OMEGA™

HDBaseT Transmitter

with USB-C and HDMI Inputs plus USB Hub

AT-OME-SW21-TX | Atlona Manuals **Switchers**

Version Information

Version	Release Date	Notes
1	Jun 2025	Initial release

Sales, Marketing, and Customer Support

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Operating Notes

IMPORTANT: Visit http://www.atlona.com/product/at-ome-sw21-tx 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/

Important Safety Information

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

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

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

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

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

FCC 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.

Copyright, Trademark, and Registration

Table of Contents

Table of Contents

Introduction

The Atlona **AT-OME-SW21-TX** is a compact, versatile switcher and HDBaseT™ transmitter with USB-C® and HDMI® inputs. It sends video up to 4K/60 4:2:0, plus embedded audio, control, and USB 2.0 over distances up to 330 feet (100 meters). Part of the Omega™ Series of integration products for modern AV communications and collaboration, the OME-SW21-TX features mirrored HDMI and HDBaseT outputs and is HDCP 2.3 compliant. With a matching HDBaseT receiver, the integrated USB extension addresses the challenge of connecting between USB devices at remote locations, and is ideal for software video conferencing and interactive touch displays. The OME-SW21-TX includes a USB hub which supports USB 3.2 Gen 1 up to 5 Gbps, and USB 2.0 up to 480 Mbps for local devices and 120 Mbps over HDBaseT. Host switching is provided with USB type B and USB-C interfaces, plus two USB type A interfaces for peripherals as well as integrating with USB 3.2 Gen 1 extenders. Both inputs and the local HDMI output support 4K HDR and 4K/60 4:4:4 at HDMI data rates up to 18 Gbps. Additionally, 4K downscaling to 1080p is available for the HDMI output when connected to an HD sink. The OME-SW21-TX is ideal for use with Omega Series receivers, switchers with HDBaseT inputs, or even as a standalone AV system unit.

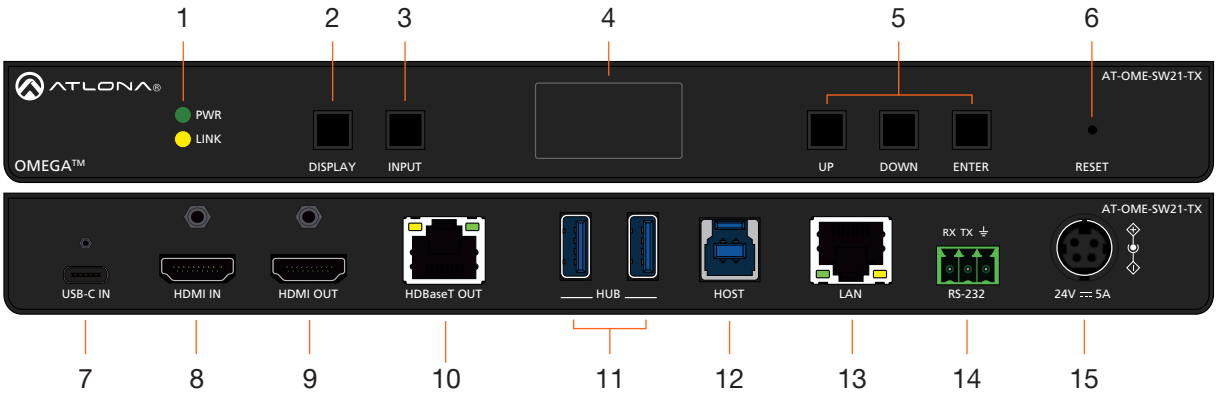
Features

- 2x1 switcher and HDBaseT transmitter with USB-C and HDMI inputs.
- USB-C input for AV, USB data, and device charging - 60 W.
- Mirrored HDBaseT and HDMI outputs
- Video, audio, power, USB 2.0 data, control, and Ethernet over category cable utilizing HDBaseT technology
- Integrated USB 3.2 Gen 1 hub
- Switch between USB host sources
- 4K/UHD @ 60 Hz capability
- HDCP 2.3 compliant
- Selectable 4K to 1080p downscaling for HDMI output
- Remote powering over HDBaseT or local powering
- Automatic display control over HDBaseT
- Automatic input selection using hot plug detect and video detection technology
- Front-panel LCD display

Package Contents

1 x AT-OME-SW21-TX
1 x 2m USB-C to USB-C cable
1 x Captive screw connector, 3-pin
2 x Mounting screws
1 x Wall/table mounting brackets
1 x Product insert

Panel Description



1 LED Indicators

- **PWR**
  This LED indicator is green when the AT-OME-SW21-TX is powered. Refer to LED Indicators (page 11) for more information.
- **LINK**
  An amber LED indicates good HDBaseT signal integrity between the AT-OME-SW21-TX and the receiver. Refer to LED Indicators (page 11) for more information.

2 DISPLAY
Press this button to toggle power on the connected display over CEC or RS-232. Each press sends an on or off command based on the display's current power state. For example, if the display is on, pressing the button will turn it off.

3 INPUT
Press this button to switch between the USB-C and HDMI inputs.

4 Front Panel Display
Displays current information and menu when selected.

5 UP, DOWN, ENTER
Press these buttons to scroll through and select menu items in the Front Panel Display.

6 RESET
Press and hold for 5 seconds to reset the IP settings and username & password to the first one set. Press for 15 seconds to factory reset the AT-OME-SW21-TX.

7 USB-C IN
Connect a USB-C cable from a USB-C source to this port. This supports AV, data, and power when the optional power supply is connected.

8 HDMI IN
Connect an HDMI cable from an HDMI source to this port.

9 HDMI OUT
Connect an HDMI cable from here to an HDMI display. This port is mirrored with the HDBaseT OUT port.

10 HDBaseT OUT
Connect a category cable from this port to the HDBaseT IN port of the AT-OME-EX-RX or other PoE-compatible receiver.

11 HUB
Connect a USB device, such as a speakerphone, to these ports. These ports provides 5 watts of power.

12 HOST
Connect a USB cable from this port to the host computer.

13 LAN
Connect an Ethernet cable to this port for control of the AT-OME-SW21-TX and/or to pass Ethernet to a local device.

14 RS-232
Connect the included 3-pin captive screw block to this port. Refer to RS-232 Control (page 26) for more information.

15 DC 24V 5A
Connect the DC 24V power supply (AT-PS-245-D4 purchased separately) to this port.

Installation

Connection Instructions

1. Connect an HDMI cable from a source to the **HDMI IN** port.
2. Connect an HDMI cable from the **HDMI OUT** port to a local display.
3. Connect a category cable from the **HDBaseT OUT** port to a compatible HDBaseT receiver or switcher. Refer to the table below for information on maximum cable length and supported resolutions.

   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.

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)
CAT6 / CAT6a / CAT7	330 feet (100 meters)	330 feet (100 meters)

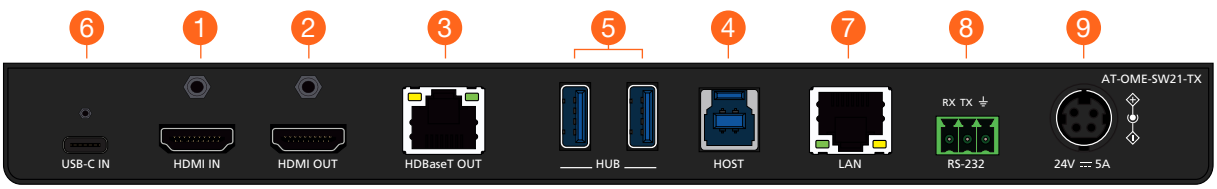
IMPORTANT: Stranded conductor or patch Ethernet cables are not recommended, as they may cause performance issues. To reduce signal noise and interference, shielded cables are highly recommended.

4. Connect a USB cable from the **HOST** port to the host USB device.
5. Connect up to two USB devices to these **HUB** ports.

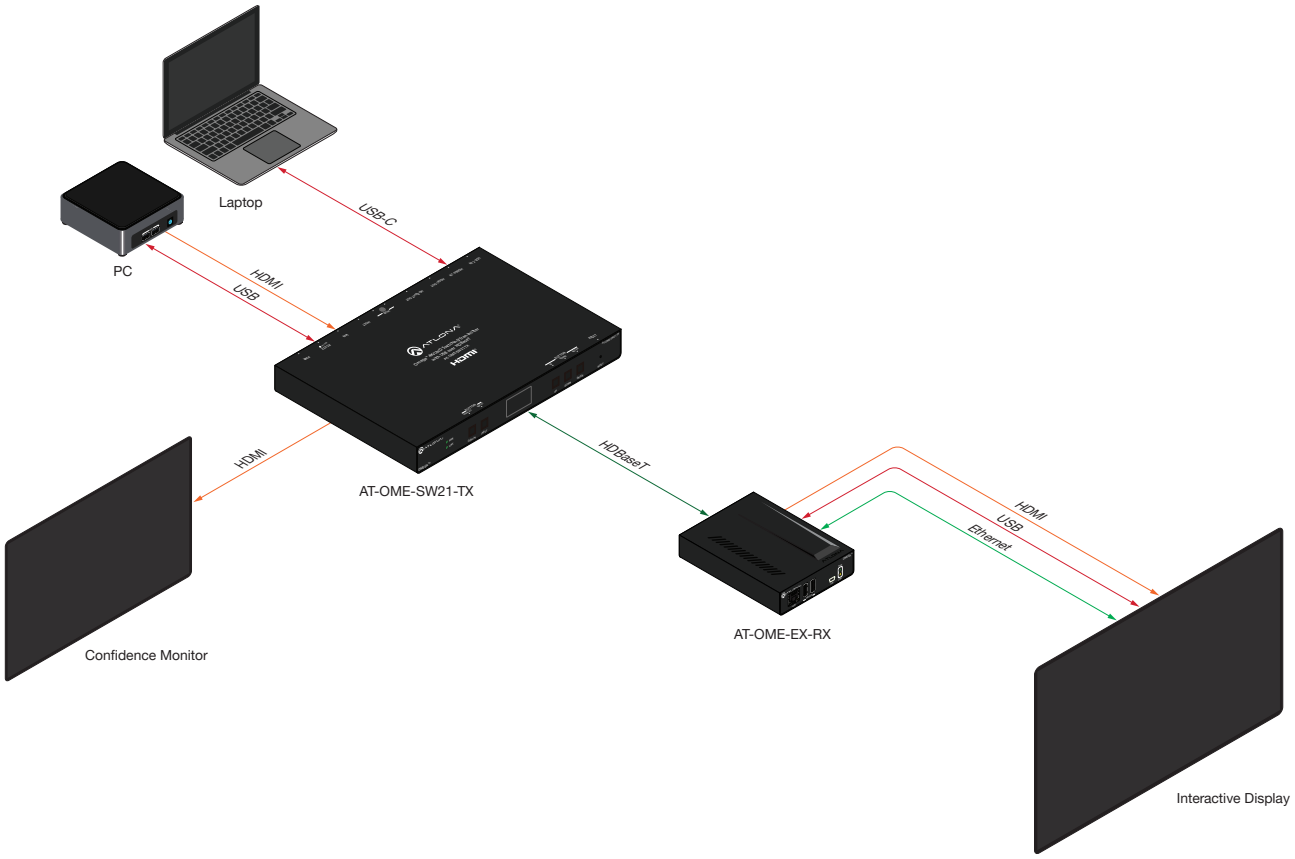
NOTE: Due to current HDBaseT limitations, USB signals can pass through a maximum of 5 hub tiers, allowing up to 6 hubs in total.

6. Connect a USB-C cable from the source to the **USB-C** port.
7. Connect an Ethernet cable from the **LAN** ports to a network switch.
8. Connect the included 3-pin captive screw connector from the **RS-232** port to a control system. Refer to RS-232 Control (page 26) for more information.
9. Connect the power supply to the 24V / 5A power receptacle. The AT-PS-245-D4 is sold separately.

IMPORTANT: Avoid connecting the AT-PS-254-D4 power supply to the AT-OME-SW21-TX while it is receiving power from a PoE-compatible receiver. Instead, first disconnect the HDBaseT cable, then connect the AT-PS-254-D4 power supply. Once the unit powers on, reconnect the HDBaseT cable.



Connection Diagram



Device Operation

LED Indicators

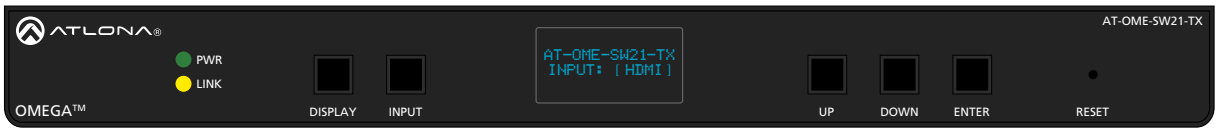
The LED indicators on both the front panel provide basic information on the current status of the AT-OME-SW21-TX.

LED	State	Description
PWR	Solid green	AT-OME-SW21-TX is powered and in normal operating mode.
	Off	AT-OME-SW21-TX is not powered. • Check the power supply and make sure it is securely fastened to the captive screw connector on the rear of the AT-OME-SW21-TX. • Make sure that the power supply is connected to an available electrical outlet and that the outlet is “live” (some outlets are controlled by a wall switch).
LINK	Solid amber	• The HDBaseT link integrity between the AT-OME-SW21-TX and the compatible PoE receiver is good.
	Off	The AT-OME-SW21-TX is not connected to a compatible PoE receiver. • Check that an HDBaseT receiver is connected to the **HDBaseT OUT** port of the AT-OME-SW21-TX. • Check the cable integrity of the category cable between the HDBaseT receiver and the **HDBaseT OUT** port of the AT-OME-SW21-TX. • Try replacing the category cable.

Front Panel Display

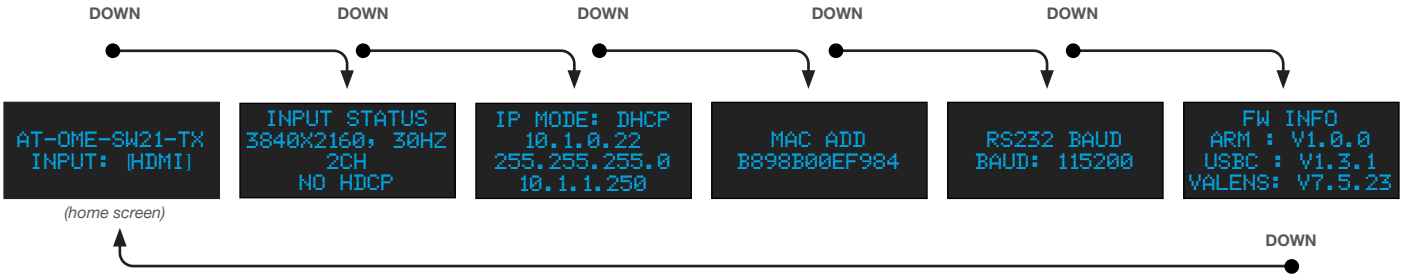
Home Screen

When powered on, the AT-OME-SW21-TX front panel display is blank by default. Press the **DISPLAY** button to activate the *home screen*, which shows the product name and currently selected input.

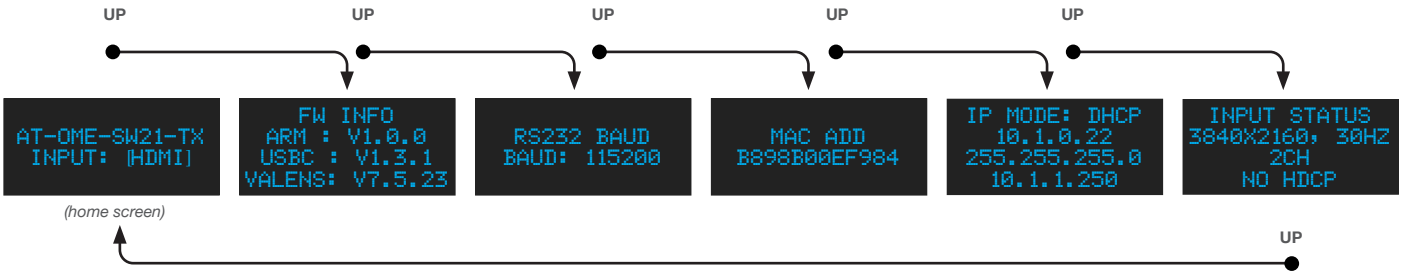


Accessing Status Screens

After the *home screen* appears, pressing the **DOWN** button repeatedly will cycle through the available *status screens* in the following sequence. After reaching the **FW INFO** screen, pressing the **DOWN** button again returns the display to the *home screen*.

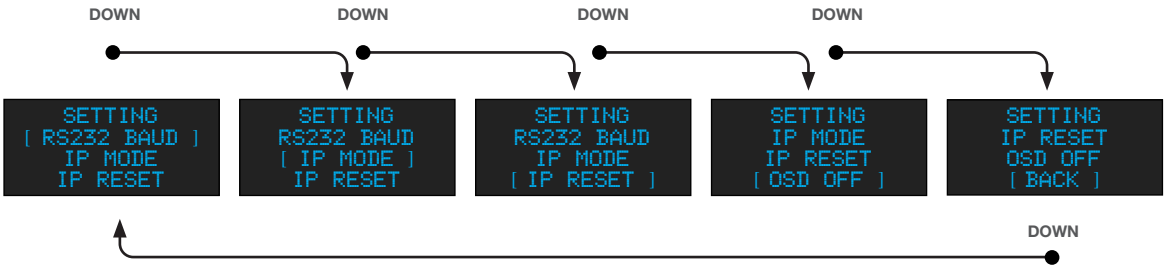


Alternatively, pressing the **UP** button repeatedly, from the home screen, will cycle through the available *status screens* in the reverse order. After reaching the **INPUT STATUS** screen, pressing the **UP** button again returns the display to the *home screen*.



Accessing the Settings Menu

From any *status screen*, press **ENTER** to open the *settings menu*, allowing adjustment of various system options. Use the **DOWN** or **UP** buttons to cycle through menu items—brackets indicate the currently selected item. Press **ENTER** to access the selected menu. Select BACK and press **ENTER** to return to the *status screens*. Each of these menu items will be covered in detail, throughout the manual.

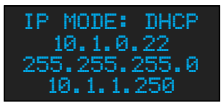


IP Configuration

The AT-OME-SW21-TX is shipped with DHCP enabled by default. When connected to a network, it will request an IP address from the DHCP server. If a DHCP server is available, an IP address will be assigned automatically. If no DHCP server is detected within 15 seconds, the unit will assign itself a link-local IP address in the `169.254.xxx.xxx/16` range.

Displaying the Current IP Address

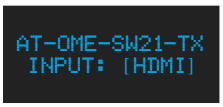
1. Make sure the AT-OME-SW21-TX is powered.
2. Press and release the **UP** or **DOWN** buttons to wake the display and access the *status screens*.
3. Press the **UP** or **DOWN** button until the following screen is displayed.



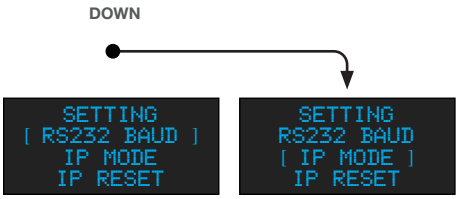
Switching between DHCP and Static IP Modes

If no DHCP server is detected by the AT-OME-SW21-TX, setting the IP mode to Static allows the device to assign itself a default Class C IP address.

1. Press and release the **UP** or **DOWN** buttons to wake the display and access the *status screens*.



2. Press the **ENTER** button to access the *settings menu*, then press the **DOWN** button to select IP MODE.



3. Press the **ENTER** button, then press the **DOWN** button to select STATIC, then press **ENTER**.

The AT-OME-SW21-TX will use the following IP configuration:

IP address:	`192.168.1.254`
Netmask:	`255.255.0.0`
Gateway:	`192.168.1.1`

When switching from DHCP to Static IP mode, the device will retain its most recently assigned DHCP address and use it as the static IP.

4. Press the **DOWN** button, select BACK, then press **ENTER** to return to the top of the *settings menu* screen.

Automatic Private IP Addressing (APIPA)

If the AT-OME-SW21-TX does not receive an IP address from a DHCP server within 15 seconds, it will fall back to Automatic Private IP Addressing (APIPA) and assign itself an address in the `169.254.xxx.xxx/16` range. If a DHCP server becomes available while in APIPA mode, the unit will automatically update its address from the DHCP pool.

To manually configure the IP address, connect the AT-OME-SW21-TX directly to a computer via Ethernet and follow these steps:

1. Change the IP address of the computer to an unused IP address within the range `169.254.xxx.xxx/16`. *The computer must not be assigned the same address as the AT-OME-SW21-TX.*
2. Click **Start** > **Settings** > **Control Panel** > **Network and Sharing Center**.
3. Click **Change adapter settings**.
4. Right-click on the adapter that is used to establish a wired connection to the network, and select **Properties** from the context menu.
5. 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.

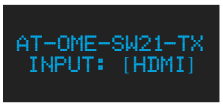
> **IMPORTANT:** Before continuing, write down the current IP settings in order to restore them, later. If **Obtain an IP address automatically** and **Obtain DNS server automatically** are selected, then this step is not required.

6. 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.
7. Set the subnet mask to `255.255.0.0`.
8. Click the **OK** button then close all **Control Panel** windows.
9. Log in to the built-in web server to set a static IP address that can be used with the network. Contact a system administrator, if necessary.

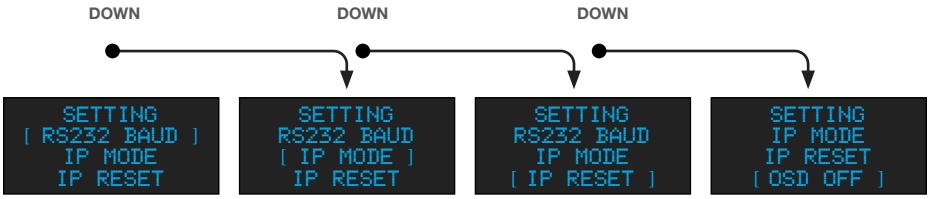
Front Panel Display Time-Out Interval

The Front Panel Display can be configured to automatically turn off after a set time interval following activation. Alternatively, the display can be set to remain on continuously.

1. Make sure the AT-OME-SW21-TX is powered.
2. Press and release the **UP** or **DOWN** buttons to wake the display and access the *status screens*.



3. Press the **ENTER** button to access the *settings menu*, then press the **DOWN** button to select OSD OFF.



4. Press the **ENTER** button. The following screen will be displayed.

By default, the OSD OFF setting is configured to 30S (30 seconds), meaning the Front Panel Display will automatically turn off after 30 seconds of inactivity. Use the **DOWN** and **UP** buttons to scroll through the available options: NEVER, 5S, 10S, 20S, 30S.

5. Press **ENTER** to select the desired value.
6. Press the **DOWN** button, select BACK, then press **ENTER** to return to the top of the *settings menu* screen.

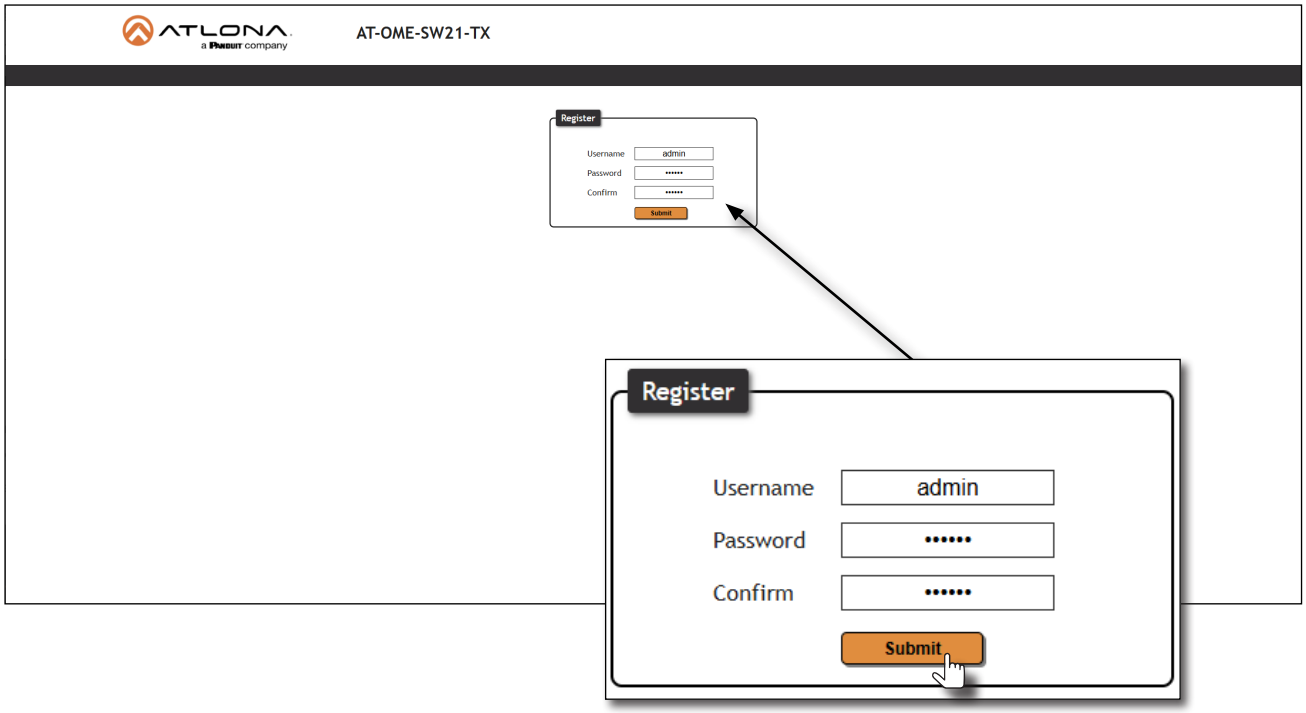
Logging in to the Web Server

Most of the AT-OME-SW21-TX operation is handled through the built-in web server. In order to access the web server, the IP address of the AT-OME-SW21-TX must be known.

Login Registration

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

1. Launch the desired web browser and enter the IP address of the AT-OME-SW21-TX in the address bar.
2. The **Login** page will be displayed.



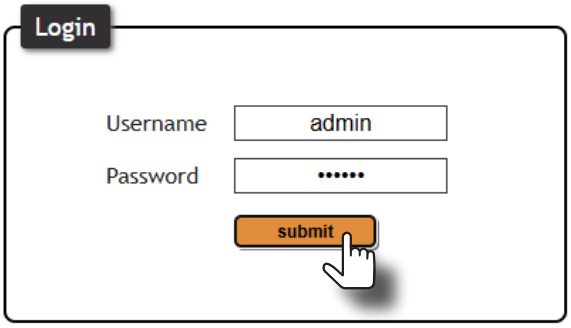
3. Enter the desired user name in the **Username** field.
4. Enter the desired password in the **Password** field. By default, the **Password** and **Confirm** fields will be masked.

> **NOTE:** Passwords can be 5 to 32 characters in length and can only contain letters, numbers, dashes, underscores, and periods. The password that is created is referred to as the *Admin* password. Additional users cannot be created or assigned. This password can be changed, if desired, from within the web server. Refer to Changing the Login Credentials (page 41) for more information.

5. Re-enter the password in the **Confirm** field.
6. Click the **Submit** button.
7. The **Login** screen will be displayed.
8. Enter the newly created user name and password, then click **Submit**.

Logging in after registration

1. Launch the desired web browser and enter the IP address of the AT-OME-SW21-TX in the address bar.
2. Enter the correct username and password in the respective fields.
3. Click the **Submit** button.

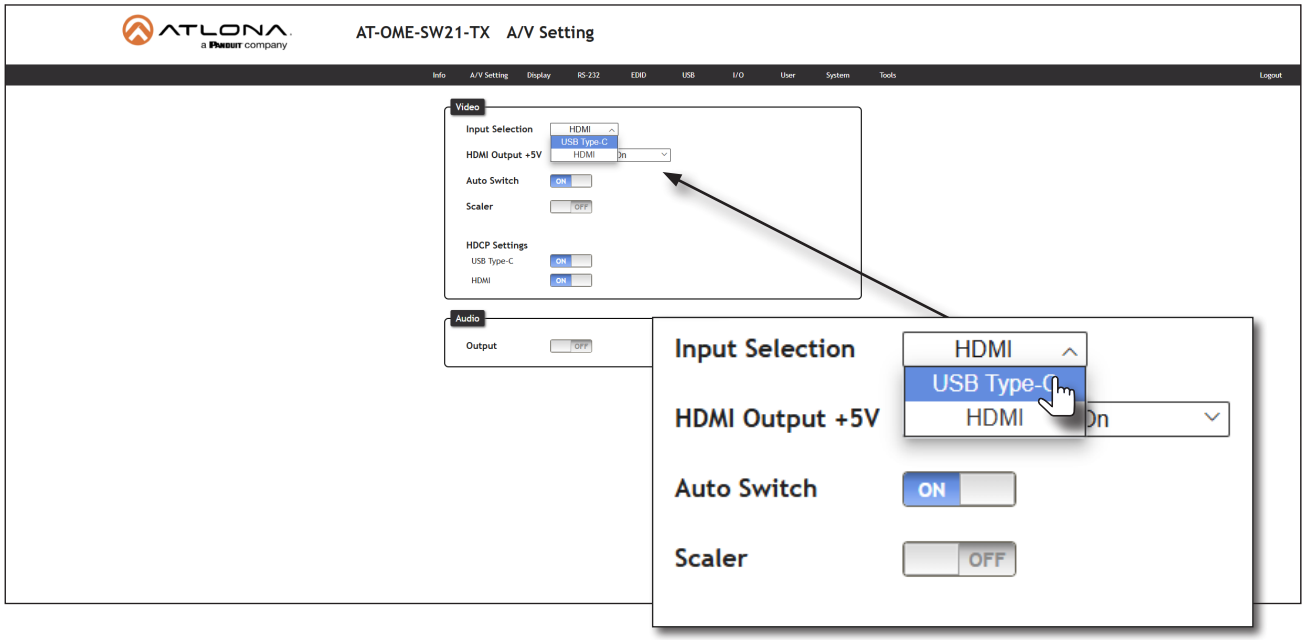


4. The **Info** page will be displayed and the login process is complete.

Video Settings

Input Selection

1. Login to the web server.
2. Click **A/V Settings** in the menu bar.
3. Under the **Video** section, click the **Input Selection** drop-down list and select the desired input.

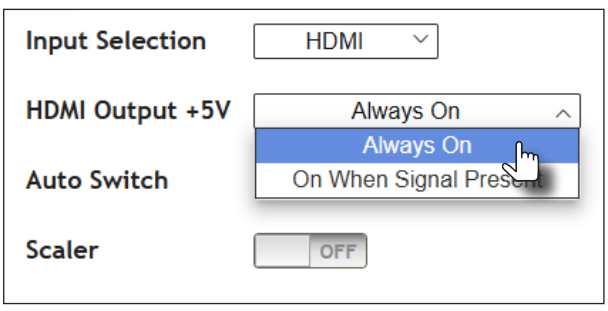


HDMI Output +5V

This option sets the +5V pin on the **HDMI OUT** port to the desired setting. This feature allows a display to go to sleep when there is no signal present. It's also used for VTC codecs that need to see a change in HDMI +5V in order to change modes. If faster switching times are desired, then this should be set to `Always On`. The default setting is `On When Signal Present`.

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.

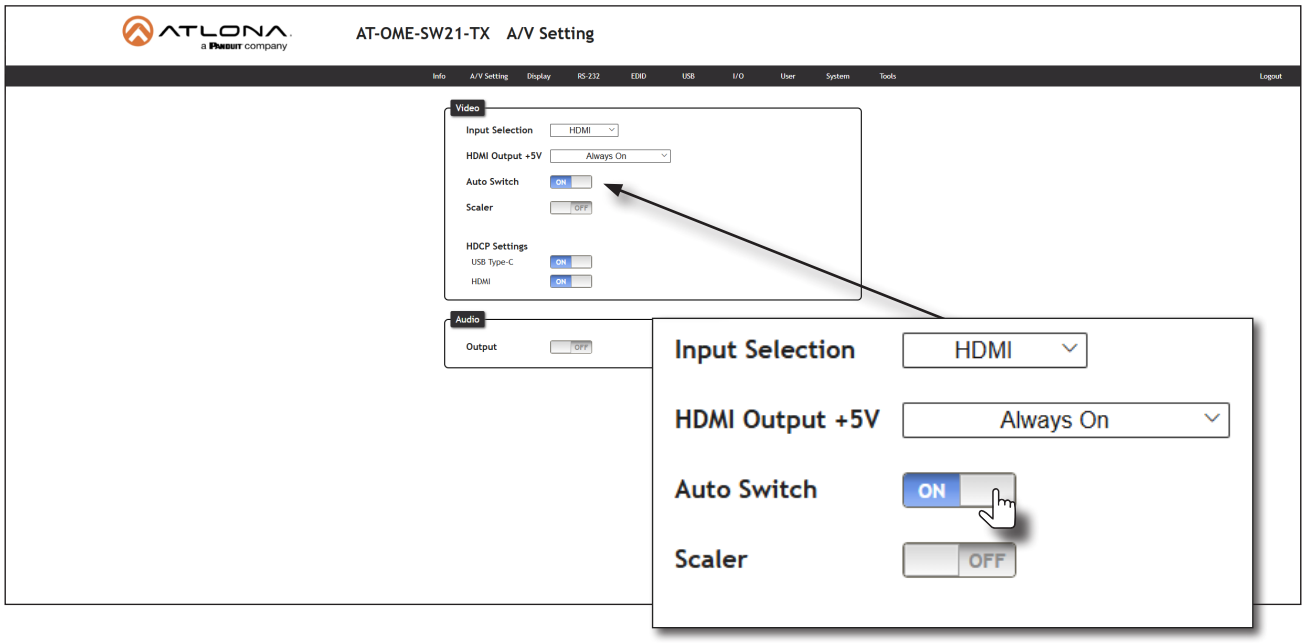
1. Login to the web server.
2. Click **A/V Settings** in the menu bar.
3. Under the **Video** section, click the **HDMI Output +5V** drop-down list and select the desired setting.



Auto Switching

The AT-OME-SW21-TX 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.

1. Login to the web server.
2. Click **A/V Settings** in the menu bar.



3. Under the **Video** section, the **Auto Switch** toggle switch will be set to the ON position, indicating that auto-switching is enabled.
4. Click the **Auto Switch** toggle switch to the OFF position to disable auto-switching. Note that when disabled, if the previously active input is no longer available, no switching will occur.

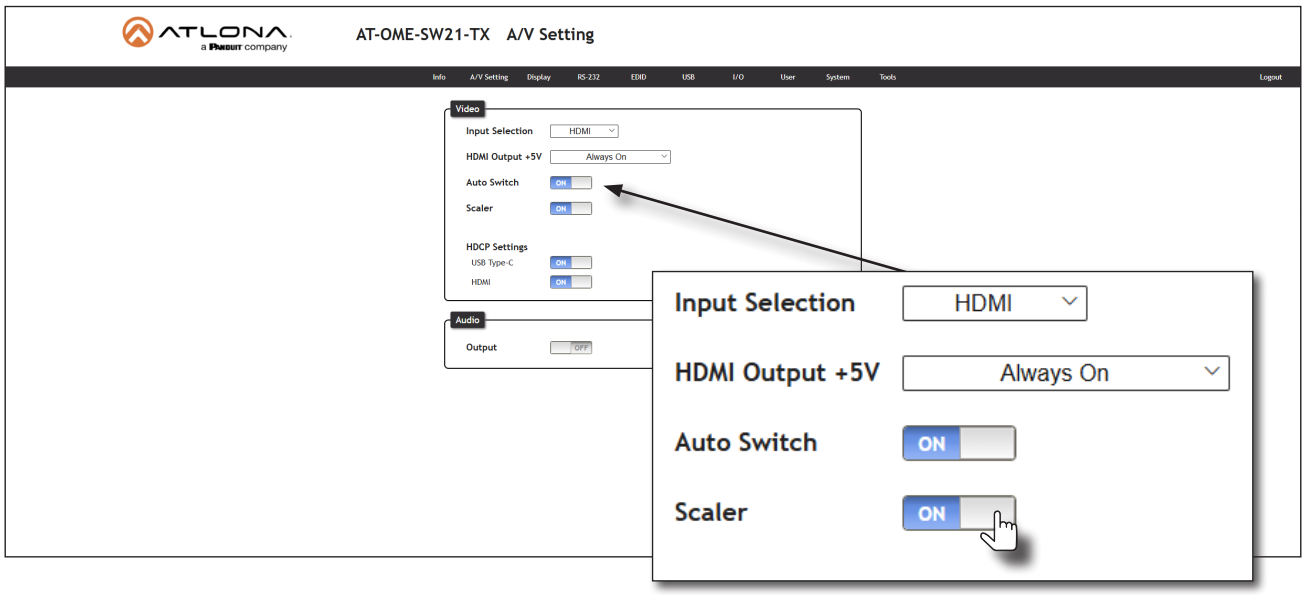
NOTE: The AT-OME-SW21-TX retains the currently selected input, even after the unit is powered-off then powered-on. The system should re-evaluate the auto switching logic after power on, and then select an input.

Scaling

Click this toggle switch to enable or disable the scaling 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 OFF.

> **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 Setting** in the menu bar.
3. Click the **Scaler** toggle switch.



4. Click the toggle switch again, to return the **Scaler** toggle to the OFF (default) position.

Notes on scaling

- 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:

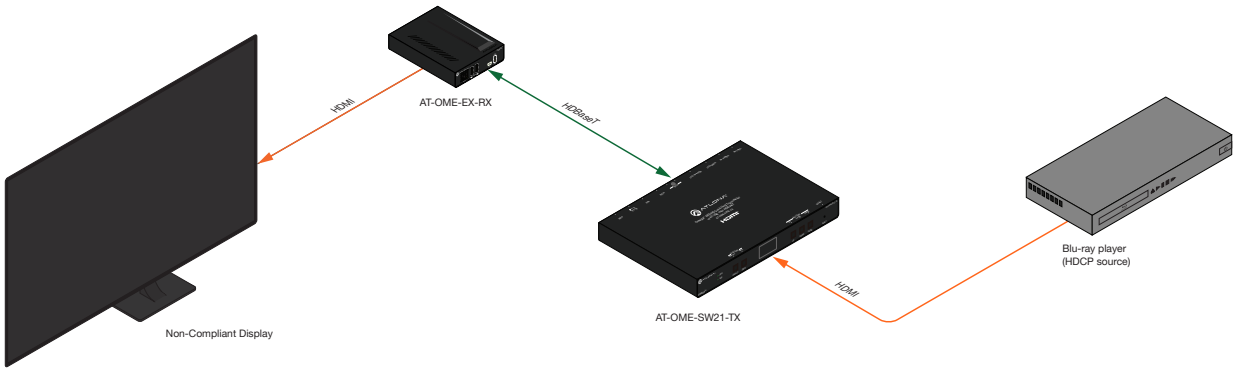
Input	Output
4K @ 24 Hz	1080p @ 24 Hz
4K @ 30 Hz	1080p @ 30 Hz
4K @ 60 Hz, 4:2:0	1080p @ 60 Hz, YUV/RGB 4:4:4

- HDR / Dolby Vision / HLG formats cannot be down-scaled to 1080p. If the source content has HDR, then the color saturation on the video output my appear “washed out”.
- The internal scaler will be bypassed if the connected display supports the resolution and timing information from the source device.

HDCP Settings

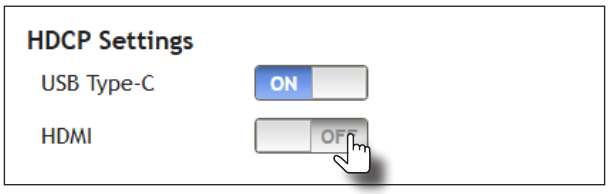
Normally, if a source is transmitting HDCP content to a display that is not HDCP-compatible, then the resulting image on the display can be “snow”, image flickering, or no picture. For example, in the illustration below, a Blu-ray player HDCP source is connected to the AT-OME-SW21-TX. A non-compliant display is connected to an AT-OME-EX-RX receiver, which is connected to the AT-OME-SW21-TX using HDBaseT.

IMPORTANT: Not all source devices are capable of transmitting non-HDCP content. For example, Sony PlayStation® gaming consoles and Apple® computers will always default to HDCP. However, if they detect a non-HDCP source, non-HDCP content will be transmitted.



By default, a 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 Setting** in the menu bar.
3. Under the **Video** section, click the toggle switch next to the desired input. In this example, clicking the **HDMI** toggle switch to the `OFF` position will instruct the source connected to the HDMI port 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:

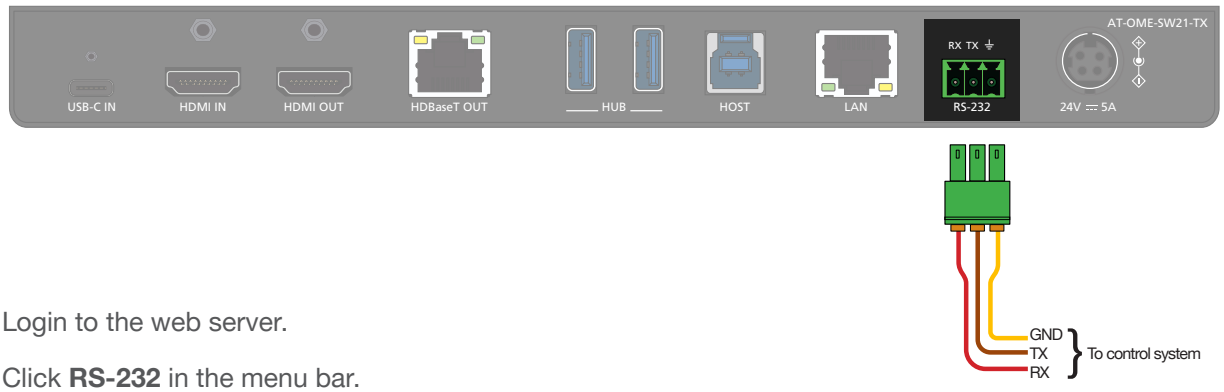
HDCP INCOMPATIBILITY

Automation Control

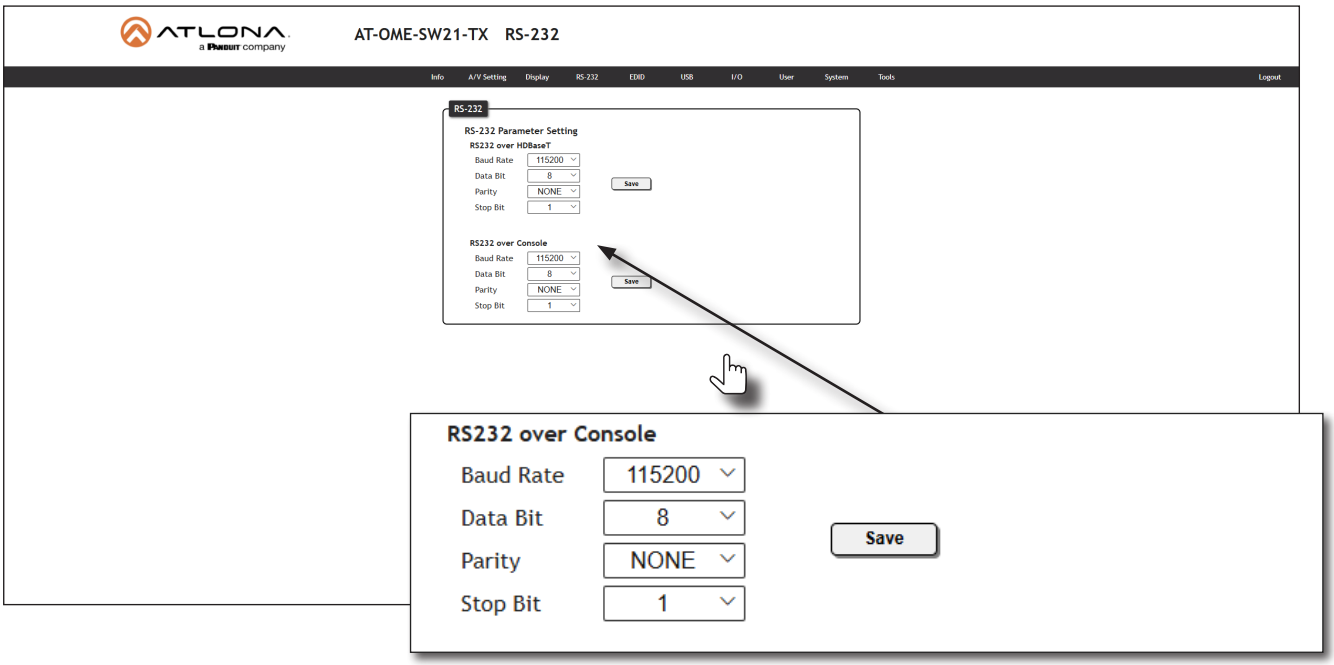
RS-232 commands can be sent from a computer or control system to the AT-OME-SW21-TX. This method allows direct control of the switch for routing, IP configuration, powering-on / powering-off and other functions.

> **IMPORTANT:** Both the **RS-232** port on the AT-OME-SW21-TX and on the control system must be set to the same baud rate, in order to communicate properly.

1. Connect the RS-232 cable from the control system to the AT-OME-SW21-TX. Use the included 3-pin captive screw connector and wire the cable according to the diagram provided.



2. Login to the web server.
3. Click **RS-232** in the menu bar.



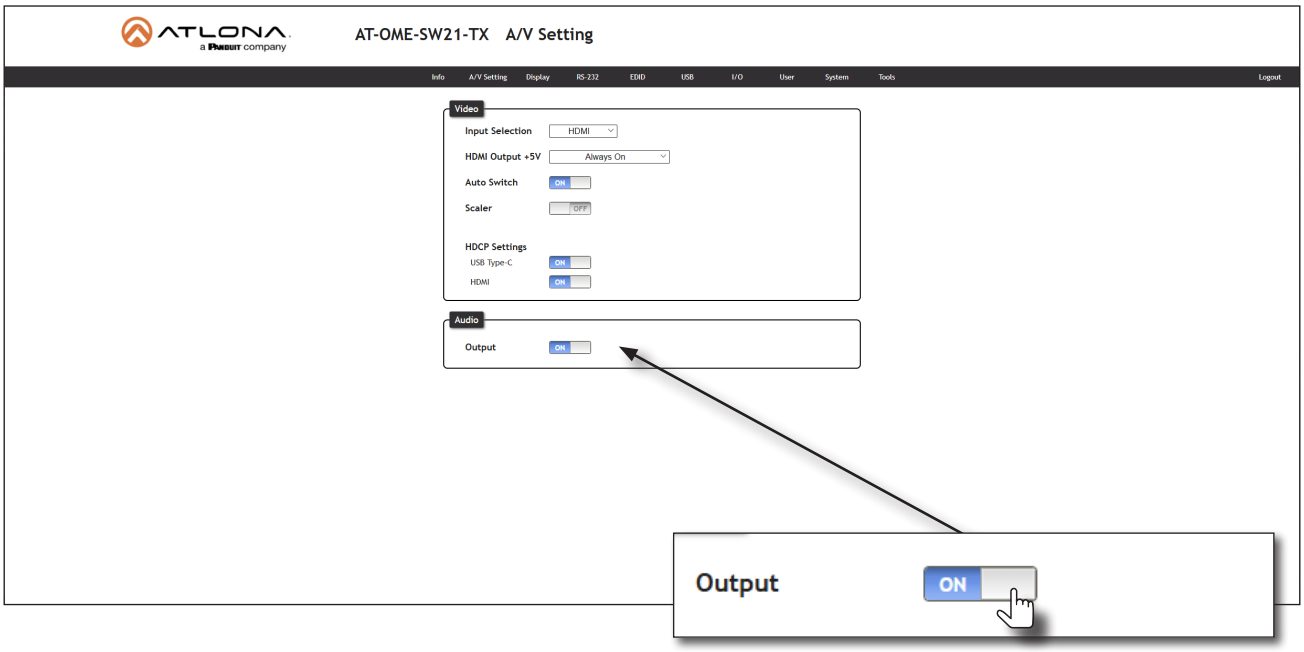
4. Set the baud rate of the computer/control system to the same baud rate. If the AT-OME-SW21-TX and the control system are not set to the same baud rate, then the AT-OME-SW21-TX will not respond to RS-232 commands.

Audio Settings

Audio Muting

The AT-OME-SW21-TX provides control over audio muting on the output.

1. Login to the web server.
2. Click **A/V Setting** in the menu bar.
3. Under the **Audio** section, click the **Output** toggle switch to either the ON or OFF position. To mute the audio output set this toggle switch to the ON position. To re-enable the audio on the output, set the toggle switch to the OFF position. By default, this is set to ON.



Display Control

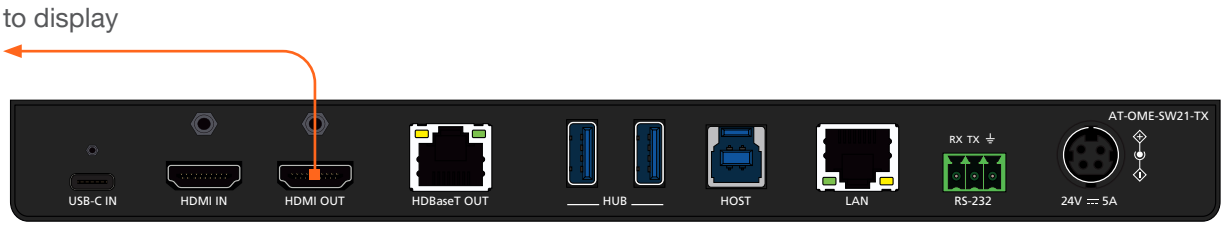
The AT-OME-SW21-TX provides various methods for display control: CEC, IP, and RS-232. No external control system is required. Each of these methods will be covered in this section.

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-SW21-TX, 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-SW21-TX to an HDMI input on the display device.

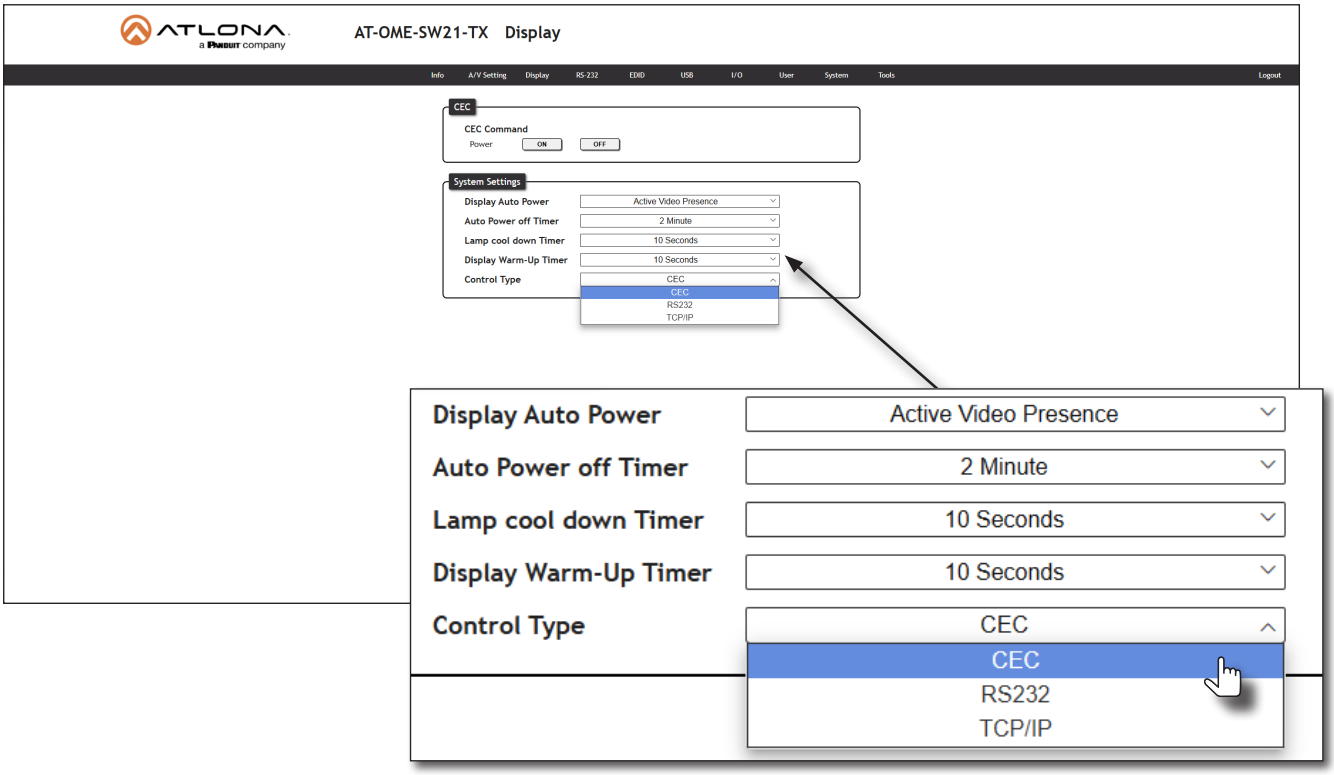


2. Enable CEC on the display device. Refer to the documentation for the display device. It should be noted that different manufacturers will identify CEC with their own brand name. Refer to the table below.Login to the web server.

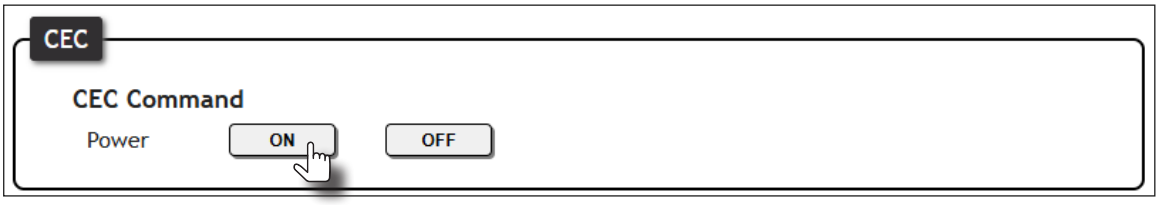
Manufacturer	CEC Designation
Hitachi	HDMI-CEC
LG	SIMPLINK
Philips	EasyLink
Samsung	AnyNet+
Sony	BRAVIA Sync
Toshiba	CE Link / REGZA Link
Visio	HDMI-CEC

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

5. Under **System Settings**, click the **Control Type** drop-down list and select **CEC**. This is the default control method.



6. 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. The display should power-on and power-off when clicking these buttons.



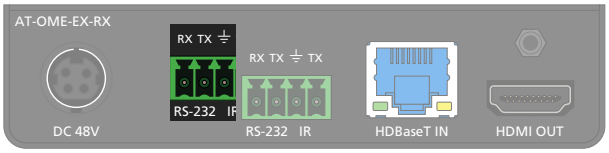
If the display does not respond, check the following:

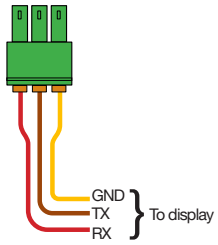
- Verify that CEC is enabled on the display device.
- Verify the integrity of the HDMI cable. Try connecting a different HDMI cable between the AT-OME-SW21-TX and the display device.
- Try connecting the HDMI cable to a different HDMI input on the display device.

RS-232 Control

1. Connect a category cable from the **HDBaseT OUT** port on the AT-OME-SW21-TX to the **HDBaseT IN** port on the AT-OME-EX-RX.

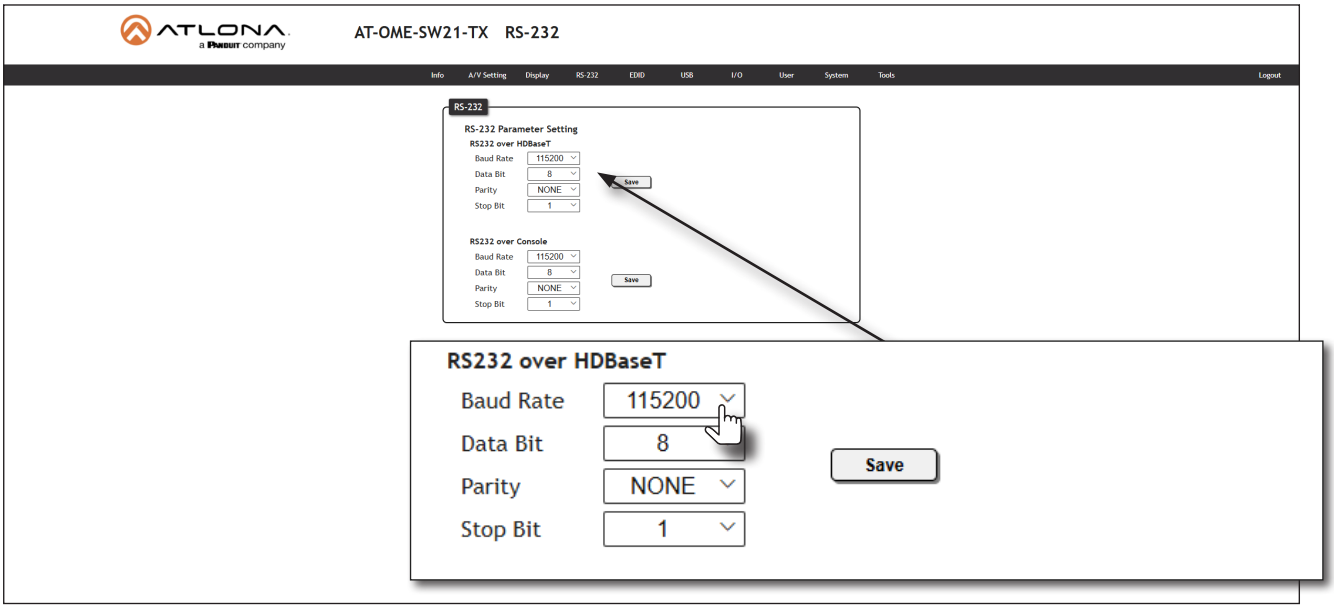
2. Connect the RS-232 cable from the display to the RS-232/IR port on the AT-OME-EX-RX. Use the included 3-pin captive screw connector and wire the cable according to the diagram provided.





3. Login to the web server.

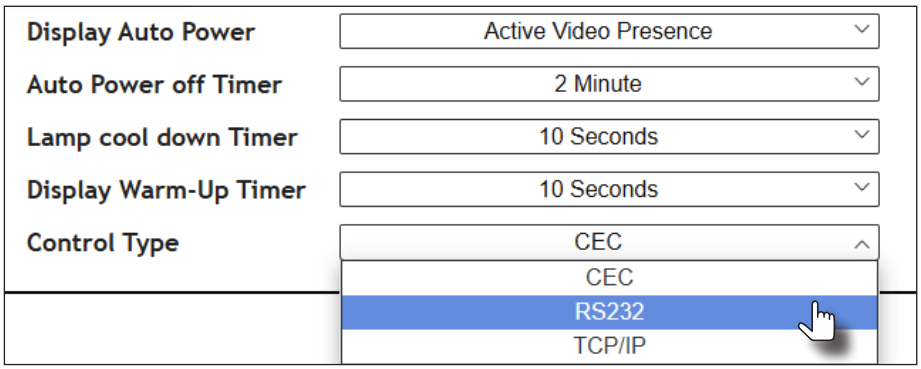
4. Click **RS-232** in the menu bar.



5. 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.

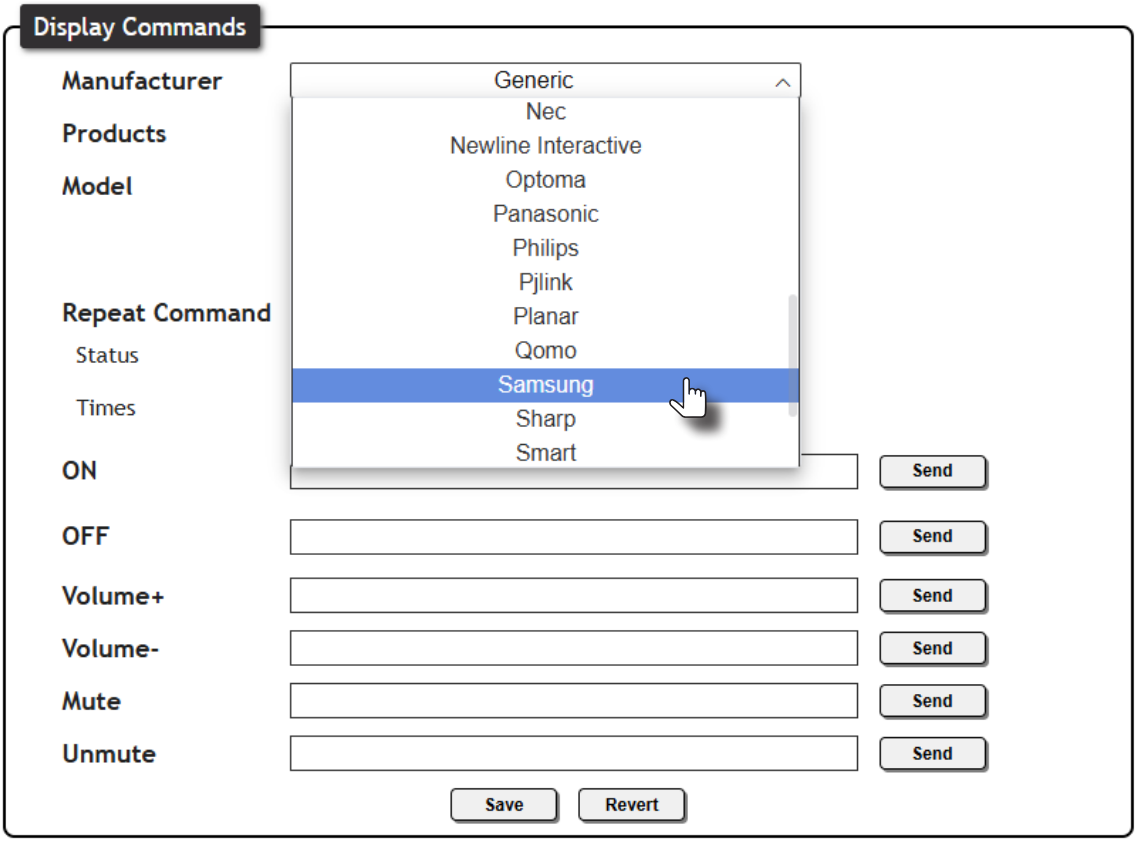
6. Click **Display** in the menu bar.

7. Click the **Control Type** drop-down list and select **RS-232**.



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

9. Click the **Manufacturer** drop-down list and select the manufacturer of the device that is being controlled. In the example below, `Samsung` is selected.



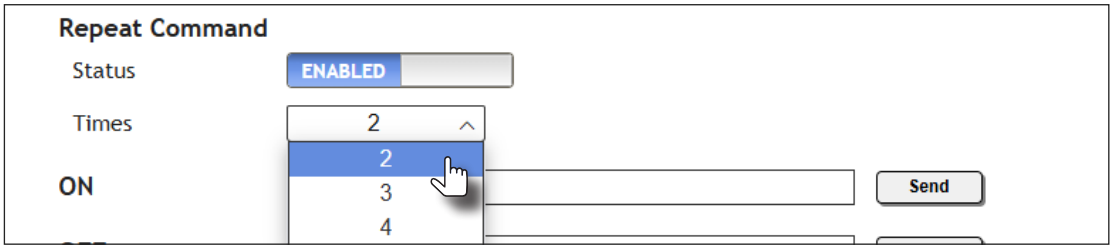
NOTE: If the manufacturer is not listed in the drop-down list, then select **Generic**. When `Generic` is selected, the **Products** and **Model** drop-down lists will only list `Generic`.

10. 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-SW21-TX will populate the command fields with the proper values, based on the selected device.

11. Some devices may require that the command be sent multiple times before an acknowledge message is sent back to the AT-OME-SW21-TX. Refer to the display's documentation for more information. If the command must be repeated, continue with the following steps. Otherwise, skip to step 11.

    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.



12. If **Generic** was selected as the manufacturer, in step 8, 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.

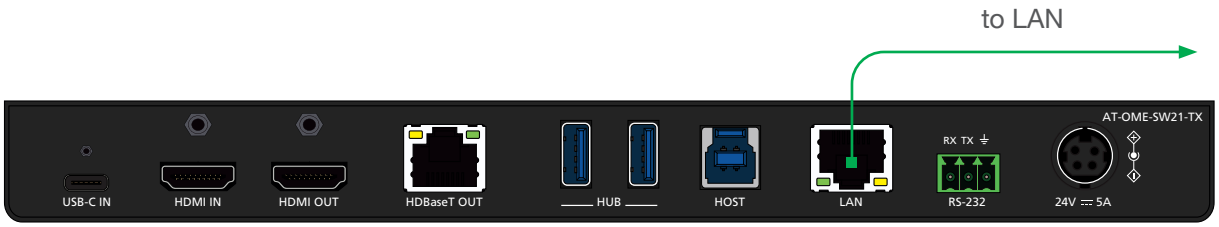
13. Click the **Send** button to verify that each command works properly. If not, check the values entered for each command.

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

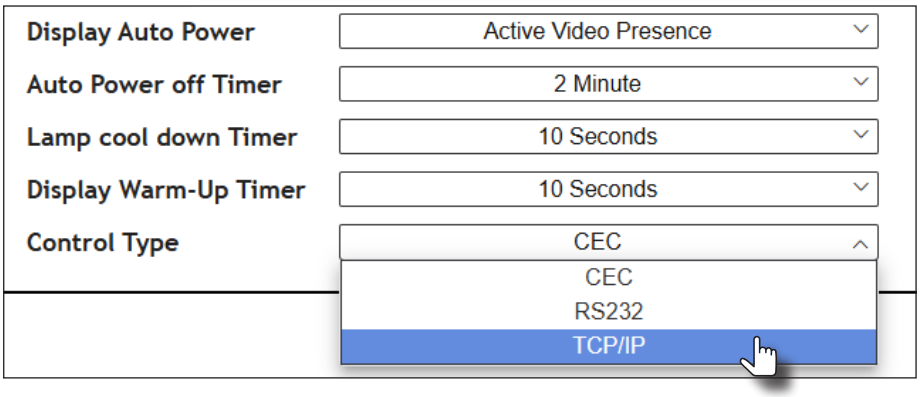
IP Control

Instead of using a serial cable to send commands, this method uses an Ethernet cable to send commands from the AT-OME-SW21-TX to the display device over IP network.

1. Verify that both the AT-OME-SW21-TX and the display to be controlled are both connected to the Local Area Network.



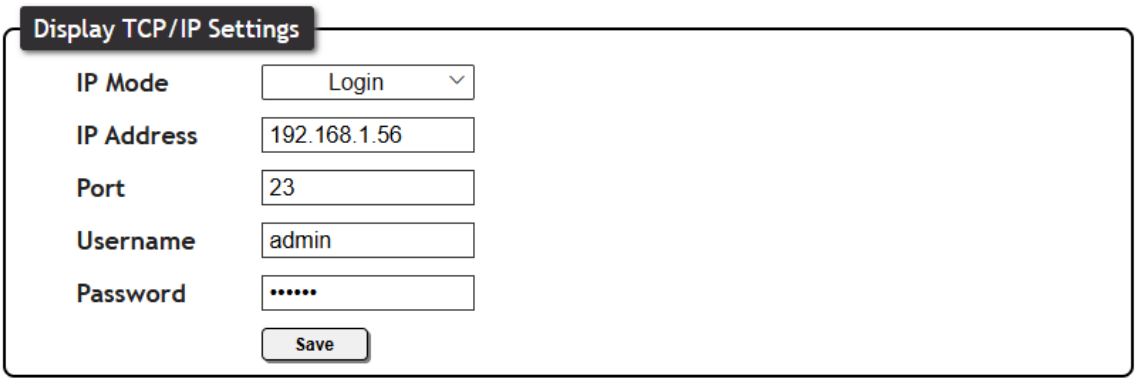
2. Login to the web server.
3. Click **Display** in the menu bar.
4. Under **System Settings**, click the **Control Type** drop-down list and select **TCP/IP**.



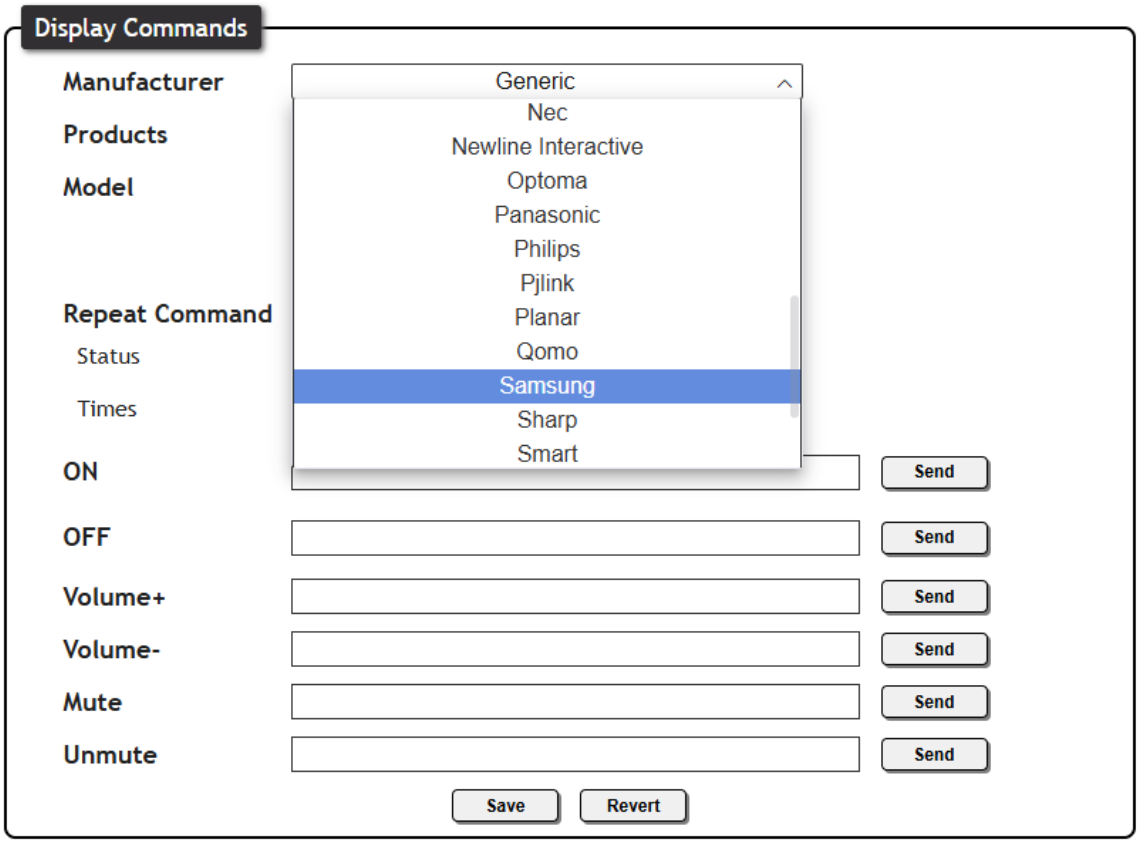
5. Click the **IP Mode** drop-down list to select the login mode for the display device.
   - If set to **Login**, then a username and password will be required to access the Telnet session.
   - If set to **Non-Login**, then no credentials will be required for the Telnet session.

6. Locate the **TCP/IP Settings of Controlled Device** section and enter the required information in the following fields.

Field	Description
IP address	The IP address of the device to be controlled.
Port	The device listening port.
Username	The user name used to access the web server. This field is only required if **IP Mode** is set to `Login`.
Password	The password used to access the web server. This field is only required if **IP Mode** is set to `Login`.



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



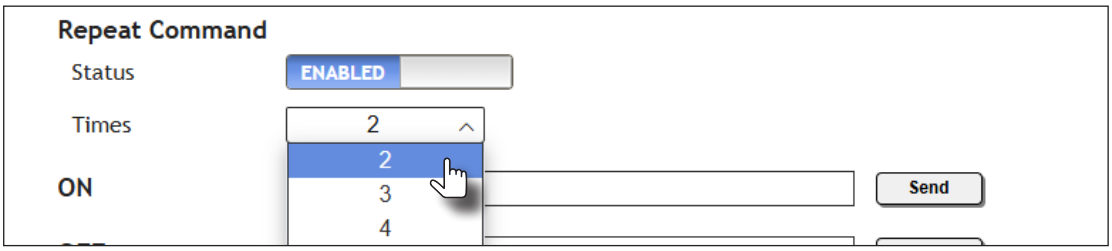
NOTE: If the manufacturer is not listed in the drop-down list, then select **Generic**. When `Generic` is selected, the **Products** and **Model** drop-down lists will only list `Generic`.

9. 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-SW21-TX will populate the command fields with the proper values, based on the selected device.

10. Some devices may require that the command be sent multiple times before an acknowledge message is sent back to the AT-OME-SW21-TX. Refer to the display's documentation for more information. If the command must be repeated, continue with the following steps. Otherwise, skip to step 11.

    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.



11. If **Generic** was selected as the manufacturer, in step 8, 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.

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

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

EDID Management

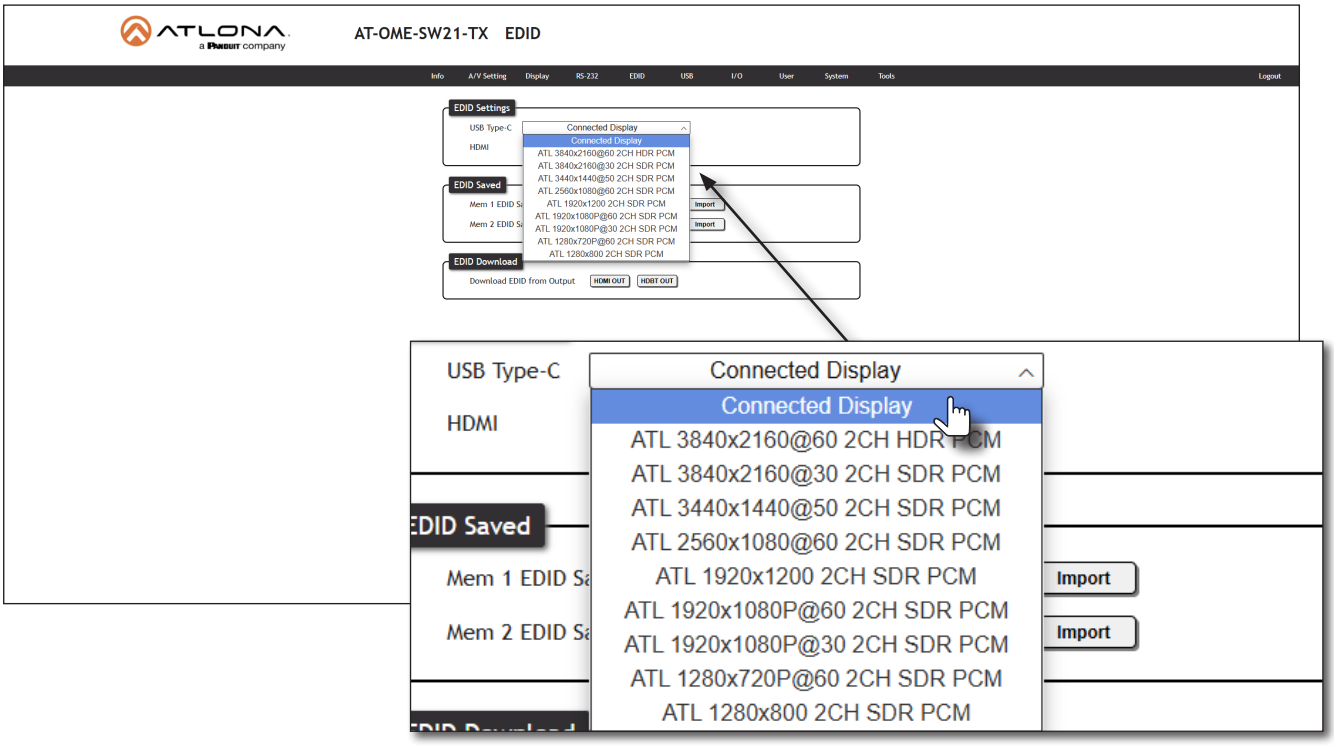
Before a source can send picture and sound to a display device, the source reads the EDID (Extended Display Identification Data) stored in the display. The EDID contains information about what type of video and audio formats are supported by the display. The AT-OME-SW21-TX can use either the downstream EDID (from the display/sink) or use a built-in EDID preset. Custom EDID data can also be stored in a user-defined preset. This section will cover each of the following topics:

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

Using the Downstream EDID

By default, the AT-OME-SW21-TX 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 desired input and select **Connected Display**. For example, to have the **HDMI** port use the EDID of the connected display, click the **HDMI** drop-down list and select **Connected Display**.



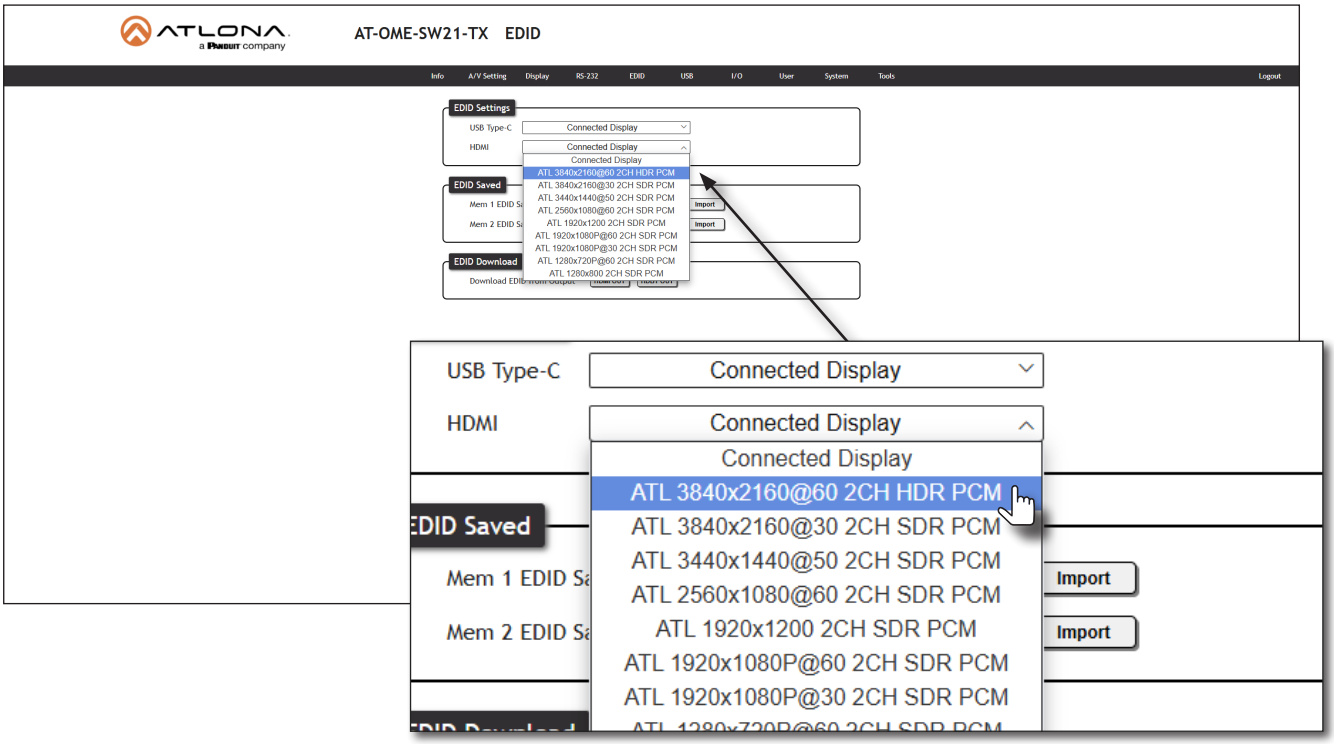
EDID Presets

The AT-OME-SW21-TX provides the option of selecting a preset EDID. The following presets are available. For information on storing custom EDID data, refer to Storing EDID Data (page 34).

EDID Presets	
Connected Display	ATL 1920x1200 2CH SDR PCM
ATL 3840x2160 @ 60 Hz 2CH HDR PCM	ATL 1920x1080P @ 60 Hz 2CH HDR PCM
ATL 3840x2160 @ 30 Hz 2CH SDR PCM	ATL 1920x1080P @ 30 Hz 2CH HDR PCM
ATL 3440x1440 @ 50 Hz 2CH SDR PCM	ATL 1920x1080P @ 60 Hz 2CH HDR PCM
ATL 2560x1080 @ 60 Hz 2CH SDR PCM	ATL 1280x720P 2CH HDR PCM

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

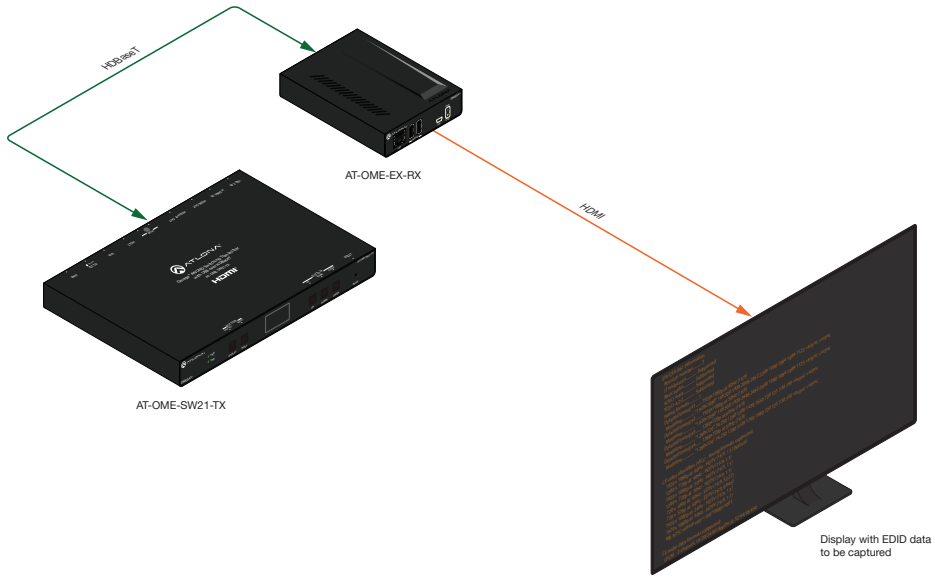
1. Login to the web server.
2. Click **EDID** in the menu bar.
3. Locate the **EDID Settings** section.
4. Click the drop-down list, next to the port that is connected to the display device, and select the desired EDID preset. For example, to have the **HDMI** port use a specific EDID, click the **HDMI**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



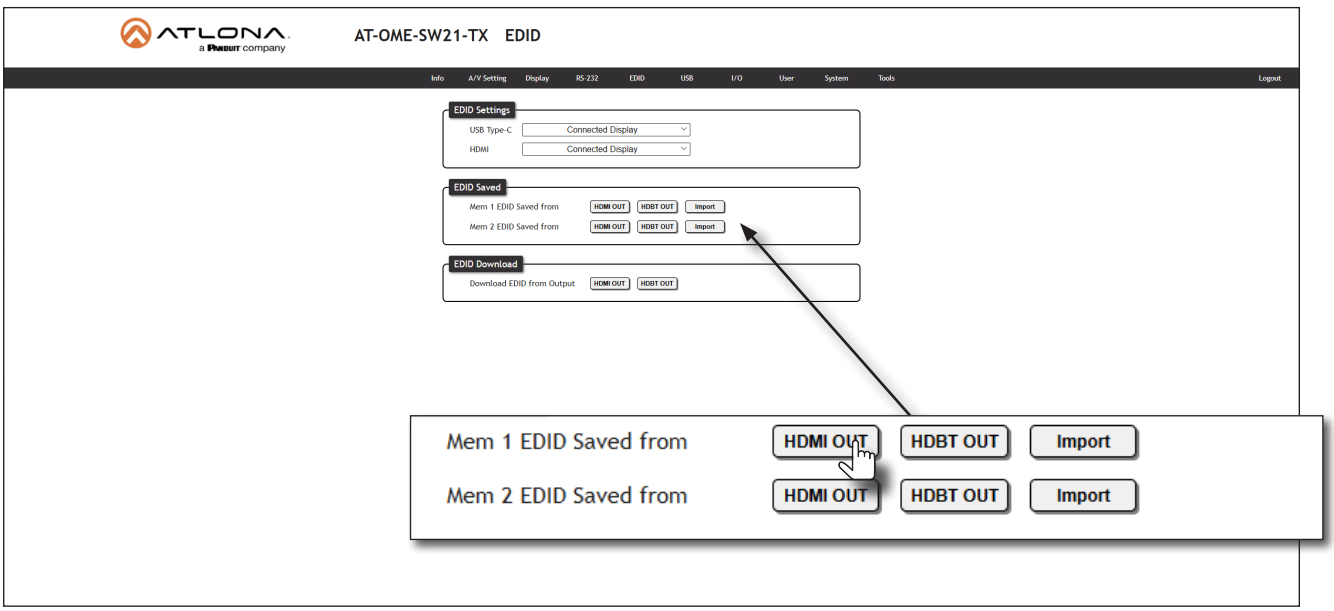
Storing EDID Data

The AT-OME-SW21-TX provide a two memory locations, which can be used to store EDID data. Any EDID can be stored in these locations. The memory location is non-volatile and captured EDID data is retained after power is disconnected from the unit.

1. Make sure the system is powered and wired, as shown in the illustration below.
2. Connect an HDMI cable from the **HDMI OUT** port on the receiver endpoint of the AT-OME-SW21-TX, containing the EDID to be stored. In this example, the AT-OME-EX-RX is used as a receiver unit.
3. Login to the web server of the AT-OME-SW21-TX.
4. Click **EDID** in the menu bar.



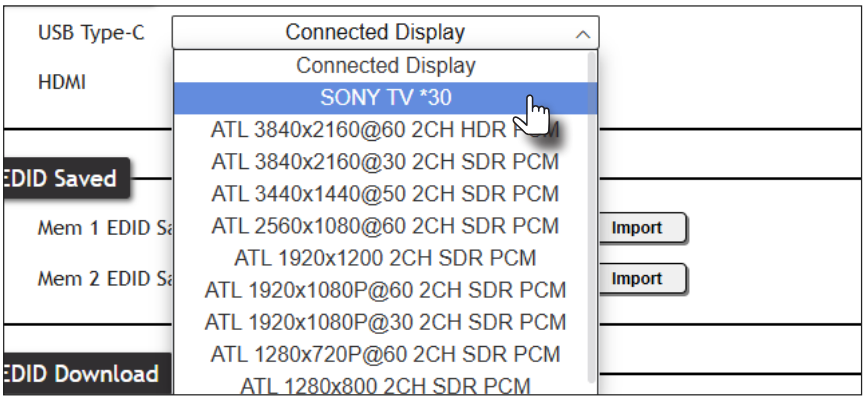
5. Locate the **EDID Saved** section.



6. Click the corresponding button based on the desired source. Once the EDID has been saved to the memory location, a message will be displayed at the bottom of the screen.

Button	Description
HDMI OUT	Fetches the EDID from the local sink device connected to the **HDMI OUT** port and saves it to memory.
HDBT OUT	Fetches the EDID from the sink device connected to the receiver and saves it to memory.
Import	Import the desired EDID file into memory. Only files with a `.bin` extension are supported, as EDID data must be in binary format.

7. Click any of the input drop-down list boxes, under the **EDID Settings** window group. Note that the stored EDID appears as an available EDID preset for each available input on the AT-OME-SW21-TX.



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 the steps above.

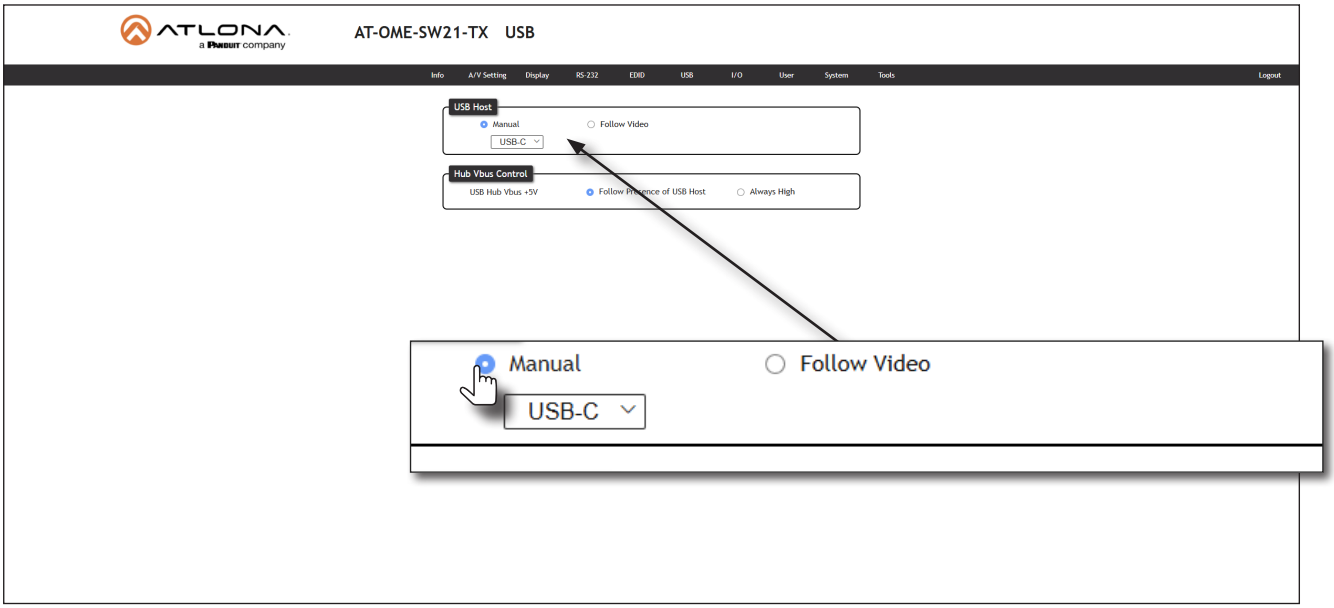
USB Modes

The AT-OME-SW21-TX provides two USB modes: **Manual** and **Follow Video**. Each mode provides a different method of selecting the USB host port. Note that the **USB-C** port also serves as a host port.

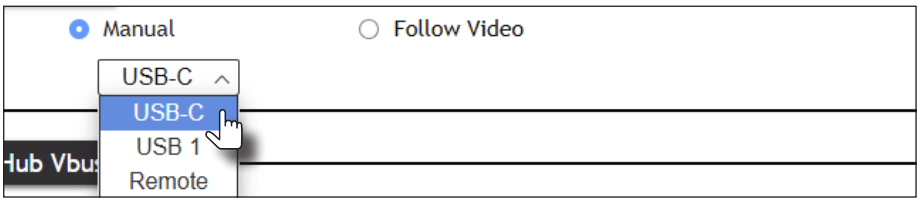
Manual

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 under the **USB Hosts** section.



5. Click the drop-down list, below the **Manual** radio button, to select the desired input.

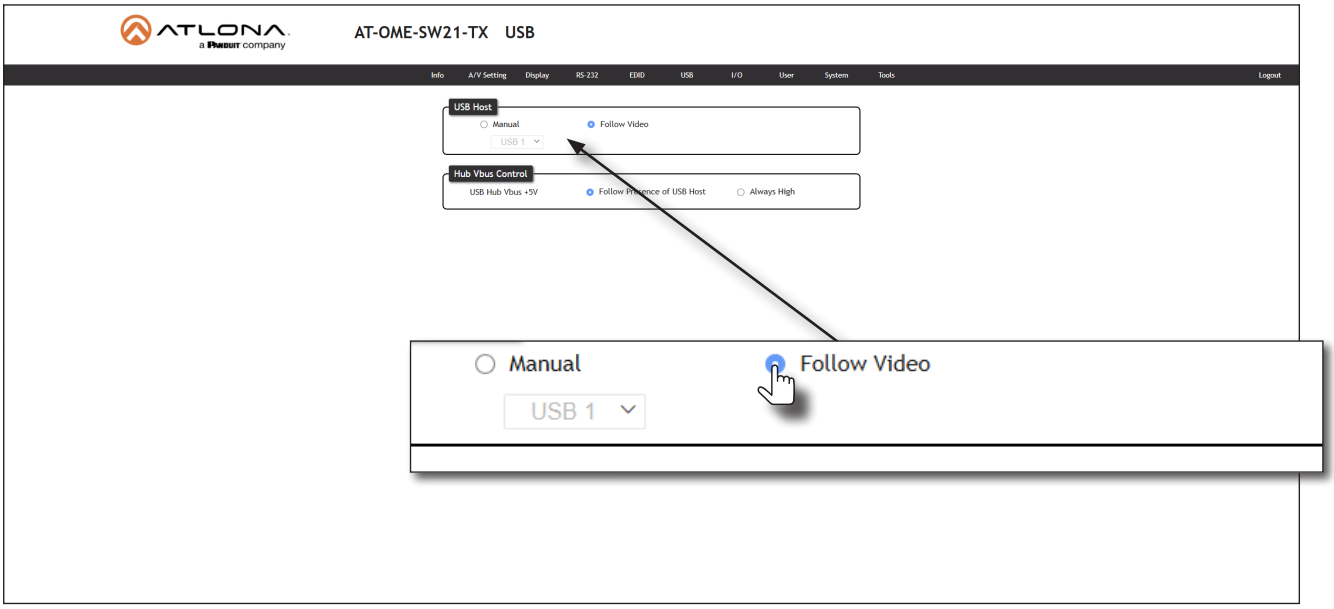


USB Host	Description
USB-C	**USB-C** port
USB 1	The **HOST** port
remote	Uses the USB host port on the HDBaseT receiver

Follow Video

In this mode, each video input can be assigned to either the **HOST** or **USB-C** port. Follow Video mode locks the USB host device to the desired video port. In this way, the video source will have access to all connected USB device, each time video switching occurs.

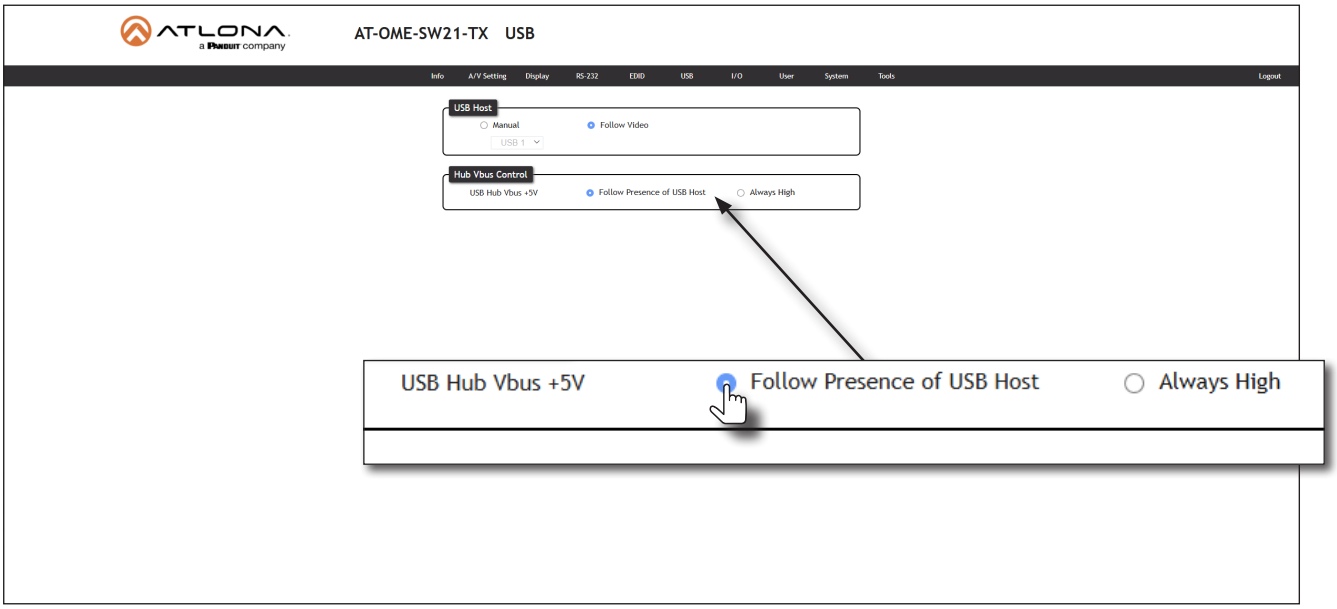
1. Connect the host computers to the desired USB host ports. Note that it is not required that two USB host ports be connected to host devices.
2. Login to the web server.
3. Click **USB** in the menu bar.
4. Under the **USB Host** section, click the **Follow Video** radio button.



Hub Vbus Control

This feature provides the ability to toggle the USB Vbus. This allows the USB hub port to always provide power or follow the presence of the connected USB host. The default setting is `Follow Presence of USB Host`.

1. Connect the host computer to the **HOST** port.
2. Log in to the web server.
3. Click **USB** in the menu bar.



4. Under the **Hub Vbus Control** section, click the radio button for the desired option.

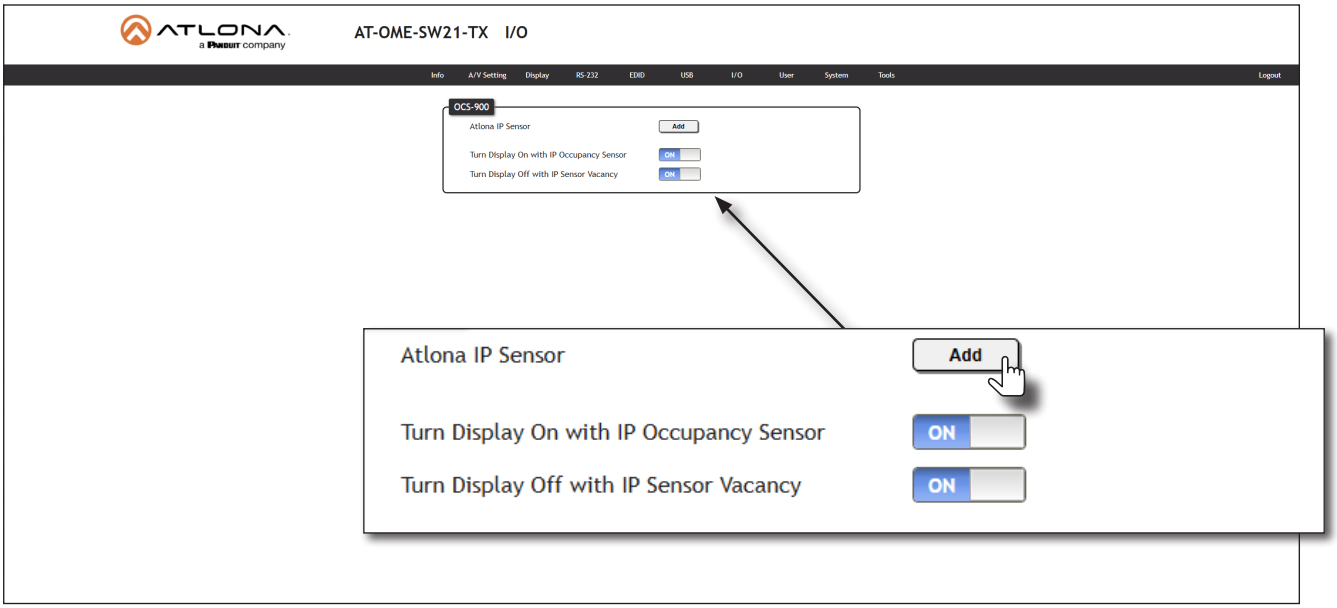
Setting	Description
`Follow Presence of USB Host`	Allows the USB hub port to toggle on and off based on the presence of a USB host.
`Always High`	USB power is always enabled. For example, when connecting to a battery-powered speakerphone, selecting `Always High` ensures that the speakerphone continues to charge even when no USB host is connected.

AT-OCS-900N Integration

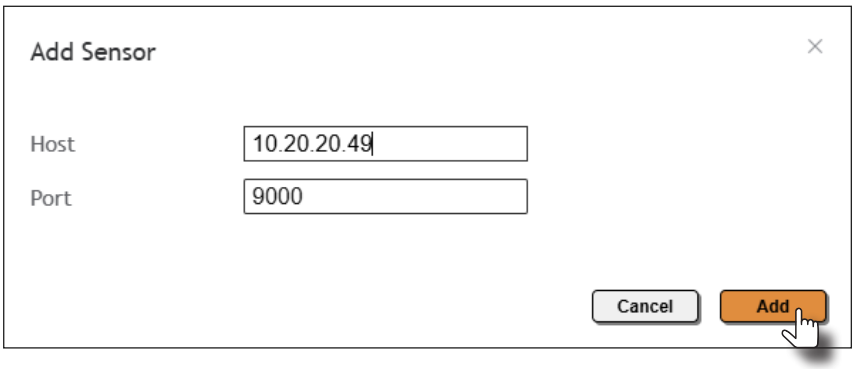
The following provides instructions on adding the AT-OCS-900N occupancy sensor as a device. The **Auto Switch** feature on the AT-OME-SW21-TX does not need to be enabled for this to work.

IMPORTANT: A username and password must be configured on the AT-OCS-900N before using the device with the AT-OME-SW21-TX.

1. Connect the AT-OCS-900N to the same network as the AT-OME-SW21-TX. Refer to the AT-OCS-900N User Manual for more information.
2. Login to the web server of the AT-OME-SW21-TX.
3. Click **I/O** in the menu bar.
4. Click the **Add** button.

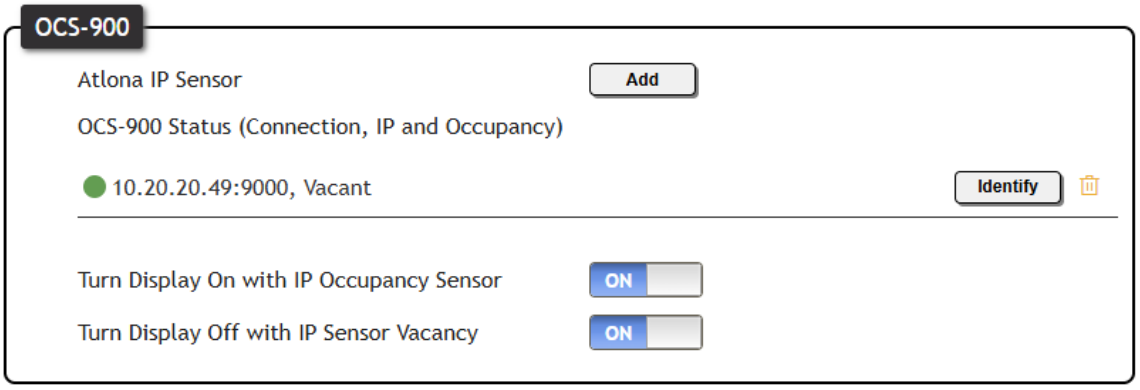


5. The Add Sensor dialog will be displayed.
6. Enter the IP address and the port in the respective fields.



7. Click the **Add** button.

8. If the AT-OCS-900N connects successfully, then it will appear in the OCS-900 section, below.



- Once added, the system will display the sensor's IP address, port number, and room status (Vacant or Occupied).
- A green status indicator confirms that the sensor is successfully connected and communicating.
- Click the **Identify** button to physically identify the connected sensor. Upon activation, the sensor's LED indicators will flash for 30 seconds, allowing physical identification of the AT-OCS-900N within the room.

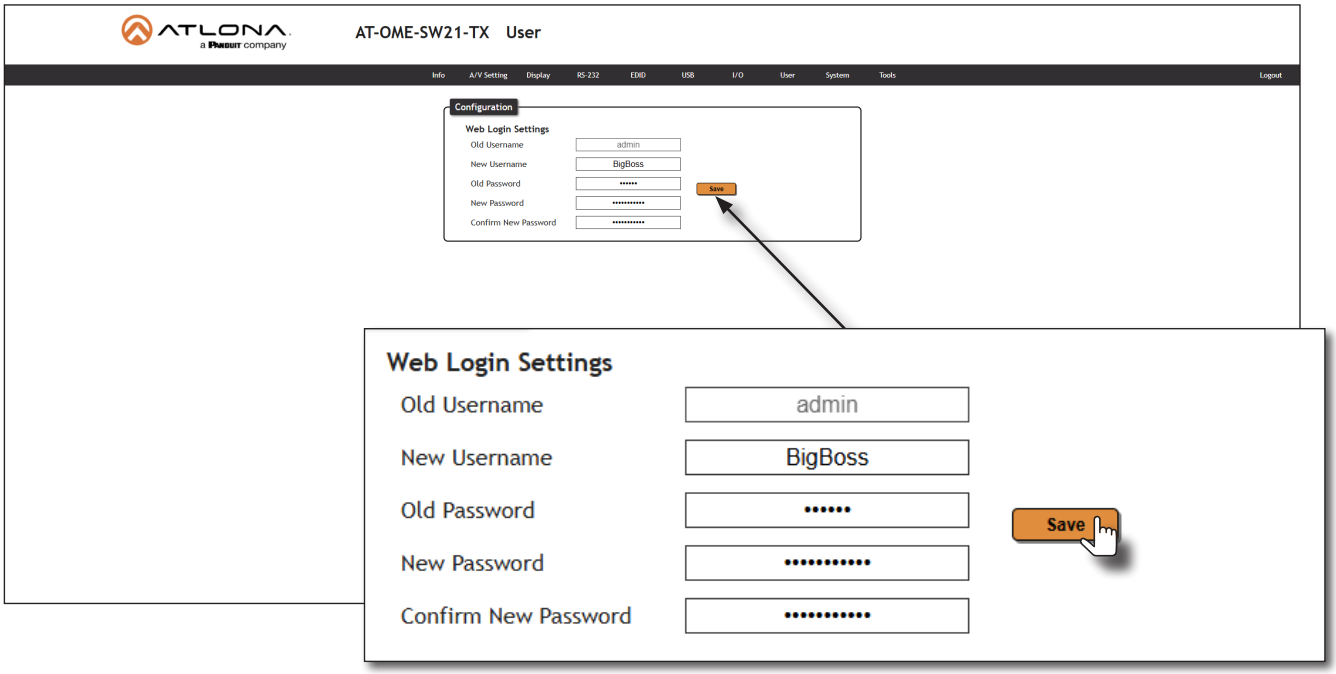
9. Click the **Turn Display On with IP Occupancy Sensor** toggle to enable or disable this feature. When enabled, the toggle switch will display as **ON** and the occupancy sensor will power-on the display when the room is occupied.
10. Click the **Turn Display Off on Vacancy** toggle to enable or disable this feature. When enabled, the toggle will display as **ON** and the occupancy sensor will power-off the display when the room is no longer occupied.

User Management

The AT-OME-SW21-TX allows the login credentials to be changed. Passwords apply to both the web server and SSH sessions. When changing the user name, a new password must also be entered. This screen does not support updating the password alone while keeping the existing user name. Both fields must be updated together for the change to be accepted.

Changing the Login Credentials

1. Login to the web server.
2. Click **User** in the menu bar.
3. Click the **New Username** field and enter the new user name.



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

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

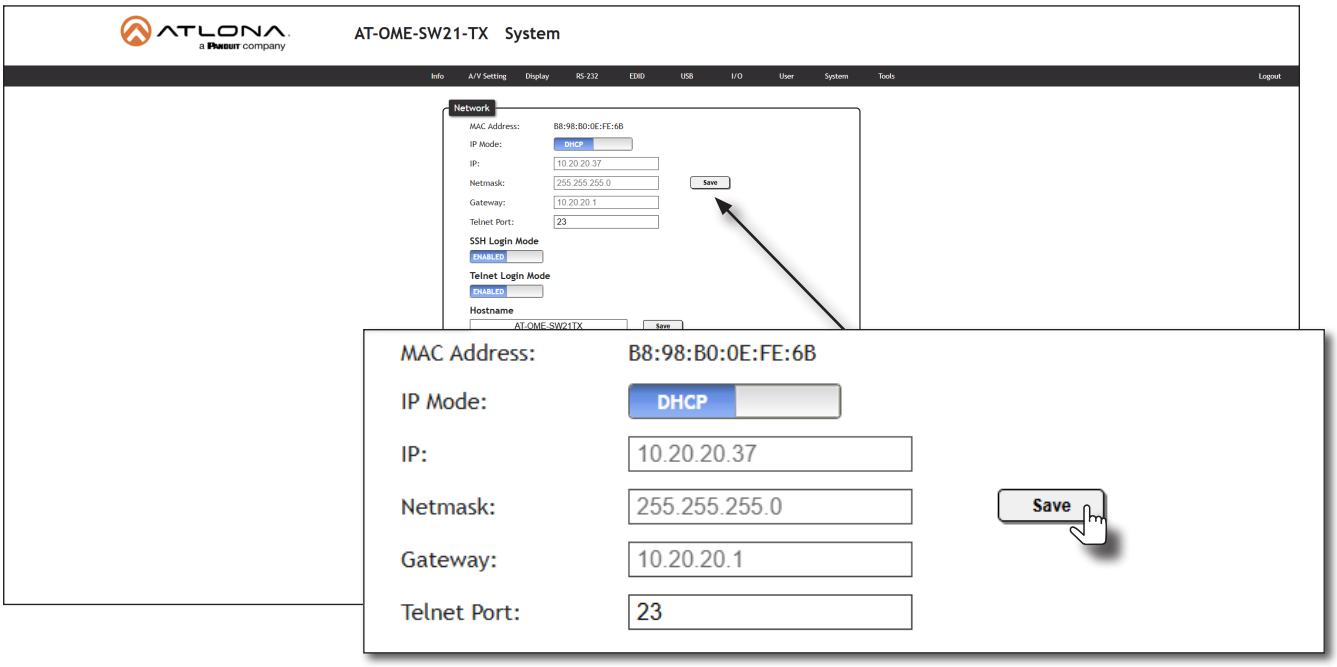
System Configuration

The AT-OME-SW21-TX provides easy access to system configuration through the built-in web server, and is the recommended method to adjust network settings.

Setting the IP Mode

Using the Web Server

1. Login to the web server.
2. Click **System** in the menu bar.
3. Click the **IP Mode** toggle to the desired setting. The default setting is **DHCP**.



If a *static IP* address is desired, do the following:

a. Click the **IP Mode** toggle to **STATIC IP**.

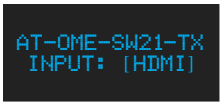
b. Enter the desired IP address, subnet mask, and gateway, in the **IP**, **Network**, and **Gateway** fields, respectively.

c. Click the **Save** button.

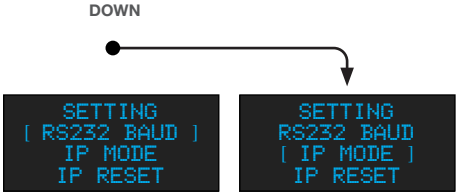
Using the Front Panel Display

The Front Panel Display allows selection of IP mode only. Unlike the web server interface, entering custom IP settings—such as IP address, subnet mask, and gateway—is not supported. When using static IP mode, these settings must be configured through the web server.

1. Make sure the AT-OME-SW21-TX is powered.
2. If nothing is displayed on the Front Panel Display, press and release the **DISPLAY** button to access the *home screen.*



3. Press the **ENTER** button to access the *settings menu*, then press the **DOWN** button to select IP MODE.



4. Press the **ENTER** button. The following screen will be displayed.

By default, the AT-OME-SW21-TX is set to DHCP mode. To use a static IP address, press the **DOWN** button to select STATIC, then press **ENTER**.

Once the AT-OME-SW21-TX is set to STATIC mode, the following IP settings will automatically be assigned:

IP address: 192.168.1.254
Subnet mask: 255.255.0.0
Gateway: 192.168.1.1

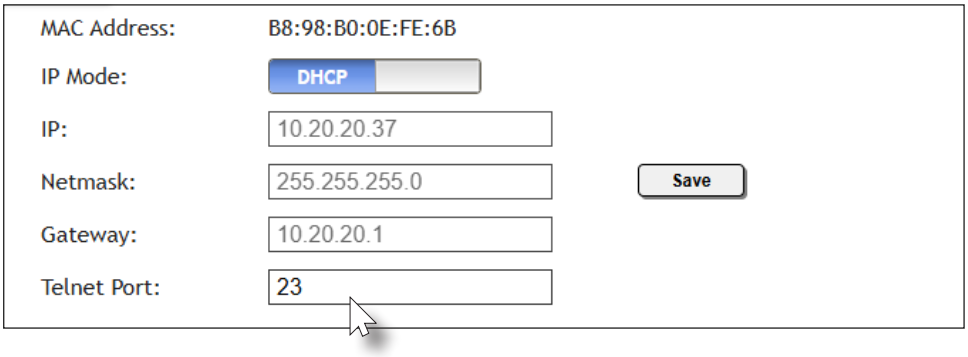
To change these values, log in to the web server.

5. Press the **DOWN** button, select BACK, then press **ENTER** to return to the top of the *settings menu* screen.

Changing the Telnet Port

Typically, the Telnet service is assigned to TCP port 23. This is the default setting for the AT-OME-SW21-TX. However, depending upon the network environment, the default Telnet port can be changed.

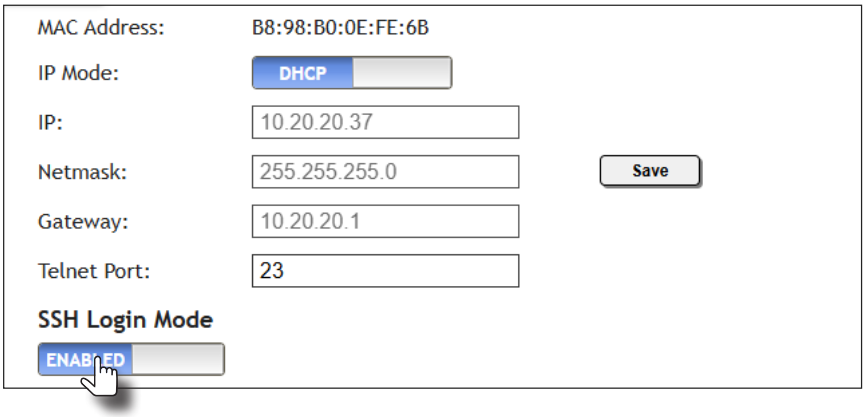
1. Login to the web server.
2. Click **System** in the menu bar.
3. Locate the **Telnet Port** field and enter the desired port in the field.
4. Click **Save** to commit changes.



SSH Login Mode

SSH Login Mode enables secure remote access to the device using the SSH protocol, which operates over port 22 and encrypts all data—including passwords and command sessions—for strong, cryptographic protection. When enabled, users can connect to the device using an SSH client (such as PuTTY, Terminal, or OpenSSH) and access a command-line interface similar to Telnet, but with robust encryption, making it the preferred option for managing systems in security-conscious environments. When an SSH session is requested, the AT-OME-SW21-TX provides the option to prompt for user credentials

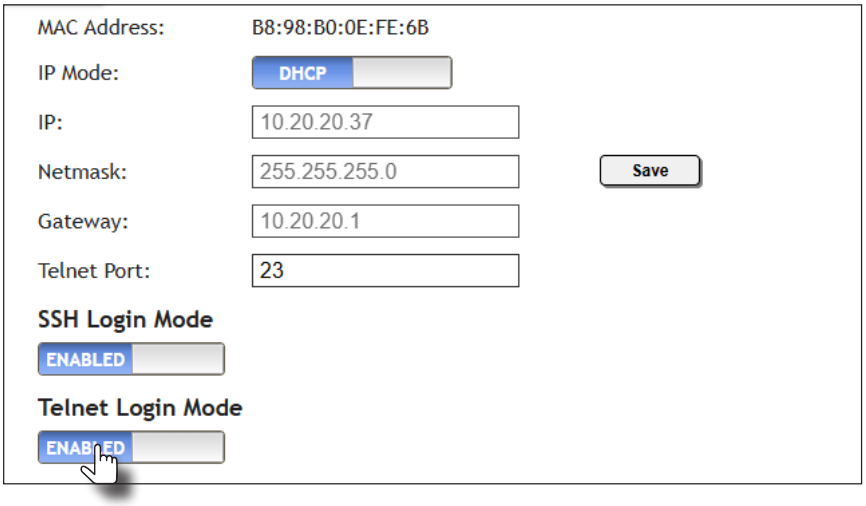
1. Login to the web server.
2. Click **System** in the menu bar.
3. Click the **SSH Login Mode** toggle switch. Setting this toggle to ON will prompt for user credentials at the start of a Telnet session.



Telnet Login Mode

When a Telnet session is requested, the AT-OME-SW21-TX 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.

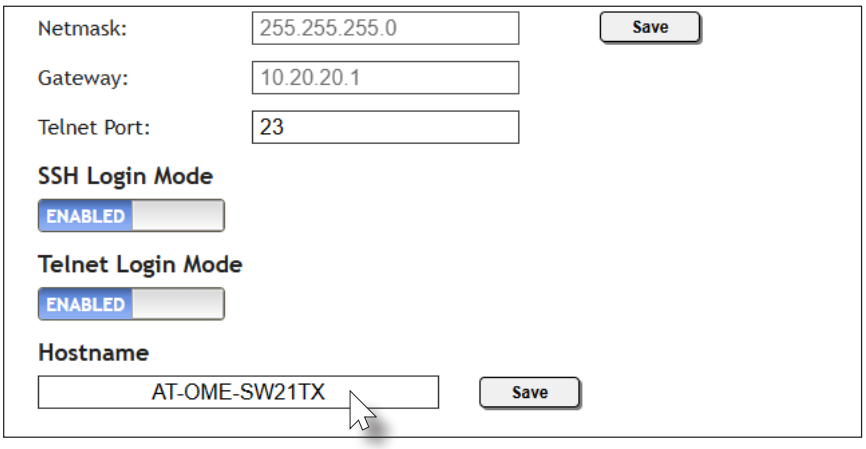
1. Login to the web server.
2. Click **System** in the menu bar.
3. Click the **Telnet Login Mode** toggle switch. Setting this toggle to ON will prompt for user credentials at the start of a Telnet session.



Setting the Host Name

The hostname can be changed, allowing the AT-OME-SW21-TX to be easily identified on a network. If using a custom hostname, it must meet the hostname standards, defined here: https://tools.ietf.org/html/rfc1123

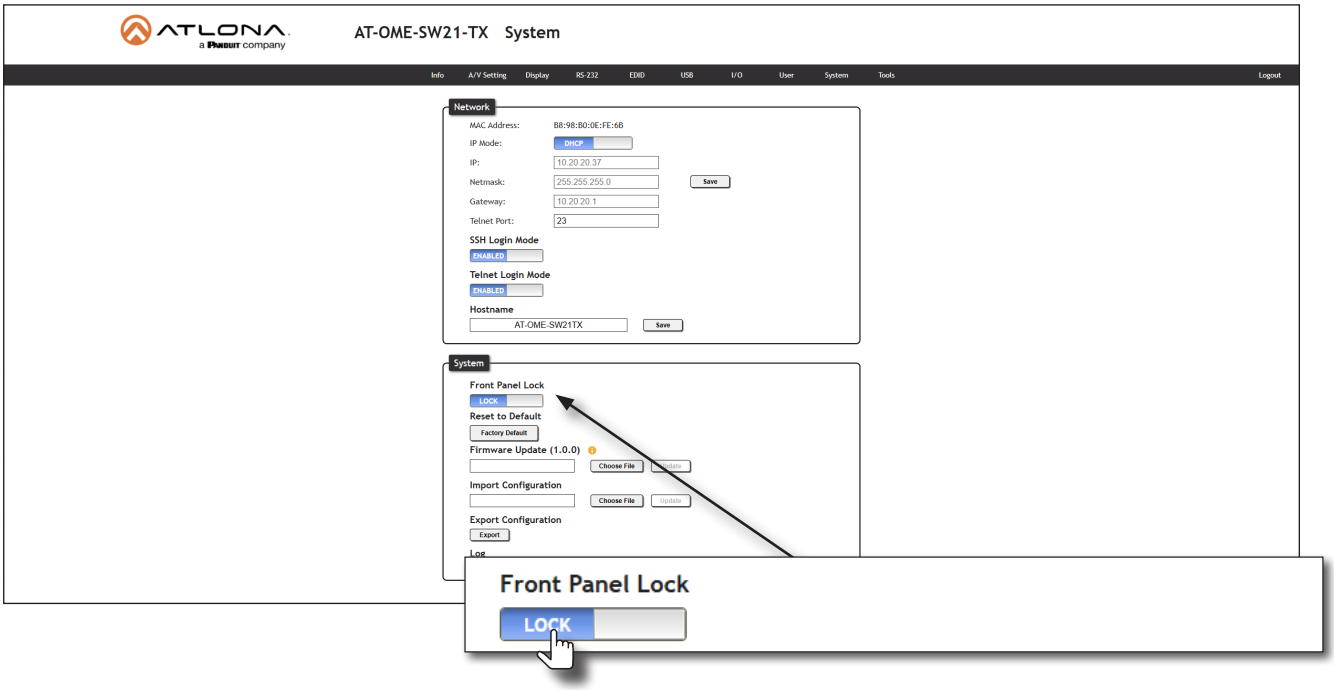
1. Login to the web server.
2. Click **System** in the menu bar.
3. Click the **Hostname** field and enter the desired name.
4. Click **Save** to commit changes.



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-SW21-TX 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.

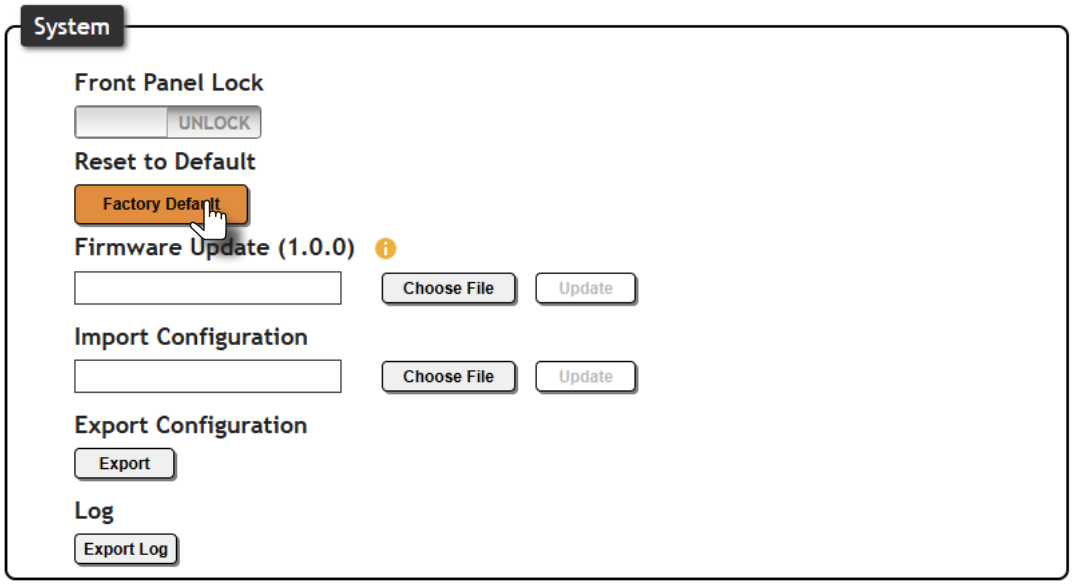


4. To unlock the front panel, click the **Front Panel Lock** toggle switch again to set it to **UNLOCK**.

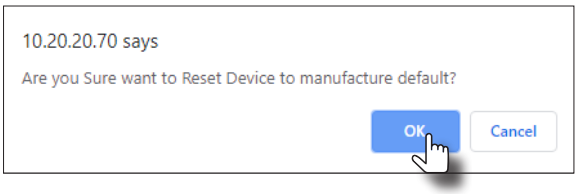
Resetting to Factory-Default Settings

The following procedure will reset the AT-OME-SW21-TX to factory-default settings. The network IP mode will be set to DHCP mode and the username and password will be reset.

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.

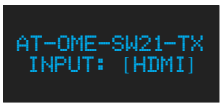


5. Once the factory-default process is complete, the web server **Login** screen will be displayed. A new username and password will need to be created before logging in.

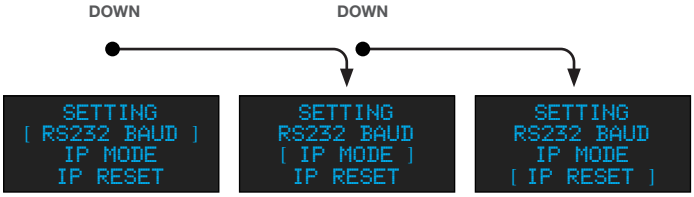
Performing an IP Reset

This function is available only through the Front Panel Display. Note that an IP reset is not equivalent to a factory reset. Performing an IP reset sets the network IP mode to DHCP.

1. Make sure the AT-OME-SW21-TX is powered.
2. If nothing is displayed on the Front Panel Display, press and release the **DISPLAY** button to access the *home screen.*



3. Press the **ENTER** button to access the *settings menu*, then press the **DOWN** button to select IP RESET.



4. Press the **ENTER** button. The following screen will be displayed.

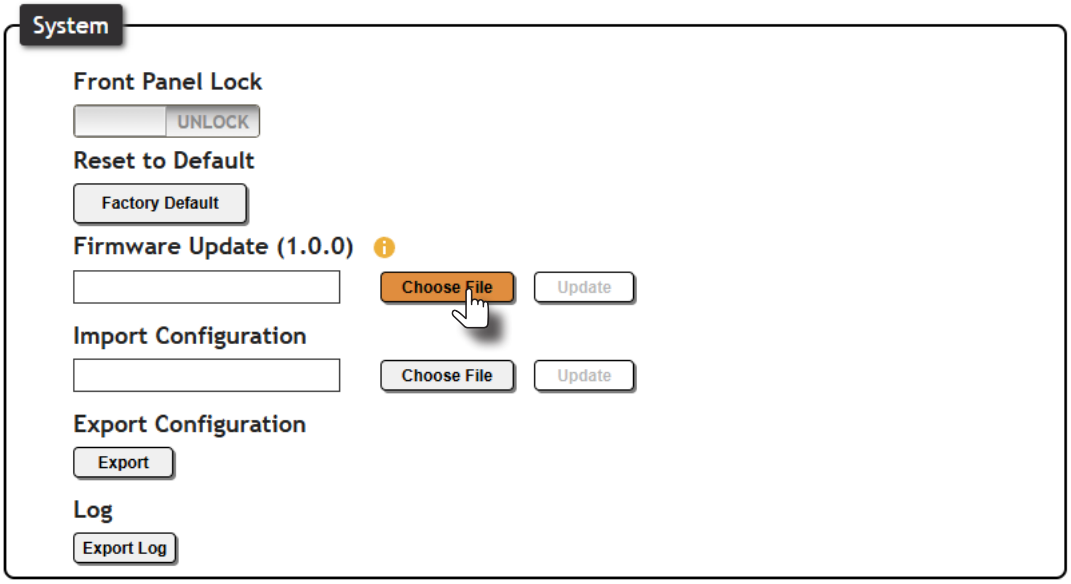
5. Press the **ENTER** button again to reset the IP mode. To cancel the operation, press the **DOWN** button to select BACK, then press **ENTER** to return to the *status screens*.

Updating the Firmware

Requirements:

- AT-OME-SW21-TX
- Firmware file
- Computer running Windows

1. Connect an Ethernet cable from the computer, containing the firmware, to the same network where the AT-OME-SW21-TX is connected.
2. Login to the web server.
3. Click **System** in the menu bar.
4. Click the **Choose File** button, under the **Firmware Update** section.

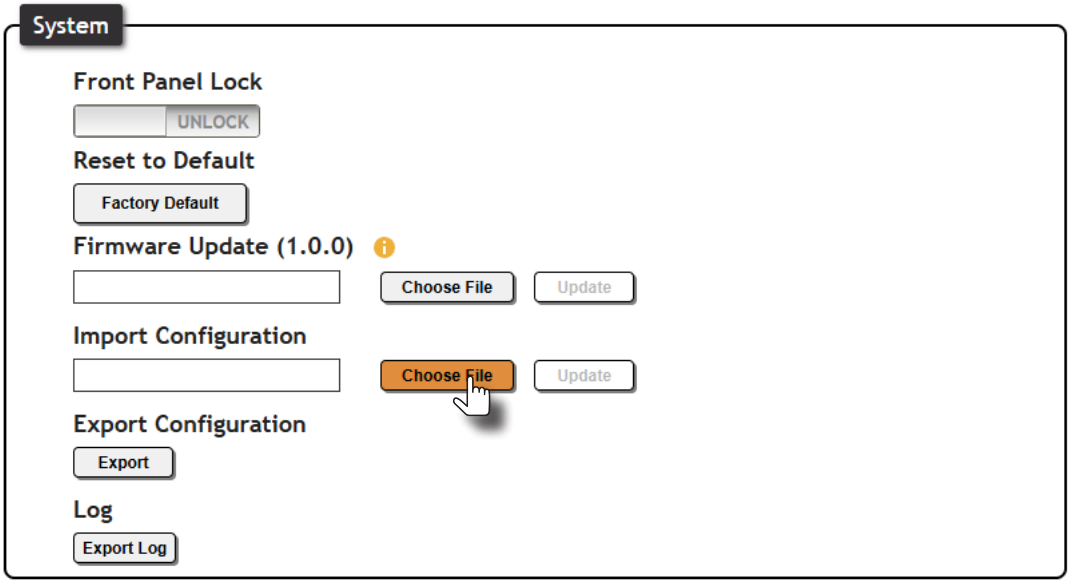


5. Browse to the location of the firmware file, select it, and click the **Open** button.
6. Click the **Update** button, under the **Firmware Update** section.

Exporting System Configuration

The AT-OME-SW21-TX allows the current system configuration to be downloaded to the connected computer, in .json format. Multiple configurations can be saved and then restored at any time. Refer to Restoring System Configuration (page 48) for more information.

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



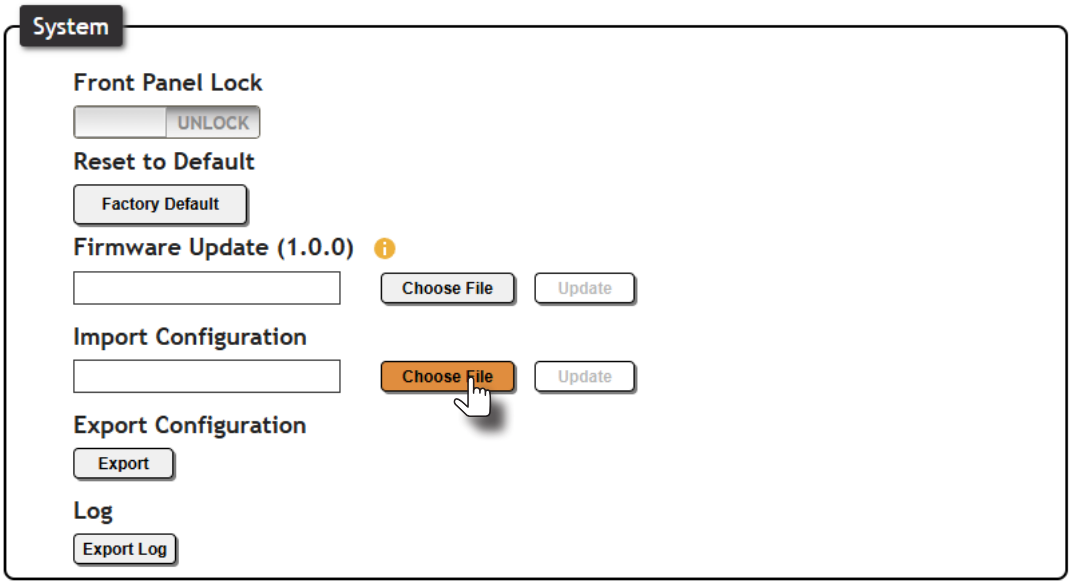
4. After a few moments, the configuration file will be automatically be downloaded to the Windows `\Downloads` folder. The filename will be similar to `AT-OME-SW21TX-11062025-222537.json`. Both the date and time (UTC) are also specified in the filename. The filename can be changed, but the file extension of `.json` must exist.

Importing System Configuration

Once a system configuration has been saved as an .json file, the file can be uploaded to the AT-OME-SW21-TX, allowing the system configuration to be restored. Both the **Export Configuration** and **Import Configuration** feature are useful for saving and loading different configurations and/or to provide a backup, in the unlikely event of a system failure. When a system configuration file is uploaded, it will overwrite the current settings.

IMPORTANT: IP Mode settings are included in the configuration file. As a result, care must be taken when sharing configuration files between multiple AT-OME-SW21-TX units. Uploading the same file—with the same static IP address—to multiple units will assign them identical IP addresses, leading to IP conflicts on the network.

1. Login to the web server.
2. Click **System** in the menu bar.
3. Click the **Choose File** button, under **Import Configuration**.



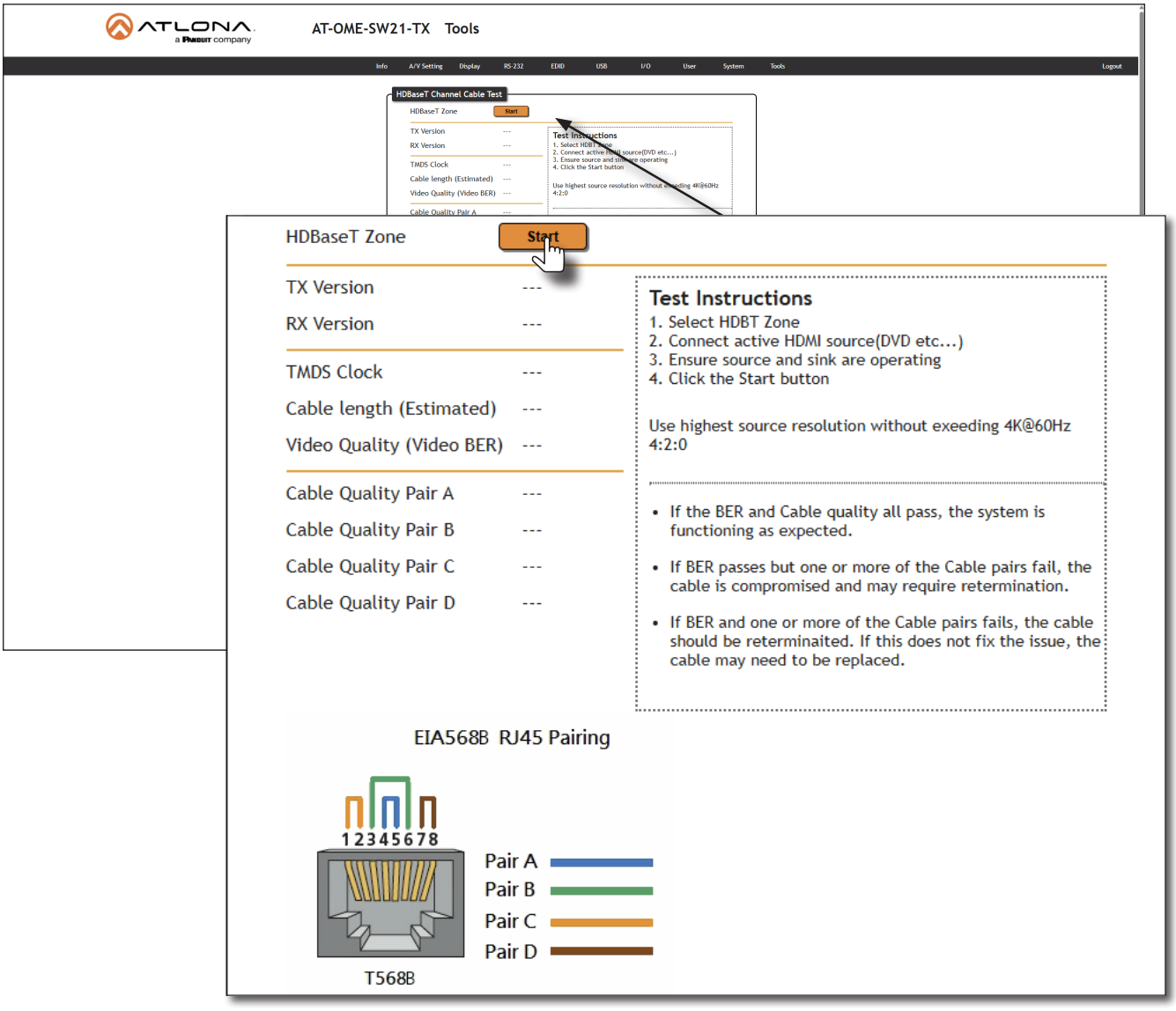
4. The **Open** dialog will be displayed. Select the desired system configuration file. Once the file is selected, the selected filename will appear next to the **Choose File** button.
5. Click the **Update** button to upload the configuration file to the AT-OME-SW21-TX.

Tools

This page offers tools to perform integrity checks on HDBaseT cables, ensuring proper signal transmission, and to test JSON API commands for verifying communication and functionality with connected devices.

HDBaseT Testing

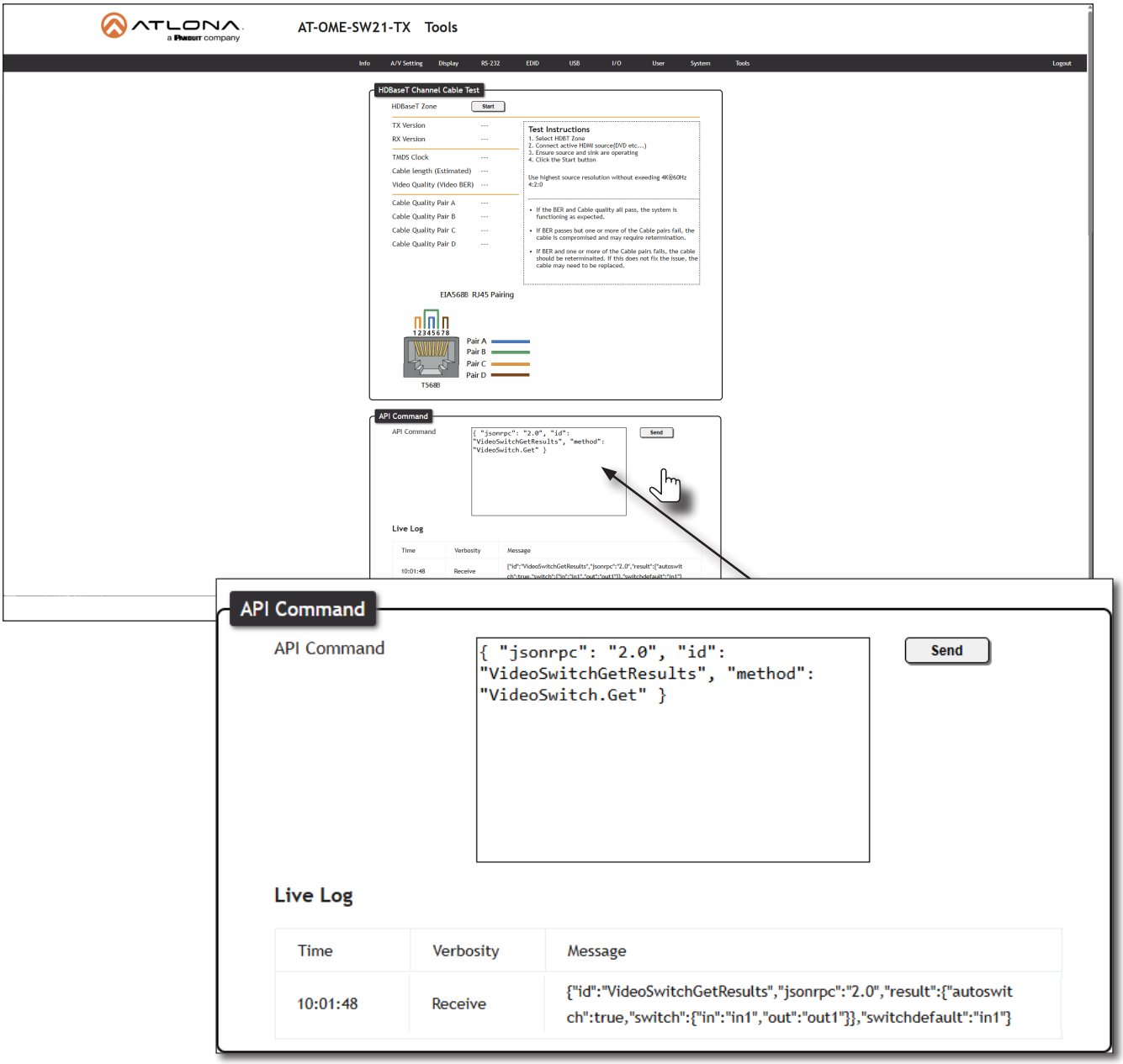
1. Login to the web server.
2. Click **Tools** in the top menu bar.
3. Make sure that a category cable (CAT-5e or better) is connected between the **HDBaseT OUT** port of the AT-OME-SW21-TX and a compatible receiver. Follow the **Test Instructions** on the page.
4. Click the **Start** button to begin testing.



- If the HDBaseT link integrity is good, then all tests will display as “Pass”.
- If any part of the HDBaseT cable fails, then a numerical value, in decibels, will be displayed next to the associated pair, under the **Signal Quality** section. These values can be reported to Atlona Technical Support Engineers to help resolve possible issues.

JSON API Testing

1. Log in to the web server.
2. Click **Maintenance** > **API Test** in the menu bar.
3. Enter the JSON string in the **API Command** field.
4. Click the **Send** button.



5. If the JSON-RPC 2.0 command is valid, feedback will be displayed under the **Live Log** section.

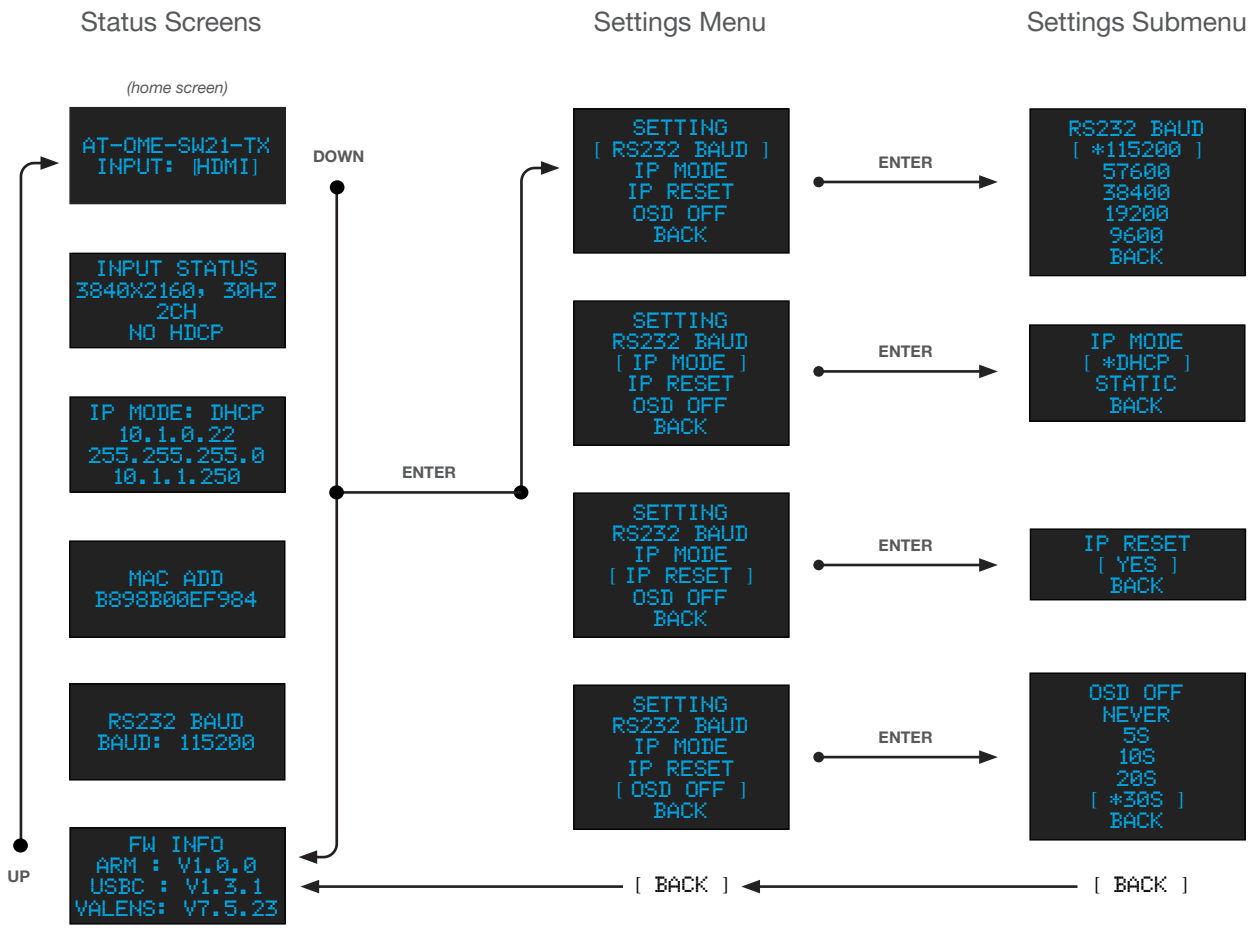
   If the JSON-RPC 2.0 command is invalid, then the following message will be displayed at the bottom of the screen:

Configuration and Management Interfaces

Front Panel Display

When powered on, the AT-OME-SW21-TX front panel display remains blank by default. Press the **UP** or **DOWN** buttons to wake up the front panel display and display the status screens. Press the **UP** and **DOWN** buttons to scroll through status screens. From any status screen, press **ENTER** to open the *settings menu*. To adjust a specific item, select it using the **UP** or **DOWN** buttons, then press **ENTER** to view its available settings. To return to the previous menu, select BACK and press the **ENTER** button.

An asterisk denotes the default setting for a menu item.

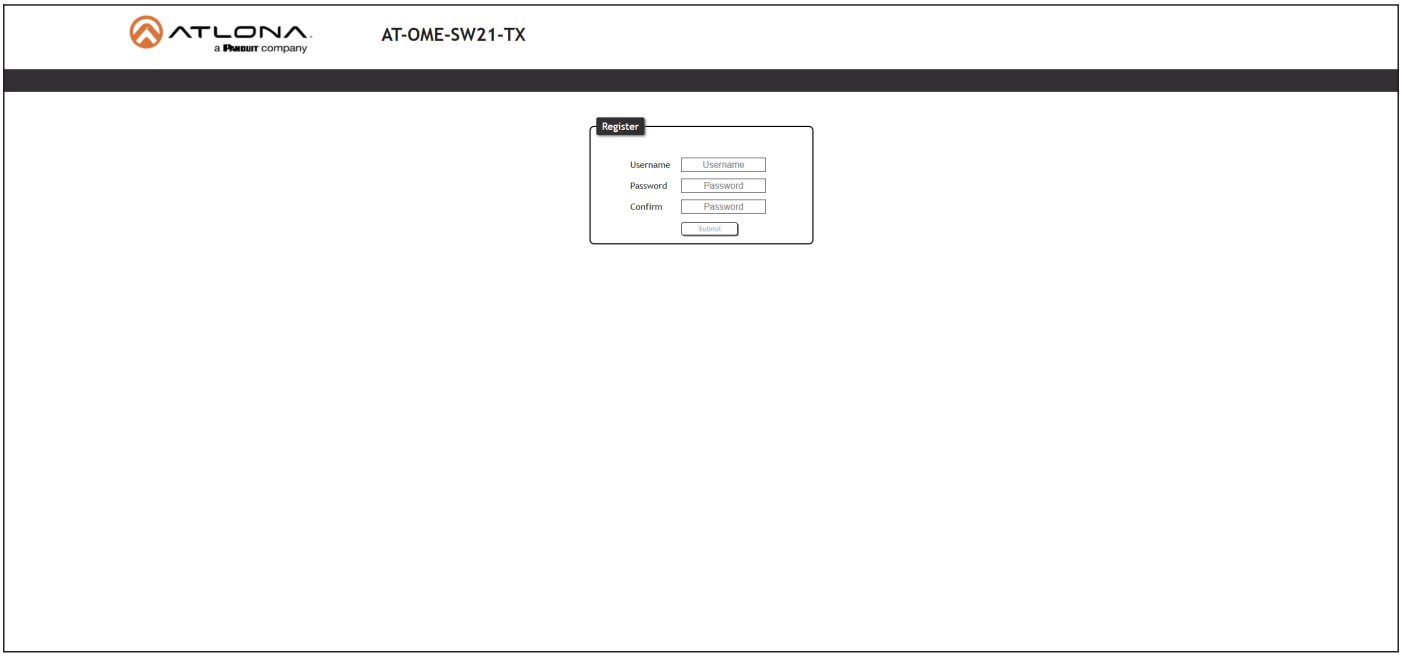


Web Server

The AT-OME-SW21-TX includes a built-in web server. Atlona recommends that the web server be used to set up the AT-OME-SW21-TX, as it provides intuitive management of all features. Refer to Login Registration (page 16) for more information.

The AT-OME-SW21-TX is shipped with DHCP enabled. Once connected to a network, the DHCP server will automatically assign an IP address to the AT-OME-SW21-TX. View the IP address of the AT-OME-SW21-TX by activating the front panel display and scrolling through the status screens. Refer to IP Configuration (page 13).

Register



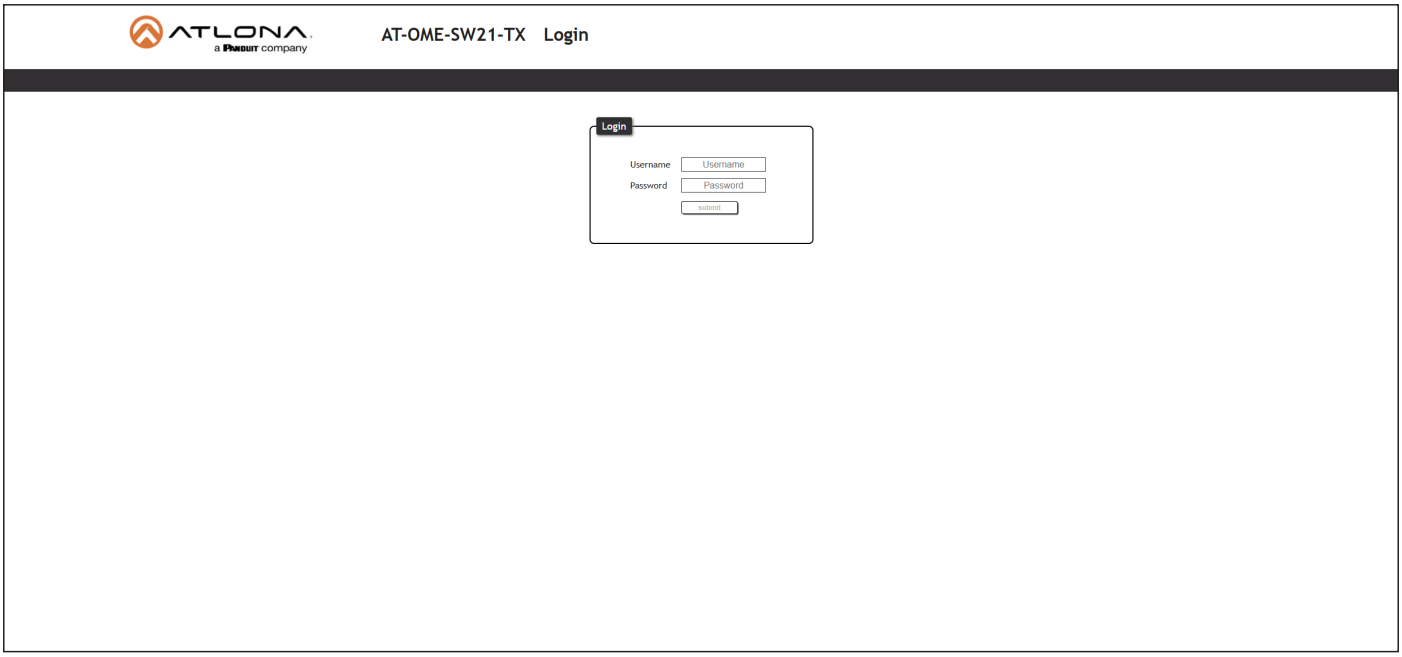
Username
Enter the desired user name this field.

Password
Enter the desired password in this field.

Confirm
Re-enter the password in this field.

Submit
Click this button to commit changes.

Login

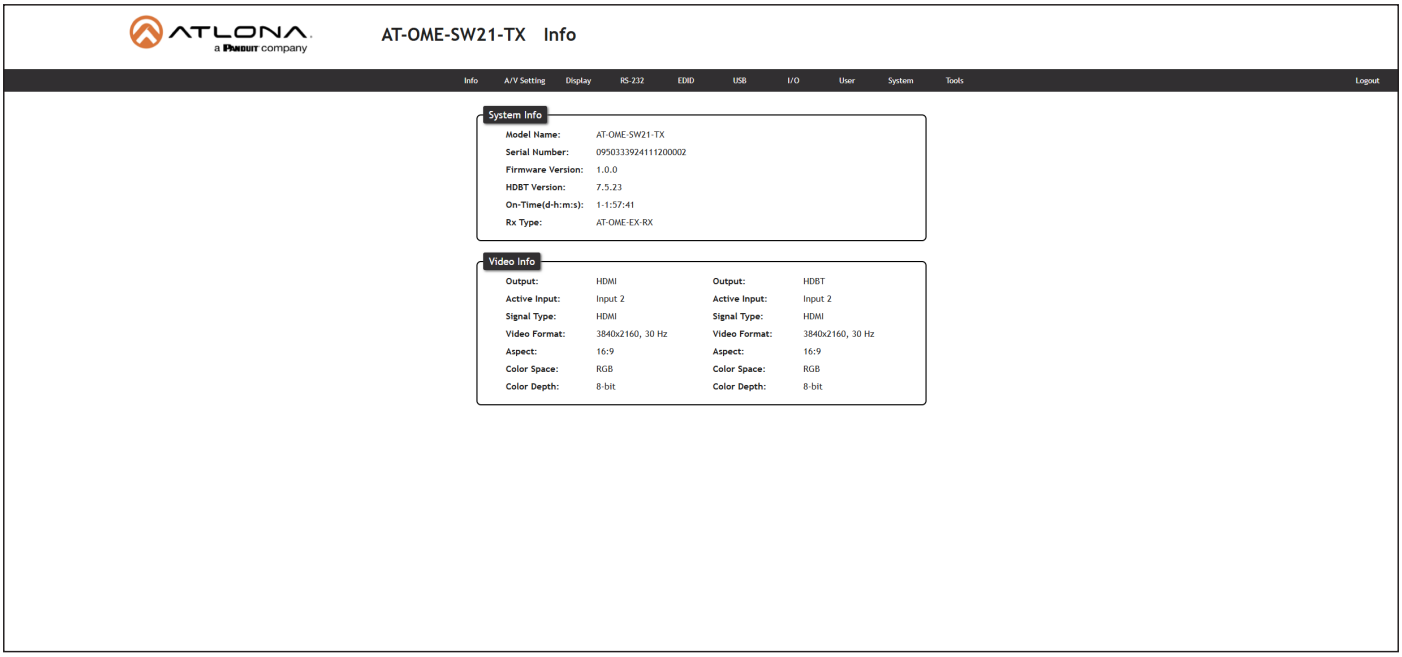


Username
Enter the desired user name this field.

Password
Enter the desired password in this field.

Submit
Click this button to submit the login credentials.

Info



System Info

Model Name
The model number of this product.

Serial Number
Displays the serial number of the AT-OME-SW21-TX.

Firmware Version
The version of firmware that the AT-OME-SW21-TX is running. Always make sure to check the AT-OME-SW21-TX product page, on the Atlona web site, for the latest version of firmware.

HDBT Version
The version of Valens firmware for the HDBaseT chip.

Uptime (d-h:m:s)
Displays the amount of time elapsed since the AT-OME-SW21-TX was powered.

Rx Type
Displays the model of the connected receiver.

Video Info

Displays signal information for both HDMI and HDBaseT outputs.

Output
The output signal type.

Active Input
The input signal port name.

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.

Audio Info
The type of audio that is being received on the input.

A/V Setting

Video

Input Selection

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

Setting	Description
HDMI	Switches to the source connected to the HDMI port.
USB Type C	Switches to the source connected to the USB-C port.

HDMI Output +5V

This option sets the +5V pin on the **HDMI OUT** port to the desired setting. This feature allows a display to go to sleep when there is no signal present. It's also used for VTC codecs that need to see a change in HDMI +5V in order to change modes. If faster switching times are desired, then this should be set to `Always On`. The default setting is `On When Signal Present`.

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.

Auto Switch

Cick the **Auto Switch mode** toggle to enable or disable auto-switching. If a source is disconnected from the active port, then the switcher will automatically switch the opposite port. This feature is enabled by default.

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 `OFF`.

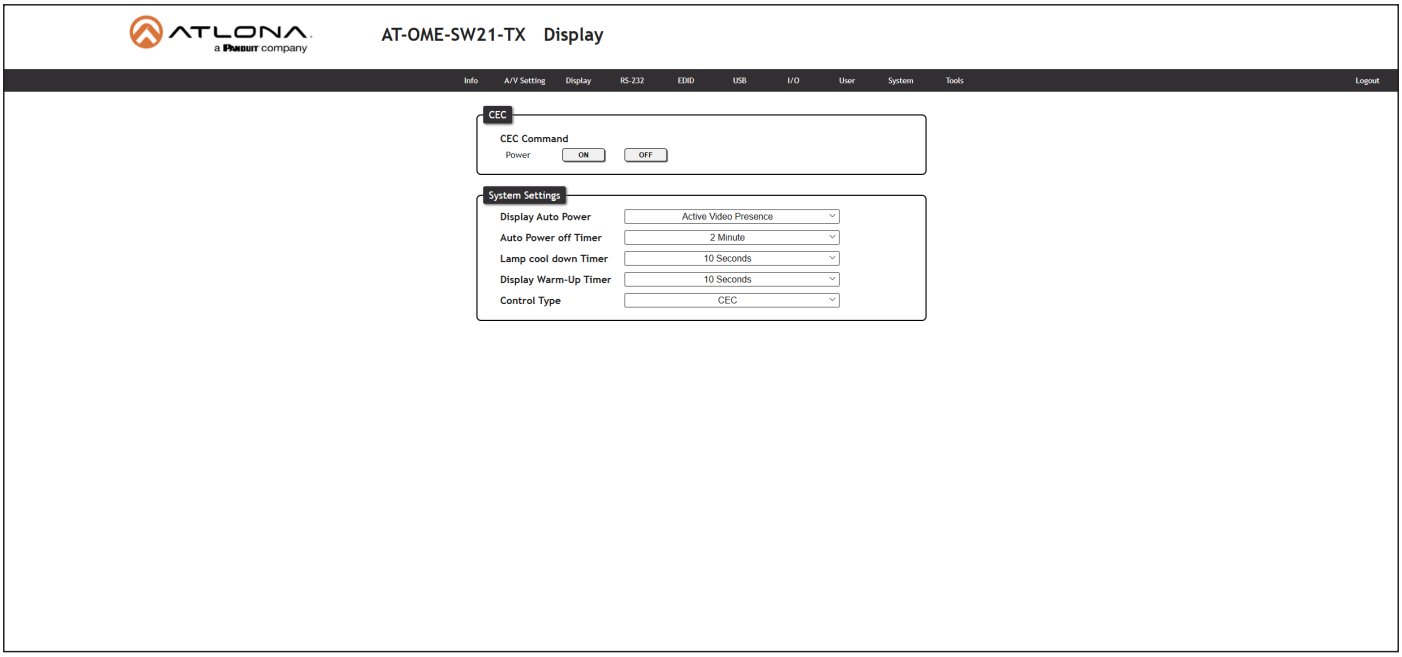
HDCP Settings
Sets the HDCP reporting mode of the specified port. Some devices will automatically transmit HDCP content if an HDCP-compliant display/sink is detected. Setting this value to OFF, will instruct the source to send non-HDCP content (if possible) to non-HDCP display and/or sink devices. Note that setting this value to OFF will not decrypt HDCP content.

Setting	Description
ON	HDCP content is always transmitted by the source
OFF	Instructs the source to send non-HDCP content, if possible

Audio

Output
Mutes or un-mutes the audio output. Set the **Output** toggle to OFF to enable audio on the output. The default setting is ON.

Display



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.

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-SW21-TX 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. This is the default setting.
`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-SW21-TX 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-SW21-TX.
`Disabled`	No display control

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

Display Warm-Up Timer
Click this drop-down list to set the projector lamp warm-up timer, in seconds. During the warm-up interval, the AT-OME-SW21-TX 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.

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

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

TCP/IP Settings of Controlled Device

These settings are only displayed when the **Control Type** is set to **IP**.

IP Mode
Click this drop-down list to select the login mode.

Setting	Description
Non-login	Does not require a username and password when using TCP/IP to control the display.
Login	Requires a username and password to control the display through TCP/IP.

IP Address
Enter the IP address of the display/device in this field.

Port
Enter the listening port of the display/device in this field.

Username
Enter the username for login. If the **IP Mode** is set to Non-Login, then this information will not be required.

Password
Enter the password for login. If the **IP Mode** is set to Non-Login, then this information will not be required.

Save
Click this button to save all changes in this section.

RS-232 / IP Commands

This section is only available when the **Control Type** is set to either **RS-232** or **IP**.

Manufacturer
Click this drop-down list to select the display manufacturer. If the display device being controlled is not in this list, then select **Generic** and enter the commands manually.

Manufactuer List		
Generic	Epson	Planar
Acer	Hitachi	Qonmo
Avocor	Infocus	Samsung
Barco	JVC	Sharp
BenQ	LG	Smart
Canon	MAXHUB	Sony
Casio	NEC	Toshiba
Christie	Newline Interactive	Viewsonic
Clevertouch	Optoma	Vivitek
Digital Projection	Panasonic	
Eiki	PJLink	

Products
Click this drop-down list to select the product. The options available within this drop-down list are dependent upon the selected value in the **Manufacturer** drop-down list.

Model
Click this drop-down list to select the model. The options available within this drop-down list are dependent upon the selected value in the **Products** drop-down list.

Repeat Command

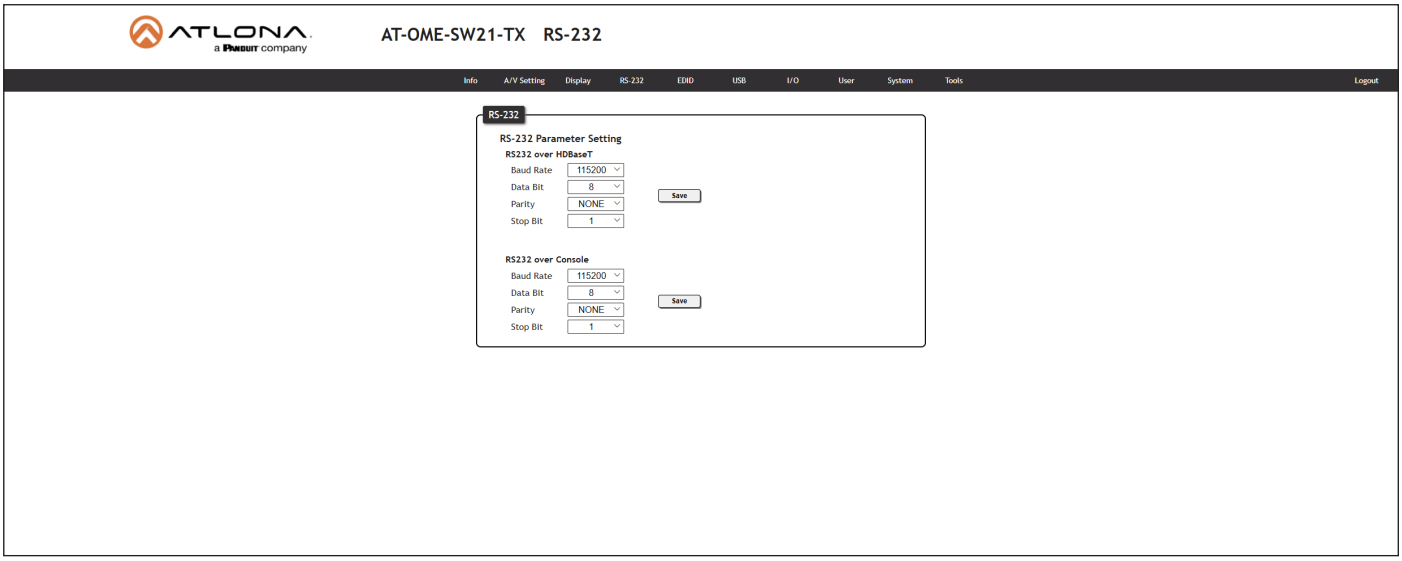
- **Status**
  Click this toggle switch to set to **ENABLE** or **DISABLED**. Enabling this feature will re-send the command. Specify the number of times that the command is transmitted by setting the **Times** value. This feature is set to **DISABLED** by default.
- **Times**
  Click this drop-down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

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

Save
Click this button to commit changes.

Revert
Click this button to undo changes to any pre-configured strings.

RS-232



RS-232

RS232 over HDBaseT

If the AT-OME-SW21-TX is connected to another HDBaseT device, such as the AT-OME-EX-RX, each of these drop-down list boxes can be set to the baud rate of the HDBaseT RS-232 settings on the corresponding device. Click the **Save** button to accept the settings.

RS232 over Console

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

Baud Rate

Click this drop-down list to select the data transmission rate in bit-per-second (bps). Available options are `9600`, `19200`, `38400`, `57600`, or `115200`.

Parity

Click this drop-down list to select the parity bit value. The parity bit helps detect single-bit errors in data transmission. The parity bit cannot correct errors. However, if an error does occur, the receiver can then request that the data be retransmitted.

Setting	Description
`NONE`	No parity (error checking) is applied.
`ODD`	The parity bit is set so that the total number of 1 bits in the data, including the parity bit, is *odd*. For example, `10110011` contains five 1 bits, which is an odd value. Applying `ODD` parity, the parity bit is set to `0` and the data becomes `101100110`, maintaining an odd number of 1 bits in the data.
`EVEN`	The parity bit is set so that the total number of 1 bits in the data, including the parity bit, is *even*. For example, `10110011` contains five 1 bits, which is an odd value. Applying `EVEN` parity, the parity bit is set to `1` and the data becomes `101100111`, maintaining an even value of 1 bits in the data.

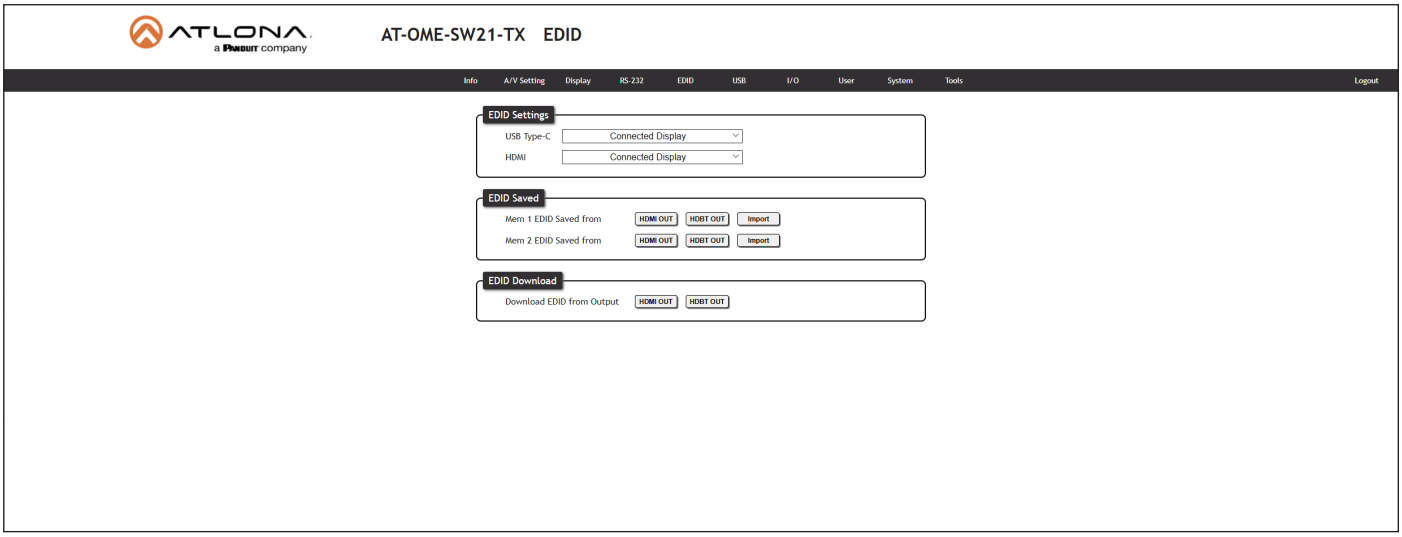
Data Bits

Click this drop-down list to select the number of data bits in each packet. Typically, packets are sent in bytes (8 bits). However, some older systems may use 7-bit data. Available options are `7` or `8`.

Stop Bits

Click this drop-down list to select the number of stop bits. Stop bits are used to signal the end of a data frame. A value of `1` is standard. Available options are `1` or `2`.

EDID



EDID Settings

HDMI / USB Type-C

Click these drop-down lists to select the desired Extended Display Identification Data (EDID) to be used for each input. The source device will use the information in the EDID, before sending A/V data to the sink device.

Available EDID Selections	
Connected Display	ATL 1920x1200 2CH SDR PCM
ATL 3840x2160@60 2CH HDR PCM	ATL 1920x1080P@60 2CH SDR PCM
ATL 3840x2160@30 2CH SDR PCM	ATL 1920x1080P@30 2CH SDR PCM
ATL 3840x1440@50 2CH SDR PCM	ATL 1280x720P@60 2CH SDR PCM
ATL 2560x1080@60 2CH SDR PCM	ATL 1280x800 2CH SDR PCM

EDID Saved

This section provides options to store into two memory locations: **Mem 1** and **Mem 2**. Each memory location includes three input sources for EDID capture.

- **HDMI OUT** – Saves EDID from the connected HDMI output.
- **HDBT OUT** – Saves EDID from the connected HDBaseT output.
- **Import** – Loads EDID from an external file source.

Each memory location operates independently, allowing multiple EDID configurations to be saved for display compatibility and system flexibility.

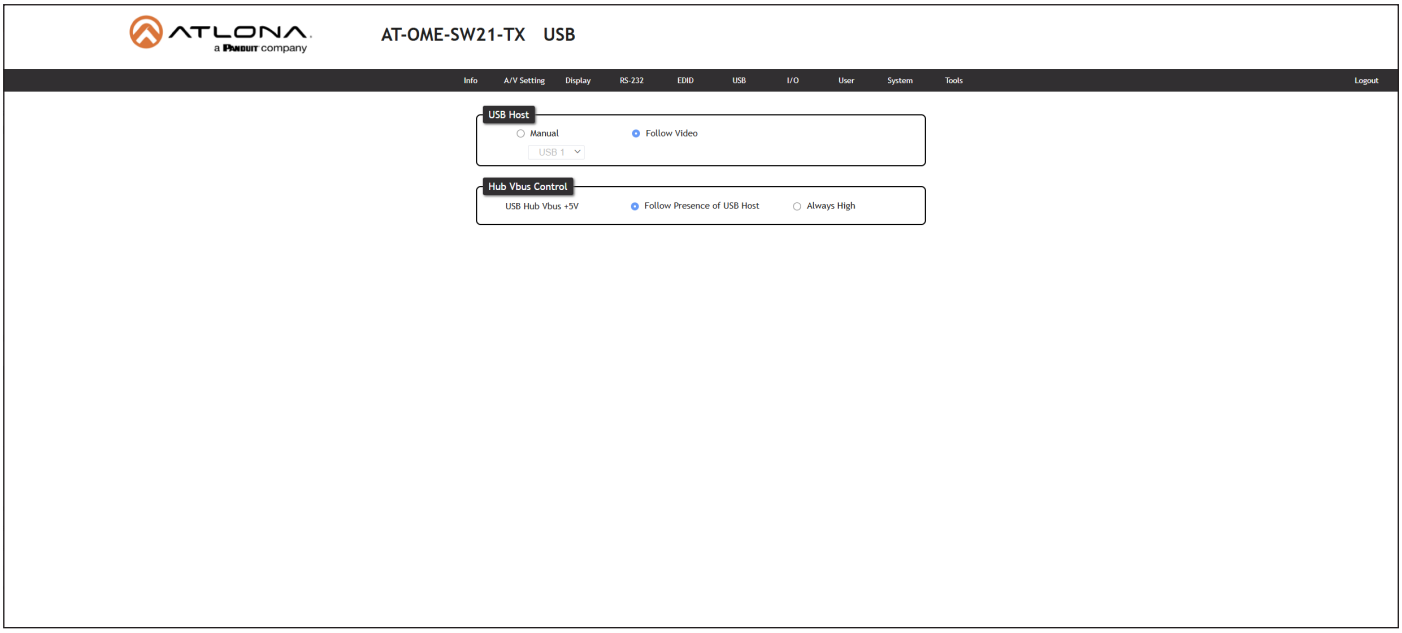
EDID Download

This interface allows EDID (Extended Display Identification Data) to be downloaded from connected output ports. Two selectable buttons are available:

- **HDMI OUT** – Click to download EDID from the HDMI output port.
- **HDBT OUT** – Click to download EDID from the HDBaseT output port.

Each button initiates EDID retrieval from the specified output for storage or analysis.

USB



USB Host

This section provides controls for setting the behavior of USB host switching.

Setting	Description
`Manual`	This mode provides manual selection of the USB host port to be used.
`Follow Video`	In this mode, each video input will follow the USB host device connected to the HOST port. Each host device will have access to the same USB devices, when video switching occurs.

Hub Vbus Control

This feature provides the ability to toggle the USB Vbus. This allows the USB hub port to always provide power or follow the presence of the connected USB host. The default setting is `Follow Presence of USB Host`.

Setting	Description
`Follow Presence of USB Host`	Allows the USB hub port to toggle on and off based on the presence of a USB host.
`Always High`	USB power to the **HOST** port is always on. For example, when connecting to the AT-CAP-SP100, setting this feature to `Always High` would allow the AT-CAP-SP100 to continually charge, even if no USB host is present.

I/O

OCS-900

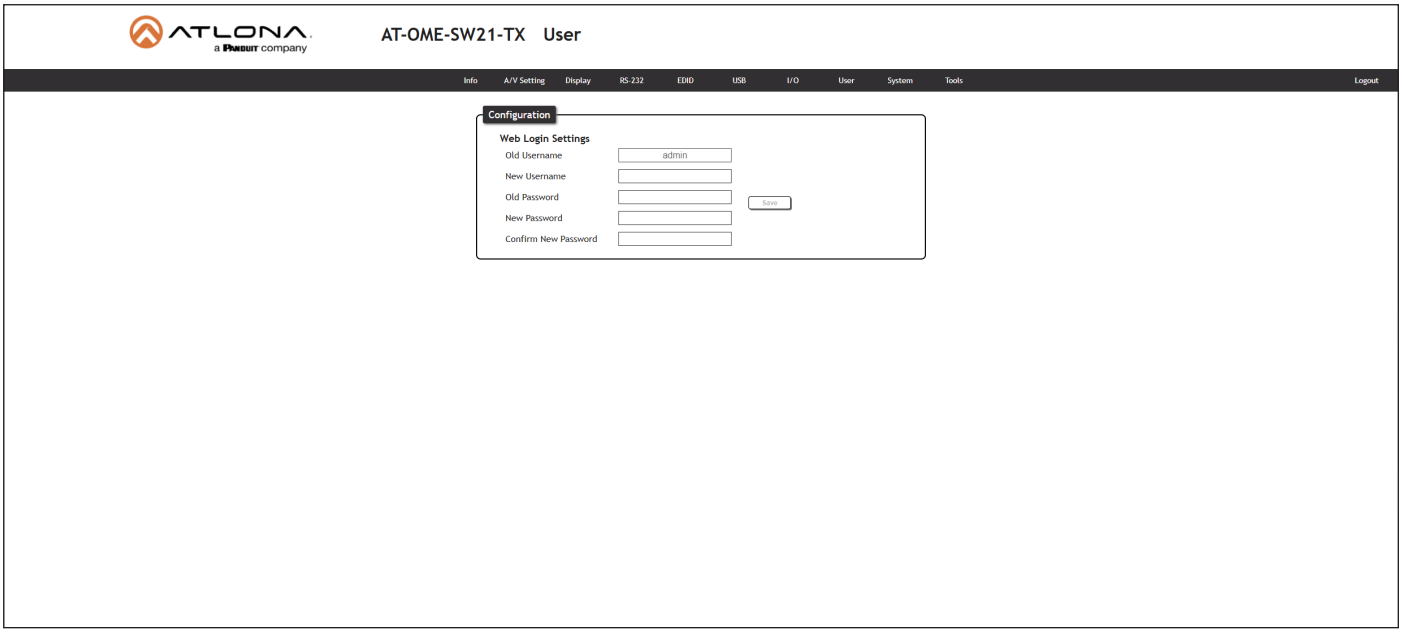
This section provides configuration options for the AT-OCS-900N network-enabled IP occupancy sensor. The AT-OME-SW21-TX supports up to three sensors.

Add
Clicking this button opens a dialog for entering the host IP address and port number of the AT-OCS-900N occupancy sensor.

Turn Display On with IP Occupancy Sensor
Enables display power-on when occupancy is detected. A toggle switch is available to set the function to ON or OFF. When set to ON, occupancy sensing is enabled.

Turn Display Off with IP Sensor Vacancy
Enables display power-off when vacancy is detected. A toggle switch is available to set the function to ON or OFF. When set to ON, vacancy detection is enabled.

User



Configuration

Old Username
Displays the current user name.

New Username
Enter the new user name in this field.

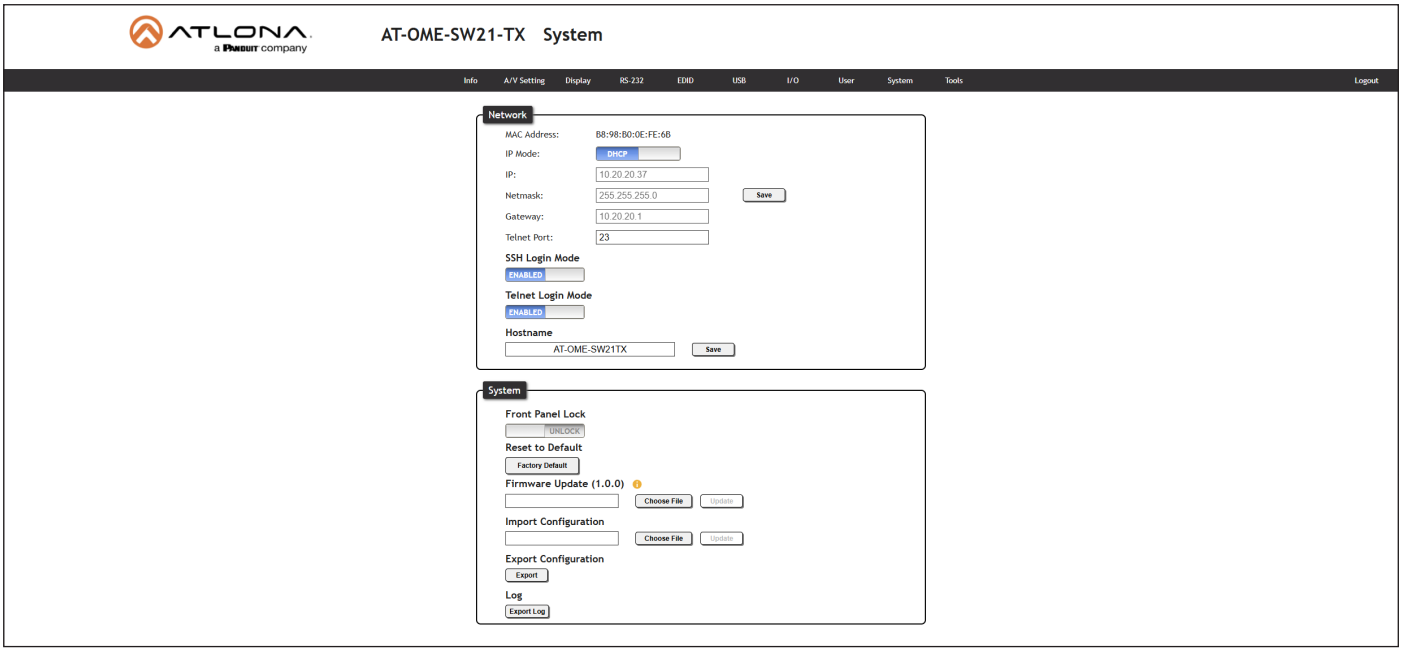
Old Password
Enter the current password for the “admin” username in this field.

New Password
Enter the new password from the “admin” username in this field.

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

Save
Click this button to save all changes.

System



Network

IP Mode
Click this toggle switch to set the IP mode of the AT-OME-SW21-TX. The default setting is `DHCP`.
Available settings: `STATIC`, `DHCP`.

IP
Enter the IP address of the AT-OME-SW21-TX in this field. This field will only be available if **IP Mode** is set to `STATIC`. The default IP address is `192.168.1.254`.

Netmask
Enter the subnet mask in this field. This field will only be available if **IP Mode** is set to `STATIC`.

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

Telnet Port
Enter the Telnet listening port in this field.

SSH Login Mode
Click this toggle to enable or disable SSH login mode. If this feature is set to `ON`, then the AT-OME-SW21-TX will prompt for both the username and password at the start of an SSH session. Use the same credentials as the web server.

Telnet Login Mode
Click this toggle to enable or disable Telnet login mode. If this feature is set to `ON`, then the AT-OME-SW21-TX will prompt for both the username and password at the start of a Telnet session. Use the same credentials as the web server.

Hostname
Displays the hostname of the AT-OME-SW21-TX, as it would appear on a network. To change the hostname, type the new hostname in this field and click the **Save** button.

System

Front Panel Lock
Click this toggle switch to LOCK or UNLOCK. When set to LOCK, the buttons on the front panel of the AT-OME-SW21-TX will be locked. This feature is set to UNLOCK by default.

Reset to Default
Click the **Factory Default** button to set the AT-OME-SW21-TX to factory-default settings.

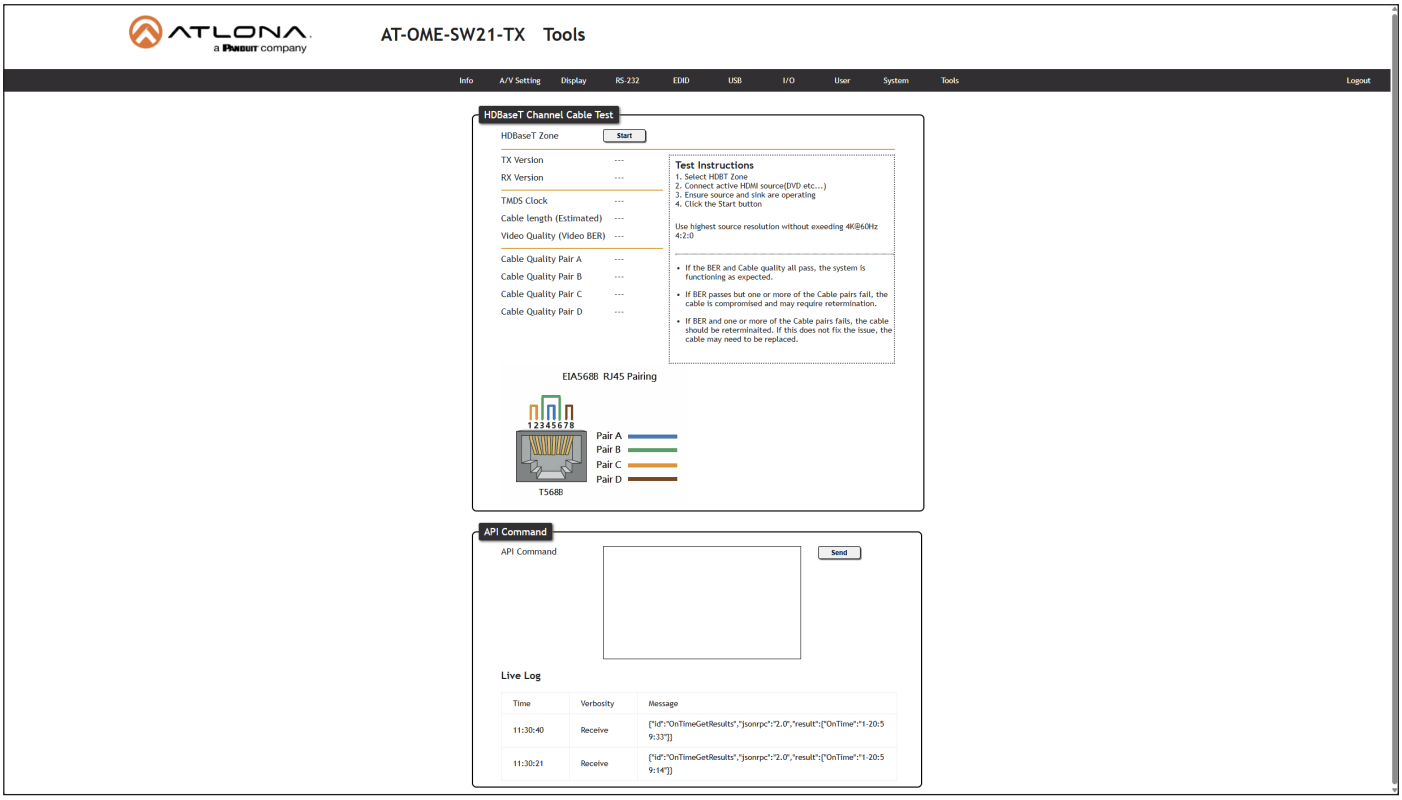
Firmware Update
Click the **Choose File** button to select the firmware file, when upgrading the firmware on the AT-OME-SW21-TX. Once the firmware file is selected, click the **Update** button. Refer to Updating the Firmware (page 49) for more information.

Import Configuration
Click the **Choose File** button to select a configuration file to restore. Click the **Upload** button to upload the configuration file to the AT-OME-SW21-TX. Restoring a configuration file will erase the current configuration.

Export Configuration
Click the **Export** button to save the current system configuration to a local file.

Log
Click the **Export Log** button to save system logs to the local computer. Log files are used for troubleshooting purposes and may be requested by Atlona Technical Support Engineers.

Tools



HDBaseT Channel Cable Test

HDBaseT Zone
Click the **Start** button to begin the HDBaseT testing process. During testing, the button text will change to “Stop”. Click the **Stop** button to halt the HDBaseT testing process. HDBaseT testing can be performed at any time, while the AT-OME-SW21-TX is powered. Refer to the instructions on this web page for information on how to interpret the Bit Error Rate (BER) and cable test results.

TX Version
The version of the Valens chip on the transmitter.

RX Version
The version of the Valens chip on the receiver.

TMDS Clock
Displays the pixel clock speed. If no source is connected, then this field will display as “None”.

Cable length (Estimated)
This field indicates the approximate length of the Ethernet cable connected between the HDBaseT port on the AT-OME-SW21-TX and the receiver. If the cable length is less than 15 feet, then this value will be displayed as 0 (zero).

Video Quality (Video BER)
The Bit Error Rate (BER). This field displays either PASS or FAIL during a test.

Cable Quality Pair (A, B, C, D)
Each of these fields will display either PASS or FAIL during a test.

API Command

API Command
Enter the JSON API command object in the provided field.

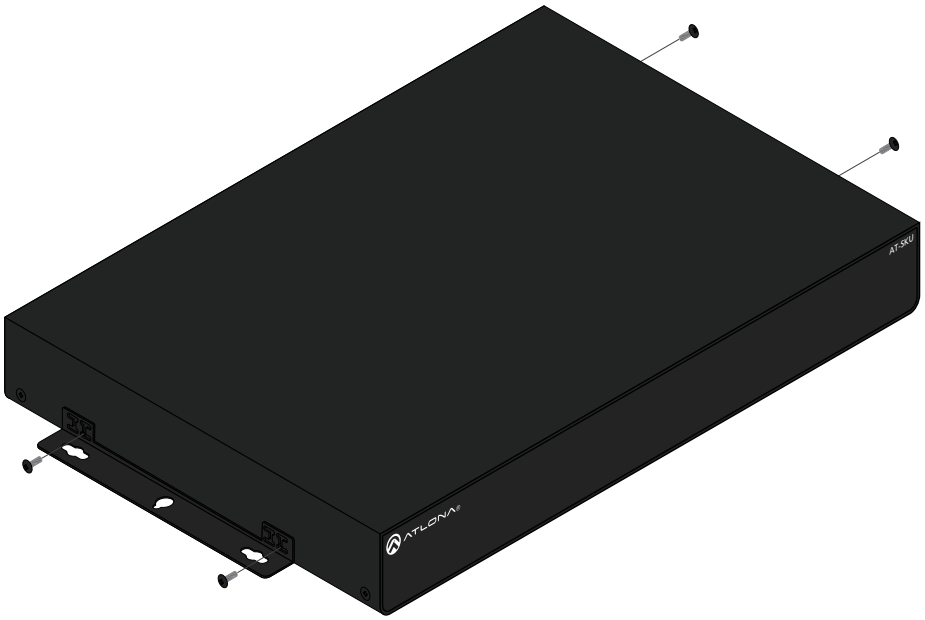
Send
Click this button to send the JSON-RPC 2.0 command to the AT-OME-SW21-TX. Feedback is displayed under the **Live Log** section. Refer to JSON API Testing (page 53) for more information.

Appendix

Mounting Instructions

The AT-OME-SW21-TX includes two mounting brackets and four mounting screws, which can be used to attach the AT-OME-SW21-TX to any flat surface.

1. Position one of the mounting brackets, as shown below, aligning the holes on the side of the enclosure with one set of holes on the mounting bracket.



2. Using a small Phillips screwdriver, attach the installation bracket to the enclosure, using the included screws.
3. Repeat steps 1 and 2 to attach the second mounting bracket to the opposite side of the unit.
4. Mount the unit to a flat surface using the oval-shaped holes, on each mounting bracket. If using a drywall surface, a #6 drywall screw is recommended.

Specifications

Video		
Signal Type	Input - DisplayPort Alternate Mode (USB-C), HDMI Output - HDBaseT, HDMI	
Copy Protection	HDCP 1.4/2.2/2.3	
Pixel Clock	600MHz (300MHz over HDBaseT)	
UHD/HD/SD	4096×2160(DCI)@60/50/30/25/24Hz 3840×2160(UHD)@60/50/30/25/24Hz 2560x1440@30Hz 1920x1080p@60/59.94/50/30/29.97/25/24/23.98Hz	1920x1080i@30/29.97/25Hz 1280x720p@60/59.94/50/30Hz 720x576i/p@50Hz 720x480i/p@60Hz
VESA All resolutions are 60Hz	2560×1600 2048x1536 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@30Hz 4:4:4 2560x1080@60Hz 4:4:4 3440x1440@30Hz 4:4:4	3440x1440@50Hz 4:4:4 3840x1600@30Hz 4:4:4
Scaler[1]	IN	OUT
	4K@24Hz 4K@30Hz 4K@60Hz	1080p@24Hz 1080p@30Hz 1080p@60Hz
Chroma Subsampling	4:4:4, 4:2:2, 4:2:0	
Color Depth	8-bit, 10-bit, 12-bit	
HDR[2]	Up to 4K HDR10@60Hz, 4K Hybrid-Log Gamma (HLG)@60Hz, and 4K Dolby® Vision™@60Hz	

Audio			
Pass-through	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 Rate	24 Mbits/s max		
Sample Rate	32kHz, 44.1kHz, 48kHz, 88.2kHz, 96kHz, 176.4kHz, 192kHz		

USB	
Signal	3.2 Gen 1 & 2.0
Maximum Data Rate	3.2 - 5 Gbps 2.0 - 480 Mbps
Hosts	1 USB 3.0 Type-C and 1 USB 3.0 Type-B host
Hub	1 - Internal

Connectors	
USB-C	1 - USB Type-C, 24-pin female
HDMI	2 – Type A, 19-pin female
HDBaseT OUT[3]	1 - RJ45
HOST	1 - USB Type-B, female, 3.0
HUB	2 - USB Type-A, female, 3.0

Indicators, Buttons, and Controls	
PWR indicator	1 - LED, green
LINK indicator	1 - LED, yellow
Buttons DISPLAY, INPUT, UP, DOWN, ENTER Reset	 5 - momentary, tact-type 1 - recessed, momentary

Resolution / Distance	4K/UHD - Feet / Meters		1080p - Feet / Meters	
USB-C	6.6	2	6.6	2
HDMI IN/OUT	15	5	30	10
CAT5e	295	90	330	100
CAT6/6a/7	330	100	330	100

Power		
Consumption	Idle: 5.2W Max: 108W	
Supply	PoE via connected receiver or *optional* 24V 5A power supply	
BTU/h	Idle: 18 Max: 27.28	

Temperature	Fahrenheit	Celsius
Operating	+32 to +104	0 to +40
Storage	-4 to +140	-20 to +60
Humidity (RH)	20% to 90%, non-condensing	

Dimensions (H x W x D)	Inches	Millimeters
Unit	0.98 x 5.91 x 9.84	25 x 150.2 x 250

Weight	Pounds	Kilograms
Device	1.65	0.75

Certification		
Device	CE, FCC	

Compliance	
NDAA-899	Yes

Warranty	
Device	To view the product warranty, use the following link: https://atlona.com/warranty

Footnotes

(1) Scaler does not support frame rate conversion.

(2) HDR is supported on USB-C and HDMI ports only.

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