ATLONA
a PANDUIT company

4K/UHD
Five-Input Universal Matrix Switcher
with Wireless Presentation Link

Solution Setup and Configuration Guide

AT-UHD-SW-510W

Atlona Manuals
Switchers

Version Information

Version	Release Date	Notes
1	Jul 2019	Initial release

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Introduction

Welcome to the AT-UHD-SW-510W Solution Setup and Configuration Guide. This document covers the following topics:

- **Input Auto Switching**
  This section explains how to configure the AT-UHD-SW-510W to automatically switch inputs, when sources are connected or disconnected.

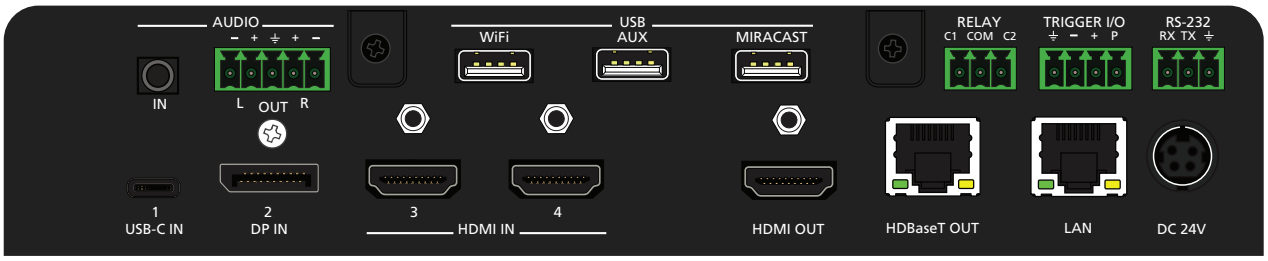
- **Display Control**
  The AT-UHD-SW-510W provides control of display (sink) devices through CEC, RS-232, or IP protocols. Step-by-step instructions are provided on how to setup each protocol and how to enter commands. In addition, the display can be automatically powered-on or powered-off based on the current time and date. The “Scheduling Display Times” section will cover this procedure.

- **Trigger Port and Relay Port**
  Each of these sections explain how to connect devices such as occupancy sensors, screens, curtains, and how to configure the AT-UHD-SW-510W to work with these devices.

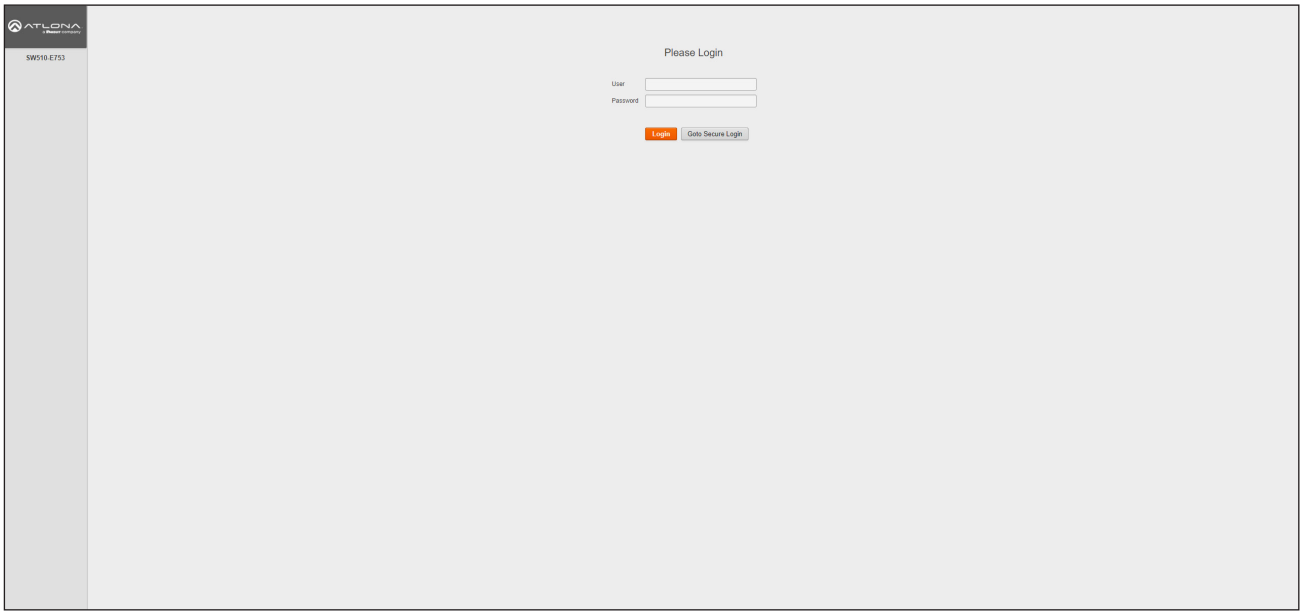
Input Auto Switching

The AT-UHD-SW-510W provides auto-switching capability, which will automatically switch the input to the most recently-connected or powered source, if a so another source is powered-down or disconnected. For example, if the connection sequence for three separate sources is: **DP IN 2** > **HDMI IN 4** > **HDMI IN 3**, and the source connected to **HDMI IN 4** is disconnected (or powered-down), then the AT-UHD-SW-510W will automatically switch to **HDMI IN 3**, since this was the last source to be connected.

Auto-switching is enabled (On), by default, and can be enabled or disabled through the web GUI.



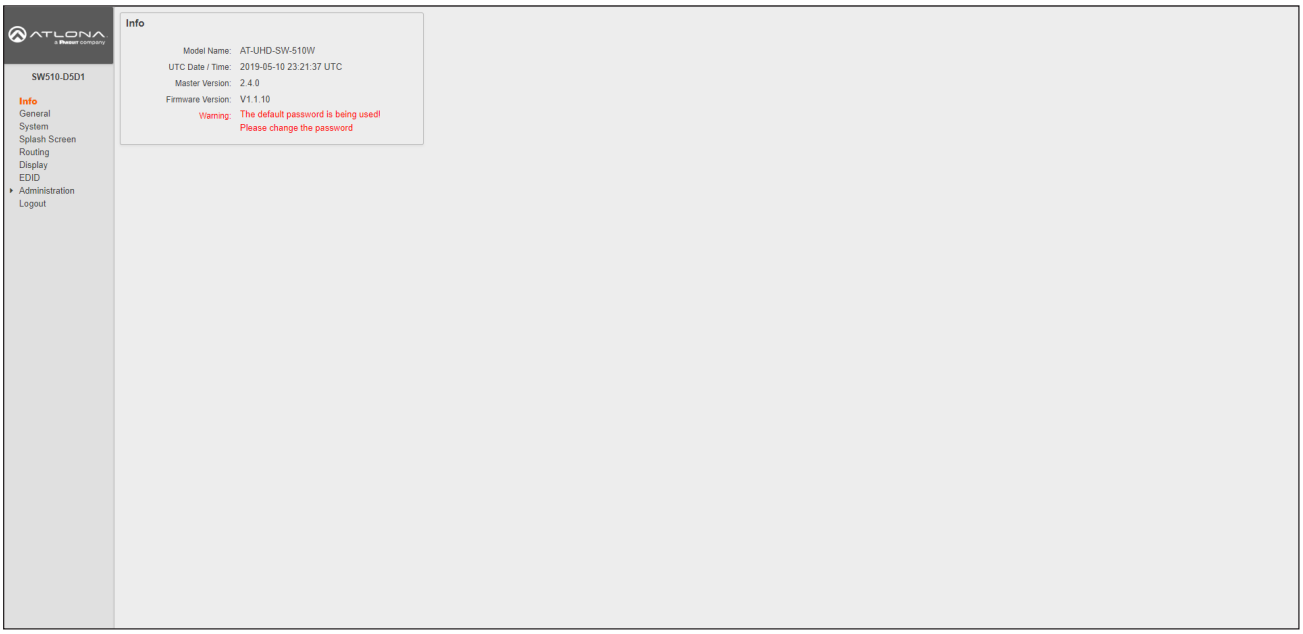
1. Launch a web browser.
2. In the address bar, type the IP address of the AT-UHD-SW-510W.



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

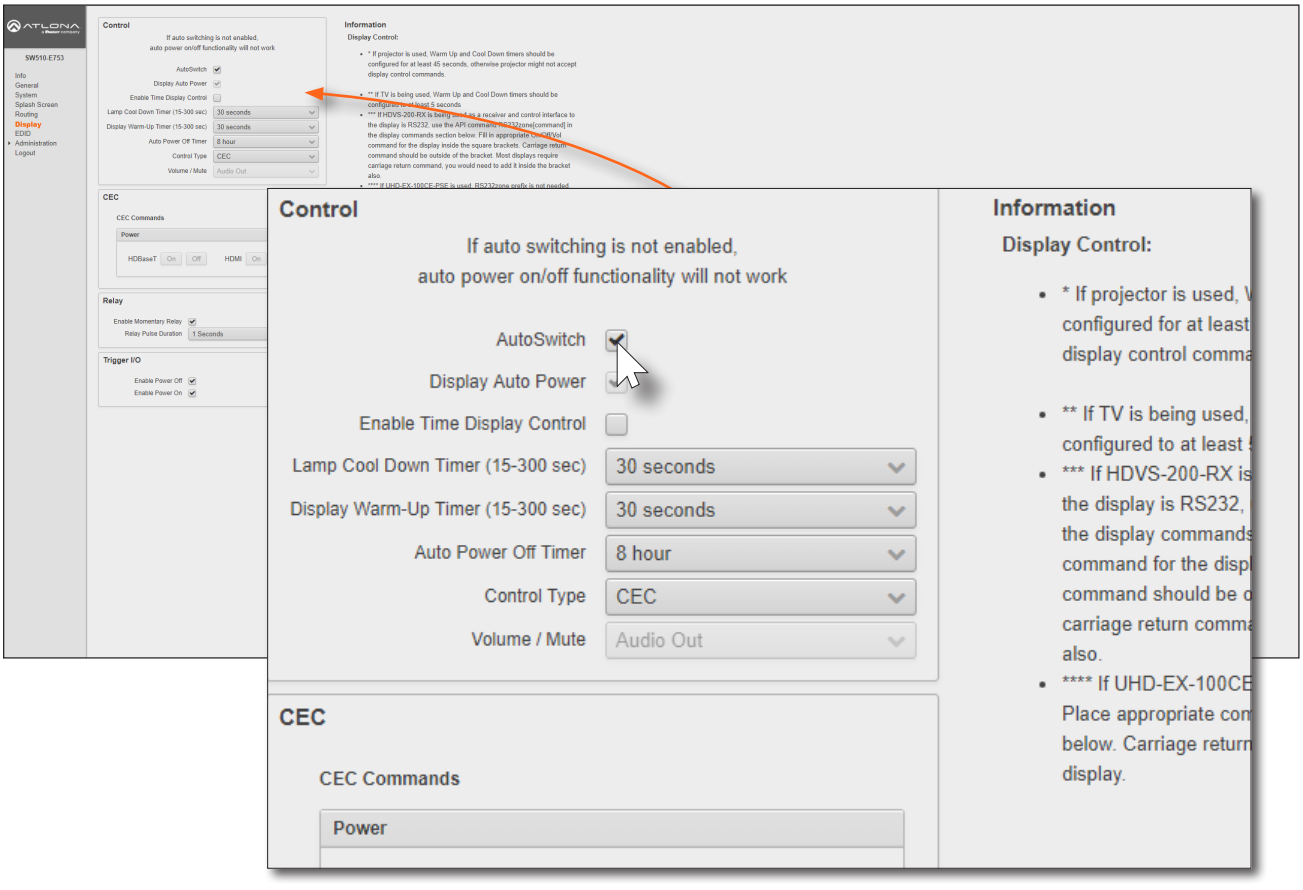
   Username: admin
   Password: Atlona

4. The **Info** page will be displayed, as shown on the next page.



5. Click **Display** in the menu on the left side of the window.

6. Locate the **AutoSwitch** check box, under the **Control** window group.



7. Click this check box to enable auto-switching. When auto-switch is enabled, a check mark will appear in this box. To disable auto-switching, click the **AutoSwitch** check box again.

Display Control

The following section cover display control using the following methods:

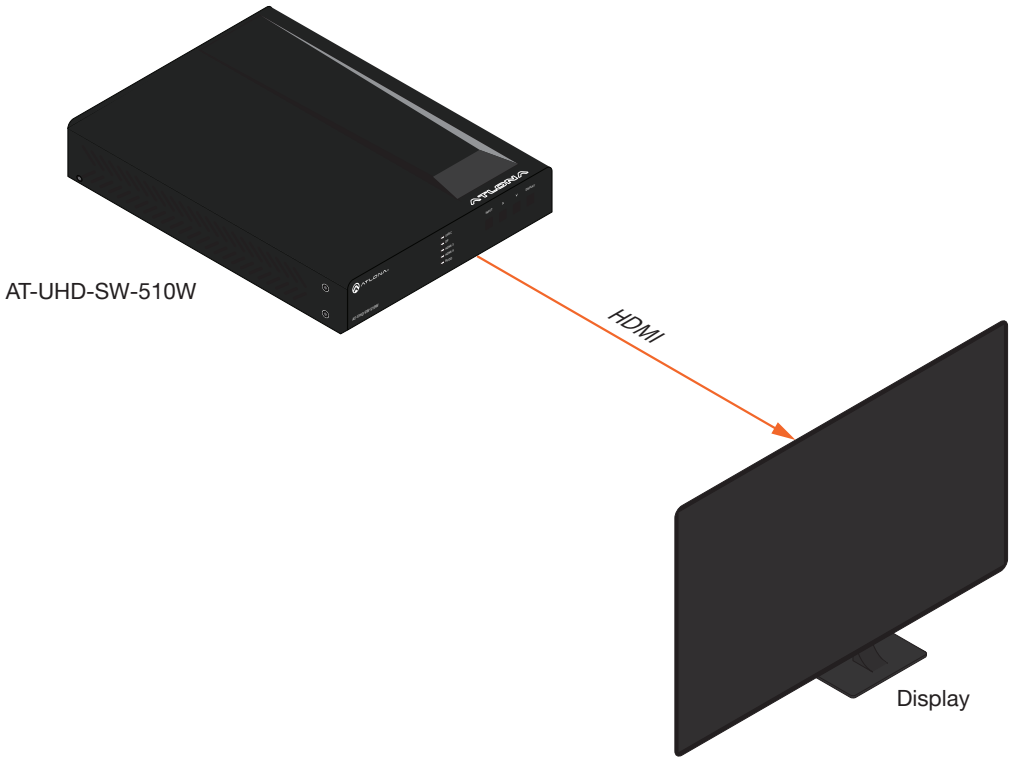
- CEC
- RS-232
- IP

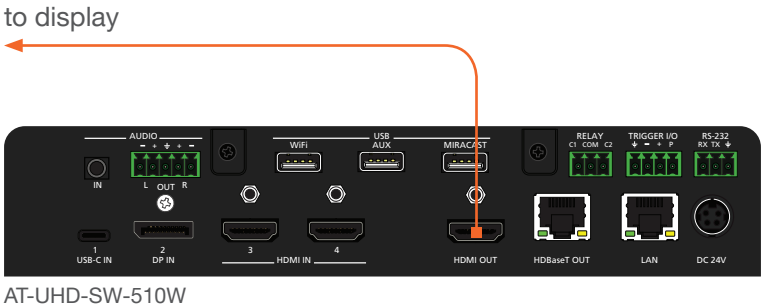
CEC Control

Consumer Electronics Control (CEC) is the simplest method when working with a consumer display. Note that the display must have CEC enabled to receive CEC messages. CEC can be transmitted over HDMI and/or HDBaseT. Note that if both connection methods are used, simultaneously, the same CEC messages will be transmitted over both **HDMI OUT** and **HDBaseT OUT** ports.

CEC Control over HDMI

a. Connect an HDMI cable from the **HDMI OUT** port on the AT-UHD-SW-510W to an HDMI input on the display device.



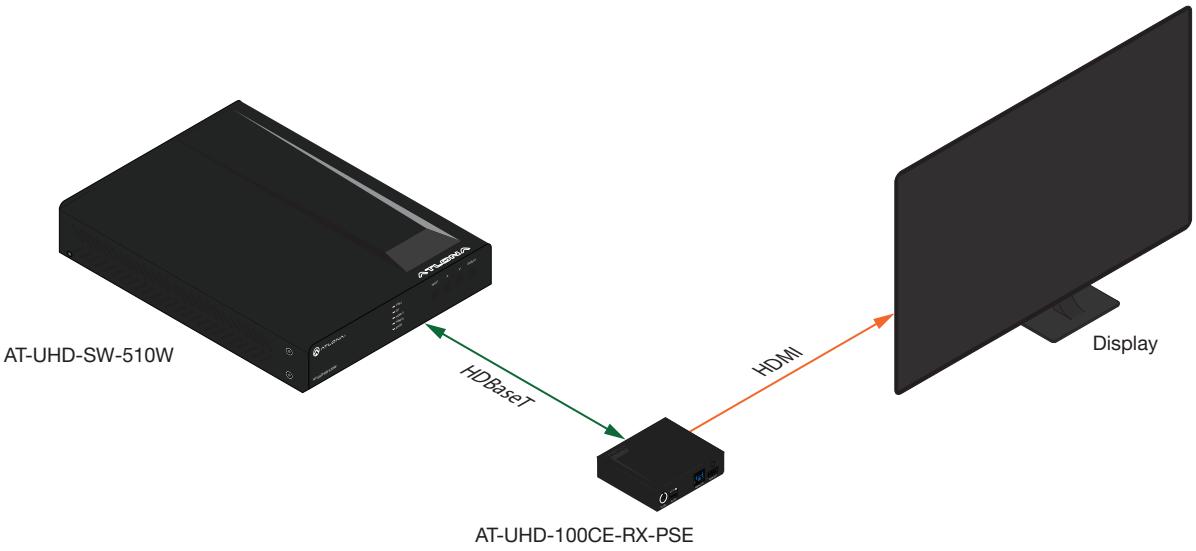


AT-UHD-SW-510W

CEC Control over HDBaseT

a. Connect a category cable (CAT-5e or better) from the **HDBaseT OUT** port on the AT-UHD-SW-510W to a compatible receiver. The example below uses an AT-UHD-100CE-RX-PSE.

b. Connect an HDMI cable from the **HDMI OUT** port on the receiver to the HDMI input on the display device.



AT-UHD-SW-510W

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

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

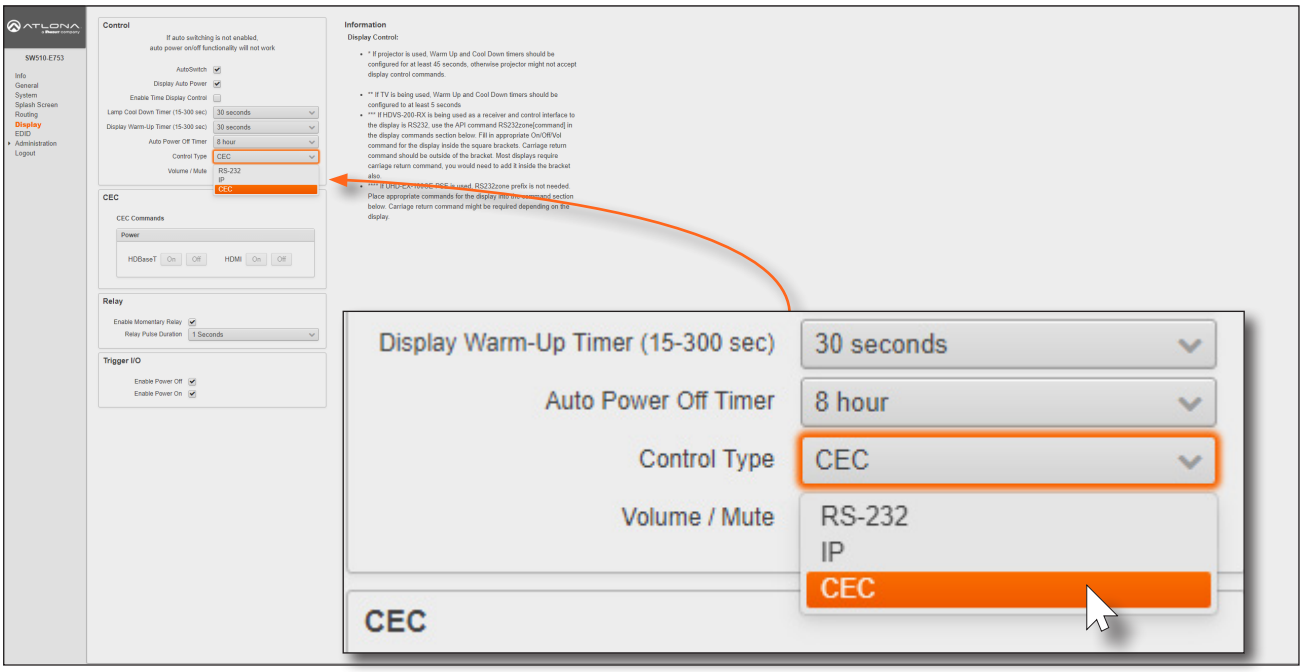
2. Launch a web browser.
3. In the address bar, type the IP address of the AT-UHD-SW-510W.

NOTE: If using AMS and the AT-UHD-SW-510W is running 2.4.0 or greater, click on the device within AMS to access the web interface.

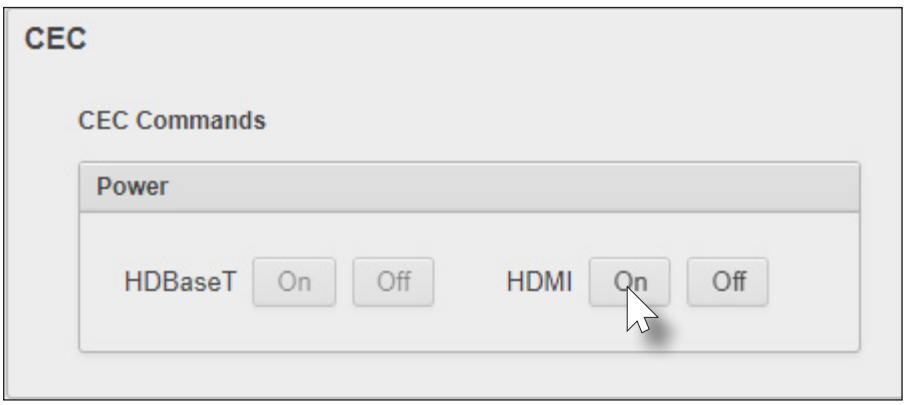
4. The Login page will be displayed. Enter the required credentials. The default credentials are shown below:

Username: admin
Password: Atlona

5. Click the **Submit** button or press the ENTER key on the keyboard.
6. Click **Display** in the menu on the left side of the window.
7. Click the **Control Type** drop-down list and select **CEC**.



8. Under the **CEC** section, next to **HDMI**, test the power-on and power-off commands by clicking the **ON** and **OFF** buttons, respectively. The display should power-on and power-off when clicking these buttons.



If the display does not respond, check the following:

- Verify that CEC is enabled on the display device.
- Verify the integrity of the HDMI cable. Try connecting a different HDMI cable between the AT-UHD-SW-510W and the display device.
- Try connecting the HDMI cable to a different HDMI input on the display device.

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.

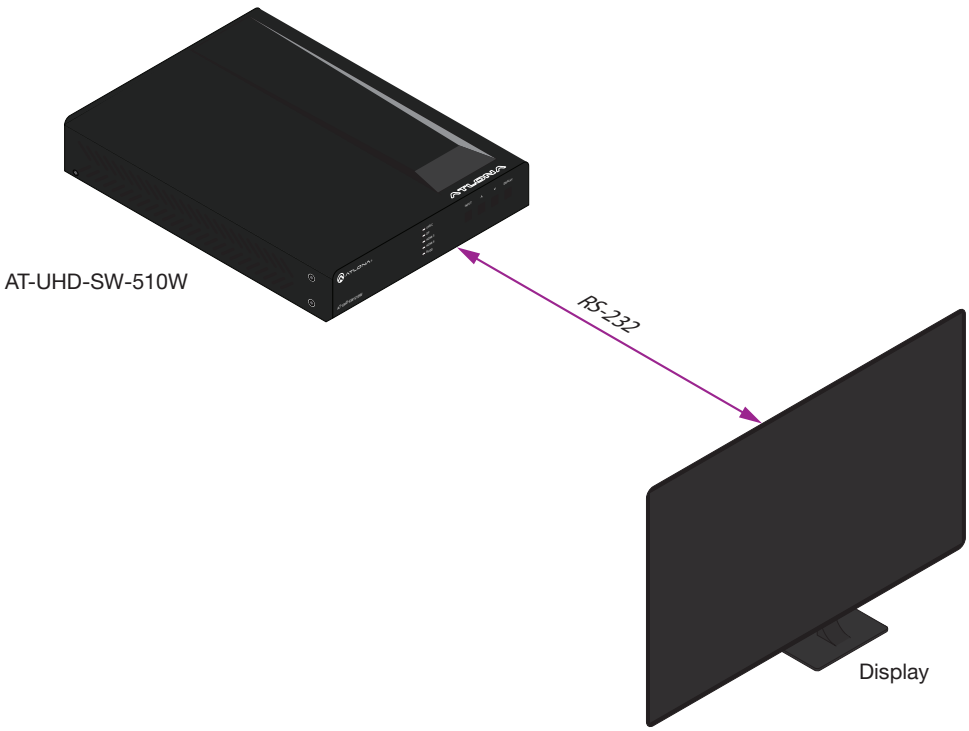
RS-232 Control

The AT-UHD-SW-510W can be connected directly to the display, using these ports, or a receiver, such as the AT-UHD-100CE-RX-PSE can be used to extend these signals to a remote display, up to 330 feet (100 meters) away. No external control system is required. This allows for convenient control of the display device from the location of the source device.

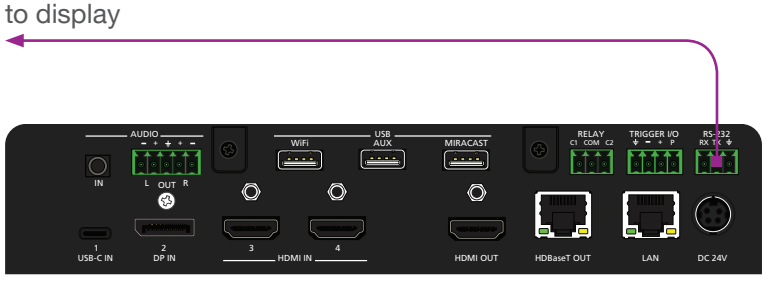
Two RS-232 connection methods will be covered in this section:

- Controlling a Display from the AT-UHD-SW-510W
- Controlling a Display over HDBaseT

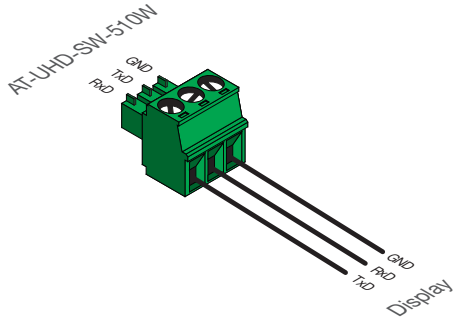
Controlling a Display from the AT-UHD-SW-510W



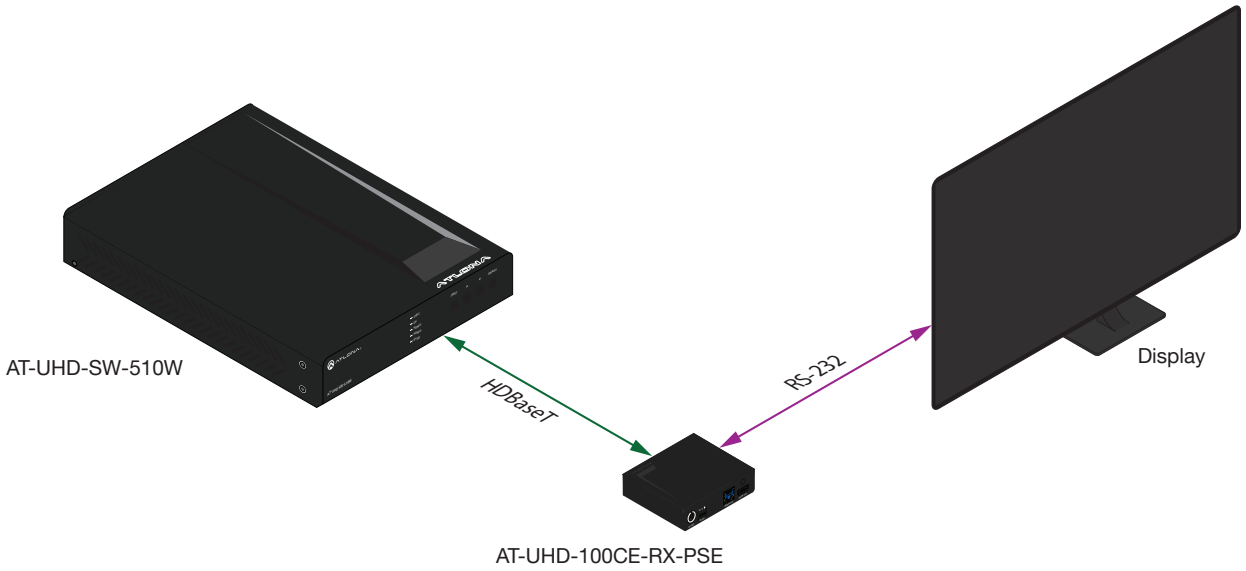
1. Connect the included 3-pin captive screw connector from the **RS-232** port on the AT-UHD-SW-510W to the RS-232 port on the display device. The included 3-pin captive screw connector should be wired as shown.



AT-UHD-SW-510W

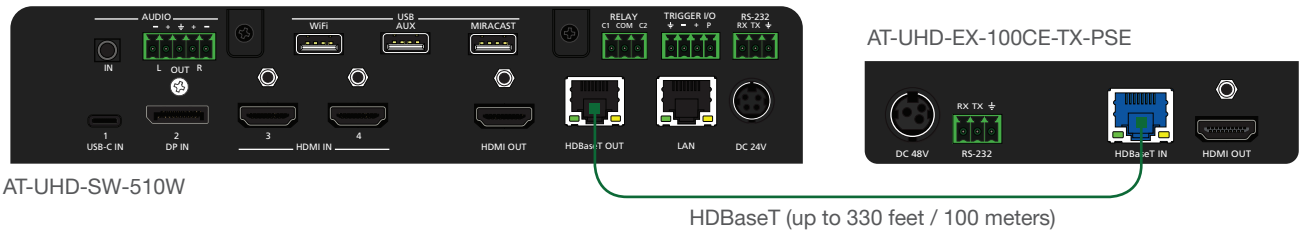


Controlling a Display over HDBaseT

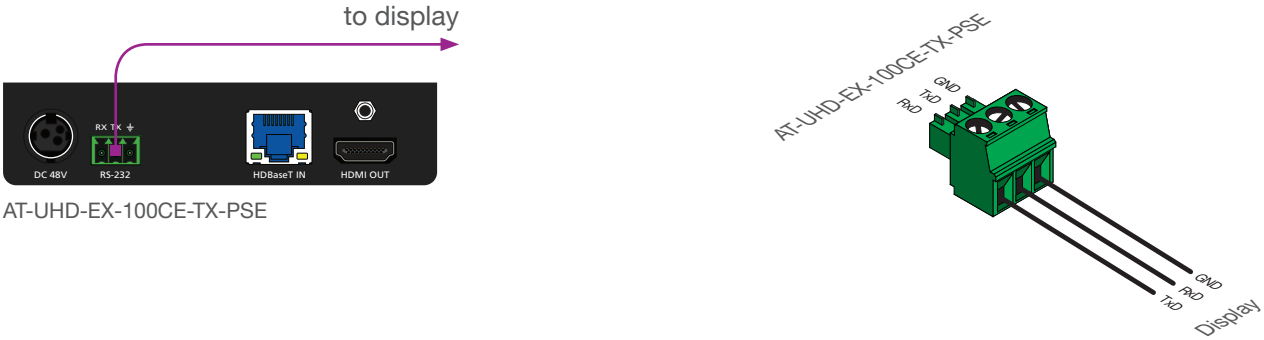


1. Connect an Ethernet cable from the HDBaseT OUT port on the AT-UHD-SW-510W to the HDBaseT IN port on the AT-UHD-EX-100CE-RX-PSE.

IMPORTANT: The AT-UHD-SW-510W does not supply PoE over HDBaseT. The receiver *must* be powered using a local power supply.



2. Connect the included 3-pin captive screw connector from the **RS-232** port on the AT-UHD-EX-100CE-RX-PSE to the RS-232 port on the display device. The included 3-pin captive screw connector should be wired as shown.



RS-232 Control Configuration

Once the AT-UHD-SW-510W is connected, either directly or using an extender, use the following procedure to configure RS-232 control.

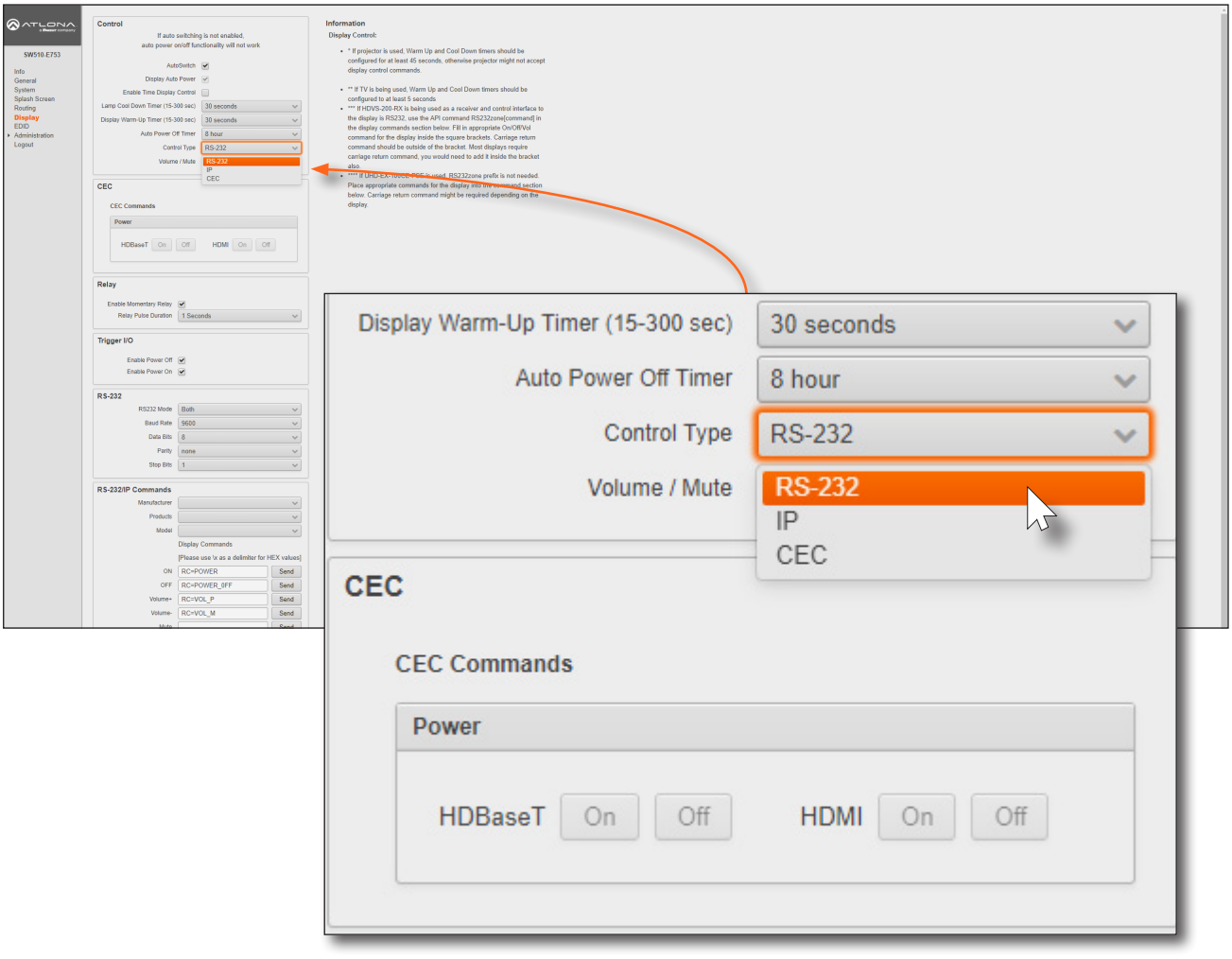
1. Launch a web browser.
2. In the address bar, type the IP address of the AT-UHD-SW-510W.

> **NOTE:** If using AMS and the AT-UHD-SW-510W is running 2.4.0 or greater, click on the device within AMS to access the web interface.

3. The **Login** page will be displayed. Enter the required credentials. The default credentials are shown below:

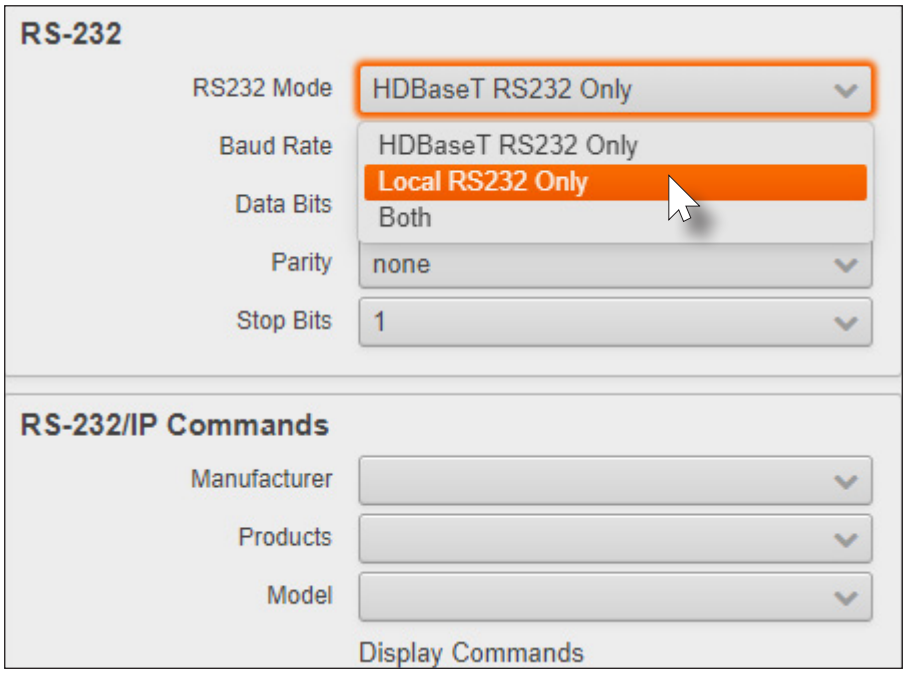
   Username: admin
   Password: Atlona

4. Click the **Submit** button or press the ENTER key on the keyboard.
5. Click **Display** in the menu on the left side of the window.
6. Click the **Control Type** drop-down list and select **RS-232**.

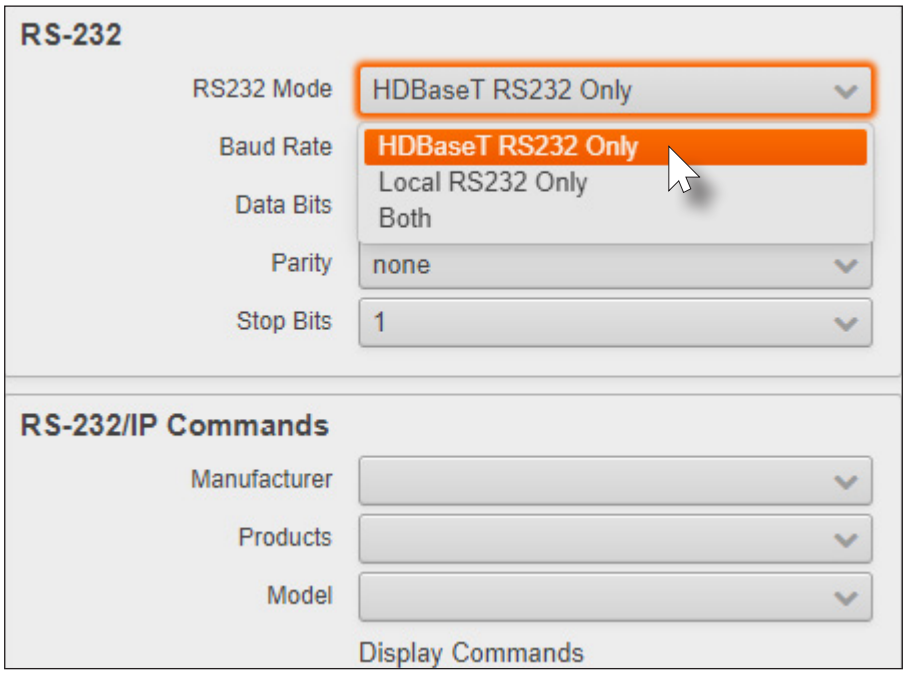


7. Scroll down and locate the **RS-232** section.

   a. If the RS-232 cable is connected directly from the AT-UHD-SW-510W to the display, then click the **RS232 Mode** drop-down list and select **Local RS232 Only**.

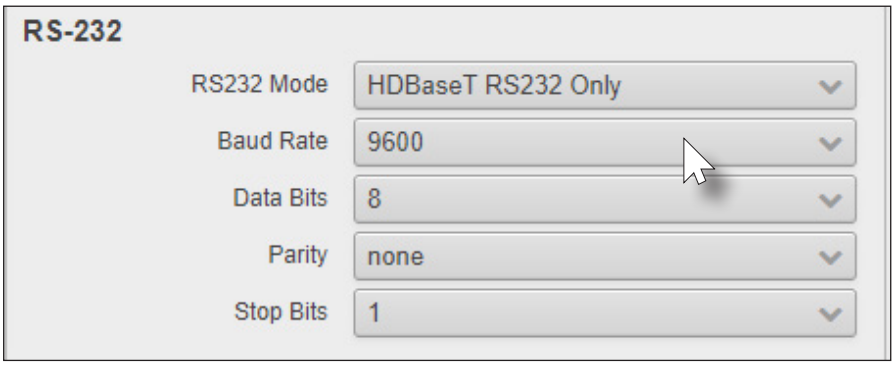


   b. If the RS-232 cable is connected to a remote extender, over HDBaseT, then click the **RS232 Mode** drop-down list and select **HDBaseT RS232 Only**.

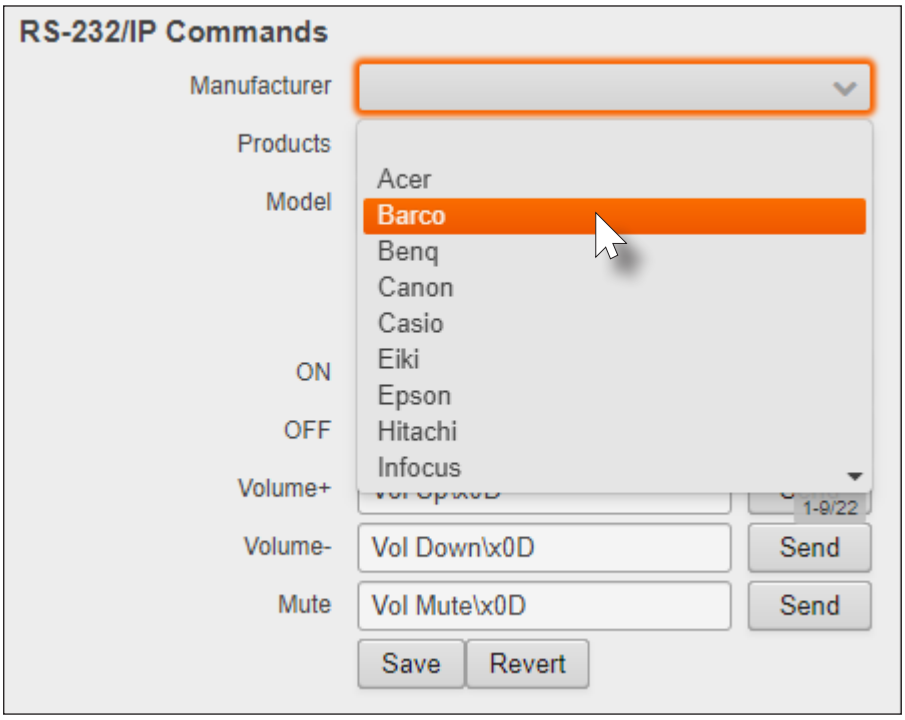


NOTE: If **Local RS232 Only** or **Both** is selected, then the AT-UHD-SW-510W *cannot* be controlled from a controlled system using RS-232.

8. Click the **Baud Rate**, **Data Bits**, **Parity**, and **Stop Bits** drop-down list to set the values required by the control system. If these values do not match the RS-232 settings of the control system, then RS-232 control will not function properly.



9. Scroll down to the **RS-232/IP Commands** section and click the **Manufacturer** drop-down list to select the manufacturer of the device that is being controlled.



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-UHD-SW-510W will populate the **ON**, **OFF**, **Volume+**, **Volume-**, and **Mute** fields with the commands used by that device.

    Refer to the next page for example command strings.

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

HEX Command Strings

a. An example hexadecimal *power-on* command for a display might be:

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

Consult the display documentation 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.

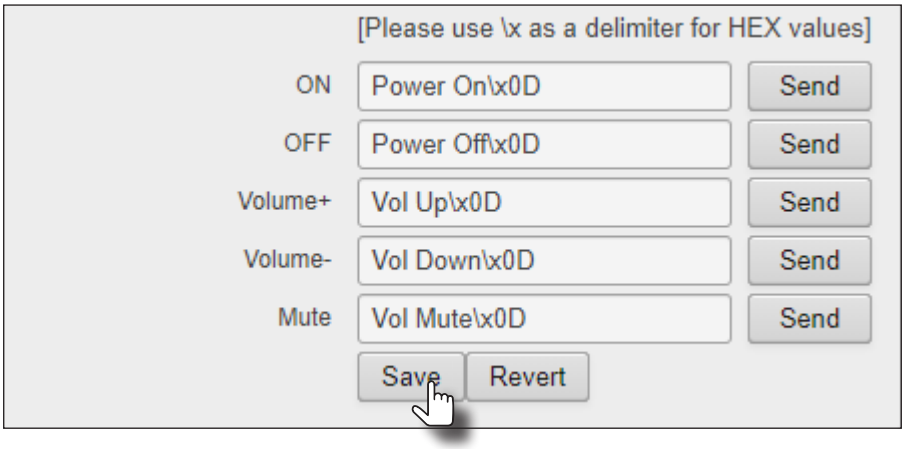
ASCII Command Strings

a. An example ASCII *power-on* command for a display might be:

PWOFF\x0D

Note the use of the "\x0D" delimter in the command string. This must be used to terminate the command string.

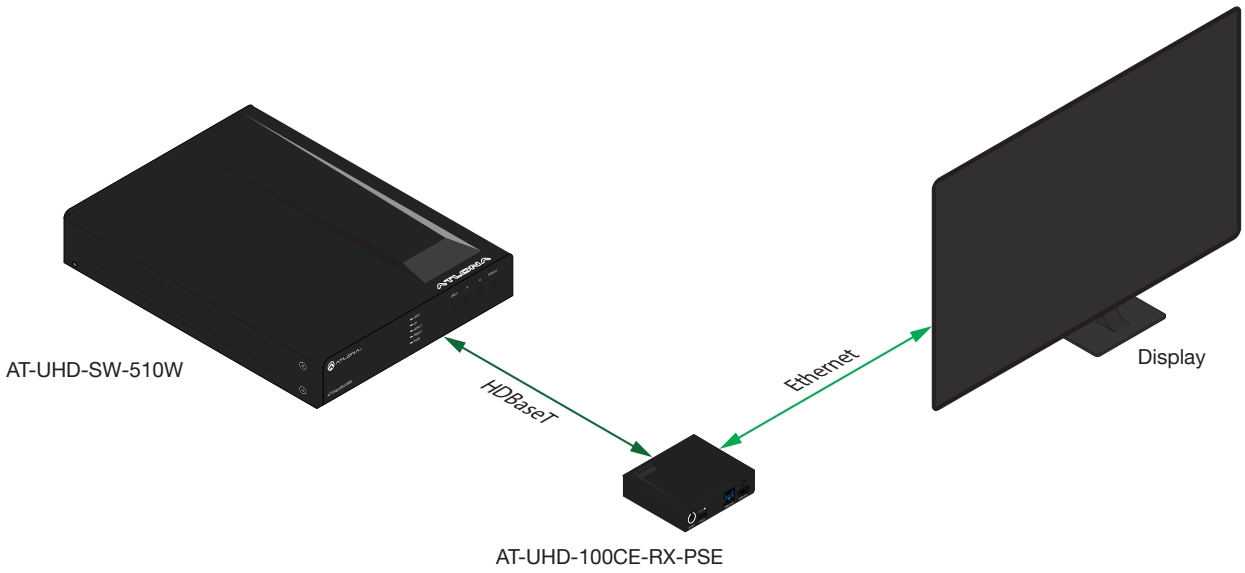
11. Click the **Send** button to test each command.
12. Click the **Save** button to commit changes.



Configuring IP Control

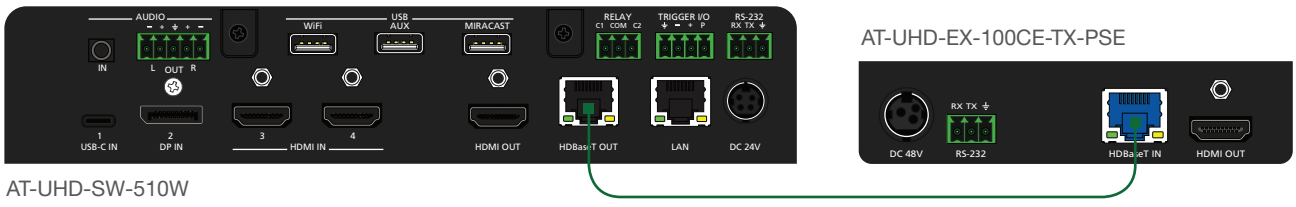
Display control can also be performed over IP. The steps are similar to the HDBaseT RS-232 setup, except that an Ethernet cable is connected between the **LAN** port on the extender and the display device.

The following example shows how to extend IP control, using the AT-UHD-100CE-RX-PSE.

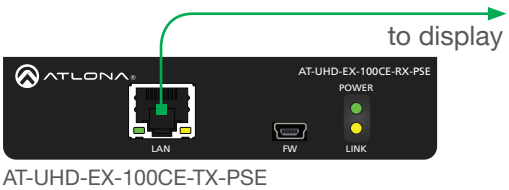


1. Connect a category cable from the **HDBaseT OUT** port on the AT-UHD-SW-510W to the **HDBaseT IN** port on the AT-UHD-EX-100CE-RX-PSE.

IMPORTANT: The AT-UHD-SW-510W does not supply PoE over HDBaseT. The receiver *must* be powered using a local power supply.



2. Connect an Ethernet cable from the LAN port on the AT-UHD-EX-100CE-RX-PSE to the Ethernet port on the display device.



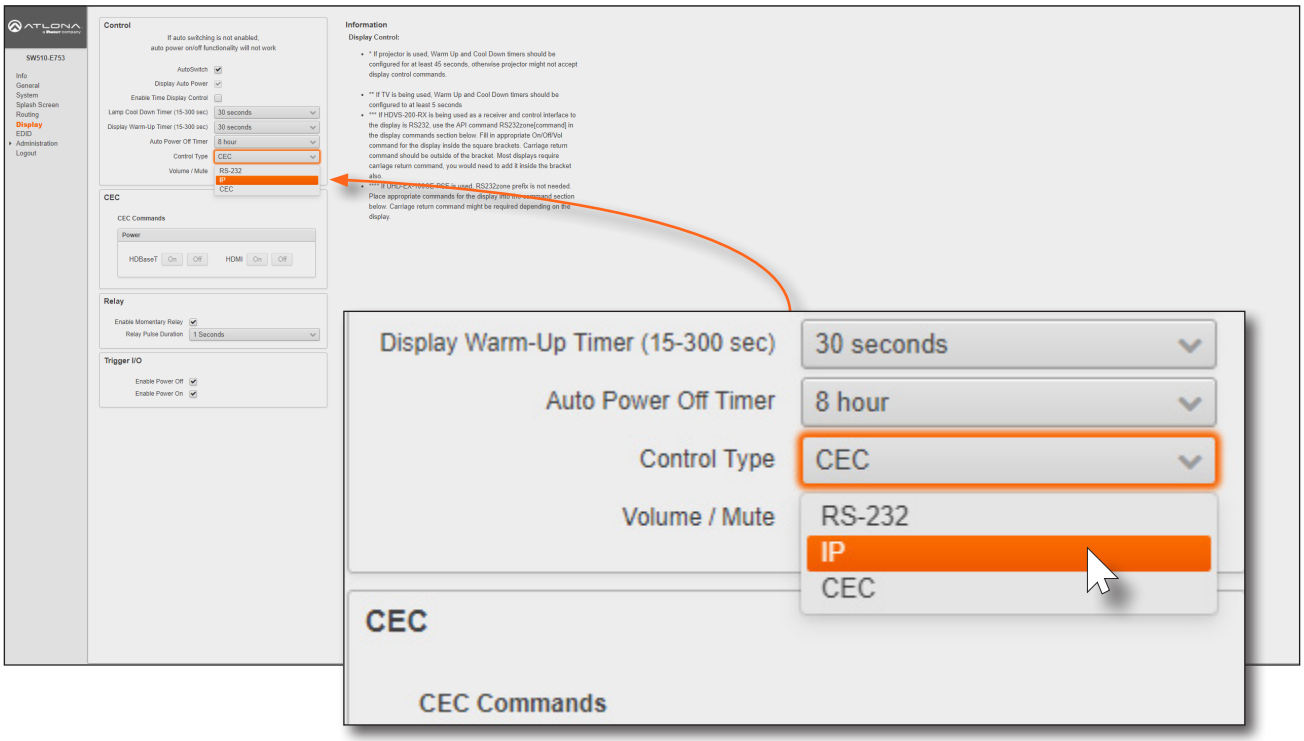
3. Launch a web browser.
4. In the address bar, type the IP address of the AT-UHD-SW-510W.

NOTE: If using AMS and the AT-UHD-SW-510W is running 2.4.0 or greater, click on the device within AMS to access the web interface.

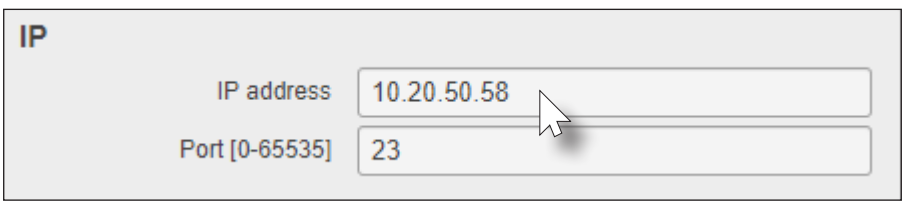
5. The **Login** page will be displayed. Enter the required credentials. The default credentials are shown below:

Username: admin
Password: Atlona

6. Click the **Submit** button or press the ENTER key on the keyboard.
7. Click **Display** in the menu on the left side of the window.
8. Click the **Control Type** drop-down list and select **IP**.



9. Locate the **IP** section and enter the IP address, of the device that is being controlled, in the **IP address** field.
10. Enter the port number in the **Port** field. Valid port numbers can be from 0 to 65535.



11. Refer to step 9, on page 13, to complete the configuration process.

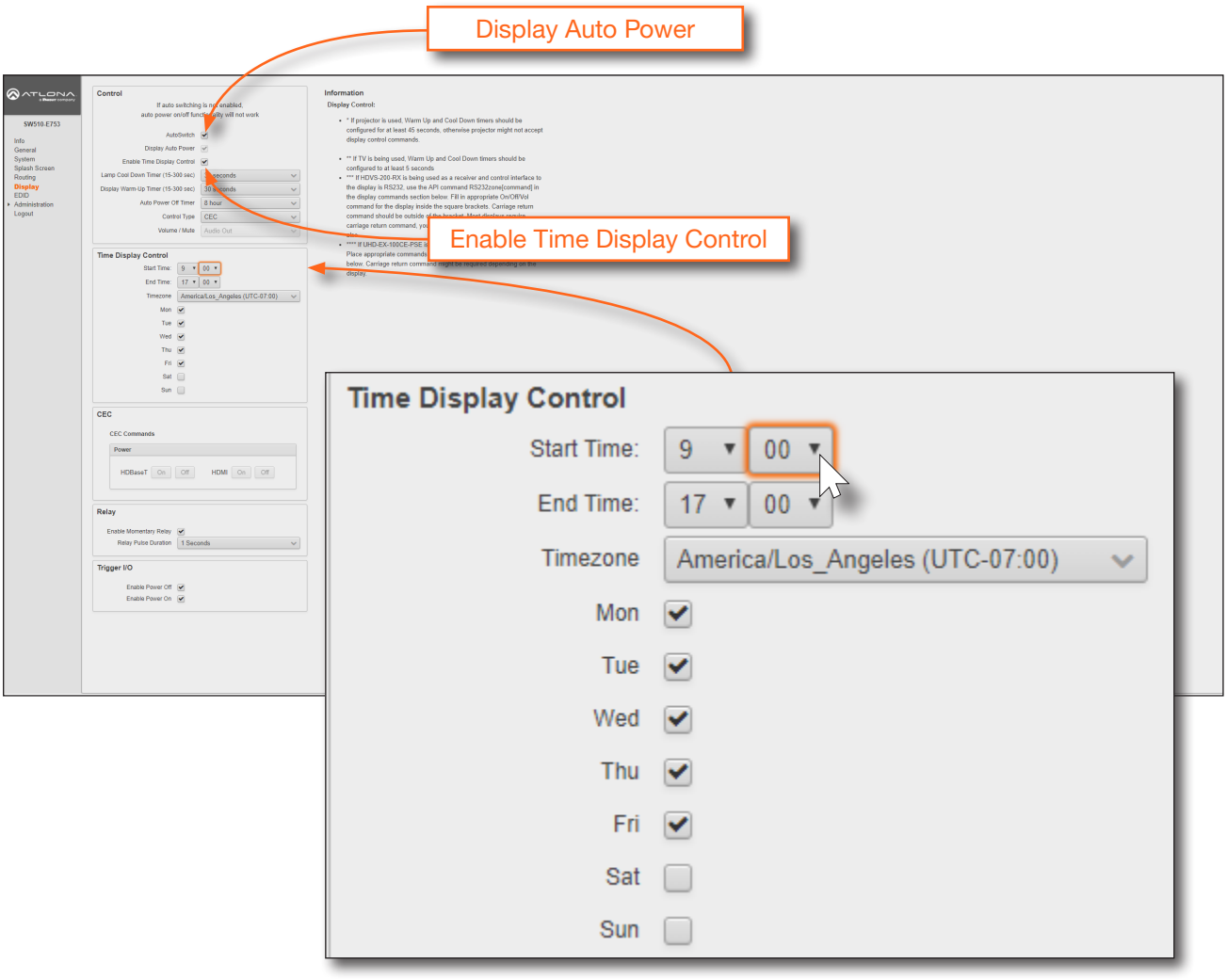
Scheduling Display Operation Times

The AT-UHD-SW-510W can be configured to automatically power-on or power-off a display during specified times and days of the week. *Time must be specified in Universal Coordinated Time (UTC) format*. Note that discrete calendar dates cannot be specified.

1. Login to the web GUI and click **System** from the menu bar on the left.
2. Click the **AutoSwitch** check box to enable auto-switching. When enabled, a check mark will appear in this box.

IMPORTANT: Auto-switching must be enabled in order for auto-powering to function.

3. Click the **Display Auto Power** check box. When enabled, a check mark will appear in this box.
4. Click the **Enable Time Display Control** check box.



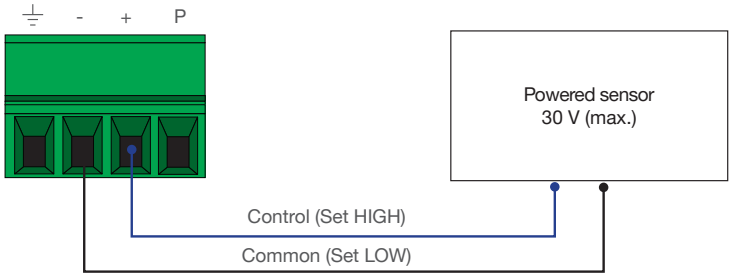
5. Click drop-down lists, next to **Start Time**, to set the hour and minute when the display will be powered-on. Time is specified in 24-hour format.
6. Click the **End Time** drop-down lists, for both hour and minute, to specify the display power-off time. Time is specified in 24-hour format.
7. Click the **Timezone** drop-down list to set the proper time zone.
8. Click the desired checkbox(s) to specify which day(s) that the unit will power-on and power-off the connected display.

Trigger Port

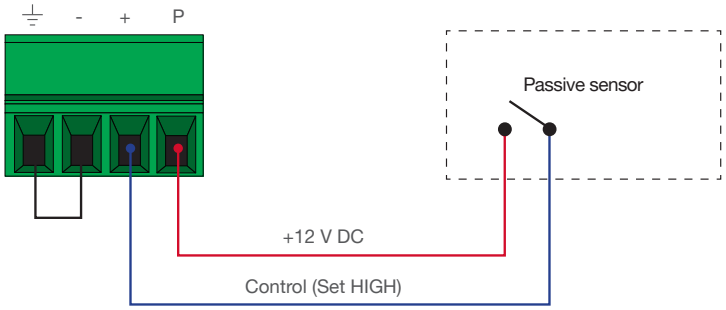
The **TRIGGER I/O** port, on the rear panel, allows voltage-controlled devices, such as an occupancy sensor, to be connected to the AT-UHD-SW-510W. Use the included 4-pin captive screw connector to connect the device. The trigger voltage range is 3 V to 30 V DC.

Wiring

Powered sensor



Passive sensor



IMPORTANT: Some occupancy sensors require 24 V DC instead of 12 V DC. In these cases, an external power supply will be required in order to power the sensor.

Configuration using the Web GUI

Configuration of the **TRIGGER I/O** port can be done through the web GUI or using API commands. Refer to the Application Programmers Interface, on the Atlona AT-UHD-SW-510W product web page, for more information.

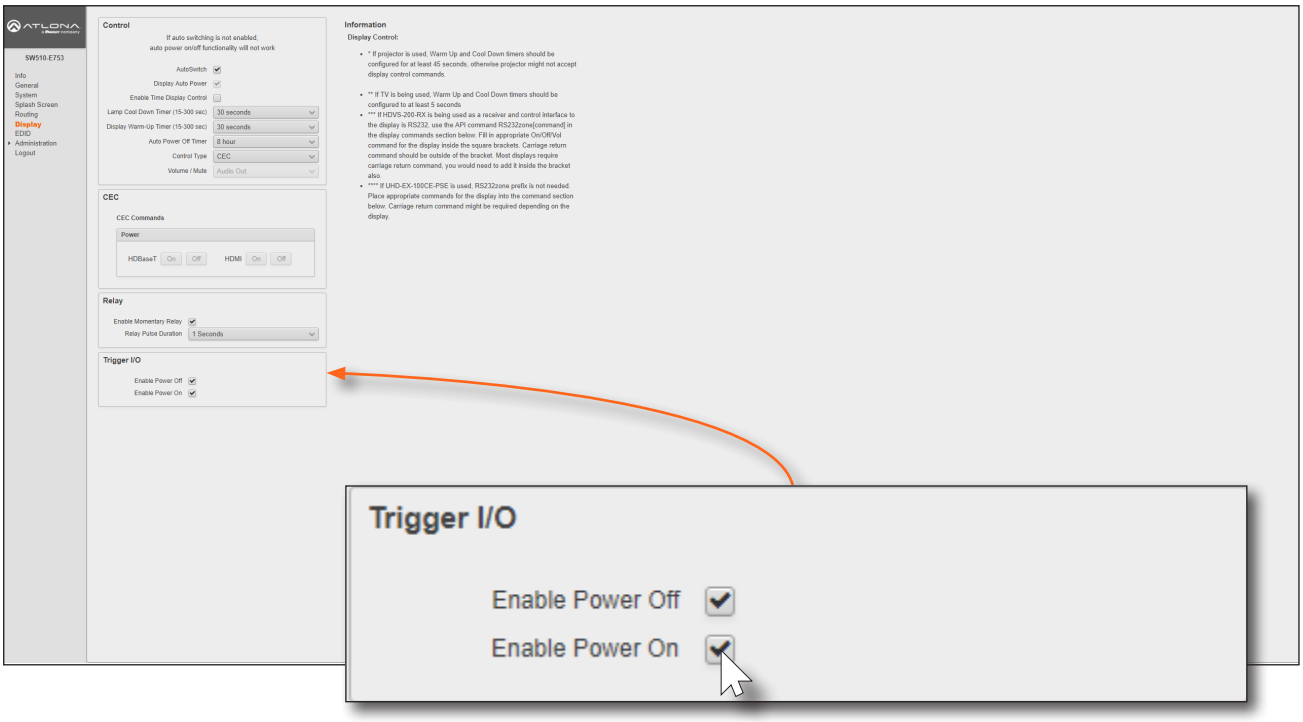
1. Launch a web browser.
2. In the address bar, type the IP address of the AT-UHD-SW-510W.

NOTE: If using AMS and the AT-UHD-SW-510W is running 2.4.0 or greater, click on the device within AMS to access the web interface.

3. The **Login** page will be displayed. Enter the required credentials. The default credentials are shown below:

Username: admin
Password: Atlona

4. Click the **Submit** button or press the ENTER key on the keyboard.
5. Click **Display** in the menu on the left side of the window.
6. Locate the **Trigger I/O** section.



7. Click the desired checkboxes for the desired operation. By default, both **Enable Power Off** and **Enable Power On** are checked (enabled).

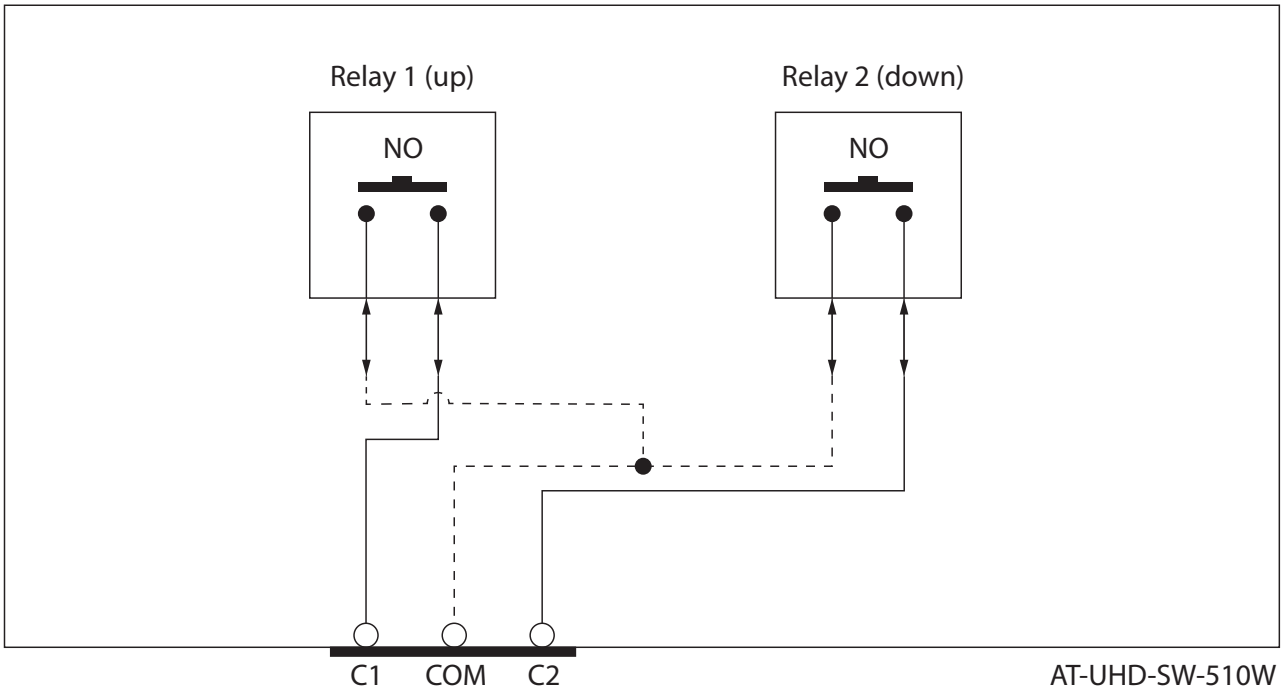
Relay Port

The AT-UHD-SW-510W provides a **RELAY** port, which provides a control interface for screens, curtains, and or other devices.

Wiring

The **RELAY** connector is wired to a pair of single-pole single-throw (SPST) relays, as shown below, providing two independent switches and a common (COM) connection. The relay is designed to work with devices that conform to standard Low Voltage Control (LVC). The AT-UHD-SW-510W software allows only a single relay switch to be enabled at any time.

IMPORTANT: The maximum voltage and current for the **RELAY** connector is 48 V / 1 A DC.



Operation

The AT-UHD-SW-510W can be programmed through the built-in web GUI to pulse the C2 contact when the AT-UHD-SW-510W is active and then pulse the C1 contact when the AT-UHD-SW-510W becomes inactive. Pulse length can also be configured using the web GUI. Refer to the next page for more information.

IMPORTANT: When the AT-UHD-SW-510W is powered-on or rebooted, both C1 and C2 are will be in the Normally Open (NO) state.

Configuration using the Web GUI

Configuration of the **RELAY** port can be done through the web GUI or using API commands. Refer to the Application Programmers Interface, on the Atlona AT-UHD-SW-510W product web page, for more information.

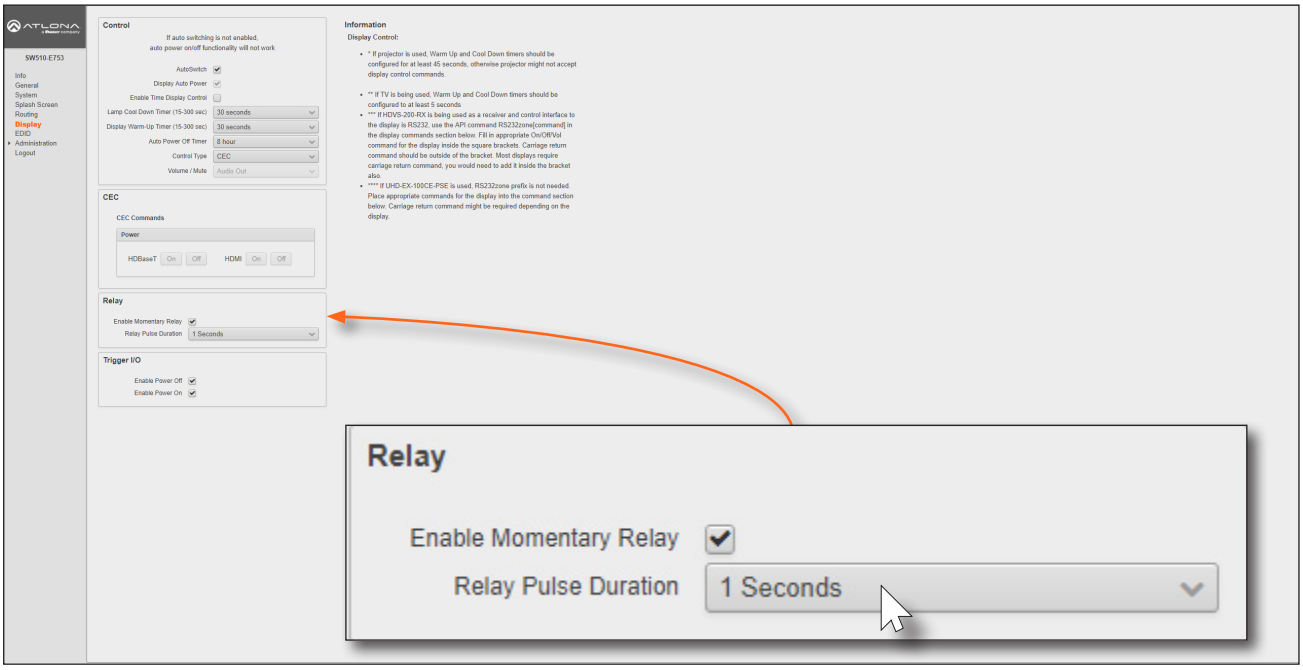
1. Launch a web browser.
2. In the address bar, type the IP address of the AT-UHD-SW-510W.

NOTE: If using AMS and the AT-UHD-SW-510W is running 2.4.0 or greater, click on the device within AMS to access the web interface.

3. The **Login** page will be displayed. Enter the required credentials. The default credentials are shown below:

Username: admin
Password: Atlona

4. Click the **Submit** button or press the ENTER key on the keyboard.
5. Click **Display** in the menu on the left side of the window.
6. Locate the **Relay** section.
7. Click the **Enable Momentary Relay** check box to enable relay operation.
8. Click the **Relay Pulse Duration** drop-down list and select the desired duration. Note that some external devices may not recognize pulse durations less than 1 second. In this case, it may be necessary to select a larger time interval.



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