



Omega™ 4K/UHD HDBaseT Transmitters and Scaler Receiver for HDMI with USB

Solutions Setup and Configuration Guide

AT-OME-SR21 | Atlona Setup
AT-OME-EX-TX | Guide
AT-OME-EX-TX-WP/E

Version Information

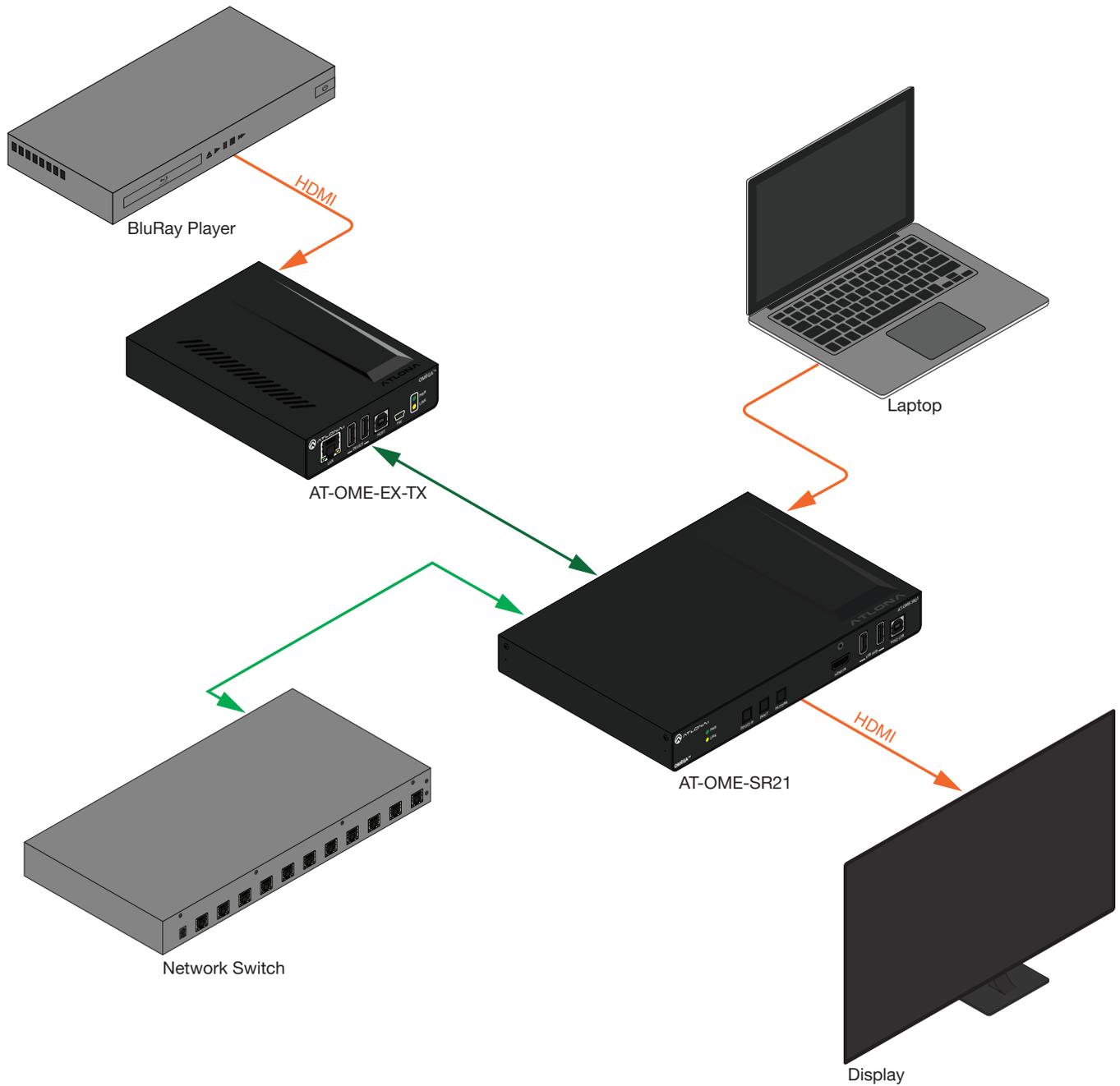
Version	Release Date	Notes
1	Jan 2020	Initial Release

Table of Contents

Introduction	4
Installation	5
AT-OME-SR21	5
AT-OME-EX-TX	6
Connection	7
Configuration	9
Control	14

Introduction

This guide provides a base for setting up and configuring a AT-OME-SR21 when used with an OME-EX transmitter (TX or TX-WP).



Installation

AT-OME-SR21

The AT-OME-SR21 includes two mounting brackets and four mounting screws, which can be used to attach the unit to any flat surface.

1. Remove the top 2 case screws on the side of the unit.
2. Align the mounting brackets to the side of the units.
3. Use the previously removed case screws and the included screws to secure the mounting bracket to the enclosure.
4. Repeat the steps for the other side of the unit.



5. Mount the unit using the oval-shaped holes, on each mounting bracket. If using a drywall surface, a #6 drywall screw is recommended.



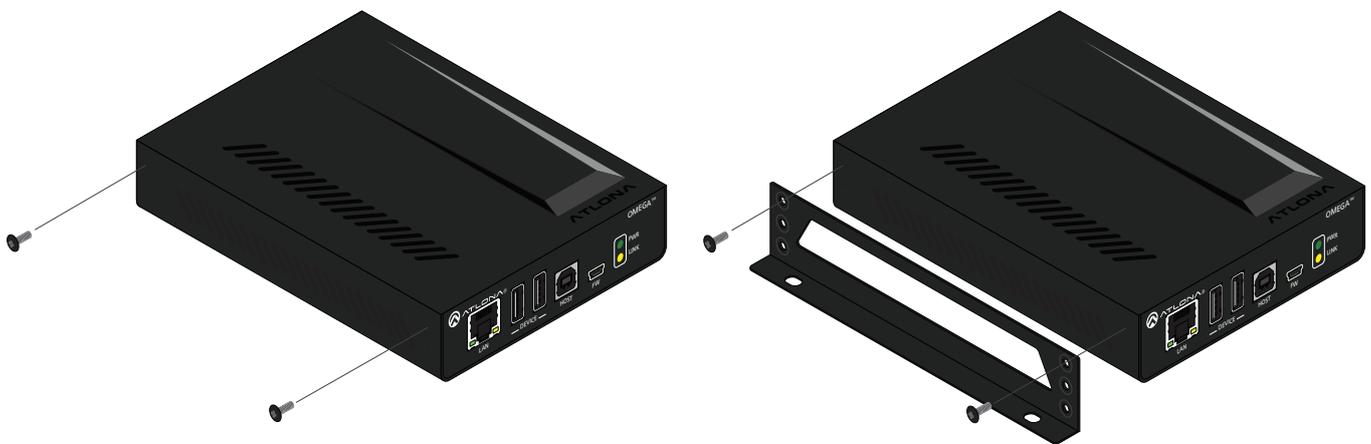
NOTE: Mounting brackets can also be inverted to mount the unit under a table or other flat surface.



AT-OME-EX-TX

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

1. Remove the top 2 case screws on the side of the unit.
2. Align the mounting brackets to the side of the units.
3. Use the previously removed case screws to secure the mounting bracket to the enclosure.
4. Repeat the steps for the other side of the unit.



5. Mount the unit using the oval-shaped holes, on each mounting bracket. If using a drywall surface, a #6 drywall screw is recommended.

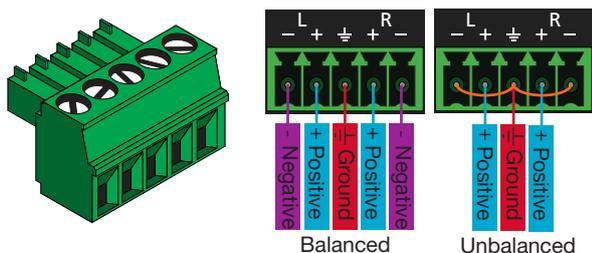


NOTE: Mounting brackets can also be inverted to mount the unit under a table or other flat surface.



Connection

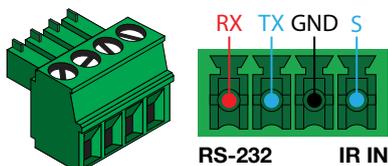
1. Connect the sources to the input ports on the OME-EX-TX and OME-SR21.
2. Connect an 568B terminated category cable to the HDBaseT output of the OME-EX-TX and the HDBaseT input of the OME-SR21.
3. Connect an HDMI cable from the SR21's HDMI output port to an HDMI display.
4. *Optional* Connect the 2CH analog AUDIO OUT ports to a DSP, or audio amplifier.



Use a jumper between the negative and ground pins when using an unbalanced connection.

5. *Optional* Connect USB devices (e.g. USB camera) to the USB hub ports on either the SR21 or OME transmitter.
6. *Optional* Connect the HOST USB port of either the SR21 or OME transmitter to a computer using a USB B to USB A cable (cable not provided).
7. *Optional* For RS-232 control, captive screw connectors have been included. The OME-EX-TX will use a 4-pin connector that only the first three pins will be used. The OME-SR21 will use a 5-pin captive screw RS-232 port to control the display (port 1) and the unit (port 2).

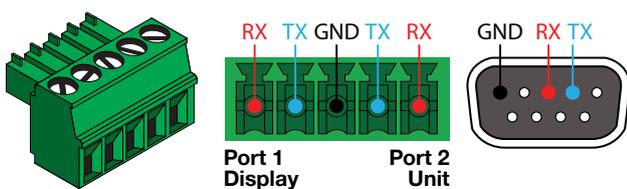
AT-OME-EX-TX



RS-232 Pin out will be determined by the RS-232 cable and connects as RX (receive), TX (transmit) and \perp (ground - shared with IR IN).

IR IN is not functional when using OME-EX-TX with SR21.

AT-OME-SR21



Pin out will be determined by the RS-232 cable and connect as RX (receive), TX (transmit) and \perp (Ground). Ground will be shared between port 1 and port 2.

NOTE: The OME-EX-TX is a pass through device only, it will pass commands from a control system to the SR21 or from the SR21 to a local source.

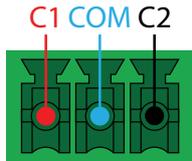
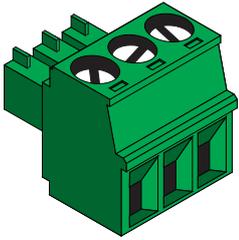
- a. **Display control using the SR21** (preferred)- Connect an RS-232 cable from the display to port 1 of the SR21. Commands will need to be programed using the webGUI but will be able to be triggered using webGUI or RS-232/IP trigger commands:

DispBtn **X**. **X** = on, off, vol+, vol-, mute.

- b. **Display control using a control system** - Connect an RS-232 cable from the control system to the OME transmitter's RS-232 port, using the first three pins and an RS-232 cable from the display to port 1 of the SR21.

- c. **Source control** - Connect an RS-232 cable from the OME transmitter to the source and connect a PC or control system to the SR21 using RS-232 port 2 (the last three pins). Send commands using the RS232zone3[X] command. X = source control command, found within the source's manual.

8. *Optional* Connect a network switch to one of the LAN ports on the SR21 or the LAN port of the EX transmitter, for IP control, system configuration, or Ethernet routing.
9. *Optional* Connect a second Ethernet cable from one of the LAN ports of the SR21 to the local display to pass through Ethernet.
10. *Optional* To control devices such as electric screens and display lifts, connect the device to the 3-pin captive screw relay port of the SR21.



There are 3 connections for the relay: C1, COM, and C2 (Circuit 1, Common, and Circuit 2.)

11. Connect the included DC 24V power supply between the power port of the SR21 and a compatible power outlet.

Configuration

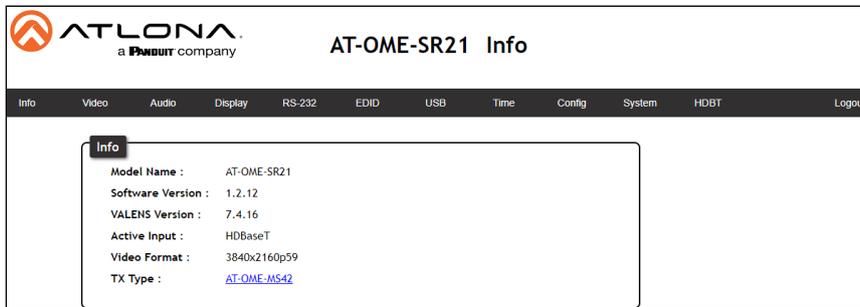
Configuration will be done through the webGUI.

By default the unit will be set to DHCP mode and receive an IP address from the DHCP server. If there is no DHCP server, press and hold the IP MODE button for 5 seconds. The LED will blink 3 times when set to static. The PC connecting to the unit will need to be set to the same IP range as the unit. The static IP address of the unit will be:

IP address: 192.168.1.254
 Subnet mask: 255.255.0.0
 Gateway: 192.168.1.1

1. Launch a web browser and enter the IP address in the address bar.
2. The AT-OME-SR21 **Login** page will be displayed.
3. Enter the following information on the **Login** page.

Login: admin
 Password: Atlona



HDCP

By default, the SR21 will have HDCP set to ON. Change this within the Video Settings page if needed.

1. Select **Video** from the top menu.
2. Select the slider next to the input port to switch between ON and OFF (non-compliant) HDCP.



NOTE: Some sources flag all content as protected, by selecting HDCP off the source device may send only user created content. In some cases, the source must be configured to send content to non-HDCP devices (e.g. HDCP must be turned off within a PS4's settings to pass unprotected content).

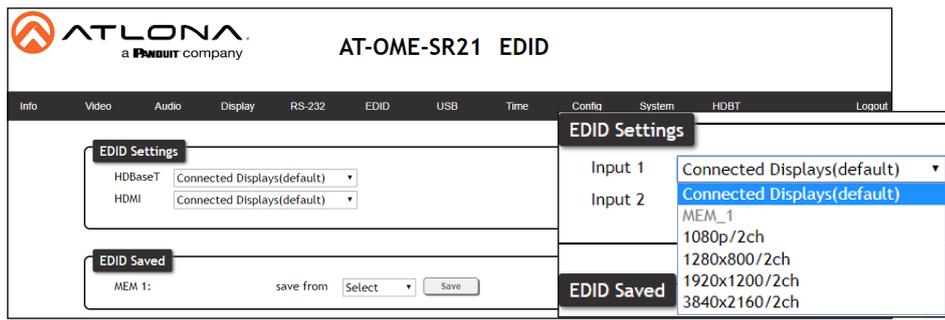


EDID and Scaling

EDID

The SR21 will have EDID on pass through by default. To change the settings on this, go to the EDID page.

1. Select **EDID** from the top menu.
2. Select the internal or saved EDID from the drop down menu next to the corresponding input port.
3. *Optional* If no EDID has been saved, select the Output 1 from the save from drop down and press the **Save** button.
4. Repeat step 2 if using a saved EDID.



EDID Selections				
Connected Display	Chooses the highest common resolution between source and display			
Internal	1080p 2CH	1280x800 2CH	1920x1200 2CH	3840x2160 2CH
Saved	1 Memory slot			

Output Scaling *optional*

The output will have resolution and scaling options. Scaling by default, will be OFF.

1. Select **Video** from the top menu.
2. Scroll to the Output section and select the **Scaler** slider, so that it shows ON (if not already on). More options will display below when enabled.
 - a. Select the **Scaler** slider, so that it shows OFF if wanting to use the Native/pass through resolutions.



3. Select the resolution and timing for the output to scale to.

Scaling Options			
Vesa	1024x768	1360x768	1920x1200
	1280x768	1600x1200	2048x1080
	1280x800		
Video	1280x720p50	3840x2160p24	4096x2160p24
	1280x720p60	3840x2160p25	4096x2160p25
	1920x1080p24	3840x2160p30	4096x2160p30
	1920x1080p25	3840x2160p50	4096x2160p50
	1920x1080p50	3840x2160p60	4096x2160p60
	1920x1080p60 (default)		

NOTE: Based on the selection from the drop down menu, the scaler will adjust not only resolution but frame rate as well. All VESA resolutions will output at 60Hz when using the scaler.

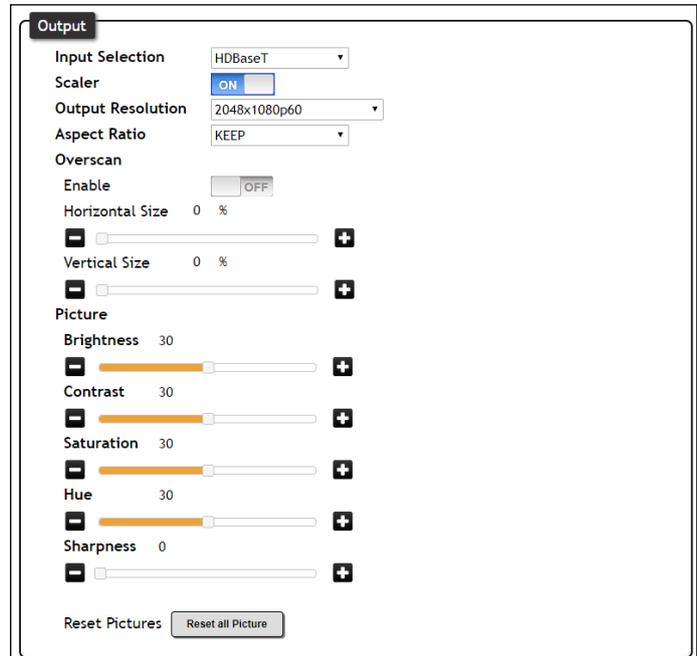
3. Select Aspect Ratio, Overscan options, and Picture options.

Aspect Ratio - Select between Keep (which will keep the aspect ration of the source device), Fill (which will adjust the picture to fill the display), and letterbox (adds black bars to sides depending on the resolution).

Overscan - Enable to be able to manually adjust the horizontal and vertical size of the output image. Default is 0 and can be adjust from 0% to 50%.

Brightness, Contrast, Saturation, Hue, Sharpness - Adjust the output's brightness, contrast, saturation, sharpness, and hue manually. Default is 30% (0% for Sharpness) and can be adjusted from 0% to 60%.

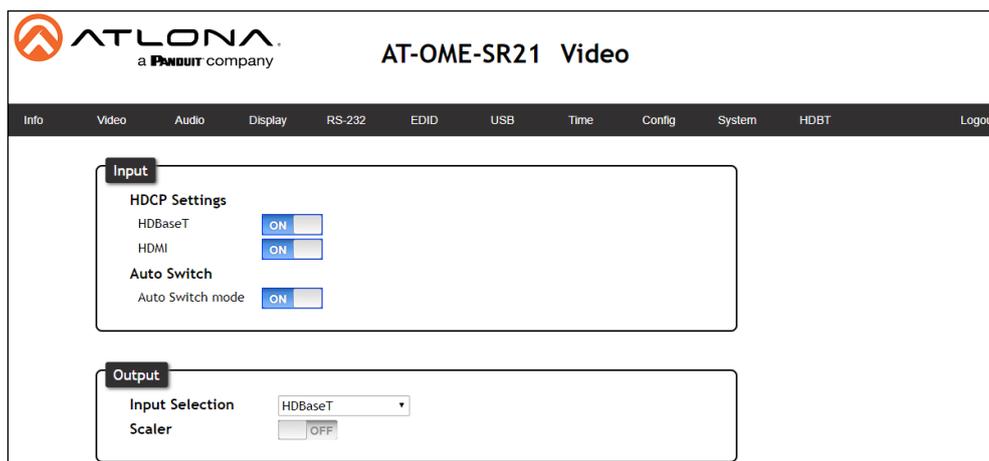
Reset all Picture - Press the Reset button to set all the video options back to factory defaults.



Audio / Video Switching

The SR21 will be set to Auto Switch mode ON by default, which means anytime a hot plug event or signal is received, it will switch to that source. To change the settings on this, go to the Video page.

1. Select **Video** from the top menu.
2. Select the **Auto Switch mode** slider. ON will enable auto switching and Off will disable it.



Manually switching the input can happen while auto switching is enabled or disabled.

- a. Scroll to the Output section and select an input from the Input Selection drop down menu. Menu options will be: A/V Mute (no signal), HDBaseT, HDMI, internal pattern 1, internal pattern 2, and internal pattern 3.
- b. Press the INPUT button on the front panel of the SR21. This will cycle through HDBaseT and HDMI inputs.
- c. Use the command `x?AVx1`, where ?=1-5. 1 = HDBaseT, 2 = HDMI, 3 = pattern 1, 4 = pattern 2, and 5 = pattern 3. This command can be sent over RS-232 or IP.

USB Switching

The SR21 will have the USB host switch to the most recently connected host device by default. To change this setting, go to the USB page.

1. Select **USB** from the top menu.
2. Select the **USB Host** option that works best.



Follow USB - Assigns the USB devices to follow the most recently connected Host (e.g. Computer). If a new USB device is connected, then it will auto switch to that Host. If the current host is disconnected, it will fall back to the previously connected active device.

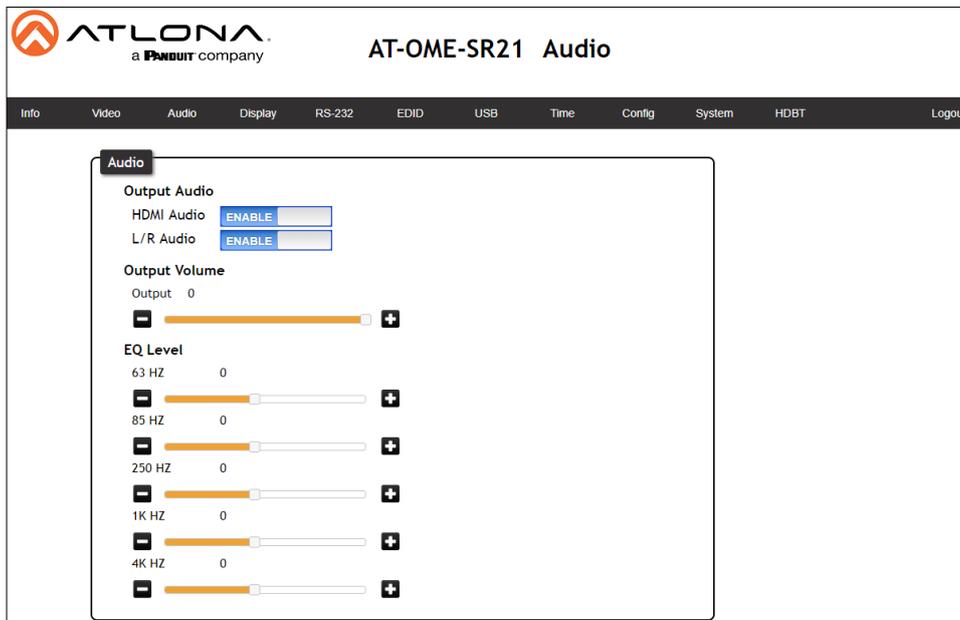
Manual - Select which host will be used. Select between SR21's USB Host (local) and OME-EX-TX's USB Host (remote).

Follow Video - Sets the USB hosts to follow the input selection. If an input on the transmitter is selected, the USB will switch to the transmitter's host ports, if a source on the receiver is selected, it will switch to the SR21's host port.

Audio

The SR21 can mute/unmute output audio, as well as adjust levels. If no levels need to be adjust, skip these steps.

1. Select **Audio** from the top menu.
2. Adjust the Audio options as needed.



Output Audio

HDMI / L/R Enable - Unmutes the audio output signal, allowing audio to pass through the outputs.

HDMI / L/R Disable - Mutes the audio output signal of the outputs. No audio will pass when selected.

NOTE: HDMI muting will mute the audio embedded on the HDMI output and L/R muting will mute the audio on the analog audio output.

Output Volume

Volume bar - Adjusts the master volume output of the unit from -80 to 0. Default is 0.

EQ Level

Level Sliders - Use the slider to adjust between level -12 and 15 on each band. Default is 0.

These options can also be adjusted through RS-232 or IP commands using the API found at https://atlona.com/pdf/AT-OME-SR21_API.pdf.

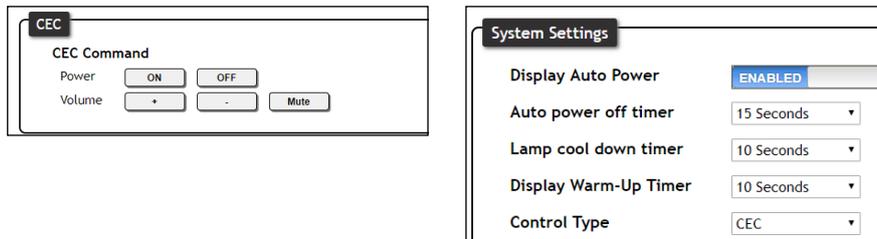
Control

The SR21 has the ability to control the display with CEC, RS-232, and TCP/IP and a secondary device by relay. Each can be triggered through the webGUI buttons or RS-232 and IP commands.

CEC

By Default, CEC will be set as the control type.

1. Select **Display** from the top menu.
2. Enable Display Auto Power. Display Auto Power is disabled by default.
3. Set the Auto power off parameters. Defaults are set to turn the display off after 15 seconds of signal loss and to wait 10 seconds before any more commands are sent to the display. The display will auto turn on as soon as a signal is received and all timers have expired.
4. Power on & off and Volume +, -, & Mute can be triggered/tested through the webGUI by pressing the corresponding buttons.
5. *Optional* CEC commands can also be triggered by an RS-232 or TCP/IP command being sent to the unit. View the AT-OME-SR21 API found at https://atlon.com/pdf/AT-OME-SR21_API.pdf.

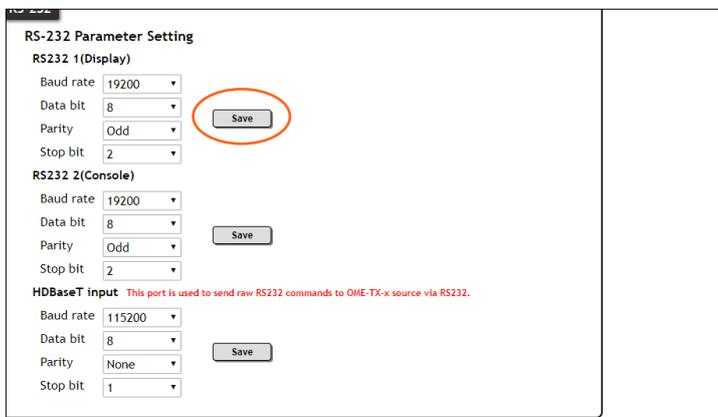


RS-232

The SR21 will have RS-232 zone control parameters automatically set to 9600 on RS-232 1, 115200 on RS-232 2, and 115200 on HDBaseT Input. If using RS-232 control, ensure these parameters match the controlled device.

1. Select **RS-232** from the top menu.
2. Select the Baud rate, Data bit, Parity, and Stop bit from the drop down menus to match the device.
3. Press the **Save** button.

NOTE: RS-232 can be used for three different control scenarios: display control using the SR21, display control using a control system, and source control. Connection and commands can be found in the within step 7a of the **Connection** section.



RS-232 1(Display) - This will adjust the settings for port 1 on the SR21 and should be set to match the display's parameters.

RS-232 2(Console) - This will adjust the settings for port 2 on the SR21 and should be set to match the local PC or control system that will be sending command to the SR21.

HDBaseT input - This will adjust the settings for the commands sent to the source or from a control system through the OME-EX-TX's RS-232 port and should be set to match the controlled input device or control system.

4. Select **Display** from the top menu.
5. Set the Auto power off parameters. Defaults is set to turn the display off after 15 seconds of signal loss and to wait 10 seconds before any more commands are sent to the display. The display will auto turn on as soon as a signal is received and all timers have expired.
6. Select **RS-232** from the Control Type drop down menu. New options will appear below the System Settings.

System Settings

Display Auto Power ENABLED

Auto power off timer 15 Seconds

Lamp cool down timer 10 Seconds

Display Warm-Up Timer 10 Seconds

Control Type CEC

Control Type

CEC

RS-232

IP

CEC

RS232/IP commands

Manufacturer Generic

Products Generic

Model Generic

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

Repeat Command

Status DISABLED

Times 2

ON PW 1 Send

OFF PW 0 Send

Volume+ VOL+ Send

Volume- VOL- Send

Mute MUTE Send

Mute On MUTE ON Send

Mute Off MUTE OFF Send

Save Revert

7. The unit has commands built in for a large variety of displays. Select the manufacturer, product type, and model from the drop down menus for the display. If the current display is not found within the drop down menus, use generic and manually adjust the command fields.

8. Press the **Save** button.

RS232/IP commands

Manufacturer Generic

Products Generic

Model Generic

Repeat Command

Status DISABLED

Times 2

ON PW 1 Send

OFF PW 0 Send

Volume+ VOL+ Send

Volume- VOL- Send

Mute MUTE Send

Mute On MUTE ON Send

Mute Off MUTE OFF Send

RS232/IP commands

Manufacturer Panasonic

Products Panasonic Projector

Model Panasonic Projector

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



NOTE: These control commands can also be triggered by an RS-232 or TCP/IP command being sent to the unit. View the AT-OME-SR21 API found at https://atlon.com/pdf/AT-OME-SR21_API.pdf.

The commands in the webGUI can be used to control or test the selected commands by pressing the Send button.

RS232/IP commands

Manufacturer Generic

Products Generic

Model Generic

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

Repeat Command

Status DISABLED

Times 2

ON PW 1 Send

OFF PW 0 Send

Volume+ VOL+ Send

Volume- VOL- Send

Mute MUTE Send

Mute On MUTE ON Send

Mute Off MUTE OFF Send

Save Revert

TCP/IP

The SR21 has the ability to control the display by TCP/IP commands. These commands can be triggered/tested from the webGUI.

1. Select **Display** from the top menu.
2. Set the Auto power off parameters. Defaults is set to turn the display off after 15 seconds of signal loss and to wait 10 seconds before any more commands are sent to the display. The display will auto turn on as soon as a signal is received and all timers have expired.
3. Select **IP** from the Control Type drop down menu. New options will appear below the System Settings.

System Settings

Display Auto Power ENABLED

Auto power off timer 15 Seconds

Lamp cool down timer 10 Seconds

Display Warm-Up Timer 10 Seconds

Control Type CEC

Control Type

CEC

RS-232

IP

CEC

TCP/IP Settings of Controlled Device

IP Mode Non-Login

IP Address 10.20.50.35

Port 23

Username admin

Password •••••

4. Set the IP information and mode to match the display's current settings. IP Mode will be default Non-Login, but can be set to login mode which will require the Username and Password to be entered in the corresponding fields to match the display's parameters. IP address and Port will be needed to send IP commands to the display.
5. Press the **Save** button.
7. The unit has commands built in for a large variety of displays. Select the manufacturer, product type, and model from the drop down menus for the display. If the current display is not found within the drop down menus, use generic and manually adjust the command fields.
8. Press the **Save** button.

RS232/IP commands

Manufacturer Generic

Products Generic

Model Acer

Repeat Command Epson

Status Hitachi

Times Infocus

ON Lg

OFF Nec

Volume+ Optoma

Volume- Panasonic

Mute Pjlink

Mute On Planar

Mute Off Qomo

RS232/IP commands

Manufacturer Panasonic

Products Panasonic Projector

Model Panasonic Projector

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

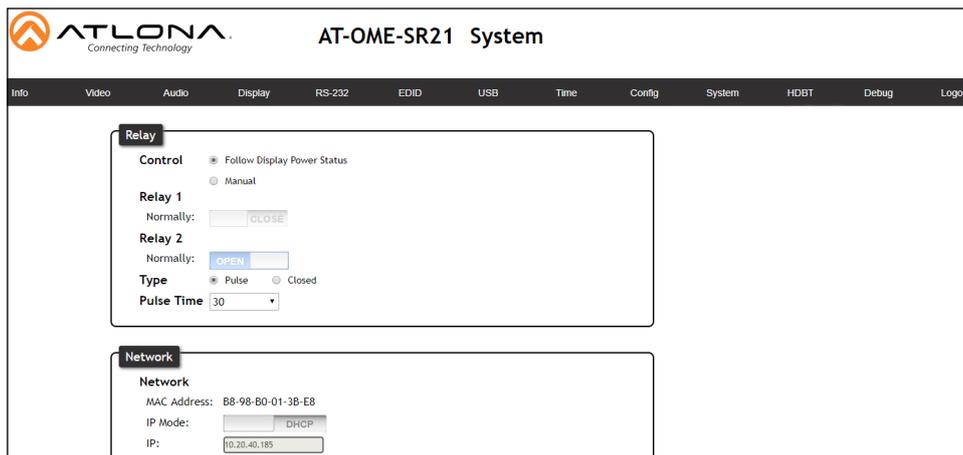


NOTE: These control commands can also be triggered by an RS-232 or TCP/IP command being sent to the unit. View the AT-OME-SR21 API found at https://atlon.com/pdf/AT-OME-SR21_API.pdf.

Relay

The SR21 has the ability to control a secondary device using a relay. By default the relay will change states based on the display's power status. To change this setting, go to the System page.

1. Select **System** from the top menu.
2. Select between Follow Display Power Status (default) and Manual.



Manual

When the relay is set to manual control, it can be controlled through the webGUI or by sending RS-232/IP commands from a control system.

- WebGUI adjustments can be done directly from the System page.
 - Relay - When the relay is set to manual, select the sliders to open and close the com ports.
 - Type - Switch between relay pulse and closed relay type.
 - Pulse Time - Sets the time between each pulse in seconds. Range is 1 to 30. Default is 1.

NOTE: When the unit is set to pulse, the relay will latch for the designated pulse time before opening again. The relay that opens and closes will be determined by the power state.

Power on

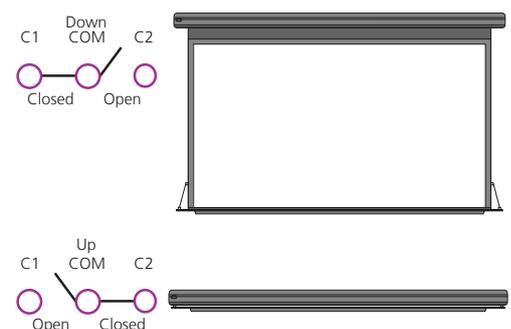
- Relay 1: Latch will close for designated pulse time then open.
- Relay 2: Relay will remain open.

Power Off

- Relay 1: Relay will remain open.
- Relay 2: Latch will close for designated pulse time then open.

- Control systems can use the RelayActX Y command to adjust the port status. X = relay port (1 or 2) and Y = port status (open, close, sta).

When using a dual signal relay with an electric projection screen, it allows for two different circuits to be controlled: up and down (pictured to the right).



While the relay is set to follow the display, the relay will close C1 and open C2 when the unit turns on. The relay will also open C1 and close C2 when the display is turned off and signal is no longer being received.

