

# OMEGA™ 4K/UHD Scaler

## for HDBaseT and HDMI



## Version Information

---

Version	Release Date	Notes
1	Sept 2019	Release

## Welcome to Atlona!

---

Thank you for purchasing this Atlona product. We hope you enjoy it and will take a extra few moments to register your new purchase.

Registration only takes a few minutes and protects this product against theft or loss. In addition, you will receive notifications of product updates and firmware. Atlona product registration is voluntary and failure to register will not affect the product warranty.

To register your product, go to <http://www.atlona.com/registration>

## Sales, Marketing, and Customer Support

---

### Main Office

Atlona Incorporated  
70 Daggett Drive  
San Jose, CA 95134  
United States

Office: +1.877.536.3976 (US Toll-free)  
Office: +1.408.962.0515 (US/International)

Sales and Customer Service Hours  
Monday - Friday: 6:00 a.m. - 4:30 p.m. (PST)

<https://atlona.com/>

### International Headquarters

Atlona International AG  
Ringstrasse 15a  
8600 Dübendorf  
Switzerland

Office: +41 43 508 4321

Sales and Customer Service Hours  
Monday - Friday: 09:00 - 17:00 (UTC +1)

## Operating Notes

---



**IMPORTANT:** Visit <https://atlona.com/product/AT-OME-RX21> for the latest firmware updates and User Manual.

# Atlona, Inc. (“Atlona”) Limited Product Warranty

---

## Coverage

Atlona warrants its products will substantially perform to their published specifications and will be free from defects in materials and workmanship under normal use, conditions and service.

Under its Limited Product Warranty, Atlona, at its sole discretion, will either:

- repair or facilitate the repair of defective products within a reasonable period of time, restore products to their proper operating condition and return defective products free of any charge for necessary parts, labor and shipping.

OR

- replace and return, free of charge, any defective products with direct replacement or with similar products deemed by Atlona to perform substantially the same function as the original products.

OR

- refund the pro-rated value based on the remaining term of the warranty period, not to exceed MSRP, in cases where products are beyond repair and/or no direct or substantially similar replacement products exist.

Repair, replacement or refund of Atlona products is the purchaser’s exclusive remedy and Atlona liability does not extend to any other damages, incidental, consequential or otherwise.

This Limited Product Warranty extends to the original end-user purchaser of Atlona products and is non-transferrable to any subsequent purchaser(s) or owner(s) of these products.

## Coverage Periods

Atlona Limited Product Warranty Period begins on the date of purchase by the end-purchaser. The date contained on the end-purchaser’s sales or delivery receipt is the proof purchase date.

### Limited Product Warranty Terms – New Products

- 10 years from proof of purchase date for hardware/electronics products purchased on or after June 1, 2013.
- 3 years from proof of purchase date for hardware/electronics products purchased before June 1, 2013.
- Lifetime Limited Product Warranty for all cable products.
- NOTE: Data cable (USB-C) and Wifi antenna covered by 1 year warranty.

### Limited Product Warranty Terms – Refurbished (B-Stock) Products and Discontinued Products

- 3 years from proof of purchase date for all Refurbished (B-Stock) and Discontinued hardware and electronic products purchased on or after June 1, 2013.

## Remedy

Atlona recommends that end-purchasers contact their authorized Atlona dealer or reseller from whom they purchased their products. Atlona can also be contacted directly. Visit [www.atlona.com](http://www.atlona.com) for Atlona’s contact information and hours of operation. Atlona requires that a dated sales or delivery receipt from an authorized dealer, reseller or end-purchaser is provided before Atlona extends its warranty services. Additionally, a return merchandise authorization (RMA) and/or case number, is required to be obtained from Atlona in advance of returns.

Atlona requires that products returned are properly packed, preferably in the original carton, for shipping. Cartons not bearing a return authorization or case number will be refused. Atlona, at its sole discretion, reserves the right to reject any products received without advanced authorization. Authorizations can be requested by calling 1-877-536-3976 (US toll free) or 1-408- 962-0515 (US/international) or via Atlona’s website at [www.atlona.com](http://www.atlona.com).

## Exclusions

This Limited Product Warranty excludes:

- Damage, deterioration or malfunction caused by any alteration, modification, improper use, neglect, improper packaging or shipping (such claims must be presented to the carrier), lightning, power surges, or other acts of nature.

## Atlona, Inc. (“Atlona”) Limited Product Warranty

---

- Damage, deterioration or malfunction resulting from the installation or removal of this product from any installation, any unauthorized tampering with this product, any repairs attempted by anyone unauthorized by Atlona to make such repairs, or any other cause which does not relate directly to a defect in materials and/or workmanship of this product.
- Equipment enclosures, cables, power supplies, batteries, LCD displays, and any accessories used in conjunction with the product(s).
- Products purchased from unauthorized distributors, dealers, resellers, auction websites and similar unauthorized channels of distribution.

### Disclaimers

This Limited Product Warranty does not imply that the electronic components contained within Atlona’s products will not become obsolete nor does it imply Atlona products or their electronic components will remain compatible with any other current product, technology or any future products or technologies in which Atlona’s products may be used in conjunction with. Atlona, at its sole discretion, reserves the right not to extend its warranty offering in instances arising outside its normal course of business including, but not limited to, damage inflicted to its products from acts of god.

### Limitation on Liability

The maximum liability of Atlona under this limited product warranty shall not exceed the original Atlona MSRP for its products. To the maximum extent permitted by law, Atlona is not responsible for the direct, special, incidental or consequential damages resulting from any breach of warranty or condition, or under any other legal theory. Some countries, districts or states do not allow the exclusion or limitation of relief, special, incidental, consequential or indirect damages, or the limitation of liability to specified amounts, so the above limitations or exclusions may not apply to you.

### Exclusive Remedy

To the maximum extent permitted by law, this limited product warranty and the remedies set forth above are exclusive and in lieu of all other warranties, remedies and conditions, whether oral or written, express or implied. To the maximum extent permitted by law, Atlona specifically disclaims all implied warranties, including, without limitation, warranties of merchantability and fitness for a particular purpose. If Atlona cannot lawfully disclaim or exclude implied warranties under applicable law, then all implied warranties covering its products including warranties of merchantability and fitness for a particular purpose, shall provide to its products under applicable law. If any product to which this limited warranty applies is a “Consumer Product” under the Magnuson-Moss Warranty Act (15 U.S.C.A. §2301, ET SEQ.) or other applicable law, the foregoing disclaimer of implied warranties shall not apply, and all implied warranties on its products, including warranties of merchantability and fitness for the particular purpose, shall apply as provided under applicable law.

### Other Conditions

Atlona’s Limited Product Warranty offering gives legal rights, and other rights may apply and vary from country to country or state to state. This limited warranty is void if (i) the label bearing the serial number of products have been removed or defaced, (ii) products are not purchased from an authorized Atlona dealer or reseller. A comprehensive list of Atlona’s authorized distributors, dealers and resellers can be found at [www.atlona.com](http://www.atlona.com).

## Important Safety Information



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



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

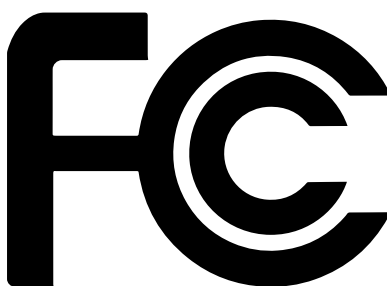


The information bubble is intended to alert the user to helpful or optional operational instructions in the literature accompanying the product.

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



## FCC Statement



FCC Compliance and Advisory Statement: This hardware device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: 1) this device may not cause harmful interference, and 2) this device must accept any interference received including interference that may cause undesired operation. This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a commercial installation.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed or used in accordance with the instructions, may cause harmful interference to radio communications. However there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures: 1) reorient or relocate the receiving antenna; 2) increase the separation between the equipment and the receiver; 3) connect the equipment to an outlet on a circuit different from that to which the receiver is connected; 4) consult the dealer or an experienced radio/TV technician for help. Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. Where shielded interface cables have been provided with the product or specified additional components or accessories elsewhere defined to be used with the installation of the product, they must be used in order to ensure compliance with FCC regulations.

# Table of Contents

---

<b>Introduction</b>	<b>8</b>
<b>Features</b>	<b>8</b>
<b>Package Contents</b>	<b>8</b>
<b>Panel Description</b>	<b>9</b>
<b>Installation</b>	<b>10</b>
Captive Screw Connections	10
Mounting Instructions	11
Connection Instructions	12
IP Modes	13
Connection Diagram	13
<b>WebGUI</b>	<b>14</b>
Video Settings	15
Audio	17
Display	18
RS-232	20
EDID	21
Config	21
System	22
HDBT	24
<b>Appendix</b>	<b>25</b>
Specifications	25

## Introduction

---

The Atlona AT-OME-RX21 is an HDBaseT receiver and 4K/UHD scaler with a local HDMI input. Part of the Omega™ Series of integration products for modern AV communications and collaboration, the OME-RX21 receives HDBaseT for video up to 4K/60 4:2:0, plus embedded audio, control, and Ethernet over distances up to 330 feet (100 meters). The HDMI input supports video up to 4K/60 4:4:4. The OME-RX21 is HDCP 2.2 compliant and features 4K/60 upscaling and downscaling with frame rate conversion. The OME-RX21 is ideal for 4K presentation applications with Omega, HDVS-200, or UHD-EX Series transmitters, as well as Atlona AV presentation switchers with HDBaseT outputs, local HDMI sources, and the Gain™ Series amplifiers.

The OME-RX21 combines the benefits of 4K/UHD scaling, auto-switching for HDBaseT and HDMI inputs, integrated display control, and more. It incorporates many popular integration convenience features, while delivering excellent performance and value for 4K presentations. The OME-RX21 can remotely power an Atlona HDBaseT transmitter through Power over Ethernet (PoE). For additional integration convenience, the OME-RX21 features audio de-embedding, integrated two-port Ethernet switch, contact closure ports for controlling a motorized screen or display lift, internal video test patterns for setup and troubleshooting, and remote management with AMS (Atlona Management System).

## Features

---

- 4K scaler for up and down scaling
- Dual LAN ports with integrated network switch to pass Ethernet and control to both unit and display
- Supports resolutions up to 4K/UHD 60Hz @ chroma sub-sampling 4:4:4, 4K HDR, Dolby Vision, and HLG
- HDCP 2.2 compliant
- Multiple control options such as RS-232, TCP/IP, webGUI, CEC, and front panel
- Multi-channel audio pass through up to Dolby Digital Plus™, Dolby® TrueHD, DTS-HD Master Audio™, and Dolby Atmos®
- 2Ch audio de-embedding using the analog audio port

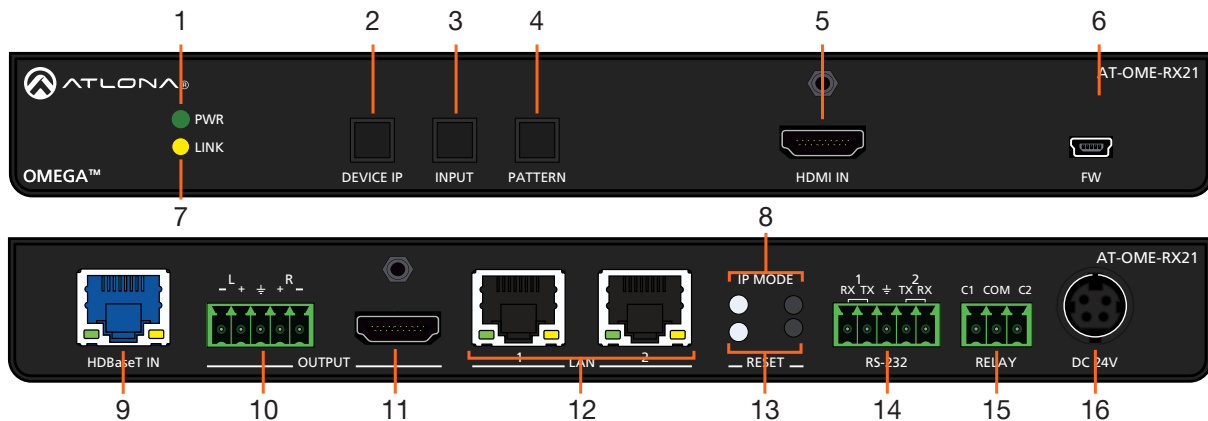
## Package Contents

---

- 1 x AT-OME-RX21
- 2 x Captive screw connector, 5-pin
- 1 x Captive screw connector, 3-pin
- 4 x Mounting screws
- 1 x Wall/table mounting brackets
- 1 x 24V DC power supply
- 1 x IEC power cord
- 1 x Installation Guide



# Panel Description



- |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>1 PWR LED</b><br/>Illuminates green when receiving power.</p> <p><b>2 DEVICE IP button</b><br/>Press to display the unit IP in the top left corner of the connected display.</p> <p><b>3 INPUT button</b><br/>Use to switch between the HDMI and HDBaseT inputs. If the device is currently showing a pattern for source, pressing the input button will bring up the last selected input.</p> <p><b>4 PATTERN button</b><br/>Use to send one of the three source patterns built into the unit. Press to cycle through all three patterns.</p> <p><b>5 HDMI IN</b><br/>Connect an HDMI cable from an HDMI source to this port.</p> <p><b>6 FW</b><br/>Connect to a computer using a mini USB to USB A cable (not included).</p> <p><b>7 LINK LED</b><br/>Illuminates yellow when receiving signal from the HDBaseT input port.</p> <p><b>8 IP MODE button and LED</b><br/>Press and hold the button for 5 seconds until the LED blinks to switch the IP mode between DHCP and Static IP modes. The LED will blink 2 times for DHCP and 3 times for static IP.</p> | <p><b>9 HDBaseT IN</b><br/>Connect a compatible HDBaseT transmitter to this port.</p> <p><b>10 AUDIO OUT</b><br/>Connect to an audio DSP, amplifier, or other audio distribution devices.</p> <p><b>11 HDMI OUT</b><br/>Connect an HDMI cable from here to an HDMI display.</p> <p><b>12 LAN</b><br/>Connect Ethernet cables to these ports for control of the unit and/or to pass Ethernet to a local device.</p> <p><b>13 RESET button and LED</b><br/>Press and hold the button for 5 seconds until the unit resets. The LED will blink as the unit resets to factory default settings.</p> <p><b>14 RS-232</b><br/>Use for device and display control.</p> <p><b>15 RELAY</b><br/>Dual low-voltage signal relay to control devices such as electric screens and display lifts.</p> <p><b>16 DC 24V</b><br/>Connect the included DC 24V power supply to this port.</p> |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

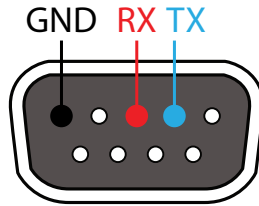
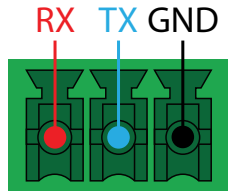
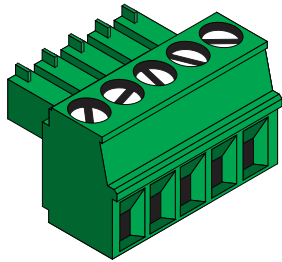
# Installation

## Captive Screw Connections

### RS-232

A 5-pin captive screw connector has been included for RS-232.

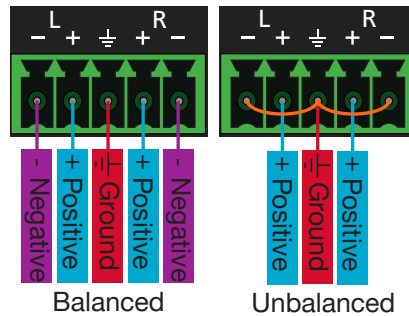
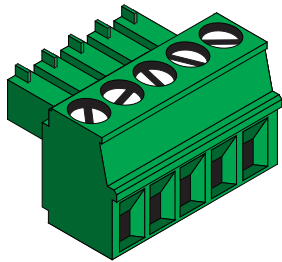
**NOTE:** Port 1 will control the display and port 2 is for unit control.



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.

### Audio

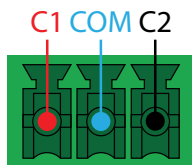
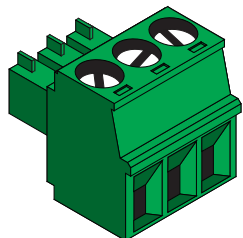
Connect to an audio DSP, amplifier, or other audio distribution devices.



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

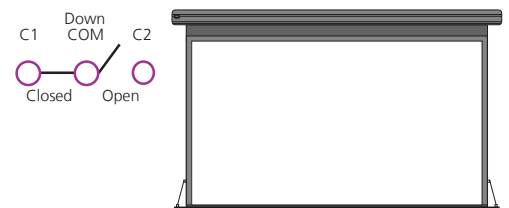
### Relay

A dual low-voltage signal relay is built into the OME-RX21 for control of devices such as electric screens and display lifts. A 3-pin captive screw connector has been included for connection.



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

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).



The relay will default to follow the display. When the unit turns on the relay will close C1 and open C2. When the display is turned off and signal is no longer being received C1 will open and C2 will close.

## Mounting Instructions

The AT-OME-RX21 includes two mounting brackets and four mounting screws, which can be used to attach the units 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 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.



## Cable Recommendation Guidelines

Refer to the tables below for recommended cabling when using Altona products with HDBaseT. The green bars indicate the signal quality when using each type of cable. Higher-quality signals are represented by more bars.

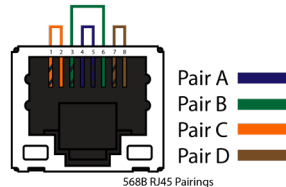
Core	Shielding	CAT5e	CAT6	CAT6a	CAT7
Solid	UTP (unshielded)	■	■■■	■■■■	N/A
	STP (shielded)	■■■	■■■■	■■■■■	■■■■■
Performance Rating (MHz)		350	500	600	800



**IMPORTANT:** Stranded or patch cables are not recommended due to performance issues.

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)

Use of a TIA/EIA 568B termination is recommended for optimal performance.



## Connection Instructions

1. Connect an HDMI source to the HDMI IN port.
2. Connect a compatible HDBaseT transmitter (e.g. AT-OME-ST31 or AT-OME-EX-TX) to the HDBaseT input port using a category cable.
3. Connect an HDMI cable from the output port to an HDMI display.
4. \*Optional\* Connect the 2CH analog AUDIO OUT ports to a DSP, or audio amplifier.
5. \*Optional\* Connect to the 5-pin captive screw RS-232 port to control the display (port 1) and the unit (port 2).
6. \*Optional\* Connect a network switch to one of the LAN ports, for IP control, system configuration, or Ethernet routing.
7. \*Optional\* Connect a second Ethernet cable from the second LAN port to the local display to pass through Ethernet.
8. \*Optional\* To control devices such as electric screens and display lifts, connect the device to the 3-pin captive screw relay port.
9. Connect the included DC 24V power supply to the power port.
10. Connect the included IEC power cord from the power supply to a compatible power outlet.

## IP Modes

### DHCP

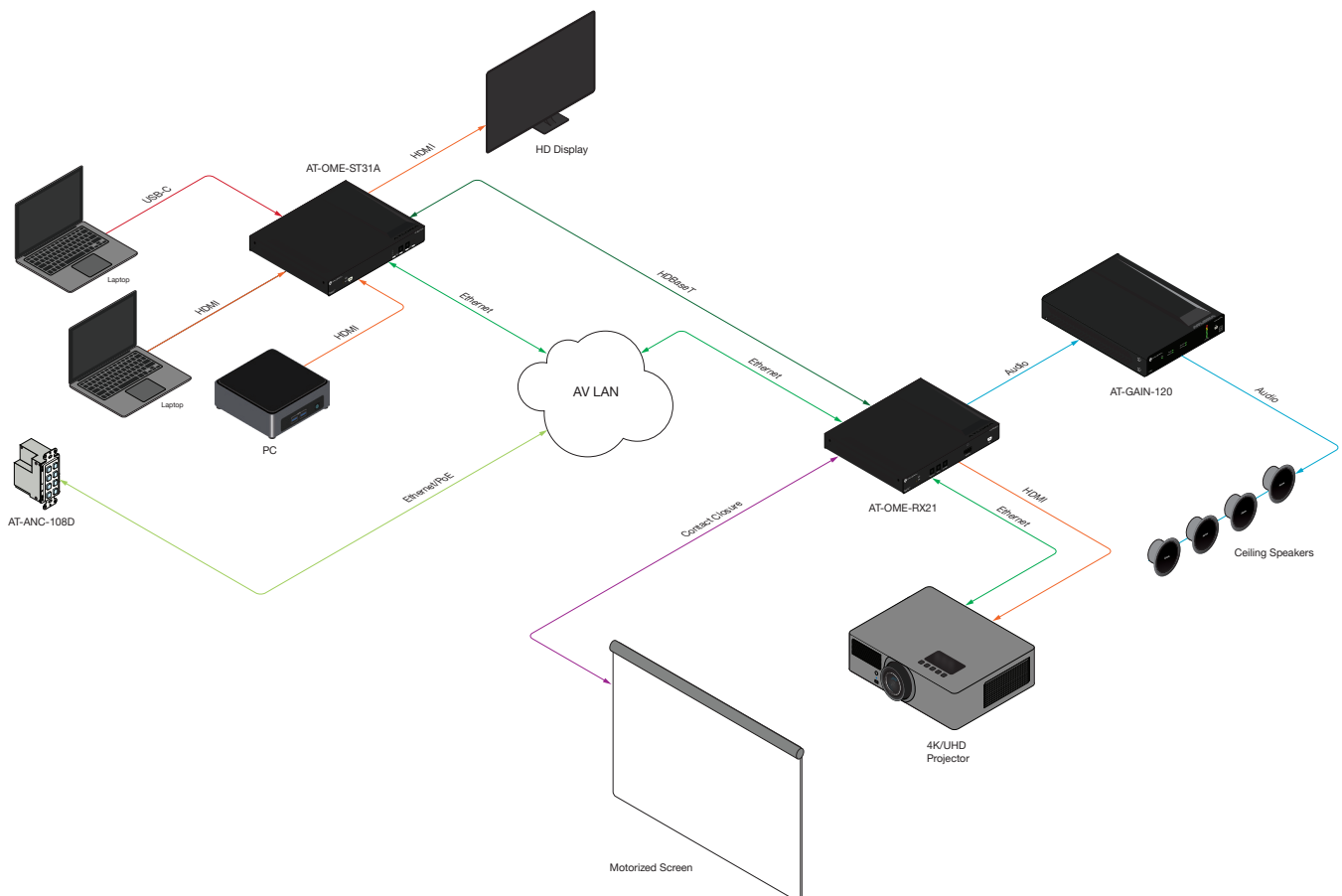
By default, the AT-OME-RX21 is set to DHCP mode. In this mode, when the AT-OME-RX21 is connected to the Local Area Network (LAN), it will automatically be assigned an IP address by the DHCP server (if available). Press the DEVICE IP button to show the IP address in the top left corner of the display.

### Static

If no DHCP server is available, or a static IP is required, the OME-RX21 can be set to static IP mode using the IP mode button.

- Press and hold the **IP MODE** button for 5 seconds to switch to static IP mode, the LED will blink 2 times when it goes into Static IP mode. In this mode, the AT-OME-RX21 will be set to the following:  
 IP address: 192.168.1.254  
 Subnet mask: 255.255.0.0  
 Gateway: 192.168.1.1
- To switch back to DHCP, press and hold the IP mode button for 5 seconds. The LED will blink 4 times when successfully put into DHCP mode.

## Connection Diagram

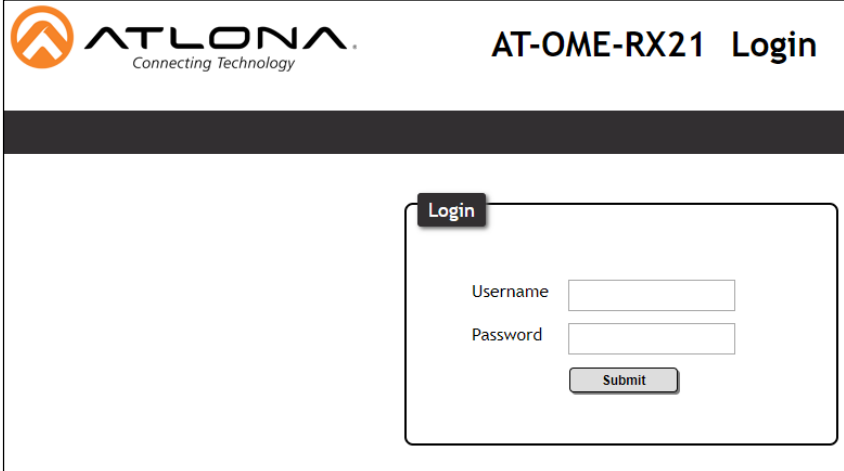


## WebGUI

The AT-OME-RX21 includes a built-in webGUI, which allows easy remote management and control of all features. Follow the instructions below to access the webGUI.

1. Make sure that an Ethernet cable is connected between the **LAN** port on the AT-OME-RX21 and the network.
2. Press the **DEVICE IP** button on the front panel to display the IP address of the unit in the top left corner of the connected display.
3. Launch a web browser and enter the IP address in the address bar.
4. The AT-OME-RX21 **Login** page will be displayed.
5. Enter the following information on the **Login** page.

Login: admin  
Password: Atlona



ATLONA  
Connecting Technology

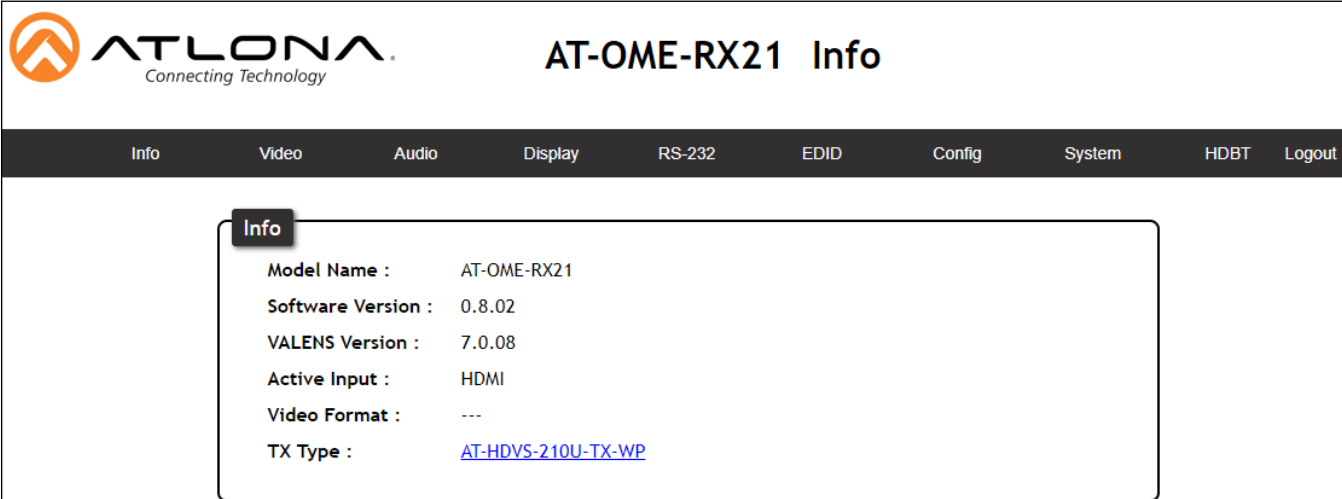
**AT-OME-RX21 Login**

**Login**

Username

Password

6. Click the Login button. The info page will display, giving all the general information of the AT-OME-RX21.



ATLONA  
Connecting Technology

**AT-OME-RX21 Info**

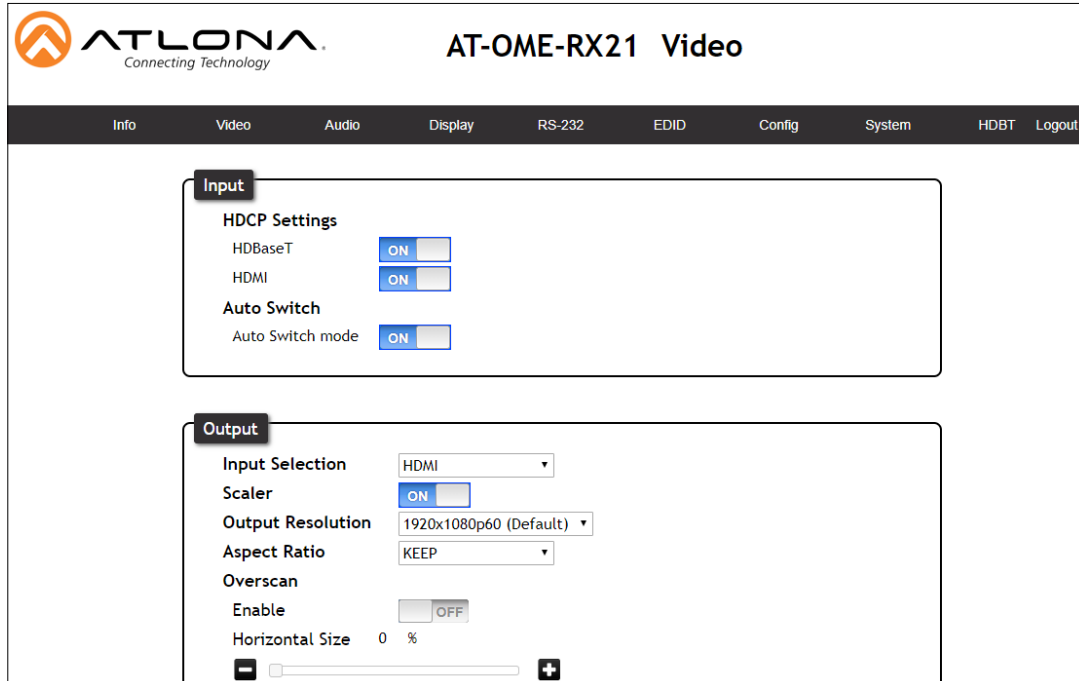
Info Video Audio Display RS-232 EDID Config System HDBT Logout

**Info**

Model Name :	AT-OME-RX21
Software Version :	0.8.02
VALENS Version :	7.0.08
Active Input :	HDMI
Video Format :	---
TX Type :	<a href="#">AT-HDVS-210U-TX-WP</a>

## Video Settings

Select Video from the top navigation to adjust routing and video settings.



### Prefer Timing

HDBaseT/HDMI - Select the source resolution to be passed. Options are: Native, 1280x800, 1920x1080, 1024x768, 1280x720, 1920x1200, 1366x768, 800x600, 1600x900, 2560x1440, 3840x2160, and 1440x900. Native will allow the EDID handshake to determine the correct resolution for the source.

### HDCP Settings

On - Sets the HDCP of the HDMI or HDBaseT ports to auto, allowing HDCP to switch between compliant and non-compliant according to the source and display HDCP handshake status.

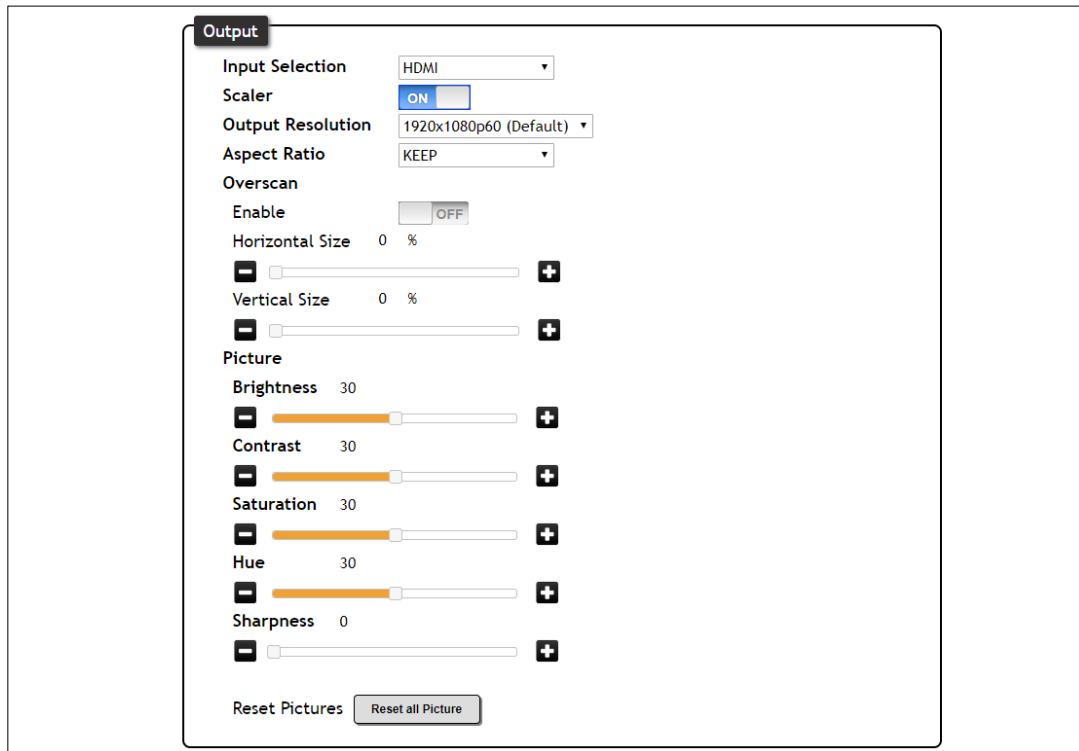
Off - Sets the HDBaseT or HDMI port to HDCP non-compliant. No HDCP compliant source signals will pass in this mode.



**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).

### Auto Switch

Auto Switch mode - Set switching to auto (on) to have the source change when detecting new signal or the currently selected source is no longer sending signal.



## Output

**Input Selection** - Use the drop down menu to switch between A/V Mute (no signal), HDMI, HDBaseT, internal pattern 1, internal pattern 2, and internal pattern 3 source signals.

**Scaler** - When enabled, will display extra options. This is for the HDMI output only.

**Output Resolution** - Select the output resolution the source signal will be scaled to from the drop down menu.

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



**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.

**Aspect Ratio** - Select between Keep (which will keep the aspect ration of the source device) and Fill (which will adjust the picture to fill the display).

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

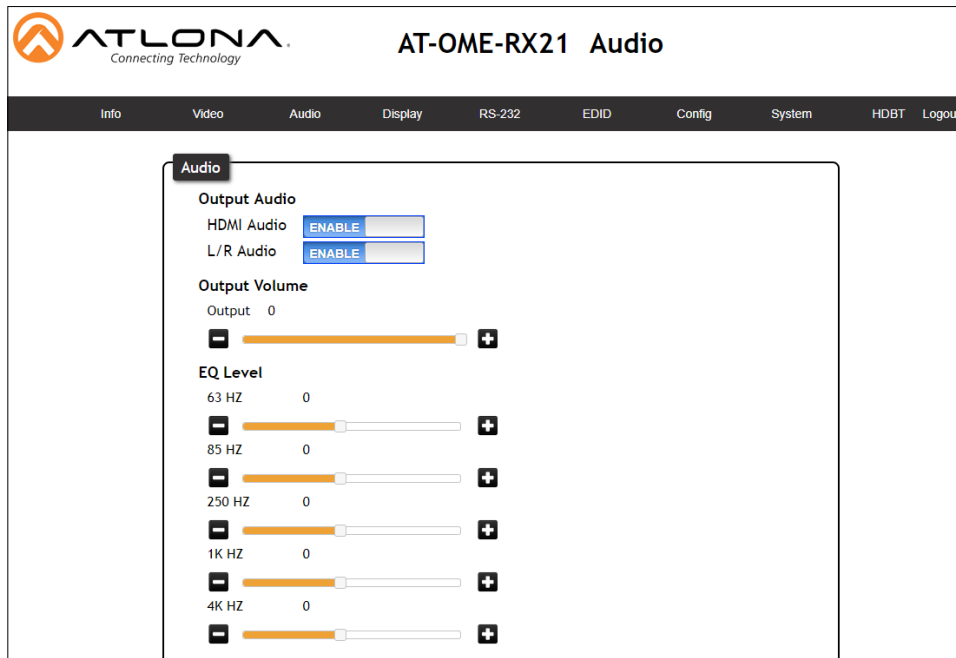
**Brightness, Contrast, Saturation, Sharpness, Hue** - Adjust the output's brightness, contrast, saturation, sharpness, and hue manually. Default is 0% and can be adjusted from 0% to 60%.

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



## Audio

Select Audio from the top navigation to adjust volume, mute status, and EQ levels.



### 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 ports. 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

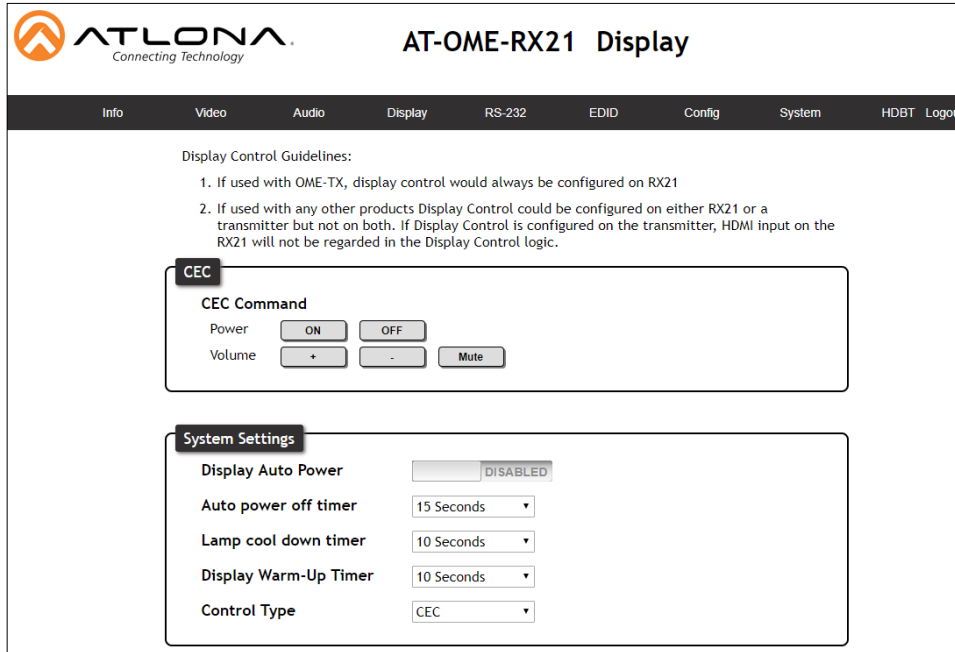
Volume bar - Adjusts the master volume output of the unit from -80 to 0. Default is 0.

### EQ Level

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

## Display

Select Display from the top navigation to adjust display control settings.



**ATLONA**  
Connecting Technology

### AT-OME-RX21 Display

Info Video Audio Display RS-232 EDID Config System HDBT Logout

Display Control Guidelines:

1. If used with OME-TX, display control would always be configured on RX21
2. If used with any other products Display Control could be configured on either RX21 or a transmitter but not on both. If Display Control is configured on the transmitter, HDMI input on the RX21 will not be regarded in the Display Control logic.

**CEC**

**CEC Command**

Power

Volume

**System Settings**

Display Auto Power

Auto power off timer 15 Seconds ▼

Lamp cool down timer 10 Seconds ▼

Display Warm-Up Timer 10 Seconds ▼

Control Type CEC ▼

### CEC

Command: Power - Press to send the CEC power on or off command out through the HDMI port.

Command: Volume - Press to send the CEC Volume up, down, or mute commands through the HDMI port.

### System Settings

Display Auto Power - Sets the unit to send the display power on/off command to the output.

Auto Power Off Timer - Sets the unit to send the display power off command to the output when signal is no longer received for the set auto power off time.

Lamp cool down timer - Sets the time between when the display is turned off and when the next command can be sent.

Display Warm-Up Timer - Sets the amount of time between when the display is turned on to when the unit sends any commands.

Control Type - Selects which command type is used to send commands and what type of control signal is sent when the display button is pressed. Options are CEC, TCP/IP or RS-232.

**TCP/IP Settings of Controlled Device**

**IP Mode**

**IP Address**

**Port**

**Username**

**Password**

### TCP/IP Settings of Controlled Device (only available when IP is selected)

**IP Mode** - Toggle telnet login mode between Non-Login and Login. If set to Login, a username and password will be required to control the controlled device via TCP/IP.

**IP Address** - Sets to the IP of the controlled device/display.

**Telnet Port** - Set the telnet port of the controlled device for control. Default is 23.

**Username & Password** - Sets the username and password that is required when login mode is enabled.

**RS232/IP commands**

**Manufacturer**

**Products**

**Model**

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

**Repeat Command**

Status  DISABLED

Times

**ON**

**OFF**

**Volume+**

**Volume-**

**Mute**

**Mute On**

**Mute Off**

**RS232/IP commands**

**Manufacturer**

**Products**

**Model**

**Repeat Command**

Status  DISABLED

Times

**ON**

**OFF**

**Volume+**

**Volume-**

**Mute**

**Mute On**

**Mute Off**

**RS232/IP commands**

**Manufacturer**

**Products**

**Model**

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

### RS-232 / IP Commands

**Manufacturer, Products, Models** - Select the make and model of the display for control. Commands have been programmed into the unit for a wide range of products. If the current display is not found within the database, use generic and manually adjust the command fields.

**Repeat Command** - Enable Status to repeat the commands. Default repeat number is 2 and can be adjusted from 2 to 4 times.

**Commands: On/Off/Volume/Mute** - These fields will automatically be filled with the correct command when selecting a manufacturer and product from the drop down menus. If manually entering the commands, type them into the fields next to the command name.

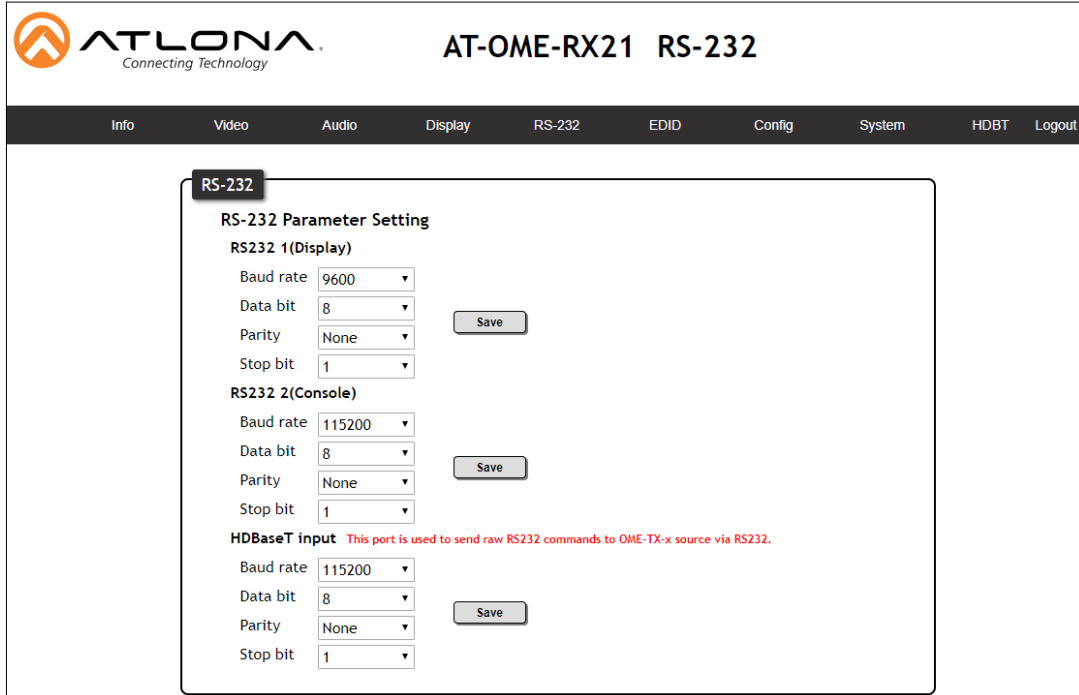
**Send** - Use this button to send the command to the display, this can be used while manually typing the commands to ensure the commands are correct.

**Save** - Save the commands to the webGUI. Manufacturer, products, and Model will revert to Generic but the commands will be saved from the previously selected and saved Manufacturer, products, and model selection.

**Revert** - Sets the commands back to the previously saved settings.

## RS-232

Select RS-232 from the top navigation to adjust the zone control parameters for the RS-232 port.



The screenshot shows the AT-OME-RX21 RS-232 webGUI interface. The top navigation bar includes: Info, Video, Audio, Display, RS-232, EDID, Config, System, HDBT, Logout. The main content area is titled "RS-232" and "RS-232 Parameter Setting". It contains three sections:

- RS232 1(Display)**: Baud rate (9600), Data bit (8), Parity (None), Stop bit (1). A "Save" button is present.
- RS232 2(Console)**: Baud rate (115200), Data bit (8), Parity (None), Stop bit (1). A "Save" button is present.
- HDBaseT input**: Baud rate (115200), Data bit (8), Parity (None), Stop bit (1). A "Save" button is present. A red note below the section reads: "This port is used to send raw RS232 commands to OME-TX-x source via RS232."

### RS-232 Parameter Setting

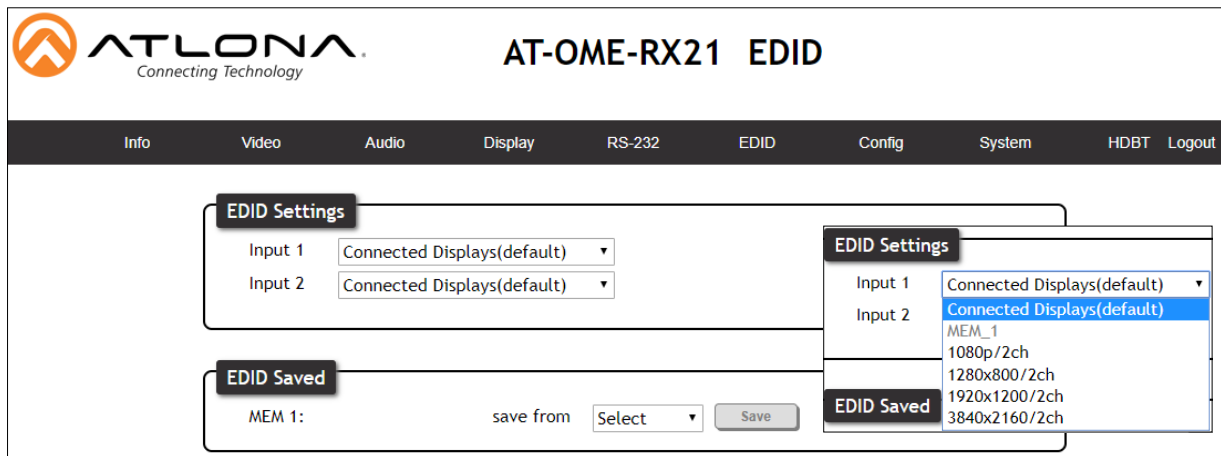
RX RS232 1 - Select the baud rate, data bit, parity, and stop bit to match the RX21's parameters. Defaults are 9600, 8, None, and 1.

RX RS232 2 - Select the baud rate, data bit, parity, and stop bit to match the display's parameters. Defaults are 115200, 8, None, and 1.

HDBaseT - Select the baud rate, data bit, parity, and stop bit to match the transmitter's parameters. Defaults are 115200, 8, None, and 1.

## EDID

Select EDID from the top navigation to save/load EDIDs.



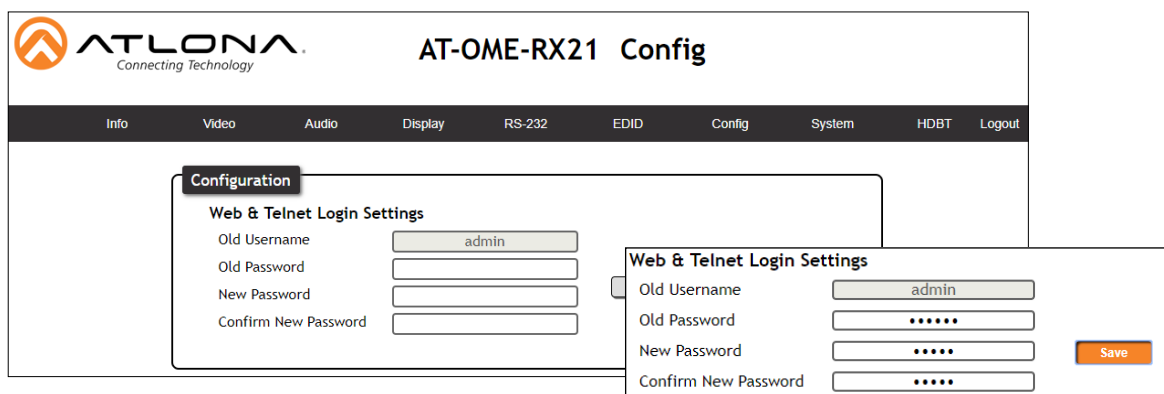
### EDID

EDID Settings - Use the drop down menu to select from default (highest common resolution between source and display), 4 internal EDIDs, and 1 previously saved EDID.

EDID Saved - The ID field will display the memory # and currently saved EDID name, select output 1 from the drop down menu. Once output 1 is selected, press the save button to make it available in the EDID settings drop down menus.

## Config

Select Config from the top navigation to update the admin password.



### Users

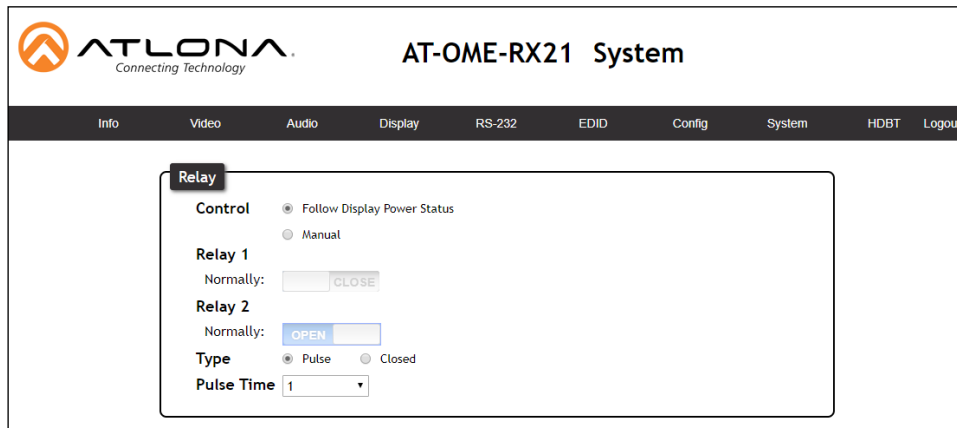
Admin Password - Update the admin password for the switcher. Only the admin password may be changed, the username will remain admin.

**i NOTE:** The passwords cannot contain any special characters. e.g. !@#\$%^&\*?+-,'".

Once the new password has been entered, press the Save button to make the password live. The user will be logged out and must log back in with the new password.

## System

Select System from the top navigation to adjust relay, network, or system options.



### Relay

**Control** - Set the relay to either follow the display's status (on: c1-close c2-open, off: c1-open c2-close) or be manually set using the selectors in the webGUI.

**Relay** - When the relay is set to manual, select the sliders to open and close the com ports.

**Type** - Switch between 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.

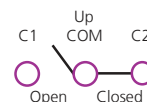
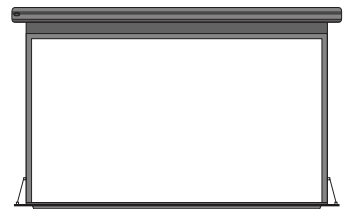
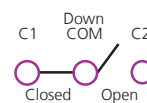
Relay 2: Relay will remain open.

Power Off

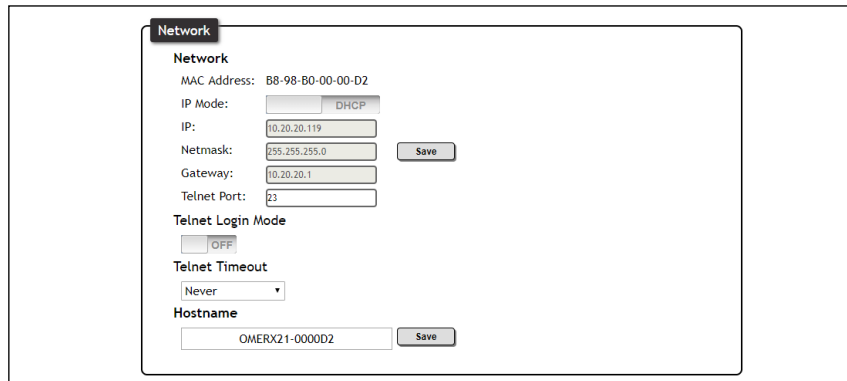
Relay 1: Relay will remain open.

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

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).



The relay will default to follow the display. When the unit turns on the relay will close C1 and open C2. When the display is turned off and signal is no longer being received C1 will open and C2 will close.



## Network

MAC Address - Displays the MAC address of the unit.

IP Mode - Switch between static and DHCP IP modes.

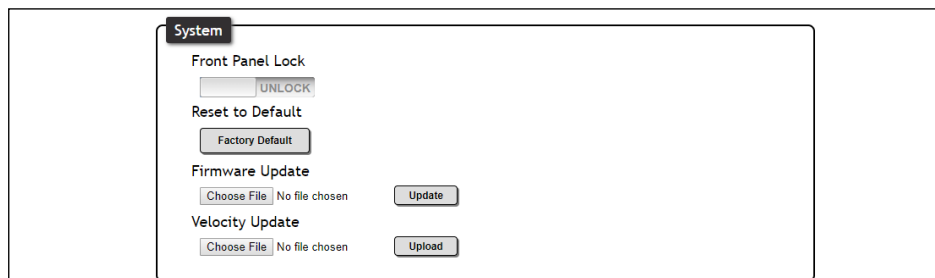
IP, Netmask, Gateway - This will display the unit's current DHCP IP settings. When set to static, fill in the IP address, netmask, and gateway.

Telnet Port - Set the telnet port if needed for control. Default port is 23.

Telnet Login Mode - Toggle telnet login mode on and off. If on, a username and password will be required to control the unit via telnet.

Telnet Timeout - Set the amount of time between actions before the current user is logged out. Default is 10000 seconds.

Hostname - Set the name for the matrix, this will show up in network discovery.



## System

Front Panel Lock - Lock or unlock the front panel buttons.

Reset to Default- Press the Factory Default button to set the unit back to all factory settings, including IP mode.

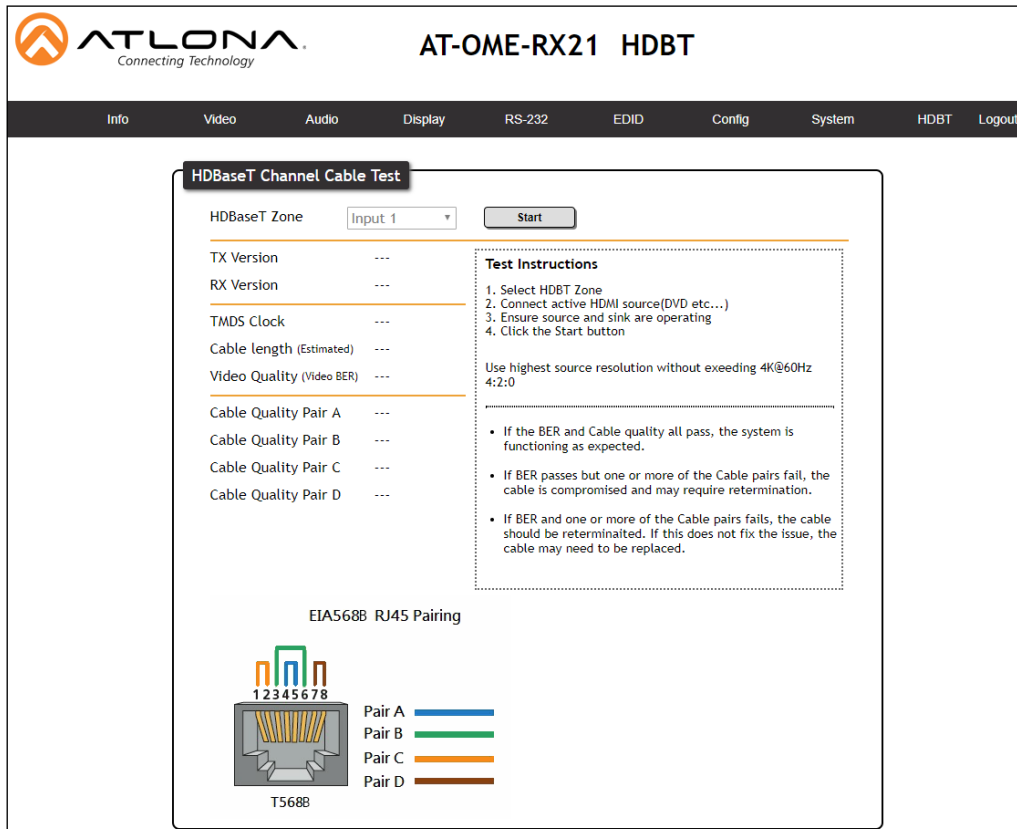
Firmware update - Use the choose file button to search the local PC for the firmware file. Once selected, press the update button to start the firmware update.



**NOTE:** Firmware updates and release notes can be found at <https://atlon.com/product/AT-OME-RX21/>.

## HDBT

Select HDBT to open the HDBaseT cable test page. This page will check extender versions, cable status and length, and Video Quality.



**ATLONA** Connecting Technology **AT-OME-RX21 HDBT**

Info Video Audio Display RS-232 EDID Config System HDBT Logout

**HDBaseT Channel Cable Test**

HDBaseT Zone

TX Version ---  
 RX Version ---  
 TMDS Clock ---  
 Cable length (Estimated) ---  
 Video Quality (Video BER) ---  
 Cable Quality Pair A ---  
 Cable Quality Pair B ---  
 Cable Quality Pair C ---  
 Cable Quality Pair D ---

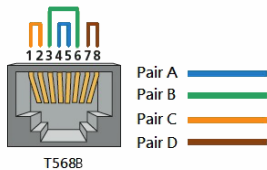
**Test Instructions**

1. Select HDBT Zone
2. Connect active HDMI source(DVD etc....)
3. Ensure source and sink are operating
4. Click the Start button

Use highest source resolution without exceeding 4K@60Hz 4:2:0

- If the BER and Cable quality all pass, the system is functioning as expected.
- If BER passes but one or more of the Cable pairs fail, the cable is compromised and may require retermination.
- If BER and one or more of the Cable pairs fails, the cable should be reterminated. If this does not fix the issue, the cable may need to be replaced.

EIA568B RJ45 Pairing



T568B

Pair A —  
 Pair B —  
 Pair C —  
 Pair D —

### HDBT Test

**HDBaseT Zone** - Use the drop down menu to select which HDBaseT input is being tested. Only active connections can be tested.

**Start/Stop** - Use the start/stop button to run or cancel the HDBaseT signal testing. The webGUI will remain active until the testing stops.

**TX / RX Version** - When the test starts, the chipset version will display. AT-OME-RX21 will be VS2310.

**TMDS Clock** - After the test has been initiated, it will display the TMDS clock frequency in Mhz.

**Cable Length** - An approximate HDBaseT cable length will be displayed here after the test has been started.

**Video Quality (Video BER)** - Will display pass or fail depending on if the cable video signal quality.

**Cable Quality** - Each pair will be tested and return a pass or fail status.

#### Failure:

One or more Pairs - **Reterminate** the cable.

Of BER and any pairs - **Replace** the cable.

Of one or more pairs after retermination - **Replace** the cable.



# Appendix

## Specifications

Video	
HDMI	2.0
HDCP	2.2
UHD/HD/SD	4096x2160@60 <sup>2</sup> /50/30/25/24Hz, 3840x2160@60 <sup>2</sup> /50/30/25/24Hz, 1080p@60/59.94/50/30/29.97/25/24/23.98Hz, 1080i@30/29.97/25Hz, 720p@60/59.94/50Hz, 576p@50Hz, 576i@25Hz, 480p@60/59.96Hz, 480i@30Hz
VESA	2560x1600, 2048x1536, 1920x1200, 1680x1050, 1600x1200, 1440x900, 1400x1050, 1280x1024, 1280x800, 1366x768, 1360x768, 1152x864, 1024x768, 800x600, 640x480
Scaler Up/Down	1024x768p60, 1280x720p50, 1280x720p60, 1280x768p60, 1280x800p60, 1360x768p60, 1600x1200p60, 1920x1080p24, 1920x1080p25, 1920x1080p50, 1920x1080p60, 1920x1200p60, 2048x1080p60, 3840x2160p24, 3840x2160p25, 3840x2160p30, 3840x2160p50, 3840x2160p60, 4096x2160p24, 4096x2160p25, 4096x2160p30, 4096x2160p50, 4096x2160p60
Color Space	YUV, RGB
Chroma Subsampling	4:4:4, 4:2:2, 4:2:0
Color Depth	8-bit, 10-bit, 12-bit

Audio	
HDMI Pass-Through Formats	PCM 2.0, LPCM 5.1, LPCM 7.1, Dolby® Digital, Dolby Digital Plus™, Dolby TrueHD, Dolby Atmos®, DTS® Digital Surround™, DTS-HD Master Audio™, and DTS:X®
Bit Rate	24 Mbits/s max
<b>Analog Audio</b>	
Format	Stereo 2-Channel
Balanced Output	+4 dBu nominal gain, +20 dB headroom
Frequency Response	20 Hz to 20 kHz, ± 0.5 dB
Impedance	150 Ω
Stereo channel separation	> 90 dB
THD+N	< 0.03% at 20 Hz to 20 kHz
SNR	> 90 dB at 1 kHz, zero clipping @ 0 dBFS, unweighted
EQ	5 band, 63Hz, 85Hz, 250Hz, 1kHz, 4kHz
Sample Rate	32 kHz, 44.1 kHz, 48 kHz, 88.2 kHz, 96 kHz, 176.4 kHz, 192 kHz

USB	
Signal	2.0
Type A - Power	2.5 W per port
Maximum Data Rate	120 Mbps

Control	
RS-232	1-way connected display control 2-way device control and monitoring Supported baud rates: 2400, 4800, 9600, 19200, 38400, 57600, 115200
IP	Full duplex 100Mbps
CEC Support	Yes
Relay	Normally open (NO), adjustable Toggle and Pulse modes Electrical rating: 48V@1A

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

Connectors, Controls, and Indicators	
HDMI IN	1 - Type A, 19-pin female
HDBaseT IN	1 - RJ45, female
HDMI OUT	1 - Type A, 19-pin female
AUDIO OUT	1 - 5-pin captive screw, balanced / unbalanced 2-channel
RELAY	1 - 3-pin captive screw
RS-232	2 - 3-pin captive screw (bidirectional)
LAN	2 - RJ45, 100Base-T
DC 24V	1 - 4-pin, mini-DIN locking connector
PWR indicator	1 - LED, green
LINK indicator	1 - LED, yellow
<b>Control Buttons:</b> DEVICE IP, INPUT, PATTERN IP MODE, RESET	3 - momentary, tact-type 2 - momentary, recessed
<b>Function Indicators:</b> IP MODE, RESET	2 - LED, green

Temperature	Fahrenheit	Celsius
Operating	32 to 122	0 to 50
Storage	-4 to 140	-20 to 60
Humidity (RH)	20% to 60%, non-condensing	

Power	
Consumption	17.6 W (wattage may vary by up to 5W when powering external USB devices)
Supply	Input: 100 - 240 V AC, 50/60 Hz Output: 24 V / 2.7A DC

Dimensions	Inches	Millimeters
H x W x D	1.02 x 8.62 x 5.98	26 x 219 x 152

Weight	Pounds	Kilograms
Device	1.96	0.89

Certification	
Device	CE, FCC, UL

