

OmniStream[™] R-Type Dual-Channel Networked AV Encoder





Version Information

Version	Release Date	Notes
11	Jan 2024	Updated warranty information



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Operating Notes



IMPORTANT: Visit http://www.atlona.com/product/AT-OMNI-512 for the latest firmware updates and User Manual.

Warranty



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

https://atlona.com/warranty/.



Important Safety Information



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



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

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

- 1. Read these instructions.
- 2. Keep these instructions.
- 3. Heed all warnings.
- 4. Follow all instructions.
- 5. Do not use this product near water.
- 6. Clean only with a dry cloth.
- 7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
- 8. Do not install or place this product near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.

- 9. Do not defeat the safety purpose of a polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
- Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the product.
- 11. Only use attachments/accessories specified by Atlona.
- 12. To reduce the risk of electric shock and/or damage to this product, never handle or touch this unit or power cord if your hands are wet or damp. Do not expose this product to rain or moisture.
- 13. Unplug this product during lightning storms or when unused for long periods of time.
- 14. Refer all servicing to qualified service personnel. Servicing is required when the product has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the product, the product has been exposed to rain or moisture, does not operate normally, or has been dropped.



FCC Compliance

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Introduction

The Atlona **AT-OMNI-512** is a networked AV encoder with two independent channels of encoding for two HDMI sources up to 4K/60 4:4:4 and HDR (High Dynamic Range), plus embedded audio and RS-232 or IR control pass-through. **OmniStream** is designed for high performance, flexible distribution of AV over standard, off-the-shelf Gigabit Ethernet switches in commercial audiovisual applications. The OMNI-512 features the advanced VCx[™] codec which delivers 4K/60 4:4:4 video from encode to decode, with artifact-free presentation of computer-generated content and fast-motion video, and ultra-low latency less than one frame. This dual-channel encoder is housed in a half-width rack enclosure with front-to-back air flow, and is ideal for high-density, compact installation in a centralized equipment location.

Features

- Best-in-class AV over IP performance and reliability over Gigabit Ethernet.
- AV encoder for HDMI up to 4K/UHD, plus embedded audio and RS-232 or IR control pass-through.
- Dual-channel AV encoding.
- Supports 4K/60 4:4:4 plus HDR formats.
- Advanced VCx codec.
- High-efficiency coding.
- HDCP compliance.
- Ultra-fast switching between 4K/60 video streams.*
- Integrated Ethernet link testing.
- Thumbnail preview of encoded video streams.
- Simplify integration with plug-and-play network switch compatibility.

- Local or PoE (Power over Ethernet) powering.
- Secure content distribution with AES-128 encryption.
- Supports industry-standard, network security features and protocols.
- AES67-compatible.
- Simultaneous OmniStream and AES67 audio streaming.
- Enhance AV presentations with visual enhancements.
- EDID management.
- Audio processing and pass-through.
- System management.
- Compact enclosure.

* Logo / image display features and 1080i video are not supported.

Package Contents

1 x AT-OMNI-512 1 x 6-pin push-spring connector 2 x Wall/table mounting brackets 4 x Rubber feet



OmniStream 101

OmniStream products are similar in principle to matrix switch endpoints: A/V signals are sent from one point (transmitter) to another point (receiver) over category cable. However, OmniStream stands apart from matrix switchers, in that it is an *IP-based solution*, allowing this data to be sent over a standard IP network. In addition, these endpoints are referred to as *encoders* and *decoders*. Encoders act as "transmitters" and decoders act as "receivers".

DEFINITIONS

Encoder - Compresses source signals before sending them out over a network environment.

Decoder – Receives and decompresses signals from an encoder and sends them to an output device, such as a display or other sink device.

IP Address – A unique numerical label that is assigned to each device connected to a network.

IP Address Assignment

Figure 1.1 below, shows an encoder and a decoder, connected through a network switch. As with all network devices, both the encoder and decoder must have unique IP addresses. OmniStream encoders and decoders are DHCP-enabled, by default. This means that when the encoder/decoder is connected to the network, and a DHCP server is available, the encoder/decoder will automatically be assigned an IP address. If no DHCP server is available, then the unit will use a self-assigned IP address within the range of 169.254.xxx.xxx/16. OmniStream devices can also be assigned a static IP address, if necessary. Static IP addressing will be covered in a later section.







Network Bandwidth and OmniStream Compression

When sending video and audio over a network, the available bandwidth needs to be managed. Gigabit Ethernet switches are very common and can take advantage of installed Category 5e cable. 10-Gigabit Ethernet switches are available, but are more expensive per port and require Category 6A cable or better. The chart below shows uncompressed data rates for common resolutions. These data rates exceed the available bandwidth of Gigabit Ethernet, but using the compression technology in OmniStream, this video can be streamed over cost-effective Gigabit networks.

Resolution	Data Rate*
1920 x 1080p 30 Hz	2.2 Gbps
1920 x 1080p 60 Hz	4.5 Gbps
3840 x 2160p 30 Hz	8.9 Gbps
3840 x 2160p 60 Hz	17.8 Gbps

* Data rate is shown without compression.

OmniStream compresses the source data at the encoder, before it is sent out over the network. This process is known as *encoding*. OmniStream uses VCx and VC-2 compression, which are intermediate compression schemes and offer lower latency and higher video fidelity than an interframe compression scheme, such as H.264 or H.265. Interframe codecs are typically used by cable or internet providers and use very aggressive bit rates (low bandwidth) with high latency (delay), which results in lag. VCx and VC-2 provide both high quality (high bit rates) and very low-latency for a much more desirable viewing experience.

Streams

The term *stream* is used throughout this manual, to describe the different types of signals that are transmitted over a network. For example, if a blu-ray player is connected to an encoder, both video and audio are sent to the encoder over an HDMI cable. The term *video stream* is used to identify the video portion of a signal and *audio stream* identifies the audio portion of the signal.

Sessions

A session is a way of organizing audio and video streams. The session identifies each stream with a unique *multicast IP address* and *UDP port* assignment. This provides an address to determine where the package of audio and video should be sent. <u>Table 1.1</u> illustrates how a session encapsulates a video and audio stream.

NOTE: Sessions are not limited to only video and audio streams. Control data, such as IR and RS-232, as well as AES67 audio, can also be contained within a session. These topics will be covered in a later chapter.

Figure 1.2 - Video and audio streams contained within a session.

Video Stream	Multicast IP Address	UDP Port
Audio Stream	Multicast IP Address	UDP Port

Session



Subscribing to a Stream

To receive information from an encoder, the decoder must *subscribe* to the multicast IP address and UDP port of the stream(s). Note that the decoder does not subscribe to the session, but to the stream(s) within the session. The process of subscribing is similar to changing the channel on a Set-Top Box. For example, in order to view the content on channel 213, the Set-Top Box must be set to channel 213. Similarly, for a decoder to subscribe to an encoder stream, *the multicast IP address and UDP port settings on the decoder must be set to the same values as the encoder to which it is subscribed.* Note that the management IP address of a unit is different than its multicast IP address.

Figure 1.2 - Diagram of a video and audio stream, transmitted over an Ethernet cable, to the subscribing decoder.



Figure 1.3 shows two encoders and a single decoder connected to a network switch. Decoder "C" is subscribed to encoder "A", since the multicast IP addresses and UDP port numbers for both video and audio are set to the same values as encoder "A".

Figure 1.3 - Decoder "C" subscribed to encoder "A".





DEFINITIONS

Stream – Describes the video, audio, or any data that is transmitted from an encoder over the network.

Multicast IP Address – A class-D IP address assigned to a stream.

UDP Port – User Datagram Protocol (UDP) port. Part of the network addressing scheme to send and receive data to the proper destination on a network.

Subscribing – The process of selecting the multicast IP address to "listen to", in order to receive one or more encoder streams at the decoder endpoint.

OmniStream Naming Schema

Each OmniStream model has a different set of inputs and outputs and, depending upon the number of inputs and outputs. The number of supported session will depend upon the encoder model.

Encoders	Description
AT-OMNI-111	One HDMI input
AT-OMNI-111-WP	One Ethernet output
	Supports up to six sessions
AT-OMNI-112	Two HDMI inputs
	Two Ethernet outputs
	Supports up to six sessions
AT-OMNI-512	Two HDMI inputs
	Two Ethernet outputs
	Supports up to four sessions

Decoders	Description	
AT-OMNI-121	One HDMI output	
	One Ethernet input	
AT-OMNI-122	Two HDMI outputs	
	Two Ethernet inputs	

The last three numbers of the OmniStream SKU, describe the model version, model type, and number of inputs/ outputs. The number of Ethernet ports and HDMI ports will be the same.

For example, the numbering scheme on the AT-OMNI-112 is read as follows:

- AT-OMNI-**112**
- **1**= OmniStream Pro ("R-Type" models begin with the number "5").
 - **1** = Indicates that the device is an *encoder* (*decoders* are identified with the number "2").
 - **2** = The number of sources (encoder)/sinks (decoder).



Panel Description



Front



1 PWR

This LED indicator is green when the unit is powered and booted.

2 HDMI 1 / HDMI 2

These LED indicators are green when the link between source and encoder is good.

3 LINK 1 / LINK 2

These LED indicators will be green when the link integrity between the between the encoder and the network switch is good.

4 ID

Press this button to send a broadcast message to any network devices that are listening. This button is also used to set the encoder to factory-default settings. Refer to ID Button (page 17) for more information.



NOTE: Some older hardware revisions do not have an **ID** button.

5 Reboot button

Press this button, using a small, pointed object to reboot the unit.

6 HDMI IN 1 / HDMI IN 2

Connect HDMI cables from these ports to a UHD/HD source.

7 ETHERNET 1 / ETHERNET 2

Connect Ethernet cables from these ports to the Local Area Network (LAN).

8 RS-232 / IR

Connect the included 6-pin push-spring block to connect an automation system and an IR emitter or extender. RS-232 Connections (page 13) and IR Connections (page 14) for more information.

9 DC 48V

Connect the optional 48V DC power supply to this receptacle. This power supply is available, separately, and can be purchased through Atlona.



Installation

RS-232 Connections

The AT-OMNI-512 provides RS-232 over IP which allows communication between an automation system and an RS-232 device. This step is optional. Either the top three or bottom three set of terminals can be used for RS-232.

- 1. Use wire strippers to remove a portion of the cable jacket.
- 2. Remove at least 3/16" (5 mm) from the insulation of the RX, TX, and GND wires.
- Insert the TX, RX, and GND wires into correct terminal on the included push-spring connector. If using nontinned stranded wire, press the orange tab, above the terminal, while inserting the exposed wire. Repeat this step for the TX, RX, and GND connections.





NOTE: Typical DB9 connectors use pin 2 for TX, pin 3 for RX, and pin 5 for ground. On some devices, pins 2 and 3 are reversed.



IR Connections

The same port that provides RS-232 connections also supports bidirectional IR pass-through, allowing a device to be controlled from either the headend or the decoder endpoint. This step is optional. Either the top three or bottom three set of terminals can be used for IR. Only the **RS-232 2** port (bottom set of connectors) supports both RS-232 and IR. Therefore, this port must be used for IR connections.



IR extender configuration





Connection Instructions

 Connect an Ethernet cable from the ETHERNET 1 and ETHERNET 2 ports on the encoder to a PoE-capable switch on the Local Area Network (LAN). Note that if a PoE-capable switch is not available, the 48V DC power supply (sold separately) must be connected to the encoder.



IMPORTANT: If a PoE-capable switch is not available, then the 48V DC power supply (sold separately) must be connected to the encoder.

- 2. Connect an HDMI cable from each source to the **HDMI** ports on the encoder.
- RS-232 (optional) Refer to RS-232 Connections (page 13) for wiring information.
 - Connect the RS-232 controller/automation system to the RS-232 port on the encoder.
 - Connect the RS-232 device to the **RS-232** port on the decoder.

4. IR (optional)

Refer to IR Connections (page 14) for wiring information.

• IR emitter

Connect the IR emitter to the **TX** and **GND** pins of the **RS-232 2** port. The IR emitter must be placed no more than one inch from the IR sensor on the device, in order to function properly.

IR extender

Connect the IR extender from the **RX** and **GND** pins of the **RS-232 2** port to the associated pins on the control system.

5. Once power is applied, the **PWR** indicator, on the front panel, will turn red, then amber, then green.





Connection Diagram





Getting Started

Rebooting OmniStream

To reboot the OmniStream encoder, press and release the recessed button, on the far-right side of the unit, using a small, pointed object. Rebooting the encoder does not reset the encoder to factory-default settings.

				******	R-Type
PWR	HDMI 1 2	LINK 1 2	ID		
OmniStream™				******	

ID Button

The **ID** button serves two functions:

- 1. Sends a broadcast message over the network to any devices that may be listening.
- 2. Resets the encoder to factory-default settings.



Broadcast Messaging

Press and release the **ID** button to send a broadcast notification over the network to any devices that may be listening.



Resetting to Factory-Defaults

WARNING: Performing a factory-default reset will erase all user-programmed settings from the encoder. IP settings are not preserved.

Using the ID button

- 1. Press and hold the **ID** button for approximately 30 seconds.
- 2. The LED indicators on the front panel will flash, then turn "off."
- 3. The encoder is now reset and will need to be reconfigured.

Using the Mclear command

- 1. Connect a PC to serial port 1 using a USB to serial cable.
- 2. Set the PC console port to the following settings: 9600 baud, 8 data bits, 1 stop bit, no parity.
- 3. Once connected to the CLI, execute the Mclear command.

Using the Web Server

- 1. Log in to the encoder using the built-in web server. Refer to ##accessingwebserver for more information. Note that OmniStream devices communicate using both LLDP and CDP protocols. Consult the switch documentation for information on returning neighbor details from the CLI. Neighbor details will include the IP address of the encoder.
- 2. Click the FACTORY RESET button.
- 3. The encoder is now reset and will need to be reconfigured.



LED Indicators

The following table provides a listing of front-panel LED indicators and their status:

LED		Description			
PWR	Off O	• If using a PoE switch, make sure that the port on the switch that is connected to the encoder, has PoE enabled. When the encoder is powered using PoE, the PWR indicator will be green.			
		Check the Ethernet cable for possible damage or loose connections.			
		• Connect the optional 48V DC power supply (available from atlona. com) to the encoder. When using an external power supply, the PWR indicator will be green.			
	Red	The encoder is booting.			
	Amber 😑	• The encoder is booting and/or attempting to locate a DHCP server.			
	Green	The encoder is ready.			
HDMI 1 / 2	Red	No source is connected to the input.			
		Check the HDMI cable for possible damage or loose connections.			
	Green	• The link integrity between the source and the encoder is good.			
LINK 1 / 2	Red	 The optional 48V DC power supply is connected, but no Ethernet cables are connected between the switch and the ETHERNET port(s). Check the Ethernet cable for possible damage or loose connections. 			
	Amber 🔶	The encoder is booting.			
	Green	• Link integrity is good between the encoder and the network.			



Accessing the Web Server

In order to access the web server of the desired encoder/decoder, the IP address of the encoder must be known. This can be accomplished by using any of the following methods: 1) Running IP scanner software or 2) accessing the encoder using the domain name. When running an IP scanner, both the computer and the OmniStream encoders/decoders must be connected to the same network.



- 1. Launch the desired web browser and enter the IP address or domain name of the encoder in the address bar.
- 2. Enter the username and password. Note that the password field will always be masked. The default credentials are:

Username: Password:	admin Atlona		Username admin	
			Password	
		Sign in to OmniStream Marrier Marier Marrier Marrier Marrier Marrier Marrier Marrier Marrier M		

3. The System Information page will be displayed.



This section provides a tutorial on configuring two AT-OMNI-512 dual-channel encoders and one AT-OMNI-121 single-channel decoder. Make sure the encoder is connected to a source device and that the decoder is connected to a display. Both the encoder and decoder should be connected to the same local network. Refer to Connection Instructions (page 15) for more information.

Physical Connections





Setting the System Mode

The AT-OMNI-512 offers two system modes. These modes will optimize the video, based on the type of information that is being displayed and/or the desired features.

- 1. Login to each encoder and click System Information in the menu bar.
- 2. Click the **System mode** drop-down list and select VCx. This mode will provide access to all of OmniStream 2.0 features.

		Logou	
< System information SAP input EDID Encoding Serial Session Logo Text Notifications Network PTP LLDP Configuration Users L	cense Upgrade		
System information			
Firmware version	2.0.0		
FPGA	xc7z045-ffg676		
Model	System information		
Description	System monnation		
Loceon	Firmware version	2.0.0	
DeerTine	FPGA	xc7z045-ffg676	
System 'C '	Model	at omni 512	
Die 'C	Model	at-01111-012	
innparaure "F Power Consumption	System mode	2 VCx -	
Hosthame NTP server	Description	VCx fry	
Buttons		VC-2 Video	
LEDs	Location	1975	
RECONFIRMET	" Timezone	UTC	
ECANY CRAZ IN	Date/Time	10-13-2022 18:30:29	
	Uptime	0 days 2 hours 51 minutes	
	System Temperature	°C 50.00 °C	
	remperature	°F 122.00 °F	

Mode	Description
VCx	This is the default mode and represents the latest codec technology from Atlona, with outstanding support for computer graphics and motion video. VCx includes support for 4K60 4:4:4 fast switching, dual streaming from AT-OMNI-111 encoders, and multiview on the decoders.
VC-2 Video	Legacy OmniStream codec that provides the best viewing experience when streaming motion graphics and/or video.

Click **SAVE** at the bottom of the page to commit changes.

Login to the decoder interface and repeat this process.

SET DATE/TIME	SET TIMEZONE		
FACTORY RESET	Reset users	Reset network	Reset defaults
IDENTIFY	DEBUG	REBOOT	3 SAVE



Configuring Inputs

The Input page is used to verify that the encoder recognizes the source device. This page is also used to set the EDID, HDCP version, and provides detailed information about the source signal. The following procedure should be performed on both AT-OMNI-512 encoders.

- 1. Click **Input** in the menu bar.
- Since a source has been connected to the HDMI IN port, the Cable present indicator within the Input 1 window 2. group is green, as shown below. This indicates that an active source is connected to the HDMI port.

If these indicators are red, check that each source is connected to an HDMI IN port. A red indicator may also describe faulty HDMI cables. If the sources are connected, then try different HDMI cables. If the HDMI cable integrity has been verified, then make sure that the output resolution of the source is at least 720p.



TIP: If no signal is being received on the encoder, then it's always a good practice to check the **Input** screen on the encoder when performing additional troubleshooting.

3. Click the EDID drop-down list to select an EDID. For now, leave this setting at Default HDR MCH. This EDID provides general compatibility with most displays.

0	Input 1		Input 2		
•	Name	hdmi_input1	Input 1		
	EDID	Default HDR MCH -	EDID		
	HDCP	Encrypted	HDCP Name		hdmi_input
		Version 2.2 -			_
		Negotiated 1.4	Cable present		2
	Video	Color depth 12	Video		
		Subsampling 444	EDID		3 Default HDR MCH
		Resolution 1920 x 1080p			-
		Framerate 59.94	HDCP	Encrypted	4 (
		HDR	Video gene		
	Abdio	Channel 2	Name Color death	Version	5 2.2
		Format LPCM	Colorspace		
		Frequency 48kHz	Francerate	version	1.
		SAVE	Subsamp		
			Resolution Video	Color depth	1
				Subsampling	44
	Video generato	٢2			
	Name	video_generator2		Colorspace	RG
	Color depth	8 -		Desclution	4000 × 4000
	Goorspace	101		Resolution	1920 X 1000
				Framerate	59.9
JDCD Second indiv	cator will	he areen if	1		

Channel count

- content. Therefore, the indicator is red.
- 5. Click the **HDCP** > **Version** drop-down list to restrict HDCP to a particular version. By default, this is set to 2.2 and this setting should be used for most applications.

4.



- The Video section provides information about the input signal: color depth, subsampling, color space, resolution, frame rate, and HDR (High Dynamic Range). If the HDR indicator is green, this will indicate that HDR content is being transmitted from the source device. Refer to the Input page (page 62) for more information.
- 7. The **Audio** section displays audio information (if present) from the source device: bit depth, the number of audio channels, the audio format, and the frequency. Refer to the Input page (page 62) for more information.
- 8. Click **SAVE** to commit all changes.

Name		hdmi_input1
Cable present		•
EDID		Default HDR MCH 🔻
HDCP	Encrypted	•
	Version	2.2 🗸
	Negotiated version	1.4
Video 6	Color depth	12
	Subsampling	444
	Colorspace	RGB
	Resolution	1920 x 1080p
	Framerate	59.94
	HDR	•
Audio 7	Bit depth	Unknown
	Channel	2
	Format	LPCM
	Frequency	48kHz



Encoder Settings

The **Encoding** page is used to assign an input to an encoder. In addition, this page allows video settings, such as the maximum bit rate, bit depth, and chroma subsampling to be set. Video thumbnails of the source device can also be displayed on this page. <u>The following procedure should be performed on both AT-OMNI-512 encoders</u>.

1. Click **Encoding** in the menu bar.

a **Panduit** company

- 2. Under the Encoder 1 window group, click the Input drop-down list and select hdmi input1.
- 3. Click the Bit depth drop-down list to change the bit depth. In this example, it will be set to 8-bit.
- 4. Click the **Thumbnail** > **Enable** toggle switch to enable it and display a thumbnail of the source. When enabled, the toggle switch is orange and a thumbnail of the source will be displayed. If no thumbnail is displayed when this feature is enabled, verify that the source is connected, powered, and is configured correctly under the **Input** menu.
- 5. Click **SAVE** to commit all changes.

 System information SAP input FDID Encoding Serial Session Logo Text Notifications. 	Network PTP LLDP Configuration Users License	Licorade		Logout
	Encoder 2	and and a second se		
Name Input	encoder1 Name hdmi_input1 - Input	Encoder 1		
Max bi nate Bit segun	S00 Max bit rate 8-bit - Bit depth	Name		encoder1
Force YUV Silate mode	off + State mode	Input	2	hdmi_input1 👻
State topo Thumbnail comruma	Enable - Slate logo Triumbnail	Max bit rate		900
		Rit donth	6	9 bit
	and the second se	Вії феріл	3	8-DIL V
	SAVE	Force YUV		•
		Slate mode		off 👻
		Slate logo		•
		Thumbnail	Enable 4	
		COPY URL		
			4 5.300	*
				A C
			ab and	
			SAVE 5	
				,



Creating a Session

Before the video and audio (if any) can be sent out over the network, a session must be created on the encoder. The session assigns each stream to a unique multicast IP address and UDP port assignment. Sessions are always created on encoders. Refer to Session page (page 70) for a detailed description of all settings. <u>The following</u> <u>procedure should be performed on both AT-OMNI-512 encoders, except where noted</u>.

- 1. Click **Session** in the menu bar.
- 2. Under Session 1, the Name field indicates the session name. This value is set to session1 and cannot be changed.

					Logout
< System information SAP input EDID Encoding Serial Session Logo Text	Notifications	Network PTP LLDP Configurat	ion Users License Upgrade		>
0	Session 1		Session 2		
	Name	5	ession1 Name	session2	
	Interface	K	eth1 Interface	eth2	
	Scrambling	Enable		0-	
		Key sci	ambin Video Encoder	vc2_encoder2	
	Video	Encoder vc2_e	ncoder1 Enable	-•	
		Enable	Destination	IP address N/A	
		Destination IP address 2 Destination UDP port	26.0.0.1 Destination	255	
		TTL	255		
		Link t	est Audio Source	hdmi_input2 -	
	Audio	Source hdmL	nput1 - Enable A8	E867 •	
		Enable AES67	Enable		
		Enable		IP address N/A	
		Destination IP address 22 Destination UDP port	Session 1		
		π.			
	AUX	Source Comm	Nomo		• • • • • • • • •
		Enable	Name		2 session1
		SAVE			
			Interface		eth1
			SAP	Enable	0—
			Scrambling	Enable	
			Scrambing	Lilable	
The Corombling > Enchle toggle		tab ia			
The Scrambling > Enable loggie	SWI			Key	4 scrambling
enabled by default. When enable	d, th	is toggle			
will be orange. Leave this setting	a ena	abled.	Video	Encoder	vc2_encoder1
0	·				
The Scrambling > Key field is se	et to			Enable	
agrambling by default Scraph	alina	kove oon		Endoic	•
Scrambring by deladir. Scram	Jing	reys call		Deetiesties ID eddee	
be any combination of alphanum	eric	cnaracters		Destination IP address	0 226.0.0.1
and it is good practice to use the	m. I	For this			
tutorial, use the default key.				Destination UDP port	7 1000

- 5. Click the **Video** > **Enable** toggle switch and make sure it is enabled for both **Session 1**. When enabled, the toggle switch will be orange. If set to disabled, then the encoder video stream will be disabled.
- 6. Enter the multicast IP address for the video stream in the **Destination IP address** field. Atlona recommends using multicast IP addresses as shown in <u>Table 2.1</u>, on the next page. Enter 226.0.0.1 in the **Destination IP** address field for **Session 1** on *Encoder #1*. For *Encoder #2*, enter 226.0.0.2 in the **Destination IP address** field for **Session 1**.
- 7. Enter the UDP port in the **Destination UDP port** field. Although any valid UDP port can be used, Atlona suggests using the UDP port numbers, as shown in <u>Table 2.1</u> on the next page. Since this is a video stream, enter 1000 in the **Destination UDP port** field for **Session 1**.

3.

4.



Stream	Video	Audio	Data (Control)
First source	226.0.0.1	226.0.10.1	226.0.20.1
Second source	226.0.0.2	226.0.10.2	226.0.20.2
nth source	226.0.0.n	226.0.10.n	226.0.20.n

Table 2.1 - Recommended multicast IP address for video, audio, and data streams.

Table 2.2 - Recommended UDP ports for video, audio, and data streams.

Stream	Video	Audio	Data (Control)
UDP Port	1000	1100	1200

- Click the Audio > Source drop-down list and select the HDMI audio input for the session. The source is connected to HDMI IN. Therefore, set this to hdmi_input1 for Session 1.
- Click the Audio > Enable toggle switch and make sure it is enabled. When enabled, it will be orange. If disabled, no audio will be streamed from the encoder.
- Enter the multicast IP address for the audio stream in the Destination IP address field. Refer to <u>Table 2.1</u>, above. In this example, enter 226.0.10.1 for Session 1 on *Encoder* #1 and 226.0.10.2 for Session 1 on Encoder #2.
- Enter the audio stream UDP port in the Destination UDP port field for Session 1. Refer to <u>Table 2.2</u>, above. Since this is an audio stream, use UDP port 1100.
- 12. Click the **SAVE** button to commit all changes to **Session 1**.

Audio	Source	8	hdmi_input1 👻
	Enable AES67		•
	Enable	9	
	Destination IP address	10	226.0.10.1
	Destination UDP port	1	1100
	TTL		255
AUX	Source		Commands 👻
	Enable		0—
	SAVE	12	



Subscribing to an Encoder

The next step is to configure the decoder so that it is able to receive video, audio, and/or data (control) streams from the encoder. This process is referred to as "subscribing to the encoder".

Video Configuration

- 1. Go to the decoder and click **IP Input** in the menu bar.
- 2. Locate the **Input 1** window group and verify that the **Enable** toggle switch is enabled. When enabled, the toggle switch will be orange. Perform the same procedure for the **Input 2** window group.
- 3. Under the **Input 1** window group, enter 226.0.0.1 in the **Multicast address** field. Under the **Input 2** window group, enter 226.0.0.2 in this field. These multicast IP address are the same addresses that were specified under the **Video** > **Destination IP address** field for the encoders.
- 4. In the **Port** field, enter 1000 under both **Input 1** and **Input 2** window groups. These are the same port settings that were entered under the **Video** > **UDP Port** section of the encoder.
- 5. Click the **SAVE** button, under the **Input 1** and **Input 2** window groups, to commit changes.

SATLONA.							Logout
< System information SAP IP Input Serial HDMI Output Logo Text Notifications	Network PTP	LLDP Configuration Users	License Upgrade				
0							
U	Input 1	10	Input 2		in innut?		
	Enable		Enable				
	Interface		eth1 Interface		eth1		
	Multicast address	22	5.0.0.1 Multicast address		226.0.0.2		
	Port	7	1000 Port		1000		
	Multicast	Mode excl	ude - Multicast	Mode	exclude 👻		
	(IGMPv3)	Addresses*	(IGMPv3)				
		"Separate multiple IP addresses with a comma	Input 1				
		SAVE					
			Name				in input1
	Input 3		Name				ip_input i
	Name						
	Enable		Enable				2
	Interface						
	Multicast address	22	Interface				oth1
	Port		menace				Curr
	Multicast filter (IGMEv3)	Mode ex					-
	(Addresses*	Multicast a	address			3 226.0.0.1
		aguarate multiple in addresses min a comme.					
		SAVE	Port				1000
			FUIL				4 1000
	Input 5						
	Name	1	Multicast	M	ode		exclude 👻
	Enable		filter				
	Interface		(IGMPv3)	•	ddraaaaa*		NUA
				A	uuresses*		N/A
				*S	Separate multij	ple IP addresses wit	h a comma.
							I
							I
					_		
					S	AVE	5
							- I
							I
		L.					



Audio Configuration

- 1. Locate the **Input 3** window group and verify that the **Enable** toggle switch is enabled. When enabled, the toggle switch will be orange. Perform the same procedure for the **Input 4** window group.
- 2. Under the **Input 3** window group, enter 226.0.10.1 in the **Multicast address** field. Under the **Input 4** window group, enter 226.0.10.2 in this field. These multicast IP address are the same addresses that were specified under the **Audio** > **Destination IP address** field for the encoders.
- 3. In the **Port** field, enter 1100 under both **Input 3** and **Input 4** window groups. These are the same port settings that were entered under the **Audio** > **UDP Port** section of the encoder.
- 4. Click the **SAVE** button, under the **Input 3** and **Input 4** window groups to commit changes.

					Logout
< System Information SAP IP Input Serial HDMI Output Logo Text Notifications Network PTP	LLDP Configuration Users License	Upgrade			>
tonut 1		locut 2			
Name	Ip_input1	Name	lp_input2		
Enable	-•	Enable	-•		
Interface	eth1	Interface	eth1		
Muticast address	1000	Multicast address	226.0.0.2		
Muticast	Mode exclude v	Multicast Mode	exclude 👻		
titer ((GMPv3)	Addresses" N/A	(IGMPv3) Addres	sses" N/A		
	"Separate multiple IP addresses with a comma.	*Separa	ate multiple /P addresses with a comme.		
	SAVE		SAVE		
	le le	anut 2			
Input 3		iput 5			
Name					
Enable	N	lame			ip_input3
menaor Muticast address					
Port	E	nable		0	
Muticast filter	Mode ex			-	
(Itameva)	Addresses*	nterface			eth1
	SAVE	fulticast addr		0	226.0.10.1
		iuilicasi auui	1033	9	220.0.10.1
Input 6				•	
France	P	ort		3	1100
Interface					
	N	lulticast	Mode		exclude 👻 🚽
	fi	lter			
	(1	GMPv3)	Addresse	s*	N/A
			*Senarate i	multiple IP addresses with a com	ma
			ooparater	and a come a come a come	in the second se
			_		
				SAVE 4	
	_				

Input Configuration Notes

Although there is no hard and fast rule for which **Input** window groups should be used for video, audio, and/or control, it can be helpful to visualize the **Input** window groups as columns and rows to better organize the IP data. Here, each column of **Input** window groups represents an encoder.

Table 2.3 - Video and Audio information from each encoder.

Encoder #1

Encoder #2

Input	Multicast Address	Input	Multicast Address
Input 1	Video (226.0.0.1:1000)	Input 2	Video (226.0.0.2:1000)
Input 3	Audio (226.0.10.1:1100)	Input 4	Audio (226.0.10.2:1100)



Configuring the HDMI Output Stream

- 1. Click HDMI Output in the menu bar.
- The Descrambling > Enable toggle switch is enabled by default. When enabled, this toggle will be orange. For this example, leave the setting enabled.
- The Descrambling > Key field is set to scrambling by default. This is the same key that is being used under the Scrambling > Key field on the encoder, and will allow the decoder to descramble the signal and send it out over the HDMI output to the display. Leave this key at it's default setting.
- 4. Click the **HDCP** > **Version** drop-down list and select the HDCP version. 2.2 will work with most sources. However, in this case, an older sink/monitor which doesn't support HDCP 2.2, is being used. Therefore, the value is set to 1.4.
- 5. Click the **Video** > **Input** drop-down list and select the video source. Based on what has been configured, the following options are available:

Vi	deo > Input
ip_input1	(226.0.0.1:1000)
ip_input2	(226.0.0.2:1000)
ip_input3	(226.0.10.1:1100)
ip_input4	(226.0.10.2:1100)

Since this is the **Video** field, a video source should be selected. Referring to <u>Table 2.3</u>, on the previous page, ip_input1 (226.0.0.1:1000) and ip_input2 (226.0.0.2:1000) are video data, from two different encoders. For this example, this field will be set to ip input1 (226.0.0.1:1000).





 Scroll down to the Audio > Input field and select the desired audio stream. Referring to <u>Table 2.3</u> (shown below), the audio stream that is associated with encoder 1 is Input 3. Therefore, ip_input3 (226.0.10.1:1100) is selected.

Table 2.3 - Video and Audio information from each encoder.

_							
En	C	0	d	e	r	#	7

Encoder #2

Input	Multicast Address / Port	Input	Multicast Address / Port
Input 1	Video (226.0.0.1:1000)	Input 2	Video (226.0.0.2:1000)
Input 3	Audio (226.0.10.1:1100)	Input 4	Audio (226.0.10.2:1100)

7. Click the SAVE button to commit changes.

Audio	Input 6	ip_input3 (226.0.10.1:1100) 🗸
	Downmixing	none 👻
	Enable AES67	0—
	Status	LPCM, 0-bit, 2 ch, 48kHz
	Mute	0—
	Volume	- 15 +
AUX (CEC)		Not used 👻
Standby	Auto on	-•
•	Projector cooldown (s)	0
	Timeout (s)	0
	Туре	DispSW AVon 👻
	SAVI	E 7

The decoder should now display the content of the source device connected to **HDMI IN** on the encoder. *Figure 3.1*, on the next page, shows the completed configuration.

To switch between video sources, click the **Video** > **Input** drop-down list and select the desired stream. To switch between audio streams, click the **Audio** > **Input** drop-down list to select the desired stream.

Note that separating video and audio data into different streams, allows the flexibility of combining different video and audio sources together.





Figure 3.1 - Basic OmniStream setup with Decoder #1 subscribed to Encoder #1.

 HDMI Output

 Destination IP Address (Video):
 226.0.0.1

 UDP Port (Video):
 1000

 Destination IP Address (Audio):
 226.0.10.1

 UDP Port (Audio):
 1100





Troubleshooting

If no video and/or audio is present on the display, check the following for both *Encoder* #1 and *Encoder* #2, unless otherwise noted.

Encoder Checklist

- Verfiy that all encoders and decoders are set to the same system mode. In this tutorial, both encoders and the decoder should be set to VCx. Refer to Setting the System Mode (page 22).
- Go to the **Input** menu and make sure that the **Cable present** indicator, under the **Input 1** window group, is green. Refer to Configuring Inputs (page 23) for more information.
- Go to the Encoding menu and verify the following under the Encoder 1 window group. Refer to Encoder Settings (page 25) for more information.
 - » Make sure the **Input** drop-down list is assigned to an input. In this tutorial, the **Input** field, under the **Encoder 1** window group, is set to hdmi input1.
 - » Verify that a **Thumbnail** > **Enable** toggle switch is enabled and a thumbnail of the source is displayed.
- Go to the **Session** menu and verify the following under the **Session** window groups. Refer to Creating a Session (page 26) for more information.
 - » Check that the Scrambling > Enable toggle switch is enabled. Also check that the Scrambling > Key field, for this example, is set to scrambling.
 - » Verify that the Video > Enable toggle switch is set to enabled.
 - » Check the Video > Destination IP address field is set to the correct multicast IP address. In the example, 226.0.0.1. is used on *Encoder* #1 and 226.0.0.2 is used on *Encoder* #2.
 - » Check that the Video > Destination UDP port field is set to 1000.
 - » Make sure the Audio > Source is set to hdmi input1.
 - » Verify that the **Audio** > **Enable** toggle switch is enabled.
 - » Check the Audio > Destination IP address field is set to the correct multicast IP address. In this example, 226.0.10.1 is used on *Encoder* #1 and 226.0.10.2 is used on *Encoder* #2.
 - » Check that the Audio > Destination UDP port field is set to 1100.



Decoder Checklist

- Verfiy that all encoders and decoders are set to the same system mode. In this tutorial, both encoders and the decoder should be set to VCx. Refer to Setting the System Mode (page 22).
- Go to the **IP Input** menu and verify the following. Refer to Subscribing to an Encoder (page 28) for more information.
 - » Under both the **Input 1** and **Input 2** window groups, verify that the **Enable** toggle switch is enabled.
 - » Check that the **Multicast address** field is set to the correct multicast IP address. In this example, 226.0.0.1 for **Input 1** and 226.0.0.2 for **Input 2**.
 - » Check that the **Port** field is set to the proper port. In this example, 1000 for both **Input 1** and **Input 2**.
 - » Under both the **Input 3** and **Input 4** windows groups, verify that the **Enable** toggle switch is enabled.
 - » Check that the **Multicast address** field is set to the correct multicast IP address. In this example, 226.0.10.1 for **Input 3** and 226.0.10.2 for **Input 4**.
 - » Check that the **Port** field is set to 1100 for both **Input 3** and **Input 4**.
- Go to the **HDMI Output** menu and verify the following. Refer to Subscribing to an Encoder (page 28) for more information.
 - » Make sure that the **Descrambling** > **Enable** toggle switch is enabled.
 - » Check the HDCP > Version field to make sure the correct version is selected. Also note the color of the HDCP > Encrypted indicator. if it is red, then a picture may not be displayed and result in a "blue screen" on the display. Change the HDCP > Version field, if necessary.



IMPORTANT: The scrambling key on a decoder must be *identical* to the scrambling key on the encoder which is being subscribed. Scrambling keys are case-sensitive.

- » Verify that the **Descrambling** > Key field is set to scrambling.
- » Make sure that the Video > Input drop-down list is set to one of the configured inputs: either ip_input1 or ip_input2.
- » Make sure that the Audio > Input drop-down list is set to one of the configured inputs: either ip_input3 or ip_input4.



Device Operation

EDID Management

OmniStream encoders provide EDID management for each input. The encoder can be assigned one of several included EDID presets or can be assigned a custom EDID. Raw EDID data can be copied from displays or other sink devices, that are connected to OmniStream decoders.

Selecting an EDID Preset

- 1. Login to the encoder and click **Input** in the menu bar.
- 2. Click the EDID drop-down list, within the desired Input window group, and select the EDID.
- 3. Click the SAVE button within the Input window group to commit changes.

nformation SAP Input EDID Encoding Serial Session Lo	go Text Notifications Network PTP LLDP C	configuration Users License	Upgrade	_	
U	Name	hdmi_input1 Name		hdmi_input2	
	Cable present	Cable prese	int	•	
	EDID Def	ault HDR MCH - EDID	Input 1		
	Default HDR 2CH Ver	n.o.r	input i		
	Ne Default DV 2CH		Name		hdmi_input1
	Video Co Default SDR 2CH	Video			
	Su ATL 1080P 2CH C0 ATL 1080P DD	Audio	Cable present		
	Re ATL 1080P DVI ATL 1080P MCH		EDID	0	
	Fre ATL 1280x800 RGB DVI P		EDID	2	Delault HDR WCH
	Audio Bit depth	Unknown	HDCP	En Default HDR MCH	
	Channel count	2		Default HDR 2CH	Ռո
	Format	LPCM 48kHz		Ver Default DV MCH	2
	SAVE			Ne Default DV 2CH	-
				Default SDR MCH	
	Name	video_generator1 Name	Video	Co	
	Color depth	8 👻 Color depth		Delault SDR 20H	
	Framerate	60 Framerate		SU ATL 1080P 2CH	
	Subsampling	444 Subsamplin		Co ATL 1080P DD	
	Resolution width	1920 Resolution		ATL 1080P DVI	
				Re	
				ATL 1080P MCH	
				ATL 1280x800 RGB [OVI PCWXGADVI
		1		Format	LPCN
				Frequency	48kHz
				SAVE	3



Adding a Custom EDID

Encoders can be loaded with a custom EDID. The raw EDID data must be in hexadecimal format. Commas or spaces are <u>not</u> permitted.

- 1. Login to the encoder and click the **EDID** menu.
- 2. Click the + icon in the lower-right corner of the screen.

h information SAP Listener Input EDID Encoding Serial Session Logo Text Notifications Network	PTP LLDP	Configuration	Users License Upgrade	<u>.</u>			
U	Default HDR MC	СН		1			
	Product		AT-OMNI-512				
	Vendor		ATL				
	Preferred mode		3840x2160p60Hz (594 MHz)				
	Supported modes	Mode	800x600p60Hz (40 MHz)				
		Mode	1024x768p60Hz (65 MHz)				
		Mode	1920x1200p60Hz (193 MHz)				
		Mode	1680x1050p60Hz (147 MHz)				
		Mode	1600x1200p60Hz (162 MHz)				
		Mode	1600x900p60Hz (118 MHz)				
		Mode	1440x900p60Hz (106 MHz)				
		Mode	1400x1050p60Hz (122 MHz)				
		Mode	1280x1024p60Hz (108 MHz)				
		Mode	1280x800p60Hz (83 MHz)				
		Mode	3840x2160p60Hz (594 MHz)				
		Mode	3840x2160p30Hz (297 MHz)				
		Mode	3840x2160p25Hz (297 MHz)				
		Mode	3840x2160p24Hz (297 MHz)				
		Mode	1920x1080p60Hz (148 MHz)				
		Mode	3840x2160p50Hz (594 MHz)				
		Mode	1920x1080i60Hz (74 MHz)				
		Mode	1920x1080i50Hz (74 MHz)				
		Mode	1280x720p60Hz (74 MHz)				
		Mode	1920x1080p50Hz (148 MHz)				
	Default HDR 2C	я		l .			
	Default HDR 2C	ж	AT-OMNI-512	1			•

- 3. The **New EDID** window group will be displayed.
- 4. Enter the name of the EDID in the Name field.
- 5. Enter the EDID data in the **Raw EDID** field. EDID data can be copy and pasted from an EDID editor and must be in hexadecimal format. Commas or spaces must <u>not</u> be included.
- Click the CREATE button to commit changes or click CANCEL to abort the addition of a custom EDID.
 Once a custom EDID is loaded, it will be added to the drop-down list and can be selected without re-entering the information.

	Logout
< System information SAP Listener Input EDID Encoding Serial Session Logo Text Notifications Network PTP LLDP Confi	guration Ubers License Upgrade >
3 Hew LCDD Raw COP	INCOL OR ATE
	Name 4 myEDID
	Raw 5 00FFFFFFFFF004C2DCB0B0000000D1801(
	6 CANCEL CREATE


Device Control

Downstream Control using RS-232

Control using RS-232 is converted and transmitted over IP by the encoder. Destination devices can either be the IP address of a display or a decoder.

- 1. Login to the encoder and click the **Serial** menu.
- 2. Under the Serial Port Configuration window group, click the Mode drop-down list and select Serial.
- 3. Click the **SAVE** button.

Serial configuration Name Stop Stop Fowcontrol Rest Not used Stop Fowcontrol Rest	information SAP-Listener Input EDID, Encoding	Serial Session Logo Text Notifications Netwo	rk PTP LLDP Configuration	Users License	Upgrade	
Image: Configuration Image: Configuration Name Serial configuration Noti used Inserial configuration </th <th>and the country input color choosing</th> <th></th> <th></th> <th>0000 00000</th> <th>oblige</th> <th></th>	and the country input color choosing			0000 00000	oblige	
New Alley of the second of		Serial port configuration		Serial port configuration	n	
Second roos usered intervent intervent Bactore roos intervent intervent		Name	serial_port1	Name	serial_port2	
Name Serial configuration Name Serial use1 Name Serial use1 Name Serial use1 Name Serial use1 Name Stop Fort An use1 Mode Cl Image: Serial use1 Stop Fort An use1 Mode Stop Fort Cl Mode Cl		Supported modes	infrared, serial	Supported modes	infrared, serial	
Serial configuration Name Serial configuration Serial configuration Serial configuration <t< td=""><td></td><td>Mode</td><td>serial 👻</td><td>Mode</td><td>serial 👻</td><td></td></t<>		Mode	serial 👻	Mode	serial 👻	
Image: control of the second of t		Baudrate	9600 -	Baudrate	9600 -	
Name Serial configuration Name Serial used Not used Not used Name Stop Name Serial used Name <td></td> <td>Data</td> <td></td> <td>Uata -</td> <td>**</td> <td></td>		Data		Uata -	**	
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Serial configuration Name Serial configuration Not used Name Serial configuration		Elowcontrol	none 👻	Flowcontrol	0000 -	
Serial configuration Name Serial configuration						
Serial port configuration Name Serial Supported modes infrared, Node 2 serial Serial configuration Name Supported modes Name Supported modes infrared, Name Supported modes infrared, Name Serial_use1 Node 2 serial_use1 Name Serial_use1 Mode Stop Infrared, Name Serial_use1 Stop Infrared, Infrared, Name Serial_use1 Infrared, I			SAVE		SAVE	
Setial point configuration Name Setial point configuration Setial configuration Mode 2 setial point configuration Name Setial point configuration Mode 2 setial point configuration Name Setial point configuration Parity Data Port 4 Not used Stop Stop Mode Cli Stop Stop Flowcontrol Ref					Portial part configuration	
Name Serial Serial configuration Mare Name Serial Name Supported modes Serial configuration Mode Name Serial Name Serial Serial configuration Serial Name Serial Name Serial Serial configuration Serial Name Serial Name Serial Serial configuration Serial Name Serial Serial configuration Serial Name Serial Serial configuration Stop Node Stop Flowcontrol Reference		Serial configuration		Serial configura	senar port configuration	
Part Part Name Senal Supported modes infrared, Mode 2 Serial configuration Mode Name Serial configuration Name Serial configuration Name Serial configuration Port 4 Not used Stop Instrument Stop Flowcontrol Flowcontrol		Name	serial_use1	Name		
Supported modes Name </td <td></td> <td>Port</td> <td>Not used 👻</td> <td>Port</td> <td>Name</td> <td>serial_po</td>		Port	Not used 👻	Port	Name	serial_po
Serial configuration Name Serial_use1 Mode Image: demonstration Name Serial_use1 Image: demonstration Port Image: demonstration Name Serial_use1 Image: demonstration Port Image: demonstration Image: demonstration Port Image: demonstration Image: demonstration Port Image: demonstration Image: demonstrat		Mode	🖌 di 🗸	Mode		
Serial configuration Name Serial_use1 Name Serial_use1 Name Serial_use1 Name Serial_use1 Image: Im					Supported modes	infrared, ser
Mode 2 set Mode 2 set Mode 2 set Baudrate 96 Data Parity Port 4 Not used Mode Stop File Stop File File File File		_	SAVE			
Command Departure Command Departure Command Departure Accin Name Serial configuration Name Port 4 Mode Cli					Mode	2 serial
Name Serial_use1 Mode Cline Mascin Mascin Mascin Baudrate 96 Name Serial_use1 Fix Data Parity Income Income <t< td=""><td></td><td>Command: Display Off</td><td></td><td>Command: Dis;</td><td></td><td>–</td></t<>		Command: Display Off		Command: Dis;		–
Ascill Name Serial_use1 Parity Parity Port Ascill Max Ascill Stop Mode Cliv Max Flowcontrol Inc.		Interpret on	decoder 👻	Interpret on	Baudrate	9600
Serial configuration Data Name Serial_use1 Port 4 Not used Image: Serial with the series withe series with the series with the series with the series		ASCII	N/A	ASCII		
Serial configuration Data Name serial_use1 Port 4 Mode cli		HEX	N/A	HEX	Data	0
Name Serial_use1 Parity Not Port Image: Chi with and the serial label of the series of the seri	Serial configuration				Dala	0
Name serial_use1 Parity not Port Image: Control to the period in the peri						
Port A Not used If a market of the sector Stop Mode Cli If a market of the sector Flowcontrol Inc.	Name		serial_use1	Command: Vol	Parity	none
Port Asso Stop Mode Cli • Flowcontrol not				Interpret on		
Mode Cli Flowcontrol no	Port	4	Not used 👻 🔤	ASCII	Stop	1
Mode Cli - Flowcontrol no		•	N/A	HEX		
	Mode		cli —		Flowcontrol	none
	Mode		Cii 🔹			
SAVE S		SAVE				SAVE 3

- 4. Under the Serial configuration window group, click the Port drop-down list and select Not Used.
- 5. Click the **SAVE** button.



6. Click the Session menu.

- 7. Under the desired Session, locate the **AUX** section and click the **Source** drop-down list to select the desired serial port.
- 8. Click the Enable toggle switch to display the additional fields.
- 9. Enter the destination IP address and UDP port in the **Destination IP address** and **Destination UDP port** fields, respectively.



10. Click the **SAVE** button.

If the destination IP address and UDP port is for a <u>decoder</u>, follow Steps 11 through 20, beginning on the next page:





- 11. Login to the decoder and click the **IP Input** menu.
- 12. Locate an Input that does <u>not</u> contain a defined Multicast address field. In this example, **Input 5** will be used. Note that if a multicast address was used in Step 9, then that multicast address must be entered in the **Multicast** address field under **Input 5**.
- 13. Click the **Enable** toggle switch to enable the Input. When an Input is enabled, the toggle switch will be orange.
- 14. Enter the UDP port, from Step 9, in the **Port** field.

8 ATLONA						Logout
< System information SAP Listener IP input MultiView Serial HDMI Output Logo Text	Notifications	Network PTP LLDP Configuration	Users	License Upgrade		>
A	nout 1		Incu	#2		
U	Name	ip_input1	Nan	ne	ip_input2	
8	Enable		Ena	Input 5 10		
	interface	eth1	Inter			
	Multicast address	226.0.0.1	Mult	Namo	in input5	
	Port	1000	Port	Name	ip_iiputo	
	itter (IGMPv3)	Addresses* N/A	filter (IGN	Enable		
		"Separate multiple IP addresses with a comma.		Ellable		
		ONE		Interface	ath1	
		SAVE		Internace	euii	
				Multicast address	N/A	
	npur 3 Name	io input3	Nan	Multicast address		
8	Enable		Ena	Port	1200	
	interface	eth1	1	1 OIL		
	Multicast address	226.0.10.1	Inter	Multicast	Mode evolude -	
F	Port		Port	filter		
	Multicast liter (IGMPv3)	Mode exclude	filter (IGN	(IGMPv3)	Addresses* N/A	
		"Separate multiple IP addresses with a comp			Audresses 10/A	
					*Separate multiple IP addresses	
		SAVE				
_						
	input 5	in insulfs	Inpu			
	Enable		Ena		SAVE 15	
	interface	eth1	Inter			
,	Multicast address	N/A	Mut	to the summary and	1011	
F	Port	1200	Port		1200	
	Multicast liter (IGMPv3)	Mode exclude -	Mult filter (IGN	Mode MPv3)	exclude 🛩	
		"Separate multiple IP addresses with a comma.		Separate multiple IP addresses with a con	nu.	
		SAVE		SAVE		
		SHOW	VMORE			
		3104	- monte			

- 15. Click the **SAVE** button.
- 16. On the decoder, click the **Serial** menu, and under **Serial port configuration**, click the **Mode** drop-down list and **select** serial.
- 17. Click the **SAVE** button.

Serial port configuration	1
Name	serial_port1
Supported modes	serial
Mode	to serial -
Baudrate	9600 👻
Data	8 🗸
Parity	none 👻
Stop	1 👻
Flowcontrol	none 👻
	SAVE 17



Device Operation

- 18. Under the **Serial configuration** window group, click the **Port** drop-down list and select the desired port.
- 19. Click the Mode drop-down list and select output.
- 20. Click SAVE.



Control using TCP Proxy

TCP/IP traffic received by an encoder or decoder, on the defined IP:Port socket, are translated to RS-232, allowing both control of source or display. Control is achieved using a control system, where all control commands are stored.

- 1. Login to the encoder or decoder and click the Serial menu.
- 2. Under the Serial Port Configuration window group, for the desired serial port, click the Mode drop-down list and select Serial.
- 3. Click the SAVE button.

					Logout
< System information	n SAP-Listener Input EDID Encoding Serial Session Logo 1	fext Notifications Network PTP LLDP Configuration	Users Ucense	Upgrade	>
	9	Serial cort configuration	Serial port configurat	lon .	
		Name serial_port1	Name	serial_port2	
		Supported modes infrared, serial	Supported modes	infrared, serial	
		Mode serial -	Mode	serial 👻	
		Baudrate 9600 -	Baudrate	9600 🛩	
		Data 8 -	Data	8 🕶	
		Parity none -	Parity	none +	
		Flowcontrol none -	Flowcontrol	none -	
		SAVE		SAVE	
Se	erial port configuration				
	and port ooningeredon		Serial configuration		
Na	ame	serial port1	Name	serial_use2	
			Port	setial_port2 +	
Su	innorted modes	infrared serial	Mode	di 👻	
		innared, senar		SAVE	
M	odo				
INIC	Jue		Command: Display 0	Dn .	
		ecco er *	Interpret on	decoder 👻	
Ва	ludrate	9600 👻 NA	ASCII	N/A	
		N/A	HEX	N/A	
Da	ata	8 👻		SAVE DELETE	
Pa	arity	none 👻	Command: Welume I	in .	
		aet 👻	Interpret on	decoder 🛩	
Ste	op	1 👻 NA	ASCII	N/A	
		N/A	HEX	N/A	
FIC	owcontrol	none 👻			
				DELETE	
		-			
	SAVE	8			
	SIVE.				



- 4. Under the Serial Configuration window group, click the Port drop-down list and select the desired serial port.
- 5. Click the Mode drop-down list and select topproxy.
- 6. Click the **TCPProxy** > **Interface** drop-down list and select the desired Ethernet interface.
- 7. Enter the listening port in the **TCPProxy** > **Port** field.
- 8. Click the **SAVE** button.

Serial configura	ition	
Name		serial_use1
Port		4 serial_port1 -
Mode		5 tcpproxy -
TCPProxy	Interface	6 any -
	Port	7 10000
	SAVE	8



Downstream Control using Triggering

TCP/IP traffic received by an encoder or decoder, on the defined IP:Port socket, are translated to RS-232, allowing both control of source or display. Control is achieved using a control system, where all control commands are stored.

Option 1: Defining Commands on the Decoder

- 1. Login to the decoder and click the Serial menu.
- 2. Under the Serial Port Configuration window group, for the desired serial port, click the Mode drop-down list and select Serial.
- 3. Click the **SAVE** button.

<u></u>					Logout
n Information SAP Listener IP Input MuttWew Serial HDM	l Output Logo Text Notifications Network PTP LLDP Configu	uration Users License Uj	ograde		>
9	Serial port configuration	Serial port configuration	1		
U	Name serial	Lport1 Name	serial_port2		
	Supported modes	serial Supported modes	infrared		
	Mode se	erial - Mode	infrared 👻		
	Baudrate M Da Party Do Pesconted of	600 - 8 - 1 - Serial configuration	SAVE		
	SAVE	Port Mode	serial_port1 -		
Serial port configuration		Bidirectional Int	erface		
Name	serial port1	De	stination N/A address		
	Schal_port	Da	stination 5004		
Cupported modes	oorial	En	abled		
Supported modes	Sella		Serial configurat	tion	
Mode	2 serial 🗸		Name		serial us
		Command: Display Off	- taine		
Baudrate	9600 👻	use2 Mode	Dort		
		od 👻 ASCII	POIL		4 senal_port
Data	8 🗸	ci 👻 HEX			
			Mode		5 output
Parity	none 👻	-			
- unity	Hone +		Input		6 Not used
Stop	4	Command: Volume Do	wn		•
Stop	1 👻	Mode	Bidirectional	Interface	
		N/A ASCII			
Flowcontrol	none 👻	HEX -	_	Destination	N
			AVE	IP address	
		h		Destination	50
	SAVE			UDP port	
		N/A			
		NA		Enabled	0
		-		Lindbied	0
	SAVE DELETE				
			_		_
				SAVE	7

- 4. Under the Serial Configuration window group, click the Port drop-down list and select the desired serial port.
- 5. Click the Mode drop-down list and select output.
- 6. Click the Input drop-down list and select not used.
- 7. Click the **SAVE** button.



8. For each of the available commands, click the Mode drop-down list and select raw.

The available commands are: **Display On**, **Display Off**, **Volume Up**, and **Volume Down**.

- 9. Enter the command data in either ASCII or hexadecimal format using the ASCII or HEX fields.
- 10. Click the **SAVE** button.



11. Open a Telnet/SSH session with the decoder and trigger display control using the following command:

TrigRS232X Y

where X is the number of the serial port: 1, 2 where Y is the command: on, off, vol+, or vol-.



Option 2: Defining Commands on the Encoder

- 1. Login to the encoder and click the **Serial** menu.
- 2. For each of the available commands, click the Interpret on drop-down list and select decoder.

The available commands are: Display On, Display Off, Volume Up, and Volume Down.

NOTE: Setting the **Interpret on** drop-down list to encoder implies that commands are defined/ stored on the encoder. If set to decoder, commands are defined/stored on the decoder.

- 3. Enter the command data in either ASCII or hexadecimal format using the ASCII or HEX fields.
- 4. Click the **SAVE** button.

Image: second state	<u> </u>			
wind wind wind wind wind wind wind wind wind	Serial port configuration	Serial port configuration		
Image: Solution Image: Solution Image: Solution Image: Solution Image: Solution Image: Solution <t< td=""><td>Name Supported modes</td><td>information and a Respected modes</td><td>senal_poliz</td><td></td></t<>	Name Supported modes	information and a Respected modes	senal_poliz	
Image: market	Morie	serial - Mode	serial -	
Image of the second region Image	Baudrate	9600 - Baixfrate	9600 -	
Image: marge: marge	Data	B T Data	8 -	
No Imp Poccess over Sole	Parity	none - Parity	none 👻	
Peccets or Social Social </td <td>Stop</td> <td>1 - Stop</td> <td>1.*</td> <td></td>	Stop	1 - Stop	1.*	
SXE SXE SXE SXE Image: constrained constraine	Flowcontrol	none - Flawcontrol	none 👻	
Sore Nore Nore <td>-</td> <td>SAVE</td> <td>SAVE</td> <td></td>	-	SAVE	SAVE	
Nime statil_use1 Part Nime Mode Image SAVE SAVE Command: Display Off Net SAVE Command: Mane Save SAVE Command: Mane Save SAVE Command: Mane Save Net SAVE Command: Mane Save Net SAVE Command: Mane Save SAVE Command: Mane Save SAVE Command: Mane Save SAVE Command: Mane Save SAVE Name SAVE Command: Mane Save SAVE Command: Mane Save Interpret on Addition SAVE Note Command: Display Off Interpret on Addition SAVE <td>Serial configuration</td> <td>Serial configuration</td> <td></td> <td></td>	Serial configuration	Serial configuration		
Not Note Note G SOT Note SOT Note SOT Note SOT SOT SOT SOT <td>Name</td> <td>serial_use1 Name</td> <td>serial_use2</td> <td></td>	Name	serial_use1 Name	serial_use2	
Nos Image: Comment Disky Ch Image: Comment Disky Ch Image: Comment Disky	Port	Not used - Port	serial_port2 👻	
SVE SVE Command Liquidy CM Image for a condent of the performance liquidy CM ASCI KA SVE DELETE Command Viame Low Image for a condent of the performance liquidy CM SVE DELETE SVE DELETE Operative Viame Low Interpret on 2 ASCI ASCI Machinet SVE DELETE ASCI Machinet Ma	Mode	cli - Mode	Ci •	
Correnand: Display Off Image of a general display Off Ascur SAR OELETE SAR OELETE Correnand: Volume Us Image of a general display Off Interpret on some of the some	-	SAVE	SAVE	
Imagent on Occomment ASCI NA HEX SAXE Delete NA SAXE Delete Na SAXE Delete NA SAXE Delete Command: Display Off Interpret on 2 ASCII 3 HEX 3	Command: Display Off	Command: Display On		
Ascil view light of the second	Interpret on	decoder - Interpret on	decoder 👻	
HX NA SAVE DELETE Contrast Value Data SAVE DELETE Contrast Value U/ Contrast Display Off Interpret on ASCII HEX Contrast Value U/ Contrast Display Off Interpret on ASCII Contrast Value U/ Contrast Display Off Contrast Display Of	ASCII	N/A ASCII	N/A	
Command: Usame Use Here's in	HEX	DELETE SAVE	DELETE	
Command: Display Off ASCII	Command: Volume Down	Command: Volume Up	_	
Interpret on 2 decoder ASCII HEX 3 N/	Interpret on ASCII		d: Display Off	
ASCII HEX 3 N/	HEX	Interpret	on	2 decoder
HEX 3 N/	SAVE	ASCII		B N
HEX 3 N/				•
		HEX		3 N//
			4 SAVE I	DELETE
4 SAVE DELETE				



- 5. Click the **Session** menu.
- 6. Under the desired Session, locate the AUX section, click the Source drop-down list, and select Commands.
- 7. Click the **Enable** toggle switch to display the additional fields.
- 8. Enter the destination IP address and UDP port, of the decoder, in the **Destination IP address** and **Destination UDP port** fields, respectively. A multicast address can also be entered in the **Destination IP address** field.
- 9. Click the **SAVE** button.



- Login to the decoder, click the **IP Input** menu, then locate an Input that does <u>not</u> contain a defined Multicast address field. In this example, **Input 5** will be used. Note that if a multicast address was used in Step 8, then that multicast address must be entered in the **Multicast address** field under **Input 5**.
- 11. Click the **Enable** toggle switch to enable the Input. When an Input is enabled, the toggle switch will be orange.
- 12. Enter the UDP port, from Step 8, in the Port field.
- 13. Click the **SAVE** button.

Input 5 10)
Name	ip_input5
Enable	1 -•
Interface	eth1
Multicast address	N/A
Port	1200
Multicast filter	Mode exclude 🗸
(IGMPv3)	Addresses* N/A
	*Separate multiple IP addresses with a comma.
	SAVE 13



- 14. Click the Serial menu.
- 15. Under Serial port configuration, set the Mode drop-down list to serial.
- 16. Click the **SAVE** button.
- 17. Under Serial configuration, select the desired port.
- 18. Click the Mode drop-down list and select output.

nformation SAP Listener IP Input Multiview Serial HDMI Output	Logo Text Notifications Network PTP LLDP Configur	ation Users License	e Upgrade		
1	Serial port configuration Name Supported modes Lione	Serial port con port1 Name serial Supported mor	nguratikn serial_port2 desinfrared infrared	l	
	Bassate 19	8 • A Serial configure	SAVE	1	
Serial port configuration	swe	Port Mode Input Bidirectional	senal_porti - eutput - Not bu- Interdice		
Supported modes	serial		UOP pol Enabled Serial configura	ition	
Mode	15 serial -		Name		serial_u
Baudrate	9600 🗸	Command: Dis use2 Mode	Port		serial_port
Data	8 🗸	cl - HEX	Mode		18 output
Parity	none 👻		save Input		Not use
Stop	1 🗸	Command: Vol	Bidirectional	Interface	-
Flowcontrol	none 🗸	N/A ASCII		Destination IP address	
SAVI	16			Destination UDP port	5
		IV - NA NA		Enabled	C
	SAVE DELETE				
				SAVE	19

- 19. Click the **SAVE** button.
- 20. Open a Telnet/SSH session with the encoder and trigger display control using any of the following commands: InputBtn X

where X is the number of the input: 1, 2, or tog.

DisplayBtnX Y

where X is the number of the HDMI input: 1, 2. where Y is the command: on, off, or toggle.

VolumeBtn X

where x is the volume-up or volume-down command.



Upstream Control using RS-232

The serial interface provides RS-232 control of both downstream and upstream devices. Source control is provided by enabling bidirectional communication.

- 1. Login to the decoder and click the Serial menu.
- 2. Under the Serial Port Configuration window group, click the Mode drop-down list and select Serial.
- 3. Click the SAVE button.

						Logout
em information SAP Listener IP Input Multiview Serial HDMI Or	ıtput Logo Text Notifications Network PTP LLDP Config	juration U	Isers License Upg	ade		*
•	Serial port configuration		Serial port configuration			
	Name seria	l_port1	Name	serial_port2		
	Supported modes	serial	Supported modes	infrared		
	Mode	enal 👻	Mode	infrared +		
	Data	8 +		SAVE		
	Parity	none 👻				
		1.+	Serial configuration			
	Flowcontrol	none 👻	Name	serial_use1		
	SAVE		Port	serial_port1 -		
Social port configuration	/	61	Input	P_1145 -		
Senai por configuration			Bidirectional Inter	ace eth1 -		
Name	serial port1		Dest IP ac	nation 10.1.0.149		
			Dest	port 5004		
Supported modes	serial		Enal	led		
				Serial configurat	ion	
Mode	2 serial 🚽					
		ы.	Command: Display Off	Name		senal_use
Baudrate	9600 👻	use2	Mode	Dort		
		ed 👻	ASCII	Poli		4 senar_poirt
Data	8 👻	di 👻	HEX	Mode		C output
			SA	re INIQUE		Output
Parity	none 👻	ы.		Input		6 in input5
			Command: Volume Down	mpor		ip_inputo
Stop	1 👻	w -	Mode	Bidirectional	Interface	eth1
		N(A	ASCII			
Flowcontrol	none 👻			-	Destination	10.1.0.14
			SA	Æ	IP address	
		ы.				
S.	AVE 3			_	Destination	500
					UDP port	
					Franklad	
		-			Enabled	_
					SAVE	

- 4. Under the Serial configuration window group, click the Port drop-down list and select the desired serial port.
- 5. Click the Mode drop-down list and select output.
- 6. Click the Input drop-down list and select the input.
- 7. Click the **Bidirectional** > **Interface** drop-down list and select the interface.



Device Operation

- Enter the destination IP address (the IP address of the encoder) and UDP port in the **Bidirectional** Destination IP address and **Bidirectional** > Destination UDP port field, respectively.
- Click the **Bidirectional** > **Enabled** toggle switch to the enabled position. When enabled, the toggle switch will be orange.
- 10. Click the **SAVE** button.
- 11. Login to the encoder and click the Serial menu.
- 12. Under the **Serial Port Configuration** window group, click the **Mode** drop-down list and select Serial.
- 13. Click the SAVE button.
- 14. Under the Serial configuration window group, click the **Port** drop-down list and select not used.
- 15. Click the SAVE button.



						Logout
normation SAP Listener Input EDID Encoding Serial Session	Logo Text Notifications Network PTP LLDP Configuration	Users License Upgrade Demo				
A	Setial port configuration	Serial port configuration				
•	Name serial_port1	Name	serial_port2			
	Supported modes infrared, serial	Supported modes	Infrared			
	Baudrate 9600 -	Mode	innared +			
	Data 8 -	SAVE				
	Parity none -					
		Serial configuration				
		Port	serial_use1			
	SAVE	Mode				
Serial port configuration		SAUE				
		JWL				
Name	serial_port1	Command: Display Off				
		Interpret on	decoder 👻			
Supported modes	infrared, serial 🧃 🗸	ASCII	al configuration			
		HEX	arconngaration			
Mode	Senal -	save Nam	ne			serial_u
Paudrato					-	
Daudiale	9800 🗸	Command: Volume Down Port			14	Not use
Data	8 -	Interpret on			-	
	NA	HEX MOD	le			C
Parity	none 🗸 👘					
		SAVE			_	
Stop	1 🗸 🗖			SAVE	15	
Flowcontrol	none 👻 🔤					
	N/A	_				
SAVA						
- 16V						

- 16. Click the Session menu.
- 17. Under the desired Session, locate the **AUX** section and click the **Source** drop-down list to select the desired serial port.
- 18. Click the **Enable** toggle switch to display the additional fields.
- 19. Enter the destination IP address and UDP port in the **Destination IP address** and **Destination UDP port** fields, respectively.



- 20. Click the **AUX** > **Bidirectional toggle** switch to enable it. When enabled, the toggle switch will be orange.
- 21. Click the **SAVE** button.

ratem information SAP Listener Input EDID Encoding Serial Session Logo	Text Notif	ications Network	PTP LLDP Configuration	Users	License Upgrade	Demo			- coga
16	Session 1 Name		session1	Session 2 Name		session2			
	Interface		eth1 👻	Interface		eth1 👻			
	EncGroup	Enable	0—	EncGroup	Enable	0-			
	SAP	Enable		SAP	Enable				
		Interval	10	г	Interval	10			
		Name	session1		AUX	Source	17	serial_port1 👻	
		Description	N(A				-		
		Catagorization				Enable	18		
	Scrambling	Enable	Autona	Scramble					
		Key	scrambling			Destination IP address	19	10.1.0.138	
	Video	Encoder	encoder1 -	Video		Destination UDP port	19	1200	
		Destination IP address	226.0.0.1			-			
		Destination UDP port	255			TTL		255	
		DSCP	Best effort 👻			_			
		FEC enable	0-			DSCP		Best effort 👻	
		FEC rows	15						
		FEC columns	Link test			Bidirectional	20		
	Audio	Source	hdmi_input'+	Audio		Listen port		1204	
		Enable AES67 Enable		AUX					
		Destination IP address	226.0.10.1						
		Destination UDP port	1100			SAVE	21		
		DSCP	Best effort +				_		l
		FEC enable	-	L	_				L
		FEC rows	4						
		FEC columns	4						
	AUX	Source	serial_port1 👻						
		Enable	-•						
		Destination IP address	10.1.0.138						
		Destination UDP port	1200						
		TTL	255						
		DSCP	Best effort 👻						
		Listen port							
		cardin porc	1204						
		SAVE							

Upstream Control using IR

To control of headend source from downstream, refer to the Upstream Control using RS-232 (page 47) instructions. Once configured, make sure that the serial port is configured for infrared, as shown.

	IMPORTANT: Depending on the hardware, IR <u>may</u> also be supported on RS-232 port 1. Verify the OmniStream hardware version to determine its capabilities. For decoders, IR is <u>only</u> suppored on RS-232 port 2.								
Serial port col	figuration								
Name	serial_port2	infrared							
Supported mo	des infrared	initaloa							
Mode	infrared								
	SAVE								



AES67 Audio

AES67 audio is a standard for high-performance audio streaming over IP, providing several features such as synchronization, media clock identification, and connection management. AES67 does not support bitstream/ compressed audio formats, such as Dolby® Digital, and others. Source audio must be transmitted as LPCM up to eight channels at 192 kHz / 24-bit.

- 1. Login to the encoder and click **Session** in the menu bar.
- 2. Click the **SAP** > **Enable** toggle switch to enable SAP. When enabled, the toggle switch will be orange.
- 3. Locate the **Audio** section and click the **Enable AES67** toggle switch to enable this feature. When enabled, the toggle switch will be orange.
- 4. Click the **SAVE** button to commit changes.

				Logout
< System information SAP Listener Input EDID Encoding Serial Session Logo Text	Notifications Network PTP LLDP Configuration	Users License Upgrade		,
1	ession 1	Session 2		
Na	ame session1 terface eth1	Name Interface SAP	Enable	2 -
SA	AP Enable	SAP	-	
	Name session1	Scramoing	Interval	10
	Description N/A Originator	Video	Name	session1
	Categorisation Atlona		-	
Scr	Key scrambling		Description	N/A
Vid	ideo Encoder vc2_encoder1		Originator	
	Destination IP address 226.0.0.1	Audio	Categorisation	Atlona
	TTL 255	Destination IP address	2500145	Ationa
	Link test	Destination UDP port	1100	
Aux	udio Source hdml_input1 - Enable AES67	AUX Audio	Sourco	bdmi innutd
	Enable	Audio	Source	
	Destination UDP port		Enable AES67	•
UA	UX Source Commands -		- Enable	<u>a</u>
	Enable		-	
	Destination UDP port 1200		Destination IP address	N/A
	TTL 255 Bidirectional O-		Destination UDP port	N/A
	Listen port 1204			
	SAVE		TTL	255
	SHOW		Source	Commands 👻
			-	
			Enable	
			Destination IP address	225.0.0.146
			-	1200
			TTL	255
			Bidirectional	0—
			Listen port	1204
			SAVE	4



- 5. Go to the decoder and click the **SAP Listener** menu.
- 6. Click the **Enable** toggle switch to enable the SAP listener. When enabled, the toggle switch will be orange.
- 7. Click the **SAVE** button.

			UDUE Out-ut									Logout
< System internation	kput Muthoew	Senal	нЭм Олри	Logo Ter	t Netifications	Network	PTP LLDP	Configuration	User Loose	SAP Enable Addresse:	s -	6 224.2.127.254, 239.255.255.255
												SAVE

- 8. Click the **IP Input** menu.
- 9. Select the desired IP input for AES67 audio and click the **Enable** toggle switch. When enabled, the toggle switch will be orange. In the example below, **Input 3** is used.
- 10. Enter the address in the **Multicast address** field.
- 11. Click the **SAVE** button.

							Logout
< System information SAP Listener IP Input Mutliview Serial HDMI Output Logo	Text Notifications	Network PTP LLDP Configuration	Users License	Upgrade			*
	Investor		louid 0				
U	Name	ip_input1	Name		in locut?		
	Enable	-•	Enable		Input 3		
	Interface	eth1	Interface		mparo		
	Multicast address	226.0.0.1	Multicast address		Name		in input3
	Port	1000	Port		- Carlo		ip_inpato
	Multicast filter (IGMPv3)	Mode exclude ~	Multicast filter (IGMPv3)	Mode	Enable		
		*Separate multiple IP addresses with a comma.		*Separate	LINDIC		9
				_	Interface		oth1
		SAVE			Interface		eun
					Multicast address		1 226 0 10 1
	Input 3		Input 4		Mullicast audress		228.0.10.1
	Name	ip_input3	Name		Det		44.00
	Enable		Enable		Port		1100
	Multicast address	226.0.10.1	Multicast address				
	Port	1100	Port		Multicast	Mode	exclude 👻
	Multicast	Mode exclude 🗸	Multicast	Mode	(IGMPv3)		
	(IGMPv3)	Addresses" N/A	(IGMPv3)	Addresse	(/	Addresses*	N/A
		"Separate multiple IP addresses with a comma.		"Separate			
		SAVE				*Separate multiple IP add	resses with a comma.
	Input 5		Input 6				
	Name	ip_input5	Name			SAVE	A
	Enable	0-	Enable				• • •
	Interface	elhi	Interface				



- 12. Click the HDMI Output menu.
- 13. Locate the **Audio** section, click the **Audio** > **Input** drop-down list, and select the input that was configured in Steps 10 and 11.
- 14. Click the **Enable AES67** toggle switch to enable it. When enabled, the toggle switch will be orange.
- 15. Click the **SAVE** button.

					Logout
< System information SAP Listener IP Input Multiview Serial HOMI Output Logo Text Notifications Network I	PTP LLDP	Configuration Users License Up	grade		*
Ð	Output 1				
•	Name	hdmi_	outputt		
	Descarroing	Key sci	ambling		
	HDCP	Encrypted	•		
		Version	1.4 •		
	EDID	Version	Audio	Input	ip_input3 (226.0.10.1:1100) -
				Backup mode	Off 🚽
	Video	Input ip_input1 (226.0.0.1)		•	
		Backup mode		Backup input	Not used 👻
		Backup input Not			
		Configuration grace period (S)		grace period	
		Active input ip_input1 (226.0.0		(s)	
		HDR No acti			
		Stretch/crop keep aspec		Active input	Not used
		Resolution		Downmixing	none 👻
		Framerate Siste mode			
	Video Wall	Enable		Enable	14
	Fast Switching	Enable		AES67	
		TO PRIMARY TO BACKU		Status	No active audio
	Audio	Backup mode			
		Backup input Not		Mute	0—
		Configuration grace period (s)			
		Active input		volume	- 15 +
		Enable		Analog power	•
		AES67No acti			
		Mute		Analog power	0—
		Volume -			
	-			TO PRIM	ARY TO BACKUP
			Standby	Auto on	
			V	Brojector	
				cooldown (s)	0
				. /	
				Timeout (s)	0
				Type	DispSW AVon -
				.,160	
				SA	



Scrambling

OmniStream supports 128-bit Advanced Encryption Standard (AES) scrambling and is required for HDCP-encrypted streams. Scrambling can be enabled or disabled through the web server, and can be applied to individual sessions. In order for scrambling to function properly, it must be enabled on both the encoder session and all decoders subscribed to a stream that is a part of a scrambled session. The scrambling key on both encoder and subscribed decoder(s) must be identical. When enabled, the default scrambling key is "scrambling".

- 1. Login to the encoder.
- 2. Click Session in the menu bar.
- 3. Locate the Scrambling section under the desired Session window group.
- 4. Click the **Enable** toggle switch to enable scrambling. Once enabled, the toggle switch will be orange.
- 5. Enter the desired scrambling key in the **Key** field.
- 6. Click the SAVE button at the bottom of the Session window group to commit the changes.

IMPORTANT: If a user-defined key is specified, then it must be a minimum of eight alphanumeric characters. Special characters and spaces are not permitted. Also note that if a key is generated, the same generated key (on the encoder) must also be used on the decoder, in order to de-scramble the signal.





Slate / Logo Insertion

The difference between a "slate" and "logo" is in the size of the image and how it is used: Logos are classified as smaller, low-resolution images that can be positioned at specified locations on the screen. Slates occupy the entire screen. Note that while logos may be used as slates, the image quality will be degraded, as the image will be scaled to fill the screen.

Slate / logo insertion can be performed on both the encoder and decoder. When configured on the encoder, the image that is displayed on the output (decoder) will be from the encoder IP address(es) to which each decoder is subscribed. When configured on the decoder, the image is unique to the specified HDMI output. Refer to the *OmniStream Single-Channel / Dual Channel A/V Decoder User Manual*, for information on managing slate / logo insertion on decoder units.

Adding Slates / Logos

- 1. Login to the encoder.
- 2. Click Logo in the menu bar.
- 3. Under the **New logo** window group, enter the name of the logo in the **Name** field.
- 4. Click the Choose File button and select the desired image. Only .png or .svg files are valid selections.
- 5. Click the **UPLOAD** button to upload the file.
- 6. A new window group will be created with the name of the logo that was provided in Step 3.
- 7. Perform one of the following:
 - If the selected image will be used as a *logo*, then proceed with Steps 8 through 13.
 - If the image will be used as a *slate*, skip to Step 14 on the next page.
- 8. Under the Logo Insertion window group, click the Select Logo drop-down list and select the desired logo. To prevent the image from being displayed, select the Not used option.
- 9. Click the Aspect Ratio drop-down list to set the aspect ratio of the image. Selecting Keep will maintain the aspect ratio. Select Stretch to scale the image to the defined size.
- 10. Enter the horizontal and vertical position of the logo, based on the resolution of the video stream, in the **Horizontal** and **Vertical** fields, respectively.
- 11. Enter the width and height of the logo, based on the resolution of the video stream, in the **Width** and **Height** fields, respectively.
- 12. Click the **Enable** toggle switch to activate the logo/slate feature. When enabled, this toggle switch will be orange.
- 13. Click the **SAVE** button to commit changes.



14. Click **Encoding** in the menu bar.

15. Click the Slate mode drop-down list, and select Off, Manual, or Auto.

Slate mode	Description
Off	Disables the image from being displayed.
Manual	The image will always be displayed, superimposed on the source signal, and will remain even if the source signal is lost.
Auto	The image will only be displayed when the source signal is lost. For example, this mode is useful in conference room applications for displaying system instructions when no sources are connected.

- 16. Click the **Slate logo** drop-down list and select the desired image. If **Slate Mode** is set to Off, then this field will not be visible.
- 17. Click the **SAVE** button to apply all changes.

Deleting Slates

- 1. Click Encoding in the menu bar.
- 2. Under the Encoder window group(s), click the Slate mode drop-down list and select Off.
- 3. Click the **SAVE** button at the bottom of the window group to commit changes.
- 4. Click Logo in the menu bar.
- 5. Click the **DELETE** button for the logo to be removed.

Deleting Logos

- 1. Click Logo in the menu bar.
- 2. Under the Logo Insertion window group(s), click Enable button (if enabled) to disable the feature.
- 3. Click the **SAVE** button at the bottom of the window group to commit changes.
- 4. Click the **DELETE** button for the logo to be removed.



Text Insertion

Text can be inserted and scrolled across the screen, making it useful for messages and notifications. Several options are available when using text: Scroll speed adjustment (forward, reverse, or static), number of iterations, text color, vertical / horizontal position, as well as transparency.

- 1. Login to the encoder.
- 2. Click Text in the menu bar.
- 3. Under the **Text Insertion** window group, click the **Enable** toggle switch. When enabled, this toggle switch will be orange.
- 4. In the **Text** field, enter the desired text.
- Specify the speed of the scrolling text in the Scroll Speed field. Integer values from -255 to 255 are valid. Negative numbers will scroll the text from left to right. Positive numbers will scroll text from right to left. A value of 0 will not scroll.
- 6. Enter the number of iterations in the **Iteration** field. Set this field to 0 (zero) to set the number of iterations to infinity.
- Click the Color drop-down list to select the color of the text. The Red, Green, and Blue fields can be changed to further modify the color of the text. Adjust the Alpha field to control the transparency of the text. A value of 255 is opaque and a value of 0 is transparent. Numbers from 0 to 255 are valid for each of these fields.
- 8. Specify the location of the text in the **Horizontal (%)** and **Vertical (%)** fields. Each of these values is based on the horizontal and vertical resolution of the video stream.
- 9. Specify the size of the text in the **Width (%)** and **Height (%)** fields. Each of these values is based on the horizontal and vertical resolution of the video stream.
- 10. Click the SAVE button to commit all changes.



Configuring a Static IP Address

There will be situations where it is desirable for the encoder to be assigned a static IP address. Some IT environments prefer this method, as opposed to having a DHCP server dynamically assign IP addresses. If the encoder is unable to detect a DHCP server within 15 seconds, then Automatic Private IP Addressing (APIPA) will be used to assign the encoder an address within the IPv4 address block 169.254.xxx.xxx/16. If this occurs, connect an Ethernet cable directly from the **ETHERNET** port of the encoder to the LAN port of a computer, then follow the instructions below.

ନିମ୍ମା କଳାବାନ କଳାବାନ < System information SAPListener Input EDID Excoding Senial Session Logo Text Notifications Network PTP LLDP Configu	ation Users License Upgrade	Loport >
Address & U Name Ensible Carrer Mode and Partners 101	Nortwork 2 101 Name Enabled Carter Mode	002 • • •
Subsectional 2015 2017 Galeway Uti 11 Link good	Network 1	eth1
MAC address BD 980 917 Tenet Enalo	Enabled	•
Evable HTTPS	Carrier	•
	Mode	2 static 🗸
	IP address	3 10.1.0.12
	Subnetmask	4 255.255.254.0
	Gateway	5 10.1.1.254
Click the Mode drop-down list and select static.	Link speed	1000
Enter the desired IP address in the IP address	MAC address	B8:98:B0:01:F7:43
field.	Telnet	Enable —
Enter the subnet mask in the Subnetmask field.		Authentication —
Enter the gateway (switch/router) address in the Gateway field.	WebUI	Enable HTTP —
Click the SAVE button to commit all changes.		Enable HTTPS —

1. Login to the web server and click **Network** in the menu bar.

2.

3.

4.

5.

6.



Web Server

NOTE: This section assumes that the **System mode** is set to VCx. If VC-2 Video or VC-2 PC Application is used, some features on these pages will not be available.

System information page

system information SAP (lakeer input Enito Encoding Section Log Text No System information Suppose Suppose Suppose Suppose Suppose Suppose
System advanuator Pimeare version 2.0.0 PRA xc:2x645.ftg616 Model aff orms 612 System mode aff orms 612 Description NA Loadon NA Timezone UTC
System mode 2.0 PiRQA xc2/closh.fg/076 Model at cmm of 12 System mode
FIEGA xc2/2d5.ftg/Fi Model at omn 612 System mode xc2/2d5.ftg/Fi Description NAP Location NAP Timezone UTC
Model at own 612 System mode Description NA Location NA Timezone UTC
System mode Company System Company System Company System Com
Description NA Location NA Timezone UTC
Location NA Timecone UTC
Timecore UTC
Luizerine 11-15-0022222116
system rc System information
Temperature vp
Timestave * Firmware version 2.0.0
· · · · · · · · · · · · · · · · · · ·
Power Consumption FPGA xc7z045_ffrn676
Hotel
strong Model at ampi 512
System mode VCX -
Action (KEST Dawl and
Description N/A
Location N/A

Firmware version

The version of firmware that the encoder is running. Always make sure the latest version of firmware is installed.

FPGA

Displays the FPGA model number and the size.

Model

The model number of the unit.

System mode

Click this drop-down list to select the system mode. The default setting is VCx.

Mode	Description
VCx	This is the default mode and represents the latest codec technology from Atlona, with outstanding support for computer graphics and motion video. VCx includes support for 4K60 4:4:4 fast switching, dual streaming from AT-OMNI-111 encoders, and multiview on the decoders.
VC-2 Video	Legacy OmniStream codec that provides the best viewing experience when streaming motion graphics and/or video.



Description

Provides the option of assigning descriptive name to the unit.

Location

Provides the option of assigning a description of where the unit is located.

Timezone

Displays the time zone format. Click the **SET TIMEZONE** button, to assign the time zone.

Date/Time

Displays the current date and time. Click the **SET DATE/TIME** button to set these values.

Uptime

Displays the elapsed time since the unit was poweredon or rebooted.

System Temperature

Displays the ambient enlosure temperature.

Die Temperature

Displays the value returned from the die temperature sensor (DTS) on the chip of the PCB.

Power Consumption

Displays the precise power consumption of the encoder.

Hostname

Displays the hostname of the encoder. By default, OmniStream encoders are assigned a default hostname, which is constructed as follows: at-omni-[SKU]-[last five digits of serial number]. If using a custom hostname, it must meet the hostname standards, defined here: https://tools.ietf.org/html/rfc1123.

NTP Server

Displays the NTP server. This field is set to pool.ntp.org by default. Click this field to enter the desired NTP server address.

Buttons

Click this toggle switch to enable or disable the front-panel buttons. If the buttons are disabled, their backlight turns off. When enabled, the toggle switch will be orange.

LEDs

Click this toggle switch to enable or disable <u>all</u> front-panel LED indicators and button backlight indicators.

SET DATE/TIME

Click this button to set the current date and time.

SET TIMEZONE

Click this button to set the desired time zone.

Description			N/A
Location			N/A
Timezone			UTC
Date/Time		10-	13-2022 22:21:05
Uptime		0 days 6	hours 41 minutes
System Temperature	°C		45.50 °C
	°F		113.90 °F
Die Temperature	°C		66.93 °C
	°F		152.48 °F
Power Consumption			8.20 W
Hostname		a	t-omni-512-00826
NTP server			pool.ntp.org
Buttons			-•
LEDs			•
SET DATE/TIME	SET TIMEZONE		
FACTORY RESET	C Reset users	Reset network	Reset defaults
IDENTIFY	DEBUG	REBOOT	SAVE



FACTORY RESET

Click this button to reset the encoder to factory-default settings. When performing a factory reset, the following options can be selected, by clicking the check box. If no options are selected, then the encoder is reset with no factory-default settings.

Option	Description
None Checked	Resets the encoder with no factory-default settings.
Reset User	Resets the encoder to factory-default settings and resets custom user information.
Reset Network	Resets the encoder to factory-default settings and resets network information.
Reset Defaults	Resets the encoder to factory-default settings. In addition, static multicast addresses are configured. This option can be used to configure a single encoder to transmit to any number of decoders.



IMPORTANT: The **Reset Defaults** option will not work for multiple encoders on the same network.

IDENTIFY

Click this button to physically identify a unit on the network. Clicking this button will cause all front-panel LED indicators to flash for 10 seconds.

DEBUG

Click this button to instruct the unit to create a debug file. This file is used by Atlona Technical Support Engineers to diagnose internal issues with the unit.

REBOOT

Click this button to perform a soft reboot of the encoder.

SAVE

Click this button to commit changes to the settings on this page.



SAP Listener page

			Logout
< System information SAP Listener Input EDID Encoding Serial Session Logo Text Notifications Network PTP	LLDP Configuration Users	License Upgrade	>
Enat	ble		
Addr	resses 2	127.254, 239.255.255.255	
	SALE		
	SAME		
Sec	sion PlayStation3		
Nam	ne	PlayStation3	
Hash	h	da36	
Inter	rface(s)	elh1	
Desc	cription	SAP	
Origi	inator		
Sour	rce address	Enable	
Vide	eo Present		
	Destination IP add	A d d	0010107051 000055055055
	Destination UDP p	Addresses	224.2.127.254, 239.255.255.255
Audr	Destination ID and		
	Destination LIDP n		
AUX	Present		C AV/E
	Destination IP add		SAVE
	Destination UDP p		

Enable

Click this toggle to enable or disable SAP. This feature is enabled when the toggle switch is orange. This is the default setting. If an SAP announcement is picked up, it will be displayed below the **SAP** window group (as shown here).

Addresses

Encoders currently send SAP announcements on two multicast addresses: 224.2.127.254 and 239.255.255.255. These IP addresses are added by default.

SAVE

Click this button to save all changes

Session PlayStation	13	
Name		PlayStation3
Hash		da36
Interface(s)		eth1
Description		N/A
Originator		-
Source address		10.1.0.12
Video	Present	•
	Destination IP address	226.0.0.1
	Destination UDP port	1000
Audio	Present	•
	Destination IP address	226.0.10.1
	Destination UDP port	1100
AUX	Present	•
	Destination IP address	N/A
	Destination UDP port	N/A

IMPORTANT: If the **Addresses** field is changed, then the same changes must be applied to all devices, in order for all devices to see the SAP multicast.



Input page

					Logout
 System Information SAP Listener Input EDID Encoding Serial Session Logo 1 	Text Notification	ss Network PTP LLDP Configuration L	lsers License Upgrade		>
	Input 1		Input 2		
	Name	hdmi_input1	Name	hdmi_input2	
	Cable present	•	Cable present	•	
	EDID	Default HDR MCH 👻	EDID Default I	HDR MCH 👻	
	HDCP	Encrypted	HDCP Encrypted	•	
		Version 2.2 •	Version	2.2 🕶	
		version 1.4	Input 1		
	Video	Color depth 12	Video		
		Subsampling 444	Name		hdmi input1
		Colorspace RGB			indin_input i
		Resolution 190 x 1080p	Cable present		
		HDR	Cable present		
	Audio	Bit depth Unknow	vioro g		
		Channel 2	EDID		Default HDR MCH 👻
		Format LPCM	Colorsp		
		Frequency 48kHz	Framer HDCP	Encrypted	•
			Susan		
		SAVE	Resol	Version	2.2 🗸
			Resolut		
				Negotiated	14
				version	1.4
				Version	
	Video generator 2	video generator?	Video	Color dopth	10
	Color depth	8 •	VIGEO		12
	Colorspace	YUV			
	Francis			Subsampling	444
Input window groups				Colorspace	RGB
The following fields apply to both the	e Inpu	ut 1 and Input 2		Resolution	1920 x 1080p
window groups					1020 X 1000p
window groupo.				Framarata	50.04
				Framerale	59.94
Name				HDR	•
The name of the input. This field ca	be changed.				
			Audio	Bit depth	Unknown
Oshla ana sat					
Cable present				Channel	2

This indicator will be red if the encoder is unable to detect the source signal. This may indicate a damaged HDMI cable. If this indicator is green (shown), then the cable integrity is good, and additional fields for both the Video and Audio sections will be displayed.

EDID

Click this drop-down list to select the desired EDID. The default EDID is selected as a default setting.

Channel count LPCM Format 48kHz Frequency SAVE

EDID	Description
Default HDR MCH	Default EDID with HDR (3840x2160p30) and multichannel audio
Default HDR 2CH	Default EDID with HDR (3840x2160p30) and two-channel audio
Default DV MCH	Default EDID with Dolby Vision (3840x2160p30) and multichannel audio
Default DV 2CH	Default EDID with Dolby Vision (3840x2160p30) and two-channel audio
Default SDR MCH	Default EDID with SDR (3840x2160p30) and multichannel audio
Default SDR 2CH	Default EDID with SDR (3840x2160p30) and two-channel audio
ATL 1080P 2CH	1920x1080p60 with two-channel PCM audio
ATL 1080P DD	1920x1080p60 with Dolby Digital
ATL 1080P DVI	1920x1080p60 formatted as DVI



EDID	Description
ATL 1280x800 RGB DVI PCWXGADVI	1280x800 formatted as DVI
ATL 1280x800 RGB PCWXGA2CH	1280x800p60 PC format with two-channel PCM audio
ATL 1280x800 RGB TVWXGA2CH	1280x800p60 TV format with two-channel PCM audio
ATL 2160P 2CH	3840x2160p30 with two-channel PCM audio
ATL 2160P MCH	3840x2160p30 with multichannel PCM audio
ATL 2560x1600 2CH	2560x1600p60 with two-channel PCM audio
ATL 2560x1600 MCH	2560x1600p60 with multichannel PCM audio
ATL 720P DD	1280x720p60 with Dolby Digital audio
ATL 720P 2CH	1280x720p60 with Dolby Digital two-channel audio
ATL VR (2160x1200)	2160x1200p90 (Compatible with HTC VIVE® VR system)

HDCP

Encrypted

Indicates if the content being transmitted from the source is HDCP-encrypted. If using HDCP-encrypted content is being used, then this indicator will be green.

Framerate

HDR content is detected.

HDR

Version

Click this drop-down list to select the version of HDCP to be supported: 2.2, 1.4, or None.

Negotiated Version

This field displays the HDCP version that has been negotiated with the source.

Video

The following fields will only be displayed if the Cable present indicator is green.

Color Depth

Displays the color depth of the source content.

Subsampling

Displays the chroma subampling value of the source content.

Colorspace Displays the color space of the source content.

Resolution Displays the resolution of the source content.

Audio

The following fields will only be displayed if the Cable present indicator is green.

Bit Depth

Displays the bit depth of the source audio.

Channel count

Displays the number of audio present that are present in the source audio.

Format Displays the audio format of the source content.

Displays the frame rate of the source content.

This indicator displays the presence of HDR source

content. If the indicator is green, then the source is outputting HDR content. If the indicator is red, then no

Frequency Displays the audio frequency of the source content.



SAVE

Click this button to save all changes under the **Input** window group.

Video generator 2	
Name	video_generator2
Color depth	8 🗸
Colorspace	YUV
Framerate	60
Subsampling	444
Resolution width	1920
Resolution height	1080
	SAVE

Video generator window groups

The following fields apply to both the **Video generator 1** and **Video generator 2** window groups. This signal can be used to test the video capability of the network.

Name

The name of the input. This field cannot be changed.

Color Depth

Click this drop-down list to select the color depth. Available values are 8, 10, and 12.

Colorspace

Displays the color depth.

Framerate

Click in this field to change the frame rate (in Hz) of the video generator signal. The default value is 60.

Subsampling

Displays the chroma subsampling value.

Resolution width

Click in this field to change the horizontal resolution of the signal.

Resolution height

Click in this field to change the vertical resolution of the signal.

SAVE

Click this button to save all changes under the Video generator window group.



EDID page

This page is used to show details about each EDID that is loaded on the unit.

					Logout
< System information SAP Listener Input EDIO Encoding Serial Session Logo Text Notifications Network.	PTP LLDP	Configuration Users	License Upgrade		*
	Default HDR MCH Product Vendor Preferred mode Supported	1 38 Mode	AT-OMINI-512 ATL 40:2160;60142 (2014)2 800:600;604:2 (40 MH2)		
		Mode 19 Mode 16 Mode 16 Mode 16	1024x768p60Hz (65 MHz) 2011200p60Hz (193 MHz) 80x1080p60Hz (147 MHz) 00x1200p60Hz (162 MHz) 600x500p60Hz (118 MHz)		
		Mode 1 Mode 14 Mode 12	Default HDR MCH	1	
		Mode 38 Mode 38	Product		AT-OMNI-512
		Mode 38 Mode 38	Vendor		ATL
		Mode 19 Mode 38 Mode	Preferred mode		3840x2160p60Hz (594 MHz)
		Mode	Supported modes	Mode	800x600p60Hz (40 MHz)
	Default HDR 2CH	Mode 19		Mode	1024x768p60Hz (65 MHz)
	Product Vendor			Mode	1920x1200p60Hz (193 MHz)
				Mode	1680x1050p60Hz (147 MHz)
Product Displays the SKU of the OmniStream encoder of	or the			Mode	1600x1200p60Hz (162 MHz)
Product and Vendor for any EDID captured usin	ng a			Mode	1600x900p60Hz (118 MHz)
decoder. This held cannot be changed.				Mode	1440x900p60Hz (106 MHz)
Vendor Displays the vendor name. This field cannot be	e chan	ged.		Mode	1400x1050p60Hz (122 MHz)
Preferred mode				Mode	1280x1024p60Hz (108 MHz)
Displays the preferred timing and resolution of t	the ED	ND.		Mode	1280x800p60Hz (83 MHz)
This field cannot be changed.				Mode	3840x2160p60Hz (594 MHz)
Common text and a second				Mode	3840x2160p30Hz (297 MHz)
Supported modes Mode				Mode	3840x2160p25Hz (297 MHz)
In addition to the preferred timing and resolution	n, eac	h		Mode	3840x2160p24Hz (297 MHz)
resolutions. The number of available supported to	imings d timin	s/ gs/		Mode	1920x1080p60Hz (148 MHz)
resolutions depends on the EDID.				Mode	3840x2160p50Hz (594 MHz)
Add EDID	the n	200		Mode	1920x1080i60Hz (74 MHz)
to add a new EDID.	ue pa	age,		Mode	1920x1080i50Hz (74 MHz)
				Mode	1280x720p60Hz (74 MHz)
				Mode	1920x1080p50Hz (148 MHz)



Encoding page



Encoder window groups

The following fields apply to both the **Encoder 1** and **Encoder 2** window groups.

Name

The name of the encoder. This field cannot be changed.

Input

Click this drop-down list to select the input. Available options are: not used, hdmi_input1, and video_ generator1. For Encoder 2, the options are: not used, hdmi input2, and video generator2.

Max bit rate

This field is set to 900 and cannot be changed.

Bit depth

Click in this drop-down list to select the desired bit depth. Available values are: 8-bit, 10-bit, and 12-bit.

Force YUV

This LED indicator will be green if YUV color space is being used.





Slate mode

Click this drop-down list to enable or disable slate mode. Available values are: off, manual, and auto.

Slate mode	Description
Off	Disables the image from being displayed.
Manual	The image will always be displayed, superimposed on the source signal, and will remain even if the source signal is lost.
Auto	The image will only be displayed when the source signal is lost. For example, this mode is useful in conference room applications for displaying system instructions when no sources are connected.

Slate logo

Click this drop-down list to select the desired slate logo.

Thumbnail Enable

Click this toggle switch to enable to disable a thumbnail of the input stream. When enabled, this toggle switch will be orange and an image of the input stream will be displayed. Thumbnails are updated every 2 seconds.



NOTE: Thumnails can also be accessed at: http://<encoder-ip-address>/thumbnail/ thumbnail1.jpg. For dual-channel encoders, the secondary thumbail can be accessed at: http://<encoder-ip-address>/thumbnail/thumbnail2.jpg.

COPY URL

Click this button to copy the URL of the thumbnail to the clipboard.

SAVE

Click this button to save all changes.



Serial page

					Log	jout
< System information SAP Listener Input EDID Encoding Settial Session Logo	Text Notifications Network PTP LI	.DP Configuration	Users Lic	ense Upgrade		
	Serial port configuration		Serial port co	nfouration		
	Name	serial_port1	Name	serial_port	2	
	Supported modes	infrared, serial	Supported mo	infrared, seria		
	Mode	serial 👻	Mode	serial		
	Baudrate	9600 -	Baudrate	9600		
	Padh	none	Parity	000e -		
	Stop	1-	Stop			
	Flowcontrol	none 👻	Flowcontrol	none		
	SAVE			SAVE		
	Serial configuration		Serial configu	ration		
	Port	serial_use1	Name	serial_use		
	Mode	ci v	Mode	ci -		
	SAVE			SAVE	\mathbf{X}	
	Command: Display Off		Command: D	isplay On		
	ASCII	N/A	ASCII	decoder -		
	нех	N/A	HEX S	erial port configuration		
				onal port configuration		i 👘
	Commont Malume Dave		Comm	lame	serial_port1	I
	ASCII	decoder 👻	Interpre S	supported modes	infrared, serial	I
	HEX SAVE DELETE	N/A	HEX N	lode	serial 👻	U
			- 8	audrate	9600 🗸	F
Sorial part configuration window	aroups		C	ata	8 🗸	L
Serial port configuration window	a oupa		P	Parity	none 👻	
The following fields apply to both Serial port			- ['			
configuration window groups.			s	itop	1 👻	L
			F	lowcontrol	none 👻	
Name						
The name of the serial port. This fie changed.	eld cannot be				SAVE	I

Supported Modes

Displays the supported protocols for the serial port. This field cannot be changed.

Mode

Click this drop-down list to select the desired serial mode. Available values will be reflected in the **Supported Modes** field.

Baudrate

Click this drop-down list to select the desired baud rate: 115200, 57600, 38400, 19200, or 9600.

Data

Click this drop-down list to select the number of data bits: 6, 7, or 8.

Parity

Click this drop-down list to select the parity bit: None, Odd, Even, Mark, or Space.

Stop

Click this drop-down list to select the stop bit: 1, 1.5, or 2.



Flow Control

Click this drop-down list to select the type of flow control: none, xonxoff, or hw.

SAVE

Click this button to commit all changes within the Serial port configuration window group.

Serial configuration window groups

The following fields apply to both **Serial configuration** window groups.

Name

The name of the port. This field cannot be changed.

Port

Click this drop-down list to select the desired serial port.

Mode

Click this drop-down list to select the desired control mode. Available values are: cli and tcpproxy. Select tcpproxy to translate received IP control traffic to RS-232 output. Selecting the cli option will force the serial port to function as a Command-Line Interface (CLI) for control of the encoder. Refer to Device Control (page 37) for more information.

SAVE

Click this button to commit all changes within the Serial configuration window group.

Command window groups

By default, window groups for the following commands are created: Display Off, Display On, Volume Down, and Volume Up.

Interpret on

Click this drop-down list to select the endpoint where the command will be processed: encoder or decoder.

ASCII

Enter the ASCII representation of the command string in this field.

HEX

Enter the hexadecimal representation of the command in this field.

SAVE

Click this button to commit all changes within the Command window group.

DELETE

Click this button to delete the command window group and all parameters.



NOTE: When entering the command string, it is not required to enter the string under both the ASCII and HEX fields. The encoder requires that one field be completed.



New Command

Click this button to create a new command window group. Provide a name for the command in the displayed dialog box, then click the **Create** button. Complete each of the fields, as described above.

Serial configuration	
Name	serial_use1
Port	serial_port1 👻
Mode	cli 👻
	SAVE

Command: Disp	lay Off		
Interpret on			decoder 👻
ASCII			N/A
HEX			N/A
	SAVE	DELETE	



Session page

						Logout
System Information SAP Listener Input EDID Encoding Serial Sesson Logo Text	Notifications Network	PTP LLDP Configuration	Users I	Joense Upgrade		>
24/5	ion 1		Saccion 2			
Name	2	session1	Name		session2	
Interfa	ace	eth1	Interface		eth2	
SAP	Enable		SAP	Enable	0-	
	Interval	10	Screpbling	Enable	0-	
	Name	N/A	Video	Decoder	vc2_encoder2	
	Description	N/A		Enable		
	Categorisation	Ationa		Destination UDP port	1000	
Scran	mbling Enable			TTL	255	
	Key	scrambling			Link test	
Video	Encoder	vc2_encoder1	Audio	Source	hdmi input2 🗸	
	Enable			Enable AES67		
	Destination IP address	N/A		Session 1		
	Destination UDP port	1000				
	TTL	255		Name		session1
		Link test				
Audio	o Source	hdmi_input1 -	AUX	Interface		eth1
	Enable AES67			menace		Curr
	Destination IP address	N/A		CAD	Fachle	
	Destination UDP port	1100	_	SAP	Enable	_
	TTL	255	Session 3		-	
AUX	Source	Commands 👻	Name		Interval	10
	Enable		Interface		-	
	Destination IP address	N/A	SAP		Name	N/A
	Destination UDP port	1200	Audio		_	
	TTL				Description	N/A
	Listen port	1204				
					Originator	
	SAVE				onginator	
					Ostassisstian	Atlana
					Calegorisation	Aliona
				UNIVE		
Sessi	ion 4	_				
Name	e	session4				
SAP	Enable	0				
Audio	Source	hdmi_input2 +				
	Enable AES67	•				
	Downmixing	none 🗸				
	Enable					
	Destination IP address	N/A				
	Destination UDP port	1120				
	112	255				
	SAVE					

Session window groups

The following fields apply to all **Session** window groups. The AT-OMNI-512 supports up to four sessions.

Name

The name of the session. This field cannot be changed.

Interface

The name of the interface being used. This field cannot be changed.



10

N/A

N/A

Atlona

scrambling

N/A

1000

255

Link test

vc2 encoder1

SAP

Interval Name Description Originator Categorisation Scrambling Enable Key Video Encoder Enable Destination IP address Destination UDP port TTI

SAP

Enable

Enable

Click this switch to enable or disable the Session Announcement Protocol (SAP) announcements. When enabled, the toggle switch will be orange.

Interval

Sets the announcement interval.

Name

The name of the SAP session. By default, this is the same as the session name.

Description

The SAP description.

Originator The ID of the SAP message originator.

Categorisation

The SAP category. This field can be changed, if desired.

Scrambling

Enable

Click this toggle switch to enable or disable scrambling on the encoder. Atlona recommends enabling scrambling for security purposes. When enabled, the toggle switch will be orange.

Key

This field is only displayed if the **Scrambling** toggle switch is enabled (orange). Enter the scrambling key in this field. The scrambling key must be ASCII and must contain a minimum of eight characters. Special characters and spaces are not permitted.

Video

Encoder

Click this drop-down list to select the encoder input.

Fnable

Click this toggle switch to enable or disable the video signal. When enabled (orange), video will pass from the encoder to the decoder.

Destination IP address

Enter the multicast IP address that will be used to stream the content.

Destination UDP port

Enter the destination UDP port in this field.

TTL

Set the TTL (Time-To-Live) duration, from 1 to 255 seconds, in this field. The default value is 255 seconds.

Link Test

Click this button to perform a link integrity test. This feature validates the quality of the link between the encoder and decoder. Link tests are initiated at an encoder, and any decoders that are configured to join that encoder's video multicast address will return packet loss statistics to the encoder, which displays the combined results under the Notifications tab. Refer to Performing a Link Test (page 88) for more information.



Audio

Source

Click this drop-down list to select the desired input. Available values are: Not used, audio_generator1, and hdmi_input1.

Enable AES67

If AES67 audio is used, this indicator will be green.

Enable

Click this toggle switch to enable or disable the audio signal. When enabled (orange), audio will pass from the encoder to the decoder.

Destination IP address

Enter the multicast IP address that will be used to stream the content.

Destination UDP port

Enter the destination UDP port in this field.

TTL

Set the TTL (Time-To-Live) duration, from 1 to 255 seconds, in this field. The default value is 255 seconds.

Audio	Source	hdmi_input1 👻
	Enable AES67	•
	Enable	-•
	Destination IP address	N/A
	Destination UDP port	1100
	TTL	255
AUX	Source	Commands 👻
	Enable	-•
	Destination IP address	N/A
	Destination UDP port	1200
	TTL	255
	Bidirectional	O—
	Listen port	1204
	SAVE	

AUX

Source

Click this drop-down list to select the method of how commands are transmitted.

Source	Description
Not Used	Serial control is disabled
Commands	Stored commands in the encoder are sent to the decoder serial port. Refer to Downstream Control using Triggering (page 42) for more information.
Serial Port 1	Commands are transmitted using Serial Port 1
Serial Port 2	Commands are transmitted using Serial Port 2

Enable

Click this toggle switch to enable or disable the AUX signals. When enabled (orange), control signals will pass from the encoder to the decoder.

Destination IP address

Enter the IP address of the decoder that will be receiving the control signals.

Destination UDP port

Enter the destination UDP port in this field.

TTL

Set the TTL (Time-To-Live) duration, from 1 to 255 seconds, in this field. The default value is 255 seconds.

Bidirectional

Click this toggle switch to enable or disable bidirectional control. When enabled (orange), control signals will be able to pass from encoder to decoder, or from decoder to encoder.


Listen port

Enter the listening port in this field.

SAVE

Click this button to commit all changes within the **Session** window group.



Logo page

	Logout
< System information SAP Listener Input EDID Encoding Serial Session Logo Text Notifications Network PT	11P LLDP Configuration Users License Upgrade >
	ver kop ver kop ver kop ver kop oge incerten 1 ranget vez_encodert spect ratio vez kon (%) Name N/A
s	Stee Wath (%) Height (%) SAVE
	ugg Insention 2 UPLOAD
۲ ۲	Sanget
	cop Notised v
A	Aspect ratio stretch +
	cocation Horizontal (%) 0
	Vertical (%) 0
Si	Size Width (%) 10
	Height (%) 10
	SAVE

New logo window group

Name

Enter a name for the logo in this field.

Choose File

Click this button to select the logo file to be uploaded. Files must be in .png or .svg format and must not exceed 5 MB (5120000 bytes) in size. When an image file is uploaded, it will appear in the **Logo** drop-down list.

UPLOAD

Click this button to upload the logo file to the encoder.

Logo Insertion window groups

The following fields apply to both **Logo Insertion** window groups.

Target

Displays the name of the encoder. This field cannot be changed.

_			_	-
Е	n	а	b	le

Click the toggle switch to enable or disable the logo. If the toggle switch is orange, then the logo will be enabled.

Logo

Click this drop-down list to select the desired logo. To disable the use of a logo, set to Not Used.

Logo Insertion 1	
Target	vc2_encoder1
Enable	0—
Logo	Not used 👻



Aspect Ratio

Click this drop-down list to select the type of aspect ratio to be applied to the logo.

Horizontal (%)

Enter the horizontal position of the logo based on the resolution of the video stream.

Vertical (%)

Enter the vertical position of the logo based on the resolution of the video stream.

Width (%)

Enter the width of the logo. This value is based on the horizontal resolution of the video stream.

Height (%)

Enter the height of the logo. This value is based on the vertical resolution of the video stream.

SAVE

Click this button to commit all changes within the Logo Insertion window group.

Aspect ratio		stretch 👻
Location	Horizontal (%)	0
	Vertical (%)	0
Size	Width (%)	10
	Height (%)	10
	SAVE	



Text page

				Logout
System Information SAP Listener Input EDID Encoding Sental Session Logo Text Notifications Network PTP LLD 	Configuration Use	rs License Upgrade		>
Text insertion	1			
Target		vc2_encoder1		
Enable		0-		
Text		N/A		
Scroll speed				
Iterations				
Color	Red	255		
	Green	255		
	Blue	255		
	Alpha			
Location	Horizontal	Text insertion 1		
	Vertical			
Size	Width	Target		vc2 encoder1
	Height	_		-
	SAVE	Enable		\frown
Text insertion	2	Toyt		NIA
Target		IEXL		IN/A
Enable		_		
Text		Scroll speed		0
Scroll speed				
Iterations		Iterations		0
Color	Pert	-		
	Green	Color		white 👻
	Blue			
	Alpha	F	Red	255
Location	Horizontal			200
	Vertical		Graan	055
Size	Width		Sieen	200
	Height			
	SAVE	E	Blue	255
		A	Alpha	255
	l			

Text insertion window groups

The following fields apply to both Text insertion window groups.

Enabled

Click this toggle switch to enable or disable the text. When the toggle switch is orange, the text will be enabled.

Text

Enter the desired text in this field.

Scroll Speed

Enter the scrolling speed in this field. Integer values from -255 to 255 are valid. Negative numbers will scroll the text from left to right. Positive numbers will scroll text from right to left.

Iterations

Enter the number of iterations in the Iteration field. Set this field to 0 (zero) to set the number of iterations to infinity.

Color

Click this drop-down list to select a solid color preset: red, green, black, white, yellow, or blue.

Red, Green, Blue, Alpha

Click these fields to fine tune the color of the text. Integer values from 0 to 255 are valid for all fields. Adjust the **Alpha** field to control the transparency of the text. An alpha value of 255 is opaque and a value of 0 is transparent.



Horizontal

Enter the horizontal position of the text, based on the resolution of the video stream.

Vertical

Enter the vertical position of the text, based on the resolution of the video stream.

Width

Enter the width of the text. This value is based on the horizontal resolution of the video stream.

Height

Enter the height of the text. This value is based on the vertical resolution of the video stream.

SAVE

Click this button to commit all changes within the Text insertion window group.

Location	Horizontal	0
	Vertical	0
Size	Width	10
	Height	10
	SAVE	



Network page

			Logout
< System information SAP Listener Input EDID Encoding Serial Session Logo Text Notifications Network PTP LLDP	Configuration Users Lice	nse Upgrade	
Network 1 Name Enabled	eth1 Name Enabled	eth2	I
Note IP address Subretmask Galenay Lifk speed NAC address Enable	statc + 10.1.0.12 255.255.254.0 Subnetmask 10.1.1.254 Gateway 1000 Link speed 8:08.001F7.45 McC address 	000 - 144 144 154 155 155 155 155 155 155 155	
Authentication Webuil Enable HTTP Enable HTTPS SAVE	• • WebU	Network 1 Name	eth1
		Enabled Carrier	
		Mode	static 👻
		IP address	10.1.0.12
		Subnetmask	255.255.254.0
		Gateway	10.1.1.254

Network window groups

The following fields apply to both **Network** window groups.

Name

Displays the name of the Ethernet interface. This field cannot be changed.

Enabled

This indicator displays the state of the Network Interface Card (NIC). If the indicator is green, then the NIC is in the up/up state.

Carrier

If this indicator is green, then an active link exists. Otherwise, if no link exists, this indicator will be red.

Mode

Click this drop-down list to select the desired IP mode. Select DHCP to let the DHCP server (if present) assign the encoder the IP settings. When static is selected, the information for the IP Address, Subnetmask, and Gateway fields must be entered.

IP Address

Displays the IP address used by the channel. This field can only be changed if the Mode field is set to static.

Subnetmask

Displays the subnet mask for the channel. This field can only be changed if the Mode field is set to static.

Gateway

Displays the gateway (router) address for the channel. This field can only be changed if the **Mode** field is set to static.



Link speed

Displays the Ethernet interface link speed in Mbps. This field cannot be modified.

MAC address

Displays the MAC address of the Ethernet interface.

Enable

Click this toggle switch to enable or disable Telnet. If disabled, then Telnet sessions to the encoder cannot be established.

Authenticator

Click this toggle switch to enable or disable Telnet authentication. If enabled, then the toggle switch will be orange. Once enabled, connecting to the encoder using Telnet will require login credentials. The default credentials are:

Username: admin Password: Atlona

Enable HTTP

Click this toggle switch to enable or disable HTTP. If disabled, traffic on port 80 is forbidden.

Enable HTTPS

Click this toggle switch to enable or disable HTTPS. If disabled, traffic on port 443 is forbidden.

SAVE

Click this button to commit all changes within the **Network** window group.

Link speed		1000
MAC address		B8:98:B0:01:F7:43
Telnet	Enable	•
	Authentication	•
WebUI	Enable HTTP	•
	Enable HTTPS	•
	SAVE	



PTP page

The **PTP** page provides options for adjust Precision Time Protocol (PTP) for AES67 audio streams. PTP is used by AES67 to keep all audio streams synchronized.

For a system utilizing PTP, all devices undergo an automatic self-election process to choose the device to be used as the PTP grandmaster (GM) clock, based on the accuracy of the device's clock and the device's configured priority. A lower priority number means the device is more likely to get selected as the GM. OmniStream runs 1 PTP daemon per Ethernet interface.

IMPORTANT: If a new device is added to the network and the GM changes, a brief outage will be experienced while all connected devices synchronize with the new clock. Because of this, Atlona recommends that one unit gets manually defined as the GM and have both **Priority 1** and **Priority 2** fields be set to 1.

					Logout
< System information SAP Input EDID Encoding Serial Session Logo Text	Notifications Network PTI	P LLDP Configuration Users	License	Upgrade	
	- 114				
	Interface	eth1	Interface		eth2
	Domain number	0	Domain n	umber	0
	Priority 1	128	Priority 1		128
	Priority 2	128	Priority	eth1	
	TTL		TTL		
	GM Identity	B8:98:30:FF:FE:01:F0:91	GM Ide	Interface	eth1
	Master offset	-96 ms	Master		
	-	SAVE		Domain number	0
				Priority 1	128
		/		Priority 2	128
				TTL	8
				Is GM	•
				GM Identity	B8:98:B0:FF:FE:01:F0:91
				Master offset	-96 ns
					SAVE
ath window groups					

eth window groups

The following fields apply to both **eth** window groups. The single-channel encoder will only have one **eth** window group.

Interface

Displays the Ethernet interface associated with the PTP settings.

Domain Number

Enter the domain number in this field. Valid entries are 0 through 127.

Priority 1

Enter the priority number in this field.

Priority 2

Enter the priority number in this field.



TTL

Displays the TTL value. The default IPV4 TTL value used for PTP is $\ensuremath{\mathfrak{B}}.$

Is GM

If the indicator is green, then this interface is the PTP GM.

GM Identity

The grandmaster clock identity.

Master Offset

Displays the grandmaster clock offset.

SAVE

Click this button to commit all changes.

eth1	
Interface	eth1
Domain number	0
Priority 1	128
Priority 2	128
TTL	8
Is GM	•
GM Identity	B8:98:B0:FF:FE:01:F0:91
Master offset	-96 ns
	SAVE



LLDP page

The Link Layer Discovery Protocol (LLDP) page returns information about the switch that the encoder is connected to. If both interfaces are connected to the switch, then two **eth** window groups will be displayed.

NOTE: LLDP must be enabled on the switch that the encoders are connected to, in order for the switch information to be displayed.



The discovery protocol being used.

RID

The router ID.

Age

Up-time of the interface.

Chassis ID

The MAC address of the interface.

Chassis Capability

Indicates the device function, such as bridge (switch), router, etc.

Port ID

The port ID.

Port Description

The type of port, such as gigabit Ethernet, fast Ethernet, etc.

TTL

The Time-To-Live value.

Refresh

Click this button to refresh the page after a port change.



Configuration page

		Logout
 System information SAP Input EDID Encoding Serial Session Logo Text Notification 	s Network PTP LLDP Configuration Users License Upgrade	>
Export configuration EXPORT	Import configuration Private Still confidence Private Still confidence Private Still confidence Centrolate (PEM) Centrolate (PEM) Choose File No file chosen	
	Upload SSL certificate	
	Certificate (PEM) Choose File No file chosen	
	Private key (PEM) Choose File No file chosen	
	UPLOAD REVERT	

Import configuration

Choose File

Click this button to select the desired configuration file to be uploaded.

IMPORT

Click this button to upload the selected configuration file to the encoder. The hostname, specific to the configuration filename, will be ignored.

Export configuration

EXPORT

Click this button to export the current encoder system configuration to a .json file.

Upload SSL certificate

Choose File

Click these buttons to select the desired certificate or private key.

UPLOAD

Click this button to upload the certificate/private key to the encoder.

REVERT

Click this button to restore the previous configuration.



Users page

			Logout
 System information SAP Input EDID Encoding Serial Session Logo Text N 	Notifications Network PTP LLDP Configuration Users License Upgrade		, ,
	User 1 User 2		
· · · · · · · · · · · · · · · · · · ·	Usemame admin Usemame	operator	
	Role administrator - Role	operator 👻	
	New password N/A New password	N/A	
	Repeat password N/A Repeat password	NA	
	DELETE SAVE DELETE	SAVE	
	User 1		
	Username	admin	1
	Role	administrator 🚽	
	TOIC .		
	New password	N/A	
	Repeat password	N/A	
	_		
		DELETE SAVE	

User window groups

The following fields apply to all **User** window groups. Encoders have two usernames, by default: **admin** and **operator**.

Username

Enter the desired username in this field.

Role

Click this drop-down list to select the desired role of the user.

New password

Enter the desired password for the username in this field.

Repeat password

Confirm the new password by entering it in this field.

DELETE

Click this button to delete the user in the current window group. Note that the at least one admin role must exist at all times. Therefore, if one **admin** role and one **operator** role exist, then the **admin** user cannot be deleted.

SAVE

Click this button to commit all changes within the current user window group.



New user

Click this button to create a new user. Provide the role and password, as described in the fields above.



License page

This page displays all installed licenses and allows additional licenses to be installed.

System information SAP input EDIO Encoding Setial Session Logo Text Notifications Network f	PTP LLDP Configuration Users	License Upgrade		
	4k Installed	true		
	Request	414:0685600011712		
	Key			
	Scrambling Installed	PRO:b898b0011743		
	Key SCI Request	RAMBLING:9796c22595027ef SCRAMBLING:b898b0011743		
	Keys can be obtained through Atlo	na by using one of the		
	License Key	_		
		License info		
		4k	Installed	true
			Key	4K:5b6fad2d822604b9e11805f32e
			Request	4K:b898b001f743
		Pro	Installed	N/A
			Key	N/A
			Request	PRO:b898b001f743
icense Key		Scrambling	Installed	true
inter the license key in this field.			Key	SCRAMBLING:9796c22595027ef
ISTALL LICENSE lick this button to validate and install the lice	ense.		Request	SCRAMBLING:b898b001f743
		Keys can be requests.	obtained throug	h Atlona by using one of the
		License Key		N/A



Upgrade page

This page is used to update the firmware on the encoder.

	Logout
< System information SAP Input EDID Encoding Serial Session Logo Text Notifications Network PTP LLDP Configuration Users	License Lipgrade >
Lignade Circless Fille Se Sile Andrea UPC AND 	Upgrade Choose File No file chosen UPLOAD

Choose File

Click this button to select the firmware file to be uploaded.

UPLOAD

Click this button to upload the selected firmware file.



Appendix

Updating the Firmware

Follow the procedure below to update OmniStream units using the built-in web server.

- 1. Launch the desired web browser and enter the IP address of the encoder/decoder in the address bar.
- 2. Enter the username and password. Note that the password field will always be masked. The default credentials are:

Username: admin Password: Atlona

- 3. The System Information page will be displayed.
- 4. Click **Upgrade** in the menu bar to display the **Upgrade** page.
- 5. Click the Choose File button.

איין איין איין איין איין איין איין איין	Looper Useration >
Lypoli	Upgrade
Conser (%) to the choice	Choose File No file chosen
(%)	UPLOAD

6. In the **Open** dialog box, select the correct firmware file. Refer to the table below.

Firmware file	OmniStream SKU
at-omni-single-upgrd-os-[version].vpup2	AT-OMNI-111 AT-OMNI-121 AT-OMNI-111-WP
at-omni-dual-upgrd-os-[version].vpup2	AT-OMNI-112 AT-OMNI-122
at-omni-residential-upgrd-os-[version].vpup2	AT-OMNI-512 AT-OMNI-521

- 7. Click the **UPLOAD** button.
- 8. A progress bar will be displayed, indicating the current upgrade status of the unit. When firmware update process has completed, the **Upgrade** page will be displayed.
- 9. The upgrade process is complete.



Performing a Link Test

Follow the procedure below to perform a link integrity test between an encoder and decoder(s).

- 1. Launch a web browser and enter the IP address of the encoder in the address bar.
- 2. Open another tab in the browser and enter the IP address of the subscribing decoder in the address bar.
- 3. Verify that all desired decoders are subscribed to the encoder's multicast address and port number. In the decoder example below, the **IP Input > Input 1 > Multicast address** field is set to 225.0.0.11. This is the same IP address that is assigned to the **Session > Session 1 > Destination IP address** field on the encoder.

						Logout
< System information SAP Listener IP Input. Multiview Serial HDMI Output Logo 1/	ot Notifications	Network PTP LLDP Configuration	Users Licen	se Upgrade		· · · · · · · · · · · · · · · · · · ·
	Input 1		Input 2			
	Name	ip_input1	Name			
	Enable	-• /	Enable	Input 1		
	Interface	etht 👻	Interface			
	Multicast address	22500.11	Multicast add	Name		ip_input1
	filter (IGMPv3)	Mode Excluse •	filter (IGMPv3)			
		"Separate multiple IP addresses with a comma		Enable		
	Port	100	Port	Eliable		
		SAVE		Interface		eth1 🔻
	Input 3		Input 4	Multicast address		225.0,0.11
	Name	IP_INPUTS	Name -			
	Interface	eth1 v	Interface	Multicast	Mode	evolute
	Multicast addresr	JS N/A	Multicast ad	filter	Mode	CACINGO
	Multicast	Mode exclude 🗸	Multicast	(IGMPv3)		
	(IGMPv3)	Addresses* N/A	(IGMPv3)	(Addresses*	N/A
		"Separate multiple IP addresses with a comma.				
	Port	1100	Port		*Separate multiple IP addres	sses with a comma.
		SAVE	4 7			
				Port		1000
	Input 5					
	Name	lp_input5		1		
	Enable	-•				
			_	1	SAVE	
			1			1

- 4. On the encoder, click the **Session** menu.
- 5. Under the Video section, click the Link test button.

	Enable AES67	•		Enable	0-	
	Enable					
	Destination IP address	N/A		SAVE		
	Destination UDP port	1100				
	TTL	255	Session 3			
AUX	Source	Commands 👻	Name		session3	
	Enable		Interface		eth1	
	Destination IP address	N/A	SAP	Enable	0-	
	Destination UDP port	1200	Audio	Source	hdmi_input1 👻	
	TTL	255				
	Bidirectional	10-		Video	Encoder	vc2_encoder1
	Listen port	104		video	Elicodel	vcz_choodern
			\			
	SAVE		1		Enable	
					Destination IP address	N/A
Second	n 4				Destination LIDP port	1000
Name		session4			Destination ODI port	1000
interfa	ce	eth2				
SAP	Enable	0-			TTL	255
Audio	Source	hdmi_input2 +				
	Enable AES67					
	Downmixing	none 👻				Link test
	Enable	_				
	Destination IP address	NIA		-		
	Destination LIDP and	4120				
	TT	255				
		200				





6. An orange screen with a progress bar will be displayed during the testing procedure.

7. After the test, the encoder web page will automatically redirect to the **Notifications** tab where the user can see the results.

If the test passed, information similar to the following will be displayed. Note the information in the **Description** field: "100% of packets received by ..." indicates no packets were dropped / zero loss.

Implementation Out Dot			Logost .
Link test results (#0) Timestamp 08-06-2021 09:44:18 Description 100% of packets received by 10.1 Status Inactive	system information SAP testener input EDIO Encoding Senial Session Logo Fest Wolfcolore Network PTP LLDP Configuration	Users License Upgrade	*
CLEAR CL	Link test (results (49)) Timestanp	08-05-2021 09:44:18	
CLEAR Link test results (#0) Timestamp 08-06-2021 09:44:18 Description 100% of packets received by 10.1 Status Inactive	Description	100% of packets received by 10.1	
CLEAR Link test results (#0) Timestamp 08-06-2021 09:44:18 Description 100% of packets received by 10.1 Status Inactive	united (1997)		
CLEAR Link test results (#0) Timestamp 08-06-2021 09:44:18 Description 100% of packets received by 10.1 Status Inactive			
CLEAR Link test results (#0) Timestamp 08-06-2021 09:44:18 Description 100% of packets received by 10.1 Status Inactive			
Link test results (#0) Timestamp 08-06-2021 09:44:18 Description 100% of packets received by 10.1 Status Inactive			CLEAR
Link test results (#0) Timestamp 08-06-2021 09:44:18 Description 100% of packets received by 10.1 Status Inactive			
Timestamp 08-06-2021 09:44:18 Description 100% of packets received by 10.1 Status Inactive		Link test results (#0)	
Description 100% of packets received by 10.1 Status Inactive		Timestamp	08-06-2021 09:44:18
Status Inactive		-	
Status Inactive		Description	100% of packets received by 10.1
		Status	Inactive



If the test fails, it could be that less than 100% of packets are received, indicating connectivity, but with some amount of packet loss. If it shows "No one replied!" or if the target decoder is not shown in results, it could indicate that there is a connectivity issue or that the decoder is not subscribed to the correct video multicast address.

	CLEAR
Link test results (#0)	
Timestamp	08-06-2021 09:31:21
Description	No one replied!
Status	Inactive

Hovering the mouse over the **Description** field will provide the full IP address of each decoder which received the test, as shown below. If multiple decoders were tested, additional IP addresses will be displayed.

Link test results (#0) Timestamp 07-07-2021 09:11:25 Description 100% of packets received by 10.1 Status 100% of packets received by 10.1.0.121		CLEAR
Timestamp 07-07-2021 09:11:25 Description 100% of packets received by 10.1 Status 100% of packets received by 10.1.0.121	Link test results (#0)	
Description 100% of packets received by 10.1 100% of packets received by 10.1.0.121 Inacuve	Timestamp	07-07-2021 09:11:25
Status	Description	100% of packets received by 10.1
	Status	100% of packets received by 10.1.0.121 macuve

8. Go to the **Notifications** menu on the decoder.

If the test passed, information similar to the following will be displayed. Note the information in the **Description** field: "100% of packets received ..." indicates no packets were dropped / zero loss.

Hovering the mouse over the **Description** field will display the full IP address of the encoder from where the packets originated.

	CLEAR	
Link test on channel 0 ((#1)	
Timestamp	07-07-2021 09:11:20	
Description	100% of packets received (300000	
Status	100% of packets	received (300000/300000)) from 10.1.0.111

9. Click the **CLEAR** button to remove the test results from the **Notification** page.



Mounting Instructions

The AT-OMNI-512 encoder includes two mounting brackets and four mounting screws, which can be used to attach the unit to any flat surface.

a **Pandult** company

1. Using a small Phillips screwdriver, remove the two screws from the left side of the enclosure.



- 2. Position one of the rack ears, as shown below, aligning the holes on the side of the enclosure with one set of holes on the rack ear.
- 3. Use the enclosure screws to secure the rack ear to the enclosure.

Included screws

- 4. To provide added stability to the rack ear, use two of the included screws and attach them to the two holes, directly below the enclosure screws, as shown above.
- 5. Repeat steps 1 through 4 to attach the second rack ear to the opposite side of the unit.

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





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

AT-OMNI-512



Rack Tray for OmniStream

OmniStream encoders can also be mounted in the OmniStream rack tray (AT-OMNI-1XX-RACK-1RU). The rack tray is sold separately and provides easy mounting and organization of up to two OmniStream encoders/decoders in a convenient 1U rack tray. The OmniStream rack tray can be purchased directly from Atlona.

- 1. Position the OmniStream products, as shown in the illustration below.
- 2. Using the included screws, secure each unit to the rack with a Philips screwdriver.



3. Install the entire assembly into an empty 1U slot in the rack.





Specifications

Video					
Signal	HDMI				
Copy Protection	HDCP 2.2				
UHD/HD/SD	4096×2160 (DCI) @ 30/24 Hz 3840×2160 (UHD) ⁽²⁾ @ 60/50/24/25/30 Hz 1920x1080p @ 23.98/24/25/29.97/30/50 /59.94/60 Hz				
VESA ⁽³⁾	2560x1600 1920x1200 1680x1050 1600x1200 1600x900 1440x900 1400x1050		1366x768 1360x768 1280x1024 1280x800 1280x768 1152x768 1024x768	4	
Color Space	YUV, RGB				
Encoding					
Density	Dual encoding engine				
Compression Format	VCx and VC-2 (SMPTE-2042)				
Video Quality Optimization	User-selectable: PC Application or Video mode (VC-2 codec only)				
Chroma Subsampling	Chroma	VCx		VC-2 Video	
	4:4:4	Yes		No	
	4:2:2	Yes		No	
	4:2:0	Yes		Yes	
Color Depth	8-bit, 10-bit, 12-bit				
HDR	HDR10, HLG, Dolby [®] Vision [™]				
Bit Rate	Configurable up to 900 Mbps				
Latency	 0.5 frame (e.g. 1080p @ 60 Hz latency is < 8 ms between encoder and decoder). 1.5 frames in Fast Switching mode (e.g. 1080p @ 60 Hz latency is < 24 ms between encoder and decoder). Note: Unusual network configurations may increase overall latency. 				
Thumbnails	Number of thumbnails: 1 per HDMI input Resolution: 320x180px File format: JPG Update frequency: 2 seconds				
Audio					
Pass-through	LPCM 2.0	Dolby [®] Digital		Dolby Atmos®	
rass-though	LPCM 2.0 LPCM 5.1	Dolby Digital Plu Dolby TrueHD	JS	DOIDY Atmos⁵ DTS® DTS-HD Master Audio™	
Deure mining					
Down-mixing	Multichannel LPCM to two-channel LPCM				
Sample Rate	32 kHz, 44.1 kHz, 48 kHz, 88.2 kHz, 96 kHz, 176.4 kHz, 192 kHz				
Bit Depth	Up to 24-bit				



Appendix

Protocols	
Video Streaming	RTP
Audio Streaming	RTP, up to 7.1 channels
	AES67, up to LPCM 7.1 channels
Addressing	DHCP, static
Encryption	AES-128
QoS Tagging	RFC 2475
Discovery	Multicast DNS, LLDP, SAP
Management	HTTPS, SSH, Telnet, and WebSockets with TLS
IP Multicast	IGMPv2 and IGMPv3 support
Graphics Features	
Text Insertion	Adjustable height/width, scrolling (speed, direction, or static), iterations (up to infi- nite), positioning, and adjustable color and alpha (transparency) channels.
Slate / Logo Insertion	PNG file format, adjustable aspect ratio (keep or stretch), horizontal/vertical size, screen position; slate mode can be set to off, manual (image always displayed, superimposed on the source signal, and will remain if source signal is lost), auto (image will only be displayed when source signal is lost).
Control	
RS-232	Device control and configuration; supports baud rates from 2400 to 115200 Bidirectional pass-through from control system to network
IR	Pass-through from control system to network Pass-through from network to control system
Connectors	
HDMI	2 - Type A, 19-pin, female, locking
ETHERNET ⁽⁴⁾	2 - RJ45, 10/100/1000 Mbps
RS-232 / IR	1 - Euroblock, 6-pin (2 ports); RS-232 or IR on ports 1 and 2
Power	1 - Euroblock, 2-pin
Indicators and controls	
PWR	1 - LED, tricolor (red, amber, green)
HDMI	2 - LED, bicolor (red, green)
LINK	2 - LED, bicolor (red, green)
ID	1 - Momentary, tact-type, backlit (blue); sends an identification broadcast message over the network to any listening devices.
Reboot	1 - Momentary, tact-type
Power	
PoF	IEEE 802 3af
Consumption	Up to 12 W
External Power Supply (op-	Input: 110 - 220 V AC, 50/60 Hz Output: 48 V DC, 0.83 A



Appendix

Environmental	Fahrenheit	Celsius
Operating Temperature	+14 to +122	-10 to +50
Storage Temperature	-14 to +140 °F	-10 to +60 °C
Operating Humidity (RH)	20% to 95%, non-condensing	
Maximum Operating Altitude	2000 meters	
Cooling System	Front-to-rear airflow, temperature-controlled fans	
Chassis		
Dimensions (H x W x D)	1.34 in x 8.19 in x 4.41 in 34 mm x 208 mm x 112 mm	
Weight	1.5 lbs 0.7 kg	
Certification		
Device	CE, FCC, CB, RoHS	
Supply	CE, FCC, cULus, CB, RCM, RoHS	
Compliance		
NDAA-899	Yes	
ТАА	Yes	
Warranty		
Device	To view the product warranty, use the following link: https://atlona.com/warranty	

Footnotes

(1) Interlaced sources are passed-through without modification, and do not support scaling, video wall, logo insertion, text insertion, or fast switching.

(2) Using VCx, streaming is supported up to 4K60 4:4:4. Using VC-2 Video Mode, 4K60 and 4K50 resolutions will be chroma subsampled to 4:2:0 before streaming.

(3) All VESA resolutions are 60 Hz.

(4) Maximum distance per hop is 330 feet (100 meters), depending upon network configuration.



