

OmniStream[™] Wallplate Networked AV Encoder







Version Information

Version	Release Date	Notes
1	Sep 2019	Initial release
2	Sep 2019	Documentation updated to support OmniStream 1.2.5; various bug fixes and added Virtual Reality EDID resolution.
3	Feb 2020	Added web server documentation reflecting changes to 1.2.6 firmware. Refer to the release notes for a complete listing features and bug fixes.
4	Jan 2021	 Firmware 1.2.7 FPGA information now available under the System Information page. Refer to System information page (page 67) for more information. NTP server set to pool.ntp.org, by default; change under the System Information page. Refer to System information page (page 67) for more information. Custom SAP multicast address can now be configured under the SAP page. Refer to SAP page (page 69) for more information. Telnet session can now be disabled under the Network page. Refer to Network page (page 88) for more information.



Welcome to Atlona!

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

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

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

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Operating Notes

• The Atlona Management System (AMS) is a free downloadable application from Atlona that provides network configuration assistance for this product. This application is available only for the Windows® Operating System and can be downloaded from the Atlona web site.



IMPORTANT: Visit http://www.atlona.com/product/AT-OMNI-111-WP for the latest firmware updates and User Manual.



NOTE: Scaling and deinterlacing is not supported at 1080i.



Atlona, Inc. ("Atlona") Limited Product Warranty

Coverage

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

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

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

OR

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

OR

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

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- 3 years from proof of purchase date for hardware/electronics products purchased before June 1, 2013.
- Lifetime Limited Product Warranty for all cable products.

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

Remedy

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

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

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This Limited Product Warranty excludes:

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packaging or shipping (such claims must be presented to the carrier), lightning, power surges, or other acts of
nature.



Atlona, Inc. ("Atlona") Limited Product Warranty

- Damage, deterioration or malfunction resulting from the installation or removal of this product from any
 installation, any unauthorized tampering with this product, any repairs attempted by anyone unauthorized by
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 workmanship of this product.
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- Products purchased from unauthorized distributors, dealers, resellers, auction websites and similar unauthorized channels of distribution.

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

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Safety and Certification



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



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

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

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

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



FCC Statement



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

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

The terms HDMI, HDMI High-Definition Multimedia Interface, and the HDMI Logo are trademarks or registered trademarks of HDMI licensing Administrator, Inc.



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Introduction

The Atlona **OmniStream™ 111 Wallplate** (**AT-OMNI-111-WP**) is a single-channel networked AV encoder for HDMI 2.0 sources up to 4K @ 60 Hz and HDR (High Dynamic Range), plus embedded audio. It features a US two-gang, Decora-style wallplate form factor, and includes interchangeable black and white wallplates and faceplates. The OmniStream 111 WP is part of the OmniStream Pro Series, designed for high performance, flexible distribution of AV over standard, off-the-shelf Gigabit Ethernet switches in commercial audiovisual applications. It is HDCP 2.2 compliant and ideal for the latest Ultra High-Definition and HDR sources. This networked AV encoder features advanced high-quality, VC-2 visually lossless video compression technology with user-selectable, video quality optimization engines designed for computer-generated imaging, or motion video content. The Atlona OmniStream 111 WP achieves extremely low, sub-frame latency when paired with OmniStream AV decoders.

With its wallplate form factor, the OmniStream 111 WP enables convenient installation wherever an aesthetically appealing or discreet AV source connection is required.

Features

- Best-in-class AV over IP performance and reliability over Gigabit Ethernet.
- US two-gang enclosure for Decora-style wallplate openings – interchangeable black or white trim kits.
- AV encoder for HDMI up to 4K/UHD, plus embedded audio.
- Networked AV redundancy.
- Supports UHD @ 60 Hz plus HDR formats.
- High performance, visually lossless video compression.
- HDCP compliance.
- Network error resilience with FEC (forward error correction).
- Simplify integration with plug-and-play network switch compatibility.

- Remote PoE (Power over Ethernet) powering.
- Secure content distribution with AES-128 encryption.
- Supports industry-standard, network security features and protocols.
- AES67-compatible audio over IP streaming.
- Simultaneous OmniStream and AES67 audio streaming.
- Enhance AV presentations with visual enhancements.
- EDID management.
- Encoder grouping.
- Audio processing and pass-through.
- System management.
- Award-winning 10 year limited product warranty.

Package Contents

- 1 x AT-OMNI-111-WP
- 1 x Black faceplate
- 1 x White Decora® wallplate
- 1 x Black Decora® wallplate
- 1 x 3.5 mm-to-DE-9 (M-F) cable
- 4 x Spare screws
- 1 x Installation Guide



Panel Description



1 HDMI IN

Connect an HDMI cable from this port to a UHD/ HD source.

2 RS-232

This is a service port used for future management purposes.

3 PWR

This LED indicator is green when the unit is powered.

4 HDMI

This LED indicator is green when the link between source and encoder is good.

5 LINK

This LED indicator is green when the link integrity between the AT-OMNI-111-WP and the switch is good.

6 RESET

Press and release this button to reboot the AT-OMNI-111-WP. Note that this operation *does not* reset the unit to factory-default settings.

7 ETHERNET

Connect an Ethernet cable from this port to the Local Area Network (LAN).

8 Fan

This fan provides internal cooling by forcing hot air from the wallplate chassis. Make sure adequate ventilation is provided when installing the AT-OMNI-111-WP.



Connection Instructions



IMPORTANT: The venting holes, surrounding the enclosure, along with the fan assembly on the back of the unit, provides cooling by expelling warm air from the enclosure. To prevent overheating, make sure these holes and the fan assembly are not blocked.

- 1. Connect an Ethernet cable from the **ETHERNET** port on the AT-OMNI-111-WP to a PoE-capable switch on the Local Area Network (LAN).
- 2. Install the AT-OMNI-111-WP into a 2-gang electrical box or mud ring.
- 3. Attach the included Decora® wallplate to secure the AT-OMNI-111-WP to the wall/surface.
- 4. Connect an HDMI cable from a HD/UHD source to the HDMI IN port on the AT-OMNI-111-WP.
- 5. The **PWR** indicator, on the front panel, displays the power status. When the AT-OMNI-111-WP is powered, the **PWR** LED initially turns red. After a few moments it will turn amber, and finally green.
- 6. The AT-OMNI-111-WP is now ready for operation.





Installation







Accessing Encoders in AMS

It is recommended that the Atlona Management System (AMS) be used to configure and control OmniStream devices. AMS uses multicast Domain Name Server (mDNS) to automatically discover each encoder on the network. AMS is free and can be downloaded from https://www.atlona.com/ams.

By default, encoders are set to DHCP mode, allowing a DHCP server (if present) to assign the encoder an IP address. Once an IP address has been assigned, the Atlona Management System (AMS) can be used to manage the product on the network. Note that AMS will only be able to discover encoders if they are on the same VLAN.

In order for AMS to automatically assign multicast IP addresses to OmniStream encoders, the destination IP addresses for the session streams must be cleared.



NOTE: The following steps are required *only if a pre-existing multicast IP address* is assigned to each session and if automatic assignment of these multicast IP addresses, using AMS, is desired.

- 1. Launch a web browser and enter the IP address of AMS, in the address bar.
- 2. Enter the required login credentials. The default login is:

Username: admin Password: Atlona

	AMS Login	
	AMS Login	
ap@a.com		
	Forgot password?	

- 3. Click the Login button.
- 4. The AMS Dashboard will be displayed.
- 5. Click the \equiv icon, in the upper-left corner of the AMS Dashboard.



6. Click **Devices** from the fly-out menu.

≡ 🖸 Help∽	AMS:	20 S
Michael Khan michael brangedina con		
II Dashboard	20 a Parour company	
Ji Upers		
Sites	Bar/Restaurant View AMS Documentation AMS Version Notes	
	Building 1 (View AMS Documentation) 2.4.0.16 (View Full Notes)	
5° QA >	MK office Extreme Added Config for ANC-108 and HDVS Building 2 Installation Guides 210U/210H	
↔ Unassigned >	Bar/Restourant Edit AtGAIN-120	
Virtual Matrix	, ATGAIN-60 , AT4/21+44M	
	© 0 61 4 Devices Assigned Devices Assigned Center or Drife	
	4 Rooms 4 Humens 4 Add Uker	
	1 Element of the second	
	Copyright 62011 Allows ins (Jahran core) , All Rights Allowed (19 Address: 1620 AG1 Vieweint 2.451 (6	

- 7. Click the **Unassigned** option.
- 8. If the device isn't immediately listed, click the left and right arrows, at the bottom of the **Unassigned** list, to scroll through all available devices.

≡ C Help×		AMS:	
E Dushoard	AP Welcome AP apart		
€ Devices >	Bar/Restaurant Edt	View AMS Documentation (View AMS Documentation)	AMS Version Notes 2.4.0.16 (View Full Notes)
S [®] All S [®] QA → ↔ Unassigned →	Mix office Ext	ATANC-108D Installation Guides Manual	New Feature: Added Config for ANC-108 and HDVS 210U/210H
at-omni-112-00221 at-omni-112-011 at-omni-112-0137	• Unassigned	>	
at-omni-112-0057 at-omni-121-0050 at-omni-121-0059	at-omni-112-00221	61 Devices are Online	e Devices are Offline
at-cmni121-00872 at-cmni122-0046	at-omni-112-00411		+
dcomin12240508 dcomin12240548 d b	at-omni-111-wp-00437		Add User
Virtual Matrix	at-omni-112-00502	64 Devices Updated	1 Devices Ready To Update
	at-omni-121-00500		
	at-omni-121-00789		
avascriptivold(0)	at-omni-121-00872		kor: 2.4.0.16
	at-omni-122-00446	Arrow buttons	
	at-omni 122-00508		
	at-omni-122-00548		



All available encoders will be displayed under the **Unassigned** category. When an encoder is unassigned, it means that it has not been assigned to a site, building, and/or room. Refer to the AMS User Manual for more information on these topics.

If a DHCP server is not found within 60 seconds, the encoder will be placed in Auto IP mode and assigned an IP address within the range of 169.254.xxx.xxx. If this occurs, configure the network interface of the computer that is running AMS, located on the same subnet (169.254.xxx.xxx, subnet mask 255.255.0.0). Refer to Configuring a Static IP Address (page 17) for more information on configuring an encoder in Auto IP mode.

If no OmniStream encoders are found, then verify the following:

- The computer that is running AMS must be on the same network as the OmniStream device.
- Remove any network restrictions that may be in place. In order for mDNS to function properly, there must not be restrictions applied to the network.
- 9. Click the desired encoder within the Unassigned list.



10. Once the unit is selected, the control interface for the encoder will be displayed.

≡ C Help∽				∧⊢	15				C 🔄 🐠 🥹
DEVICE LIST	÷	DEVICE INFO	INPUT	SERIAL	SESSION	ALARMS	NETWORK	OTHER	CONFIGURATION
Unassigned	^	Device Info							
● at-omni-111-wp-00000									
🗑 at-omni-112-00259		Alias:	TO BE SSS						
# st-cmni-122-00242		IP Address	192.168.0.132						
		MAC Address	B8:98:B0:01:91:7E						
		Firmware Version:	1.2.5_RC02						
		FIRMWARE UPDATE							
		Description	AT-OMNI-111						
		Location							
		Uptime:	4 minutes						
		Hostname:	at-omni-111-wp-0000	0					
		Reset users Reset n	twork						
		FACTORY RESET IDENTIFY	REBOOT DEVICE						
		SHOW ADVANCED -							
									SAVE
						Chat (SAM PST - 5PM PST) 🗖			



11. Click **SESSION** in the top menu bar.

≡ Ω Help≁					5.				🌚 0 对 D
DEVICE LIST		DEVICE INFO	INPUT	SERIAL	SESSYON	ALARMS	NETWORK	OTHER	CONFIGURATION
Unassigned	^	Stream 1							
€ at omni-111-wp 00000		Interface:	eth1						
at-omni-112-00259									
€ at-omni-122-00242		SAP:							
		Video							
		Encoder:	HDMI Input 1						
		Enable Video:	-						
		Destination Multicast/Unicast Address:	225.0.0.5						
		Destination UDP Port:	1000						
		TTL:	255						
		Audio							
		Source:	HDMI 1						
		Enable &ES67							
		Downmixing:			-				
		Earthin Audio:	•						
		Destination Multicast/Unicast Address:	225.0.0.6						
		Destination UDP Port:	1100						
		TTL:	255						
		Control/Serial:			Atlana Customer Support Live	Chat (5AM PST - 5PM PST) 🗖			•

- 12. Locate the Video section.
- 13. Delete the value in the **Destination Multicast / Unicast Address** field.

Unassigned	^	Stram 1
• at cmni-111-wp-00000		Index alt
♥ at-omni-112-00259 :		Destination Multicast/Linicast Address field
♥ at-omni-122-00242 :		
		Sambing
		Vite
		Droster: HDMI Irput 1
		Enable Veloci
		Destination Multicast/Unicast Address: 225.0.0.5
		Destination LDP Put 1000
		TL 255

14. Locate the Audio section and delete the value in the Destination Multicast / Unicast Address field.

♥ at-omni-122-00242	Destination UDP Port:	1000
	TTL	255
	Audio	Destination Multicast/Linicast Address field
	Source:	HOMIN Destination Wolfices offices Fadices field
	Frable AFS67	•
	Downmixing:	Nore
	Enable Audio:	
	Destination Multicast/Unicast Address:	2250.06
	0	SAVE button
	Destination UDP Port:	O, VE Batton
	TTL:	255
	Control/Serial:	
	Source:	Not Used
	SHOW ADVANCED 👻	
	SHOW BACKUP STREAMS +	

15. Scroll down to the bottom of the page and click the **SAVE** button at the bottom of the **Stream 1** window group.



Configuring a Static IP Address

The following section is only required to when setting an encoder to a static IP address. If a DHCP server is not found within 60 seconds, encoders are automatically placed in Auto IP mode and will be assigned an IP address within the range 169.254.xxx.xxx. If this occurs, a static IP address can be assigned to the encoder in order for AMS to locate it on the network.

- 1. Make sure that the encoder is powered. The AT-OMNI-111-WP is powered by connecting an Ethernet cable from the encoder to a PoE-capable switch.
- 2. Connect an Ethernet cable from the PC, directly to the Ethernet port on the rear of the encoder. Make sure that the computer being used has AMS installed.
- 3. Configure the PC to a static IP address that is on the same subnet as the encoder.



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

- 4. Login to AMS. Refer to Accessing Encoders in AMS (page 13) for information on the login process.
- 5. Locate the encoder under the **Unassigned** section within AMS.
- 6. Click on the device.
- 7. Under AMS, click **NETWORK** in the menu bar.

DEVICE INFO	INPUT	SERIAL	SESSION	ALARMS	NETWORK	OTHER	CONFIGURATION
Network 1 (eth1)							
Enabled:	•						
Carrier:	•						
DHCP Mode:	DHCP						
Changing IP Mode from Stat	tic to DHCP requires running a scan to find the ne	w IP address of the device.					
IP Address:	192.168.0.132						
Subnet:	255.255.255.0						

8. Click the DHCP Mode drop-down list and select Static.

DEVICE INFO	INPUT	SERIAL	SESSION	ALARMS	NETWORK	OTHER	CONFIGURATION
Network 1 (eth1)							
Enabled:	•						
Carrier:	•						
DHCP Mode:	DHCP						
Changing IP Mode from Static to DHCP requires ru	n Static						
IP Address:	Daisy Chain						
Subnet:	255.255.255.0						

- 9. Enter the required network information for the encoder in the IP Address, Subnet, and Gateway fields.
- 10. Click the **Save** button in the bottom-right corner, to apply the changes.
- 11. Disconnect the encoder from the PC and connect the encoder to the network.
- 12. The encoder is now ready for use.



Input Selection

Once the OmniStream encoder is configured, and can be located on the network, the encoder will need to be instructed on how to handle source devices and to which stream each source is assigned.

Input Selection

- 1. Under AMS, click **INPUT** in the menu bar.
- 2. Click the Input drop-down list for HDMI Input 1 and select the input.

DEVICE INFO	INPUT	SERIAL	SESSION	ALARMS
номі іприї 1				
Input:	Not Used			
Bit Rate:	HDMI Input 1	L.		
Subsampling:	Video Generator 1			
Force YUV:				
			SAVE	
SHOW ADVANCED -				

- 3. Enter the desired bit rate in the **Bit Rate** field. Specifying lower bit rates will reduce video quality. This value is in megabits-per-second (Mbps). 4K/UHD streams should be set to 900 Mbps. The recommended bandwidth for 1080p60 video is also 450 Mbps. Setting this field below these recommended values will result in lower-quality video.
- 4. Enter the bit depth from the **Bit Depth** drop-down list.
- 5. Select the chroma subsampling value from the **Subsampling** drop-down list. Available values are 4:2:0, 4:2:2, and 4:4:4.
- 6. Click the Force YUV toggle switch to enable or disable the use of YUV color space. Enable (the toggle switch will be green) this feature to force the output of the encoder to output YUV, regardless of whether the input is RGB or YUV. In order for the chroma scaling to work on RGB inputs, this feature must be enabled.

DEVICE INFO	INPUT	SERIAL	SESSION	ALARMS
HDMI Input 1		Bit Rate		
Input:	HDMI Input 1	v		
Bit Rate:	900			
Subsampling:	4:2:2	~		
Force YUV:			SAVE	
SHOW ADVANCED 👻				

7. Click the SAVE button in the right-hand corner of the HDMI Input 1 window group to commit changes.



Verifying the Input

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

DEVICE INFO		SERIAL	SESSION	ALARMS
HDMI Input 1				
Input:	HDMI Input 1	~		
Bit Rate:	900			
Subsampling:	4:2:2	~		
Force YUV:	-			
			SAVE	
SHOW ADVANCED 🔻		Cable Present indicator		
HDMI Input 1				
Cable Present:	•			
EDID:	Default		~	
HDCP Encrypted:	•			
Supported Version:	2.2		~	
Video:	N/A			
Audio:	N/A			
			SAVE	

2. Check the **Cable Present** indicator. If a cable is connected from a source to an input on the encoder, then the indicator will be green. If no cable is connected, then the indicator will be red.

Note that this indicator may also reflect the integrity of the cable: if the cable is bad or does not maintain a secure connection, then the **Cable Present** indicator may also be displayed as red. If this is the case, try a different HDMI cable.



Session Configuration

Once the inputs have been assigned to the desired source, the next step is to configure each *session*. A *session* is a class-D multicast IP address that is assigned to an AV stream. If each stream is configured for bit rates less than 450 Mbps (only recommended for 1080p and lower resolutions), a single Ethernet cable can transport two sessions. The single-channel encoder supports a maximum of two sessions to enable redundancy for single 1080p-use cases.

Video

- 1. Under AMS, click Session in the menu bar.
- 2. Click the eth1 physical interface from the Interface drop-down list.
- 3. Select the HDMI Input 1 from the Encoder drop-down list.
- 4. Under the **Video** section, make sure that the **Enable Video** toggle switch is enabled (green). To disable video at any time, click the toggle switch so that it appears gray.
- 5. Enter the destination multicast IP address in the **Destination Multicast/Unicast IP Address** field, within the range 224.0.0.0 through 239.255.255.255.
- 6. Enter the port number in the **Destination UDP Port** field.

Audio

- 1. Locate the Audio section.
- 2. Click the Source drop-down list and select the HDMI source.



NOTE: If AES67 audio will be used, refer to AES67 Audio (page 30) for more information.

- 3. Click the **Enable Audio** toggle switch and make sure it is enabled (green). To disable audio at any time, click the toggle switch so that it appears gray.
- 4. Enter the specific destination IP address, if desired, in the **Destination Multicast/Unicast IP Address** field. By default, AMS will automatically populate this field.
- 5. Enter the port number in the **Destination UDP Port** field.



IMPORTANT: AMS does not allow the same port numbers to be used on both video and audio. Always specify unique ports for both video and audio.



Basic Operation

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.
	Red	The encoder is booting.
	Green	The encoder is ready.
HDMI	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	Red	Check the Ethernet cable for possible damage or loose connections.
	Green	Link integrity is good between the encoder and the network.



Basic Operation

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.





Unicast Mode

The term *unicast* is used to describe a configuration where information is sent from an encoder to a single decoder. Although it is common to have multiple encoder and decoder units within a system, it may also be desirable to restrict a single encoder to communicate with one decoder. In *unicast* mode, OmniStream encoders and decoders function similar to an n x 1 switcher. Changing the destination IP address at the encoder, will direct the stream to be received by a different decoder.

The illustration below shows three encoders and three decoders on a network, operating in *unicast* mode. The red lines indicate the data paths from each encoder to a separate (single) decoder.



- 1. Login to AMS. Refer to Accessing Encoders in AMS (page 13), if necessary.
- 2. Click **SESSION** in the menu bar and locate the **Video** section.
- 3. Enter the IP address of the decoder in the Destination Multicast/Unicast Address field.

		IP address of decoder
Encoder:	HDMI Input 1	
Enable Video:		
Destination Multicast/Unicast Address:	225.0.0.5	
Destination UDP Port:	1000	
TTL:	255	

4. Scroll down to the bottom of the page and click the **SAVE** button to commit all changes.



- 5. Go to the decoder AMS interface. Refer to the OmniStream Single-Channel / Dual Channel A/V Decoder User Manual, if necessary.
- 6. Click **IP INPUT** from the menu.
- 7. Remove the IP address from the Multicast Address field.
- 8. Click the **SAVE** button to commit changes.

IP Input 1 (Video 1)	
Enabled:	Field should be blank
Interface:	eth1 -
Multicast Address:	
Port:	4
	SAVE

9. Unicast setup is complete. The decoder unit will now receive streams exclusively from the encoder containing the IP address of this decoder.



Multicast Mode

The term *multicast* is used to describe a configuration where information is sent from one or more points to a set of other points. For example, a single encoder can transmit data to multiple decoders. In addition, if multiple encoders are used, each encoder can stream data to any decoder that is not already receiving data from an encoder. In *multicast* mode, the OmniStream encoders and decoders function similar to a matrix switcher.

The illustration below shows three encoders and three decoders on a network, operating in *multicast* mode, where multiple decoders are subscribed to a single encoder. The red lines indicate the data paths from an encoder (192.168.11.117) to multiple decoders.



- 1. Login to AMS. Refer to Accessing Encoders in AMS (page 13), if necessary.
- 2. The AMS Dashboard will be displayed.
- 3. Click the \equiv icon, in the upper-left corner of the AMS Dashboard.
- 4. Click Virtual Matrix from the fly-out menu. Refer to The Virtual Matrix (page 61), if necessary.
- 5. Locate the desired encoder in the Virtual Matrix, as shown on the next page.
- 6. Create a cross-connection to the desired decoder. When a cross-connection is created, AMS will automatically assign a multicast IP address to both the encoder and decoder. By default, AMS automatically assigns a multicast IP address to each OmniStream encoder and decoder.

Refer to the illustration on the following page, if necessary.



Basic Operation

🖽 OmniStream Virtual Matrix										
Encoders	• View: Active	LEGEND	AT-OMNI-121 192.168.11.34	Connected Or	Andrew's AT-OMNI-122 192.168.11.117	Connected	AT-OMNI-122 192.168.11.86 192.168.11.87	Connected	AT-OMNI-521 192.168.11.39	Connected Ov
Audi Audi Audi	a 🗘 All Flip Mat	rix	at-omni-121-00461 HDMI 1	Options	at-omni-122-00548 HDMI 1	Options HDMI 2	at-omni-122-00242 HDMI 1	Options HDMI 2	at-omni-521-00064 HDMI 1	
AT-OMNI-11 192.168.11. at-omni-111 Connected	1 50 -00200 01	HDMI 1								
AT-OMNI-11 192.168.11.	2	HDMI 1					\$			
Connected	-00349 0 7	HDMI 2	0				i n i		S	
Andrew's AT 192.168.11.	-OMNI-112	HDMI 1								
Connected	•00722	HDMI 2								
AT-OMN 192.168		<u> </u>								
at-omni Connec		Im								
4	9							1		
	••••									



802.1X Authentication

802.1X is a server-based port authentication which restricts unauthorized (rogue) clients from connecting to a Local Area Network through a public port. In its simplest form, 802.1X usually involves three parties: supplicant (client device), authenticator (Ethernet switch or WAP), and an authentication server. Before the device is permitted on the network, port communication is restricted to Extensible Authentication Protocol over LAN (EAPOL) traffic. If the device passes the authentication process, the authentication server notifies the switch, allowing the client to access the LAN. The illustration below shows the basic architecture.



WARNING: Connecting an 802.1X-enabled encoder to a network without an active or operational authentication server, will result in an encoder that does not function until the expected message is returned from a RADIUS server. If it is unclear as to whether the network uses 802.1X authentication, consult the IT administrator for assistance.



Three options are available on both the OmniStream encoder and decoder.

Protocol	Description
none	802.1X protocol disabled
PEAP/MSCHAPv2	Protected EAP; requires basic credentials in addition to a CA (certificate authority) certificate.
EAP-TLS	EAP Transport Layer Security; requires a client certificate, client private key, and CA (certificate authority) certificate.



- 1. Login to AMS. Refer to Accessing Encoders in AMS (page 13), if necessary.
- 2. Click **Devices** > **All** and select the desired encoder from the **Device List**.
- 3. Click **NETWORK** in the menu bar.
- 4. Click the SHOW ADVANCED button to expand the options under both Network window groups.
- 5. Click the **802.1x Mode** drop-down list, at the bottom of the page, and select the desired authentication method. In the example below, **PEAP/MSCHAPv2** is selected.

DEVICE INFO	INPUT	SERIAL	SESSION	ALARMS	NETWORK	OTHER	CONFIGURATION
Network 1 (eth1)							
Enabled:	•						
Carrier:	•						
DHCP Mode:	DHCP						
Changing IP Mode from Static to E	DHCP requires running a scan to find the new	v IP address of the device.					
IP Address:	192.168.0.132						
Subnet:	255.255.255.0						
Gateway:	192.168.0.1						
Link Speed:	1000						
MAC Address:	B8:98:B0:01:91:7E						
Telnet Authentication:							
802.1x Mode:	none						
	EAP-TLS						
HIDE ADVANCED 🔺							
			SAVE				
	MAC Address:		B8:98:B0:01:91:	7E			
	Telnet Authentication						
	802.1x Mode:		none				
			PEAP/MS0	HAPv2			
		_		راس			
	HIDE ADVANCED	•	EAP-ILS				
							SAVE

- 6. Once a method is selected, the required fields for that method will be displayed. Enter the required information in each field. For the **PEAP/MSCHAPv2** option, the fields are described as follows:
 - Identity

Enter the identity of the authentication server in this field. PEAP uses this field to identify the correct authentication server which will process the credentials. For example, if foo@authserv.com is entered, then this identifies AUTHSERV as the RADIUS (authentication) server.

CA certificate

Click the **Browse...** button to select the certification authority (CA) certificate. To remove a certificate, click the **Remove** button.

- Username Enter the username in this field
- **Password** Enter the password in this field.

7. Click **SAVE** to commit changes.



MAC Address:	B8:98:B0:01:90:22
Telnet Authentication:	
802.1x Mode:	PEAP/MSCHAPv2
Identity:	foo@server.com
Password:	t0ughpA55w0rd
CA certificate:	
	SAVE

8. Refer to the table below for a list of available authentication methods. An orange dot indicates that this field will be displayed as part of the method.

Authentication Method	Identity	Password	CA Certificate	CA Certificate	Client Private Certificate
PEAP/MSCHAPv2		•	•		
EAP-TLS					

9. 802.1X authentication configuration is complete. If desired, click the **HIDE ADVANCED** button to collapse the options under both **Network** window groups.



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 compressed audio formats, such as Dolby® Digital, and others. Source audio must be transmitted as LPCM 2.0 or 5.1.

- 1. Login to AMS. Refer to Accessing Encoders in AMS (page 13), if necessary.
- 2. Click **Devices** > **All** and select the desired encoder from the **Device List**.
- 3. Click **SESSION** in the menu bar.
- 4. Locate the **Audio** section, under the desired **Stream**, and click the **Enable AES67** toggle switch to enable this feature. When enabled, the toggle switch will be green.

DEVICE INFO	INF	PUT S	ERIAL	SESSION	ALARMS	NETWORK	OTHER	CONFIGURATION	Ī
troom 1					1				
terface:	eth	n1							
AP:	•								
crambling:									
deo									
ncoder:	HD	OMI Input 1							
nable Video:	•	•							
estination Multicast/U	nicast Address: 22	5.0.0.5							
estination UDP Port:	10	00							
TL:	25	5							
udio									
ource:	HD	DMI 1							
hable AES67:									
ownmixing:	Ste	ereo		*					
nable Audio:	ninget Address	5004							1
estination multicast/o	Audio	3.0.0.6							
estination UDP Port:	Source:			HDMI 1					
n:									
	Enable AES67	7.		֏ՠ					
ontrol/Serial:	Endbre / (200)	· ·							
	Downmixing:			Stereo				· · ·	_
	Enable Audio:								
	Destination N	/ulticast/Unicast Ad	dress:	225.0.0.6					
	ream 1 re	ream 1 ream 1 ream 1 ream 1 ream 1 rambling: rambling: rambling: rambling: rambling: ream 4 ream 4	DEVICE NPCO NPUT S ream 1 efface: effa	DEVICE INFO INFUT SENAL ream 1 efface: eth 1 P: eth 1 efface: eth 1 P: efface: eth 1 P: efface: eth 1 P: efface: eth 1 P: eth 1 eth 1 P: P: P: P: P: P: P: P: P: P: P: P: P: P: P: P: P: P: P: P: P: P: P: P: P: P: P: P: P: P: P: P: P: P: P: P: P: P: P: </th <th>DEVICE INFO INPUT SERIAL SESSON ream 1 efface: eth 1 - e: • • e: • • ecoder: HDMI Input 1 - able Video: • • estimation Multicast/Unicest Address: 225 0.0 5 stimation Multicast/Unicest Address: 225 0.0 5 stimation Multicast/Unicest Address: 225 0.0 5</th> <th>BUDIE NPO NRVT SERAL SESSON ALAMS ream 1 efface: eth1 <p< th=""><th>EVOLE INV NUT SURAL SUSTON ALAME NETWORK Reference effice: effi1 - p: 0 - so: so: so: adia Valore: POINT - so: so:</th><th>AUXCE MNO NNUT DEMAL BESSON ALAME NETWORK OTHER</th><th>RAVE RAVID REVION ALANS NETWORK OTHER CORRELATION</th></p<></th>	DEVICE INFO INPUT SERIAL SESSON ream 1 efface: eth 1 - e: • • e: • • ecoder: HDMI Input 1 - able Video: • • estimation Multicast/Unicest Address: 225 0.0 5 stimation Multicast/Unicest Address: 225 0.0 5 stimation Multicast/Unicest Address: 225 0.0 5	BUDIE NPO NRVT SERAL SESSON ALAMS ream 1 efface: eth1 eth1 <p< th=""><th>EVOLE INV NUT SURAL SUSTON ALAME NETWORK Reference effice: effi1 - p: 0 - so: so: so: adia Valore: POINT - so: so:</th><th>AUXCE MNO NNUT DEMAL BESSON ALAME NETWORK OTHER</th><th>RAVE RAVID REVION ALANS NETWORK OTHER CORRELATION</th></p<>	EVOLE INV NUT SURAL SUSTON ALAME NETWORK Reference effice: effi1 - p: 0 - so: so: so: adia Valore: POINT - so: so:	AUXCE MNO NNUT DEMAL BESSON ALAME NETWORK OTHER	RAVE RAVID REVION ALANS NETWORK OTHER CORRELATION

- 5. Select the type of downmixing from the **Downmixing** drop-down list, if desired. Available options are: **None**, **Mono**, or **Stereo**.
- 6. Click the **SAVE** button within the **Stream** window group.
- 7. Go to the decoder interface and click **OTHER** in the menu bar.
- 8. Click **SAP** in near the upper-left corner of the AMS screen.
- Click the Enable toggle switch to enable SAP. When enabled, the toggle switch will be green. Refer to the OmniStream Single-Channel / Dual Channel A/V Decoder User Manual, if necessary. If the decoder is to receive AES67 audio, this step is required.
- 10. Click the **SAVE** button on the **SAP** page.



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 AMS. Refer to Accessing Encoders in AMS (page 13), if necessary.
- 2. Click **INPUT** in the menu bar.
- 3. Click the EDID drop-down list, within the desired HDMI Input window group, and select the EDID.

DEVICE INFO	INPUT	SERIAL	SESSION	ALARMS	NETWORK	OTHER	CONFIGURATION
HDMI Input 1							
Input:	HDMI Input 1						
Bit Rate:	900						
Subsampling	4-2-2						
Gubbarriping.	7.6.6						
Force YUV:							
			SAVE				
SHOW ADVANCED -							
HDMI Input 1							
Cable Present:	•						
EDID:	Default		1 Aliante de la companya de la compa				
UDCD Econoted	Default (DV)						
Proce Encrypted.	ATL 1080P 2CH						
Supported version:	ATL 1080P DD						
Video:	ATL 1080P DVI						
Audio:	ATL 1080P MCH	Ռո					
	ATL 1280x800 RGB	DVI PCWXGADVI					
	ATL 1280x800 RGB	PCWXGA2CH					
	ATL 1366x768 RGB	TVWXGA2CH					
	ATL 2160P 2CH						
	ATL 2160P MCH						
	ATL 2560x1600 2CH	H					
	ATL 2560x1600 MC	н	ve Ch	iat (5AM PST - 5PM PST) 🏴			
	ATL 720P DD						
	ATL 720P 2CH						
			•				

4. Click the **SAVE** button to commit changes.

Using a Custom EDID

Encoders can be assigned a custom EDID. The raw EDID data must be in hexadecimal format. Commas or spaces can be included as delimiters to separate each hexadecimal value.

- 1. Login to AMS. Refer to Accessing Encoders in AMS (page 13), if necessary.
- 2. Click **INPUT** in the menu bar.
- 3. Click the EDID drop-down list.
- 4. Scroll down to the bottom of the list and select + Add Custom EDID.
- 5. Enter the name of the EDID in the **EDID Name field**. Spaces and special character are valid entries. Use a descriptive name for this field.



Add Custom EDID			
EDID Name			
3840 x 2160 YUV 60 Hz			
Raw EDID			
Raw EDID			
		CANCEL	SUBMIT

- 6. 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 can be included as delimiters to separate each hexadecimal value.
- Click the SUBMIT button to commit changes or click CANCEL to abort the addition of a custom EDID. Once a custom EDID is created, it will be added to the drop-down list and can be selected without re-entering the information.

The following tables provide a list of which EDID to use with each video mode. Note that the available EDID selections will depend upon the current video mode. Refer to Setting the Video Mode (page 40) for more information.

Common

EDID	2CH LPCM	MCH LPCM	DTS	Dolby	Dolby Digital*	DTS-HD MA [†]	Dolby True HD*
1080P 2CH	Yes	No	No	No	No	No	No
1080P DD	No	No	Yes	Yes	No	No	No
1080P MCH	No	Yes	Yes	Yes	Yes	Yes	Yes

PC application mode only

EDID	2CH LPCM	MCH LPCM	DTS	Dolby	Dolby Digital*	DTS-HD MA [†]	Dolby True HD*
Default	Yes	No	Yes	Yes	Yes	Yes	Yes
1080P DVI	No	No	No	No	No	No	No
1280x800 RGB DVI PCWXGADVI	No	No	No	No	No	No	No
1280x800 RGB PCWXGA2CH	Yes	No	No	No	No	No	No
1366x768 RGB TVWXGA2CH	Yes	No	No	No	No	No	No
2160P 2CH	Yes	No	No	No	No	No	No
2160P MCH	No	Yes	Yes	Yes	Yes	No	No
2560x1600 2CH	Yes	No	No	No	No	No	No
2560x1600 MCH	No	Yes	Yes	Yes	Yes	No	No



EDID	2CH LPCM	MCH LPCM	DTS	Dolby	Dolby Digital*	DTS-HD MA †	Dolby True HD*
Default -Video Mode	No	Yes	Yes	Yes	Yes	Yes	Yes
Default - Video Mode (No HDR)	No	Yes	Yes	Yes	Yes	Yes	Yes
4K60 MCH	No	Yes	Yes	Yes	Yes	Yes	Yes
4K60 PCM-MCH	No	Yes	No	No	No	No	No
460 LPCM 2CH	Yes	No	Yes	Yes	Yes	Yes	Yes
720P DD	No	No	Yes	Yes	No	No	No
720P 2CH	Yes	No	No	No	No	No	No

* Dolby Atmos® is carried with either Dolby Digital Plus or Dolby True HD audio streams.

[†] DTS:X is carried with DTS-HD MA audio streams.

Copying an EDID from the Display

In order to allow the source device to send all AV formats that are supported by the display device, the EDID from the decoder must be copied to the encoder. Access to a decoder will be required.

- 1. Login to AMS and access the desired decoder. Refer to Accessing Encoders in AMS (page 13) except instead of clicking on an encoder, click on a decoder (AT-OMNI-121, AT-OMNI-122, or AT-OMNI-521).
- 2. Make sure the display, where the EDID will be fetched, is connected to the decoder. Select the desired decoder from within AMS.
- 3. Click **HDMI OUTPUT** in the menu bar.

DEVICE INFO	IP INPUT	HDMI OUTPUT	SERIAL	ALARMS	NETWORK	OTHER	CONFIGURATION
HDMI Output 1				HDMI Output 2			
Descrambling				Descrambling			
Enabled:	•			Enabled:	•		
Key:			C	Key:			C
HDCP				HDCP			
Encrypted:	•			Encrypted:	•		
Supported Version:	1.4			Supported Version:	1.4		
Negotiated Version:	1.4			Negotiated Version:	1.4		
EDID:	00fffffffffff004c2d f80714f81c081002 1e662156aa51001 0202000000/c000 122021220716230 2c258076f231000 20b828554076f23	7cbb000000033170103805932780a 1809500a%cb3000101023a8018713 e304681330076f23100001e000000fdc 53414d53554e470a20202020201e00 9070783010000e2000f67030cc00100 9070783010000e2000f67030cc00100 90411480187116152582c2580076f2: 100001e1110007251401e206e285500	ee91a3544c99260f5054bde a2c40582c450076f2310000 0184b0f5117000a2020202 20325f14d901f0413051403 b82d011480d0721c162010 3100099e011400bc52d01e 76f23100001e000000000	EDID: Video Video:	IP Input 2 (Video 2)		
	000000000000000000000000000000000000000	00000000070		Active Input:	Video 2		
Video				Status:	No active video		
Video:	IP Input 1 (Video 1)			Stretch/Crop Mode:	Keep Aspect Ratio		
Active Input:	Video 1			Resolution:	Auto		
Status:	No active video						
Stretch/Crop Mode:	Full Screen			Fast Switching Enable:			
Resolution:	Auto			Audio			
				Input:	IP Input 4 (Audio 2)		
Fast Switching Enable:	•			Active Input:	Audio 2		



HDMI Output 1		
Descrambling		
Enabled:		
Key:		
HDCP Encrypted: Display's EDID		
Supported Version:	1.4	-
Negotiated Version:	1.4	
EDID:	<pre> 00fffffffffffff004c2d7c0b000000033170103805932780aee91a3544c99260f5054 f80714f81c0810081809500a9c0b3000101023a801871382d40582c450076f2310 1e662156aa51001e30468f330076f23100001e000000fd00184b0f5117000a20202 0202000000fc0053414d53554e470a202020202001e0020325f14d901f0413051 1220212207162309070783010000e2000f67030c001000b82d011d80d0721c162 2c258076f23100009e011d8018711c1620582c250076f23100009e011d00bc52d0 20b828554076f23100001e011d007251d01e206e28550076f23100001e0000000 00000000000000000000070</pre>	bde 000 202 403 010)1e)00

4. Locate the **EDID** section. This is the EDID of the display which is connected to the decoder. Click and select the data in this field, then press [CTRL]+[C] to copy the data.

- 5. Select the desired encoder, within AMS.
- 6. Click **INPUT** in the menu bar.
- 7. Click the EDID drop-down list, in the desired HDMI Input window group.
- 8. Scroll down to the bottom of the list and select + Add Custom EDID.

Input:	HDMI Input 1	
Bit Rate:	900	
Subsampling:	4:2:2	
Force YUV:		
		SAVE
SHOW ADVANCED 👻		
HDMI Input 1		
Cable Present:	•	
EDID:	ATL 1080P 2CH	
LIDOD Francisco	ATL 1080P DD	
HDUP Encrypted:	ATL 1080P DVI	
Supported Version:	ATL 1080P MCH	
Video:	ATL 1280X800 RGB DVI PCWXGADVI	Add Custom EDID
Audio:	ATL 1260/600 KGB FOWAGA2CH	
	ATL 2160P 2CH	
	ATL 2160P MCH	
	ATL 2560x1600 2CH	
	ATL 2560x1600 MCH	
	ATL 720P DD	
	ATL 720P 2CH	
	ATL VR (2160x1200)	
	+ Add Custom EDID	
	, lm	Y



- 9. Enter the name of the EDID in the **EDID Name field**. Spaces and special character are valid entries. Use a descriptive name for this field.
- 10. Paste the EDID data into the **Raw EDID** field by pressing [CTRL]+[V].
- 11. Click the **SUBMIT** button to commit changes or click **CANCEL** to abort the addition of the custom EDID. Once a custom EDID is created, it will be added to the drop-down list and can be selected without re-entering the information.

HDMI Input 1						
	HDMI Input 1					
	900					
	4:2:2					
	Add Custom EDID					
SHOW ADVANCED 👻						
	EDID Name Samsung EDID					
HDMI Input 1	Raw EDID					
Cable Drasset	00fffffffffff004c2d7c0b0 10081809500a9c0b3000	000000033170103805932780a 101023a801871382d40582c45	aee91a3544c99260f5054bde 50076f23100001e662156aa5	f80714f81c08 1001e30468f3		
	30076f23100001e000000 020202001e0020325f14c	0fd00184b0f5117000a20202020 1901f041305140312202122071	02020000000fc0053414d53 162309070783010000e2000f	554e470a202 67030c00100		
	0b82d011d80d0721c162 d00bc52d01e20b828554	0102c258076f23100009e011d8 076f23100001e011d007251d01	8018711c1620582c250076f2 1e206e28550076f23100001e	:3100009e011 :00000000000		
		0000070				
			CANCEL	SUBME		
Audio:	N/A					
			SAVE			



Encoder Grouping

Grouping encoders allows a group of encoders to feed a single decoder, simultaneously. The stream will be displayed by the decoder using either manual or automatic input-selection, based on the presence of a source signal.

- 1. Login to AMS. Refer to Accessing Encoders in AMS (page 13), if necessary.
- 2. Click **SESSION** in the menu bar.
- 3. Click the SHOW ADVANCED button to expand options for the desired Stream.
- 4. Locate **Encoder Groups** and enter a name for the group in the **Group Name** field. The default group names for **Stream 1** is **session1**.

Control/Serial:		
Source:	Serial Port 1 v	
Enable Aux:	•	
Destination Multicast/Unicast Address:	225.0.0.15	
Destination UDP Port:	1200	
TTL	255	
DSCP:	Best Effort	
	Bidirectional	Group Name
Bidirectional:		
Listen Port:	1204	
Encoder Groups		
Group Name:	session1	
Enable Encoder Group:	0 -	
Active:	•	
Trigger:	manual	
	ACTIVATE	
Members		
None		
	ADD	
HIDE ADVANCED		
	SAVE	
	over a second seco	

- 5. Under **Members**, click the **ADD** button and enter the IP address of the encoder to be added to the group.
- 6. Click the Interface drop-down list to select the desired interface.
- 7. Click the **SUBMIT** button to commit changes to the encoder group.
- 8. Repeat steps 5 through 8 for each encoder to be added to the encoder group.

IMPORTANT: The IP address for each encoder must be added to the group. This includes the IP address of the encoder that is being used to create the group.

×				
Interface			-	
ethi	Enc	oder IP address	_	Ŧ


- 9. Click the **Enable Encoder Group** toggle switch to enable encoder grouping. When enabled, this toggle switch will be green.
- 10. Click the **Trigger** drop-down list and select the desired trigger mode.

Listen Port:	1204
Encoder Groups	Enable Encoder Group
Group Name:	session1
Enable Encoder Group:	
Active:	· · · · · · · · · · · · · · · · · · ·
Trigger:	manual
	input connected

Mode	Description
manual	Use this setting to manually enable the input. When set to manual, click the Activate button to perform the input switching.
input connected	Use this setting to allow the encoder group to use automatic input detection. Once a new source is connected, that source becomes the active source.



NOTE: Setting **Trigger** to **input connected** should not be used when **Slate Mode** is set to **Auto**. Doing so will cause the slate to be displayed when switching inputs. If encoder auto-switching is being used, set the **Slate Mode** to **Auto**, on the decoder. Refer to **Slate / Logo Insertion (page 41)** for more information.

11. Click the **SAVE** button, at the bottom of the **Stream** window group to commit all changes.



Scrambling

OmniStream supports 128-bit Advanced Encryption Standard (AES) scrambling for both audio and video streams. Scrambling can be enabled or disabled through AMS, and can be individually applied to video, audio, or both. Scrambling can be enabled either before or after the decoding process is started. Data streams cannot be scrambled. By default, scrambling is disabled.

Standard Method

- 1. Login to AMS. Refer to Accessing Encoders in AMS (page 13), if necessary.
- 2. Click **SESSION** in the menu bar.
- 3. Under the desired **Stream**, click the **Scrambling** toggle switch to enable it. Once enabled, the toggle switch will be green and the **Key** field will be displayed.



4. Enter the desired scrambling key in the **Key** field. If a random key is desired, click the **C** icon to generate a key. Each time this icon is clicked, a new scrambling key will be generated.

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.

5. Click the **Save** button at the bottom of the page to commit the changes.



Using the Virtual Matrix

- 1. Access the Virtual Matrix. Refer to The Virtual Matrix (page 61) for more information.
- 2. Locate the desired encoder or decoder. Scrambling is managed on the encoder; descrambling is managed on the decoder.
- 3. Click the key icon. The Scrambling dialog box will be displayed. If the key icon for a decoder is clicked, then the Descrambling dialog box will be displayed.

AT-OMNI-112 10.20.40.26 10.20.40.26	HDMI 1 In	– Key icon	
at-omni-112-0041	HDMI 2 In		
AT-OMNI-512	HDML1 In	: :: :	::::

4. Click the **Enable** toggle switch to enable scrambling for the desired session.



- 5. Enter the desired scrambling key using one of the following methods:
 - Manual enter a user-defined key in the Key field.
 - Click the C icon to generate a random key using AMS. Each time this icon is clicked, a new scrambling key will be generated.
- 6. Repeat the above process for each session.
- 7. Click the **Save** button to commit the changes.



Setting the Video Mode

OmniStream offers two video modes: Video and PC application. These two modes will optimize the video, based on the type of information that is being displayed. Use the **Video** mode when display motion graphics/video. Set this mode to **PC application** when viewing static images, such as spreadsheets or similar content.



IMPORTANT: In order to use 3840x2160p60 signals, **Video Optimization** must be set to **Motion Video**.

- 1. Login to AMS. Refer to Accessing Encoders in AMS (page 13), if necessary.
- 2. Click **INPUT** in the menu bar.
- 3. Click the SHOW ADVANCED button, under the HDMI Input 1 window group.
- 4. Click the Video Optimization drop-down list to select the desired mode.

DEVICE INFO	INPUT	SERIAL	SESSIONN	ALARMS	NETWORK	OTHER	CONFIGURATION
HDMI Input 1							
Input:	HDMI Input 1						
Bit Rate:	900						
Subsampling:	4:2:2						
Force YUV:	-						
Slate Mode:	Off						
			SAVE				
Video Optimization							
Video Optimization:		M	ation Video				
Note: Changing Video Optimization may	y take a few moments to complete.	Co	mputer Graphics				
							SAVE
HDN							
Video Optimiza	tion:				Mot	on Video	0
Nets Observice	Mideo Ontinination				Com	puter Craphica	
Note: Changing	video Optimization	may take a rew	moments to complete	2.	Con	iputer Graphics	
	-D .						

Mode	Description
Computer Graphics	Optimizes the image when viewing static images, such as spreadsheets or similar content.
Motion Video	Provides the best viewing experience when streaming motion graphics and/or video.

- 4. Click the **SAVE** button, within the **Video Optimization** window group to commit changes. Note that switching between video modes may take a few moments to complete.
- 5. Go to the decoder interface and repeat the process. Refer to the *OmniStream Single-Channel / Dual Channel A/V Decoder User Manual*, if necessary.



Slate / Logo Insertion

Slate / logo insertion is managed from within AMS. 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 AMS. Refer to Accessing Encoders in AMS (page 13), if necessary.
- 2. Click **OTHER** in the menu bar.
- 3. Verify that **Logo** is selected, near the upper-left corner of the screen. **Logo** is the default selection and applies to both logo and slate images.
- 4. Enter the name of the image in the **Name** field. If a name is not specified, then the **UPLOAD** button will be disabled.
- 5. Under the **New logo** window group, click the **Choose File** button and select the image to be used. Only .png files are valid selections.
- 6. Click the **UPLOAD** button to upload the file.

		Logo s	selected				
DEVICENT	INPUT	SEIIAL	SESSION	ALARMS	NETWORK	OTHER	CONFIGURATION
Logo Text PTP Name My_image Choose F	6 image prg						
HDMI Inpr Enabled: Select Log	t 1 Logo : Not Used						
Location Horizontal Vertical Size: Height:	Name My_image	ide phd					
Width:		.ah.ia					

7. A new window group will be created with the name of the logo that was provided in Step 4.



DEVICE	INFO INPUT	SERIAL	SESSION	ALARMS	NETWORK	OTHER	CONFIGURATION
Logo	New Logo						
Text							
PTP	Name My_image						
	Choose File image.png		Ir	nage window g	Iroup		
				PLOAD			
	My_image						
	Usage Count						
	0	_					
		DELETE					
	HDMI Input 1 Logo			HDMI Input 2 Logo			
	Enabled:	•		Enabled:	•		
	Select Logo:	Not Used		Select Logo:	Not Used		· · ·
	Aspect Ratio:	Stretch		Aspect Ratio:	Stretch		

- 8. Perform one of the following:
 - If the selected image will be used as a *logo*, then proceed with Steps 9 through 13.
 - If the image will be used as a *slate*, skip to Step 14.
- 9. Under the **HDMI Input Logo** 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.

DEVIC	E INFO	INPUT	SERIAL	SESSIONN	ALARMS	NETWORK	OTHER	CONFIGURATION
Logo								
Text	New Logo							
PTP	Name My impose							
	Change File image of							
	Choose File Image.ph	g			UPLOAD			
	My_image							
	Usage Count							
	0							
			DELETE					
	HDMI Input 1 Logo							
	Enabled:	•						
	Access Dation	M	ot Used y_image					
	Aspect Natio.							
	Location Horizontal:	0						
	Vertical:	0						
	Size:							
	Height:	HDMI Input	1 Logo					
	Width:							
		Enabled:						
		Colort Long						
		Select Logo:			Not Used			
					My_image			
		Aspect Ratio):			1		
					-			



- 10. 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 fill the screen.
- 11. Enter the location of the on-screen image, in pixel values, by entering the desired values in the **Horizontal** and **Vertical** fields.
- 12. Click the **Enabled** toggle switch to activate the logo/slate feature. When enabled, this toggle switch will be green.
- 13. Click the **SAVE** button to commit changes.
- 14. Click **INPUT** in the menu bar, then click the **SHOW ADVANCED** button.
- 15. Click the Slate mode drop-down list, and select Off, Manual, or Auto.

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.

DEVICE INFO	INPUT	SEIIAL	SESSION	ALARMS	NETWORK	OTHER	CONFIGURATION
HDMI Input 1							
Input:	HDMI Input 1						
Bit Rate:	900						
Subsampling:	4:2:2						
Force YUV: Slate Mode:	Off						
	Manual		SAVE				
	Auto		SAVE				
Video Optimization							
Video Optimization:		Compu	ter Graphics				
Note: Changing Video Optimization may tal	e a few moments to complete.						
							SAVE
HIDE ADVANCED							
Subsampling:			4:2:2		T		·
Cable F			-				
Force YUV:							
Suppor Slate Mode:							
Video:			Off				
Audio:			Manual				
			Auto				SAVE
·			(m				

- 16. Click the **Slate Logo** drop-down list and select the desired image. Note that 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 / Logos

Follow the instructions below to remove a logo/slate image.

- 1. Click **OTHER** in the menu bar.
- Click the **DELETE** button in the desired image window group. When the **DELETE** button is clicked, the window
 group and the associated image will be deleted from the encoder. If the **DELETE** button is disabled, do the
 following:
 - a. Locate the HDMI Input Logo window groups.
 - b. Click the Select Logo drop-down list and select Not Used.
 - c. Click the SAVE button.
 - d. Refresh the page.
 - e. Click the DELETE button to remove the logo.



Text Insertion

- 1. Login to AMS. Refer to Accessing Encoders in AMS (page 13), if necessary.
- 2. Click **OTHER** in the menu bar.
- 3. Click **Text** in the side menu bar, in the upper-left corner of the AMS screen.
- 4. Click the **Enabled** toggle switch, to allow the text to be displayed. When enabled, this toggle switch will be green.

DEVICE INFO	INPUT	SERIAL	SESSION	ALARMS	NETWORK	OTHER	CONFIGURATION
Logo							
Text							
PTP Enabled:	-						
Text:							
Scroll Speed:	0						
Iterations:	ovt coloctod						
Color	ext selected						
Color:	white	-					
Location							
Horizontal (%):	0			_ \			
Vertical (%):	0			_ \			
Pine							
Width (%):							
Height (%):		-					
	HDMI Input 1	Text					
SHOW ADVANCED +							
	Enabled						
	Text:			-			
	Scroll Speed:		0				
	Iterations:		0				

- 4. In the **Text** field, enter the desired text.
- Specify the speed of the scrolling text in the Scroll Speed field. 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.
- 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 screen.
- 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 screen.
- 10. Click the SAVE button to commit all changes.



Device Info page

The **Device Info** page provides general information about the encoder.

≡ 🕄 Help≁									C 🔄 0 🐠
DEVICE LIST	÷	DEVICE INFO	INPUT	SERIAL	SESSION	ALARMS	NETWORK	OTHER	CONFIGURATION
Unassigned	^	Device Info							
€ at-omni-111-wp-00000									
🗑 at-omni-112-00259		Allas	AT-OMNI-111						
₹ at-omni-122-00242		IP Address	192.168.0.132						
		MAC Address	88:98:80:01:91:7E						
		Firmware Version:	1.2.5_RC02						
		FIRMWARE UPDATE							
		Description:	AT-OMNI-111						
		Location:							
		Uptime:	4 minutes						
		Hostname:	at-omni-111-wp-00000						
		Reset users Reset network							
		FACTORY RESET IDENTIFY	REBOOT DEVICE						
		SHOW ADVANCED 👻							
									SAVE
					Atlona Customer Support Live C	hat (SAM PST - SPM PST) 🏴			

Alias

Enter a name for the unit in this field. This is optional.

Model

The model number of the unit. The OmniStream Wallplate will use the name AT-OMNI-111-WP. **IP Address** Displays the IP address of the encoder.

MAC Address

Displays the MAC address of the encoder.

Firmware version

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

FIRMWARE UPDATE

Click this button to update the firmware.

Description

Provides the option of assigning descriptive name to the unit.

Location

Provides the option of assigning descriptor for the location of the unit.

Uptime

Time elapsed since the last reboot operation.



Hostname

The hostname of this unit. This can be changed if desired. By default, the host name is automatically created using the model of the unit and adding the last five digits of the unit serial number.

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 without using the Virtual Matrix within AMS. IMPORTANT: This 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.

REBOOT DEVICE

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

Advanced Settings

Click the **SHOW ADVANCED** button to view the following options.

Timezone

Click this drop-down list to select the time zone, expressed in Universal Coordinated Time (UTC).

System Temperature

The current internal temperature of the unit listed in both degrees Fahrenheit and Celsius.

Die Temperature

The component chip temperature listed in both degrees Fahrenheit and Celsius.

Power Consumption

The current power consumption value.

NTP Server

Specify the desired NTP server in this field. This provides timestamps for any logs and alarms.

Buttons

Disabling this feature will lock the ID button on the front panel. This feature is enabled by default.

LEDs

Disabling this feature will turn off all LED indicators on the front panel. This is enabled by default.



Input page

The **Input** page provides signal information for each channel (input). If using the single-channel encoder, only a single (input) channel will be displayed.

≡ C Help~			AMS.									
DEVICE LIST		DEVICE INFO	INPUT	SIRIAL	SESSION	ALARMS	NETWORK	OTHER	CONFIGURATION			
Unassigned	^	HDMI Input 1										
♥ ♥ atiomni-111-wp-00000		land	UDM Instit 1									
€ at-onni-112.00250		mpor.	HDWITINDULT									
♥ at-ormi-122-00242		Bit Rate:	900									
		Subsampling:	4:2:2									
		Force YUV:	•									
					SAVE							
		SHOW ADVANCED 👻										
		HDMI Input 1										
		Cable Present:	•									
		EDID:	Default									
		HDCP Encrypted:	•									
		Supported Version:	2.2									
		Video:	N/A									
		Audio:	N/A									
					SAVE							
						(5AM PST - 5PM PST)						
			Copyright @2019 At	tiona Inc (atlona.com). All Rights Reserved.	IP Address: 192.168.0.116 Version: 2.4	0						

Input

The selected input. This value can be HDMI Input 1, Video Generator 1, or None.

Bit Rate

The current video bit rate. Specifying lower bit rates will reduce video quality. This value is in megabits-per-second (Mbps). 4K/UHD streams should be set to 900 Mbps. The recommended bandwidth for 1080p60 video is also 450 Mbps. Setting this field below these recommended values will result in lower-quality video.

Subsampling

Click this drop-down list to select the desired maximum chroma subsampling value. Any input with a higher chroma subsampling will have their chroma scaled to the configured value using a very high quality chroma scaler to preserve quality.

Force YUV

When this toggle switch is enabled (green), it will force the output of the decoder to output YUV regardless of whether the input to the encoder is RGB or YUV. In order for the chroma scaling to work on RGB inputs, this option must be enabled.

Cable Present

Indicates whether or not a connection is detected. The indicator, to the left, indicates the current state. If the indicator is green, then a source signal is detected. If the indicator is red, then check the cable connection and make sure that the source is powered. Damaged cables may also display a red indicator.



EDID

Click the drop-down list to select the desired EDID. Refer to the table elow for a list of available EDID selections.

EDID	Description
Default	Default OmniStream EDID
ATL 1080P 2CH	1920x1080p60 with two-channel PCM audio
ATL 1080P DD	1920x1080p60 with Dolby Digital audio
ATL 1080P DVI	1920x1080p60 with video formatted as DVI
ATL 1080P MCH	1920x1080p60 with multichannel PCM audio
ATL 1280x800 RGB DVI PCWXGADVI	1280x800p60 with video 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 4K60 MCH	3840x2160p60 with multichannel PCM audio
ATL 4K60 PCM_MCH	3840x2160p60 with two-channel / multichannel PCM audio
ATL 720P DD	1280x720p60 with Dolby Digital audio
ATL 720P 2CH	1280x720p60 with Dolby Digital two-channel audio

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.



NOTE: Disabling HDCP compliance does not decrypt HDCP content.

Supported Version

Click this drop-down list to select the version of HDCP to be supported: **2.2**, **1.4**, or **None**. If **None** is selected, then HDCP-enctrypted content cannot be passed-through.

Video

The current sampling rate for the input video signal.

Audio

The sampling frequency for the input audio signal.



Advanced Settings

Click the **SHOW ADVANCED** button to view the following options.

Slate Mode

Click this drop-down list to enable slate mode or select the desired slate to be used. Refer to Slate / Logo Insertion (page 41) for more information.

Video Optimization

Sets the output video mode. Refer to Setting the Video Mode (page 40) for more information.



Serial page



IMPORTANT: The AT-OMNI-111-WP does not currently support serial (RS-232) functionality. However, the page is listed within AMS.

≡ C Help~					15:				🍕 0 🗗 D
DEVICE LIST	а. —	DEVICE INFO	INPUT	SERIA.	SESSION	ALARMS	NETWORK	OTHER	CONFIGURATION
Unassigned	^	Serial Port 1				Serial Port 2			
♥ ♥ atiomni-111-wp-00000		Supported Moder:	earlal			Summerted Medan	infrared		
€ at-omni-112.00259		Mode:	serial			Mode:	infrared		
♥ at-omni-122-00242		Baud Rate:	9600				SAVE		
		Data Bit:	8						
		Parity:	None						
		Stop:	1						
		Flow Control:	None						
			SAVE						
		Serial Configuration 1				Serial Configuration 2			
		Port:	Serial Port 1		ν	Port:	Not Used		~
		Mode:	cli			Mode:	cli		
			SAVE				SAVE		
		SHOW ADVANCED 👻							
						Chat (5AM PST - 5PM PST) 🏴			
			Copyrig	ht ©2019 Atlona Inc (atlona.com). All Rights Re	sserved. IP Address: 192.168.0.116 Versic	n: 2.4.0			



Session page

The **Session** page provides the ability to configure all session parameters. Up to two sessions are supported on the AT-OMNI-111-WP.

≡ 🕄 Help∽				<u>∧</u> ⊳	15:				C 🔄 🕛 🐠
DEVICE LIST		DEVICE INFO	INPUT	SERUL	SESSION	ALARMS	NETWORK	OTHER	CONFIGURATION
Unassigned	^	Stream 1							
♥ ♥ atiomni-111-wp-00000		Interferen	-st-1						
€ at-onni-112.00250		internace.	euri						
♥ at-omni-122-00242		SAP:							
		Video							
		Encoder:	HDMI Input 1						
		Enable Video:							
		Destination Multicast/Unicast Address:	225.0.0.5						
		Destination UDP Port:	1000						
		TTL:	255						
		Audio							
		Source:	HDMI 1						
		Enable AES67:	•						
		Downmixing:			*				
		Enable Audio:	-						
		Destination Multicast/Unicast Address:	225.0.0.6						
		Destination UDP Port:	1100						
		TTL:	255						
		Control/Serial:							
		Source:	Not Used						
					Ationa Customer Support Live Cha	at (SAM PST - 5PM PST) 🏴			
			Copyright @2	019 Atlana Inc (atlana.com). All Rights	Reserved. IP Address: 192.168.0.116 Version: 2.	.4.0			

Interface

Click this drop-down list to select the desired interface.

Interface	Description
eth1	ETHERNET 1 port
Not Used	Ethernet interface is disabled

SAP

Click this switch to enable to disable the Session Announcement Protocol. When enabled, the toggle switch will be green.

Scrambling

Click this toggle switch to enable (green) or disable scrambling.

Key

This field is only displayed if the **Scrambling** toggle switch is enabled (green). 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.



Encoder

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

Enable Video

Click the toggle switch to enable or disable the video stream. When enabled, the toggle switch will be green. By default, video streaming is *enabled*. Disabling the video stream can be used to "mask" the video on the decoder endpoints.

Destination Multicast/Unicast Address

Enter the IP address of the decoder that will be receiving the video stream. By default, AMS will automatically populate multicast IP addresses for the encoder.

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. **Source**

Input

Select the desired HDMI input from the Source drop-down list.

Enable AES67

Click this toggle switch to enable AES67. When this feature is enabled, the toggle switch will be green.

Downmixing

This field will only be available when AES67 is enabled.

Enable Audio

Click the toggle switch to enable the audio stream. By default, audio streaming is *disabled*.

Destination Multicast/Unicast Address

Enter the IP address of the decoder that will be receiving the audio stream.

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.

Source

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



IMPORTANT: The AT-OMNI-111-WP does not currently support serial (RS-232) functionality. However, the page is listed within AMS.



Advanced Settings

Click the **SHOW ADVANCED** button to view the following options. **DSCP**, **FEC Enable**, **FEC Rows**, and **FEC Columns** apply to both **Video** and **Audio** sections.

DSCP

Select the Differentiated Services Code Point (DSCP) type from the **DSCP** drop-down list. This value will be used to determine the Quality of Service (QoS) on a network. The available values are: **Best Effort**, **Low**, **Normal**, **High**, and **Highest**. The **Best Effort** setting will provide normal priority for data packets, while a setting of **Highest** will prioritize data packets as critical. However, it should be noted that a higher priority setting may also result in high data packet loss, depending upon network traffic.

FEC Enable

Click this toggle switch to enable (green) or disable Forward Error Correction (FEC). This feature can be used when transporting streams over a network that is suspected to be unreliable, due to noise or other factors. By default, this feature is enabled. Refer to FEC Details (page 100) for more information.

FEC rows

Specify the number of FEC rows in this field. Refer to FEC Details (page 100) for more information.

FEC Columns

Specify the number of FEC columns in this field. Refer to FEC Details (page 100) for more information.

Group Name

The name of the encoder group.

Enable Encoder Groups

Click this toggle switch to enable (green) or disable encoder groups for the stream.

Active

Indicates if the encoder group is active. If active, this indicator will be green.

Trigger

Click this drop-down list to select the trigger type: manual or input connected.

ACTIVATE

Click this button to activate the encoder group.

ADD

Click this button to add the IP address of an encoder to the encoder group.



Network page

The **Network** page provides the ability to enable or disable DHCP mode for each video channel. When DHCP mode is disabled, the IP address, subnet mask, and gateway must be provided. This screen is identical to the **Network** page for the decoder.

≡ C Help×									C 🔽 🔅 ֎
DEVICE LIST	i.	DEVICE INFO	INPUT	SERIAL	SESSION	ALARMS	NETWORK	OTHER	CONFIGURATION
Unassigned	^	Network 1 (eth1)							
♥ at-omni-111-wp-00000		Fachlack							
♥ at-omni-112-00259		Carrier:							
♥ at-omni-122-00242		DHCP Mode:	DHCP						
		Changing IP Mode from Static to DHCI	requires running a scan to find the	new IP address of the device.					
		IP Address:	192.168.0.132						
		Subnet:	255.255.255.0						
		Gateway:	192.168.0.1						
		SHOW ADVANCED +							
					SAVE				
					Atlona Customer Support Live Chat	t (5AM PST - 5PM PST) 🏴			

Enabled

This indicator displays whether or not the video stream for this channel is active. If the indicator is green, then the video stream is active.

Carrier

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

DHCP Mode

Click this drop-down list to select the desired network mode. Select DHCP to let the DHCP server (if present) assign the encoder the IP settings; **Subnet** and **Gateway** fields will automatically be populated. When **Static** mode is selected, the information for the **IP Address**, **Subnet**, and **Gateway** fields must be entered.

IP Address

Displays the IP address used by the channel. This field can only be changed if **Static** mode is selected.

Subnet

Displays the subnet mask for the channel. This field can only be changed if **Static** mode is selected.

Gateway

Displays the gateway (router) address for the channel. This field can only be changed if **Static** mode is selected.



Advanced Settings

Click the **SHOW ADVANCED** button to view the following options.

Link Speed

Displays the port speed in Mbps.

MAC Address

The MAC address of the Ethernet channel.

Telnet Authentication

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

Username: admin Password: Atlona

802.1x Mode

Click this drop-down list to select the desired authentication mode. Refer to 802.1X Authentication (page 27) for more information.



Other page

The **Other** page provides logo/slate, text, and PTP management. Click the menu in the upper-left corner of the AMS screen to switch between **Logo**, **Text**, and **PTP** screens.

Logo

The **Logo** page provides the ability to upload a custom logo. This logo will be displayed when no video signal is detected. Separate logos can be uploaded: one for each channel. Refer to Slate / Logo Insertion (page 41) for more information on these settings.

≡ C3 Help~					4	-15:				C 🔄 🕛 🐵
DEVICE LIST	:	DEVIC	E INFO	INPUT	SERIAL	SESSION	ALARMS	NETWORK	OTHER	CONFIGURATION
Unassigned	^	Logo	New Logo							
🛡 🛡 at omni-111-wp-00000		Text								
€ at-omni-112-00259			Name							
at-omni-122-00242			Choose File No file chose	n						
							UPLOAD			
			HDMI Input 1 Logo							
			Enabled:							
			Select Logo:	Not Used						
			Aspect Ratio:	Stretch						
			Location							
			Horizontal:	0						
			Vertical:	0						
			Size:							
			Height:	10						
			Width:	10						
							AVE			

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 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.

Enabled

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

Target

The name used by AMS to identify the encoder.

Select Logo

Click this drop-down list to select the desired logo. To disable the use of a logo, set to 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 on the screen.



Vertical

Enter the vertical position of the logo on the screen.

Height

Enter the horizontal resolution of the logo, in pixels.

Width

Enter the vertical resolution of the logo, in pixels.



IMPORTANT: Maximum logo resolution (both height and width) is 1/4 of the video resolution.

Text

The **Text** page provides the ability to display scrolling or stationary text superimposed on the source image. Refer to **Text Insertion (page 45)** for more information.

≡ 🕄 Нер×									C 🔄 🕛	
DEVICE LIST	DEVICE	EINFO INPUT		SRIAL	SESSION	ALARMS	NETWORK	OTHER	CONFIGURATION	
Unassigned A	Logo	HDMI Input 1 Text								
♥ ♥ at-omni-111-wp-00000 :	PTP	Enabled:								
♥ at-omni-112-00259		Text:								
♥ at-omni-122-00242		Scroll Speed:	0							
		Iterations:	0							
		Color								
		Color:	white							
		Location								
		Horizontal (%):	0							
		Vertical (%):	0							
		Size								
		Width (%):	10							
		Height (%):	10							
		SHOW ADVANCED -								
					SAVE					

Enabled

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

Text

Enter the desired text in this field.

Scroll Speed

Enter the scrolling speed in this field. 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.



Horizontal (%), Vertical (%)

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 screen.

Width (%), Height (%)

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 screen.

Advanced Settings

Click the SHOW ADVANCED button to view the following options.

Red, Green, Blue, Alpha

Enter the RGBA values for each of the respective fields, to specify a custom color and transparency of the text. Enter the desired value in 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.

PTP

The **PTP** page provides options for adjust Precision Time Protocol (PTP) for AES-67 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 interface 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 unit is more likely to get selected as GM.



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.

≡ 🖸 Help×		AMS:									
DEVICE LIST	DEVICE	E INFO INPUT	SRIAL	SESSION	ALARMS	NETWORK	OTHER	CONFIGURATION			
Unassigned A	Logo Text	Network 1 (eth1)									
 ♥ et omni-111-wp 00000 ♥ at omni-112-00259 	РТР	Domain Number:	0								
♥ at-onnei-122-00242		Priority 1: Priority 2:	128								
		Is GM Present:	B898 B0FF FE01 8717								
		Master Offset (ns):	25	SAVE							



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.

Is GM Present

This indicator displays the existence of a grandmaster clock for the specified PTP domain number. If the indicator is green, then the grandmaster clock exists on this interface.

GM Identity

The grandmaster clock identity. If this field is blank, then it means that this interface is the grandmaster clock.

Master Offset

Displays the grandmaster clock offset.



The Virtual Matrix

- 1. Login to AMS. Refer to Accessing Encoders in AMS (page 13), if necessary.
- 2. Click the \equiv icon, in the upper-left corner of the AMS Dashboard.
- 3. Click Virtual Matrix.



4. The **OmniStream Virtual Matrix** page will be displayed.

						~	<u>M</u> 9	5	
-									
⊞ OmniStrean	n Virtual Ma	atrix	All Sites						
Encoders / Decoders LEGEND	Andrew's AT-OMNI-122 192.168.11.181	Connected	AT-OMNI-121 192.168.11.34	Connected AT-OMNI-122 07 192.168.11.86	Connected	AT-OMNI-521 192.168.11.39	Connected	AT-OMNI-122 192.168.11.160	Connected
Audio All	at-omni-122-00548	Options	at-omni-121-00461	Options 81 omni 122 00242	Options	at-omni-521-00054		192.168.11.161 at-omni-122-00381	Options
Conta C Flip Matrix ATFOMNE112	HDMI1	HDMI 2	HDMI 1	HDML1	HDMI 2	HDMI 1		HDMI 1	HDMI 2
192.168.11.89 HDMI 192.168.11.88 at-omni-112-00349 HDMI	2								
Connected Or AT-OMNI-111					•				•
192.168.11.50 at-omni-111-00200 HDMI Corrected Or	1								
AT-OMNI-512									
192.168.11.51 HDMI at omni-512-00003 HDMI	2		S	✓	S				
Consected .	:0:	:!!!	:0:	:D:	:!!!:	:0:		:0:	:0;
192.168.11.116 HDMI at-omni-112-00722						S		S	
Connected -		S			S				
AT-OMNI-112 192.168.11.183 HDMI 192.168.11.148	1			0		0		0	
at-omni-112-00335 HDMI	2	0			S				0



Layout and Operation

The illustration below, shows a multiple OmniStream units (encoders and decoders). The Virtual Matrix is organized into rows and columns.

The blue circle with the checkmark indicates that these two OmniStream units are connected to one another. The second column identifies a dual-channel decoder (AT-OMNI-122). The third row shows a dual-channel encoder (AT-OMNI-112). In this example, the source signal on **HDMI 1 IN** (encoder) is being sent out, over the network, and will be displayed on **HDMI 1** on the decoder. This will create a *cross-connection*, which connects both the encoder and decoder together.

• Creating a cross-connection

To route an input on an encoder to an output, locate the row and column where an input and output intersect, then click the square with the dots around it.

• Removing a cross-connection

To remove a *cross-connection*, click on the desired circle icon with the check mark symbol. The square with the dots around it will be displayed indicating that the *cross-connection* has been removed.



• To view the individual streams for video, audio, and data, click the icons on the upper-left corner of the screen.

≡ C Hep≁	AMS:	
OmniStream Virtual Matrix All Sites		Ŧ
Encoders LECTION Andrew% AFGMNR-122 Commetcle ATCMMR-121 Video Video <td< td=""><td>Connected AT-0MI9-122 Connected AT-0MI9-521 Connected AT-0MI9-122 Connected V12.164.11.86 Verv V22.164.11.60 Verv Verv.164.11.97 Verv V12.06.11.87 Verv Verv.164.11.97 Verv Verv.164.11.101 Verv Verv Verv Verv Verv Verv Verv Verv</td><td></td></td<>	Connected AT-0MI9-122 Connected AT-0MI9-521 Connected AT-0MI9-122 Connected V12.164.11.86 Verv V22.164.11.60 Verv Verv.164.11.97 Verv V12.06.11.87 Verv Verv.164.11.97 Verv Verv.164.11.101 Verv Verv Verv Verv Verv Verv Verv Verv	
Hotelstrate Notest = Notest = Notest = Notest = 1020141130 Hotelstrate ID	Encoders / Decoders	
122.144.150 correction correction AFCARDE-572 122.144.153 122.144.153 122.144.153 122.144.153 122.144.153 122.144.153 122.144.153 122.144.153 122.144.153 122.144.153 122.144.153 122.144.153 122.144.153 122.144.154 122.145.154 122.154.154 122.154.154 122.154.154 122.154.154 122.154.154 122.154.154 122.154.154 122.154.154 122.154.154 122.154.154 122.154.154 122.154.154 122.154.154 122.154.154 122.154.154 122.154.154 122.154.154 122.154.154.154 122.154.154 122.154.154 122.154.154 122.154.154 122.154.154 122.154.154 122.154.154 122.154.154 122.154.154 122.154.154 122.154.154 122.154.154 122.154.154 122.154.154 122.154.154 122.154.154.154 122.154.154.154 122.154.154.154.154.154.154.154.154.154.154	Video View: Active 🔻	
at comparison HCM2 Image: 4 (a) Image: 4 (a) Image: 4 (a) At Codes 112 HCM2 Image: 4 (a) Image: 4 (a) Image: 4 (a) Image: 4 (a) At Codes 112 HCM2 Image: 4 (a) At Codes 112 HCM2 Image: 4 (a)	Audio 🔲 All	
Convector Image: Convector	→ Data 🗘 Flip Matrix	
1 Vella Nella 1		



When these icons are clicked, the associated icons will be displayed in the rows and columns of the Virtual Matrix.

Symbol	Description
V	Video only
Α	Audio only
D	Data only
V	Connected; not all signals are active
	Connected; all streams are being used





IMPORTANT: R-Type and Pro compatibility: R-Type encoders (AT-OMNI-512) and decoders (AT-OMNI-521) operate in Video Mode, only. Pro encoders can be set to either Video Mode or PC Mode. Video Mode is incompatible with PC Mode. Therefore, in order for both R-Type and Pro encoders/decoders to work within a system, Pro encoders/decoders must be set to Video Mode. Refer to Setting the Video Mode (page 40) for more information.

- Click the Video, Audio, and Data icons to return to the normal view.
- Since only HDMI (both audio and video) is being used, the V (video) and A (audio) icons are displayed. The blue circle with the checkmark indicates that the cross-connection has been created. However, not all streams are being used. Refer to the chart below.
- This illustration also shows that the data stream (the icon with two arrows and three dots), which is used for control, is also being used and is displayed as a dark-blue circle with the letter "D".
- The icons in the upper-left corner can also act as a filter. This allows for a clear breakdown of where signals are being routed and is useful when several encoders and decoders are used on a 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 more than one method. Running IP scanner software or using the Address Resolution Protocol (ARP) are two possibilities. When running an IP scanner or using ARP, both the computer and the OmniStream encoders/decoders must be connected to the same network.



TIP: Atlona recommends downloading and using the Network Assignment Planner, when setting up OmniStream products on the network. Recording this information in this document will provide a "snapshot" of the current OmniStream network configuration. The Network Assignment Planner is available for download on the OmniStream product pages, under the Resources tab.

Getting the IP Address

The following method uses the arp command, which is available from the command line in Windows. The arp command will display the IP-to-physical address translation tables used by the Address Resolution Protocol (ARP). The following procedure can be used for both encoders and decoders.

1. Identify the desired encoder/decoder by locating the MAC address on the back panel of the unit. *Figure 1.1* shows a sample label from an AT-OMNI-112 dual-channel encoder.

The MAC address for the Ethernet 1 physical interface is B8:98:B0:01:F7:EB.

Figure 1.1 - Sample label from a dual-channel encoder, showing the location of the MAC address.



- 2. Connect a PC to the same network where the OmniStream encoders/decoders are connected.
- 3. Type cmd in the search bar, then press [ENTER] to launch the command line interface.
- 4. At the command prompt, type arp -a. Make sure to include a space between arp and the -a argument, then press [ENTER].
- 5. Press [ENTER]. Several lines of information will be displayed. Locate the MAC address of the encoder/decoder, under the **Physical Address** column. Directly across from the MAC address, the IP address of the encoder/ decoder will be listed under the **Internet Address** column. Refer to the illustration on the next page.



	Encoder I	P address	MAC address
Interface: 10.1.0.4 -	0x16		
Internet Address	Physical Address	Type	
10.1.0.3	30-cd-a7-37-26-bb	dynamic	
10.1.0.8	b8-98-b0-01-fa-58	dynamic	
10.1.0.11	b8-98-b0-01-f2-56	dynamic	
10.1.0.12 🦊	b8-98-b0-01-f7-eb 🖊	dynamic	
10.1.1.254	00-38-df-d1-35-8a	dynamic	
10.1.1.255	ff-ff-ff-ff-ff-ff	static	
224.0.0.2	01-00-5e-00-00-02	static	
224.0.0.22	01-00-5e-00-00-16	static	
224.0.0.230	01-00-5e-00-00-e6	static	
224.0.0.252	01-00-5e-00-00-fc	static	
239.255.255.250	01-00-5e-7f-ff-fa	static	
255.255.255.255	ff-ff-ff-ff-ff-ff	static	

Logging In

- 1. Launch the desired web browser and enter the IP address 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 Useries Tassed Tassed Tassed



3. The **System Information** page will be displayed.

الم المعالم الم من المعالم المعا	iguration Users License Upgrade Demo		Logout >
System Frances PCA 600 Location Trensor System Syst	Averations version 1.2 		
	System information	1	1.2.7
	FPGA		xc7z035-fbg676
4. The login process is complete.	Model		at-omni-111-wp
	Description		N/A
	Location		N/A
	Timezone		UTC
	Date/Time		01-01-1970 00:15:56
	Uptime		0 days 0 hours 9 minutes
	System	°C	34.50 °C
	Temperature	- • Е	94.10 °E
	Die	•	44.05 °C
	Temperature	- -	111 20 °E
	Hostnamo	Г 	at ompi 111 wp 00084
	NTR conver		
	lode		pourintprote
	Leus		_
	SET DATE/TIME	SET TIMEZONE	
	FACTORY RESET	Reset users	Reset network Reset defaults
	IDENTIFY	DEBUG	REBOOT SAVE



System information page

ିକୁ ନମ୍ମ LGPNA Internation < System information SAP input EDID Encoding Setial Session Logo Test Alarms Network PTP LLDP Configuration Us	ers License Upgrade Demo				Logout >
System information Firmware version FPGA Model Description Location Timecone Date/Time Uppine	1.2. Files and the second seco				
System are hereporture per 'C Die Temperature re	System information Firmware version			1.2.7	1
Hostname NTP server Letis	FPGA			c7z035-fbg676	
Tee antritria tee state stat	Model			at-omni-111-wp	
	Description			N/A	
	Location			N/A	
	Timezone			UTC	
	Date/Time		01-01	-1970 00:15:56	-
Firmware version	Uptime		0 days 0 I	nours 9 minutes	L
The version of firmware that the encoder is running.	System Temperature	°C		34.50 °C	
installed.		°F		94.10 °F	L
FPGA	Die Temperature	°C		44.05 °C	L
Displays the FPGA model number and the size.		°F		111.29 °F	L
Model	Hostname		at-omn	i-111-wp-00084	L
The model number of the unit. This will be AT-OMNI- 111-WP	NTP server			pool.ntp.org	L
	Leds			-•	L
Description Provides the option of assigning descriptive name to the unit.	SET DATE/TIME	SET TIMEZONE			
Location Provides the option of assigning a description of where	FACTORY RESET	Reset users) Reset network	Reset defaults	

the unit is located.

Timezone Displays the tir

Displays the time zone format. Click the $\ensuremath{\textbf{SET TIMEZONE}}$ 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 powered-on 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-111-wp-[last five digits of MAC address]. If using a custom hostname, it must meet the hostname standards, defined here: <u>https://tools.ietf.org/html/rfc1123</u>.

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.

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.

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 without using the Virtual Matrix within AMS.
	 IMPORTANT: This 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 page



Enable

Click this toggle to enable or disable SAP. This feature is enabled when the toggle switch is orange. This is the default setting.

Addresses

Encoders currently send SAP announcements on two multicast addresses: 224.2.127.254 and 239.255.255.255. In some rare instances, this can conflict with other network address settings. Custom SAP addresses can be specified in this field.



NOTE: 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

					Log
< System information SAP linput EDID Encoding Serial Session Logo Text A	Alarms Networl	C PTP LLDP Configuration Users Lice	nsë Upgrade Demo		
	Input 1		Video generator 1		
	Name	hdml_input1	Name	video_generator1	
	Cable present	•	Color depth	8 🗸	
	EDID	Default 👻	° Input 1		
	HDCP	Encrypted	FI CONTRACTOR OF		
		Negoliated 2.2	Name		hdmi_input1
	Video	Color depth 8 Subsampling 444	Cable present		
		Colorspace RGB	ouble procent		
		Resolution 20 x 1080p	EDID		Default 👻
		Framerate 60.00			
	Audio	Bit depth	HDCP	Encrypted	•
		Channel 2			
		Format LPCM		Version	2.2 👻
		Frequency 48kHz			
		SAVE		Negotiated	2.2
				version	
			Video	Color depth	
			VIGCO		
				Subsampling	444
				Colorspace	RGB
			1	Resolution	1920 x 1080n

Input window groups

Name

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

Cable present

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.

Name		hdmi_input1
Cable present		•
EDID		Default 👻
HDCP	Encrypted	•
	Version	2.2 🔻
	Negotiated version	2.2
Video	Color depth	8
	Subsampling	444
	Colorspace	RGB
	Resolution	1920 x 1080p
	Framerate	60.00
	HDR	•
Audio	Bit depth	16
	Channel count	2
	Format	LPCM
	Frequency	48kHz
	Sł	AVE

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



EDID	Description
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.

Version

Click this drop-down list to select the version of HDCP to be supported: **2.2**, **1.4**, or **None**. If **None** is selected, then HDCP-enctrypted content cannot be passed-through.

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. **Framerate** Displays the frame rate of the source content.

HDR

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 HDR content is detected.

Format Displays the audio format of the source content.

Frequency Displays the audio frequency of the source content.



Video generator 1	
Name	video_generator1
Color depth	8 🗸
Colorspace	YUV 🗸
Framerate	60
Subsampling	444 🗸
Resolution width	1920
Resolution height	1080
	SAVE

Video generator window group

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

Click this drop-down list to select the color space. Available values are YUV and RGB.

Framerate

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

Subsampling

Click this drop-down list to select the chroma subsampling value. Available values are 444, 442, and 420.

Resolution width

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

Vertical width

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


EDID page

လောင် အာက The and a second s	LLDP Configuration	vn Users Licens	e Upgrade Demo		Logout >
	Default		AT CARE ST.		
	Vendor Preferred mode	3	AT-OWNETTX ATL 840x2160p30Hz (2004Hz)		
	Supported modes	Mode	800x600p60Hz (40 MHz) 1024x768p60Hz (65 MHz)		
		Mode 1 Mode 1	320x1200p60Hz (193 MHz) 380x1050p60Hz (147 MHz)		
		Mode 1 Mode	500x1200p60Hz (162 MHz) 1600x900p60Hz (118 MHz)		
		Mode 1	1440x900p60Hz (106 MHz)		
		Mode 1 Mode			
		Mode 3 Mode 1	Product		AT-OMNI-11x
		Mode 3 Mode 3	Vendor		ATL
		Mode 4 Mode 4	Preferred mode		3840x2160p30Hz (297 MHz)
		Mode 1 Mode	Supported modes	Mode	800x600p60Hz (40 MHz)
		Mode	19	Mode	1024x768p60Hz (65 MHz)
	Default (DV) Product			Mode	1920x1200p60Hz (193 MHz)
				Mode	1680x1050p60Hz (147 MHz)
Product Displays the SKU of the OmniStream encoder	This fi	ield		Mode	1600x1200p60Hz (162 MHz)
cannot be changed.				Mode	1600x900p60Hz (118 MHz)
Vendor				Mode	1440x900p60Hz (106 MHz)
Displays the vendor name (ATL). This field can changed.	not be			Mode	1400x1050p60Hz (122 MHz)
Preferred mode				Mode	1280x1024p60Hz (108 MHz)
Displays the preferred timing and resolution of		ID.		Mode	1280x800p60Hz (83 MHz)
This field cannot be changed.				Mode	3840x2160p30Hz (297 MHz)
Supported modes				Mode	1920x1080p60Hz (148 MHz)
Mode				Mode	3840x2160p25Hz (297 MHz)
EDID structure contains a listing of supported t	n, eact imings	h ;/		Mode	3840x2160p24Hz (297 MHz)
resolutions. The number of available supported resolutions depends on the EDID		gs/		Mode	4096x2160p30Hz (297 MHz)
·				Mode	4096x2160p25Hz (297 MHz)
Add EDID				Mode	4096x2160p24Hz (297 MHz)
Click this button, located at the bottom-right of to create a new EDID	f the pa	age,		Mode	1920x1080p50Hz (148 MHz)
				Mode	1920x1080p30Hz (74 MHz)
+				Mode	1920x1080p25Hz (74 MHz)
				Mode	1920x1080p24Hz (74 MHz)



Encoding page



Input

Click this drop-down list to select the input. Available options are: not used, hdmi_input1, hdmi_input2, video_generator1, and video_generator2. Singlechannel encoders will only have the following options: not used, hdmi_input1, and video_generator1.

Name	vc2_encoder1
Input	hdmi_input1 👻
Max bit rate	900
Bit depth	8-bit 👻
Subsampling	4:2:2 💌
Force YUV	0—
Slate mode	off 🔻
Slate logo	¥
	SAVE

Max bit rate

Click this field to enter the maximum bit rate. The default setting is 900 Mbps. Specifying lower bit rates will reduce video quality. 4K/UHD streams should be set to 900 Mbps. The recommended bandwidth for 1080p60 video is 450 Mbps. Setting this field below these recommended values will result in lower-quality video.

Bit depth

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

Subsampling

Click this drop-down list to select the chroma subsampling value. Available values are: 4:4:4, 4:4:2, and 4:2:0.

Force YUV

When this toggle switch is enabled (green), the encoder will stream YUV content over the network, regardless of which color space is used by the HDMI source. When the decoder receives the YUV stream, it will output YUV on the HDMI output. However, if the decoder is connected to a display that requires RGB, as determined by the EDID of the display, then the decoder will convert the video signal to RGB on the HDMI output. In order for the chroma scaling to work on RGB inputs, this option must be enabled.



Slate mode

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

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.

System mode

System mode

Click this drop-down list to select **PC application** or **Video** mode. By default, units are set to **PC Application** mode.

System mode		
System mode		PC application -
	SAVE	



IMPORTANT: If decoders are configured to be used in a video wall application, then Force YUV must be enabled.

Mode	Description
PC Application	Optimizes the image when viewing static images, such as spreadsheets or similar content.
Video	Provides the best viewing experience when streaming motion graphics and/or video.



Serial page

				Logout
< System information SAP Input EDID Encoding Setsion Logo Text	Alarms Network PTP LLDP Configuration Use	rs License Upgrade Demo		>
	Serial part configuration	Serial configuration		
	Name serial_port	Name serial	use1	
	Supported modes seria	Port serial_po	ett •	
	Mode serial	Mode	cli 👻	
	Baudrate	SAUE		
	Data	JANK L		
	Parity none			
	Flowcontrol	Comman.* Display Off		
		ASCII	N/A	
	SAVE	HEX		
		SAVE DELETE		
	Command: Display On	Command: Volume Down		
	Interpret on decoder	Interpret on decor	281 -	
	HEX NO			
		Senar port configuration	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
	SAVE DELETE	Name		
		Name	senal_port1	
	Command: Volume Up			
	Interpret on decoder	Supported modes	serial	
	ASCII	-		
	HEX	Mode	serial 👻	
	SAVE DELETE	-		
		Baudrate	9600 👻	
		Data	8 🗸	
Serial port configuration window	groups			
The following fields apply to both Serial port configuration window groups. Although single-channel encoders will also have two Serial port configuration		Parity	none 🚽	
		i any		
		Stop	1 -	
		Stop	1 🗸	
window groups, serial port 2 only su	upports IR.	Flowcontrol	none 👻	

Name

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

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.



decoder 👻

DELETE

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. The single-channel encoder will only have one **Serial configuration** window group.

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 send IP commands directly to the decoder, which are then output over RS-232 to the display (sink) device. Selecting the **cli** option will pass through RS-232 data, directly from a control system, to the sink device that is connected to the decoder.

Command: Display Off

SAVE

Interpret on

ASCIL

HEX

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.



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



Session page

					Logout
System information SAP Input EDID Encoding Serial Session Logo Text Alarma	is Network PTP LLDF	P Configuration Users Lio	ense Upgrade Demo		>
Ses	ision 1		Session 2		
Nan	ne	session1	Name	session2	
Inte	rface	eth1 🗸	Interface	Not used 👻	
Enc	Group Enable		EncGroup Enable		
	Name	session1	SAD Enable		
	Active		Scrambling Emerce		
	ingger	manual 🗸	Audio Source	Not used -	
		Activate	AUX Source	Commands	
Men	mbers		Enable		
		Add			
SAF	 Enable 	-•	SAVE		
	Interval	10			
	Name	session1	Section 1		
	Description		36351011-1		
	Originator				
	Categorisation	Ationa	Name		session1
Scra	ambling Enable				
Vela	ney Encoder	- trabores Cru	Interface		eth1 👻
	Encodel .	vcz_encodel1 •			
	Destination IP address	N/A	EngOroup	Enable	
	Destination UDP port	1000	Encoroup	Enable	
	TTL	255			
	DSCP	Best effort 👻		Name	session1
	FEC enable	0-			
	FEC rows	15		Active	
	FEC columns	15			
Aud	lio Source	hdmi_input1 👻		Triagon	manual
	Enable AES67	-•		ngger	manuar 👻
	Downmixing	none 👻			
	Enable	-•			Activate
	Destination IP address				
	Destination UDP port	1100			
	TTL	255	Members		
	DSCP	Best effort 👻			
	FEC enable	0-			
	FEC rows	4			Add
410	X Source	Commande -	L		
AUZ	Enable	-			
	Destination IP address	N/A			
	Destination UDP port	1200			
	TTL	255			
	DSCP	Best effort 👻			
	Bidirectional	0-			
	Listen port	1204			
	SAVE				

Session window groups

The following fields apply to all **Session** window groups. The dual-channel encoder has six **Session** window groups. The single-channel encoder will only have two **Session** window groups.

Name

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

Interface

Click this drop-down list to select the desired interface.

Interface	Description
eth1	ETHERNET 1 port
eth2	ETHERNET 2 port



session1

manual 🦷

EncGroup

Enable

Click this toggle switch to enable (orange) or disable encoder grouping.

Name

Enter the name of the encoder in this field. Only available if encoder grouping is enabled.

Active

Indicates if the encoder group is active. If active, then this indicator will be green. Only available if encoder grouping is enabled.

EncGroup

Enable

Name

Active

Trigger

Trigger

Click this drop-down list to select the trigger type: **manual** or **input connected**. Only available if encoder grouping is enabled.

Mode	Description
manual	Use this setting to manually enable the input. When set to manual, click the Activate button to perform the input switching.
input connected	Use this setting to allow the encoder group to use automatic input detection. Once a new source is connected, that source becomes the active source.

Activate

Click this button to activate the encoder group.

Members

This field lists all members (encoder IP addresses) that have been added to the group. Use the **Add** button to add members to the group.

Add

Click this button to add the IP address of an encoder to the group. Note that when adding encoders to the group, the IP address of the encoder, which is being used to create the group, must be included.

		Activate
Members		
		Add
SAP	Enable	•
	Interval	10
	Name	session1
	Description	N/A
	Originator	-
	Categorisation	Atlona

SAP

SAP

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

Key

This field is only displayed if the **Scrambling** toggle switch is enabled (green). 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.

Scrambling

Enable

Kev

Video

Encoder

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

Enable

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 IP address of the decoder that will be receiving the video stream.

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.

DSCP

Differentiated Services Code Point (DSCP) is a method of managing network traffic, in addition to providing *Quality of Service* (QoS) within the Layer-3 (Network Layer) of the OSI network model. DSCP uses the 6-bit Differentiated Services (DS) field in the IP header in order to determine packet classification/priority. Normally, all routers and switches will forward network traffic to the proper destination with the same priority, no matter what type of data it is. This methodology is what is known as *Best Effort*.

The **Best Effort** setting will provide normal priority for data packets, while other settings will raise the priority on data packets. However, it should be noted that a higher priority setting on one type of data type may also result in data packet loss for other data types, depending upon network traffic.

When QoS or differentiated services policy is used, all network devices such as routers, networks switches, and end-devices must be configured properly in accordance with QoS policies on the network. There are two main methodologies for tagging traffic: Assured Forwarding and Class Selectors.

The tables on the next page provide a list of the available selections and their description.



IMPORTANT: Consult the IT administrator as to what methods to use and the required settings for each encoder on the network.

Video	Encoder	vc2_encoder1 -
	Enable	•
	Destination IP address	N/A
	Destination UDP port	1000
	TTL	255
	DSCP	Best effort 👻
	FEC enable	0—
	FEC rows	15
	FEC columns	15



Table 1.1 - Assured Forwarding

Selection	Queue Classification	Drop Probability
AF11	Class 1	Low
AF21	Class 2	Low
AF31	Class 3	Low
AF41	Class 4	Low

Table 1.2 - Class Selectors

Selection	Class Selector Name
CS0 / Best Effort	Routine
CS1	Priority
CS2	Immediate
CS3	Flash
CS4	Flash Override
CS5	Critical
CS6	Interwork Control
CS7	Network Control
EF	Expidited Forwarding

FEC enable

Click this toggle switch to enable (green) or disable Forward Error Correction (FEC). This feature can be used when transporting streams over a network that is suspected to be unreliable, due to noise or other factors. By default, this feature is enabled. Refer to FEC Details (page 100) for more information.

FEC rows

Specify the number of FEC rows in this field. Refer to FEC Details (page 100) for more information.

FEC Columns

Specify the number of FEC columns in this field. Refer to FEC Details (page 100) for more information.

Source

Click this drop-down list to select the desired input. Available values are: **Not used**, **audio_generator1**, **hdmi_input1**, and **hdmi_input2**.

Enable AES67

Click this toggle switch to enable AES67. When this feature is enabled, the toggle switch will be green.

Downmixing

This field will only be available when AES67 is enabled. Available values are: none, mono, and stereo.

Enable Audio

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 IP address of the decoder that will be receiving the audio stream.

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.



DSCP

Refer to the information on page 80 on DSCP settings.

FEC enable

Click this toggle switch to enable (green) or disable Forward Error Correction (FEC). This feature can be used when transporting streams over a network that is suspected to be unreliable, due to noise or other factors. By default, this feature is enabled. Refer to FEC Details (page 100) for more information.

FEC rows

Specify the number of FEC rows in this field. Refer to FEC Details (page 100) for more information.

FEC Columns

Specify the number of FEC columns in this field. Refer to FEC Details (page 100) for more information.

Audio

Source

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

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.

DSCP

Refer to the information on page 111 on DSCP settings.

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.

Audio	Source	hdmi_input1 👻
	Enable AES67	
	Downmixing	none 👻
	Enable	_●
	Destination IP address	N/A
	Destination UDP port	1100
	TTL	255
	DSCP	Best effort 👻
	FEC enable	0—
	FEC rows	4
	FEC columns	4



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	Commands are sent using CEC (over HDMI)
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.

DSCP

Refer to page 111 for information on DSCP settings.

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.

AUX	Source	Commands 👻
	Enable	•
	Destination IP address	N/A
	Destination UDP port	1200
	TTL	255
	DSCP	Best effort 👻
	Bidirectional	0—
	Listen port	1204
	SAVE	



Logo page

	Lopot
< System information SAP input EDID Encoding Serial Session Logo Text Alarms Network PTP LLC	DP Configuration Users License Upgrade Demo >
	New logo Name Na Name Na Name Na Name Na Name Name
	Vertrait (%) Vertrait (%) Hegit (%) Hegit (%) Kame N/A
	UPLOAD

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 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. The single-channel encoder will only have one **Logo Insertion** window group.

Target

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

Enabled

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.

Aspect Ratio

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

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



Horizontal (%)

Enter the horizontal position of the logo on the screen. This value is based on the total horizontal resolution of the screen.

Vertical (%)

Enter the vertical position of the logo on the screen. This value is based on the total vertical resolution of the screen.

Width (%)

Enter the width of the logo. This value is based on the total horizontal resolution of the screen.

Height (%)

Enter the height of the logo. This value is based on the total vertical resolution of the screen.

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

					Log	out
< System information SAP Input EDID Encoding Serial Session Logo Text Alarms Network PTP LLDP	Configuration	n Users Licens	e Upgrade Demo			>
Te	ext insertion 1					
Та	arget		vc2_encoder1			
En	inable		0-			
Te	ext		N/A			
sc	croll speed					
lie	erations					
		Red	255			
		Green	255			
		Blue	255			
		Alpha	Total includion 4			6
Lo	ocation	Horizontal	Text Insertion 1			
si	ize	Width	Transf			
		Height	larget		Vc2_encoder1	
		0.005	E		0	
		SAVE	Enable		0—	
			lext		N/A	
			Scroll speed		0	
			Iterations		0	
			Color		white 👻	
				Red	255	
Text insertion window groups						
3. anho				Green	255	
Enabled						
Click this toggle switch to enable or disable the te	ext			Blue	255	
When the toggle switch is grange, the text will be						
when the toggle switch is orallye, the text will be	,			Alpha	255	
enabled.				•		

Text

Enter the desired text in this field.

Scroll Speed

Enter the scrolling speed in this field. 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. 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. Numbers from 0 to 255 are valid for all fields.



Horizontal

Enter the horizontal position of the text in this field.

Vertical

Enter the vertical position of the text in this field.

Width

Enter the width of the text in this field. This value is based on the horizontal resolution of the screen.

Height

Enter the height of the text in this field. This value is based on the vertical resolution of the screen.

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 Input EDID Encoding Serial Session Logo Text Alarms Network PTP LLDP Configuration Users Lico	nse Upgrade Demo >
Nerve Notes	eth1
Enabled	
Carrier	
Mode	static •
IP address	10.1.0.113
Subnetmask	255 255 254 0
Gateway	10.1.1.254
Link speed	1000
MAC address	88 96 80 06 3E 1C
Teinet Enable	
Augentication	Network 1
SAVE	Name eth1
	Enabled
	Camer
	Mode static 🗸
	IP address 10.1.0.113
	Subnetmask 255 255 254 0
	Cubicanask 200.200.204.0
	Gateway 10.1.1.254

Network window group

Name

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

Enabled

This indicator displays whether or not the video stream for this channel is active. If the indicator is green, then the video stream is active.

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; **Subnet** and **Gateway** fields will automatically be populated. When **Static** mode is selected, the information for the **IP Address**, **Subnet**, and **Gateway** fields must be entered.

IP Address

Displays the IP address used by the channel. This field can only be changed if **Static** mode is selected.

Subnetmask

Displays the subnet mask for the channel. This field can only be changed if **Static** mode is selected.

Gateway

Displays the gateway (router) address for the channel. This field can only be changed if **Static** mode is selected.



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.

Telnet Enable

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

Telnet Authenicator

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

802.1x Mode

Click this drop-down list to select the desired authentication mode.

SAVE

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

Link speed		1000
MAC address		B8:98:B0:06:3E:1C
Telnet	Enable	
	Authentication	
802.1x	Mode	none 🗸
	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 interface 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 unit is more likely to get selected as GM.



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 Alarms Network PTP LLDP Configuration Users License	Upgrade Demo
eth1	
Interface ethn	
Domain number 0 Priority 1 128	
Priority 2 128	-114
т. 8	etni
is GM present	Interface other
GM Identity BS 99 TVFFED1A9 60 Master offset 26 ns	ean
SAVE	Domain number 0
	Priority 1 128
	Priority 2 128
	TTL 8
	Is GM present
	GM Identity B8:98:B0:FF:FE:01:A9:60
	Master offset 26 ns
	SAVE

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. PTP uses a default IPv4 TTL value of 1 for multicast. This value may be changed, if necessary, in order for the replies to reach the PTP monitor.

Is GM Present

This indicator displays the existence of a grandmaster clock for the specified PTP domain number. If the indicator is green, then the grandmaster clock exists on this interface.

GM Identity

The grandmaster clock identity. If this field is blank, then it means that this interface is the grandmaster clock.

Master Offset

Displays the grandmaster clock offset.

eth1	
Interface	eth1
Domain number	0
Priority 1	128
Priority 2	128
TTL	8
Is GM present	•
GM Identity	B8:98:B0:FF:FE:01:A9:60
Master offset	26 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 from a dual-channel encoder 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.

	License Upgrade Demo		Logout
Share of the second of the	CDP/2 1 0 day, 011 basil 00308111358 Chore 60300-2. 01.1.254 0 mage (rot) 0 mage (r		
	Via		CDPv2
	RID		1
	Age		0 day, 01:12:30
	Chassis	ID	local 0038dfd1358a
Via		Description	Cisco SG300-28MP (PID:SG300-2
The discovery protocol being used. LLDP, CDP, etc.		Manag. IP	10.1.1.254
RID The router ID.		Capability	Bridge (on)
Are		Capability	Router (on)
Up-time of the interface.	Port	ID	ifname gi9
Chassis ID The MAC address of the interface.		Description TTL	gi9
Chassis Capability Indicates the switch function, such as root bridge, router, etc.		R	efresh

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



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.

EXPORT

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



Users page

SATLONA			Logout
< System information SAP Input EDID Encoding Serial Session Logo Text Alarms Network PTP LLDP Configuration	on Users License Upgrade Demo		
Username	admin Username operator		
Role ar	dministrator + Role operator +		
New password	N/A New password N/A		
Repeat password	N/A Repeat password N/A		
DELETE SAVE	DELETE SAVE		
	User 1		
	Username	admin	
	Role	administrator 👻	
	New pageword	N//0	
	New password	N/A	
	Repeat password	N/A	
		0/3	
	DELETE	C AV /E	•
	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.

				Logout
< System information SAP input EDIO Encoding Serial Session Logo Text Alarms Network PTP LLDP Config	guration Users L	License Upgrade Demo		
License ando	Installed	true		
	Key 4H	<:1c279210bbld6ef1175078a702d		
fec	Request	4K:b698b0063otc		
	Key FE	EC:406b1aba668f8e632afccf4fff		
Scrambing	Request	FEC:b898b0063e1c		
	Key SC	CRAMBLING:45c13d18e026072		
	Request	SCRAMBLING:b698b0063e1c		
Keys can requests	be obtained through Atl	iona by using one of the		
License K	Key			
		License info		
		4k	Installed	true
			Key	4K:1c2792f0bbfd6ef1f75078a702d
			Request	4K:b898b0063e1c
		fec	Installed	true
			Key	FEC:406b1aba668f8e632afccf4fff
			Request	FEC:b898b0063e1c
License Key		Scrambling	Installed	true
Enter the license key in this field.			Кеу	SCRAMBLING:45c13d18e026072
INSTALL LICENSE Click this button to validate and install the license.			Request	SCRAMBLING:b898b0063e1c
		Keys can be o requests. License Key	btained throug	h Atlona by using one of the N/A



Upgrade page

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

Software Construction Cognet
< System information SAP Input EDID Encoding Setial Session Logo Text Alarms Network PTP LLDP Configuration Users Liketise Lippatie: Demo
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

IMPORTANT:

- If updating from version 1.0.x, OmniStream units must first be updated to version 1.1. Note that this does *not* apply to OmniStream R-Type units. If running version 1.0.x, contact an Atlona Technical Support Engineer before updating the firmware.
- When updating the firmware, make sure that the unit does not lose power. The firmware update process should take approximately 1 to 2 minutes.
- For full functionality of OMNI 1.2.1 (or later), Velocity must be running at least 1.4.5 and AMS must be on firmware version 2.0.12 and above.
- 1. Click **DEVICE INFO** in the menu bar.
- 2. Click the UPDATE FIRMWARE button to display the Firmware Update dialog.

							NETWORK
Device Info							
AT-OMNI-112							
Model							
AT-OMNI-112							
IP Address 1	Firm	iware Update					
		T-OMNI-112 - 192.168.11.116:80					
B8:98:B0:01:A5:7F		Drop or Browse	e file here to upload new Firn	nware			
			N				
	Sele	ect Firmware					
UPGRADE FIRMWARE							
Description							
						<i>c</i> :	
Location					Dra	ig firmware f	ile here
3 minutes							
			01005				
49.5			CLOSE	UPDATE ONLINE			

- Click and drag the firmware file to the yellow box, to upload the firmware to the device. OmniStream firmware files use the .v2pup file extension. Once the firmware file has been uploaded, it will appear under the Select Firmware section of the dialog box.
- 4. Click the **UPDATE FIRMWARE** button to begin the update process.

Andrew's AT-OMNI-112 - 192.168.11.116:80	Uploaded firmware fi	le
Drop or Browse file here to up	pload new Firmware	
Select Firmware		
at-omnioual-upgrd-os-1.2.1_RC02.vpup2 05 Jun 2018 17:44:16 +0000	×	



5. After the **UPDATE FIRMWARE** button is clicked, the Upgrade Firmware Started message box will be displayed.

121.1	-
Hostname	
at-omni-112-00722	
NTP Server	
	Atlona Customer Support Live Chat (SAM PST - 5PM PST) 🏴
	Upgrade Firmware Started

6. Click the orange up-arrow icon, in the upper-right corner of the screen, as shown below. If this icon is orange, it indicates that a firmware update is in progress.

			±
LOGO	РТР	NETWORK	-

The progress bar for the update process will be displayed. The update process should take a few seconds.

Device Info	
Aliae	
AT-OMNI-112	
Model	
AT-OMNI-112	
IP Address 1	
192.168.11.116	IP Address 2
B8:98:B0:01:A5:7F	B:98:B0:01:A5:80
Firmware Version	Firmware Update
1.2.1_RG02	
	Firmware Name: "at-omni-dual-upgrd-os-1.2.1_RC02.vpup2"
	AT-OMNI-112 - 192.168.11.116:80
Description	
	CLOSE
Location	

- 7. Click the "X" to close out the progress bar window, then click the **CLOSE** button to dismiss the **Firmware Update** message box.
- 8. The firmware update process is complete.
- 9. Clear the web browser cache and refresh the web page. The new firmware version will appear in the **Firmware Version** field, in the **DEVICE INFO** page.



Updating the Firmware using the Web Server

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.

	Logout
- System information SAP Input EDID Encoding Serial Session Logo Text Alarms Network PTP LLDP Configuration Users License	e Upprade Demo >
Utypade (Conser File) for declaran UTLOAD	Upgrade 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.



FEC Details

Matrix Size, Overhead, and Latency

- FEC can only work if a single packet from each row/column is missing. Multiple packets missing from each row/ column will cause FEC to fail.
- Due to the above, a smaller matrix is more robust, as there is a better chance of errors not occurring in the same row/column.
- FEC has a bitrate overhead that is inversely proportional to the matrix size: the bigger the matrix, the less bitrate overhead is generated.
- FEC has a latency overhead that is directly proportional to the matrix size: the bigger the matrix, the more latency is introduced.
 - » As of v1.0.0, OmniStream does not explicitly synchronize audio and video. Therefore, FEC configuration can have a noticeable impact on lip sync. The tables below should be used to keep the audio/video lip sync as tight as possible.
- FEC latency overhead is also inversely proportional to bitrate: the higher the bitrate, the less FEC latency is introduced.
 - » For applications where lip sync is very critical, using a higher audio sampling rate, and thus a higher audio bitrate, can result in more accurate lip sync.

FEC and Video Bitrate

- The bitrate configured on the video encoder includes FEC overhead and will automatically adjust itself depending on the bitrate needed for FEC.
- FEC overhead can be calculated using the following formulas:



FEC rate = Configured bit rate - Video rate

• The following table provides a few examples of how this works.

FEC / matrix usage	Configured bit rate	Used for video	Used for FEC
FEC disabled	900 Mbps	900 Mbps	0 Mbps
FEC enabled, 4x4	900 Mbps	600 Mbps	300 Mbps
FEC enabled, 10x10	900 Mbps	750 Mbps	150 Mbps
FEC enabled, 20x20	900 Mbps	818 Mbps	82 Mbps
FEC enabled, 4x4	450 Mbps	300 Mbps	150 Mbps
FEC enabled, 10x10	450 Mbps	375 Mbps	75 Mbps
FEC enabled, 20x20	450 Mbps	409 Mbps	41 Mbps





FEC, Latency, and Lip Sync

- In order for FEC to work, the matrix must be filled in order to calculate the FEC packets. This introduces some additional latency. Due to high bitrates, this is not noticeable for video, but can be very significant for audio. Therefore, Atlona recommends either leaving FEC disabled for audio or using a very small matrix.
- Latency calculations are complex. The tables below provide some common working benchmarks. In order to minimize lip sync issues, try to match the additional latencies for video and audio as closely as possible.
 - » Video additional video latency for enabling FEC using various matrix sizes.

Configured bit rate	4x4	10x10	20x20
900 Mbps	0.64 ms	3.20 ms	11.74 ms
450 Mbps	1.28 ms	6.40 ms	23.47 ms

» Audio - additional audio latency for enabling FEC using various matrix sizes.

Format	1x4	2x4	4x4	10x10
2 channel PCM, 44.1 kHz	34.01 ms	68.03 ms	136.10 ms	850.30 ms
2 channel PCM, 48 kHz	31.25 ms	62.50 ms	125.00 ms	781.30 ms
2 channel PCM, 96 kHz	15.63 ms	31.25 ms	62.50 ms	390.60 ms
2 channel PCM, 192 kHz	7.81 ms	15.63 ms	31.25 ms	195.30 ms

- It is recommended to keep lip sync within ±1 frame of video to prevent any noticeable syncing issues.
- Examples of good choices to minimize lip sync issues are:
 - » Video configured for 450 Mbps, FEC 10x10; Audio is 2 channel PCM, 192 kHz, FEC 1x4: 6.40 ms 7.81 ms = -1.41 ms
 - » Video configured for 900 Mbps, FEC 10x10; Audio is 2 channel PCM, 48 kHz, FEC disabled: 6.40 ms 0 ms = 6.40 ms



Appendix

Specifications

Video		
HDMI Specification	HDMI 2.0b, HDCP 2.2	
UHD/HD/SD	4096×2160 (DCI) @ 60 ⁽¹⁾ /30/24 Hz 3840×2160 (UHD) @ 60 ⁽¹⁾ /50/24/25/30 Hz 1920x1080p @ 23.98/24/25/29.97/30/50/59.94/60 Hz 1920x1080i ⁽²⁾ @ 25/29.97/30 Hz 1280x720p @ 30/50/59.94/60 Hz	720x576p @ 50 Hz 720x576i @ 25 Hz 720x480p @ 59.94/60 Hz 720x480i @ 29.97/30 Hz
VESA ⁽³⁾	2560x1600 1920x1200 1680x1050 1600x1200 1600x900 1440x900 1440x1050	1366x768 1360x768 1280x1024 1280x800 1280x768 1152x768 1024x768
Virtual Reality	2160×1200 @ 90 ⁽¹⁾ Hz (HTC [®] Vive)	
Color Space	YUV, RGB	

Encoding			
Density	Single encoding engine		
Compression Format	VC-2 (SMPTE-2042)		
Video Quality Optimization	User-selectable: PC Applicat	ion or Video mode	
Chroma Subsampling	Chroma	PC Application	Video Mode
	4:4:4	Yes	No
	4:2:2	Yes	No
	4:2:0	No	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		

Audio			
Pass-through	LPCM 2.0 LPCM 5.1 LPCM 7.1	Dolby® Digital Dolby Digital Plus Dolby TrueHD Dolby Atmos®	DTS® DTS-HD Master Audio™
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
Authentication	IEEE 802.1x: PEAP/MSCHAPv2 or EAP-TLS
IP Multicast	IGMPv2 and IGMPv3 support
Graphics Features	
Text Insertion	Adjustable height/width, scrolling (speed, direction, or static), iterations (up to infinite), 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).
Connectors	
HDMLIN	1 - Type A 19-pin female locking
ETHERNET ⁽⁴⁾	1 - B.145 10/100/1000 Mbps
Indicators and Controls	
PWR	1 - LED, tricolor (red, amber, green)
HDMI	1 - LED, bicolor (red, green)
LINK	1 - LED, bicolor (red, green)
RESET	1 - Momentary, tact-type
Device	
Power	
POE	IEEE 802.3at
Consumption	Up to 12.5 W
Environmental	
Cooling System	Front-to-rear airflow, temperature-controlled fans
Operating Temperature	+14 to +122 °F -10 to +50 °C
Storage Temperature	+14 to +140 °F -10 to +60 °C
Operating Humidity (RH)	20% to 95%, non-condensing
Chassis	
Dimensions (H x W x D)	4.19 in x 3.46 in x 1.72 in 106 50 mm x 88 mm x 43 65 mm
Weight	0.46 lbs
	0.21 kg
Certification	
Device	CE ECC CB BOHS
DEVICE	



- (1) Only supported when Video Quality Optimization is set to Video mode.
- (2) Scaling and deinterlacing is not supported at 1080i.
- (3) All VESA resolutions are 60 Hz.
- (4) Maximum distance per hop is 330 ft (100 m), depending upon network configuration.



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