



## Introduction

The Atlona **AT-OMNI-111-WP** is a networked AV encoder for HDMI sources up to 4K/UHD and HDR (High Dynamic Range), plus embedded audio. It features a US two-gang, wallplate form factor, and includes interchangeable black and white wallplates and faceplates. **OmniStream** is designed for high performance, flexible distribution of AV over standard, off-the-shelf Gigabit Ethernet switches in commercial audiovisual applications. The OMNI-111-WP encoder features the advanced VCx™ codec which delivers 4K/UHD, with artifact-free presentation of computer-generated content and fast-motion video, and ultra-low latency less than one frame. With its wallplate form factor, the OMNI-111-WP enables convenient installation wherever an aesthetically appealing or discreet AV source connection is required.

## Applications

- Enterprises and other large organizations**  
 Maximize AV application flexibility by enabling content sharing within single meeting rooms, or corporate-wide broadcasting to every connected screen.
- Corporate and university campuses with the need to distribute AV between buildings**  
 OmniStream allows virtually unlimited AV system scope and scale. For very large, expansive or interconnected LANs, SMPTE-standard FEC (Forward Error Correction) ensures robust, reliable image presentation at every endpoint.
- Applications in which any AV content or resource can be shared anywhere in the system**  
 AV over IP technology removes the restrictions associated with interconnecting sources and displays through standard matrix switching architecture.
- Meeting rooms and conference rooms**  
 An IP network infrastructure makes it simple and efficient to design AV systems for small, large, and divisible meeting room configurations, and to centrally manage them throughout a facility.

## Key Features

### Best-in-class AV over IP performance and reliability over Gigabit Ethernet

- Delivers pristine image quality and ultra-low latency over 1 Gbps (GbE) networks.
- Ideal for integration over new or legacy network cable infrastructure – including CAT 5e.

### US two-gang enclosure for wallplate openings – interchangeable black or white trim kits

- Allows inconspicuous installation on a wall, in furniture, or in a floor box.
- Includes black and white wallplates and faceplates.
- Meets end user requirements for conveniently accessible yet discreet AV connectivity.

### AV encoder for HDMI up to 4K/UHD, plus embedded audio

- Streams video and audio, with the flexibility of transmitting them together or to separate network destinations.
- Allows wide-ranging versatility for integrators to design systems to specific requirements.

### Supports 4K/UHD plus HDR formats

- Supports HDR10 @ 60 Hz and 10-bit color, as well as HLG (Hybrid Log-Gamma) for 60p HDR broadcast services.
- Supports Dolby Vision™ @ 60 Hz and 12-bit color.

### Advanced VCx codec

- Delivers 4K/UHD with artifact-free presentation of computer-generated content and fast-motion video.
- Ultra-low encode-to-decode latency less than 1 frame.

### High-efficiency coding

- VCx codec allows numerous 4K streams over 10 Gigabit uplinks between network switches.

### Integrated high-quality scaler

- OMNI-111-WP includes an integrated, high-performance scaling engine.
- Provides upscaling and downscaling for a wide array of 4K/UHD, HD, and VESA resolutions.

### HDCP Compliance

- Adheres to the latest HDCP 2.2 specification for High-bandwidth Digital Content Protection.
- Allows protected content streams to pass between authenticated devices.
- HDCP can be disabled through Velocity Device Manager, allowing content to pass to non-compliant displays and teleconference systems. Protected content is not transmitted.

## Key Features (continued)

### Ultra-fast switching between 4K/60 video streams<sup>(1)</sup>

- Provides instantaneous and precise video and audio HDMI switching.
- Works between streams at different resolutions and frame rates.
- Ideal for mission-critical applications where stable, fast AV switching is required.

### Encoder grouping

- Assign up to eight encoders to a logical group.
- Allows a decoder to automatically switch between encoders in the group upon input detection.
- Create scalable, flexible switching systems with encoders placed wherever AV sources may be located.

### Integrated Ethernet link testing

- Tests integrity of the network infrastructure between encoders and decoders (cabling, terminations, switch, bandwidth).
- Allows quick, easy verification or troubleshooting from the encoder and decoder web GUI – no need to visually check each display location.

### Thumbnail preview of encoded video streams

- View encoder streams as thumbnails on a Velocity touch panel or through the web GUI.
- Ideal for previewing sources before selecting for display.
- Also ideal for validating system operation.

### Networked AV redundancy

- Maximizes system reliability and meets IT requirements for system redundancy and failover.

### Network error resilience with FEC (forward error correction)

- Compensates for AV packet losses in large systems spanning several networks.
- Enables consistent, reliable performance in enterprise-wide networked AV implementations.

### Simplify integration with plug-and-play network switch compatibility

- Streamline system setup by using Atlona Certified Switch configurations for popular models from Cisco®, NETGEAR®, and many others.
- NETGEAR switches also available from Atlona (United States and Canada only).
- Saves installation time and costs without the need to manually configure a network switch.

### Remote PoE (Power over Ethernet) powering

- With PoE, encoders can conveniently be powered over the network from a PoE-equipped network switch.
- PoE simplifies integration without the need for local AC power, and allows centralized power monitoring and management.

## Key Features (continued)

### Secure content distribution with AES-128 encryption

- Any AV presentation content can be secured by scrambling IP streams.
- Ensures secure content delivery across the network.
- Ideal for government, military, and enterprise applications, as well as meeting IT security requirements.

### Supports industry-standard, network security features and protocols

- HTTPS, Telnet, SSH, WebSockets with TLS, and AES-128 encryption.
- Features IEEE 802.1x which meets IT authentication requirements for enhanced network security.

### AES67-compatible

- OmniStream features industry standard, AES67-compatible networked audio streaming between encoders, decoders, and audio interfaces.
- Supports multi-channel PCM up to 7.1 channels.

### Simultaneous OmniStream and AES67 audio streaming

- OmniStream encoders can deliver native OmniStream RTP networked audio alongside an AES67-compatible audio stream.
- RTP audio streaming supports multi-channel audio formats and PCM up to 7.1 channels.
- Encoders also can provide multi-channel PCM audio downmixing.

### Enhance AV presentations with visual enhancements

- Provide corporate or institutional branding by overlaying a logo.
- Display a full-screen image as a backup in an event of an interruption in an AV stream, or between presentations.
- Identify and label presentation content with static or scrolling text.

### EDID management

- Manages EDID communications between source and encoder; allows integrators to force a source to a preferred resolution.
- Ensures desired audio formats and video resolutions are provided to the AV system.
- EDID can be assigned from a display connected to an OmniStream decoder.

### Audio processing and pass-through

- Streams PCM, Dolby® Digital, Dolby Digital Plus™, Dolby TrueHD, Dolby Atmos®, DTS® Digital Surround™, DTS-HD Master Audio™, and DTS:X®.
- Supports multichannel PCM audio downmixing to two-channel PCM.

### System management

- Intuitive standalone web GUI.
- Velocity Device Manager - web-based interface for configuration and management of OmniStream systems, and AV over IP cross-connections.

## Specifications

Video	
Signal	HDMI
Copy Protection	HDCP 2.2
UHD/HD/SD	4096x2160 (DCI) @ 30/24 Hz 3840x2160 (UHD) <sup>(2)</sup> @ 60/50/24/25/30 Hz 1920x1080p @ 23.98/24/25/29.97/30/50/59.94/60 Hz 1920x1080i <sup>(1)</sup> @ 25/29.97/30 Hz
VESA <sup>(3)</sup>	1280x720p @ 30/50/59.94/60 Hz 720x576p @ 50 Hz 720x576i @ 25 Hz 720x480p @ 59.94/60 Hz 720x480i @ 29.97/30 Hz
	2560x1600 1920x1200 1680x1050 1600x1200 1600x900 1440x900 1400x1050
	1366x768 1360x768 1280x1024 1280x800 1280x768 1152x768 1024x768
Color Space	YUV, RGB

Encoding				
Density	Single encoding engine			
Compression Format	VCx and VC-2 (SMPTE-2042)			
Video Quality Optimization	User-selectable: PC Application or Video mode (VC-2 codec only)			
Chroma Subsampling	Chroma	VCx	VC-2 Video	VC-2 PC Application
	4:4:4	Yes	No	Yes
	4:2:2	Yes	No	Yes
	4:2:0	Yes	Yes	No
Color Depth	8-bit, 10-bit, 12-bit			
HDR	HDR10, HLG, Dolby® Vision™			
Bit Rate	Configurable up to 900 Mbps			
Scaler <sup>(4)</sup>	Encoder 1			
	Up and down, 3840x2160 max.			
Latency	0.5 frame (e.g. 1080p @ 60 Hz latency is < 8 ms between encoder and decoder). 1.5 frames in Fast Switching mode (e.g. 1080p @ 60 Hz latency is < 24 ms between encoder and decoder). Note: Unusual network configurations may increase overall latency.			
Thumbnails	Number of thumbnails: 1 per HDMI input Resolution: 320x180px File format: JPG Update frequency: 2 seconds			

Audio			
Pass-through	LPCM 2.0 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		

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	
HDMI IN	1 - Type A, 19-pin, female, locking
ETHERNET <sup>(5)</sup>	1 - RJ45, 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

Power	
PoE	IEEE 802.3af
Consumption	Up to 12 W
BTU/h	40.9

Environmental	
Cooling System	Front-to-rear airflow, temperature-controlled fans
Operating Temperature	+14 to +104 °F (+14 to +95 °F when used with a 4K source) -10 to +40 °C (-10 to +35 °C when used with a 4K source)
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, FCC, CB, RoHS

  

Compliance	
NDAA-889	Yes
TAA	Yes

  

Warranty	
Device	To view the product warranty, use the following link: <a href="https://atlon.com/warranty">https://atlon.com/warranty</a>

## Footnotes

- (1) Interlaced sources are passed-through without modification, and do not support scaling, video wall, logo insertion, text insertion, or fast switching.
- (2) Due to thermal constraints, 4K50 and 4K60 resolutions are only supported when the input resolution has 4:2:0 chroma subsampling.
- (3) All VESA resolutions are 60 Hz.
- (4) Scaler is limited to a fixed list of resolutions. Refer to documentation for more information.
- (5) Maximum distance per hop is 330 feet (100 meters), depending upon network configuration.

## Accessories

Description	SKU
LinkConnect™ HDMI to HDMI Cable	AT-LC-H2H

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