ATLONA
Connecting Technology

OmniStream™
Single-Channel / Dual-Channel
Networked AV Encoder / Decoder

AT-OMNI-112

AT-OMNI-111

AT-OMNI-122

AT-OMNI-121

Introduction

OmniStream is an all-new AV over IP product family from Atlona for distributing 4K video, audio, and control over a standard Gigabit network. It delivers the performance and dependability of traditional AV distribution, with the virtually unlimited scalability, security, and cost efficiency of integrating over IP networks.

OmniStream was engineered from the ground up at Atlona with several industry-exclusive capabilities including high density encoding and decoding, redundant AV networks and streams, secure content distribution, network error resilience, critical-quality 4K video compression with extremely low latency, and audio distribution.

Atlona specifically developed OmniStream to address the many technological and practical challenges associated with converging video onto IP networks. OmniStream is designed to integrate easily into a new or existing Gigabit network infrastructure, and deliver the same reliability, performance, and image quality expected of a baseband or HDBaseT™ video system.

Applications

- Enterprises and other large organizations
- Corporate and university campuses with the need to distribute AV between buildings
- Applications in which any AV content or resource can be shared anywhere in the system

Key Features

Supports HDMI video up to 4K/UHD, plus audio and RS-232 control

- 4K @ 24 Hz, UHD @ 30 Hz, and 1080p @ 60 Hz.
- Video, audio, and RS-232 can be routed together or independently .

High density video over IP integration

- Dual channel units can process two independent services per chassis.

Networked AV redundancy

- Replicate AV over two separate networks and IP streams – a first for the pro AV industry.
- Enables 99.9% system failover for mission-critical applications.

Control

- RS-232, Telnet, SSH, and JSON over WebSockets.

Easy Setup with AMS

- Automatic discovery with IP address configuration.
- Helps get the system flowing video in no time.

Secure content distribution

- AV presentation content can be encrypted to prevent unauthorized access.
- Supports HDCP.

Professional visually lossless video compression using VC-2 Highly robust and reliable over IP networks

- SMPTE FEC (forward error correction) for very high resilience to network errors.
- Ensures reliability and dependability of traditional video and audio routing platforms.

Extremely low latency of less than 0.5 frame from encode to decode

- < 8 ms for 60 Hz video – lowest in the proAV industry.

Standard Gigabit network infrastructure

- Works with standard, off-the-shelf Gigabit managed switches from Cisco and others.
- Can easily be integrated into existing network infrastructures.

Design highly flexible and scalable AV systems

- No theoretical limitations on I/O size, switching capacity, or transmission distance.
- “Virtual matrix” – can route any source to any destination, anywhere on the network.
- Easily add sources, displays, and additional switches as needed.

Power over Ethernet

- Works with standard, off-the-shelf Gigabit managed switches from Cisco and others.

Audio embedding and de-embedding* plus multichannel audio downmixing

- Integrate with a Dante-equipped DSP via an OmniStream 232, or with a local audio source or sound reinforcement.
- Multi-channel PCM audio can be downmixed to two channels.
- Simplifies system designs and avoids the need for additional audio signal processing and interfacing devices.

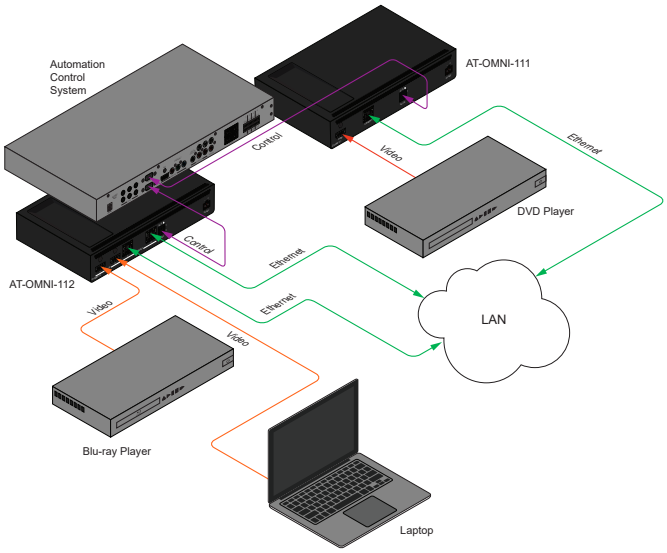
Local or PoE (Power over Ethernet) powering

- With PoE, decoders 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
- Optional AT-PS-48083-C power supply available and is required for analog audio outputs

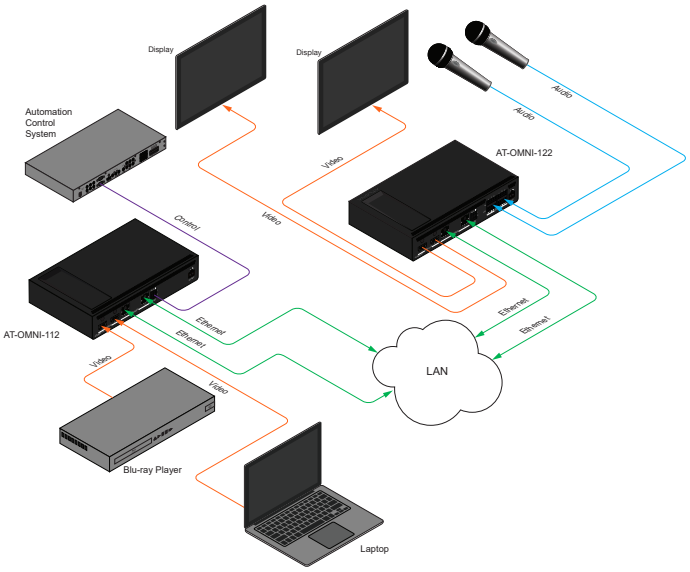
* Optional AT-PS-48083-C power supply is required for analog audio outputs.

Connection Diagrams

AT-OMNI-111 / AT-OMNI-112



AT-OMNI-121 / AT-OMNI-122



Specifications

Video	
Video	4096x2160@24Hz, 3840x2160@24/25/30Hz (UHD), 1080p@23.98/24/25/29.97/30/50/59.94/60Hz, 1080i@25/29.97/30Hz, 720p@30/50/59.94/60Hz
VESA*	1920x1200, 1680x1050, 1600x1200, 1600x900, 1440x900, 1400x1050, 1366x768, 1360x768, 1280x1024, 1280x800, 1280x768, 1152x768, 1024x768
Codec	VC-2
Latency	0.5 frames (**e.g.** 1080p@60Hz latency is < 8 ms) **Note:** Unusual network configurations may increase overall latency
Bitrate	Up to 900 Mbps
Color Space	YUV, RGB
Chroma Subsampling	4:4:4, 4:4:2
Color Depth	8-bit, 10-bit, 12-bit
Scaling	Up / down-conversion

Audio	
Digital In / Out	LPCM 2.0, LPCM 5.1, LPCM 7.1, Dolby® Digital, Dolby Digital Plus, Dolby TrueHD, Dolby Atmos®, DTS®, DTS-HD Master Audio™
Analog Audio	2-channel balanced input / output
Sample Rate	32 kHz, 44.1 kHz, 48 kHz, 88.2 kHz, 96 kHz, 176.4 kHz, 192 kHz
Bit Rate	24-bit (max.)

Control	
Protocols	RS-232, Telnet, SSH, JSON over WebSockets

Distance	Feet	Meters
Per hop of Ethernet cable	330	100

Signal	
CEC	Yes; display, volume, power, input
HDCP	1.4 switchable, hardware capable 2.2
Scrambling	AES-128

IP	
Protocol	RTP
Ethernet Speed	10/100/1000 Mbp/s
Addressing	DHCP, static
QoS tagging	RFC 2475
FEC	SMPTE 2022-5:2013; Columns: 1 to 20; Rows: 4 to 20

RS-232	
Baud Rate	2400 to 115200 bps
Connector	Molex, 3-pin x 2

Temperature	Fahrenheit	Celsius
Operating	32 to 122	0 to 50
Storage	-4 to 140	-20 to 60
Humidity (RH)	20% to 90% (non-condensing)	

Power	
Consumption	~13 W (w/o analog audio), TBD (w/ analog audio)
Supply (optional)	Input: 85 V ~ 264 V AC 50/60 Hz, Output: 48 V DC, 0.83 A
SKU	AT-PS-48083-C

Dimensions	Inches	Millimeters
H x W x D	1.34 x 8.19 x 4.41	34 x 208 x 112

Weight	Kilograms	Pounds
Single channel	TBD	TBD
Dual-channel	0.7	1.54

Certification	
Power Supply	CE, FCC, cULus, RoHS, RCM
Product	CE, FCC, RoHS

*All VESA resolutions are 60p.

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