OmniStream™ R-Type
Dual-Channel Networked AV Encoder

Introduction

The Atlona **OmniStream 512** (**AT-OMNI-512**) is a networked AV encoder with two independent channels of encoding for two HDMI sources up to UHD @ 60 Hz and HDR, plus embedded audio and RS-232 or IR control pass-through. It is part of the **OmniStream R-Type Series**, designed for high performance, flexible distribution of AV over Gigabit Ethernet in residential and commercial applications. The OmniStream 512 is HDCP 2.2 compliant and ideal for the latest as well as emerging UHD and HDR sources. It features visually lossless compression, optimized for motion video, pristine-quality imaging, and extremely low sub-frame latency from encode to decode – critical for demanding applications such as gaming. This dual-channel encoder is housed in a half-width rack enclosure and is ideal for high-density, compact installation in a centralized equipment location.

Applications

- **Multi-room or whole-house AV systems**
  OmniStream R-Type enables cost-effective system design, allowing the connection of any number of sources to any number of displays, throughout a residence.

- **Bars, restaurants, offices, meeting spaces, and other commercial environments**
  Expand the system by adding encoders and decoders, making video wall, digital signage, and many other applications simple and easy.

- **Home theater and gaming**
  OmniStream R-Type delivers the uncompromising performance of traditional baseband video systems, making it ideal for applications where both image quality and low latency are crucial.

Key Features

AV encoder for HDMI up to 4K/UHD, plus embedded audio and RS-232 or IR control pass-through

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

Dual-channel AV encoding

- Two independent channels of encoding in a single box, with dedicated processing for each channel.
- Allows high-density rack installations and reduces box count for locations with limited space for equipment.

Supports UHD @ 60 Hz plus HDR formats

- Ideal for new and emerging UHD and HDR-capable sources and displays.
- Supports HDR10 @ 60 Hz and 10-bit color, as well as HLG (Hybrid Log-Gamma) for future 60p HDR broadcast services.

High performance, visually lossless video compression

- SMPTE VC-2 light video compression with absolutely minimal, sub-frame latency from encode to decode.
- Ensures optimal motion video performance and pristine-quality imaging, and is ideal for gaming and other applications requiring interactivity.

HDCP 2.2

- Adheres to latest specification for High-bandwidth Digital Content Protection.
- Allows protected content stream to pass between authenticated devices.

Simplify integration with plug-and-play network switch compatibility

- Streamline system setup by using Atlona Certified Switch configurations for popular models from Cisco, Luxul, and others.
- Saves installation time and costs without the need to manually configure a network switch.

Local or 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.

AES67-compatible audio over IP streaming

- OmniStream R-Type features industry standard, AES67-compatible networked audio streaming between encoders, decoders, and audio interfaces.
- Also enables integration with AES67-compatible audio products and systems.

Connection Diagram
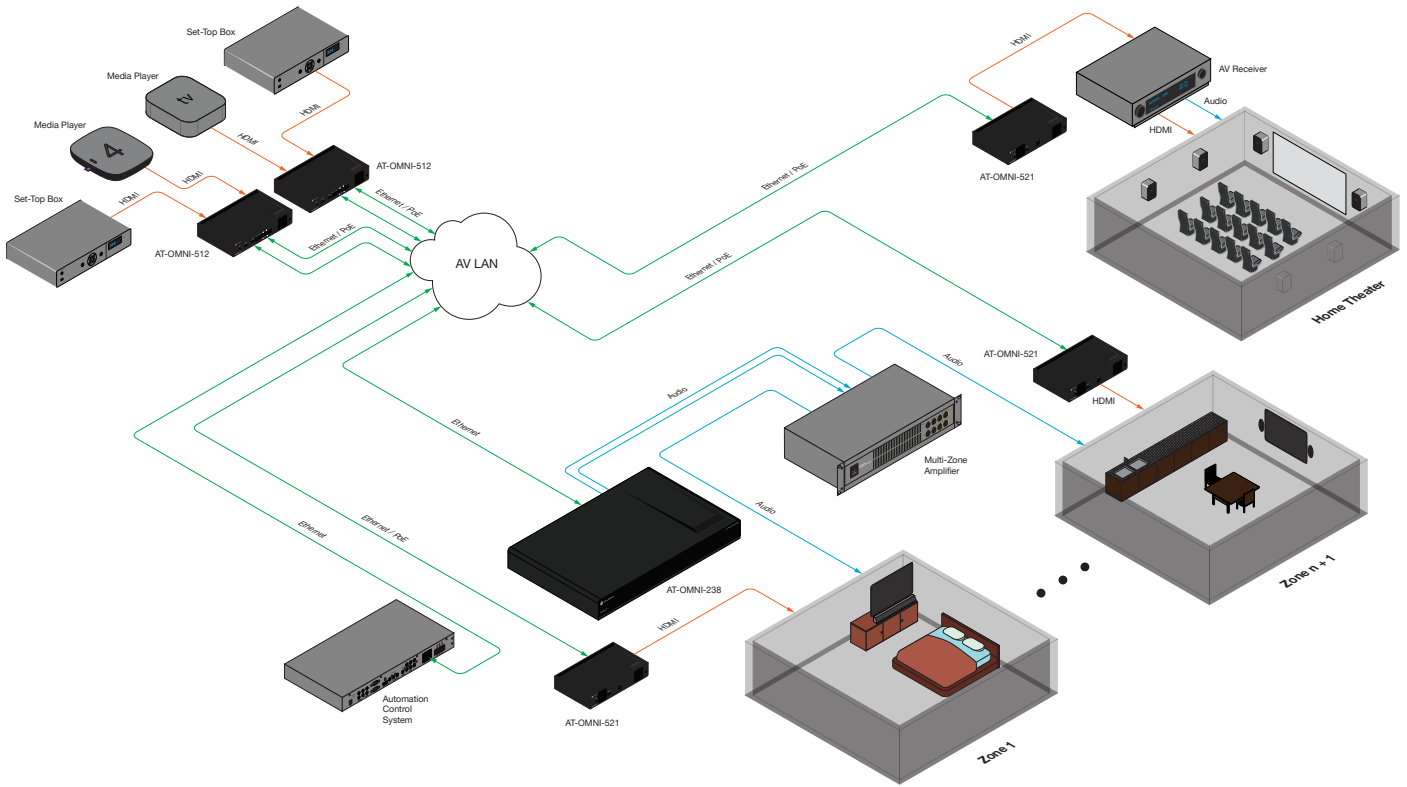
Specifications

Video	
UHD/HD	4096×2160@24Hz, 3840×2160@60/50/24/25/30Hz (UHD), 1080p@23.98/24/25/29.97/30/50/59.94/60Hz, 1080i@25/29.97/30Hz, 720p@30/50/59.94/60Hz
Latency	0.5 frames (e.g. 1080p @ 60 Hz latency is < 8 ms) Note: Unusual network configurations may increase overall latency
Bitrate	900 Mbps
Color Space	YUV, RGB
Color Depth	8-bit, 10-bit, 12-bit

Audio	
Digital IN	LPCM 2.0, LPCM 5.1, LPCM 7.1, Dolby® Digital, Dolby Digital Plus, Dolby TrueHD, Dolby Atmos®, DTS®, DTS-HD Master Audio™
Sample Rate	32kHz, 44.1kHz, 48kHz, 88.2kHz, 96kHz, 176.4kHz, 192kHz
Bit Depth	up to 24-bit

Distance	
Maximum distance depends on network configuration	

Signal	
CEC	Yes
HDCP	2.2
Scrambling	AES 128-bit for HDCP sources

IP	
Protocol	RTP
Ethernet Speed	10/100/1000 Mbps
Address	DHCP, static

RS-232	
Bit Rate	2400 - 115200 bps
Connector	Molex - 2 x 3 pin
IR	Pass-through

Temperature	Fahrenheit	Celsius
Operating	14 to 122 °F	-10 to 50 °C
Storage	-14 to 140 °F	-10 to 60 °C
Humidity (RH)	20% to 95%, non-condensing	

Power		
Consumption	12 W	
Supply (optional) *	Input: 110 - 220 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	Pounds	Kilograms
Device	3.08	1.4

Certification		
Device	CE, RoHS, FCC	

* Unit can also be powered over Ethernet cable using a PoE-capable switch.