OmniStream™ R-Type
Dual-Channel Networked AV Encoder

Introduction

The Atlona **OmniStream R-Type 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 light commercial applications. The OmniStream R-Type 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 picture, 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, and other light commercial environments**
  Expand the system by adding encoders and decoders, making video wall and digital signage 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 light 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

- Compatibility with new and emerging UHD and HDR-capable sources and displays, without being limited to HDR10 @ 24 Hz.
- Support for HDR10, HLG, and other formats will be added in future firmware updates.

HDCP 2.2

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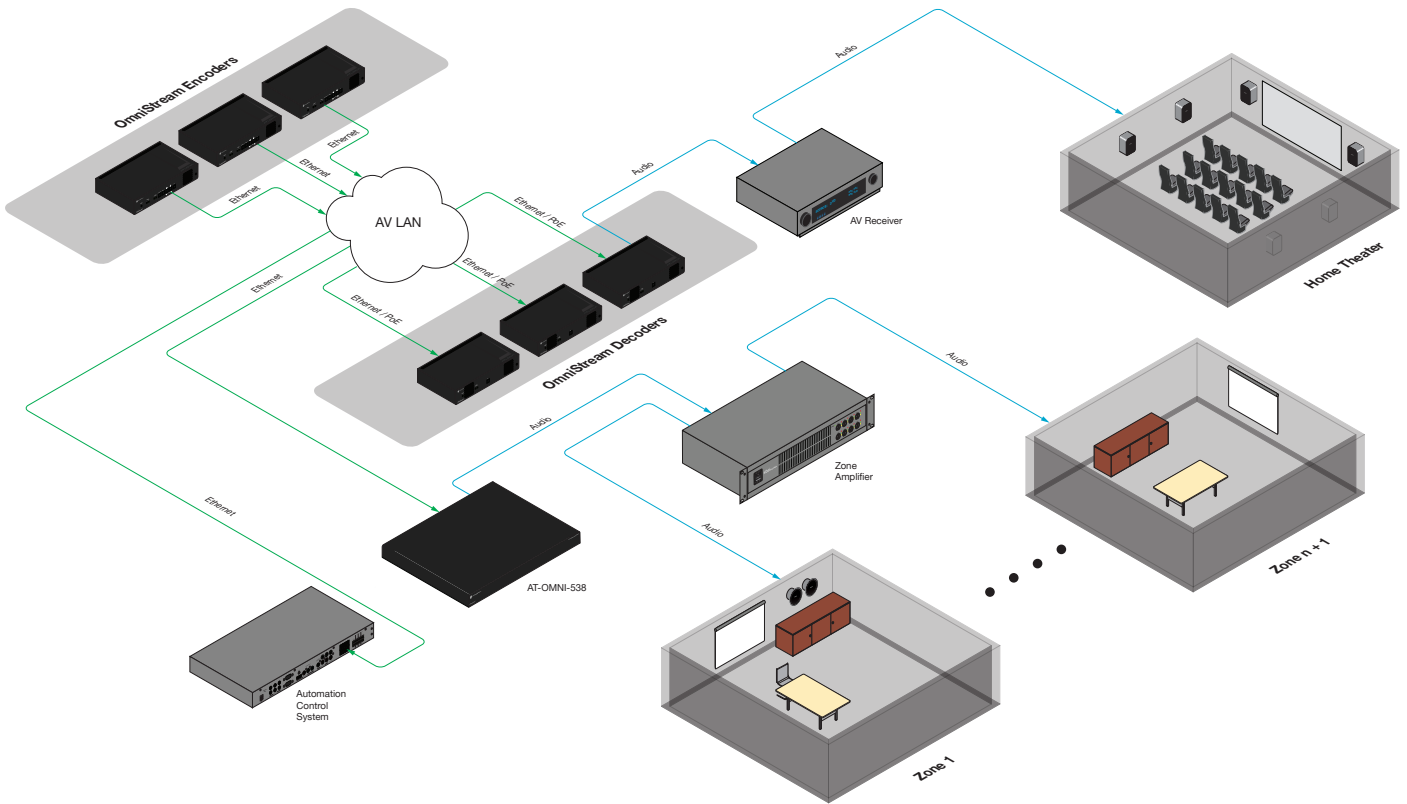- Allows protected content stream to pass between devices.

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.

Award-winning 10 year limited product warranty

- Ensures long-term product reliability and performance in residential and commercial systems.
- Specify, purchase, and install with confidence.

Connection Diagram

Specifications

Video	
UHD/HD	4096×2160@24Hz, 3840×2160@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

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: 12 V DC, 1 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.