OmniStream™ R-Type
Single-Channel Networked AV Decoder

Introduction

The Atlona **OmniStream 521** (**AT-OMNI-521**) is a networked AV decoder for an OmniStream-encoded video stream 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 521 is HDCP 2.2 compliant and ideal for the latest as well as emerging UHD and HDR displays. It features SMPTE VC-2 visually lossless compression with pristine-quality video and graphics performance, plus extremely low, sub-frame latency from encode to decode – critical for demanding applications such as gaming. This decoder includes an HDMI output, high performance upscaling and downscaling, aspect ratio control, and video wall processing, plus presentation enhancement features such as logo insertion and scrolling on-screen text.

Applications

- **Multi-room or whole-house AV systems**
  OmniStream R-Type enables cost-effective system designs with a few source devices feeding many displays throughout a residence.

- **Bars, restaurants, offices, and other light commercial environments**
  These are also ideal settings for few-to-many distribution of TV or digital signage content. Expanding the system is as simple as adding more encoders or decoders.

- **Home theater and gaming**
  OmniStream R-Type delivers the uncompromised performance of a traditional baseband video system, making it ideal for applications where image quality is essential and latency is unacceptable.

Key Features

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

- Receives video, audio, and control from OmniStream 512 encoders, together or streamed from separate network locations.
- Allows wide-ranging versatility for residential and light commercial integrators to design systems to specific requirements.

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.

SMPTE VC-2 visually lossless video compression

- Broadcast-quality, light video compression with absolutely minimal, sub-frame latency from encode to decode.
- Ensures pristine-quality video and graphics performance, and is ideal for gaming and other applications requiring interactivity.

High-performance upscaling and downscaling

- Preserves visual detail in motion video and graphics imagery.
- Optimizes compatibility between destination devices with a variety of resolutions, such as a mix of UHD and 1080p displays.

Video wall processing

- Present source content on display arrays of any size, with processing options for aspect ratio, display orientation, and more.
- Enables cost-effective video walls in a variety of light commercial environments such as bars, retail, and office lobbies.

Enhance AV presentations with visual enhancements

- Display messages as scrolling text, overlay a company logo, or present a full-screen image.
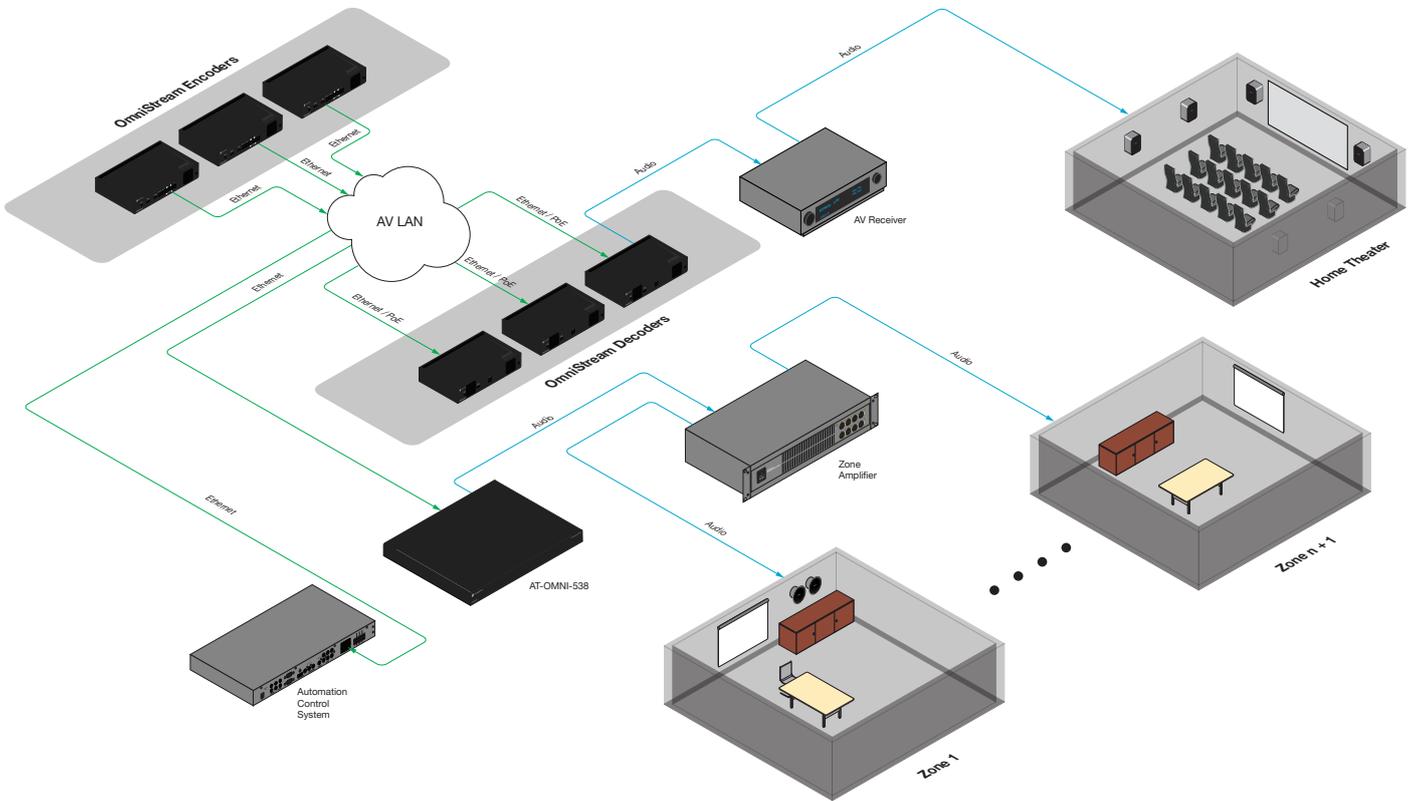- Integration-friendly features ideal for a wide range of light commercial applications.

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	Ethernet PoE

Dimensions	Inches	Millimeters
H x W x D	6.59 x 5.90 x 5.90	167.5 x 150 x 150

Weight	Pounds	Kilograms
Device	3.08	1.4

Certification	
Device	CE, RoHS, FCC