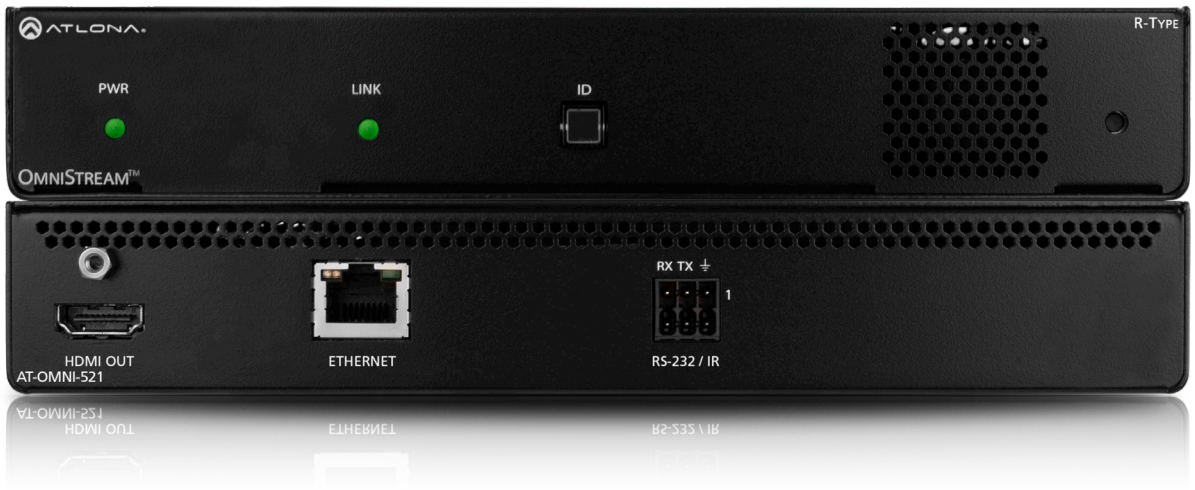
OmniStream™ R-Type
Single-Channel Networked AV Decoder



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 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 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 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 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 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 commercial integrators to design systems to specific requirements.

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.

Pristine-quality upscaling and downscaling

- Preserves visual detail in motion video and graphics imagery.
- Optimizes compatibility and image quality for systems with 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 commercial environments such as bars, retail, and corporate 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 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.

Remotely powered via PoE (Power over Ethernet)

- With PoE, decoders can conveniently be powered by a PoE-equipped network switch.
- Simplifies integration and allows centralized power monitoring and management.

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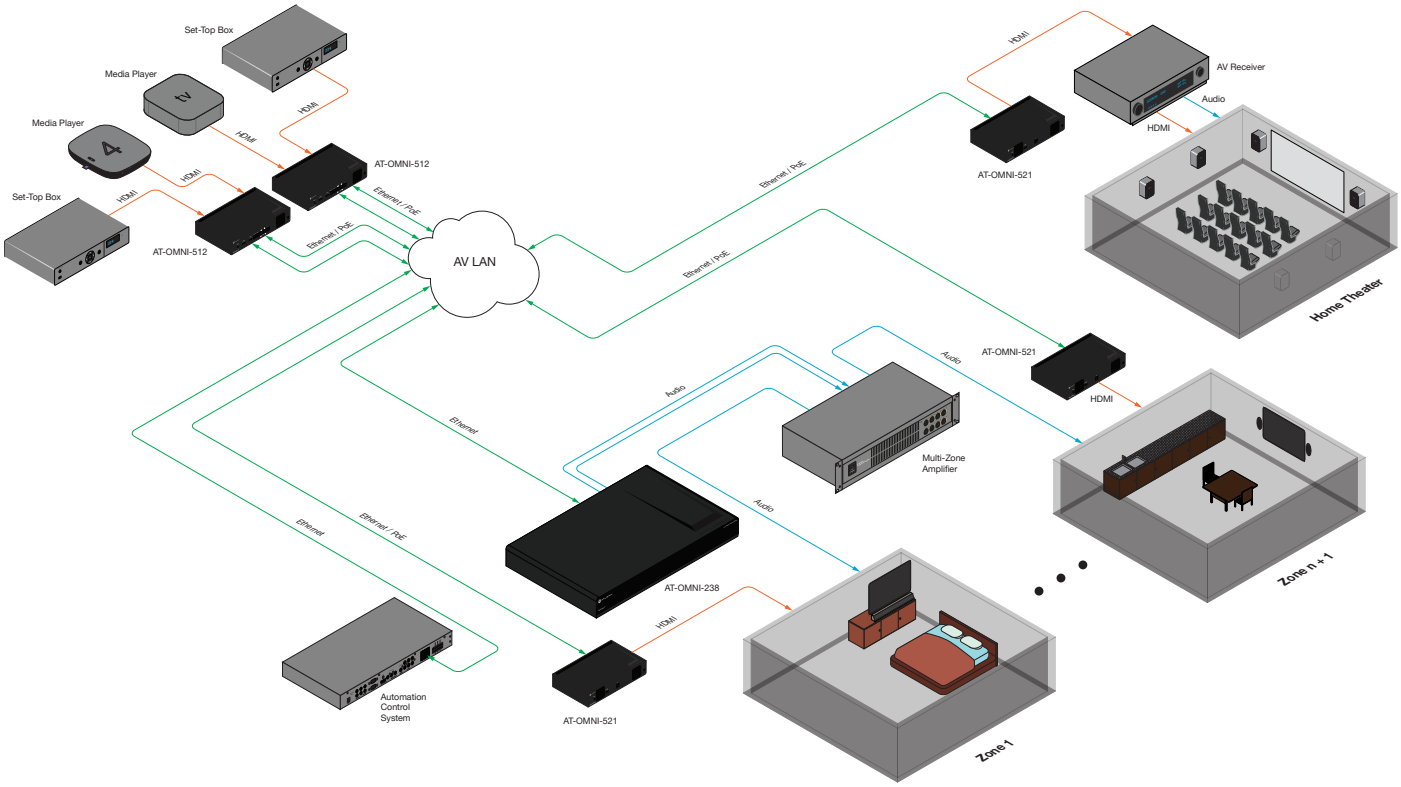
Connection Diagram



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

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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	Ethernet PoE

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