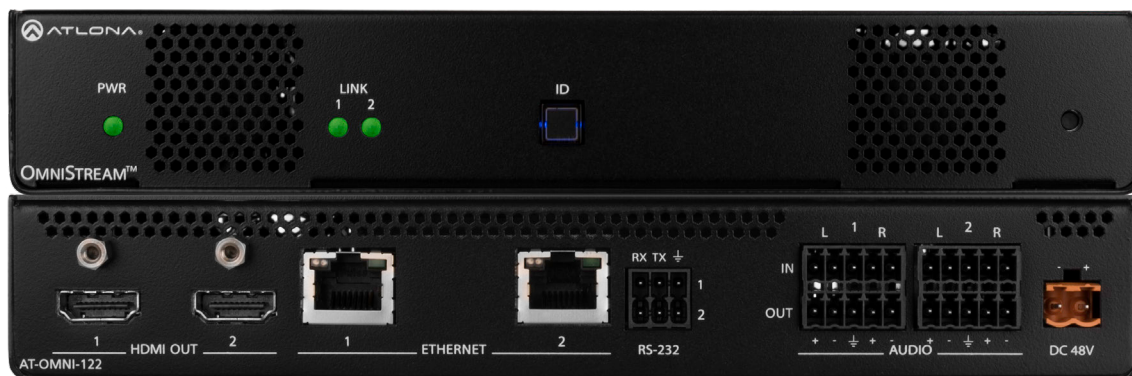




## Introduction

The Atlona **OmniStream™ 122 (AT-OMNI-122)** is a networked AV decoder with two independent decoding channels and two independent HDMI 2.0 outputs supported resolutions up to UHD @ 60Hz and HDR (High Dynamic Range), plus audio embedding / de-embedding, and RS-232 or IR control pass-through. It is part of the OmniStream Series, designed for high performance, flexible distribution of AV over standard off-the-shelf Gigabit Ethernet switches in commercial audio visual applications. It features advanced high-quality VC-2 visually lossless video decoding technology with user selectable video-quality optimization engines designed for computer-generated imaging, or motion video content. The Atlona OmniStream™ 122 achieves extremely low, sub-frame latency when paired with OmniStream Encoders. This dual-channel decoder is housed in a half-width rack with front-to-back air flow enclosure, and is ideal for high-density, compact installation in a centralized equipment location.

## Applications

- **Enterprises and other large organizations**  
Maximize AV application flexibility by enabling content sharing within single meeting rooms, or corporate-wide broadcasting to every connected screen.
- **Corporate and university campuses with the need to distribute AV between buildings**  
OmniStream allows virtually unlimited AV system scope and scale, desirable for enterprise local area networks. SMPTE-standard FEC (Forward Error Correction) ensures robust, reliable image presentation at every endpoint.
- **Applications in which any AV content or resource can be shared anywhere in the system**  
AV over IP technology removes the restrictions associated with interconnecting sources and displays through standard matrix switching architecture.

## Key Features

### AV decoder output for HDMI 2.0 up to 4K/UHD, plus de-embedded audio and RS-232 or IR control pass-through

- Decode video, audio, and control, with the flexibility of receiving them together or from separate network sources.
- Allows wide-ranging versatility for integrators to design systems to specific requirements.

### Dual-channel AV decoding

- Two independent channels of decoding 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.

### Networked AV redundancy

- Monitors AV streams and automatically switches to the backup stream if packet losses are detected.
- Maximizes system reliability and meets IT requirements for system redundancy and failover.

### 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 current 60p HDR broadcast services.
- Supports Dolby® Vision™ @ 60 Hz and 12-bit, delivering best-in-class dynamic HDR experience. Included as of firmware version 1.2.5.

### High performance, visually lossless video decoding

- SMPTE 2042 VC-2 video decoder with absolutely minimal, sub-frame latency from encode to decode.
- Ensures optimal, pristine-quality graphics and motion video presentations, and is ideal for applications requiring interactivity.

### HDCP Compliance

- Allows protected content streams to pass between authenticated devices.
- HDCP can be disabled through AMS, allowing content to pass to non-compliant displays and teleconference systems. Protected content is not transmitted.

### Network error resilience with FEC (forward error correction)

- Compensates for AV packet losses in large systems spanning several networks.
- Enables consistent, reliable performance in enterprise-wide networked AV implementations.

### Simplify integration with plug-and-play network switch compatibility

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

## Key Features (continued)

### Local or PoE (Power over Ethernet) powering

- With standard 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.

### Secure content distribution with AES-128 decryption

- Decrypt AES-128 content from any OmniStream encoder.
- Ensures secure content delivery across the network.
- Ideal for government, military, and enterprise applications, as well as meeting IT security requirements.

### Supports industry-standard, network security features and protocols

- HTTPS, Telnet, SSH, SCP, WebSockets with TLS, and AES-128 encryption.
- Features IEEE 802.1x which meets IT authentication requirements for improved network security.

### AES67-compatible

- OmniStream supports industry-standard AES67-compatible networked audio streams from encoders and audio interfaces.
- Supports multichannel PCM up to 7.1 channels.

### Audio embedding and de-embedding<sup>(1)</sup>

- Receives up to 7.1 channels of PCM audio as AES67 or native RTP from compliant sources and embeds audio on to the HDMI output or outputs audio using the analog audio interface.
- Receives audio from analog interface and embeds the audio on to the HDMI output.

### Built-in high-quality scaler

- Integrated high-performance scaling engine provides upscaling and downscaling for a wide array of UHD, HD, and VESA resolutions.
- Ideal for applications when the video output resolution needs to match the different capabilities and requirements of sources, displays, codecs, and other equipment.
- Processing for video walls with portrait and landscape displays up to 16×16 @ 4K/30 and 2×2 @ 4K/60 with precision wall-tile alignment.

### Enhance AV presentations with visual enhancements

- Provide corporate or institutional branding by overlaying a logo.
- Display a full-screen image as a backup in an event of an interruption in an AV stream, or between presentations.
- Identify and label presentation content with static or scrolling text.

## Key Features (continued)

### Ultra-fast switching<sup>(2)</sup>

- Eliminates black screen displays during HDMI and HDCP handshake.
- High-quality video scalers and internal frame rate converters provide instantaneous and precise video and audio HDMI switching.
- Ideal for mission-critical applications where stable, fast AV switching is required.

### EDID management

- EDID from a connected display can be copied and stored; EDID can also be assigned to a specific timing.
- Ensures desired audio formats and video resolutions are provided to the AV system.

### Audio processing and pass-through

- Multichannel PCM, Dolby® Digital, Dolby Digital Plus™, Dolby TrueHD, Dolby Atmos®, DTS® Digital Surround™, DTS-HD Master Audio™, and DTS:X®.
- Supports multichannel PCM audio downmixing to two-channel PCM.

### Display control

- Supports IR, bidirectional RS-232, and CEC to control connected displays.
- Bidirectional conversion of control data from TCP/IP to and from RS-232.

### System Management

- Intuitive standalone web GUI.
- Atlona Management System (AMS). Web-based interface for configuration and management of OmniStream systems, and AV over IP cross-connections.

### Compact enclosure

- Installs side-by-side in a rack with the optional AT-OMNI-1XX-RACK-1RU rack mount shelf.

### Award-winning 10-year limited product warranty

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

## Specifications

| Video               |                                                                                                                                                                                                                                                                                                                 |
|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Signal              | HDMI                                                                                                                                                                                                                                                                                                            |
| Copy Protection     | HDCP 2.2                                                                                                                                                                                                                                                                                                        |
| UHD/HD/SD           | 4096×2160 (DCI) @ 30/24 Hz<br>3840×2160 (UHD) <sup>(2)</sup> @ 60/50/24/25/30 Hz<br>1920×1080p @ 23.98/24/25/29.97/30/50/59.94/60 Hz<br>1920×1080i <sup>(1)</sup> @ 25/29.97/30 Hz<br>1280×720p @ 30/50/59.94/60 Hz<br>720×576p @ 50 Hz<br>720×576i @ 25 Hz<br>720×480p @ 59.94/60 Hz<br>720×480i @ 29.97/30 Hz |
| VESA <sup>(3)</sup> | 2560×1600<br>1920×1200<br>1680×1050<br>1600×1200<br>1600×900<br>1440×900<br>1400×1050<br>1366×768<br>1360×768<br>1280×1024<br>1280×800<br>1280×768<br>1152×768<br>1024×768                                                                                                                                      |
| Virtual Reality     | 2160×1200 @ 90 <sup>(4)</sup> Hz (HTC® Vive)                                                                                                                                                                                                                                                                    |
| Color Space         | YUV, RGB                                                                                                                                                                                                                                                                                                        |

| Decoding                                       |                                                                                                                                                                                                                                                            |
|------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Density                                        | Dual decoding engines                                                                                                                                                                                                                                      |
| Decoding Format                                | VC-2 (SMPTE-2042)                                                                                                                                                                                                                                          |
| Chroma Subsampling                             | 4:4:4, 4:2:2, 4:2:0                                                                                                                                                                                                                                        |
| Video Quality Optimization                     | User-selectable: PC Application or Video mode                                                                                                                                                                                                              |
| Color Depth                                    | 8-bit, 10-bit, 12-bit                                                                                                                                                                                                                                      |
| HDR                                            | HDR10, HLG, Dolby® Vision™                                                                                                                                                                                                                                 |
| Bit Rate                                       | Supports bit rates up to 900 Mbps                                                                                                                                                                                                                          |
| Latency                                        | 0.5 frame (e.g. 1080p @ 60 Hz latency is < 8 ms between encoder and decoder)<br>1.5 frames in Fast Switching mode (e.g. 1080p @ 60 Hz latency is < 24 ms between encoder and decoder)<br>Note: Unusual network configurations may increase overall latency |
| Output Resolution in Ultra-Fast Switching Mode | 1080p @ 60 Hz (1 channel), 1080p @ 30 Hz (2 channels)                                                                                                                                                                                                      |

| Audio                       |                                                                                                                                                                                                                                                                           |
|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Pass-through                | LPCM 2.0<br>LPCM 5.1<br>LPCM 7.1<br>Dolby® Digital<br>Dolby Digital Plus<br>Dolby TrueHD<br>Dolby Atmos®<br>DTS®<br>DTS-HD Master Audio™                                                                                                                                  |
| Down-mixing                 | Multichannel LPCM to two-channel LPCM                                                                                                                                                                                                                                     |
| Sample Rate                 | 32 kHz, 44.1 kHz, 48 kHz, 88.2 kHz, 96 kHz, 176.4 kHz, 192 kHz                                                                                                                                                                                                            |
| Bit Depth                   | Up to 24-bit                                                                                                                                                                                                                                                              |
| Analog audio <sup>(2)</sup> | Balanced output: +4 dBu nominal gain, +20 dB headroom<br>Frequency response: 20 Hz to 20 kHz, ± 0.5 dB<br>Output impedance: 150 Ω<br>Stereo channel separation: > 90 dB<br>THD+N: < 0.03% at 20 Hz to 20 kHz<br>SNR: > 90 dB at 1 kHz, zero clipping @ 0 dBFS, unweighted |

| Protocols       |                                                           |
|-----------------|-----------------------------------------------------------|
| Video Streaming | RTP                                                       |
| Audio Streaming | RTP, up to 7.1 channels<br>AES67, up to LPCM 7.1 channels |
| Addressing      | DHCP, static                                              |
| Encryption      | AES-128                                                   |
| QoS Tagging     | RFC 2475                                                  |
| Discovery       | Multicast DNS, LLDP, SAP                                  |
| Management      | HTTPS, SSH, Telnet, and WebSockets with TLS               |
| Authentication  | IEEE 802.1x: PEAP/MSCHAPv2 or EAP-TLS                     |
| IP Multicast    | IGMPv2 and IGMPv3 support                                 |

| Graphics Features                     |                                                                                                                                                                                                                                                                                                                    |
|---------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Text Insertion                        | Adjustable height/width, scrolling (speed, direction, or static), iterations (up to infinite), positioning, and adjustable color and alpha (transparency) channels.                                                                                                                                                |
| Slate / Logo Insertion <sup>(6)</sup> | PNG file format, adjustable aspect ratio (keep or stretch), horizontal/vertical size, screen position; slate mode can be set to off, manual (image always displayed, superimposed on the source signal, and will remain if source signal is lost), auto (image will only be displayed when source signal is lost). |

| Control |                                                                                                                                                                                             |
|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CEC     | Supported and triggered from control systems and OmniStream encoders                                                                                                                        |
| RS-232  | Device control and configuration; supports baud rates from 2400 to 115200<br>Bidirectional pass-through from control system to network<br>Bidirectional TCP Proxy (RS-232 commands over IP) |
| IR      | Pass-through from control system to network<br>Pass-through from network to control system                                                                                                  |

| Connectors              |                                                                                           |
|-------------------------|-------------------------------------------------------------------------------------------|
| HDMI                    | 2 - Type A, 19-pin, female, locking                                                       |
| ETHERNET <sup>(7)</sup> | 2 - RJ45, 10/100/1000 Mbps                                                                |
| RS-232 / IR             | 1 - Euroblock, 6-pin (2 ports); RS-232 on port 1 and 2, IR on port 2 only                 |
| AUDIO                   | 2 - Euroblock 10-pin; AUDIO 1 IN/OUT, AUDIO 2 IN/OUT; accepts balanced or unbalanced line |
| Power                   | 1 - Euroblock, 2-pin                                                                      |

| Indicators and controls |                                                                                                                                |
|-------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| PWR                     | 1 - LED, tricolor (red, amber, green)                                                                                          |
| HDMI                    | 2 - LED, bicolor (red, green)                                                                                                  |
| LINK                    | 2 - LED, bicolor (red, green)                                                                                                  |
| ID                      | 1 - Momentary, tact-type, backlit (blue); sends an identification broadcast message over the network to any listening devices. |
| Reboot                  | 1 - Momentary, tact-type                                                                                                       |

| Power                            |                                                             |
|----------------------------------|-------------------------------------------------------------|
| PoE                              | IEEE 802.3af                                                |
| Consumption                      | Up to 12 W (w/o analog audio), up to 25 W (w/ analog audio) |
| External Power Supply (optional) | Input: 110 - 220 V AC, 50/60 Hz<br>Output: 48 V DC, 0.83 A  |

| Environmental           |                                                    |
|-------------------------|----------------------------------------------------|
| Cooling System          | Front-to-rear airflow, temperature-controlled fans |
| Operating Temperature   | +14 to +122 °F<br>-10 to +50 °C                    |
| Storage Temperature     | +14 to +140 °F<br>-10 to +60 °C                    |
| Operating Humidity (RH) | 20% to 95%, non-condensing                         |

| Chassis                |                                                        |
|------------------------|--------------------------------------------------------|
| Dimensions (H x W x D) | 1.34 in x 8.19 in x 4.41 in<br>34 mm x 208 mm x 112 mm |
| Weight                 | 1.5 lbs / 0.7 kg                                       |

| Certification |                               |
|---------------|-------------------------------|
| Device        | CE, FCC, CB, RoHS             |
| Supply        | CE, FCC, cULus, CB, RCM, RoHS |

## Accessories

| Description                             | SKU                  |
|-----------------------------------------|----------------------|
| 48 Volt 0.83 Amp Power Supply           | AT-PS-48083-C        |
| Rack Mount Shelf for OmniStream         | AT-OMNI-1XX-RACK-1RU |
| IR Emitter Cable for OmniStream Systems | AT-OMNI-IR-TX        |
| IR Receiver Cable for PoE Extenders     | AT-IR-SC-RX          |
| LinkConnect™ HDMI to HDMI Cable         | AT-LC-H2H            |

## Footnotes

- (1) External power supply is required when using the analog audio interface.
- (2) UHD video is output at 1080p in ultra-fast switching mode. Logo / image display and 1080i video are not supported.
- (3) 4096x2160 (DCI) @ 60 Hz and 3840x2160 (UHD) @ 60 Hz are only supported by hardware revision C or later.
- (4) Scaling and deinterlacing are not supported at 1080i.
- (5) All VESA resolutions are 60 Hz.
- (6) Slate insertion is limited to 1080p only.
- (7) Maximum distance per hop is 330 feet (100 meters), depending upon network configuration.

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