



HW-LUMA-D4111

Specification Sheet

H.264 and H.265 Networked AV Decoder

Description

The Atlona HW-LUMA-D4111 is an H.264 and H.265 networked AV decoder for HDMI® output, along with RS-232 and IR control. LumaStream™ is designed for high-performance distribution of video, audio, and control over data networks, with an emphasis on network bandwidth efficiency and scalability. The LUMA-D4111 receives and decodes video from LUMA-E4211 encoders up to 4K/60 4:4:4. H.265 (HEVC) encoding is ideal for multicast video distribution from HW-LUMA-E4211 encoders. H.264 encoding is ideal for applications with LUMA-D4111 decoders alongside third-party H.264 platforms for online or on-premises live streaming. This decoder also features snapshot image captures, for previewing its video output as a thumbnail on a touch panel or in a web browser. The LUMA-D4111 is equipped with audio de-embedding, fast switching, 4K upscaling and downscaling, video wall processing, simplified stream discovery and selection, decoder daisy-chaining, CEC display control, RS-232, IR and the ability to overlay an image, logo, or text. It is housed in a compact enclosure, with optional rack mounting accessories available for high-density installation.

Applications

Digital Signage

- LumaStream is ideal for signage applications in which there are just a few sources serving many display locations. Typical installations include retail, hospitality, student centers, hotels, sporting venues, casinos, and convention centers. It is well suited for menu boards, as it supports both portrait and landscape orientations.

Bars, Restaurants, and Other Venues

- LumaStream is a great choice for streaming multiple sources of television and informational content to displays and even video walls. Staff can preview content live on an Atlona Velocity™ touch panel before assigning it to one or more destinations.

Key Features

H.264 and H.265 (HEVC) decoder for HDMI outputs

- Automatically detects and decodes incoming H.264 or H.265 streams from Atlona HW-LUMA-E4211 encoders, with video up to 4K/60 4:4:0.
- Decodes video and audio, with the flexibility of receiving them together or from separate network sources.
- Allows wide-ranging versatility for integrators to design systems to specific requirements.

High-efficiency H.264 or H.265 encoding

- H.265 encoding delivers high image quality and low-bandwidth network streaming between Atlona HW-LUMA-E4211 encoders and HW-LUMA-D4111 decoders.
- H.264 encoding is ideal for applications with LUMA-D4111 decoders alongside third-party H.264 platforms for online or on-premises livestreaming.
- H.265 encoding efficiency enables as many as 50 4K video streams over a Gigabit Ethernet⁽¹⁾ link.

Integrated video processing including 4K upscaling and downscaling

- Ensure professional-quality image presentations with video processing optimization settings.
- Frame rate conversion is available, as well as chroma subsampling conversion from 4:2:0 to 4:2:2 or 4:4:4 for display compatibility.
- Ideal for presentation applications where content is to be viewed on a variety of 4K displays and projectors at HD or other resolutions.

Simplified multicast discovery and joining

- Automatically discovers available multicast streams from LumaStream encoders on the network.
- Users can join a multicast session by IP address, or a custom name assigned at the encoder.
- Enables simple access to LUMA-E4211 encoder streams from the web GUI, Velocity control system, or third-party application via API.

Fast switching

- Provides fast video and audio switching between streams from LUMA-E4211 encoders. Works with streams at different resolutions and frame rates.
- Ideal for applications where stable, fast AV switching is required.

Preview decoder output as a snapshot image thumbnail

- View the video output of the LUMA-D4111 on a Velocity touch panel or in a web browser. The preview is presented as snapshot images refreshed every two seconds.
- Ideal for monitoring presentation content, validating system operation, or troubleshooting.

Enhance AV presentations with visual enhancements

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

Audio de-embedding

- De-embeds two-channel PCM audio and delivers to a balanced, analog audio output.
- Selectable stereo audio downmixing to mono.
- Provides direct interfacing into an external audio system.

PoE+ (Power over Ethernet+) or optional local 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.
- Video deinterlacing and Dante audio can be individually disabled to reduce PoE power consumption.
- Optional AT-PS-48083-C power supply available.

Simplify integration with plug and play network switch compatibility

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

Secure content distribution with AES-128 encryption

- Any AV presentation content can be secured by scrambling IP streams.
- 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, SSH, WebSocket with TLS, and AES-128 encryption.
- Features IEEE 802.1x which meets IT authentication requirements for enhanced network security.

Front panel signal status LEDs

- LED indicators provide status information on power, stream decoding, HDMI output, and Ethernet link.

On-screen display

- View system information including device IP address, video output resolution, streaming status, and more.
- Menu navigation and selection available from the front panel. Channels can be selected using the up and down buttons on the front panel.
- Quick system monitoring and controls without the need to access the web GUI.

Intuitive GUI-based configuration using integrated web server

- Offers menu-based, comprehensive configuration of network settings, streaming modes, multicast streaming, video processing, and graphics features.
- Allows fast configuration of internal product settings and troubleshooting from a mobile device or PC in the field.

Field-updatable firmware

- Device can be updated in the field via the web GUI, LumaSuite or Velocity Device Manager.

Compact enclosure

- Installs side-by-side in a rack with the optional HW-RACK-1RU-2S rack mount shelf and HW-LUMA-D4-RACK installation adapter.

- Fanless, convective cooling design allows surface mounting behind a display, or high-density installation in an equipment room.

Specifications

Video	
Signal	Input: Network (encoded video) Output: HDMI
Copy Protection	HDCP 1.4 / 2.2
Pixel Clock	600 MHz
UHD/HD/SD ⁽¹⁾⁽²⁾	3840×2160 @ 60/50/30/25/24 Hz 1920×1080p @ 60/50/30/25/24 Hz 1280×720p @ 60/59.94/50 Hz 720×576p @ 50 Hz 720×480p @ 60 Hz
VESA ⁽³⁾	2560×1600 (4:4:4 and 4:2:2 only) 1920×1200 (4:4:4 and 4:2:2 only) 1680×1050 1600×1200 1440×900 1366×768 1280×1024 1280×800 1024×768 800×600 640×480 (4:4:4 and 4:2:2 only)
Chroma Sub Sampling	4:4:4 ⁽³⁾ , 4:2:2 ⁽³⁾ , 4:2:0
Encoding	
Video Compression Format	H.265, H.264
Chroma Subsampling	Decoder options are RGB, 4:4:4, 4:2:2, 4:2:0
Bit Rate	128 kbps – 60 Mbps
Scaler	Scaler can be configured to one of the resolutions and frame rates specified in the video section
Latency	150 ms max end-to-end
Thumbnails	Number of thumbnails: 1 Resolution: 320×180px File format: JPG Update frequency: 2 seconds
Audio	
Signal Type	Input: Network Output: HDMI, Balanced Analog Audio, Network
HDMI Audio	Format: LPCM 2.0 Bit Depth: Up to 16 bits Sample Rate: 32 kHz, 44.1 kHz, 48 kHz
Analog Audio	Format: 2-channel balanced analog audio Input Signal Level: +20 dBu max.

	Output Signal Level: +20 dBu max. Frequency Response: 20 Hz to 20 kHz $\pm$ 0.5 dB THD+N: < 0.025% from 20 Hz to 20 kHz
Network	
Port	2 $\times$ RJ45
Speeds	10/100/1000 Mbps
Protocols	
Video Streaming	RTP
Audio Streaming	RTP, up to 2 channels
Addressing	DHCP, Static
Encryption	AES-128
QoS Tagging	RFC 2475
Management	HTTP, HTTPS, SSH, Telnet, WebSocket, LLDP
Authentication	IEEE 802.1X: PEAP-MSCHAPv2, EAP-TLS
IP Multicast	IGMPv3
Time	NTPv4
Graphics Features	
Text Insertion	256 characters max., adjustable height, scrolling (speed, direction, or static), iterations (up to infinite), positioning, and adjustable color and alpha (transparency) channels
Logo Overlay	JPG or PNG images up to 1280 $\times$ 720, adjustable transparency, position, and height
Image Streaming	JPG or PNG images up to 1920 $\times$ 1080p
RS-232 / IR	
Port	1 $\times$ 4-pin captive screw
Use	External device control
Baud Rates	9600, 19200, 38400, 57600, 115200
Data Flow	Bidirectional
IR Protocols	Pronto, Global Cache
Connectors	
HDMI OUT	1 $\times$ Type A, 19-pin female
LAN	2 $\times$ RJ45
RS-232/IR	1 $\times$ 4-pin captive screw
AUDIO OUT	1 $\times$ 5-pin captive screw
POWER	1 $\times$ 2-pin captive screw
Buttons and Indicators	
Buttons: MENU, UP, DOWN, ENTER	4 $\times$ momentary, tact-type

Indicators: PWR, HDMI IN, ENC, ETH, DANTE	5 × LED, red / green	
Power		
PoE	IEEE 802.3at	
Consumption	Up to 9 W	
BTU/h	30.1	
External Power Supply (optional)	Compatible with AT-PS-48083-C	
Environmental		
Operating Temperature	+32 to +104 °F	0 to +40 °C
Storage Temperature	-4 to +140 °F	-20 to +60 °C
Operating Humidity	20% to 90%, non-condensing	
Dimensions (H × W × D)		
Unit	0.98 × 6.89 × 4.34 in.	25 × 175 × 110.2 mm
Power Supply (optional)	1.42 × 1.81 × 4.41 in.	36 × 46 × 112 mm
Weight		
Device	1.21 lbs	0.55 kg
Certification		
Device	CE, FCC	
Compliance		
NDAA-889	Yes	
TAA	No	
Warranty		
3 years	To view the product warranty, visit: hallresearch.com/warranty	

Footnotes

⁽¹⁾ Gigabit Ethernet is dependent on saturations and stream encoded bitrate.

⁽²⁾ Local AC power will be required for each daisy-chained decoder. Optional AT-PS-48083-C power supply available.

⁽³⁾ The decoder can force Sub-sampling: Auto, RGB, 4:2:0, 4:2:2, 4:4:4. Auto passes the EDID preferred Chroma. Otherwise, it forces the output format indicated.