

## E4100 • Encoder | D4100 • Decoder

Distribute 4K UHD Video and Audio over Gigabit Ethernet

### Overview

Visionary's PoE 4K UHD over IP cinema quality, ultra-low latency [~1 frame - visually lossless ], encoders and decoders bypass the constraints of traditional switch matrix distribution systems by continuing to harness the flexibility and scalability of converged IP networks.

With the growing demand for 4K UHD video, professional AV designers and IT directors – in an increasingly converged AV/IT environment – have been using Visionary's products as an alternative to conventional distribution systems.

Visionary's PacketAV® AV over IP products can be deployed on any industry standard IP network. They can be used on existing enterprise IP networks or a physically



separate parallel network [private network] to offload traffic, using the same network protocols, methods, and devices but without intermingling of video traffic with data or voice; with equal ease of installation.

### Features

#### Gigabit LAN Port for 4K UHD Video, Control, and Powered Device (PD)

- A single Ethernet port for AV over IP, KVM over IP, USB over IP and RS-232 over IP, and POE Power Input

#### HDMI loop-through (Encoder)

- HDMI loop-through: display any of the three locally connected sources

#### Independent Routing

- Independently route all signals with the ability to separately matrix video, audio, and USB.

#### Auto Video Scaler

- No need to worry about configuring the source resolution
- 4K in/1080P out, 1080P in/4K out

#### Dynamically Optimized (Adaptive) bit-rate compression CODEC w/ built-in AI

- Visionary's highly efficient video compression codec is a modified full frame encoding that dynamically optimizes for fine lines (computer generated graphics) or motion video by using sophisticated AI to analyze the input source content. Actively matching the level of compression to a scene by leveraging periods of low motion video content reduces the stream's size and enhances performance - enabling, without compromising image quality, Visually Lossless transmission of computer generated graphics or full-motion video sources.
- Adjustable Video Bitrate: (50 – 200 Mbps or Auto [800Mbps max])

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### Features cont.

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#### Enterprise applications demand a secure Network AV solution

- AES Stream Encryption - The Advanced Encryption Standard, or AES, is a worldwide standard and was adopted as the standard encryption algorithm by the U.S. government for encrypting classified information
- HTTPS Secure API - Using secure SSL/TLS communications HTTPS provides integrity that a client is communicating with the real API and receiving back authentic data.
- 802.1x Authentication for Network access control -
- SSH Network Protocol - SSH is a network protocol used to remotely access and manage a device through command line communications.

#### USB 2.0 over IP (KVM), RS-232 over IP, and CEC over IP

- Control practically any remotely located device using USB devices and interfaces
- Also supports KVM over IP
- Control any device with an RS-232 interface
- HDMI CEC signal extension over IP

#### KVM Multi Display Roaming

- Switch keyboard and mouse control automatically and seamlessly between PC's by moving the cursor across the boundaries of a display and 'roaming' to adjacently mapped displays.

#### Built in Video Wall Functions

- A Single platform to support distributed displays and Video Walls; without expensive video wall processors
- Enhanced Video Wall functionality – supports video rotation 180/270 degrees
- Easily create video walls using normal commodity displays
- Built-in video wall processor that allows you to build up to a 16x16 video wall

#### Dynamic OSD text overlay capabilities

- The ability to overlay dynamic or fixed text on screen enables displaying of alerts, announcements, special instructions, clocks / timers, schedules, and other messaging

#### Mass Configuration

- Auto Discover all endpoints on the network, export to .CSV file (all configurable parameters included), make changes offline, upload .CSV file through embedded web page of encoder/decoder and push configuration to the network
- No external software required – mass configuration capabilities built into the endpoint embedded webpage UI

#### LLDP Support

- Link Layer Discovery Protocol (LLDP) is a protocol used by network devices for advertising their identity, capabilities, and neighbors on a local area network based on IEEE 802 technology
- Allows for dynamic control of endpoints based on automatic discovery of physical location

#### QoS Support

- Quality of Service (QoS) is an advanced feature that prioritizes network traffic resulting in performance improvement for critical network traffic

#### Control

- Vision Lite Control Software
- 3rd Party Control Drivers [Crestron, QSC, Symetrix, RTI, etc.]
- \*API providing access to the full range of features on the encoders and decoders offered to qualified System Integrators

#### Seamless Fast Switching

- Tearing free, no black screen, no frame lock

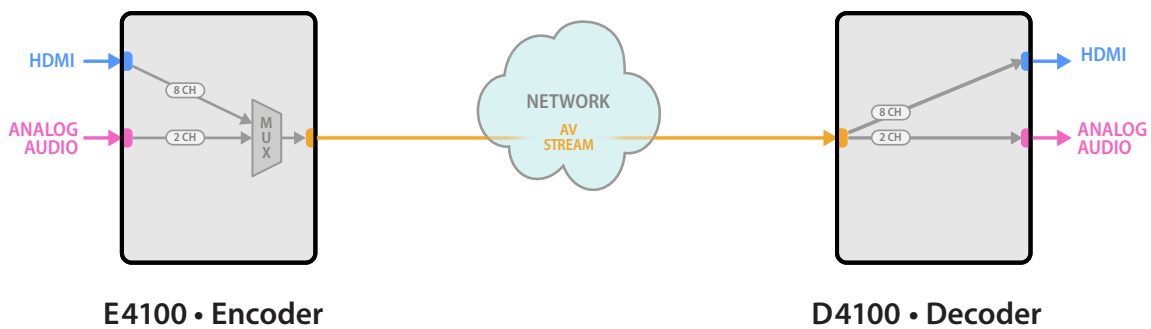
#### HDMI 2.0 and HDCP 2.2 Compliant

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### Benefits

- A single Gigabit LAN Port for PoE Power, 4K UHD Video, Audio, and Control
- Easy Control Integration
- Ultra-low Latency [ ~1 frame - visually lossless ]
- Low bitrates
- No fiber or 10 Gigabit switch required
- Low-Cost network switches are used
- Scalable / Unlimited Distribution
- Any number and combination of inputs/outputs [in increments of one]
- Standard network cabling [CAT5e/6]
- Utilize existing network resources
- Rapid deployment
- Single network for AV and IT
- Reduced operating costs

### Audio Workflow



VDC 5-12 LAN POE HDMI IN HDMI LOOP



PWR LINK RS-232 AUDIO INPUT USB



VDC 5-12 LAN POE HDMI OUT



PWR LINK RS-232 AUDIO OUT USB USB

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### Specifications

Encoding / Decoding	
Video Codec	JPEG2000 based visually lossless video compression algorithm
Audio Codec	LPCM
Bit Rates	50 to 800 Mbps
Latency	Ultra-low Latency (visually lossless video) 17ms @ 1080p60 & 4K60 4:2:0 33ms @ 4K30 4:4:4
Streaming Protocols	IP, UDP, TCP, ICMP, IGMP
Copy Protection	HDCP 2.2, AES-128 Encryption
Video	
Maximum Resolutions	High Dynamic Range (HDR) 4K60 4:2:0 HDR 8 bit 4K30 4:4:4 HDR 8 bit 1080p60 4:4:4 HDR 12 bit 1080p30 4:4:4 HDR 12 bit
Input Signal Types (Encoder)	HDMI (with Loop Out) capable of receiving source input video formats up to 4K60 4:2:0
Output Signal Types	Decoder: 1x HDMI capable of scaling and outputting video formats up to 4K30 4:4:4 Encoder: (HDMI Loop Out) capable of outputting video formats up to 4K60 4:4:4
Scaler (Decoder)	Supports a wide range of resolutions and rates, up to 4K in/1080P out, 1080P in/4K out, image rotation, and video wall up to 16x16 Integrated scaling helps optimize image quality and switching performance
Audio	
Input Signal Types	HDMI Audio, Analog Stereo Audio. • 1 analog stereo input, unbalanced or balanced • 1 digital input de-embedded from HDMI
Output Signal Types	HDMI Digital Audio (NLPCM pass-through), Analog Stereo Audio • 1 digital audio output via HDMI • 1 Analog Stereo Audio balanced output
Digital Formats	Dolby Digital®, Dolby Digital EX, Dolby Digital Plus, Dolby TrueHD, Dolby Atmos, DTS®, DTS-ES, DTS 96/24, DTS-HD High Res, DTS-HD Master Audio, DTS:X, LPCM up to 8 channels
Analog Formats	Stereo 2-channel
Analog-To-Digital Conversion	24-bit 48 kHz
Digital-To-Analog Conversion	24-bit 48 kHz
Analog Output Volume Adjustment	-80 to +20 dB

Communication & Control of External Devices	
Ethernet	Network connectivity for control and AV traffic
USB	USB 2.0 host or device signal extension and routing
Serial / RS-232	Bi-directional device control and monitoring
HDMI	HDCP 2.2, EDID (encoder), CEC (decoder)
Connectors	
LAN	8-pin RJ-45 connector, female; 100BASE-TX / 1000BASE-T Ethernet port / PD port POE (IEEE 802.3af or 802.3at),
HDMI INPUT	HDMI Type A connector, female; HDMI digital video/audio inputs
HDMI Outputs (Encoder loop-through & Decoder output)	HDMI Type A connector, female; HDMI digital video/audio inputs
4 pin Euroblock 3.81mm pitch connector	Encoder Stereo Unbalanced Analog Audio Input Decoder Stereo Unbalanced Analog Audio Output
5 pin Euroblock 3.81mm pitch connector	RS-232 over IP
USB Host (Decoder)	(2) USB Type-A connector, female; USB 2.0 host port; USB signal extender port for connection to a mouse, keyboard, or other USB 2.0 device
USB Device (Encoder)	(1) USB Type-B connector, female; USB 2.0 device port; USB signal extender port for connection to a computer or other USB 2.0 host
Power	
Power Consumption	12 W maximum
Environmental	
Cooling	Convection / no fan ( no moving parts )
Temperature	32° to 104° F (0° to 40° C)
Humidity	10% to 90% RH (non-condensing)
Heat Dissipation	41 BTU/hr
Acoustic Noise	0 dBA
Form Factor	
Dimensions	Height: 1.15 in. (29.3 mm) Width: 5.75 in. (146 mm) Depth: 5.37 in. (136.4 mm)
Weight	1.0 lb (0.45 kg)
Compliance	
	CE, FCC, C-tick, RoHS, WEEE

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**Dimensions**

