

PlexusAV

P-AVN-4E IPMX Encoder



OVERVIEW

The P-AVN-4E IPMX Encoder is a versatile, high-performance AV-over-IP device capable of encoding HDMI or USB-C video signals using JPEG-XS for ultra low-latency transport. Built to support open standards like IPMX, the P-AVN-4E integrates seamlessly into existing and future AV networks. It delivers high-quality, ultra low-latency video using JPEG-XS for bandwidth-efficient workflows. The P-AVN-4E can also carry peripheral signals across the network, including USB for KVM, balanced analog audio, AES67, and RS-232 control. Dante stereo audio support is available with an optional license.

WHY CHOOSE THE P-AVN-4E IPMX ENCODER?

- **IPMX-Based Open Standards:** Built on IPMX protocols for future-proof AV-over-IP deployment.
- **Flexible Video Support:** Up to 4K60 with JPEG-XS for ultra low-latency, high-quality video.
- **Multiple Network Ports:** Two gigabit network ports for installation into traditional ethernet and PoE+ network environments.
- **Advanced Audio Integration:** Linear PCM, AES67 (as defined in VSF TR-10-3), and audio passthrough ensures professional-grade audio quality.
- **Compact Form Factor:** Small and easy to install, fits into any AV environment without compromise.
- **Easy-to-use Interface and Advanced API:** The P-AVN-4E user interface has been designed for quick deployment and ease-of-use. With its advanced API, the P-AVN-4E can be controlled and managed by the PlexusAV Visual Array or integrate into existing network management systems using REST API.

APPLICATIONS



EDUCATIONAL & CORPORATE AV

Perfect for large campuses, meeting rooms, and lecture halls requiring seamless AV distribution.



DIGITAL SIGNAGE

Distribute video across multiple screens in retail, transportation, or large venues.



LIVE PRODUCTION

Ensure smooth, ultra low-latency video transmission for on site applications.



VIRTUAL MATRIX SWITCHING

Ideal for easily switching and distributing video content over 1Gbps networks.



BROADCAST & PRODUCTION

Take advantage of JPEG-XS common payloads over different protocols.

KEY FEATURES

FLEXIBLE NETWORK CONNECTIVITY

- **1Gbps Ultra Low-Latency:** Experience high-quality JPEG-XS compression.
- **PoE+ Support:** Simplify your setup with Power over Ethernet for power delivery and network connectivity through a single cable.

VERSATILE INPUT/OUTPUT OPTIONS

- **HDMI & USB-C:** Seamlessly connect a variety of video sources, including HDMI 2.1 with HDCP 2.3 and USB-C with DisplayPort.
- **Analog & Digital Audio Codec Support:** Supports professional grade balanced analog audio, audio passthrough, AES67 (as defined in VSF TR-10-3), and Linear PCM.

CODEC SUPPORT

- **JPEG-XS:** Ultra low-latency encoding for real-time workflows and IPMX applications.
- **JPEG-XS with FIP/TDC Profile:** Perfect for applications requiring high-quality, low-latency video like live production, e-sports, and broadcast.

COMPACT DESIGN

- **Small Form Factor:** The P-AVN-4E form factor makes it flexible enough to mount behind a TV, in a control room environment or in our 1RU, 4RU, and wall-mount accessories.



P-AVN-4E IPMX Encoder Specifications



REAR PANEL PORTS

HDMI and USB Interfaces:

HDMI Input (1):	Type-A Female, HDMI 2.1/1.4b Content Protection - up to HDCP 2.3 EDID Control - Auto, Presets or Manual
HDMI Loop Out (2):	Type-A Female, HDMI 2.1, 1.4b Content Protection - Up to HDCP 2.3 Follow Input
USB-C (3):	Single USB 3.0 (Video, DisplayPort Alt Mode)

Analog Audio Input Support:

Connector:	5-Pin Phoenix
Channels:	Stereo Pair, Balanced, or Unbalanced
Volume Adjust:	Slider in web-interface (+/- volume)
Pinouts:	Printed on chassis silk screen

Serial Communication:

Connector:	5-Pin Phoenix
Protocol:	RS-232 "Serial"
Pinouts:	Printed on chassis silk screen

Network Interfaces:

Ethernet 1:	RJ-45/PoE+ (100/1000 Auto-Negotiating)
Ethernet 2:	RJ-45 (100/1000 Auto-Negotiating)
Cable Type:	CAT6 or CAT6A shielded cable recommended

Power Port:

Power Specifications:	12V/3A DC
Polarity:	Center-Positive

FRONT PANEL PORTS

ID Button:

ID Push Button:	One-Click
ID Light:	When ID mode is on, LED is lit and HDMI output shows system information

Factory Reset:

Press and hold recessed button for 10 seconds

IPMX SUPPORT

Technical Standards:

TR-10-1:	System Timing and Definitions
TR-10-3:	PCM Digital Audio
TR-10-5:	HDCP Key Exchange Protocol*
TR-10-8:	NMOS Requirements
TR-10-9:	Requirements for System Environment and Device Behavior
TR-10-11:	Constant Bitrate Compressed Video
TR-10-12:	AES3 Transparent Transport

VIDEO SCALING

Encoder Video Scaling:	Upscale (up to 3840x2160)
Aspect Ratio Adjustment:	Maintain Aspect Ratio (no change) Stretch (fill screen)

AUDIO SUPPORT

Audio Signal Type:	Linear PCM, AES67 (as defined in VSF TR-10-3), and Pass-Through
AAC Bitrate Range:	96/112/128/160/192/224/256 Kbps
Sample Rate:	32/44.1/48/96/192/384 kHz

VIDEO AND AUDIO SPECIFICATIONS

Bitrate Range:	200-800Mbps
Dynamic Range:	HDR10 Pass-Through SDR (Standard Dynamic Range)
Color Formats:	
HDMI Input:	8/10/12-bit, RGB/YUV 4:4:4, YUV 4:2:0 / 4:2:2 (<18 Gbps)
IPMX JPEG-XS Stream:	8/10-bit, RGB/YUV 4:4:4 8/10-bit, YUV 4:2:2
HDMI Output:	8-bit, RGB/YUV 4:4:4 8/10-bit, YUV 4:2:0, 12-bit, YUV 4:2:2
Color Gamut:	BT.2020, BT.709, BT.601
Codec Support:	
Video Codecs:	JPEG-XS
Audio Codecs:	PCM
IPMX Stream Output:	
Auto:	Follow Input

HDMI Output Formats:

3840x2160P @ 60, 50, 30, 25fps
1920x1080P @ 60, 50, 30, 25fps
1280x720P @ 60, 50fps

Video Input Formats:

HDMI IN/USB-C:	4096x2160P @ 60, 59.94, 50, 30, 29.97, 25fps
	3840x2160P @ 60, 59.94, 50, 30, 29.97, 25fps
	1920x1080P @ 60, 59.94, 50, 30, 29.97, 25fps
	1280x720P @ 60, 59.94, 50, 30, 29.97, 25fps
	720x576P @ 60, 59.94, 50, 30, 29.97, 25fps
	2560x1600P @ 60fps
	2560x1440P @ 60fps
	2560x1080P @ 60fps
	2160x1440P @ 60fps
	1920x1200P @ 60fps
	1680x1050P @ 60fps
	1600x1200P @ 60fps
	1440x900P @ 60fps
	1280x1024P @ 60fps
	1024x768P @ 60fps
	800x600P @ 60fps
	640x480P @ 60fps

MANAGEMENT AND CONTROL

Web Interface:	Browser-based HTTPS Web-UI and Control
HTTPS API:	REST API, GraphQL
NMOS Support:	IS-04, IS-05, IS-11* BCP-003
LED Indicators:	(1) Power (2) Status (3) Stream (4) HDMI-IN (5) USB (6) HDCP

DIMENSIONS AND POWER

Size:	162mm x 143mm x 26mm (6.37" x 5.63" x 1.02")
Weight:	1.3 lbs (0.6kg)
PoE+:	IEEE 802.3at Type 2 Class 4 compliant
External:	12V DC/3A (optional, sold separately) See Power Accessories

Power Consumption (Operational Mode): 15W Typical

Power Consumption (Eco Mode) FW 1.4: 11.4W

ENVIRONMENTAL CONDITIONS

Operating Temperature:	-13° to 113° F (-25° to 45° C)
Storage Temperature:	-40° to 113° F (-40° to 45° C)
Operating Humidity:	Less than 95% (non-condensing)
Acoustic Noise:	33 dBA (normal operation)

DANTE AUDIO (OPTIONAL)

Dante Stereo License Option:	1x Input + 1x Output
Dante Features:	Dante Controller Detects P-AVN-4E Dante Stereo PCM Support 1x Dante Stereo IP Input 1x Dante Stereo IP Output

MOUNTING ACCESSORIES

P-AVN-M-1RU:	3x P-AVN-4E 1RU Rackmount Kit Frame
P-AVN-M-4RU -KIT:	14x P-AVN-4E 4RU Rackmount Kit Frame

POWER ACCESSORIES

P-AVN-PSU-TYPE-A-US:	Type A Power Supply
P-AVN-PSU-TYPE-C-EU:	Type C Power Supply
P-AVN-PSU-TYPE-G-UK:	Type G Power Supply
P-AVN-PSU-TYPE-I-AUS:	Type I Power Supply

FUTURE FEATURES (PLANNED UPDATES)

(*) indicates a future feature option.

WARRANTY

3-year warranty: The P-AVN-4E comes standard with a 3-year limited warranty.

For additional details reach out at <https://plexusav.com/contact-us/>

