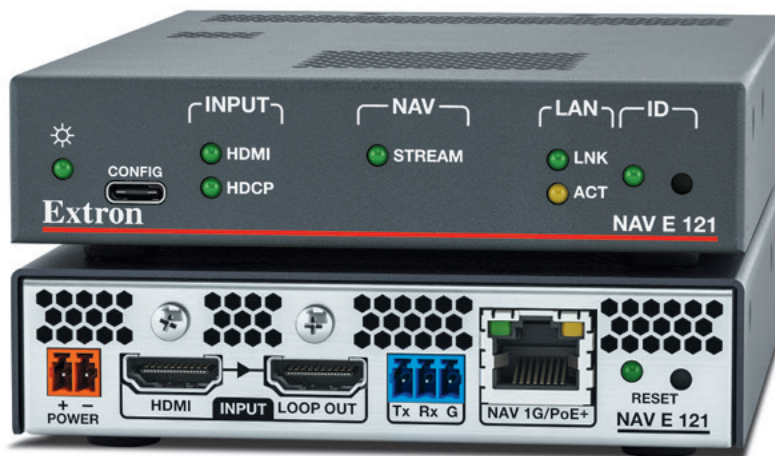# NAV E 121

1G COMPACT PRO AV OVER IP ENCODER FOR HDMI

The **NAV E 121** is a compact Pro AV over IP encoder that streams ultra-low latency, high-quality HDMI video and audio over a standard 1 Gbps copper Ethernet interface. Using the Extron patented PURE3® codec, the NAV® Series delivers groundbreaking performance with real-time, lossless video at resolutions up to 4K @ 60 Hz with 4:4:4 chroma sampling. The NAV E 121 includes a loop-thru for local monitoring. Support for embedded digital HDMI and AES67 audio over IP facilitates flexible integration with DMP Plus DSPs or other IP-enabled audio components. Purpose-built to support demanding professional AV applications, the highly scalable and powerful NAV platform enables secure deployment of AV signals to thousands of endpoints.

▸ Compact and economical HDMI video and audio encoding, distribution, and switching over 1 Gbps

▸ HDMI 2.0 input and loop-thru at resolutions up to 4K/60 with 4:4:4 chroma

▸ Extron-patented PURE3® codec capable of lossless 4K/60 4:4:4 video with ultra-low latency

▸ PURE3 error concealment delivers high immunity to network errors without adding latency

▸ Confidence Preview of the encoder video is available in either the endpoint or NAVigator browser interface

▸ Configurable Power Priority selects PoE or line power priority for power management and redundancy
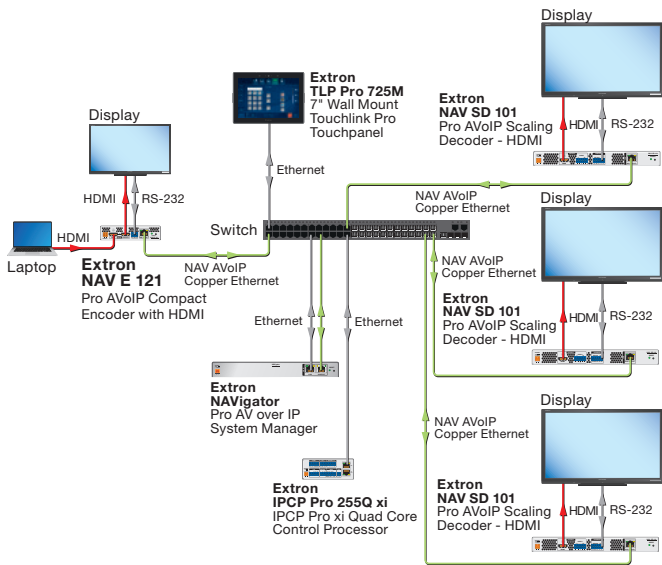
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DESCRIPTION

The **NAV E 121** is a compact 1 Gbps Pro AV over IP encoder that utilizes Extron's patented PURE3® codec to deliver groundbreaking performance with real time, visually lossless video at resolutions up to 4K @ 60 Hz with 4:4:4 chroma sampling and ultra-low latency. Adjustable bitrates facilitate transmission over 1 Gbps networks and compatibility with NAV 1 Gbps copper Ethernet scaling decoders. Support for HDMI and AES67 audio over IP facilitate flexible integration with Extron DSPs or other IP-enabled audio components.

KEY FEATURES

▸ Streams video, audio, over standard copper Gigabit Ethernet and IP networks

▸ Compact packaging enables four encoders on a single 1U RSB 126 shelf mount

▸ HDMI 2.0 input and loop-thru at resolutions up to 4K/60 @ 4:4:4 chroma sampling

▸ PURE3 Codec capable of lossless video and ultra-low latency

▸ PURE3 ISS - Intelligent Selective Streaming delivers efficient bitrates

▸ FIPS 140-2 verified for protection of sensitive data

▸ RTP - Secure Real Time Transport Protocol for enhanced security with encrypted streaming

▸ 802.1X port-based Network Access Control

APPLICATION DIAGRAM

SPECIFICATIONS

TRUE 4K SPECIFICATION

Max 4K Capabilities		
Resolution and Refresh Rate	**Chroma Sampling**	**Max Bit Depth per Color**
4096 x 2160 at 60 Hz 3840 x 2160 at 60 Hz 4096 x 2160 at 30 Hz 3840 x 2160 at 30 Hz	4:4:4	8 bit
		10 bit
4096 x 2160 at 60 Hz 3840 x 2160 at 60 Hz	4:2:0	

Frame rate	24, 25, 30, 50, or 60 fps
Chroma sampling	4:4:4, 4:2:2, or 4:2:0
Color bit depth	8 or 10 bits per color
Signal Type	DVI v 1.0, HDMI v1.4 and v2.0, HDCP v1.4 and v2.3
Max. video data rate	18 Gbps (6 Gbps per color)

VIDEO INPUT AND LOOP THROUGH

Connectors	2 female HDMI type A: 1 for input, 1 for loop through

VIDEO PROCESSING

Digital sampling	8 or 10 bits per color; 600 MHz pixel clock maximum
Compression	PURE3®
Bit rate	250 Mbps to 900 Mbps
Latency	<1 frame (encode/decode)**

NOTE: **Indicates minimum latency. Network and video processing dependencies apply.

AUDIO OUTPUT STREAM

Number/signal type	1 audio over IP LPCM 1 audio over IP AES67

NETWORK INTERCONNECTION (NAV)

Ethernet standards	1GbE (802.3ab), 10/100/1000 Base-T, half/full duplex with autodetect
Protocols	
Streaming	SRTP (AES-128) on video and audio
Transport	Multicast UDP
All supported	DHCP, HTTPS, IGMPv2/v3, IPv4, LLDP, PTPv2, QoS, SSH, TCP, UDP
Security	AES-256, 802.1X, Active Directory authentication
Signal transmission distance	330' (100 m) using CAT 5e/6/6a/7 cables

GENERAL

Power consumption	
PoE	Complies with IEEE 802.3at Type 2 (PoE+), class 4
Enclosure	1.00" H x 4.3" W x 6.00" D* (1" high, quarter-rack wide) (25 mm H x 109 mm W x 152 mm D*) (Depth excludes connectors)
Regulatory compliance	CE, c-UL, UL, C-tick, FCC Class A, ICES, VCCI, Complies with the appropriate requirements of RoHS, WEEE
Product warranty	3 years parts and labor

Model	Version Description	Part number
NAV E 121	1G Pro AV over IP Compact Encoder - HDMI	60-2040-01

For complete specifications, please go to www.extron.com
Specifications are subject to change without notice.

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