

# NAV E 511

1G FIBER PRO AV OVER IP ENCODER FOR  
HDMI, USB, AND ETHERNET



The **NAV E 511** is a Pro AV over IP encoder that streams ultra-low latency, high quality video, audio, USB, and Ethernet over a 1 Gbps Optical Ethernet interface. The NAV® System is the only solution that offers both 1 and 10 Gbps encoders and decoders with full interoperability across both systems. The NAV E 511 is ideal for educational spaces, board rooms, conference rooms, corporate training rooms, and mission critical applications that require live, high quality, ultra-low latency video. Purpose-built to support demanding professional AV applications, the highly scalable and powerful NAV platform enables secure deployment of AV signals from one to thousands of endpoints.

- ▶ Visually lossless video, audio, USB, and Ethernet streaming over standard Gigabit Fiber Ethernet interface and IP networks
- ▶ Supports HDMI 2.0 at resolutions up to 4K/60 @ 4:4:4
- ▶ Ultra-low latency, high quality encoding using the patented Extron PURE3® codec
- ▶ AES67 audio over IP support enables integration with Extron DSPs or other IP-enabled audio components
- ▶ USB 2.0 extension over the NAV network interface
- ▶ Ethernet expansion over the NAV network interface
- ▶ Seamless interoperability with 1 and 10 Gbps NAV decoders for flexible system design
- ▶ FIPS 140-2 verified for protection of sensitive data
- ▶ SRTP - Secure Real Time Transport Protocol for enhanced security with encrypted streaming

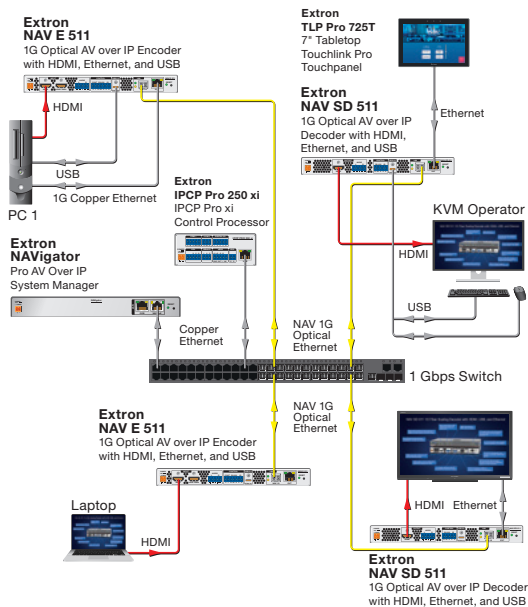
## DESCRIPTION

The **NAV E 511** is a 1 Gbps fiber 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 with ultra-low latency. Adjustable bitrates facilitate transmission over 1 Gbps networks and compatibility with NAV 1 and 10 Gbps endpoints. Support for analog and embedded digital HDMI audio and AES67 audio over IP facilitate flexible integration with Extron DSPs or other IP-enabled audio components.

## KEY FEATURES

- ▶ Streams video, audio, USB and Ethernet over standard Gigabit Ethernet Fiber interface and IP networks
- ▶ HDMI 2.0 input and loop-thru at resolutions up to 4K/60 @ 4:4:4 chroma sampling
- ▶ PURE3 Codec provides lossless video and ultra-low latency
- ▶ PURE3 ISS - Intelligent Selective Streaming delivers efficient bitrates
- ▶ Compatible with 1 and 10 Gbps NAV decoders
- ▶ Ultra-low latency with visually lossless video encoding
- ▶ HDCP 2.3 compliant
- ▶ Standard single or multimode fiber with LC connectors for robust, reliable transmission with high noise immunity
- ▶ 802.1X port-based Network Access Control
- ▶ Microsoft® Active Directory® integration for user management

## 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
4096 x 2160 at 60 Hz 3840 x 2160 at 60 Hz	4:2:0	12 bit

Frame rate <sup>2</sup>	24, 25, 30, 50, or 60 fps
Chroma sampling <sup>2</sup>	4:4:4, 4:2:2, or 4:2:0
Color bit depth <sup>2</sup>	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)
<b>NOTE:</b> <sup>1</sup> 4096 x 2160 @ 50-60 Hz is available only for HDMI connectors.	
<b>NOTE:</b> <sup>2</sup> Subject to the maximum data rate limit. Use our calculator at <a href="http://www.extron.com/8Kdata">www.extron.com/8Kdata</a> to determine video parameters supported by this data rate.	

### 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	150 Mbps to 900 Mbps
Latency	<1 frame (encode/decode)**
<b>NOTE:</b> **Indicates minimum latency. Network and video processing dependencies apply.	

### AUDIO OUTPUT STREAM

Number/signal type	1 audio over IP LPCM 1 audio over IP AES 67*
--------------------	---

### NETWORK INTERCONNECTION (NAV)

Ethernet standards	1GbE (802.3z), 1000 Base-LX (SFP) SM, 1000 Base-SX (SFP) MM
Protocols	SRTP (AES-128) on video and audio Multicast UDP DHCP, HTTPS, IGMPv2/v3, IPv4, PTPv2, QoS, SSH, TCP, UDP

### GENERAL

Power supply	External Input: 100-240 VAC, 50-60 Hz
Enclosure	1.00" H x 8.75" W x 6.00" D (half rack wide) (25 mm H x 222 mm W x 152 mm D)
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
Everlast power supply warranty	7 years parts and labor

Model	Version Description	Part number
NAV E 111	1G Fiber Pro AV over IP Encoder HDMI SM	60-1958-02
NAV SD 111	1G Fiber Pro AV over IP Scaling Decoder HDMI MM	60-1958-03

For complete specifications, please go to [www.extron.com](http://www.extron.com)  
Specifications are subject to change without notice.

### WORLDWIDE SALES OFFICES

Anaheim • Raleigh • Silicon Valley • Dallas • New York • Washington, DC • Toronto • Mexico City  
Paris • London • Frankfurt • Stockholm • Amersfoort • Moscow • Dubai • Tel Aviv • Sydney • Melbourne  
Bangalore • Mumbai • New Delhi • Singapore • Seoul • Shanghai • Beijing • Hong Kong • Tokyo

[www.extron.com](http://www.extron.com)