NAV Series

PRO AV OVER IP SYSTEMS

Pixel Perfect Video
Ultra-Low Latency
Low Bit Rates

- High quality streaming of video, audio, Ethernet, and USB 2.0 over a standard Ethernet infrastructure
- Supports HDMI 2.0 up to 4K/60 @ 4:4:4
- Ultra-low latency with visually lossless compression using the patented Extron PURE3 codec
- PURE3 Intelligent Selective Streaming achieves low bit rates with low motion content while maintaining visually lossless performance
- 1 Gbps and 10 Gbps encoders and decoders with full interoperability
- Supports the AES67 audio over IP standard, providing interoperability with Extron and third party audio DSP processors
- Enhanced security with SRTP - Secure Real Time Transport Protocol
- 802.1x port-based Network Access Control for device authentication
- Microsoft® Active Directory integration for user management

NAV
PRO AVoIP

PURE3 VECTOR 4K SCALING 18 Gbps 4K/60 4:4:4

Extron

Introduction

NAV™ is the no-compromise Pro AV over IP solution for distribution and switching of ultra-low latency, high quality video, audio, and USB 2.0 signals over an Ethernet network at low bitrates. Utilizing Extron's patented PURE3® codec, it delivers 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. PURE3's Intelligent Selective Streaming - ISS - leverages low motion content to achieve low bitrates while maintaining visually lossless performance. The NAV platform is the only solution that offers both 1 Gbps and 10 Gbps encoders and decoders while providing full interoperability across both systems. NAV can be deployed as a high-performance IP-based video and audio matrix, combining the flexibility of an IP-based system with the integration-friendly video and audio switching features found in conventional Extron matrix switchers. The optional NAVigator System Manager features a user-friendly interface for centralized management and control of any NAV system, facilitating easy setup and configuration, plus extensive features for monitoring, diagnostics, and troubleshooting.

Full Interoperability Over 1G and 10G Infrastructures

NAV leverages the PURE3 codec to stream video from 1 Gbps encoders to 10 Gbps decoders, or reduce bitrates from 10 Gbps encoders so that streams can be readily decoded by 1 Gbps decoders. This flexibility ensures reliable delivery of superior quality video with ultra-low latency across your entire enterprise.

HDCP 2.2

NAV systems are fully compliant with HDCP 2.2 for transmission of UHD content encrypted with the HDCP standard. They also feature Extron Key Minder® to enhance and simplify integration of HDMI-equipped devices. For HDMI signals with protected content, Key Minder authenticates and maintains continuous HDCP encryption to support quick and reliable transmission across a network infrastructure. If HDCP-encrypted content is streamed to a non-compliant display, the receiver sends a green signal for immediate visual feedback that protected content cannot be viewed.

AES67 Support

The NAV platform supports the AES67 standard for transmission of audio over IP networks, facilitating integration with Extron DMP 128 Plus audio DSP processors or other IP-enabled audio components. The AES67 standard enables interoperability between the predominant network audio over IP products in use today. This audio over IP standard enables AV integrators to more easily add audio networking technology into a variety of applications, ensuring flexibility in the distribution of audio signals.

Quick and Reliable Switching

NAV systems are not limited to video extension and distribution. Multiple encoders and decoders can be deployed together to create an IP-based video and audio matrix. NAV Pro AV over IP solutions provide the flexibility of an IP-based system, with the integration-friendly switching features found in conventional Extron matrix switchers, such as Key Minder, EDID Minder®, and USB and audio breakaway. Small IP switching systems with multiple endpoints can be controlled using an Extron Pro Series control system. In larger deployments, the NAVigator System Manager enhances matrix switching capabilities, featuring advanced control and enterprise-level system monitoring.

PURE3 Codec

Most codecs make compromises in either image quality, bandwidth requirements, or latency. Extron's no-compromise PURE3® codec with ISS - Intelligent Selective Streaming, offers the best of all three with its groundbreaking simultaneous delivery of high quality, low bitrate, and ultra-low latency.

NAV systems utilize PURE3, the patented, highly efficient wavelet-based compression technology that exceeds the performance characteristics found in standards-based compression systems. With virtually no latency, encoded video signals are processed with 4:4:4 color quantization, while maintaining original source quality and native resolution.

PURE3's exclusive ISS - Intelligent Selective Streaming technology leverages periods of low motion in streamed content to achieve efficient bit rates while maintaining visually lossless performance. This significantly reduces bandwidth requirements, bringing increased scalability to PURE3 deployments.

The PURE3 codec also features advanced error concealment, providing high immunity to network errors such as bit errors, jitter, and out-of-order or dropped data packets. PURE3 error concealment provides robust picture delivery without the increased latency or bandwidth typically introduced by forward error correction – FEC systems.

Ultra-Low Latency

Visually Lossless

4: 4: 4 Chroma Sampling

Efficient Bitrates

Error Concealment

Easy Setup and Configuration

NAV systems feature a built-in, user-friendly web interface for easy access to network settings, bitrate adjustments, and other parameters from a standard web browser. In addition to the web interface, NAV systems support configuration from Extron PCS – Product Configuration Software.

System Monitoring and Control

The optional NAVigator System Manager turns any NAV system into a powerful and flexible IP-based matrix solution. NAVigator is a purpose-built hardware appliance with a user-friendly interface for centralized management and control of large NAV deployments. It facilitates easy setup, configuration, and quick switching, and includes extensive features for monitoring, diagnostics, and troubleshooting. NAVigator also facilitates bulk firmware upgrades and simultaneous configuration, backup, and restoration of multiple units from a single access point. In addition, NAVigator integrates with Extron Pro Series control processors for secure and user-friendly external control.

Robust Security

NAV endpoints support **802.1x** port-based Network Access Control. When applied, 802.1x authentication requires that all devices are approved before network access is granted. In addition, support for Microsoft® **Active Directory** simplifies user management and group authentication, and **SRTP** - Secure Real-Time Transport Protocol ensures encryption, message authentication, and data integrity of video and data streams. When used with the optional NAVigator System Manager, all communication between the manager and endpoints is encrypted with **SSH** – Secure Shell protocol. In addition, due to the nature of fiber optic transmission, NAV 10 G systems are inherently immune to electromagnetic and radio frequency interference, making them ideal for highly sensitive, secure environments. To further enhance security, Extron Pro Series control systems feature a **Secure Platform Interface** that encrypts all commands from control processor to endpoint.

Scalability

The flexible nature of Ethernet networks makes NAV systems highly scalable and easily expandable to grow with any organization. Coupled with the efficiency of the PURE3 codec, NAV delivers unrivaled video quality at low bitrates, meaning it doesn't require the extreme uplink bandwidth required by other AV over IP systems when connecting multiple switches. All these features make NAV the most scalable system in the market.

Features

Streams AV signals over Ethernet networks
Standard Ethernet streaming supports flexible system design and transmission over large distances to any location.

Supports HDMI 2.0 at video resolutions up to 4K/60 @ 4:4:4
HDMI up to 4K @ 60Hz (4096 x 2160) with full 4:4:4 chroma sampling ensures accurate reproduction of source images with no loss of detail.

PURE3® Codec
Extron's patented wavelet-based compression technology that delivers high image quality with very low-latency at efficient bit rates. With its high immunity to network errors and built-in error concealment, PURE3 facilitates reliable, real-time delivery of visually lossless video over IP networks.

PURE3 Intelligent Selective Streaming
Achieves low bit rates with low motion content while maintaining visually lossless performance.

Full 1G and 10G interoperability
Features seamless, full interoperability between 1 Gbps and 10 Gbps endpoints for flexible system design across the entire enterprise.

Ultra-low latency with high quality video
Streams professional-grade video with ultra-low latency using Extron's unique wavelet-based PURE3® codec, guaranteeing exceptional user experience and accurate reproduction of detail.

AES67 audio support
Supports AES67 audio over IP standard, providing interoperability with Extron and third party audio DSP processors.

Quick and reliable switching
Multiple encoders and decoders can be deployed together to create an IP-based video and audio matrix, combining the flexibility of an IP-based system with the switching performance and integration-friendly features found in conventional matrix switchers.

NAVigator System Manager
Optional hardware appliance for secure, centralized management and control of NAV systems. NAVigator offers bulk setup and configuration as well as easy switching, and extensive features for monitoring, diagnostics, and troubleshooting.

HDCP 2.2 compliant
Ensures display of content-protected media and interoperability with other HDCP-compliant devices.

USB 2.0 extension
Built-in USB 2.0 extension facilitates connection to peripheral USB devices over the same cable as video and audio. Ideal for KVM applications or remote connectivity for USB cameras or storage devices.

Ethernet expansion
Built-in Ethernet expansion facilitates connection to peripheral Ethernet-enabled devices over the same cable as video and audio. Saves on cabling cost in installations with any remote devices requiring LAN connectivity.

Power over Ethernet
PoE+ compatible encoder and decoder end points can be powered over the Ethernet cable, eliminating the need for bulky local power supplies.

Audio breakaway enables independent audio and video switching
Provides capability to break away an audio signal from its corresponding video signal.

Adjustable bit rate
Select bit rates while maintaining image quality for a more flexible network configuration that easily adapts to different application requirements. A non-blocking solution is available to accommodate even very large installations.

Error concealment
Offers high immunity to network errors, ensuring reliable transmission of high quality imagery with the ability to conceal errors even during incidents of heavy packet loss.

Advanced Extron Vector™ 4K scaling technology
Vector 4K scaling ensures critical-quality 4K imagery, with best in class image upscaling and downscaling, enhanced color accuracy, and picture detail.

HDMI loop-through
Local HDMI output provides signal for a local display, an AV system, or a hardware codec, enabling monitoring or sharing of content without the need for a separate distribution amplifier.

Embedded web interface
Intuitive, user-friendly embedded web interface simplifies device configuration, setup, and system operation.

EDID Minder® automatically manages EDID communication between connected devices
Ensures that all sources power up properly and reliably output content for display.

Key Minder® continuously verifies HDCP compliance for quick, reliable switching
Key Minder authenticates and maintains continuous HDCP encryption between input and output devices to ensure quick and reliable switching in professional AV environments, while enabling simultaneous distribution of a single source signal to one or more displays.

HDCP Visual Confirmation
When HDCP-encrypted content is transmitted to a non-HDCP compliant display, a full-screen green signal is sent to the display for immediate visual confirmation that protected content cannot be viewed on that display.

Supports analog audio and embedded HDMI audio signals
Directly interfaces with common AV signals for compatibility with most audio devices.

Compatible with Show Me cables
Show Me cables and Retractors provide convenient connectivity, user input selection, and control of AV systems.

Pro Series control ports
Designed to integrate directly with Extron Pro Series control systems for secure, encrypted RS-232 and IR control of external devices without the need for additional control processors.

Secure Platform Interface
Working natively with NAV Systems, Extron Pro Series control systems offer flexible system management and matrix switching control via a Secure Platform Interface that encrypts all commands from control processor to endpoint.

Multicast filtering with IGMPv3
Supports multicast filtering with IGMPv3 for lower bandwidth consumption. Enables use of standard network equipment.

One-button endpoint identification
Identify endpoints with an ID button and indicator for quick discovery of units on a network, simplifying diagnostics and installation.

Overview

ENCODER

Convenient access for configuration
Mini USB port provides easy access for configuration changes and updates

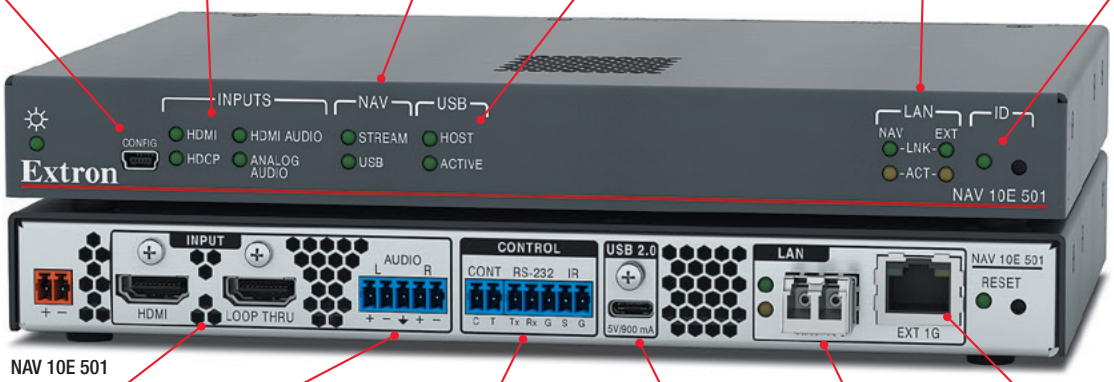
Monitor input signals
Input status LEDs enable convenient of HDMI and audio inputs, and HDCP status

Verify status of streams
NAV status LEDs show presence of AV and USB streams

Confirm USB status
USB status LEDs show status and mode of USB connection

Monitor network connectivity
LAN status LEDs show status of streaming link and Ethernet expansion link

Quickly identify unit on the network
ID LED and button helps to quickly identify units on the network



NAV 10E 501

Accepts video with resolutions up to 4K/60
HDMI input and loop-through supports 4K/60 with 4:4:4 chroma sampling

Separate analog audio input
5-pole captive screw provides balanced or unbalanced analog audio input

Control remote devices
Pro Series control port enables remote RS-232 and IR remote port access.

USB connectivity for KVM applications
USB-C port for USB 2.0 connection of peripheral devices

Stream over standard 10 Gbps networks
Industry standard singlemode or multimode LC connector for streaming and management

Expand Ethernet connectivity to remote locations
RJ-45 1 Gbps Ethernet expansion port enables connectivity to remote LAN devices

DECODER

Convenient access for configuration
Mini USB port provides easy access for configuration changes and updates

Monitor output signals
Output status LEDs enables convenient verification of HDMI and audio outputs, and HDCP status

Check active audio output
Audio status LEDs designates active audio signal presence

Confirm USB status
USB status LEDs shows status and mode of USB connection

Monitor network connectivity
LAN status LEDs show status of streaming link and Ethernet expansion link

Quickly identify unit on the network
ID LED and button helps to quickly identify units on the network

NAV 10SD 501

Scale and output video with resolutions up to 4K/60
HDMI output supports 4K/60 and 4:4:4 chroma sampling and scaling

Extract analog audio
5-pole captive screw provides balanced or unbalanced analog audio output

Control remote devices
Pro Series control port enables remote RS-232 and IR remote port access

USB connectivity for KVM applications
USB-C port for USB 2.0 connection of peripheral devices

Stream over standard 10 Gbps networks
Industry standard singlemode or multimode LC fiber connector for streaming and management

Expand Ethernet connectivity to remote locations
RJ-45 1 Gbps Ethernet expansion port enables connectivity to remote LAN devices

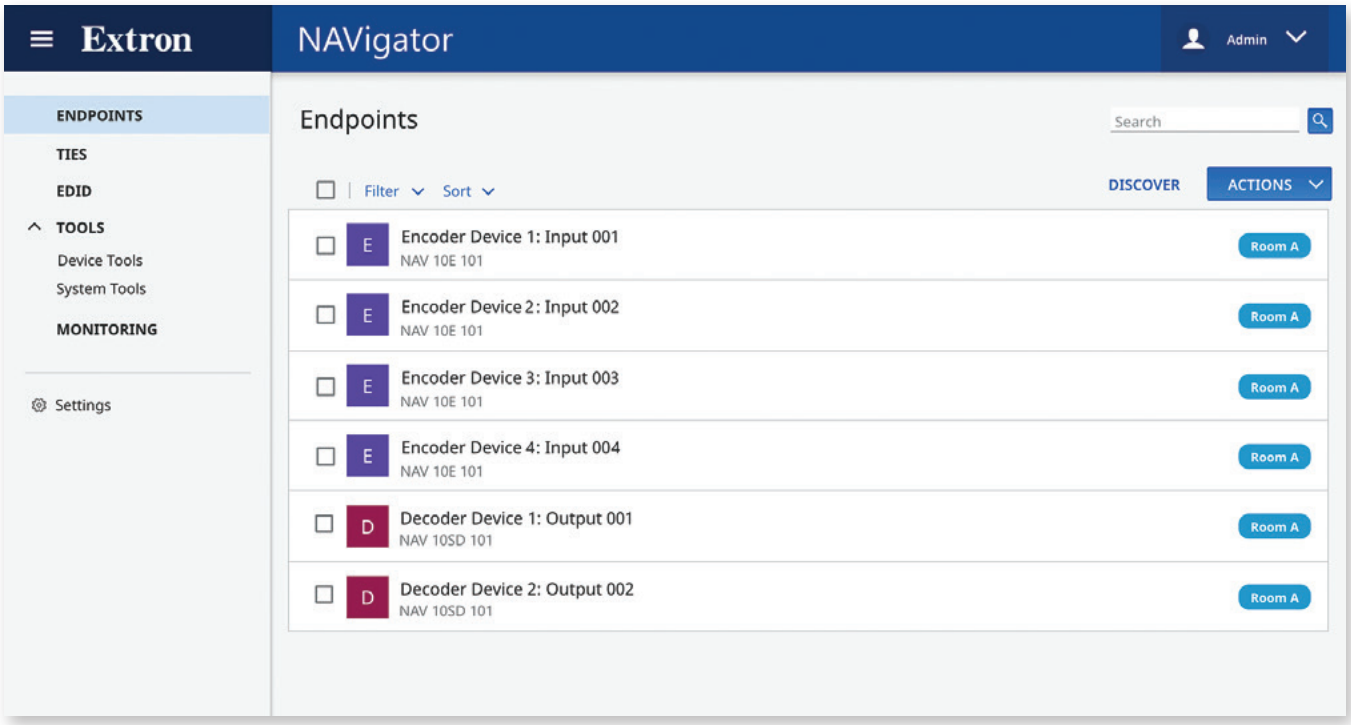
Configuration and Centralized Management

NAVIGATOR

In larger AV systems, ease of use and effective monitoring and reporting tools are key to successful deployment. Manual configuration of every endpoint is inefficient and without the right tools, troubleshooting problems can be a labor-intensive process. Created specifically for the Pro AV integrator, NAVigator System Manager is a hardware appliance with intuitive configuration, monitoring, and reporting tools that make it easy to manage and control your NAV system.

NAVigator features a web-based interface for centralized management and control. Integrators familiar with traditional Extron matrix switchers will find it easy to implement Pro AV over IP with NAVigator, as it shares many of the same terminologies. With NAV, all communications are encrypted and secure, and access can be protected with username and password authentication. NAVigator features two LAN interfaces with easily accessible IP address settings and a variety of backup and configuration options.

NAVigator can copy EDID settings from any attached display or select from a wide range of pre-defined settings, ensuring that all sources power up properly and reliably output content for display. NAVigator also features enhanced matrix switching capabilities, switching signals from individual units or groups of devices simultaneously. It also features breakaway switching with individual routing of audio, video, and USB signals. Bulk-configuration tools enable backup, restoration, and firmware management of many devices simultaneously, greatly enhancing efficiency. Intuitive alarm and monitoring features are also available, aiding administrators in quickly identifying issues and applying solutions.



Integrated Pro Series Control

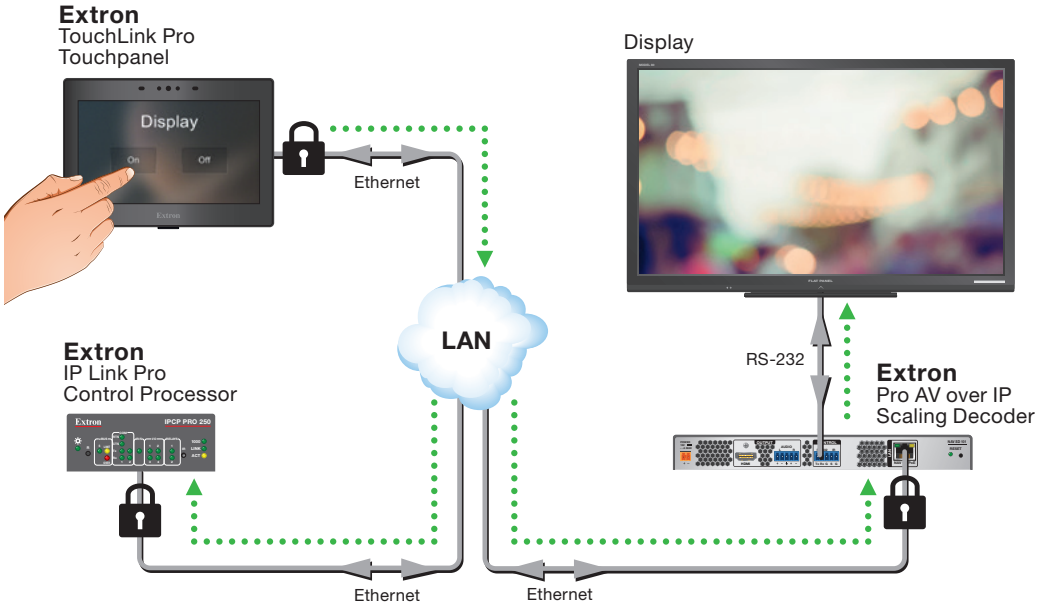
PRO SERIES CONTROL

An integral part of any AV installation, control systems configure, control, and manage AV systems. The NAV platform takes control to the next level. NAV's unique Pro Series control integration turns any NAV endpoint into an extension of your Extron Pro Series control system. NAV encoders and decoders feature built-in Pro Series control ports for CEC, RS-232, IR, and digital I/O, effectively expanding your Extron Pro Series control system to anywhere the network can reach.

NAV Pro Series control offers full integration with Extron TouchLink Pro touchpanels, eBUS button panels, and IP Link Pro control processors. Using Extron Global Configurator or Global Scripter, it's just as easy to access and configure NAV Pro Series control ports on an encoder or decoder as it is to access ports on a control processor. Extron device drivers and modules make it simple to employ control of any set-top box or Blu-ray player connected to a NAV encoder, projector, or display connected to a NAV decoder. With NAV, the same IP Link Pro control processor that manages and controls your NAV video and audio switching network can control multiple devices in remote locations. This unique Extron feature saves the time and cost associated with installing additional control processors that would otherwise be needed at the endpoints.

NAV Pro Series control ports are compatible with Extron Show Me cables for convenient connectivity and user input selection in collaborative environments. Operating a Show Me cable is convenient and straight-forward; simply connect an HDMI Show Me cable to a NAV encoder and press the Share button to instantly share your content onto the display.

All communications between NAV endpoints and Pro Series control systems are encrypted, ensuring secure control of connected devices at any location. NAV solutions are ideal for any application requiring device control, flexible video and audio switching, and reliable transmission of high-quality content.



Pro AV Over IP System Manager

NAVigator

Extron NAVigator is a hardware appliance for the secure management, configuration, and control of NAV Pro AV over IP systems. Use the user-friendly web-based NAV System Manager to configure, monitor and control, backup and restore, run diagnostics, and troubleshoot. An entry level NAVigator system supports 16 endpoints and can expand with LinkLicense to support 48, 96, or 240 devices. Multiple NAVigator units working together can support thousands of endpoints. Two isolated, independent LAN ports facilitate control from a secondary network, enabling flexible design with enhanced security, and eliminating AV traffic on the corporate network. With Extron Pro Series control integration, the NAVigator acts as a centralized communication bridge for secure control of all attached devices. The NAVigator System Manager can be PoE powered over the network.

Quick and Reliable Switching

NAV systems are not limited to video extension and distribution. Multiple encoders and decoders can be deployed together to create an IP-based video and audio matrix. NAV Pro AV over IP solutions provide the flexibility of an IP-based system, with the integration-friendly video and audio switching features found in conventional Extron matrix switchers, such as Key Minder®, EDID Minder®, and USB and audio breakaway. Design a small IP-based switching system with multiple endpoints and an Extron Pro Series control system for secure switching. In larger deployments, the NAVigator System Manager can enhance matrix switching capabilities, featuring advanced control and enterprise-level system monitoring.

Security

NAVigator System Manager encrypts all communication between the manager and endpoints with **SSH** – Secure Shell protocol, ensuring every single command sent out on the network is fully encrypted from control processor to endpoint. NAV endpoints also support **802.1x** port-based Network Access Control. When applied, 802.1x authentication requires that all devices are approved before network access is granted. Support for **Active Directory** simplifies user management and group authentication, and **SRTP** - Secure Real-Time Transport Protocol ensures encryption, message authentication, and data integrity of video and data streams.

Features

- Securely manages, configures, and controls NAV Pro AV over IP systems
- Each unit supports up to 240 NAV endpoints
- Intuitive, web-based user interface for ease of use
- Manages simultaneous configuration of multiple NAV devices
- Secure encrypted communication between all endpoints
- Power over Ethernet, or PoE, eliminates the need for a local power supply
- Scalable with LinkLicense
- Secure network isolation with dual LAN interfaces
- Enables parallel firmware update of multiple NAV devices at once
- Integrates with Extron Pro Series control systems for secure, user-friendly external control
- External Extron Everlast™ power supply included
- Extron Everlast Power Supply is covered by a 7-year parts and labor warranty
- 1" (2.5 cm) high, half rack width metal enclosure

Model	Version Description	Part Number	Model	Version Description	Part Number
NAVigator	Entry level version for 16 Endpoints	60-1534-01	LinkLicense	Upgrade to 96 Endpoints	79-2551-03
LinkLicense	Upgrade to 48 Endpoints	79-2551-02	LinkLicense	Upgrade to 240 Endpoints	79-2551-04

1G Pro AV Over IP - HDMI

NAV E 101 and NAV SD 101

The NAV E 101 and NAV SD 101 are an AV over IP encoder and scaling decoder that deliver ultra-low latency, high quality video and audio signals over 1 Gbps Ethernet networks at low bitrates. Utilizing Extron's patented PURE3® codec, they deliver groundbreaking performance with real-time, high quality video at resolutions up to 4K @ 60 Hz with 4:4:4 chroma sampling and ultra-low latency. The NAV E 101 and NAV SD 101 are fully compatible with NAV 10 Gbps endpoints, increasing scalability for large deployments. Support for analog and embedded digital HDMI audio and AES67 Audio Over IP facilitate flexible integration with DMP 128 Plus audio DSP processors 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.

Features

- Streams video and audio over 1 Gbps Ethernet networks
- Supports HDMI 2.0 at resolutions up to 4K/60 @ 4:4:4
- PURE3® Codec
- PURE3 Intelligent Selective Streaming - ISS
- Compatible with 10 Gbps NAV endpoints
- Ultra-low latency with high quality video
- AES67 audio support
- HDCP 2.2 compliant
- Power over Ethernet, or PoE+, eliminates the need for a local power supply
- Error concealment
- Enhanced security with SRTP - Secure Real Time Transport Protocol
- 802.1x port-based Network Access Control
- Embedded web interface
- Active Directory support
- HDCP Visual Confirmation
- EDID Minder® automatically manages EDID communication between connected devices
- Key Minder® continuously verifies HDCP compliance for quick, reliable switching
- Supports analog and embedded HDMI audio signals
- Integrates with Extron Pro Series control systems for secure, user-friendly external control
- Secure Platform Interface
- Multicast filtering with IGMPv3
- One-button endpoint identification
- External Extron Everlast™ power supply included
- Extron Everlast Power Supply is covered by a 7-year parts and labor warranty
- 1" (2.5 cm) high, half rack width metal enclosure

NAV E 101

1G Pro AV Over IP Encoder - HDMI

Unique Features

- Adjustable bit rate
- HDMI loop-through

Model	Version Description	Part Number
NAV E 101	1G HDMI Encoder	60-1525-12

NAV SD 101

1G Pro AV over IP Scaling Decoder - HDMI

Unique Features

- Advanced Extron Vector™ 4K scaling technology
- Compatible with Show Me cables

Model	Version Description	Part Number
NAV SD 101	1G HDMI Scaling Decoder	60-1525-14

Networking

Successful deployment of Pro AV Over IP applications requires networking proficiency. Extron certification programs prepare integrators to successfully deploy and troubleshoot networked AV systems. For more information about Extron's **Network AV Specialist** certification program for NAV, please see the back page.

When deploying Pro AV over IP, it's important to be familiar with the following key terms:

Multicast - Multicast is a "one-to-many" form of group communication where a single data stream is addressed to a group of destinations simultaneously. It is considerably more efficient, significantly reducing bandwidth required over Unicast, a "many-to-many" form of group communication, where a separate stream is sent to each endpoint.

IGMP - Internet Group Management Protocol, or IGMP, is a network layer (Layer 3) protocol used to establish membership in a **Multicast** group. IGMP manages multicast group memberships by marking packets in messages sent between a router and the hosts. Each sending host applies a unique identifier to multicast packets so that they can be identified, then separated or forwarded as required.

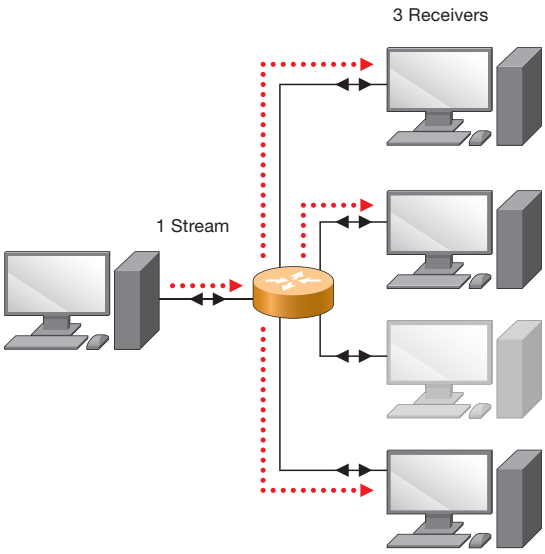
IGMP Snooping - Most network switches are Layer 2 devices operating on the link layer of the OSI protocol. Since Layer 2 devices are typically unaware of IP addresses and the IGMP protocol, they cannot filter multicast packets. With IGMP snooping, Layer 2 devices, such as a switch, can listen to IGMP queries and configure Layer 2 LAN ports to selectively forward multicast traffic to only the ports that should receive it.

For more detailed information, please refer to the Extron **Multicast for AV Streaming** whitepaper available at: www.extron.com/multicastpaper.

NETWORK DESIGN SUPPORT

To ensure optimal performance and reliability, a team of Extron networking experts are available to provide personalized assistance with network design and selecting the right network equipment for your unique application.

For more information, contact your Extron representative.

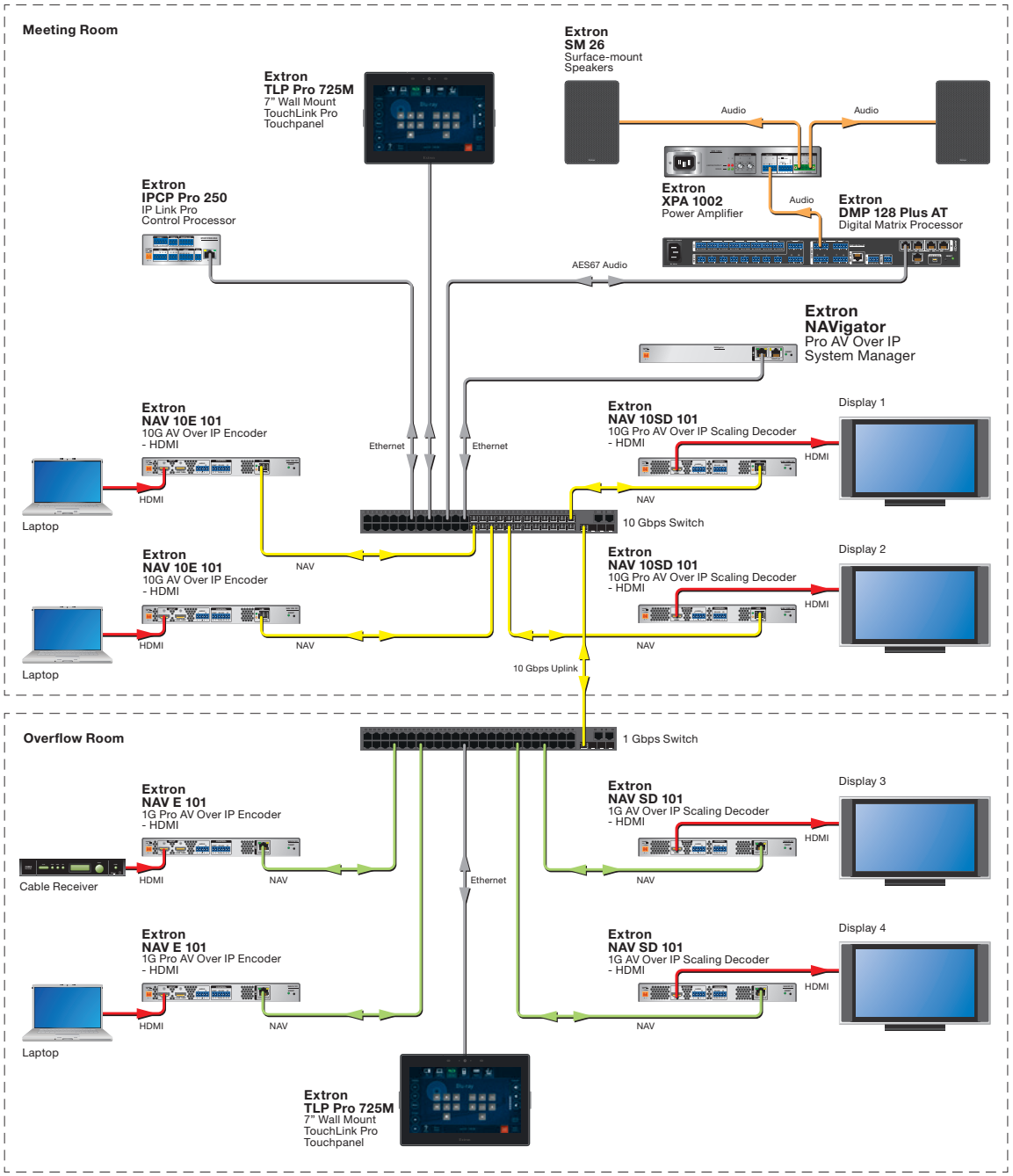


Multicast "one-to-many" streaming, where a single stream is delivered to multiple endpoints, significantly conserving bandwidth

Application Diagrams

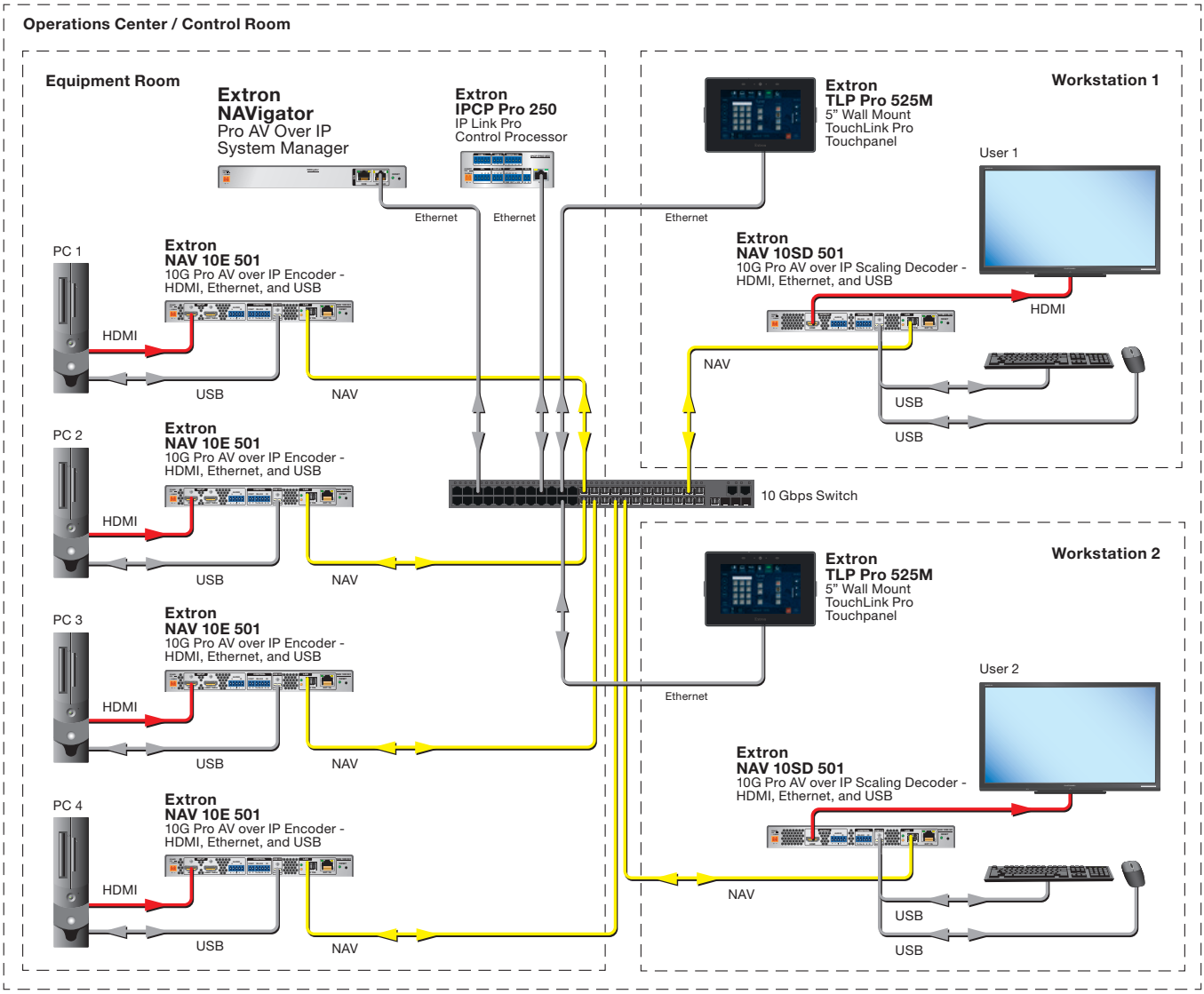
MEETING ROOMS WITH A MIXED 1G AND 10G INFRASTRUCTURE

In the Meeting Room, NAV devices run over a 10 Gbps network for maximum performance. Here, two NAV 10E 101 encoders connect via HDMI to two laptops and two NAV 10SD 101 decoders connect to two large displays. All NAV devices are managed by the NAVigator System Manager. Audio from NAV encoders is sent via AES67 to the DMP 128 Plus Digital Matrix Processor. An XPA 1002 amplifies the line level signal and sends it to SM 26 speakers. A 10 Gbps uplink connects the Meeting Room to the Overflow Room, where NAV devices run over a 1 Gbps network. Two NAV E 101 encoders connect via HDMI to a cable receiver and a laptop, and two NAV SD 101 decoders connect to two large displays. The cable receiver connected to the 1 Gbps NAV E 101, can stream video back to either of the 10 Gbps NAV 10SD 101 decoders for display in the Meeting Room. Conversely, the NAV 10E 101 can operate at 1 Gbps bandwidth to stream to either of the NAV SD 101 decoders for display in the Overflow Room. The IPCP Pro 250 IP Link Pro control processor and a TLP Pro 725M touchpanel in each room facilitate control of all signals.



OPERATIONS CENTER WITH KVM CONTROL

In the Equipment Room, four back-racked computers are each connected to a NAV 10E 501 encoder. Two KVM – Keyboard, Video, and Mouse workstations are connected to a NAV 10SD 501 decoder. Users can access any of the computers in the equipment room and have full keyboard and mouse control with no noticeable latency. Each user has a TLP Pro 525M TouchLink Pro Touchpanel to switch between different sources. An IPCP Pro 250 IP link Pro Control Processor enables secure control of the NAVigator System Manager.



Certification

Extron Network AV Specialist Program

The Extron Network AV Specialist - NAVS certification program prepares individuals to successfully deploy and troubleshoot networked AV systems using Extron NAV encoders, decoders, and software. Course participants will learn advanced techniques for streaming Pro AV over IP with an emphasis on low latency, bandwidth management, and signal quality. They will also learn to configure point-to-point and multipoint-to-multipoint networked AV systems and best practices for deploying Extron NAVigator, a hardware appliance for the secure management, configuration, and control of NAV Pro AV over IP systems. In addition, the Network AV Specialist program includes opportunities for hands-on experience with system configuration, validation, and troubleshooting.

Extron CERTIFIED Network AV Specialist

Extron Certification

In the highly competitive AV industry, education, training, and certification are important to both individual and corporate success. Like a professional license, certification instills customer confidence, providing formalized evidence of critical knowledge and skills. The fluency and expertise acquired through Extron Certification Programs save valuable time and expense, ensuring higher levels of customer service and satisfaction.

The Extron Network AV Specialist certification program is for AV professionals who wish to advance their knowledge of Pro AV over IP system technology, design, and configuration. This program features both online and instructor-led training components, providing system integrators, engineers, and consultants an opportunity to learn new skills, validate their existing skills, and gain a better understanding of the latest technologies and solutions in growing field of Pro AV over IP.

Course Content

The Extron Network AV Specialist program is a two-day course covering the following categories:

- Best practices for networked AV system design and deployment
- Understanding matrix switching and Pro AV over IP
- Configuration of point-to-point and multipoint-to-multipoint networked AV systems
- Overview of NAV Pro AV over IP encoders, decoders, and software
- When and how to deploy NAVigator Pro AV over IP System Manager
- Effective fault identification, troubleshooting, and commissioning of NAV systems

How Can I Get Started?

To request enrollment in the Network AV Specialist certification program, contact your Extron Support Representative or visit www.extron.com/training.

Continuing Education Units

The Extron Network AV Specialist certification program qualifies for Continuing Education Unit - CEU credits with a variety of established industry organizations, including AVIXA and BICSI. For more information, visit www.extron.com/training.

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03-2019
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