Extron

NAV E 501 and NAV E 101 • Setup Guide

IMPORTANT:
Go to www.extron.com for the complete user guide, installation instructions, and specifications before connecting the product to the power source.

This guide provides instructions for an experienced installer to install the Extron NAV E 501 and NAV E 101 streaming encoders and to make all connections. One or more NAV encoders and one or more compatible Extron NAV decoders form an AV distribution and switching matrix on a managed 1G IP network.

NOTE: For more information on any subject in this guide, see the *NAV E 501 and NAV E 101 User Guide*, available at **www.extron.com**.

Installation

Step 1 — Mounting

Turn off or disconnect all equipment power sources and rack or furniture mount the encoder as required.

Step 2 — Rear Panel Connections

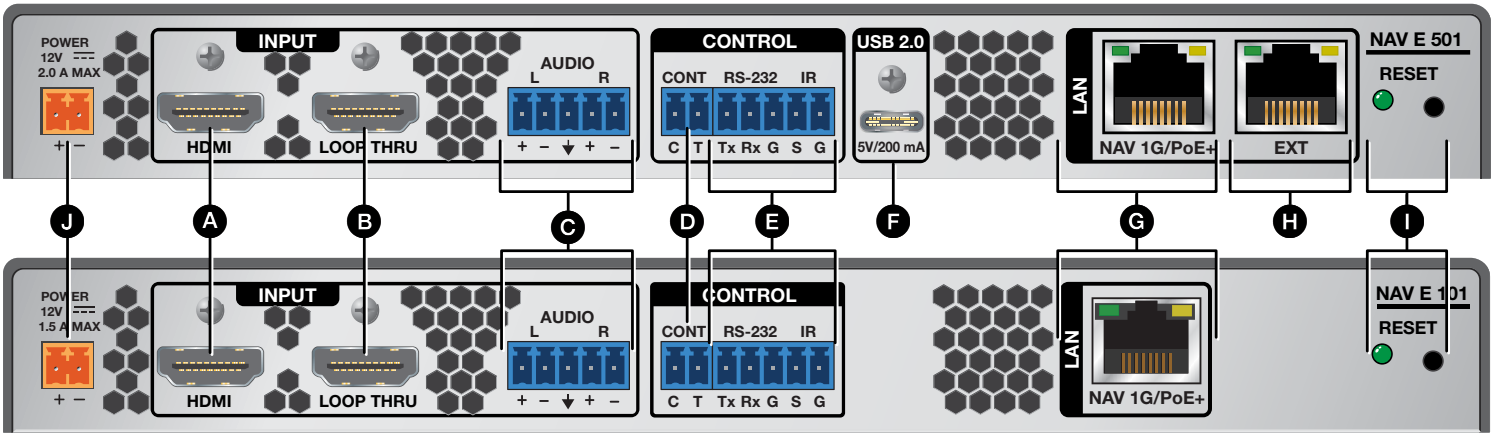


Figure 1. NAV E 501 and NAV E 101 Rear Panel Features

A **HDMI input port** — Connect an HDMI cable between this port and the HDMI output port (or DVI port, with an appropriate adapter) of the digital video source.

B **HDMI Loop Thru port** — Connect a display to this female HDMI connector for local loop-through monitoring of the source signal.

NOTE: See **LockIt® Lacing Brackets** on page 6 to securely fasten the HDMI connectors to the encoder for **A** and **B**.

C **AUDIO input port** — Connect balanced or unbalanced stereo audio input to this 5-pole, 3.5 mm captive screw connector (see **Analog audio input** on page 6 to wire the connector).

D **Control Contact Closure port** — Connect an Extron Show Me® cable to the port to allow the encoder to select itself as the input to the decoder, using the control system.

E **Control RS-232/IR port** — Connect a serial RS-232 signal, a modulated IR signal, or both to this 3.5 mm, 5-pole captive screw connector for bidirectional RS-232 and IR communication with connected remote controlled devices. Control is accomplished using an Extron control system (see **Control connector** on page 6 to wire the connector).

F **USB 2.0 port** (NAV E 501 only) — Connect a USB Type-C cable from a USB host or a USB device. See **LockIt® Lacing Brackets** to securely fasten the USB connector to the encoder.

NOTE: This connector is limited to supplying 200 mA in USB device mode.

G **NAV 1G/PoE+ port** — Connect to an Ethernet LAN on which one or more decoders also reside for streaming and control. This port can also receive Power over Ethernet (PoE+) to power the encoder (see **Power** on page 3 for power options).

H **Extension port** (NAV E 501 only) — If desired, connect another networked device to this port. The port acts as a networked switch to the NAV 1G/PoE+ port.

NOTE: The Extension port cannot provide PoE.

I **Reset button and LED** — This button initiates three modes of reset (see the *NAV E 501 and NAV E 101 User Guide*, available at **www.extron.com**, for details).

J **Power connector** (optional) — Plug the included external 12 VDC power supply into this 2-pole connector for local power (see **Power connector** on page 6 to wire the connector and **Power** for power options).

Step 3 — Front Panel Configuration Port Connection

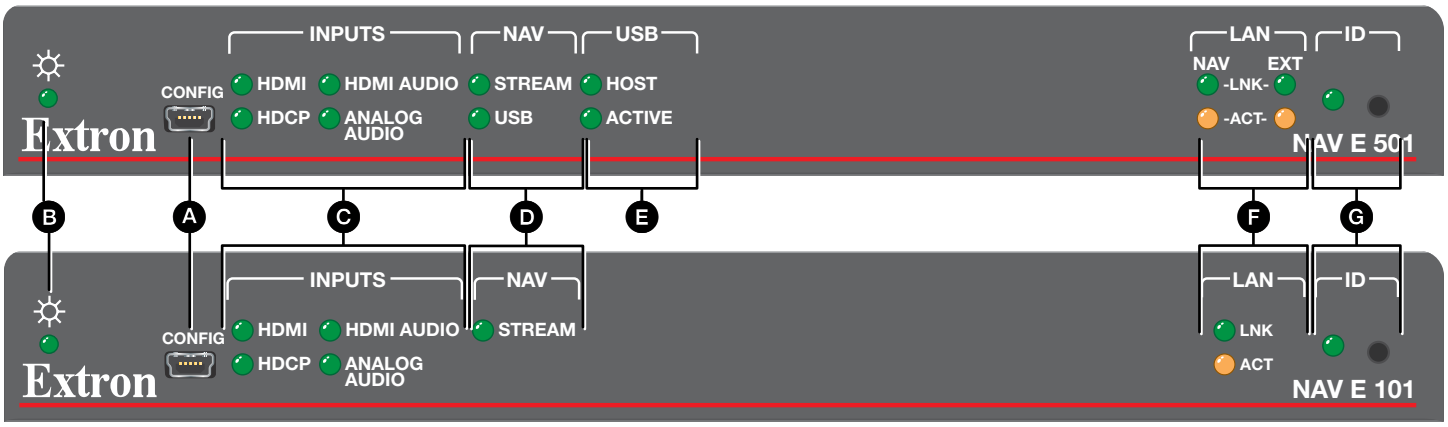


Figure 2. **NAV E 501 and NAV E 101 Front Panel Features**

A **Configuration (CONFIG) port** — Connect a PC to the encoder via this front panel USB Mini-B connector for configuration of the unit. The port uses IP over USB technology. The IP address is always 203.0.113.22 and **CANNOT** be changed. The Config port is also discoverable via Extron Toolbelt (see the *NAV E 501 and NAV E 101 User Guide*. The guide and Toolbelt are available for download at www.extron.com).

Indicators

B **Power LED** — Indicates power and startup status, as follows:

- **Blinking** — The unit is receiving power, either locally or remotely (via PoE) and is booting up.
- **Lit steadily** — The unit is receiving power, either locally or remotely (via PoE) and is operational.

C **INPUTS** — Indicate status of the signal inputs, as follows:

- **HDMI LED** — The encoder is detecting an HDMI input.
- **HDCP LED** — The HDMI signal is HDCP encrypted.
- **HDMI Audio LED** — The embedded HDMI audio input is selected.
- **Analog Audio LED** — The analog audio input is selected.

D **NAV LEDs** — Indicate the output status of the AV and USB streams, as follows:

- **Stream**
  - **Lit steadily** – The encoder is actively streaming a NAV output consisting of video, audio, or both.
  - **Blinking** – The encoder is actively streaming a NAV output, but network errors are present.
  - **Unlit** - The encoder is not actively streaming a NAV output.
- **USB** (NAV E 501 only)
  - **Lit steadily** – The encoder is actively sending and receiving a NAV USB stream.
  - **Blinking** – The encoder is unable to establish a NAV USB stream.
  - **Unlit** — The encoder is not actively sending and receiving a NAV USB Stream.

E **USB LEDS** (NAV E 501 only)— Indicates the status of the USB stream, as follows:

- **Host**
  - **Lit steadily** – The encoder is in USB host mode, the default condition.
  - **Unlit** – The encoder is in USB device mode.
- **Active**
  - **Lit steadily** – A host or USB device is connected to the rear panel USB port.
  - **Unlit** – No host or USB device is connected to the rear panel USB port.
  - **Blinking** – A USB device or hub is connected to the encoder and is drawing more power than the USB port can supply.

F **LAN LEDs** (see **figure 2** on page 2) — Indicate the status of the network connections, as follows:

- **NAV LED** (NAV E 501) or **LAN LED** (NAV E 101) —
  - **Link LED** — Lit steadily indicates that a network link is established.
  - **Act LED** — Blinking indicates network traffic. The blink rate corresponds to activity.
- **EXT LED** (NAV E 501 only) —
  - **Link LED** — Lit steadily indicates that a network link is established. Blinking indicates a link speed less than 100 Mbps.
  - **Act LED** — Blinking indicates network traffic. The blink rate corresponds to activity.

G **ID button and LED** — The recessed ID button identifies the encoder when pressed. The LED blinks when the encoder is in pairing mode (see **Pairing devices on front panel** on page 5 for details).

Operation

Power

The encoder can be powered in one of three ways:

- Locally, from the included external power supply and via the power connector (see J on page 1).
- Remotely, receiving PoE via the NAV 1G/PoE+ port (see G), either from the network switch or from an optional PI 140 Power Injector.
- Locally (J) and remotely (G), with priority on the NAV 1G/PoE+ port. If PoE voltage drops below a threshold, the encoder immediately transitions to the external power connector with no effect on system operation.

When power is applied, the encoder runs a series of self-tests that blink the front panel Power LED and all other indicators. The encoder then boots the NAV operating system. It can take approximately 45 seconds for self-test and system startup to complete. When the process is complete, the Power LED lights steadily.

NOTE: The encoder is **NOT** operational until the boot process is complete (the Power LED is lit steadily).

System Operation

The encoder can be configured and controlled using embedded web pages or Toolbelt software (see the *NAV E 501 and NAV E 101 User Guide* available at **www.extron.com**).

NOTE: The "Connection via web pages," **Connection settings**, and **Pairing devices via front panel** procedures (see page 5) may **NOT** be necessary if your system includes a NAVigator System Manager.

Connection via web pages

Connection to the encoder and its embedded web pages can be made via either the front panel Configuration (USB) port (using IP over USB technology) (see **figure 2**, A) or the rear panel NAV 1G/PoE+ port (see **figure 1**, G on page 1).

Access the encoder using HTML pages as follows:

1. Start a web browser.

   NOTES:
   - Suggested browsers to fully support the NAV system are: Google Chrome™, Mozilla™, Firefox™, and Microsoft® Edge™.
   - The network must be properly configured for multicasting (IGMP). Failure to do so may result in degraded performance.

2. Enter the IP address of the encoder in the browser `Address` field.

   NOTE:
   - **Default settings:**

Port	DHCP	IP address	Subnet mask
Config (USB)*		203.0.113.22	
NAV/PoE+ (RJ-45)	On		

     * **For the Config port**, the address for IP over USB **CANNOT** be changed.
   - If you use IP over USB, Extron recommends waiting a minute after plugging in the cable for your PC to identify the USB connection as a valid Ethernet port.

3. Press the keyboard <**Enter**> key. The browser displays a privacy error message (see figure 3 at right for an example in the Chrome browser).
4. Click **Advanced** (see figure 3, ❶). The button changes to **Hide Advanced** and explanatory text and a link appear below the button.
5. Click **Proceed to** <***IP address***>**(unsafe)** (❷). The browser opens to the Login dialog box (see figure 4).

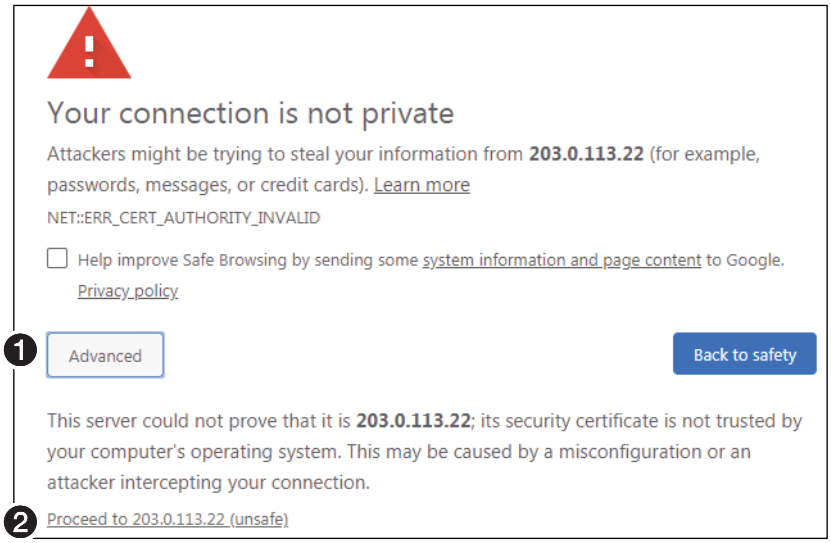


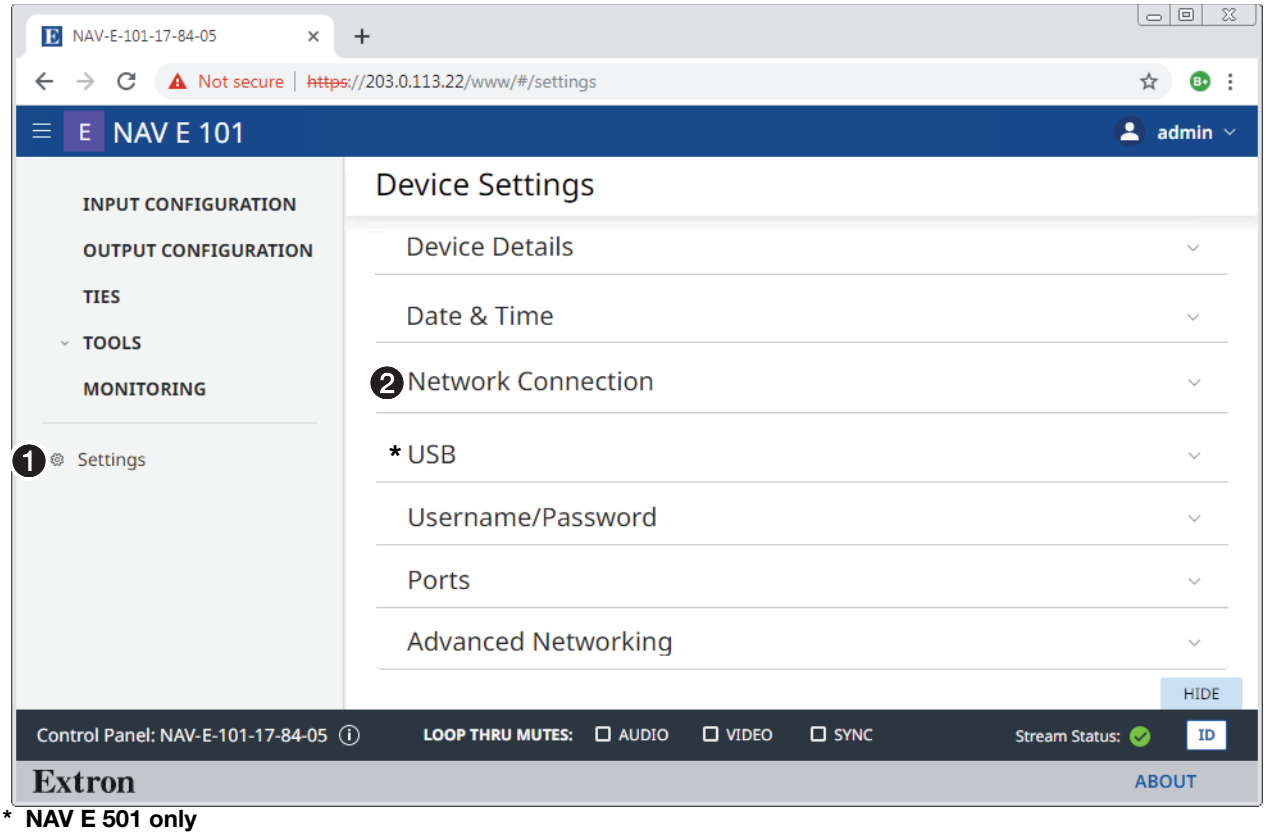
Figure 3. Privacy Error Message (in Chrome Browser)

Figure 4. Login Dialog Box

6. Complete the **Username** (see figure 4, ❶) and **Password** (❷) fields and click **Sign In** (❸). The browser opens to the home page of the embedded web pages (see figure 5 on page 5).

NOTES:

- The default username is admin.
- The factory configured passwords for all accounts on this device have been set to the device serial number. If the password is reset, the encoder defaults to the default password, which is extron.
- Usernames and passwords are case sensitive.



* **NAV E 501 only**

Figure 5. Home Page

NOTE: Detailed descriptions of communication, configuration, and monitoring are provided in the *NAV E 501 and NAV E 101 User Guide*, available at **www.extron.com**.

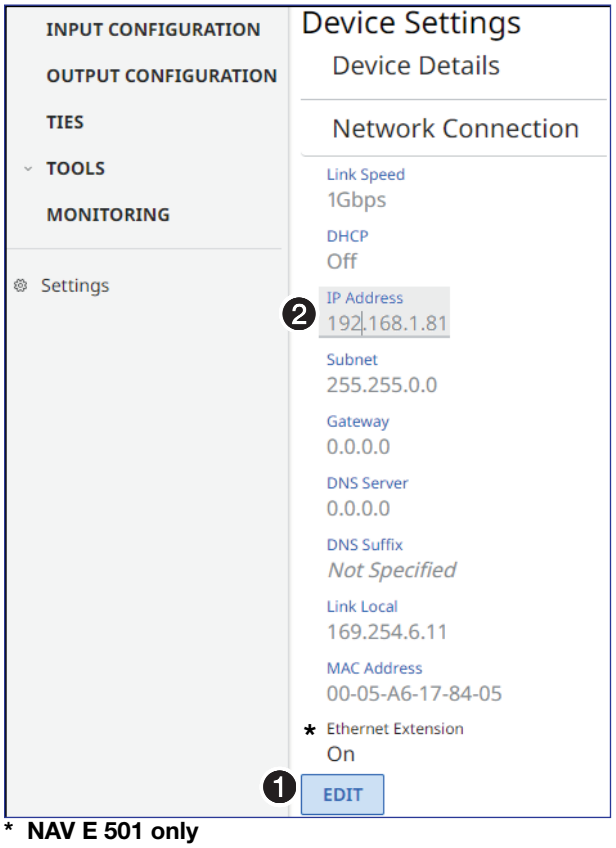
Connection settings

View and change connection settings as follows:

1. On the home page, click **Settings** (see figure 5, ❶) > **Network Connection** (❷). The Network Connection pane opens (see figure 6 at right), showing protected views of the network connection settings.

   NOTE: Editing of connection settings is disabled when the device is assigned to an Extron NAVigator System Manager.

2. **To change the settings**, click **Edit** (see figure 6, ❶). The Edit button changes to Save.
3. Click in the desired field (❷) and edit it as desired.
4. Repeat step 3 as necessary for other values.
5. Click **Save**.



* **NAV E 501 only**

Figure 6. Network Connection Pane

Pairing devices via front panel

Pair devices from the front panel as follows:

1. Use an Extron Tweeker or other small screwdriver to press and **hold** the **encoder** front panel **ID** button for approximately 3 seconds, until the ID LED blinks. The encoder enters pairing mode, which allows decoders to receive the AV stream (NAV E 101) or AV and USB streams (NAV E 501 only) from encoders.
2. One at a time, use a Tweeker or other small screwdriver to press and **hold** the **decoder** front panel **ID** button for approximately 3 seconds, until the ID LED blinks. The decoder is now paired to the encoder.
3. Repeat step 2 for each decoder.

4. Use a Tweeker or other small screwdriver to press and release the **encoder** front panel **ID** button. The encoder exits pairing mode.
5. Repeat steps 1 through 4 to pair decoders to other encoders.

After all devices are connected, powered on, and paired, the system is fully operational.

Operation in a System with a NAVigator

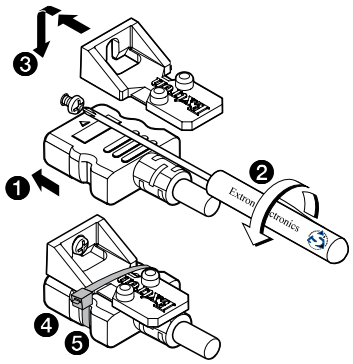
The Extron NAVigator is a system manager that easily configures and controls the NAV System. The NAVigator can support a 16 endpoint system by default, but if a LinkLicense is installed, it can support up to 240 endpoints.

See the *NAVigator User Guide*, available at **www.extron.com** for details.

Connection Details

LockIt® Lacing Brackets

1. Plug the HDMI cable or USB (NAV E 501 only) into the panel connection (see ❶, at right).
2. Loosen the connection mounting screw from the panel enough to allow the LockIt lacing bracket to be placed over it (❷). The screw does not have to be removed.
3. Place the LockIt lacing bracket on the screw and against the connector (❸).
4. Tighten the screw to secure the bracket.

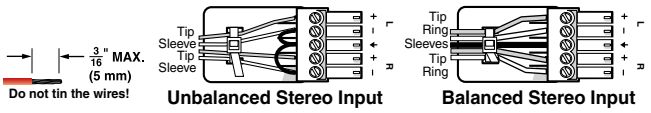


ATTENTION:

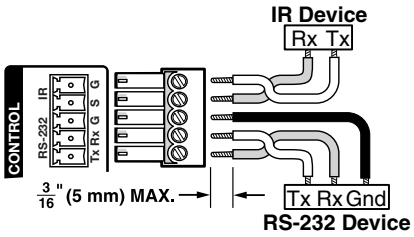
- Do not overtighten the HDMI connector mounting screw. The shield it fastens to is very thin and can easily be stripped.
- Ne serrez pas trop la vis de montage du connecteur HDMI. Le blindage auquel elle est attachée est très fin et peut facilement être dénudé.

5. Loosely place the included tie wrap around the connector and the LockIt lacing bracket as shown (❹).
6. While holding the connector securely against the lacing bracket, use pliers to tighten the tie wrap, then remove any excess length (❺).

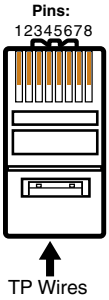
Analog audio input



Control connector

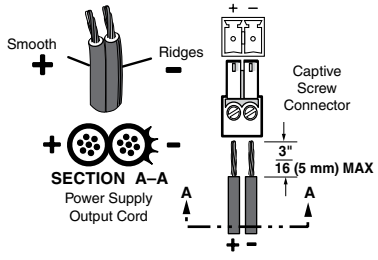


NAV and EXT connectors



Pin	TIA/EIA T568B Wire color
1	White-orange
2	Orange
3	White-green
4	Blue
5	White-blue
6	Green
7	White-brown
8	Brown

Power connector



For information on safety guidelines, regulatory compliances, EMI/EMF compatibility, accessibility, and related topics, see the **Extron Safety and Regulatory Compliance Guide** on the Extron website.

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