

NAV E 121 • Setup Guide

IMPORTANT NOTE:

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 121 streaming encoder and to make all connections. The Extron NAV encoder and one or more compatible decoders form an AV distribution and switching matrix on a managed 1G (1 Gbps) IP network.

NOTE: For more information on any subject in this guide, see the *NAV E 121 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

- 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 OUT port** — Connect a display to this port 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 Control RS-232 port** — Connect a serial RS-232 signal to this 3.5 mm, 3-pole captive screw connector for bidirectional RS-232 and unidirectional IR communication with connected remote controlled devices using an Extron control system (see [Control connector](#) on page 5 to wire the connector).
- D NAV 1G/PoE+ port** — Connect to an Ethernet LAN on which one or more decoders also reside for streaming and control (see [NAV 1G/PoE+ connector](#) on page 5 to wire the connector).
- E Reset button and LED** — This button initiates three modes of reset (see the *NAV E 121 User Guide*, available at www.extron.com, for details).
- F Power connector** — If desired, plug the optional external 12 VDC power supply into this 2-pole connector (see [Power connector](#) on page 5 to wire the connector and [Power](#) for power options).

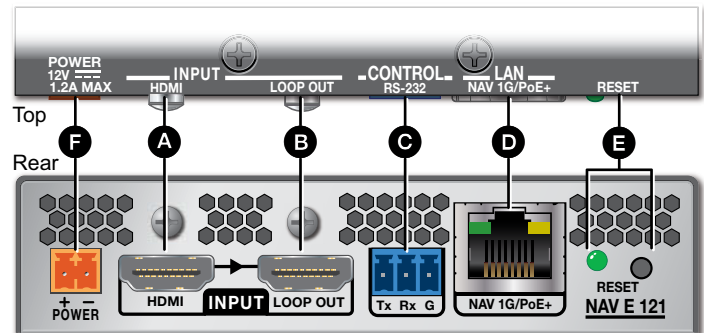


Figure 1. NAV E 121 Rear Panel Features

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Step 3 — Front Panel Configuration Port Connection

- A Configuration port** — Connect a PC to the encoder via this front panel USB type C 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 Toolbelt (see the *NAV E 121 User Guide*). The guide and Toolbelt are available for download at www.extron.com.

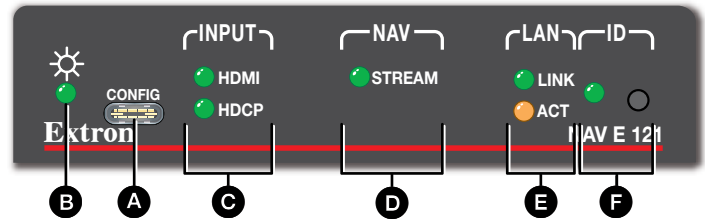


Figure 2. NAV E 121 Front Panel Features

Indicators

- B Power LED** — Indicates power and startup status.
- **Blinking** — The unit is receiving power and is booting up.
 - **Lit steadily** — The unit is receiving power and is operational.
- C Input LEDs** — Indicate status of the signal inputs.
- **HDMI** — The encoder is detecting an HDMI input.
 - **HDCP** — The HDMI signal is HDCP encrypted.
- D NAV Stream LED** — Indicates the output status of the AV, as follows:
- **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.
- E LAN LEDs** — Indicate status of the network connection.
- **Link LED** — Lit steadily indicates that a network link is established. Blinking indicates a link speed less than 1G.
 - **Act LED** — Blinking indicates network traffic. The blink rate corresponds to activity.
- F ID button and LED** — The recessed ID button identifies the encoder to the NAVigator and decoder when pressed. The LED blinks when the encoder is in pairing mode (see [Pairing devices via front panel](#) on page 5 for details).

Operation

Power

The encoder can be powered in one of three ways:

- Remotely, receiving PoE via the NAV 1G/PoE+ port (see **D** on page 1), either from the network switch or from an optional PI 130 Power Injector.
- Locally, from an optional external power supply via the power connector (see **F** on page 1).
- Remotely (**D**) and locally (**F**), 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 60 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 Extron Toolbelt (see the *NAV E 121 User Guide* available at www.extron.com and the *Toolbelt Help file*).

NOTE: The [Connection via web pages](#) (see page 3), [Connection settings](#) (see page 4), 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** on page 2) or the rear panel NAV 1G/PoE+ port (see figure 1, **D** on page 1).

Access the encoder using HTML pages as follows:

1. Open 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.

NOTES:

- **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 the unit does not receive a DHCP address, a self-assigned Link Local Address, is assigned in the range 169.254.X.X.

- 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, **1**). The button changes to Hide Advanced and explanatory text and a link appear below the button.
5. Click **Proceed to <IP address> (unsafe)** (**2**) (or the equivalent message from your browser). The browser opens to the Login dialog box (see figure 4).



The login dialog box features the Extron logo at the top. Below it are two input fields: 'Username' (labeled with a circled 1) and 'Password' (labeled with a circled 2). At the bottom is a blue 'SIGN IN' button (labeled with a circled 3).

Figure 4. Login Dialog Box

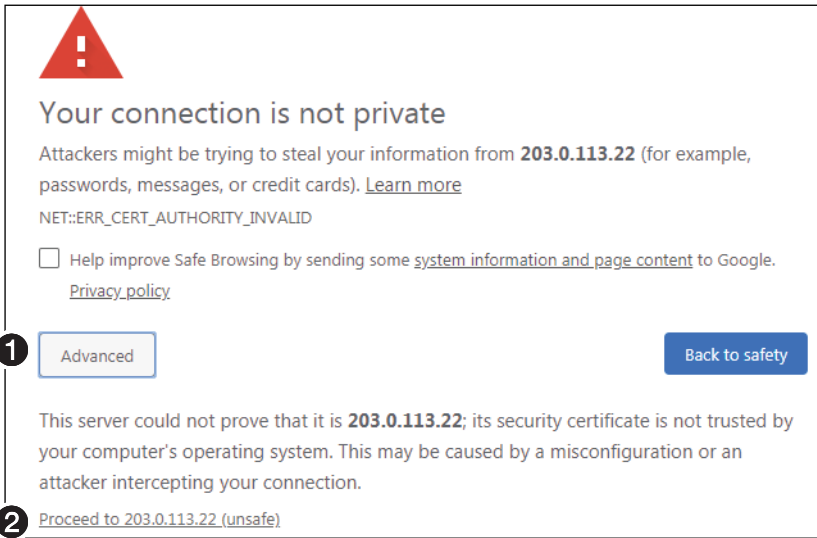


Figure 3. Privacy Error Message (in Chrome Browser)

6. Enter the **Username** (see figure 4, **1**) and **Password** (**2**) and click **SIGN IN** (**3**). The browser opens to the embedded web pages (see figure 5 on page 4).

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 reverts to the default password, which is extron.
- Usernames and passwords are case sensitive.

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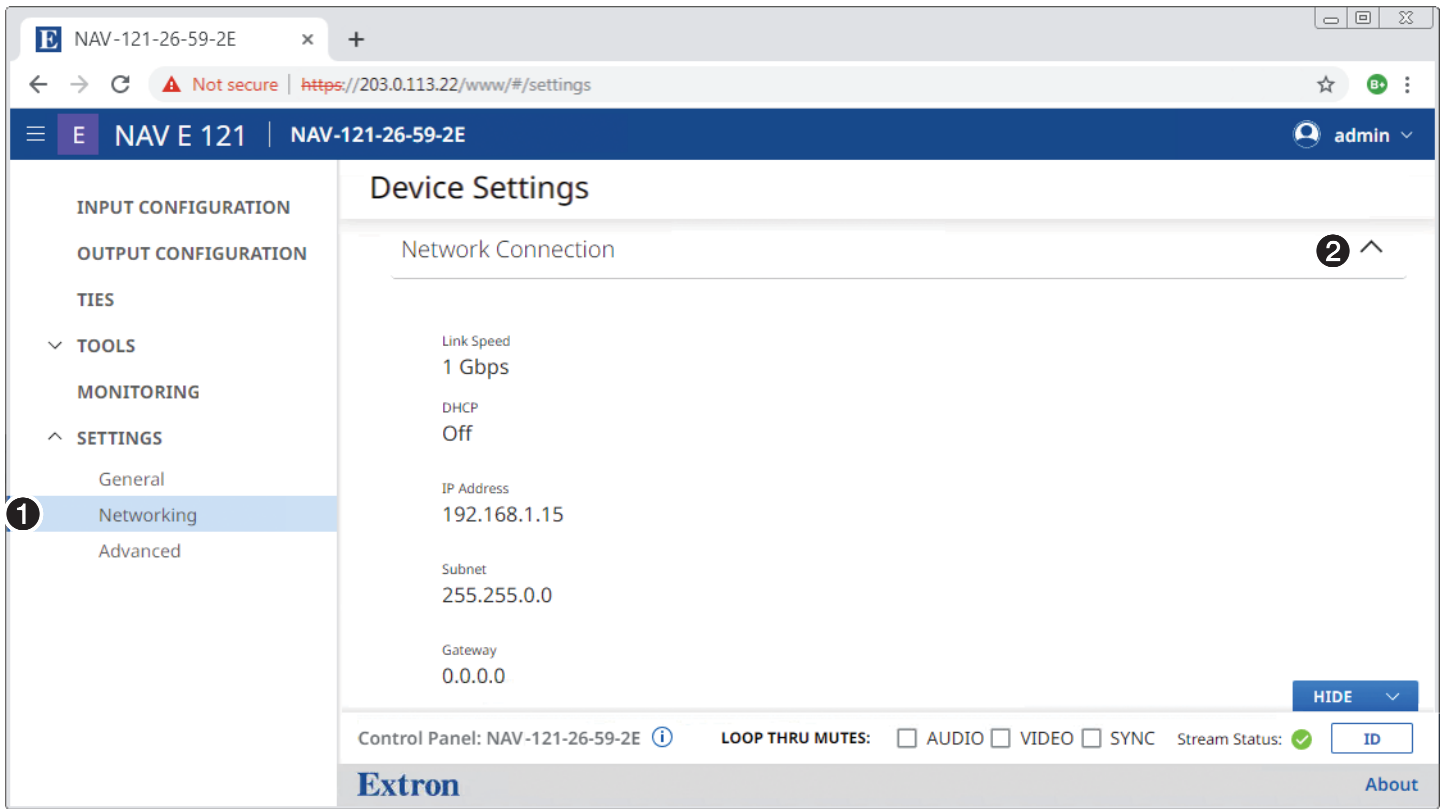


Figure 5. HTML Page

NOTE: Detailed descriptions of communication, configuration, and monitoring are provided in the *NAV E 121 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, **1**) > **Networking**.
2. Click the **Network Connection** drop-down list (**2**). The Network Connection pane opens (see figure 6), 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.

3. To change the settings, click **Edit** (see figure 6, **1**). The Edit button changes to Save.
4. Click in the desired field (**2**) and edit it as necessary.
5. Repeat step 4 as necessary for other values.
6. Click **Save**.

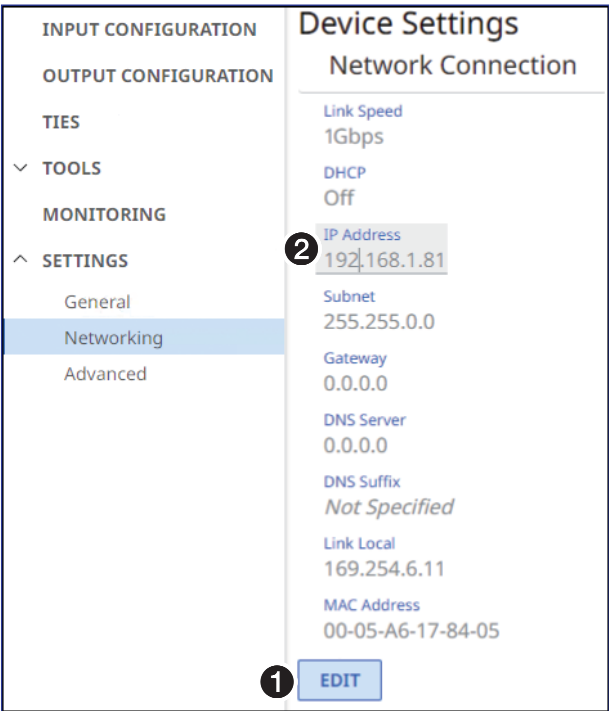


Figure 6. Network Connection Pane

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Pairing devices via front panel

1. Use a 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 from encoders.
2. One at a time, use small screwdriver to press and **hold** the decoder front panel **ID** button for approximately 3 seconds, until the ID LED blinks three times. The decoder is now paired to the encoder.
3. Repeat step 2 for each decoder.
4. Use a Tweezer 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.

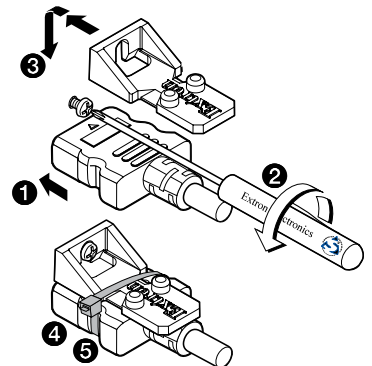
Operation in a System with a NAVigator

The Extron NAVigator is a system manager that easily configures and controls the NAV System. The NAVigator supports 16 endpoints by default, but a LinkLicense can upgrade its capabilities to 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 into the panel connection (see **1**, at right).
2. Loosen the connection mounting screw from the panel enough to allow the LockIt lacing bracket to be placed over it (**2**). The screw does not have to be removed.
3. Place the LockIt lacing bracket on the screw and against the connector (**3**), then tighten the screw to secure the bracket.



ATTENTION:

- Do not overtighten the 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. Le blindage auquel elle est attachée est très fin et peut facilement être dénudé.

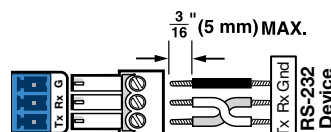
4. Loosely place the included tie wrap around the connector and the LockIt lacing bracket as shown (**4**).
5. While holding the connector securely against the lacing bracket, use pliers to tighten the tie wrap, then remove any excess length (**5**).

NAV 1G PoE connector

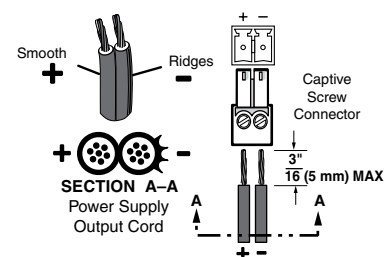
Pins: 12345678	TIA/EIA T 568B
Pin	Wire color
1	White-orange
2	Orange
3	White-green
4	Blue
5	White-blue
6	Green
7	White-brown
8	Brown

TP Wires

Control connector



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.