NAV E 222 • 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 222 two-input switching, streaming encoder 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.

Installation

Step 1 — Mounting

Turn off or disconnect all equipment power sources and under-desk or rack mount the NAV E 222 as required.

Step 2 — Rear Panel Connections

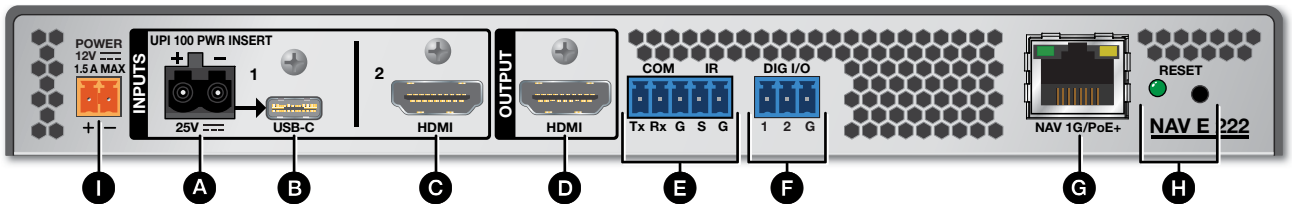


Figure 1. NAV E 222 Rear Panel Features

Ⓐ **UPI 100 PWR INSERT connector** — **If desired**, connect power from an Extron UPI 100 Power Inserter to this 2-pole, 5 mm black captive screw connector. This feature can provide up to 100 watts of power to a laptop computer connected to Ⓑ.

NOTE: See the *UPI 100 User Guide* at **www.extron.com**.

Ⓑ **USB-C video (input 1) connector** — Connect a DisplayPort Alt Mode USB video source to this USB-C input connector. If power is supplied to Ⓐ, this connector can also power or charge the connected video source.

NOTES:

- An Extron UPI 100 is required to provide power to the USB-C source (Ⓐ).
- When using the UPI 100, choose a cable that can support 100 watts of power delivery.
- Use the built-in HTML pages to configure the power delivery (see the *NAV E 222 User Guide* at **www.extron.com**).
- See **LockIt Plus® Lacing Brackets** on page 5 to secure the USB type C and HDMI cables to Ⓑ, Ⓒ, and Ⓓ).

Ⓒ **HDMI video (input 2) connector** — Connect an HDMI video source to this HDMI input connector.

Ⓓ **HDMI video loop out connector** — Connect a display to this female HDMI connector for local loop out monitoring of the selected video input.

Ⓔ **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 5 to wire the connector).

Ⓕ **Digital I/O port** — Connect one or two devices (see **Digital I/O connector** on page 6) that you want to:

- Monitor events
- Trigger events on (such as toggling relays, issuing commands, sending e-mails) once configured
- Power LEDs or other devices that accept TTL signal functions

Ⓖ **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 2 for power options).

Ⓗ **Reset button and LED** — Initiates three reset modes (see the *NAV E 222 User Guide*, at **www.extron.com**).

Ⓘ **Power connector** — Plug an optional 12 VDC power supply into this 2-pole connector (see **Power connector** on page 5 for connection and **Power** for power options).

NOTE: Alternatively, the NAV E 222 can be powered via PoE+.

Step 3 — Front Panel Configuration Port Connection

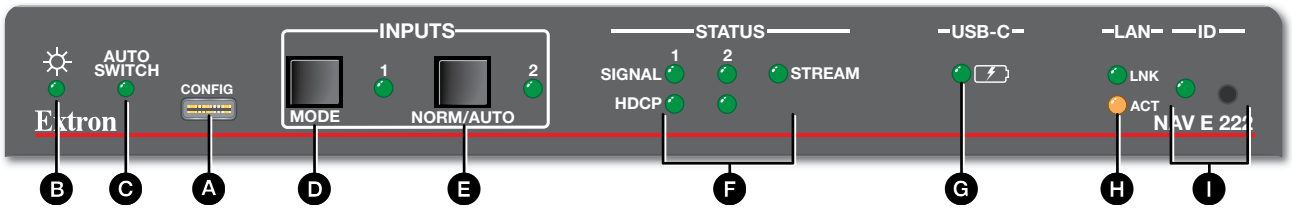


Figure 2. NAV E 222 Front Panel Features

Ⓐ **CONFIG(uration) 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 Extron Toolbelt (see the *NAV E 222 User Guide*). The user guide and Toolbelt are available for download at **www.extron.com**.

Indicators and Switching Controls

Ⓑ **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.

Ⓒ **AUTO SWITCH LED** — Indicates the switcher is in auto-switch mode (see **Auto-Switch mode** on page 5).

Ⓓ **Input 1 (MODE) button and LED** — **In manual switch mode**, press and release to select input 1 (USB-C video, see **figure 1**, Ⓑ on page 1) for output on the NAV 1G/PoE+ port (Ⓖ). The LED indicates input 1 is selected regardless of the switch mode.

This button is also used to toggle auto-switch mode on and off (see **Auto-Switch mode**).

Ⓔ **Input 2 (NORM[al])/AUTO button and LED** — I**n manual switch mode**, press and release to select input 2 (HDMI video, Ⓒ) for output on the NAV 1G/PoE+ port (Ⓖ). LED indicates input 2 is selected regardless of switch mode.

This button is also used to toggle Auto-Switch mode on and off (see **Auto-Switch mode**).

Ⓕ **STATUS LEDS** — Indicate status of the signal inputs and output, as follows:

- **SIGNAL LEDs 1 and 2** — Light to indicate the encoder is detecting a digital input.
- **HDCP LEDs 1 and 2** — Light to indicate the digital input signal is HDCP encrypted.
- **STREAM LED** — Indicates the output status of the AV output stream, 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.

Ⓖ **USB-C LED** — Indicates power is being delivered via the USB-C rear panel input 1 (USB-C, Ⓑ) as follows:

- **Lit steadily** – The encoder is actively charging a device with no issues.
- **Blinking** – The encoder is not actively charging due to an error.

Ⓗ **LAN LEDS** — Indicate the status of the network connection, as follows:

- **Link LED** — Lit steadily indicates that a network link is established. Blinking indicates a link speed less than 1Gbps.
- **ACT LED** — Blinking indicates network traffic. The blink rate corresponds to activity.

Ⓘ **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 via front panel** on page 5 for details).

Operation

Power

The encoder can be powered in one of three ways:

- Locally, from the optional external power supply, via the power connector (see **figure 1**, Ⓘ on page 1).
- Remotely, receiving PoE via the NAV 1G/PoE+ port (Ⓖ), either from the network switch or from an optional Extron PI 130 Power Injector.
- Locally (Ⓘ) and remotely (Ⓖ), 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 222 User Guide* available at **www.extron.com**).

NOTE: The "Connection via web pages" (see below), **Connection settings** (see page 4), and **Pairing devices via front panel** (see page 5) procedures 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**, Ⓐ on page 2) or the rear panel NAV 1G/PoE+ port (see **figure 1**, Ⓖ on page 1).

Access the encoder using embedded 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.

   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 for an example in Chrome).
4. Click **Advanced** (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).

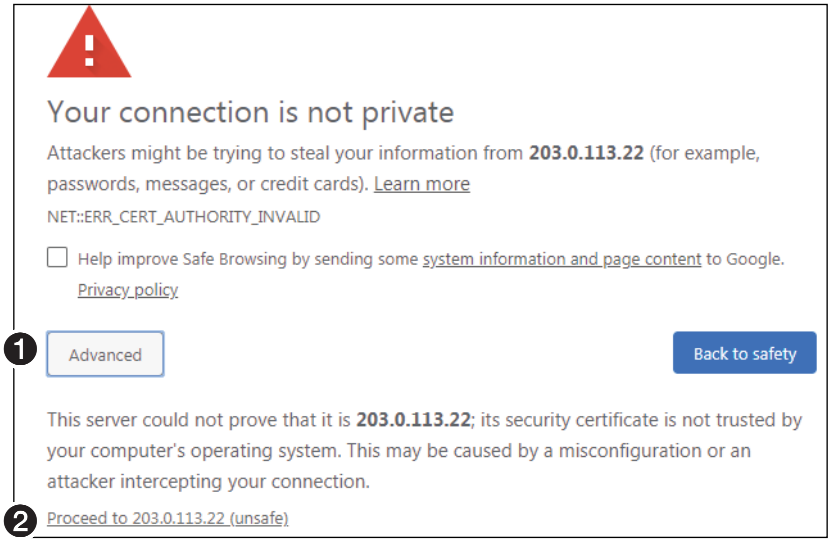


Figure 3. Privacy Error Message (in Chrome Browser)

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

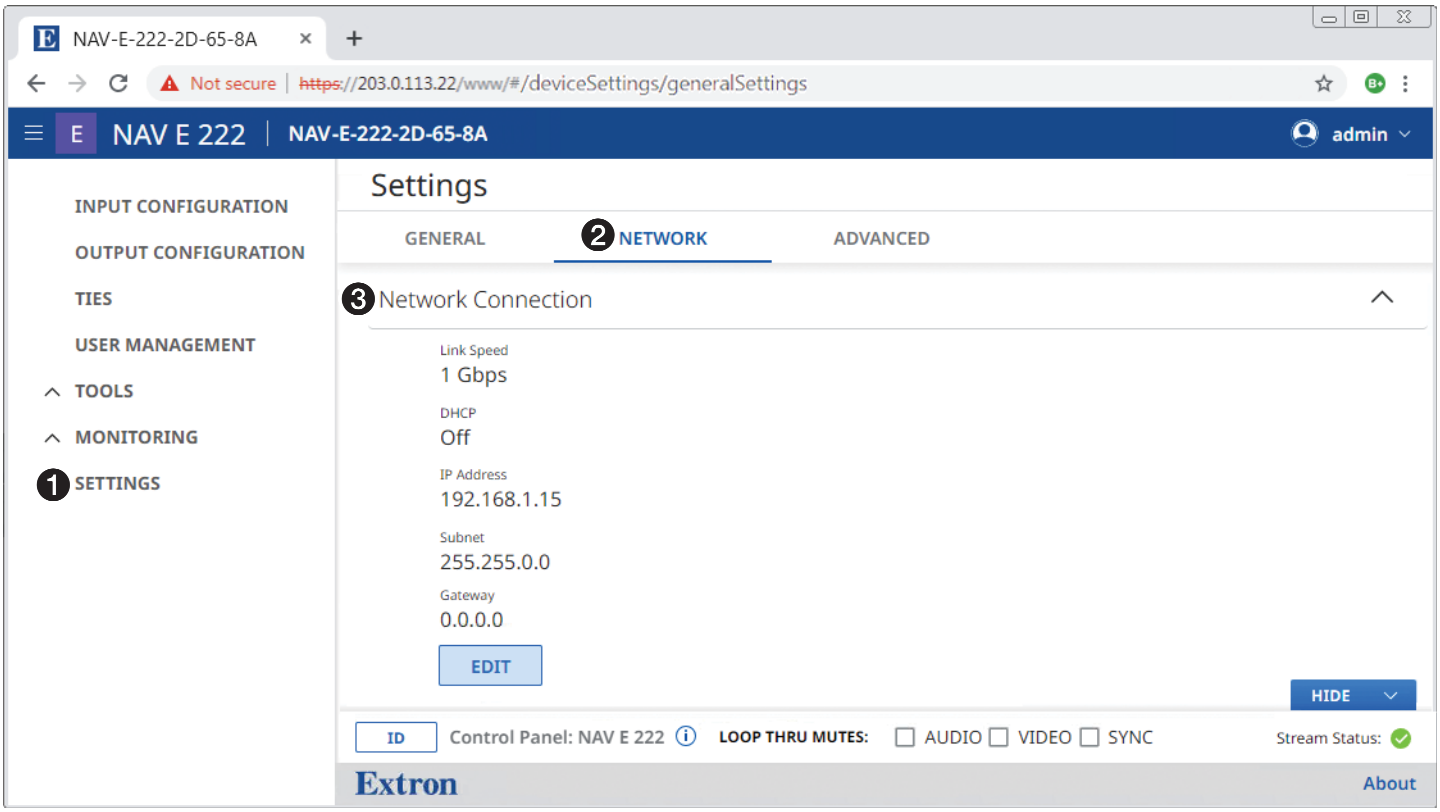


Figure 5. Home Page

NOTE: Detailed descriptions of communication, configuration, and monitoring are provided in the *NAV E 222 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`** (❷) > **`Network Connection`** (❸). 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`**.

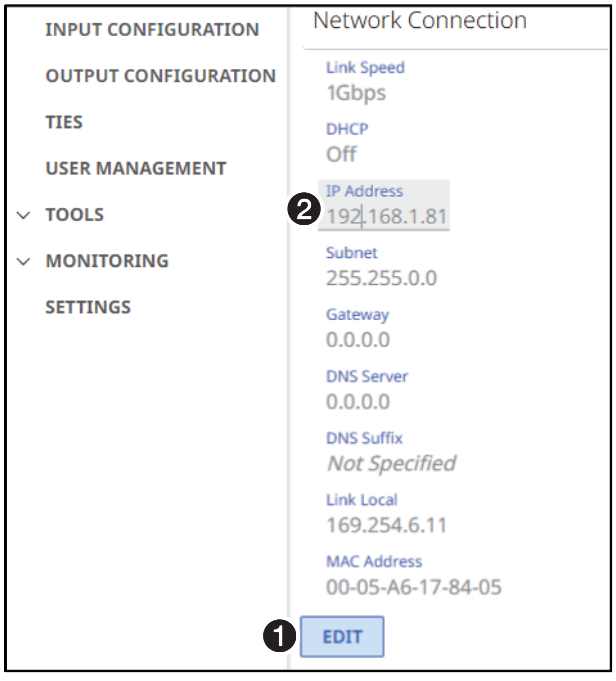


Figure 6. Network Connection Pane

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 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.

Auto-Switch mode

When in auto-switch mode, the switcher automatically selects the highest numbered active input. If you try to manually select an input from the front panel in auto-switch mode, both input LEDs blink three times and no switch is made. Toggle auto-switch mode on and off as follows:

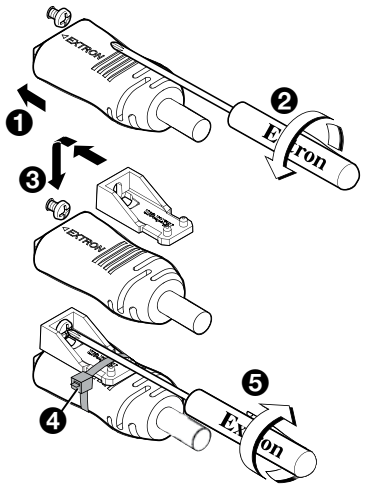
1. Simultaneously press and **hold** the front panel **Input 1** (**MODE**) button and the **Input 2** (**NORM**[al]**/AUTO** button (see **figure 2**, D and E on page 2) for 3 seconds.

   The AUTO SWITCH LED (C), when lit, indicates auto-switch mode is on.
2. Release both **Input** buttons.

NOTE: You can change the auto-switching priority (input 1, or input 2, or last selected) using the embedded HTML pages (see *NAV E 222 User Guide*, available at **www. extron.com**).

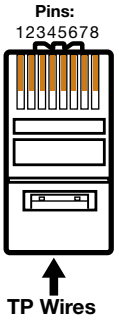
Connection Details

LockIt Plus® Lacing Brackets



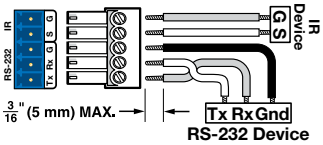
1. **Plug in the Cable** – Connect the HDMI or USB-C cable to the port (❶).
2. **Loosen the Screw** – Slightly loosen the mounting screw (do not remove it, ❷).
3. **Attach the Bracket** – Place the bracket over the screw and tighten it (❸). Do not overtighten the connector mounting screw.
4. **Secure the Cable** – Tighten the tie wrap around the connector and bracket (❹), and cut off the extra length (❺).

NAV 1G PoE connector

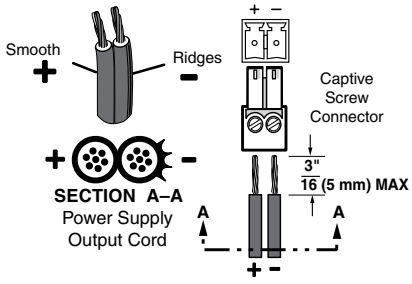


Pin	TIA/EIA T 568B Wire color
1	White-orange
2	Orange
3	White-green
4	Blue
5	White-blue
6	Green
7	White-brown
8	Brown

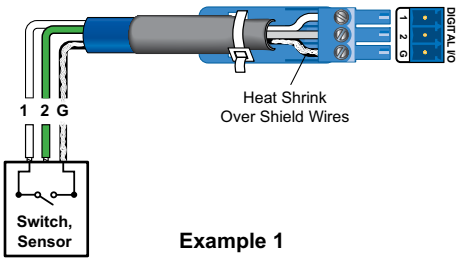
RS-232/IR connector



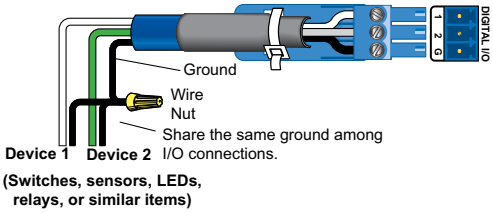
Power connector



Digital I/O connector



Example 1



Example 2

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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