

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

NAV E 401 D and NAV E 201 D • Setup Guide

This guide provides instructions for an experienced installer to install the Extron NAV E 401 D and NAV E 201 D 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 IP network. The encoder fits in a standard US three-gang mud ring or electrical junction box. The encoder ships with a three-gang mud ring and a decorator-style wallplate (white or black, depending on the version ordered). The front panel faceplates are in white or black, as appropriate.

NOTE: For more information on any subject in this guide, see the *NAV E 401 D and NAV E 201 D User Guide*, available at www.extron.com.

Features

Front Panel

NOTES:

- Figure 1 shows a NAV E 401 D. The NAV E 201 D is similar; the only exception is lack of an Extension port (D).
- Items C and F are visible only when the faceplate is removed.

Connectors

- A HDMI IN port** — Receives the HDMI video input (or DVI, with an appropriate adapter) from the HDMI output port of the digital video source (see [LockIt® Lacing Brackets](#) on page 7 to securely fasten the HDMI connectors to the encoder).
- B HDMI OUT port** — Outputs looped-through HDMI video for local monitoring of the source signal.
- C Configuration (CONFIG) port** — Connect a PC into the encoder for configuration of the encoder. 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 and Product Configuration Software (PCS).
- D NAV - Ext(ension) port (NAV E 401 D only)** — If desired, connect another networked device to this port (see [LAN and Ext connector](#) on page 7 to wire the connector). The port acts as a networked switch to the NAV 1G/PoE+ port (see **A** on page 2).

Indicators and buttons

- E Visible LEDs (LEDs that are always visible)** —
 - **Power** — Indicates power and startup status.
 - 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.
 - **HDMI** — The encoder is detecting an HDMI input.
 - **HDCP** — The HDMI signal is HDCP encrypted.
 - **Stream** — Indicates the output status of the A/V 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.
- F Hidden buttons and LEDs (features that are visible only when the faceplate is removed)** —
 - **Reset button and LED** — This recessed button and LED initiate and display three modes of reset (see the *NAV E 401 D and NAV E 201 D User Guide*, available at www.extron.com, for details).
 - **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 7 for details).
 - **NAV 1G LEDs** — Indicate the status of the network connection.
 - 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.

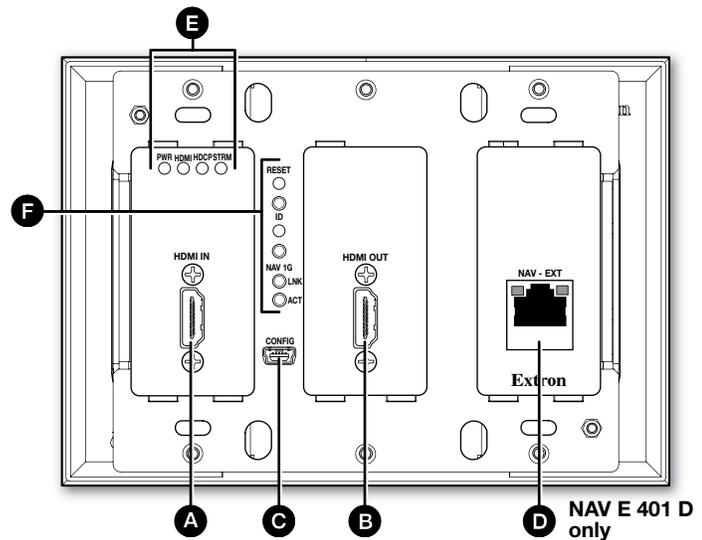


Figure 1. NAV E 401 D Front Panel Features

NAV E 401 D and NAV E 201 D • Setup Guide (Continued)

Rear Panel Connectors

- A NAV 1G/PoE+ port** – Connects to an Ethernet LAN on which one or more decoders also reside for streaming and control (see **LAN and Ext connector** on page 7 to wire the connector).
This port can also receive Power over Ethernet (PoE+) to power the encoder (see **Power** on page 4 for power options).
- B CONTROL RS-232/IR port** – Connects 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 using an Extron control system. (see **Control connector** on page 7 to wire the connector).
- C Power connector** (optional) – Plug the included external 12 VDC power supply into this 2-pole connector for local power (see **Power connector** on page 7 to wire the connector and **Power** for power options).

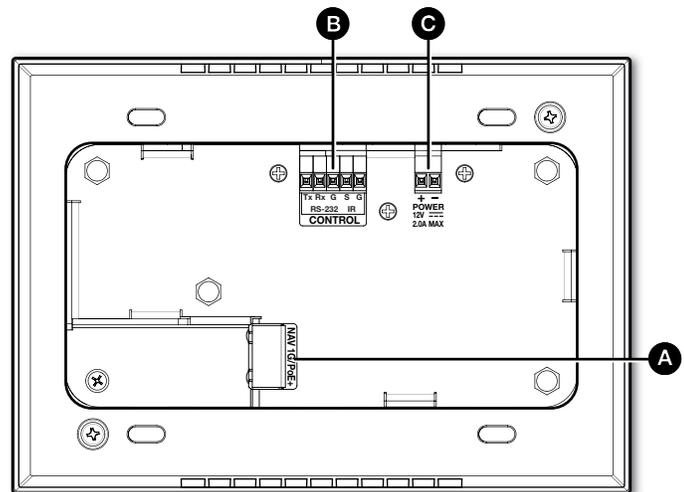


Figure 2. NAV E 401 D and NAV E 201 D Rear Panel Features

Installation

Step 1: Prepare the Installation Site

ATTENTION:

- Installation and service must be performed by authorized personnel only.
- L'installation et l'entretien doivent être effectués par le personnel autorisé uniquement.
- Extron recommends installing the encoder into a grounded, UL Listed electrical junction box.
- Extron recommande d'installer le encodeur dans une boîte de dérivation électrique mis à la terre, certifiée UL.
- If the encoder will be installed into fine furniture, it is best to hire a licenced, bonded craftsman to cut the access hole and perform the physical installation so the surface will not be damaged.
- S'il est prévu d'installer le encodeur dans du beau mobilier, il est préférable de faire appel à un artisan autorisé et qualifié pour couper le trou d'accès et réaliser l'installation de telle façon que la surface ne soit pas endommagée.
- Follow all national and local building and electrical codes that apply to the installation site.
- Respectez tous les codes électriques et du bâtiment, nationaux et locaux, qui s'appliquent au site de l'installation.
- For the installation to meet UL requirements and to comply with National Electrical Code (NEC), the encoder must be installed in a UL Listed junction box. The end user or installer must furnish the junction box. It is not included with the unit.
- Pour que l'installation respecte les exigences UL et soit conforme au National Electrical Code (NEC) américain, le encodeur doit être installé dans une boîte de dérivation certifiée UL. Il incombe à l'utilisateur final ou à l'installateur de fournir la boîte de dérivation. Cet équipement n'est pas inclus avec l'unité.

Americans with Disabilities Act (ADA) compliance

When planning where to install the encoder, you may need to consider factors affecting accessibility of the encoder such as height from the floor, distance from obstructions, and how far a user must reach to access the connectors. For guidelines, see sections 307 ("Protruding Objects") and 308 ("Reach Ranges") of the *2010 ADA Standards for Accessible Design* available at:

<http://www.ada.gov/regs2010/2010ADASTandards/2010ADASTandards.pdf>.

Site preparation

The encoder fits into a standard US three-gang junction box or mud ring and decorator-style wallplate. The encoder ships with a mud ring. Optional UL Listed junction boxes, external junction boxes, and surface mounting boxes are available for use with the unit. Read any installation instructions and UL guidelines that come with the mounting devices, then install the box or mud ring in the opening at the installation site.

NOTE: Connect the network cable and (if applicable) the external power supply, but do not apply power yet.

To prepare the site:

1. Using the size of the junction box or mud ring for reference, cut the hole in the mounting surface. Protect the surface prior to and during cutting so the surface is not damaged.
2. Run cables to the mounting location, leaving enough slack for device installation.
3. Install the junction box or mud ring into the wall or furniture.
4. Secure the cables with a clamp for strain relief and so they do not slip back down into the wall or furniture.

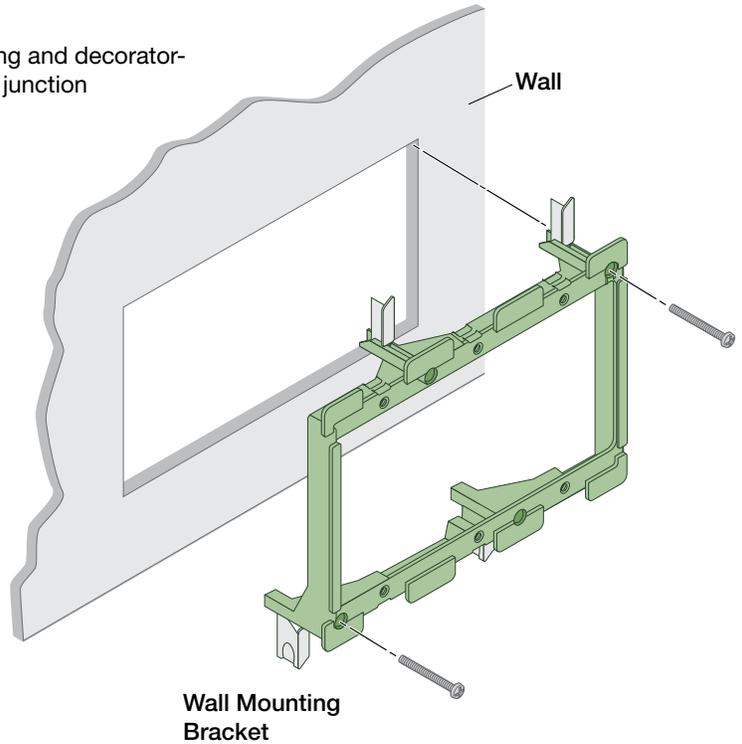


Figure 3. Installing a Mud Ring

Step 2: Cable the Encoder (Inside the Wall)

NOTE: The encoder is wider than a standard 3-gang device. You cannot install another wall-mounted device immediately adjacent to this device.

1. Connect the encoder to the network switch (see **item A** on page 2).
2. **Optional** — Connect the encoder to a remote controlled device for bidirectional RS-232 and IR communication (see **item B** on page 2).
3. **Optional** — Connect the encoder to an unpowered external power supply (see **item C** on page 2 and **Power** on page 4).

Step 3: Test and Troubleshoot

1. Power up the system. Check that after approximately 45 seconds, the front panel LEDs indicate normally (Power LED and Stream LEDs lit steadily green).
2. Make adjustments to wiring or configuration as needed. Remember that the rear panel ports are not accessible after the encoder is mounted.

Step 4: Complete the Physical Installation

Mount the encoder to a wall or furniture as follows:

NOTE: Extron recommends taking safety precautions to avoid electrostatic discharge issues during installation.

1. Insert the cabled encoder into the mud ring or junction box within the wall or furniture, aligning the mounting holes in the encoder mounting tabs with those in box or mud ring.
2. Secure the encoder to the junction box, wall or surface mounting box, or mud ring as follows (see **figure 4** on page 4):
 - a. Insert the included screws through the mounting holes at diagonal corners of the unit and into the corresponding threaded holes in the box or mud ring.
 - b. Using a Phillips screwdriver, tighten the screws until snug.

ATTENTION:

- Do **not** overtighten the screws.
- Veuillez à **ne pas** trop serrer les vis.

3. Attach the wallplate to the encoder: insert the six included screws through the circular holes in the wallplate and the tabs on the encoder (see **figure 4**). Tighten the screws using a flat bladed screwdriver until snug.

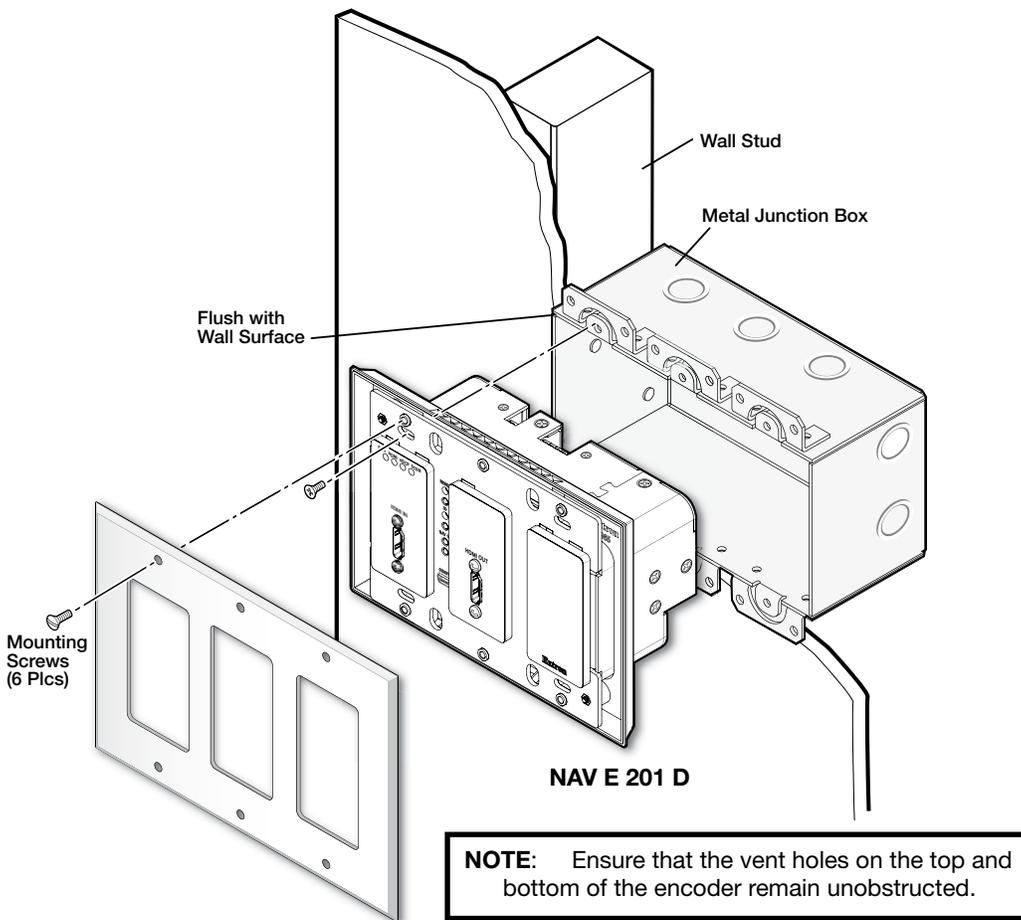


Figure 4. Installing the Encoder in a Junction Box

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 **item C** on page 1).
- Remotely, receiving PoE via the NAV 1G/PoE+ port (see **item A** on page 2); either from the network switch or from an optional PI 140 Power Injector.
- Locally (**item C**) and remotely (**item A**), 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.

ATTENTION:

- Power over Ethernet (PoE) is intended for indoor use only. It is to be connected only to networks or circuits that are not routed to the outside plant or building.
- L'alimentation via Ethernet (PoE) est destinée à une utilisation en intérieur uniquement. Elle doit être connectée seulement à des réseaux ou des circuits qui ne sont pas routés au réseau ou au bâtiment extérieur.

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 401 D and NAV E 201 D User Guide available at www.extron.com).

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 1](#), **C** on page 1) or the rear panel NAV 1G/PoE+ port (see [figure 2](#), **F** on page 2).

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™, 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:

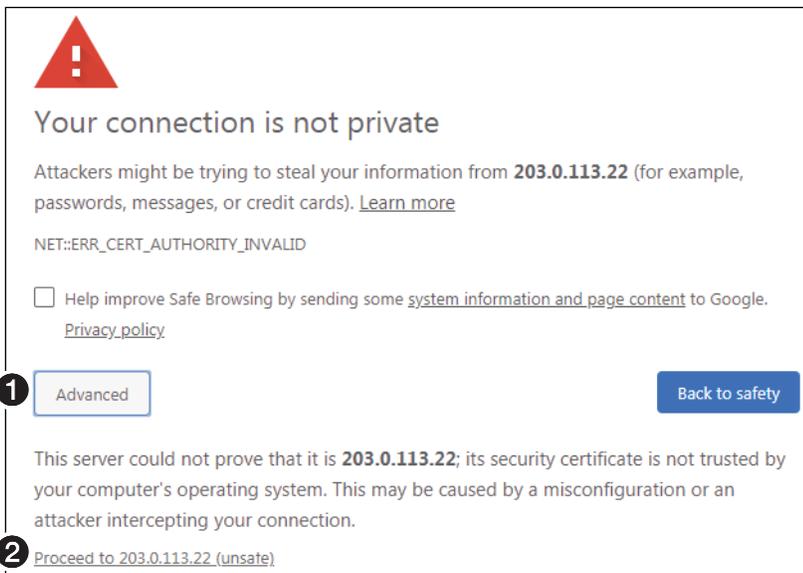
- **Default settings:**

| Port | DHCP | IP address | Subnet mask |
|---------------|------|--------------|-------------|
| Config (USB)* | | 203.0.113.22 | |
| NAV 1G/PoE+† | On | | |

- 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.

- * **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.

3. Press the keyboard <Enter> key. The browser displays a privacy error message (see figure 5) for an example in the Chrome browser).



NOTE: Your IT department can provide an uploadable SSL Certificate. Once the certificate is loaded, the notification (figure 5) does not occur and step 3 displays figure 6. Proceed to [step 6](#) on page 6.

Figure 5. Privacy Error Message (in Chrome Browser)

4. Click the browser button that advances past the privacy notification (such as **Advanced** [1] in Chrome). Explanatory text and a link appear.
5. Click **Proceed to <IP address> (unsafe)** (2) (or similar message). The browser opens to the Login dialog box (see figure 6).



Figure 6. Login Dialog Box

NAV E 401 D and NAV E 201 D • Setup Guide (Continued)

6. Complete the **Username** (see [figure 6](#), ❶ on page 5) and **Password** (❷) fields and click **Sign In** (❸). The browser opens to the home page of the embedded web pages (see [figure 7](#)).

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.

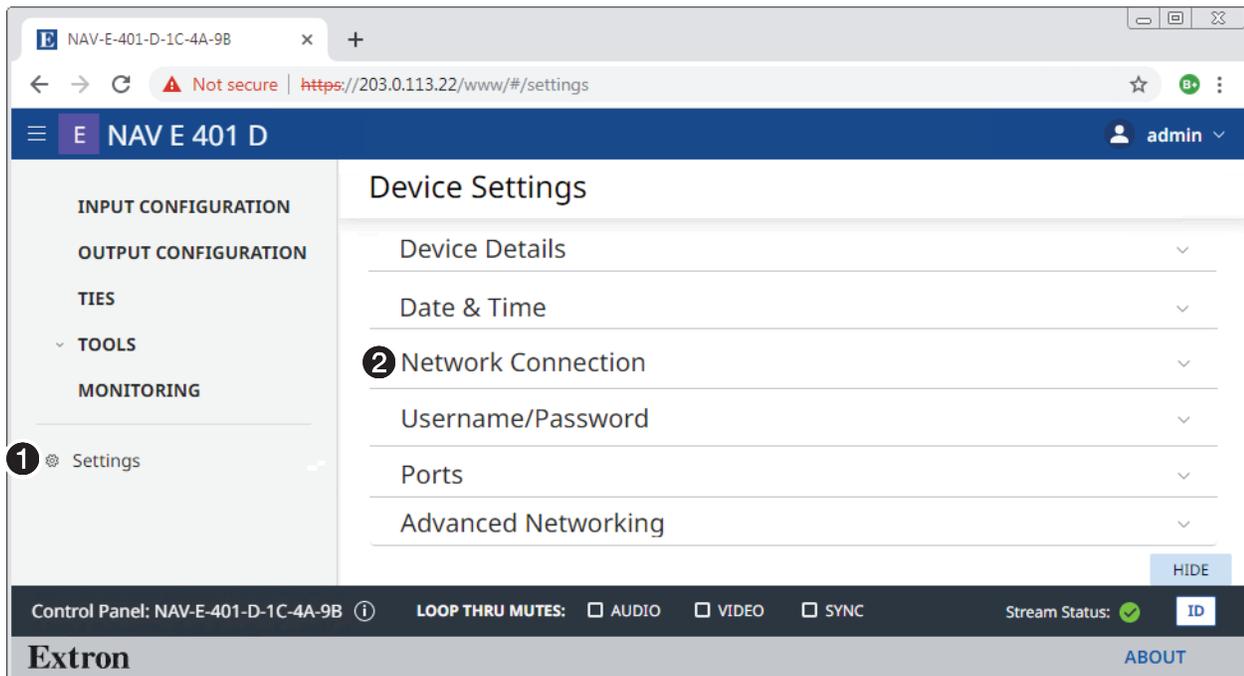


Figure 7. Home Page

NOTE: Detailed descriptions of communication, configuration, and monitoring are provided in the *NAV E 401 D and NAV E 201 D 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 7](#), ❶) > **Network Connection** (❷). The Network Connection pane opens (see [figure 8](#)), 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 8](#), 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**.

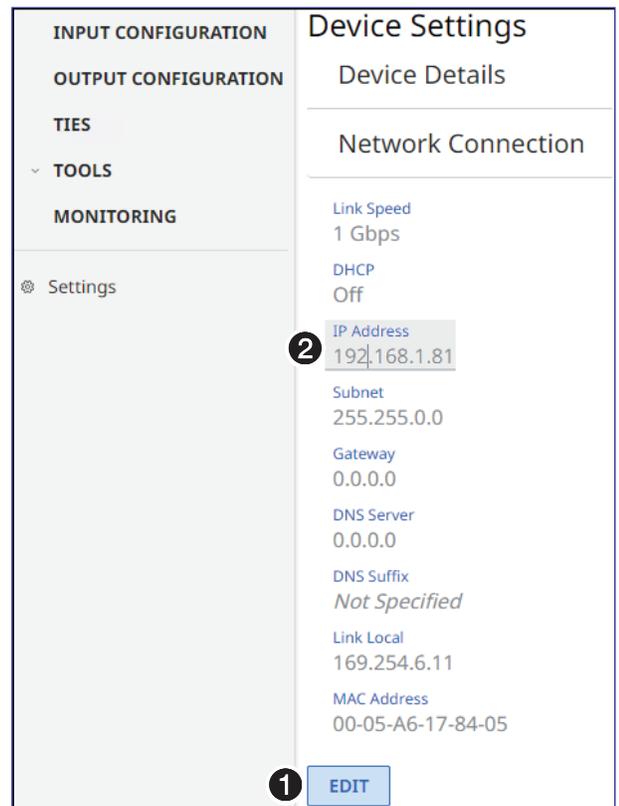


Figure 8. Network Connection Pane

Pairing devices on front panel

Pair devices from the front panel as follows:

1. Use a Tweezer or other small screwdriver to press and **hold** the **encoder ID** button on the front panel, behind the bezel (see **figure 1, E** on page 1) for approximately 3 seconds, until the ID LED blinks. The encoder enters pairing mode, which allows decoders to receive AV streams from encoders.
2. One at a time, use a Tweezer 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 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.

ID
○
○

Operation in a System with a NAVigator

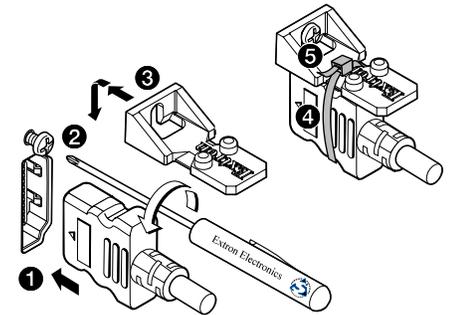
The Extron NAVigator is a system manager that easily configures and controls the NAV System. The NAVigator supports a 16 endpoint system by default, but if a LinkLicense™ is installed, it can support up to 240 endpoints.

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

Connection Details

LockIt® Lacing Brackets

1. Plug the HDMI cable into the panel connection (see **1**, at right).
2. Loosen the HDMI 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 HDMI connector (**3**).
4. Tighten the screw to secure the bracket.

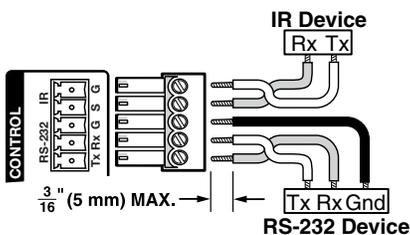


ATTENTION:

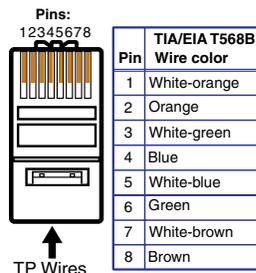
- Do not overtighten the HDMI connector mounting screw. The shield it fastens to is very thin and can easily be stripped.
- Ne serrez pas trop la vis de montage du connecteur HDMI. Le blindage auquel elle est attachée est très fin et peut facilement être dénudé.

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

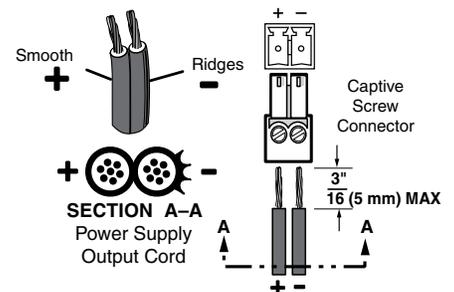
Control connector



LAN and Ext 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.