INSTRUCTION MANUAL

N2600 SERIES NMX-ENC-N2615D-WP WALLPLATE ENCODERS/NMX-DEC-N2625D-WP WALLPLATE DECODERS

NMX-ENC-N2615D-WP-NA, NMX-DEC-N2625D-WP-NA
NMX-ENC-N2615D-WP-EK, NMX-DEC-N2625D-WP-EK

IMPORTANT SAFETY INSTRUCTIONS

1. READ these instructions.
2. KEEP these instructions.
3. HEED all warnings.
4. FOLLOW all instructions.
5. DO NOT use this apparatus near water.
6. CLEAN ONLY with dry cloth.
7. DO NOT block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. DO NOT install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. DO NOT defeat the safety purpose of the polarized or grounding type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wider blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. PROTECT the power cord from being walked on or pinched, particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. ONLY USE attachments/accessories specified by the manufacturer.
12. UNPLUG this apparatus during lightning storms or when unused for long periods of time.
13. REFER all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
14. DO NOT expose this apparatus to dripping or splashing and ensure that no objects filled with liquids, such as vases, are placed on the apparatus.
15. To completely disconnect this apparatus from the AC Mains, disconnect the power supply cord plug from the AC receptacle or disconnect the PoE+ injector.
16. Where the mains plug or an appliance coupler is used as the disconnect device, the disconnect device shall remain readily operable.
17. DO NOT overload wall outlets or extension cords beyond their rated capacity as this can cause electric shock or fire.
18. Power is supplied via Power Over Ethernet (PoE+), utilizing an AMX certified PoE+ injector such as the PS-POE-AF-TC PoE+ Injector (FG423-83) or compatible network switch which is classified as ES1 and PS2 output in accordance with IEC/EN/UL 62368-1.
19. The product is to be connected only to PoE+ networks without routing to the outside plant.

The exclamation point, within an equilateral triangle, is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electrical shock to persons.

ESD Warning: The icon to the left indicates text regarding potential danger associated with the discharge of static electricity from an outside source (such as human hands) into an integrated circuit, often resulting in damage to the circuit.

WARNING: To reduce the risk of fire or electrical shock, do not expose this apparatus to rain or moisture.

WARNING: No naked flame sources - such as candles - should be placed on the product.

CAUTION: This product contains batteries that are covered under the 2006/66/EC European Directive, which cannot be disposed of with normal household waste. Please dispose of any used batteries properly, following any local regulations. Do not incinerate.

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LIABILITY NOTICE

No patent liability is assumed with respect to the use of information contained herein. While every precaution has been taken in the preparation of this publication, AMX assumes no responsibility for error or omissions. No liability is assumed for damages resulting from the use of the information contained herein. Further, this publication and features described herein are subject to change without notice.

AMX WARRANTY AND RETURN POLICY

The AMX Warranty and Return Policy and related documents can be viewed/downloaded at www.amx.com.

ESD WARNING

To avoid ESD (Electrostatic Discharge) damage to sensitive components, make sure you are properly grounded before touching any internal materials.

When working with any equipment manufactured with electronic devices, proper ESD grounding procedures must be followed to make sure people, products, and tools are as free of static charges as possible. Grounding straps, conductive smocks, and conductive work mats are specifically designed for this purpose.

Anyone performing field maintenance on AMX equipment should use an appropriate ESD field service kit complete with at least a dissipative work mat with a ground cord and a UL listed adjustable wrist strap with another ground cord.

WARNING: Do Not Open! Risk of Electrical Shock. Voltages in this equipment are hazardous to life. No user-serviceable parts inside. Refer all servicing to qualified service personnel.

Place the equipment near a main power supply outlet and make sure that you can easily access the power breaker switch.

WARNING: This product is intended to be operated ONLY from the voltages listed on the back panel or the recommended, or included, power supply of the product. Operation from other voltages other than those indicated may cause irreversible damage to the product and void the products warranty. The use of AC Plug Adapters is cautioned because it can allow the product to be plugged into voltages in which the product was not designed to operate. If the product is equipped with a detachable power cord, use only the type provided with your product or by your local distributor and/or retailer. If you are unsure of the correct operational voltage, please contact your local distributor and/or retailer.

FCC AND CANADA EMC COMPLIANCE INFORMATION:

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

CAN ICE-3 (B)/NMB-3(B)

FCC SDOC SUPPLIER'S DECLARATION OF CONFORMITY:

HARMAN Professional, Inc. hereby declares that this equipment is in compliance with the FCC part 15 Subpart B.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Approved under the verification provision of FCC Part 15 as a Class B Digital Device.

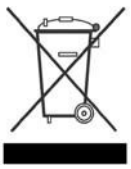
Caution: Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate this device.

EU COMPLIANCE INFORMATION:

Hereby, Harman Professional, Inc. declares that the equipment is in compliance with the following: European Union Low Voltage Directive 2014/35/EU; European Union EMC Directive 2014/30/EU; European Union Restriction of Hazardous Substances Recast (RoHS2) Directive 2011/65/EU and as amended by 2015/863.

You may obtain a free copy of the Declaration of Conformity by visiting http://www.amx.com/techcenter/certifications.asp.

WEEE NOTICE:



This appliance is labeled in accordance with European Directive 2012/19/EU concerning waste of electrical and electronic equipment (WEEE). This label indicates that this product should not be disposed of with household waste. It should be deposited at an appropriate facility to enable recovery and recycling.

此标识适用于在中华人民共和国销售的电子信息产品. 标识中间的数字为环保实用期限的年数.

This logo applies to electronic information products sold in the People's Republic of China. The number in the middle of the logo is the number of years of environmental utility.

Manufacturer Information:
HARMAN Professional, Inc.
Address: 8500 Balboa Blvd. Northridge, CA 91329 USA

EU Regulatory Contact:
Harman Professional Denmark ApS
Olof Palmes Allé 44, 8200 Aarhus N, Denmark

UK Regulatory Contact:
Harman Professional Solutions
2 Westside, London Road, Apsley, Hemel Hempstead, HP3 9TD, UK

Table of Contents

Introducing Your New N2600 Series Devices

Product Overview

The N2600 AV over IP Series belongs to the N-Series product family from AMX and consists of N2612 Encoders, N2622 Decoders, N2615D Wallplate Encoders and N2625D Wallplate Decoders. This series provides a flexible, feature-rich, simple-to-deploy digital media distribution and switching solution that can be used in 4K applications with resolutions up to 4096x2160, with support for HDCP 2.2. This motion-based wavelet codec solution delivers video with nearly imperceptible latency over standard gigabit Ethernet networks.

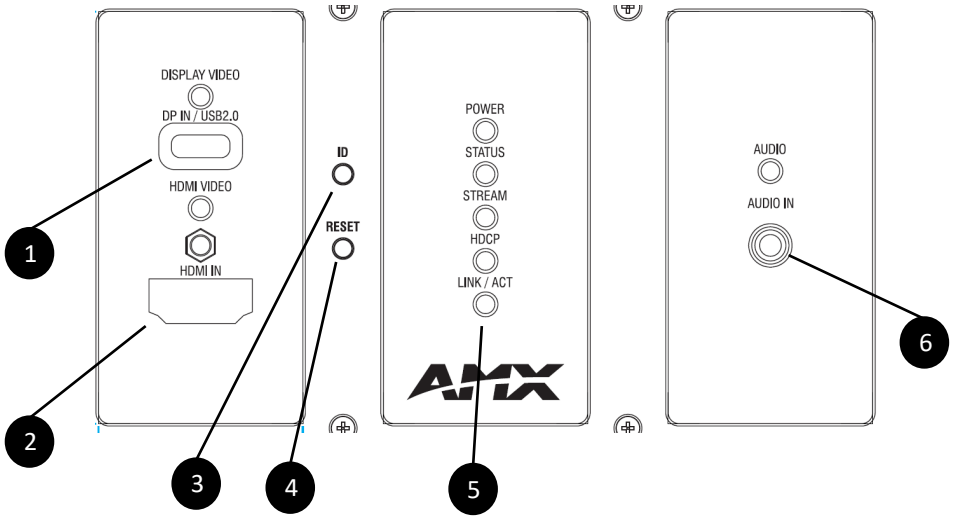
Any source can be sent to one or more displays by routing through layer-2/layer-3 switches using standard Cat5e cable. Standard features include H264 Stream, output scaling, bi-directional serial, IR, embedded 7.1 audio, USB 2.0 and KVM-over-IP extension. Card versions compatible with the N-Series N9206 card cage are available for high-density applications.

Features include:

- Design flexibility allows you to start as small as 1x1 and grow the system in increments of single sources and devices by simply adding additional Encoders and Decoders.
- Simultaneously stream an H264 Stream from the N2612 Encoder allowing for maximum flexibility of the system.
- USB 2.0 routable.
- Output scaling performed at the Decoder for maximum flexibility.
- Power over Ethernet (PoE+) eliminates the need for a local power supply and speeds installation. Units can still be powered by PoE+ or PoE+ Injectors.
- Infrared (IR) emitter connection allows control of low-cost, IR-only display devices.
- Fast install with Phoenix connectors for power, IR, RS232 serial, and analog audio interfaces.
- Pass-through HDMI interface allows easy installation with local display, such as desktop PC applications.
- USB-A and USB-C connections for KVM applications.

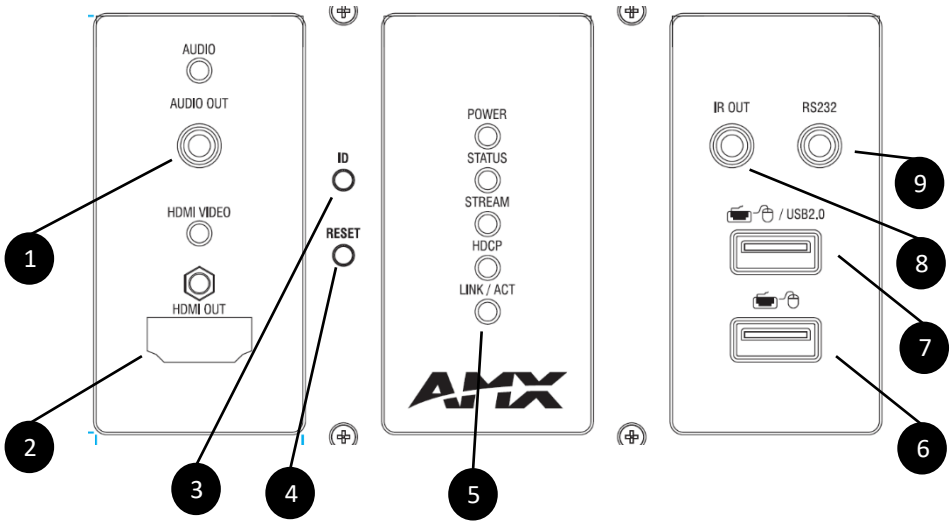
Hardware Overview

Refer to the following figures (front and rear panel drawings of these devices) and the Front and Rear Panel Descriptions table on page 6 for hardware details.



1) USB-C Port
2) HDMI Input
3) Device ID Discovery Button
4) Device Reset Button
5) LED Status Indicators
6) Analog Audio Input

FIG. 1 N2615D Encoder Front Panel



1) Analog Audio Out
2) HDMI Out
3) Device ID Discovery Button
4) Device Reset Button
5) LED Status Indicators
6) USB-A HID Connector
7) USB-A, USB 2.0 or HID
8) IR Output
9) RS232 Connector

FIG. 2 N2625D Decoder Panel

Wallplate Encoder and Decoder Panel Descriptions	
Encoder Panel	
DISPLAY VIDEO LED	On (green) when USB-C is detected
USB-C port	For Video/KVM/USB 2.0 support.
HDMI VIDEO LED	On (green) when HDMI is detected
HDMI IN	HDMI video input.
RESET button	Recessed pushbutton. Press to initiate a "warm restart" which causes the processor to reset, but not lose power. A reset does NOT affect the current settings.
ID button	Recessed pushbutton. Press to send notification out on the network to identify the unit (the notification causes a pop-up dialog in N-Able and N-Command). Press and hold for 30 seconds to initiate a factory restore.
POWER LED	On solid (green) when operating power is supplied.
STATUS LED	On flashing (green) when there is software activity.
STREAM LED	On (green) when the unit is streaming video.
HDCP LED	On (Amber) when the unit detects HDCP
LINK/ACT	On (green) / Flashing (green) based on the activity of the ethernet connection to the device.
AUDIO LED	On (green) when analog audio is enabled
AUDIO IN	3.5mm connector, Provide analog audio input
Decoder Panel	
AUDIO LED	On (green) when analog audio is enabled
AUDIO OUT	3.5mm connector, Provide analog audio output
HDMI VIDEO LED	On (green
HDMI OUT	HDMI video output
RESET button	Recessed pushbutton. Press to initiate a "warm restart" which causes the processor to reset, but not lose power. A reset does NOT affect the current settings.
ID button	Recessed pushbutton. Press to send notification out on the network to identify the unit (the notification causes a pop-up dialog in N-Able and N-Command). Press and hold for 30 seconds to initiate a factory restore.
POWER LED	On solid (green) when operating power is supplied.
STATUS LED	On flashing (green) when there is software activity.
STREAM LED	On (green) when the unit is streaming video.
HDCP LED	On (Amber) when the unit detects HDCP
LINK/ACT	On (green) / Flashing (green) based on the activity of the ethernet connection to the device.
IR OUT	3.5mm connector. Provides IR output only (33 to 60 kHz; typically, 39 kHz). IR emitter not included.
RS232	3.5mm connector, which provides a serial control interface full duplex communication. Supports standard baud rates from 1200 to 115200.
USB 2.0 Standard- A port (x2)	For USB 2.0 support, connect to top connector. For HID support, connect to either USB port.

Installing and Configuring Your AV Equipment

This chapter provides an installation overview as well as a detailed step-by-step process for installation. If you encounter any problems, refer to the *Troubleshooting* section on page 100 for help.

Installation Overview

The N2600 Encoders and Decoders have multiple configuration and installation options. For basic installation guidelines, see the table below. For more detailed instructions, refer to Step-by-Step Installation Instructions on page 12.

Basic Installation Guidelines	
Connections	**Options**
Power	**Power over Ethernet (PoE+):** Connect the unit's P0 port to an active, PoE+ enabled network switch.
Network	**PoE units:** Using PoE+ to power the unit, you should already have a network connection.
Video	**N2615D Encoders** • For video encoding of a digital source, connect the source to the Encoder's USB-C or HDMI IN port. • USB-C - Use a DP-Alt or Thunderbolt 3/4 cable or adapter. • HDMI - Use a HDMI 2.0 or greater cable or adapter.
	N2625D Decoders • For video decoding, connect a digital display to the Decoder's **HDMI OUT** port using a video cable with an HDMI connector (or adapter).
Audio	**N2615D Encoders** • For audio encoding, connect a line-level analog audio source to the **Audio In** input 3.5mm connector, or • Use the HDMI audio embedded with the source connection.
	N2625D Decoders • For audio decoding, connect a line-level analog audio device to the **Audio Out** output 3.5mm connector, or send the HDMI embedded audio to a connected display's speakers.

Acceptable Input/Output Types	
N2615D Encoder - Input	
Digital	HDMI - Native connection. No adapter necessary. DVI - Appropriate passive adapter required. DisplayPort- Appropriate passive adapter required. USB-C – DP-Alt or Thunderbolt 3/4
N2625D Decoder - Output	
Digital	HDMI - Native connection. No adapter necessary. DVI- Appropriate passive adapter required.
NOTE: *For all other Input/Output types, an active adapter is required.*	

Step-by-Step Installation Instructions

This section provides step-by-step guidance for installing and configuring equipment from the N-Series product family on your network. The steps provided here assume the following to be true: **NOTE:** *For a more detailed requirements list, refer to* *Appendix B: Minimum Network Requirements* on page 105.

1. *There are switches operational on the network.*
   N-Series equipment can operate on many different brands of networking equipment. The network itself needs to meet certain requirements to be able to support deployment. These instructions assume that you have purchased, installed and properly configured your existing equipment to meet the following physical and protocol requirements:
   - Layer 2 (with IGMP Multicast Protocol), OR Layer 3 (also known as "multi-layer")
   - Gigabit Ethernet
   - IGMP Snooping
   - IGMP Snooping Querier (which only needs to be enabled on a single switch within the network)
   - Capable of Jumbo Frames (due to frame density)

   NOTE: *To proceed with this installation, the switches must already be successfully connected to your network. If needed, refer to your network equipment documentation for installation instructions.*

2. *Deployment considerations have been made for the addition of high-speed video.*
   Our Networked AV solutions provide unsurpassed video and audio quality at bandwidths appropriate to any network segment or link. Matrix switches as large as 1200x800 have been constructed on a house network using N-Series equipment. Alternatively, many customers choose to deploy on physically separate networks in order to use low-cost network appliances but keep video traffic separate from data and voice.

3. *N-Able software has been loaded on the computer you are using to configure the equipment.*
   From your host computer, download N-Able (our free setup utility software):
   PC-Version - https://www.amx.com/en-US/products/n-able-pc
   Mac-Version - https://www.amx.com/en-US/products/n-able-mac

   This software is designed to set up and control the equipment during initial deployment, however, it is not always the best solution for production-type or primary user control. Refer to Control Options on page 21 for details on the available control options.

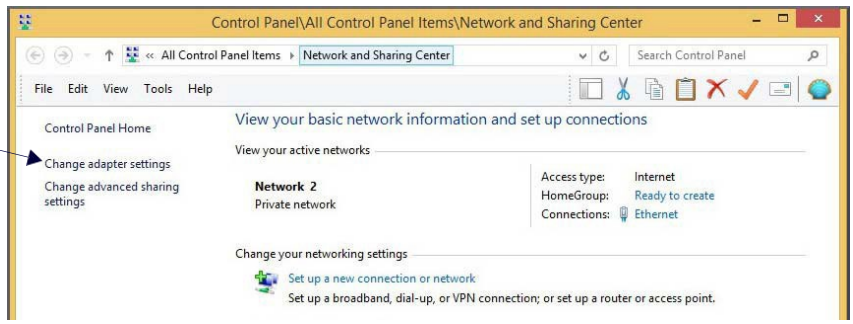
Step 1: Setting Up Your Host Computer

In order to communicate with N-Series products, your devices must be on the same subnet as the host computer. N2600 units are shipped in **DHCP** mode and the IP address will be assigned automatically based on the network DHCP server. If no DHCP server is found, the unit will use a link-local default IP address of 169.254.xxx.xxx.

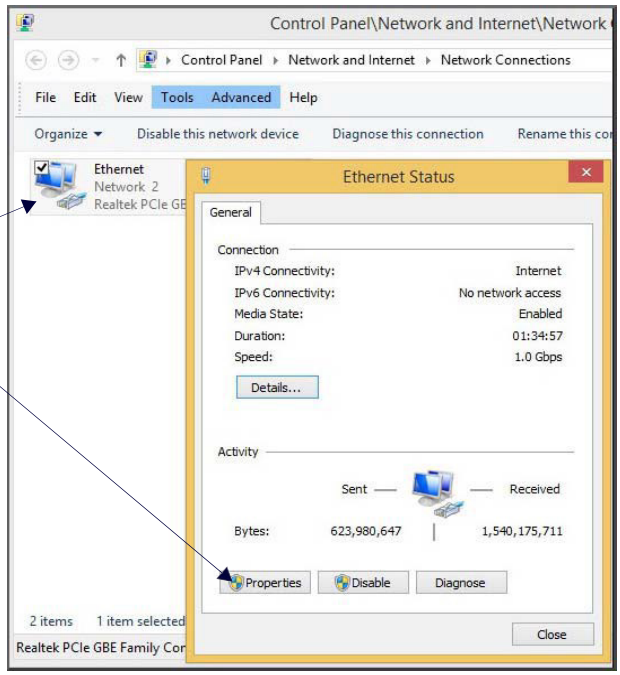
Before beginning installation, you may need to make some changes to the computer running N-Able. These steps show how this can be accomplished in a Microsoft Windows environment.

1. From the **Start** menu, select **Control Panel > Network and Sharing Center**.

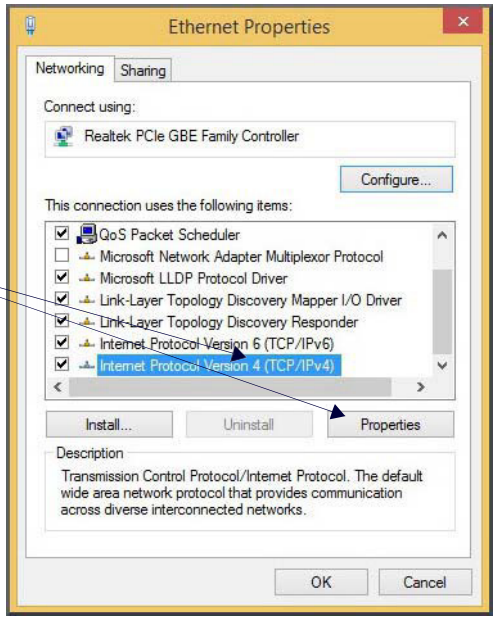
2. Select **Change adapter settings**.



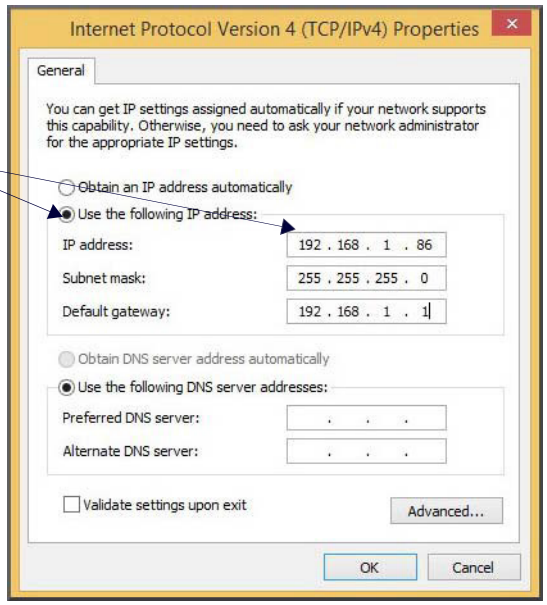
3. Double-click the wired interface to your AV network, and then click the **Properties** button.



4. Scroll down in the list to the **Internet Protocol Version 4 (TCP/IPv4)** option. Highlight it and click the **Properties** button.



5. Enable the **Use the following IP address** option and enter the static IP address provided to you by your network administrator.



NOTE: *If the computer does not need Internet access, you can simply enter a unique 169.254.xxx.xxx IP address with a 255.255.0.0 subnet mask. Contact your network administrator if you are unsure of how to configure the existing network. N-Series units will not self-assign in the 169.254.0.xxx range.*

NOTE: *If the computer has a statically-assigned IP address, click the Advanced button. Then click Add to enter a unique 169.254.xxx.xxx address with a Subnet Mask of 255.255.0.0 and a Default Gateway of 169.254.1.1.*

Step 2: Connecting Decoders to the Network

The digital connection from a Decoder **HDMI OUT** port to a display is accomplished using either a HDMI cable or DVI-D (through adapter). N2600 units support embedded audio input and output on the HDMI ports; however, some display devices (e.g., many monitors) *do not* support embedded audio. When using such a display, use the **AUDIO** port for separate transmission of sound and turn **HDMI Audio** off (on the **Settings** page) to avoid video display issues.

Power is supplied via a PoE+-enabled switch. Refer to the following steps for guidance.

1. Using a minimum Cat-5e cable, connect your N-Series Decoder's **P0** port to a PoE+-enabled switch. This provides both network and power connection.
2. Connect the display you would like to use for that Decoder (monitor, projector, etc.) to the Decoder's **HDMI OUT** port using an HDMI cable (or DVI through adapter). This must be a digital video connection.

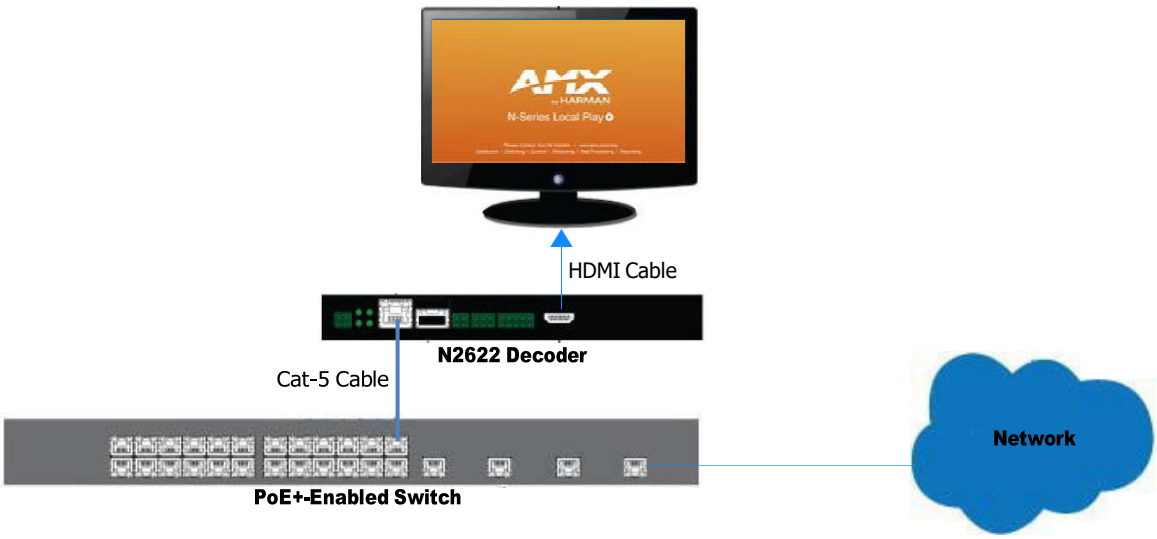


FIG. 3 Decoder Connections

3. Repeat Steps 1 and 2 until all Decoders are installed on the network.

4. Once the Decoders and displays are connected and powered up, the LocalPlay screen appears on the displays.

NOTE: *If the LocalPlay screen does not appear, refer to the chapter Troubleshooting on page 100 for more guidance.*

NOTE: *In order for the unit to receive PoE+, it must be connected to a switch or other equipment that has a PoE+ PSE (Power Sourcing Equipment) port.*

***CAUTION:** Do not run wiring that is connected to a PoE+ PSE port outside of the building where the PSE resides. It is for intra-building use only.*

Step 3: Connecting Encoders to the Network and Configuring Stream Settings

1. Using a Cat-5e cable, connect your N-Series Encoder's **P0** port to a PoE+-enabled switch.

NOTE: *In order for the unit to receive PoE+, it must be connected to a switch or other equipment that has a PoE+ PSE port.*

2. In **N-Able**, select the **Unit Management** tab and click the **Auto Discover** button (if the table has not already populated itself with the installed units).

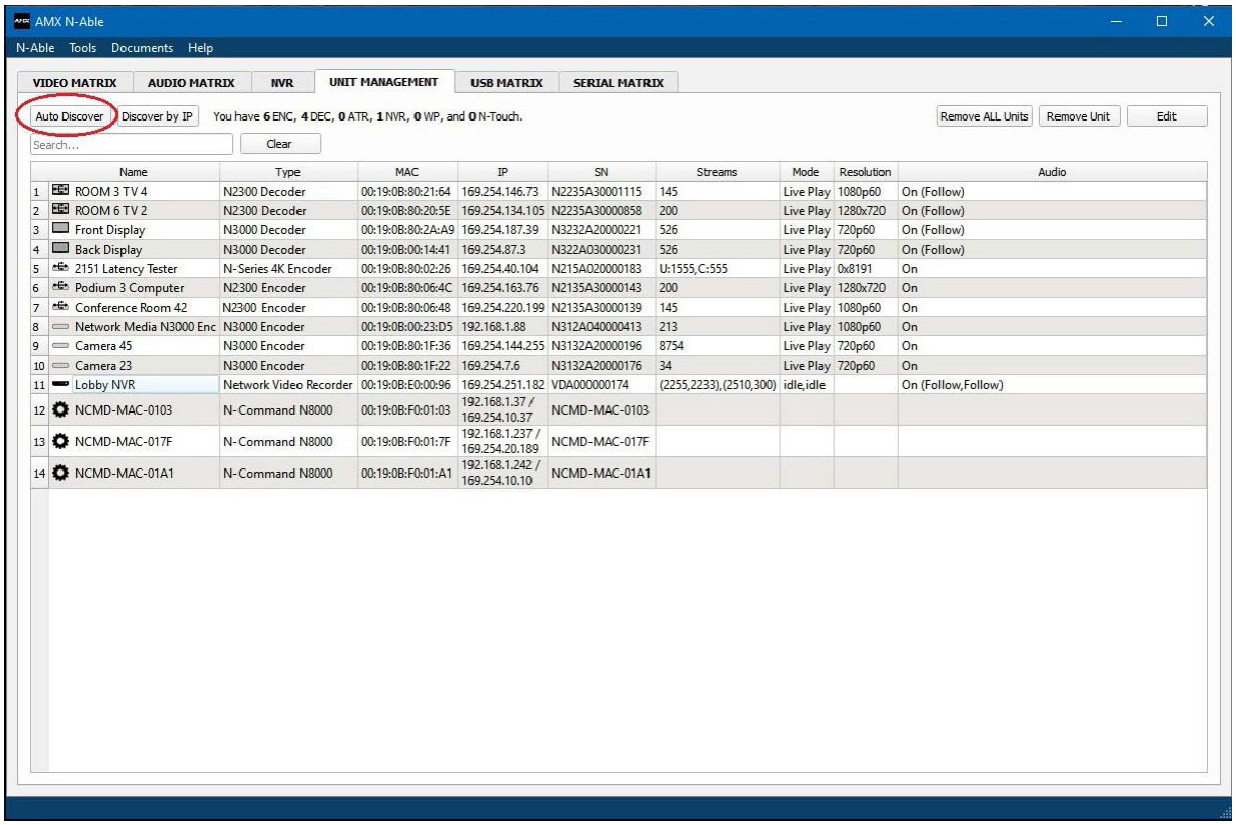
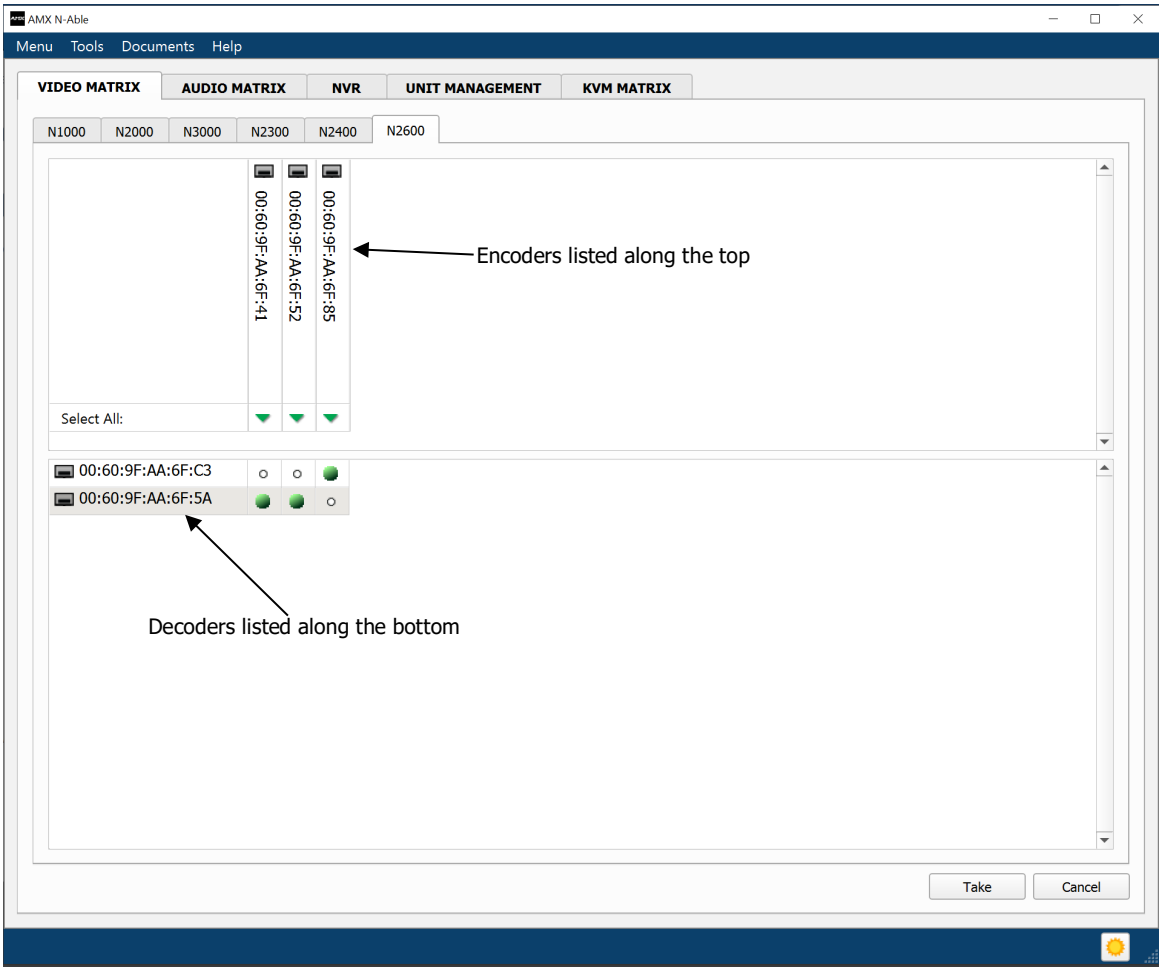


FIG. 4 Unit Management Page

3. Find your Encoder in the list. N2600 units are displayed on the following tabs:
   - **Unit Management** tab — N2600 units have **N2600 Encoder/Decoder** listed in their **Type** fields.
   - **Video Matrix** tab — N2600 units are found on the **N2600** sub-tab.

NOTE: *If using multiple Encoders in your set up, it is important to plug in and configure one Encoder at a time. All Encoders come pre-configured to use stream 2600. As you add Encoders to the network, you will need to set them up to use different streams.*



Red Text – No Video source (Encoder) or no display (Decoder)
Red Explanation Point (!) – N-Able cannot communicate with device.
Gray Text – Video network transmit for the unit is disabled.
Black Text – Unit is in live play mode.
Blue Text – Unit is playing locally-stored content.

FIG. 5 Video Matrix Page

4. Double-click the Encoder's name in the list. The **Login** page is displayed. If prompted, use the following default login credentials to log in for the first time. These can be changed later on from the **Settings** page.
   Default username: **admin**
   Default password: **password**

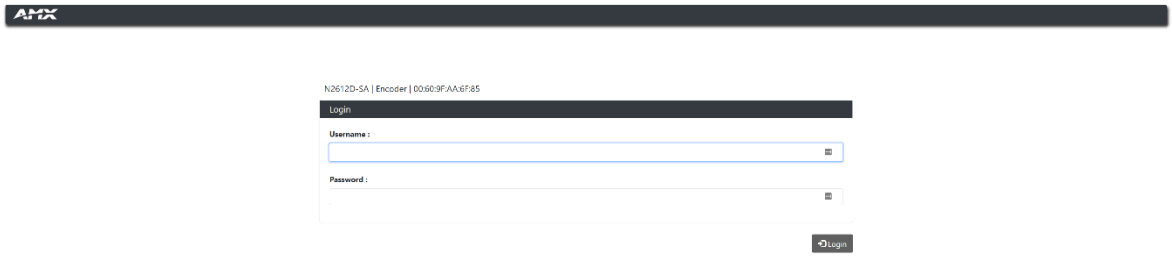


FIG. 6 Login Page

NOTE: *The Login page is only displayed if N-Able's stored username/password does not match the unit's username/password. A default system will match.*

5. The **Settings** page is displayed.
6. Change the **Stream** setting. We recommend setting **Stream** to a number between 2 and 254 (it is *required* that the number be less than 32,512).

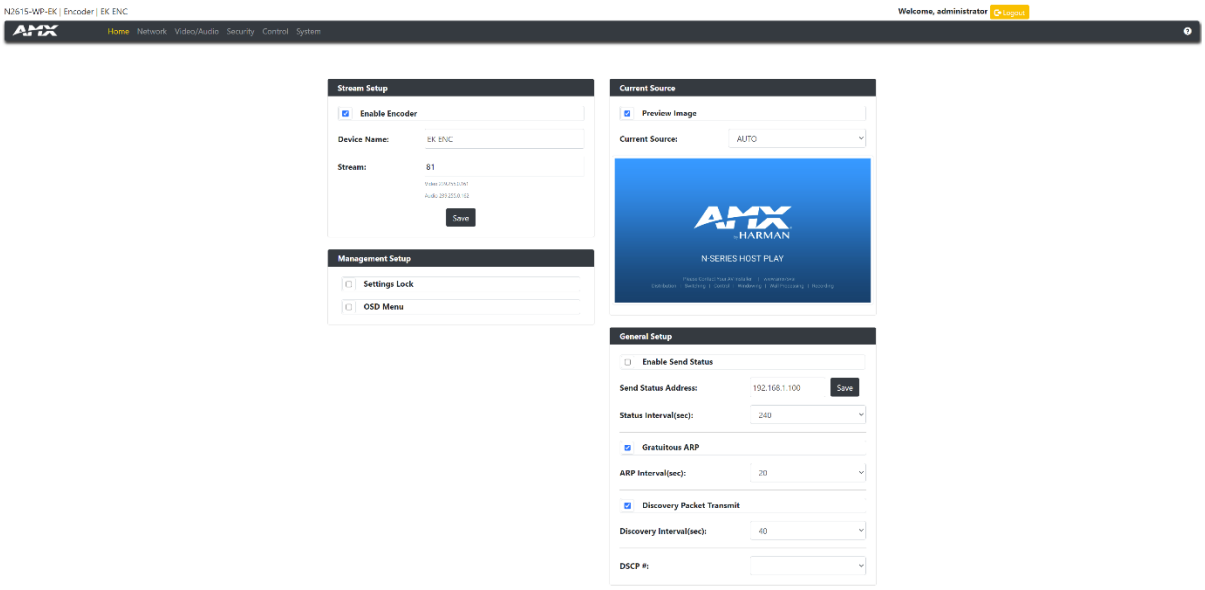


FIG. 7 Changing Stream Setting

7. Repeat these steps until all Encoders are connected to the network and configured with an appropriate **Stream** number.

NOTE: *Each Encoder's Stream number must be unique to all other Encoders on the network.*

NOTE: *Screen-by-screen descriptions of the web interface options are provided for your reference in the Encoder Configuration Options section on page 22 and the Decoder Configuration Options section on page 57.*

Step 4: Configuring Decoder and Encoder IP addresses (if needed)

By default, all Decoders and Encoders are preset to **DHCP** mode. When first connected to the network, an IP address is assigned automatically based on the network DHCP server. If no DHCP server is found, the unit will use a link-local address (with an IP address pre-configured to 169.254.xxx.xxx with a subnet mask of 255.255.0.0).

How IP Address Changes Affect Unit Control

As discussed previously, N-Able control is dependent upon the host computer being in the same IP address range as the N-Series devices. Therefore, before making any N2600 IP address changes, we recommend having **two statically assigned IP addresses on your computer**.

- Configure the first IP address to be in the range of the default N-Series IP settings (i.e., in the 169.254.xxx.xxx range), AND
- Configure a second IP address in the range of the IP address you are planning to assign to the units (or when using DHCP, an address within the defined range for your network).

Changing IP Addresses

There are two ways to assign new IP addresses to your N2600 units using N-Able:

- **Option 1:** Log in to each unit individually and make the changes on the **Settings** page.
- **Option 2:** Export a comma-separated value (CSV) file, make changes to all units in the resulting file, and import the CSV file into N-Able to apply the changes.

Option 1: Assigning IP Addresses Individually (using the Settings page)

1. Find the unit you wish to change in the control matrix (either on the **Unit Management** tab or the **Video Matrix > N2600** tab).
2. Double-click the unit and log in.
3. Go to the **Network** page and select **IP Setup** page to make IP address changes for that unit, either by setting a **STATIC** address or by enabling **DHCP**

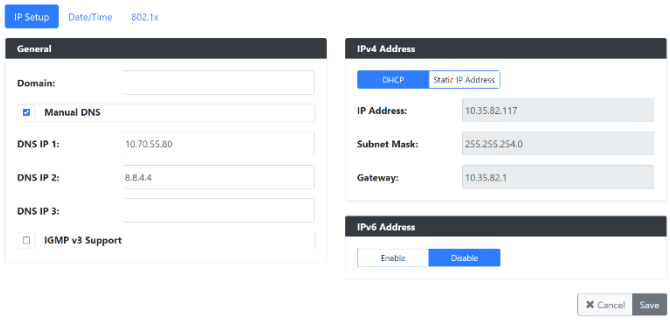


FIG. 8 IP Setup of the Network settings

4. Click the **Save** button.
5. Return to the **Settings** page through the newly configured IP address.

Option 2: Assigning IP Addresses to Multiple Units (using CSV files)

N-Able has the ability to export and import CSV files. Once units are auto-discovered in N-Able, the CSV file can be exported into Excel where parameters such as IP address, subnet mask, gateway, stream number, audio settings, etc. can be configured. Once configured, import the CSV file back into N-Able to assign those parameters to the appropriate devices. Reboot the devices to activate the new settings. This procedure can be used to configure multiple networked AV devices at the same time. It can also provide valuable diagnostics by allowing you to see the last known device configuration as well as scan the network for new devices (regardless of IP configuration).

To configure units using a CSV file, follow these steps:

1. Make sure that you have performed an **Auto Discover** (on the **Unit Management** tab of N-Able) once all new units are connected to the network.
2. From the N-Able main menu bar, select **Menu > Export CSV**.
3. Select **Default** on the next screen that opens.
4. Click **Ok** on the pop-up box informing you that a CSV file is about to be generated.
5. Select the location to save the exported settings file.

NOTE: *A CSV file editor (e.g., Microsoft Excel, Notepad etc.) is necessary to proceed.*

6. The folder containing your CSV file displays. Double-click the file to open it.
7. You can use this file to edit the IP mode, IP address, subnet mask, gateway IP address, stream number, etc. Once all changes have been made, save the file.
8. Go back into N-Able and select **Menu > Import CSV**.
9. Browse to your saved CSV file and click **Import**.

Step 5: Connecting Encoders to an Input Source

Having already connected the Encoder(s) to the network and made the appropriate settings changes (as described in Step 3 and Step 4), you can now connect to the appropriate AV source(s). This connection from an Encoder **HDMI IN** port to an input source is accomplished using either an HDMI cable, USB-C cable or DVI-I (through adapter).

1. Connect the source you would like to use for the Encoder (camera, laptop, etc.) to the Encoder's **HDMI IN** port using an HDMI cable. This connection can be digital.
2. Repeat until all Encoders are connected to their sources.

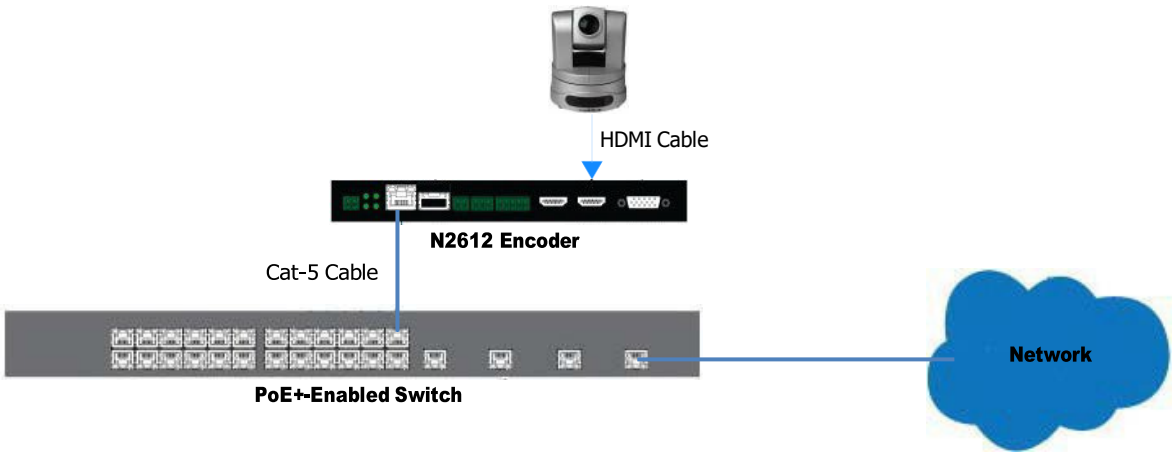


FIG. 9 Encoder Connection to Source

Switching and Scaling Options

N-Series Encoders and Decoders make up a true AV matrix solution. In other words, one input can go to any or all outputs.

Decoders have internal scaling capabilities. Keep the following in mind:

- The input of an Encoder is the video and/or audio signal going into the Encoder.
- The output of an Encoder is the network stream.
- The input of a Decoder is the network stream.
- The output of a Decoder is the digital video and/or audio being transmitted out to the display device.
- Upscaling is fully supported.
- Downscaling is supported only if the input is 3840x2160 and the Decoder scaler is set to 1080p50/60. Any other attempts at downscaling are not recommended/supported.

Seamless Switching

The N2600 Series supports seamless switching capability if the scalers on the Decoders are all set to the same resolution and refresh rate. If the scalers are off, all of the *sources* must have the same resolution and refresh rate.

To get streams onto a Decoder, use the **Video Matrix** tab to route video from an Encoder to a Decoder. This works seamlessly if the previously mentioned settings are true. All you have to do is click the common cell on the matrix and click the **Take** button.

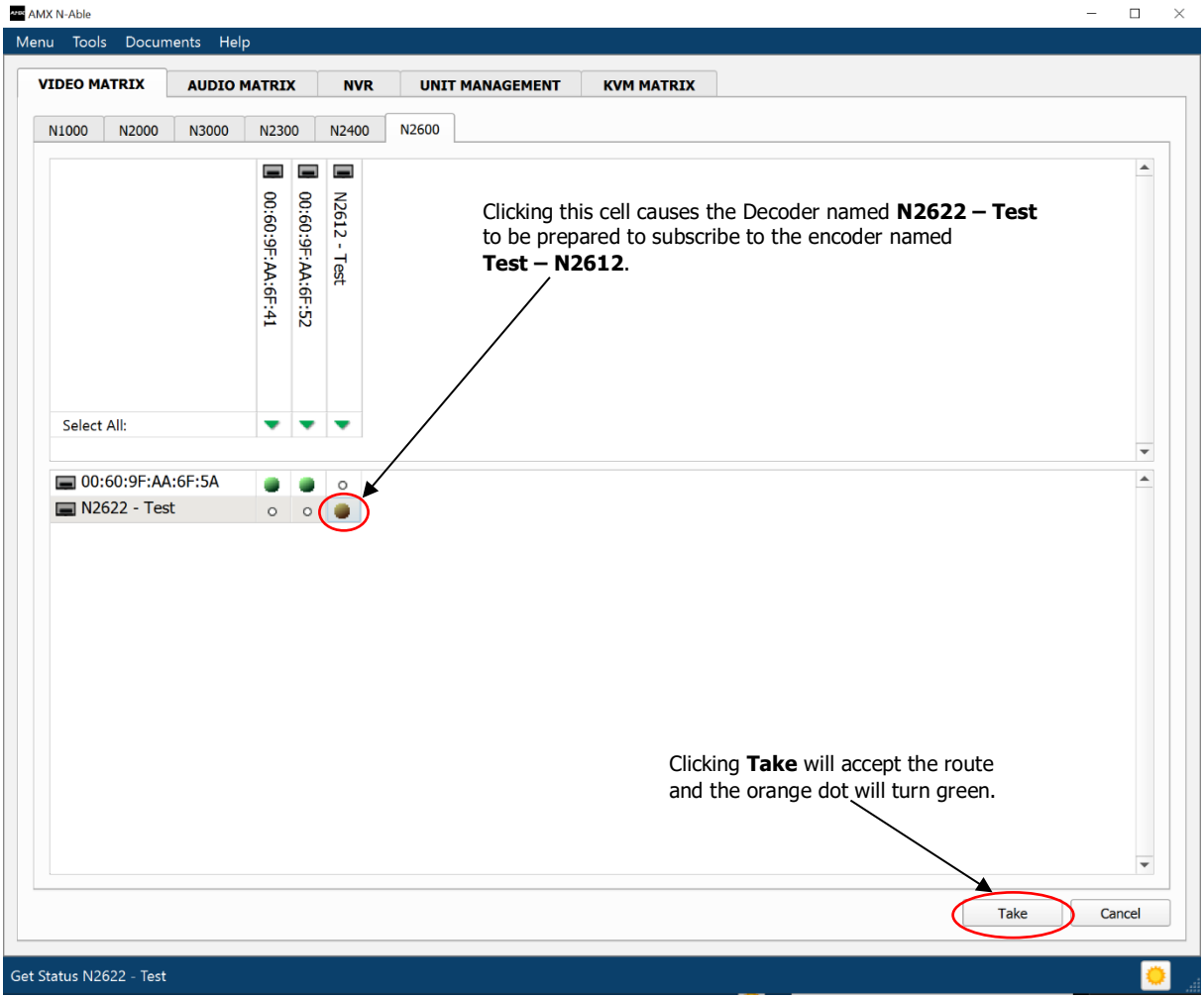


FIG. 10 Seamless Switching Using the Video Matrix

Control Options

For the most part, once the initial setup is complete, you will be primarily managing/configuring the Decoders. To better understand, think of Encoders as radio stations and Decoders as car radios. The Encoders are supplying the streams and, using the Decoders, you can "tune in" to the stream you want. N-Series, N-Control solutions (N-Command and N-Act) provide you with the most flexible management options available, insuring you are getting the most from your digital media system.

Primary Control Options

During initial configuration and setup, the free N-Able setup utility (version 2023.2.6 or higher) is sufficient. However, we do not recommend N-Able for production-level, primary-user control.

N-Command Controllers

These web-based hardware Controllers offer intuitive, powerful management of equipment, content, bandwidth utilization, and AV switching (using a web-based, point-and-click graphical matrix). The N-Command product line also offers:

- Simplified ASCII interface for third-party control via TCP/IP.
- N8002 controllers have leader / follower failover protection.
- Graphical presentation of video network connections.
- Full configuration control: assign fixed IP addresses for each N-Series component, adjust variable bitrate for each video stream, etc.
- Additional software bundles (free with N-Command) allow you to easily create attractive touch panels for N-Series and third-party equipment control, as well as build software design walls of any size. Visit our website for more details on the available N-Command Controllers.

Third-Party Controllers

The N2600 Series is capable of interfacing with third-party control systems such as Crestron, Q-Sys, Extron, Etc.. For direct control of N2600 units from any Third-Party Control system, please use the Direct Control API (available on our website).

N-Act | On-Board, Built-In Control

All N-Series Encoders and Decoders have on-board, built-in control capability via events that can trigger any number of TCP/UDP commands to other IP controllable devices. Included free with all N-Series Encoders/Decoders. ***Available later 2023 via firmware update.***

KVM Configuration

The N2600 Encoders and Decoders are KVM-capable. By default, KVM connections are enabled.

Basic Setup

Follow these steps for basic KVM configuration:

1. On the N2612 Encoder, connect the USB Micro-B or on the N2615 Encoder, connect the USB C port to the computer to be controlled.
2. Connect the computer's video output to the N2612 Encoder's **HDMI 1 IN** or **HDMI 2 IN** or on the N2615 **HDMI IN** or **USB C** port.
3. On the N2600 Series Decoder, connect the **HDMI OUT** to the display.
4. Connect a USB keyboard and mouse to the Decoder's USB Standard-A ports (they can be plugged into either port).

NOTE: *For wireless devices, simply plug the wireless signal receivers into these ports. For keyboard and mouse combos (with a single connection) use the keyboard port.*

5. Using N-Able, click the **Unit Management** tab.
6. Click the **Auto Discover** button to discover your new devices (if you have not already done so).
7. Once discovery is complete (and you see the new units listed in N-Able), click the **Video Matrix** tab.
8. On the matrix, click the common cell for the desired Encoder/Decoder streaming combination.
9. Click the **Take** button to make the change to your matrix. The radio button turns green to indicate the connection was successful.
10. Check the **KVM Enable** box on the Encoders and Decoders being used (this setting is found on the **Control > KVM/USB > KVM Setting** page).
11. On the Decoder **Control > KVM/USB > KVM Setting** page, enter the KVM Encoder's IP address (in the **KVM IP** field).

NOTE: *Multiaccess is enabled by default, you can have multiple Decoders attached to a single Encoder. Simply go to each Decoder's Settings page and enable KVM and input the Encoder's IP address (or create the connection in N-Able, as described in the steps above).*

Encoder Configuration Options

This chapter defines N2615D Encoder configuration options. For ease of navigation, it is organized to reflect the graphical user interface (GUI).
From any main page in the GUI, you can access all other main pages by clicking the links in the top navigation bar. Below shows the navigation bar and provides hot links to the sections of this chapter which describe each main page.

*Encoder Configuration section is based on firmware version 1.3.4

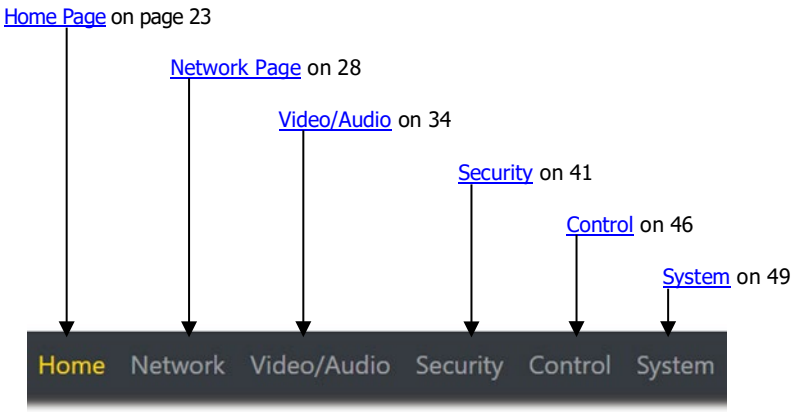


FIG. 11 Section Links

Home Page

Click the **Home** link at the top of any of the main web pages to access the page shown. This page is divided into several sections and has links to other dialog boxes for additional configuration options. Refer to the following sections for detailed descriptions:

- Stream Setup Settings Section on page 24
- Management Setup Settings on page 25
- Current Source Section on page 26
- General Setup Section on page 27

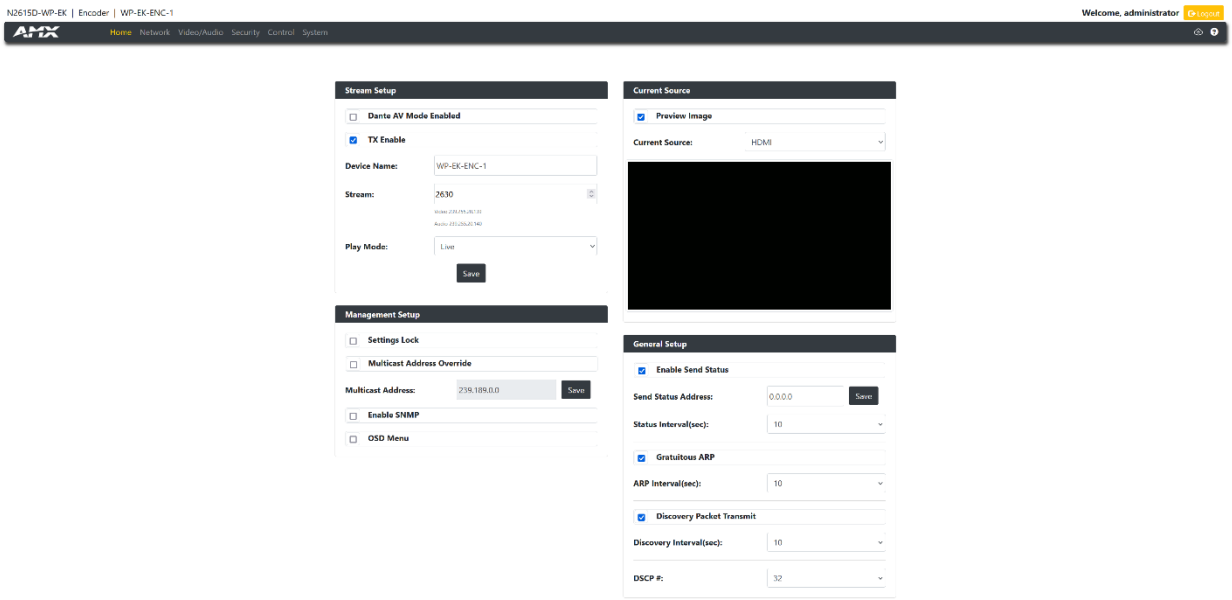


FIG. 12 Settings Page

Stream Setup Section

The **Stream Setup** section of the **Home** page is shown.

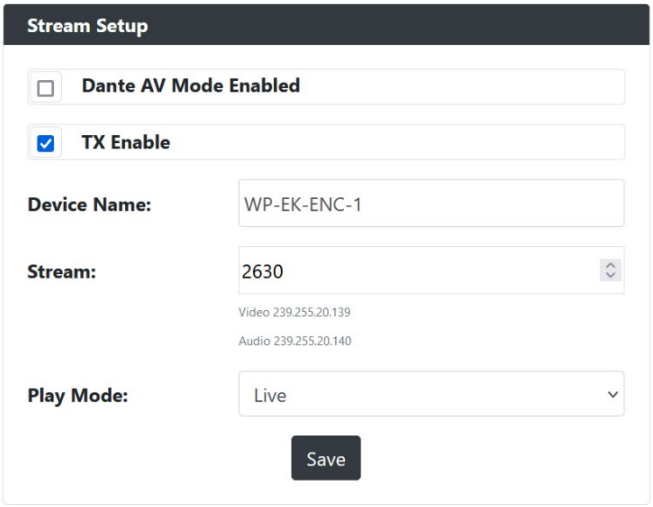


FIG. 13 Device Settings Section

TABLE 1 Home Page: Stream Settings Section

Option	Description	Notes
Dante AV Mode Enabled	When enabled, it will allow the Dante Video and Audio channels to be discover able in the Dante Controller	When Enabled/Disabled and after pressing save will reboot the unit for the settings to take effect. Dante audio will always be available despite the Dante AV Mode.
TX Enable	When enabled, it will allow the encoder to transmit multicast video through the network.	
Device Name	Enter a user-friendly name for the unit.	More descriptive names in this field help you organize and manage the N-Series system efficiently. Names based on the unit's location and function are very useful. Some good examples are **Lobby-Left-HDMI** (for left side of lobby, HDMI input) or **CR201-HDMI** (for Conference Room 201, HDMI input). Keep in mind the matrices are organized alphanumerically.
Stream	View/edit the current transmit stream number.	To better understand this setting, think of Encoders more like a channel on a cable box, rather than a traditional AV Matrix. Each Encoder must have a unique stream number, just like every channel must have a unique channel number (e.g., Food Network and HGTV cannot both be on channel 201).
Play Mode	Drop down menu to select between Live video encoding or a Play List	Options include Live and Host Play #1
Save button	Click to save settings made in this section.	Only applies Device Name and Stream fields. The other fields are dynamically updated.

Management Setup Settings

The **Management Setup** section of the **Home** page is shown.

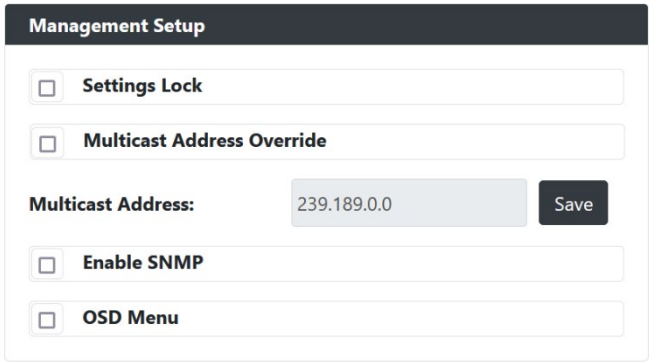


FIG. 14 Management Setup Settings

TABLE 2 Home Page: Management Setup Settings

Option	Description	Notes
Settings Lock	Enable to lock the Encoder IP settings and stream number, preventing automated processes (from N-Able or N-Command) from occurring.	
Multicast Address Override	When enabled will allow for setting of a custom multicast address for the MWC stream	Only the first 2 octets can be modified, example: 239.250.0.0. Ensure to use 0's for the 3rd and 4th octet.
Multicast Address	Enter custom address and press save once done.	Only the first 2 octets can be modified, example: 239.250.0.0. Ensure to use 0's for the 3rd and 4th octet. All Decoders need to match the custom address to view video stream.
OSD Menu	Enables the On-Screen Display (OSD) for 10 seconds then turns off for 10 seconds. The process repeats until disabled.	

Current Source Section

The **Current Source** section of the **Home** page is shown.

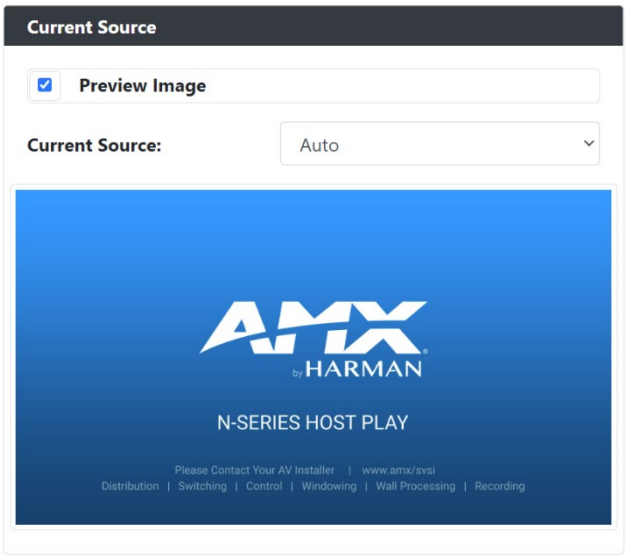


FIG. 15 Current Source Section

TABLE 3 Home Page: Current Source Section

Option	Description	Notes
Preview Image	When enabled the current source will be shown in the below image preview area.	The preview image is updated approximately every 2 seconds. Path MPJEG: <IP Address>/snapshot.jpg
Current Source	Selectable field consisting of three options and selecting one of the drop downs will select that input source. **Auto**: Last source plugged in will be the active source **HDMI**: HDMI In will be the active source **USB-C**: USB-C In will be the active source	There can only be one active source at a time. Recommended to leave Auto selected for majority of installations.
Video Preview Area	When Preview Image is enabled will display a snapshot of the current input source.	Clicking on the preview image will open a pop-up showing a larger preview image.

General Setup Section

The **General Setup** section of the **Home** page is shown.

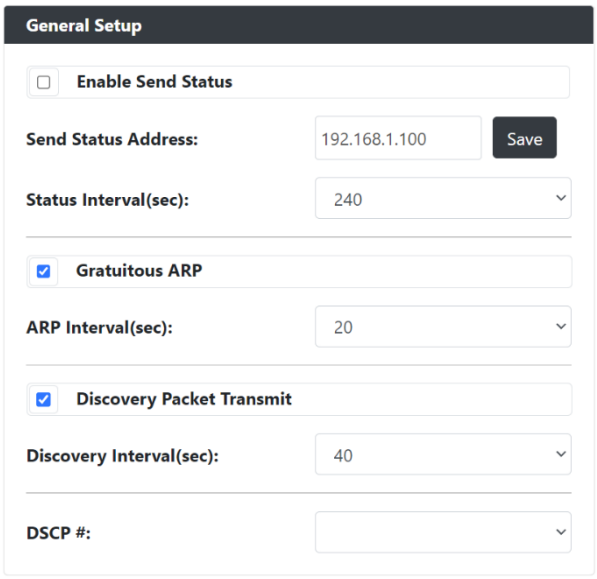


FIG. 16 General Setup Section

TABLE 4 Home Page: General Setup Section

Option	Description	Notes
Enable Send Status	Enables the encoder to send a periodic status packet to the **Send Status Address** listed.	
Send Status Address	When **Enable Send Status** is enabled, the encoder sends a periodic status packet to the IP address specified here.	
Status Interval (sec)	Determines how often (in seconds) the unit transmits status packets.	
Gratuitous ARP	Enables the encoder to send a periodic address resolution protocol (ARP) packet to the network.	
ARP Interval (sec)	Determines how often (in seconds) the unit transmits gratuitous ARP packets.	
Discovery Packet Transmit	Enables the N-Series multicast discovery service (used to identify units)	For N-Series devices to communicate with each other, their multicast settings must be compatible.
Discovery Interval (sec)	Determines how often (in seconds) the unit transmits discovery packets.	
DSCP #	Select the Differentiated Services Code Point (DSCP) for the transmitting vlan traffic.	

Network Page

Click the **Network** link at the top of any of the main web pages to access the page shown. This page is divided into several sections and has links to other dialog boxes for additional configuration options. Refer to the following sections for detailed descriptions:

- IP Setup Settings Section on page 29
- Date/Time Section on page 32
- 802.1x Section on page 33

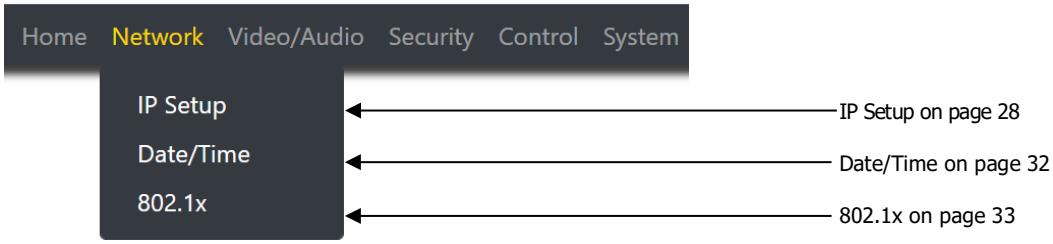


FIG. 17 Network Page

General Section –IP Setup

The **General Section** of the **IP Setup** on the **Network** page is shown.

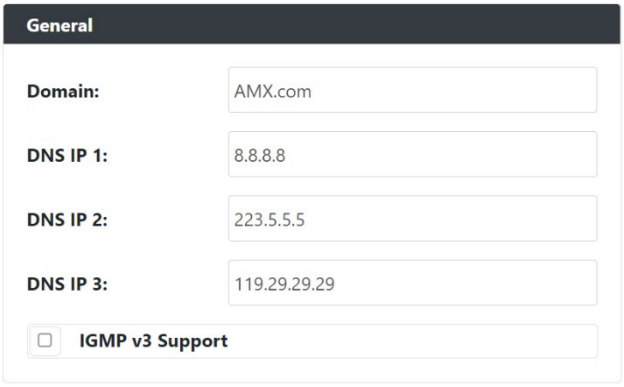


FIG. 18 General Section

TABLE 5 Network Page: General Section of IP Setup

Option	Description	Notes
Domain	Type in the domain name of the network if needed	
DNS IP 1	IP address of a DNS server.	
DNS IP 2	IP address of a DNS server.	
DNS IP 3	IP address of a DNS server.	
IGMP v3 Support	Enable to allow for IGMP v3 support.	
Save	Pressed to save all information on the MWC IP Setup page and apply those settings.	
Cancel	Pressed to discard all settings made on the MWC IP setup page.	

IPv4 Section –IP Setup

The **IPv4** section of the **IP Setup** on the **Network** page is shown.

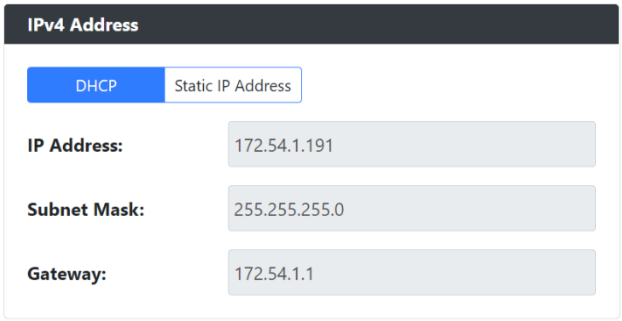


FIG. 19 IPv4 Section

TABLE 6 Network Page: IPv4 Section of IP Setup

Option	Description	Notes
DHCP / Static IP Address	Used to select either DHCP or Static IP Address mode.	
IP Address	View the current IP address of the encoder. When in Static mode, enter an IP address into this field.	
Subnet Mask	View the current subnet mask address of the encoder. When in Static mode, enter a subnet mask address into this field.	
Gateway	View the current gateway address of the encoder. When in Static mode, enter a gateway address into this field.	
Save	Pressed to save all information on the MWC IP Setup page and apply those settings.	
Cancel	Pressed to discard all settings made on the MWC IP setup page.	

IPv6 Section –IP Setup

The **IPv6** section of the **IP Setup** on the **Network** page is shown.

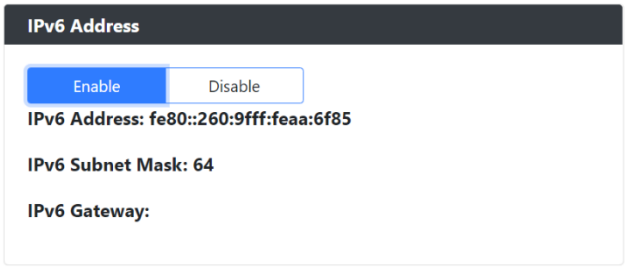


FIG. 20 IPv6 Section

TABLE 7 Network Page: IPv6 Section of IP Setup

Option	Description	Notes
Enable / Disable	When enabled the unit will attempt to obtain a DHCP IPv6 address.	Disabled by default, Requires an IPv6 DHCP server.
IPv6 Address	View the current IPv6 address of the encoder.	
IPv6 Subnet Mask	View the current IPv6 subnet mask address of the encoder.	
IPv6 Gateway	View the current IPv6 gateway address of the encoder.	
Save	Pressed to save all information on the MWC IP Setup page and apply those settings.	
Cancel	Pressed to discard all settings made on the MWC IP setup page.	

Date/Time

The **Date/Time** section of the **Network** page is shown.

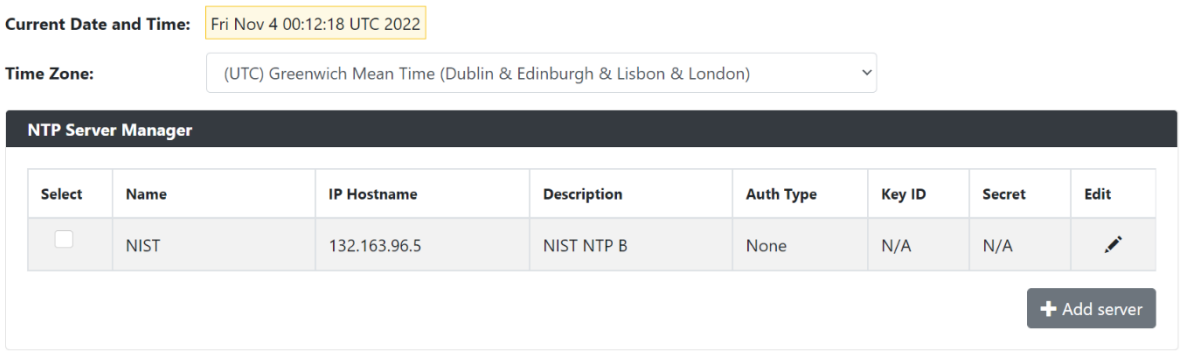


FIG. 21 Date/Time Section

TABLE 8 Network Page: Date/Time

Option	Description	Notes
Current Date and Time	Displays the current date and time of the unit.	
Time Zone	Used to select the offset for the NTPP time.	
Select	Used to select the NTP server connection	One NTP must be selected for NTP to be active.
Edit	When selected will allow editing of that name server information.	
Add Server	When selected will open a pop-up allowing to input information for the NTP server	

802.1x

The **802.1x** section of the **Network** page is shown.

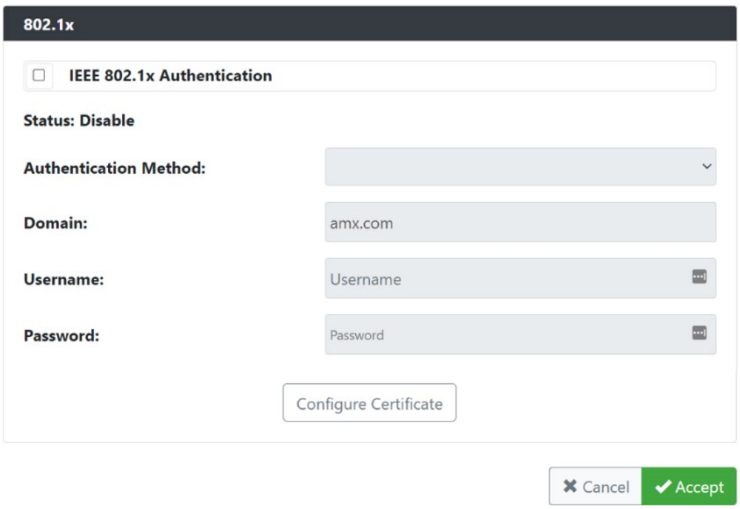


FIG. 22 802.1x Section

TABLE 9 Network Page: 802.1x

Option	Description	Notes
IEEE 802.1x Authentication	When enabled will allow the device to be used with 802.1x network configurations.	
Status	Displays the current port connection as either Disabled, Authorized, or Unauthorized.	
Authentication Method	Select one of the options listed, EAP-TLS Certificate or EAP-MSCHAP V2 Password to connect to the 802.1x server.	
Domain	Type the name of the domain the 802.1x server will be connecting.	
Username	Type the username here to access the 802.1x. Field is used when the Authentication Method is EAP-MSCHAP V2 Password.	
Password	Type the password here to access the 802.1x. Field is used when the Authentication Method is EAP-MSCHAP V2 Password.	
Configure Certificate	When pressed will navigate to the certificate page.	
Accept	Pressed to save all information on the 802.1x page and apply those settings.	
Cancel	Pressed to discard all settings made on the 802.1x page.	

Video/Audio Page

Click the **Video/Audio** link at the top of any of the main web pages to access the page shown. This page is divided into several sections and has links to other dialog boxes for additional configuration options. Refer to the following sections for detailed descriptions:

- Video Settings on page 35
- Audio Settings on page 38
- EDID Settings on page 39
- Playlist Settings on page 40

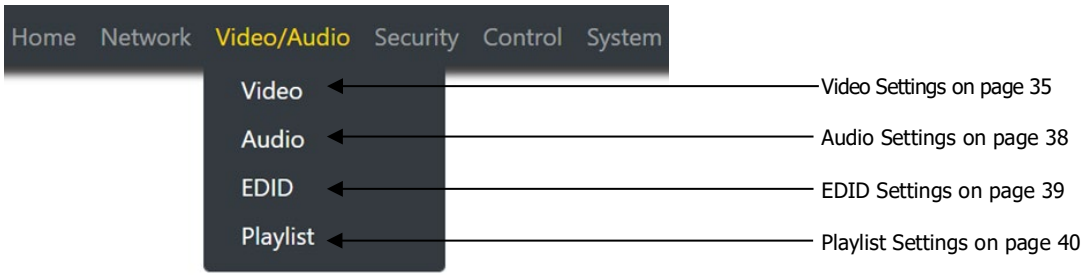


FIG. 23 Video/Audio Page

HDMI Video Section –Video section

The **HDMI Video** section of the of the **Video** section on the **Video/Audio** page is shown.

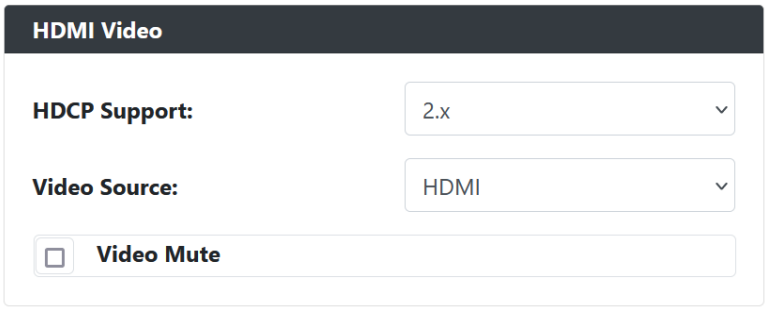


FIG. 24 HDMI Video Section

TABLE 10 Video/Audio: HDMI Video section of the Video tab

Option	Description	Notes
HDCP Support	Selection field used to specify the version of HDCP advertised to the source. **None:** No HDCP advertisment **1.x:** Advertising HDCP 1.x versions **2.x:** Advertising HDCP 2.x versions	In environments with mixed HDCP version 1.x and 2.x. The encoder needs to be set to the lowest level of HDCP supported. For example, With displays supporting 1.4 and 2.1. The encoder should be set to 1.x to allow for all displays to receive the content
Video Source	Selection field displaying one of three options showing the current input source. **Auto**: Last source plugged in will be the active source **HDMI**: HDMI In will be the active source. **USB-C**: USB-C In will be the active source.	
Video Mute	Used to mute (output black screen) for the video stream.	

Current Source Section – Video section

The **Current Source** section of the **Video** section on the **Video/Audio** page is shown.

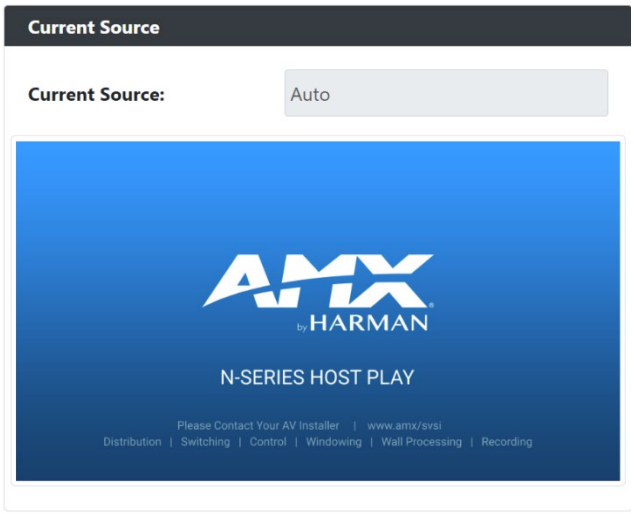


FIG. 25 Current Source Section

TABLE 11 Video/Audio: Current Source section of the Video tab

Option	Description	Notes
Current Source	Status field displaying one of three options showing the current input source. **Auto**: Last source plugged in will be the active source **HDMI** : HDMI 1 In is the active source **USB-C** : HDMI 2 In is the active source	
Preview Image	When Preview Image is enabled will display a snapshot of the current input source.	Clicking on the preview image will open a pop-up showing a larger preview image.

Status – Video section

The **Status** section of the **Video** section on the **Video/Audio** page is shown.

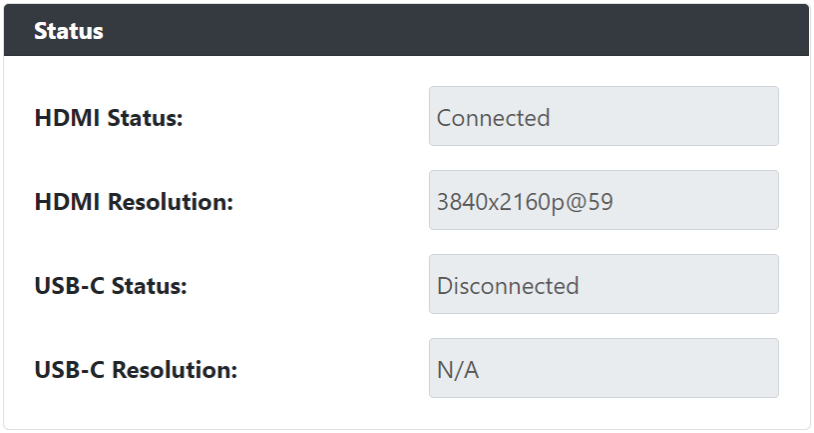


FIG. 26 Status Section

TABLE 12 Video/Audio: Status section of the HDMI Pass-thru section of the Video tab

Option	Description	Notes
HDMI Status	Status field displaying connection status of the HDMI input port **Disconnected**: HDMI cable is not detected **Connected**: HDMI cable is detected	
HDMI Resolution	Current detected resolution of the video source on the HDMI input port.	
USB-C Status	Status field displaying connection status of the USB-C input port **Disconnected**: USB cable is not detected **Connected**: USB cable is detected	
USB-C Resolution	Current detected resolution of the video source on the USB-C input port.	

Audio Settings Section – Audio Setup

The **Audio Settings** section of the **Audio** on the **Video/Audio** page is shown.

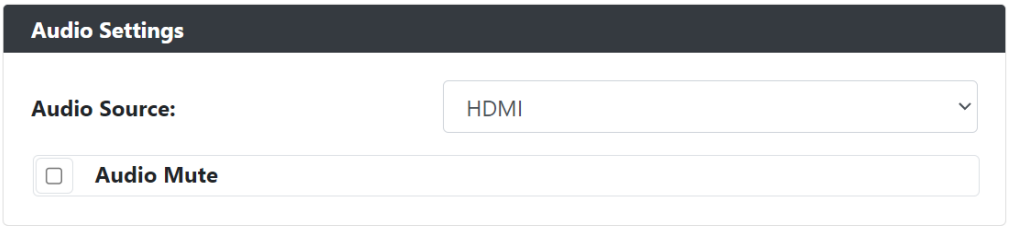


FIG. 27 Audio Section

TABLE 13 Network Page: Audio Section of Audio Setup

Option	Description	Notes
Audio Source	Drop down list containing two selections. **HDMI**: Play audio coming from the HDMI input **Analog**: Play audio coming from the Analog audio input	
Audio Mute	When enabled will mute the audio for the audio source selected above	

EDID Section – EDID Setup

The **EDID** section of the **EDID** on the **Video/Audio** page is shown.

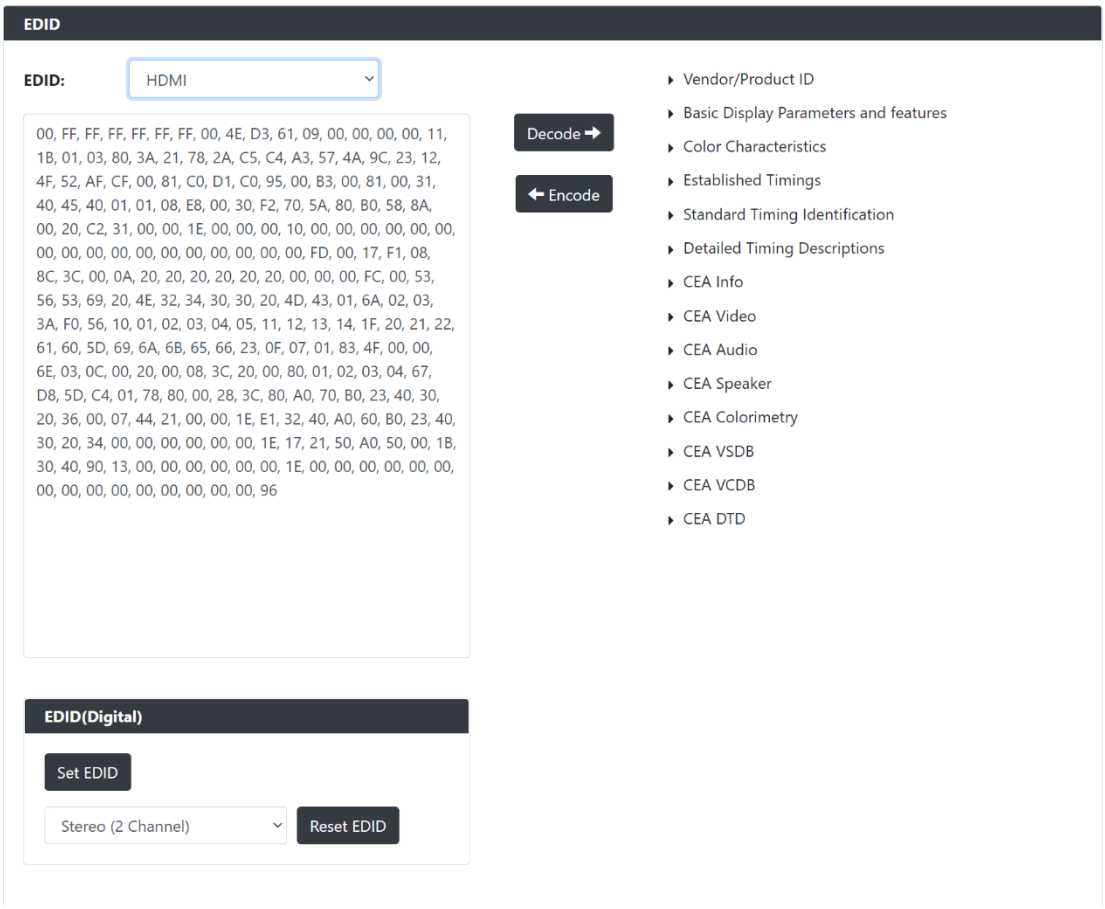


FIG. 28 EDID Section

TABLE 14 Network Page: Audio Section of Audio Setup

Option	Description	Notes
EDID (drop down)	Select what EDID information to display. **HDMI:** Displays EDID information connected to the Encoder's HDMI input. **USB-C:** Displays EDID information connected to the encoder's USB-C input.	
Decode	Click to translate the EDID currently displayed on the left to the operating parameters list on the right.	
Encode	After making any changes to the operating parameters list on the right, click this button to update the EDID information on the left. To store the new settings, click **Set EDID**.	
Read EDID	Click to initially show the EDID or if the source EDID has changed (refreshes the EDID table).	
Set EDID	If creating a custom EDID, click to apply the changes.	
Reset EDID	For **Digital**, choose a standard EDID from the drop-down menu and click **Reset EDID** to apply.	Ensure that the source is disconnected when setting an EDID.

Playlist Section – Playlist Setup

The **Playlist** section of the **Playlist** on the **Video/Audio** page is shown.

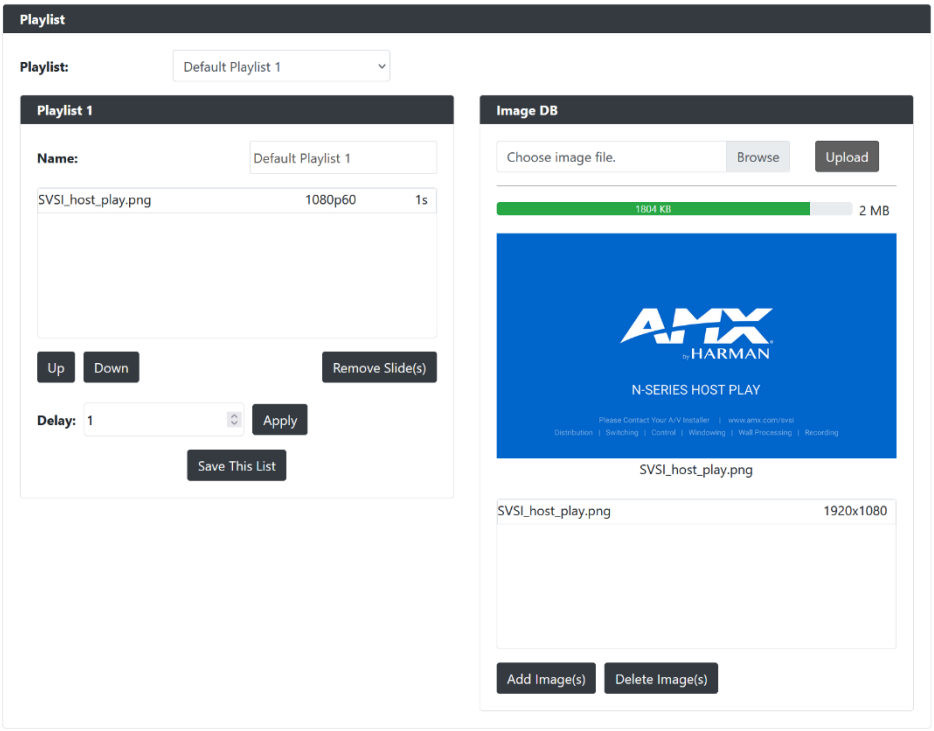


FIG. 29 Playlist Section

TABLE 15 Playlist Page: Playlist Section of Playlist Setup

Option	Description	Notes
Playlist	Dropdown containing Playlists 1-8 to be selected to work with.	

TABLE 16 Playlist Page: Playlist X Section of Playlist Setup

Option	Description	Notes
Name	Name of play list currently selected	
List Area	Listing of the current images in the playlist	
Up	Move the selected image up in the list	
Down	Move the selected image down in the list	
Remove Slides(s)	Delete the selected image(s) from the playlist selected	
Delay	Delay applied to the image until advances to the next image in the list	Measured in seconds and only applies when more than one image in a playlist
Apply	Set the delay for the selected image(s)	Different delay times can be applied to different image(s)
Save This List	Saves the current selected list changes for that selected list	

TABLE 17 Playlist Page: Image DB Section of Playlist Setup

Option	Description	Notes
Browse	Used to select the image wishing to be uploaded	One image can be uploaded at a time
Update	Used to upload the image selected to the unit	
Available Memory	A graphical bar showing the amount of available space for images	Max of 2 Mb is available
Image Preview	Preview of the selected images from the below list area	
List Area	Name of images that were uploaded	
Add Image(s)	Will add the selected image(s) to the playlist chosen	
Delete Image(s)	Will delete the image(s) from the list area above.	

Security Page

Click the **Security** link at the top of any of the main web pages to access the page shown. This page is divided into several sections and has links to other dialog boxes for additional configuration options. Refer to the following sections for detailed descriptions:

- General Settings Section on page 42
- Users Settings on page 44

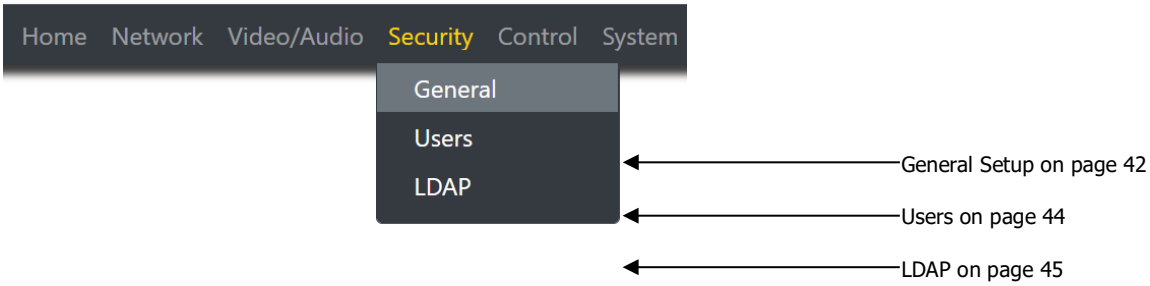


FIG. 30 Security Page

Web Page Section – General Setup

The **Web Page** section of the **General** on the **Security** page is shown.

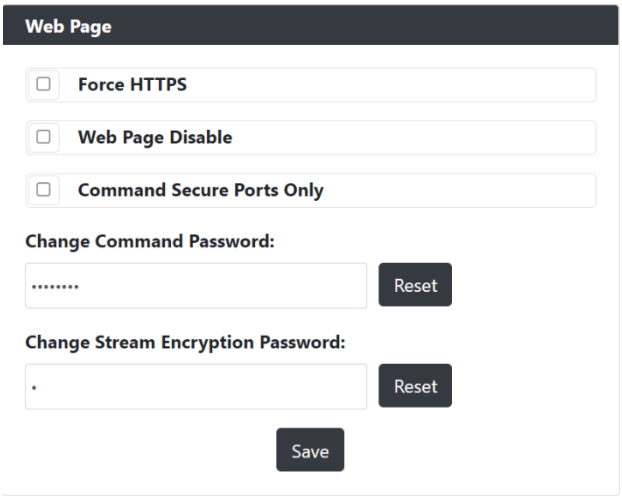


FIG. 31 Web Page Section

TABLE 18 Security Page: Web Page Section of General

Option	Description	Notes
Force HTTPS	When enabled will force the web page access to always be HTTPS	
Web Page Disable	Wen enabled will cause the web pages to fail to load	To enable or disable via API call will need to use secure socket connections.
Command Secure Ports Only	If enabled, commands must be sent using secure sockets (TLS/SSL) and follow the secure command port protocol.	
Change Command Password	Set the default password for command encryption.	When issuing API commands, this password must precede each command in the format: <password>\r<command>.
Change Stream Encryption Password	Set the default password for stream encryption.	To successfully communicate, the Decoder and Encoder passwords must match.
Reset	Click Reset to return to default password and settings.	
Save	Pressed to save all information on the Security Setup page and apply those settings.	

Security Certificates Section – General Setup

The **Security Certificates** section of the **General** on the **Security** page is shown.

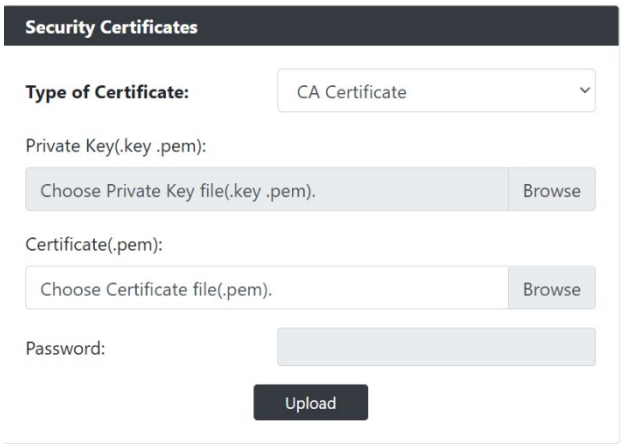


FIG. 32 Security Certificates Section

TABLE 19 Security Page: Security Certificates Section of General

Option	Description	Notes
Type of Certificate	Three options exist for the drop down: CA Certificate Client Certificate Server Certificate	
Private Key	Browse for the Private Key file	
Certificate	Browse for the certificate file	
Password	If required input password for the Private Key or Certificate file	
Upload	Pressed to upload the private key or certificate to the device.	

User Security Details Section – Users Setup

The **Security Certificates** section of the **Users** on the **Security** page is shown.

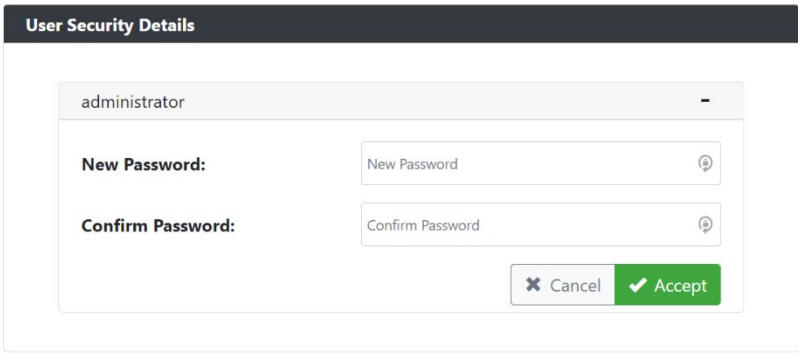


FIG. 33 User Security Details Section

TABLE 20 Security Page: User Security Details Section of Users

Option	Description	Notes
New Password	Input the new password for the Administrator account	
Confirm Password	Input the new password for the Administrator account	
Accept	Press to confirm and apply new password to the user account.	
Cancel	Press to discard changes and retain old password for the user account.	

LDAP Section – LDAP Setup

The **LDAP** section of the **LDAP** on the **Security** page is shown.

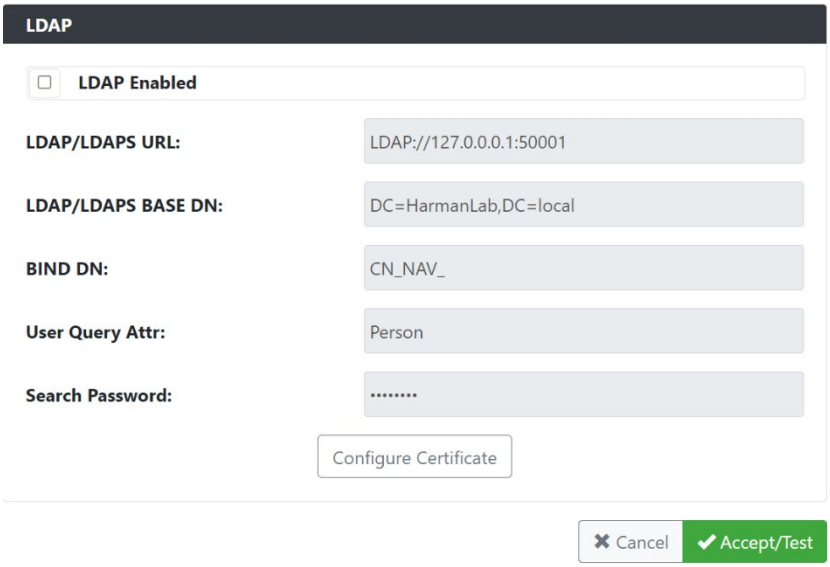


FIG. 34 LDAP Section

TABLE 21 Security Page: LDAP Section of LDAP

Option	Description	Notes
LDAP Enabled	When enabled will allow the device to connect to an LDAP server.	
LDAP/LDAPS URL	Address and port of the LDAP Server	If using LDAP type ldap://<IP>:Port If using LDAPS type ldaps://<IP>:Port
LDAP/LDAPS Base DN	Location of the BIND DN user account with the AD structure	
BIND DN	The binding account being used to form the LDAP connection	
User Query Attr		
Search Password	Password used for the BIND DN account	
Configure Certificate	Pressed will redirect to the certificate management window	
Accept/Test	Press to accept and test the changes to the LDAP settings	
Cancel	Press to discard changes made to LDAP settings	

Control Page

Click the **Control** link at the top of any of the main web pages to access the page shown. This page is divided into several sections and has links to other dialog boxes for additional configuration options. Refer to the following sections for detailed descriptions:

- N-Act Settings on page 47
- KVM/USB Settings on page 48

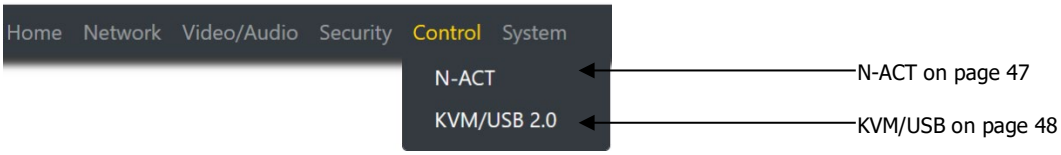


FIG. 35 Control Page

N-Act Events – N-Act

The **N-Act Events Settings** section of the **N-Act** page is shown.

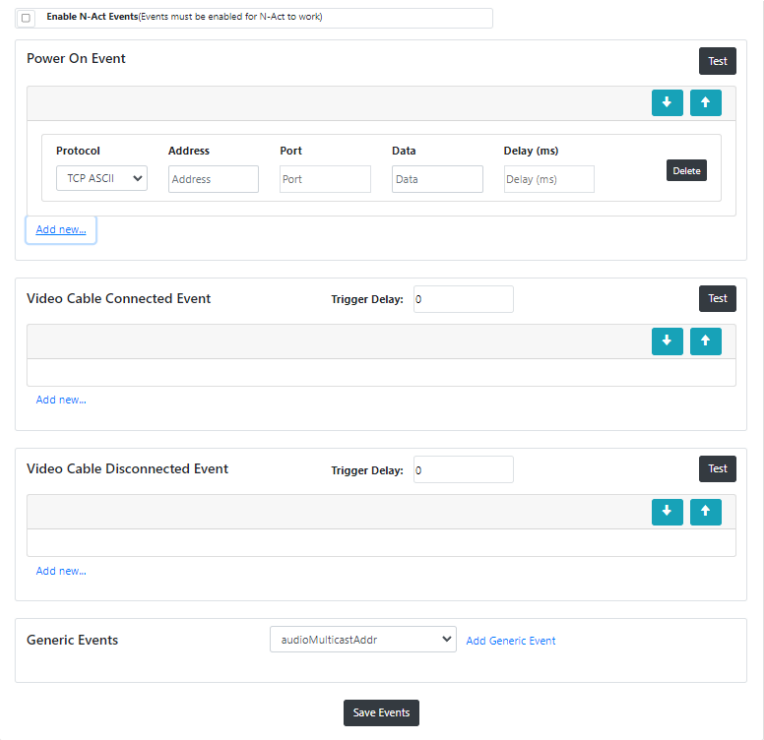


FIG. 36 N-Act Events Section

TABLE 22 N-Act Page: N-Act Events Section

Option	Description	Notes
Enable N-Act Events	Used to enable the N-Act events	
Power On Event	Event is triggered once the device is powered on and running	
Video Cable Connected Event	Event is triggered when a hot plug of the video cable is connected	
Video Cable Disconnected Event	Event is triggered when a video cable is disconnected	
Generic Events	List of different parameters that can be triggered based on the selected parameter	Refer to the N-Act documentation for list of events.
Save Events	Used to save the event parameters	Refer to the N-Act documentation for list of events.
Protocol	Drop down containing the different communication protocol formats to send	Refer to the N-Act documentation for list of events.
Address	IP address of the device to send the data	Refer to the N-Act documentation for list of events.
Port	Network port to send the data	Refer to the N-Act documentation for list of events.
Data	Command or payload to send the device being controlled	Refer to the N-Act documentation for list of events.
Delay (ms)	Can be used to delay the commands being sent to the device. Time is in milliseconds	Refer to the N-Act documentation for list of events.
Test	Once a macro of commands is inputted for event the Test button can be used to force the event without triggering the actual event.	
Trigger Delay	Used to create a delay in seconds until the commands are executed once the event is triggered.	
Add new	Used to add a new command to the event the Add new was clicked in	
Up Arrow	Used to move the selected command up in the event	
Down Arrow	Used to move the selected command down in the event	

KVM/USB 2.0 Setting – KVM/USB

The **USB Settings** section of the **KVM/USB** on the **Control** page is shown.

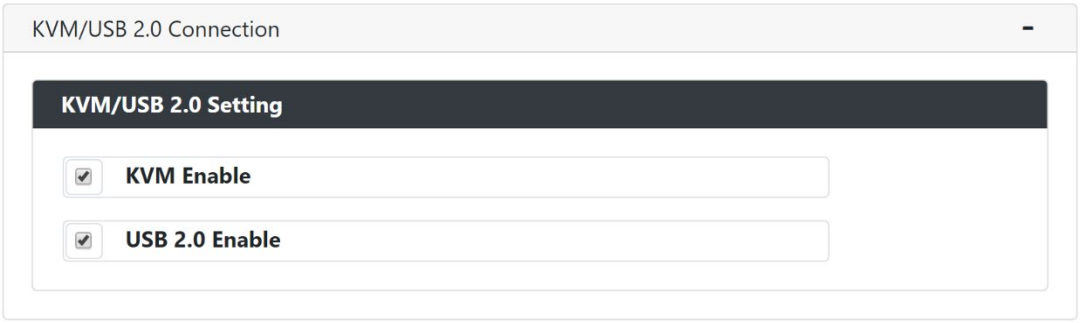


FIG. 37 USB Settings Section

TABLE 23 Control Page: USB Settings Section of USB

Option	Description	Notes
USB 2.0 Enable	When enabled will allow a decoder USB 2.0 signal to be received.	Up to 4 decoders can connect to a single encoder for USB 2
KVM Enable	When enabled will allow a decoder KVM signal to be received.	

System Page

Click the **System** link at the top of any of the main web pages to access the page shown. This page is divided into several sections and has links to other dialog boxes for additional configuration options. Refer to the following sections for detailed descriptions:

- Logs Section on page 50
- Status Settings on page 54

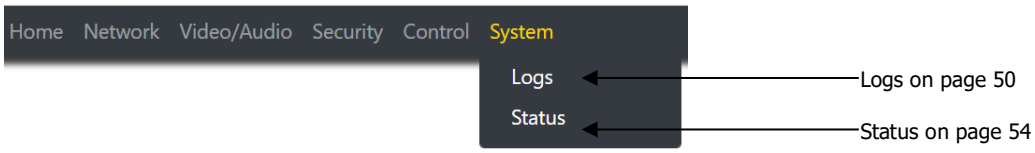


FIG. 38 System Page

Command Log – Log

The **Command Log** section of the **Log** on the **System** page is shown.

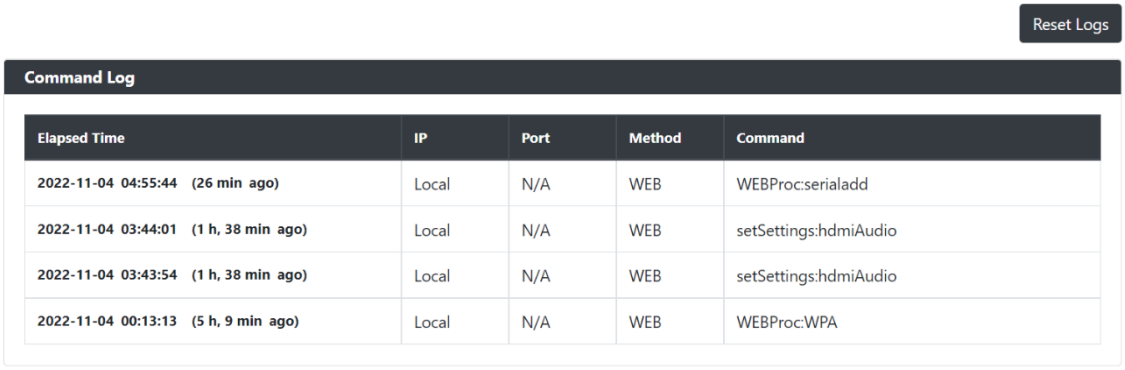


FIG. 39 Command Log Section

TABLE 24 System Page: Command Log Section of Log

Option	Description	Notes
Reset Logs	When pressed will cleat the Command Log history table	

Debug Log – Log

The **Debug Log** section of the **Log** on the **System** page is shown.

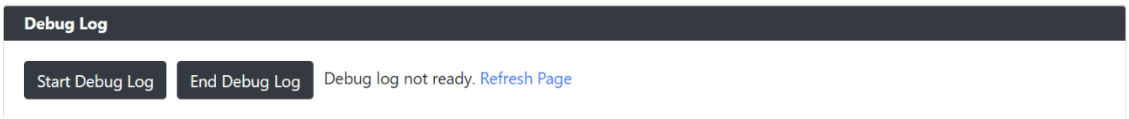


FIG. 40 Debug Log Section

TABLE 25 System Page: Debug Log Section of Log

Option	Description	Notes
Start Debug Log	When pressed will begin enhanced log gathering	Used when troubleshooting an issue with tech support
End Debug Log	When pressed will stop enhanced log gathering	Used when troubleshooting an issue with tech support

Syslog Settings – Log

The Syslog Settings section of the **Log** on the **System** page is shown.

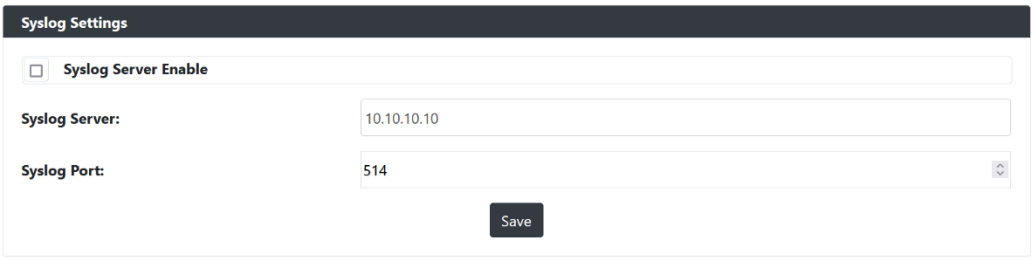


FIG. 41 Debug Log Section

TABLE 26 System Page: Debug Log Section of Log

Option	Description	Notes
Syslog Server Enable	When pressed will enable the Syslog server function	
Syslog Server	IPv4 address of the Syslog Server to connect to	
Syslog Port	Port used to connect to Syslog Server	

Link Layer Discovery Protocol (LLDP) – Status

The **LLDP** section of the **Status** on the **System** page is shown.

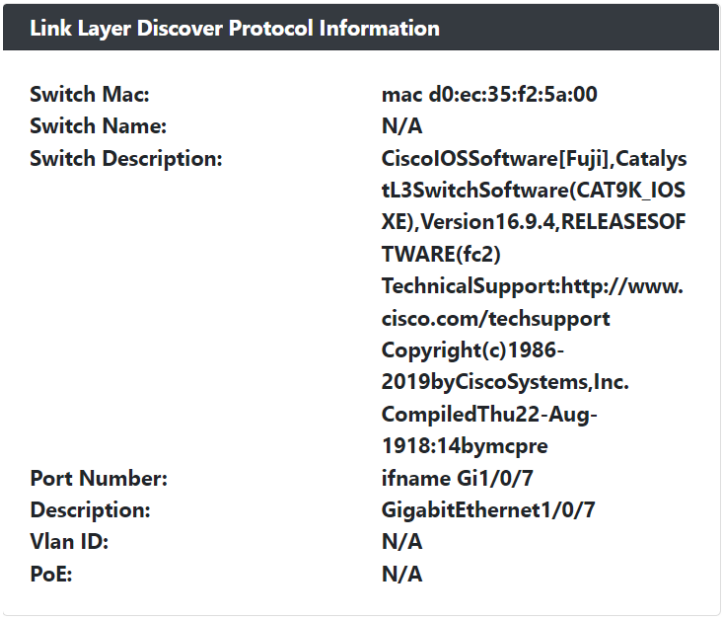


FIG. 42 LLDP Section

TABLE 27 System Page: LLDP Section of Status

Option	Description	Notes
Switch Mac	Mac address of the network switch	
Switch Name	Name of the network switch	
Switch Description	Network description of the switch	
Port Number	Port number the device is connected	
Description	Network port description	
Vlan ID	Vlan of the network device is connected	
PoE	Watts being supplied to the device.	

Status – Status

The **Status** section of the **Status** on the **System** page is shown.

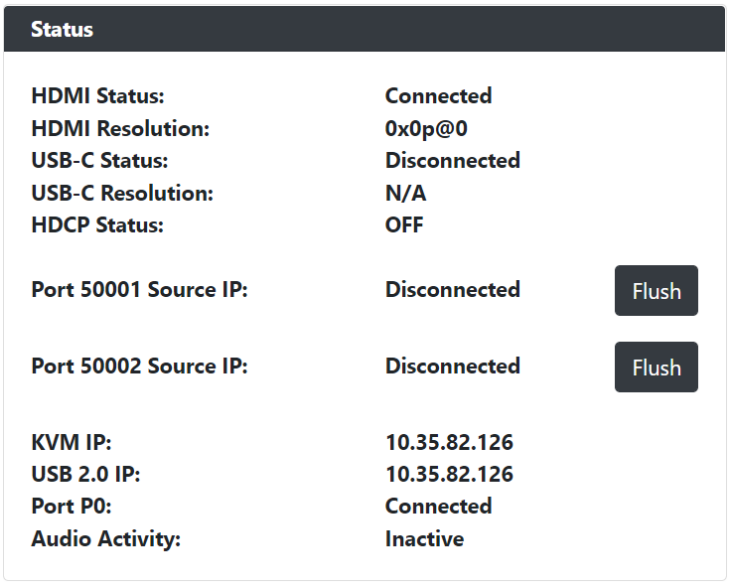


FIG. 43 Status Section

TABLE 28 System Page: Status Section of Status

Option	Description	Notes
HDMI Status	Displays the status of the HDMI input as either Connected or Disconnected	
HDMI Resolution	Displays the resolution detected on the HDMI Input	
USB-C Status	Displays the status of the USB-C input as either Connected or Disconnected	
USB-C Resolution	Displays the resolution detected on the USB-C Input	
HDCP Status	Reports status of HDCP along with version information	
Port 50001 Source IP	IP address of the device connected to the port	
Port 50002 Source IP		
Serial Source IP		
KVM IP		
USB 2.0 IP		
Port P0	Displays the ethernet ports as either connected or disconnected.	
Audio Activity	Displays the status of the audio stream on the network. **Active**: Stream is detected **Inactive**: Stream is not detected	

Current Source – Status

The **Current Source** section of the **Status** on the **System** page is shown.

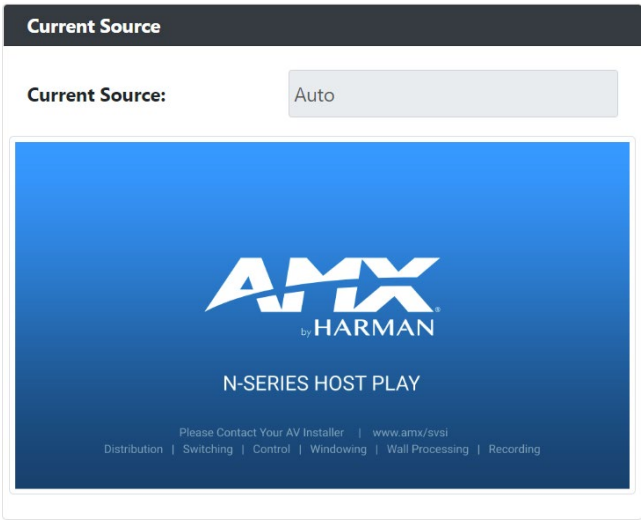


FIG. 44 Current Source Section

TABLE 29 System Page: Current Source of Status

Option	Description	Notes
Current Source	Displays the current source selected. **Auto**: Last source plugged in is the active source **HDMI**: HDMI In is the active source **USB-C**: USB-C In is the active source	
Preview Area	When Preview Image is enabled will display a snapshot of the current input source.	Clicking on the preview image will open a pop-up showing a larger preview image.

Software – Status

The **Software** section of the **Status** on the **System** page is shown.

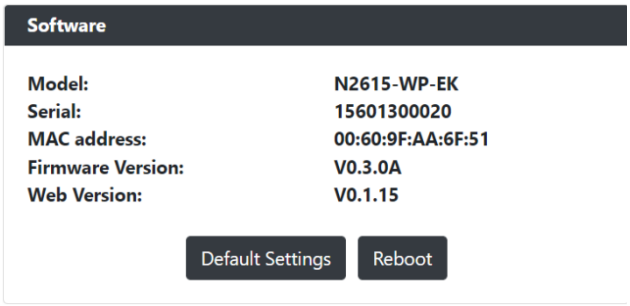


FIG. 45 Current Source Section

TABLE 30 System Page: Current Source of Status

Option	Description	Notes
Model	Displays the model of the N2600 device.	
Serial	Displays the serial number of the Encoder.	
Mac Address	Displays the MAC address of the network interface of the Encoder.	
Firmware Version	Displays the currently running version of the Encoder internal firmware.	
Web Version	Displays the currently running version of the web interface.	
Default Settings	Click to restore the device to the original factory settings. This resets everything except the IP address (including name, stream number, serial settings, etc.).	
Reboot	Click to reboot the device (does not affect current configuration).	

Decoder Configuration Options

This chapter defines N2625 Decoder configuration options. For ease of navigation, it is organized to reflect the graphical user interface (GUI).
As explained previously in the *Encoder Configuration Options* section on page 22, you can access the GUI main pages by clicking the links in the top navigation bar. Below shows the navigation bar and provides hot links to the sections of this chapter which describe each main page.

*Decoder Configuration section is based on firmware version 1.3.4

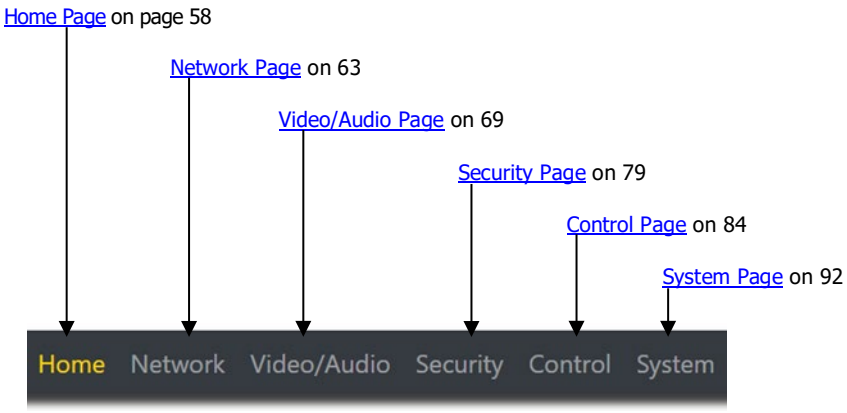


FIG. 46 Section Links

Home Page

Click the **Home** link at the top of any of the main web pages to access the page shown. This page is divided into several sections and has links to other dialog boxes for additional configuration options. Refer to the following sections for detailed descriptions:

- Stream Setup Settings Section on page 59
- Management Setup Settings on page 60
- Current Source Section on page 61
- General Setup Section on page 62

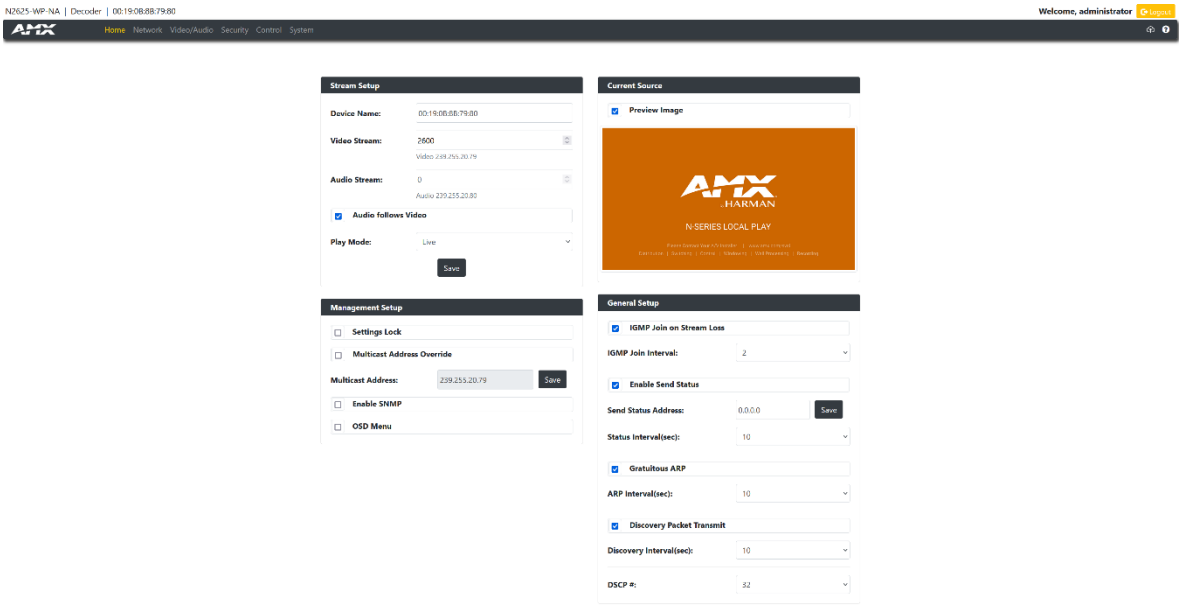


FIG. 47 Settings Page

Stream Setup Section

The **Stream Setup** section of the **Home** page is shown.

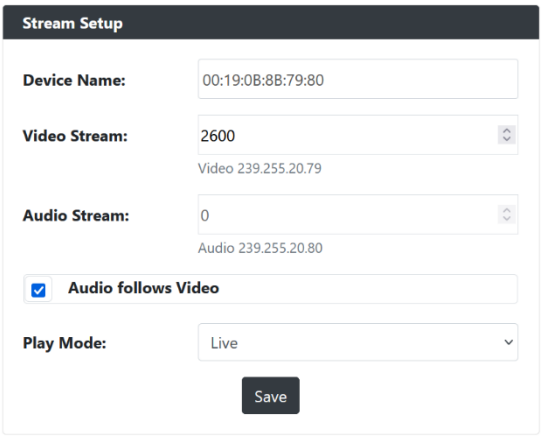


FIG. 48 Device Settings Section

TABLE 31 Home Page: Stream Settings Section

Option	Description	Notes
Device Name	Enter a user-friendly name for the unit.	More descriptive names in this field help you organize and manage the N-Series system efficiently. Names based on the unit's location and function are very useful. Some good examples are **Lobby-Left-HDMI** (for left side of lobby, HDMI input) or **CR201-HDMI** (for Conference Room 201, HDMI input). Keep in mind the matrices are organized alphanumerically.
Video Stream	View/edit the current receive video stream number.	
Audio Stream	View/edit the current receive audio stream number.	
Audio Follows Video	When enabled will force the Audio Stream to be the same as the video stream.	
Play Mode	Drop down menu to select between Live video or a Play List	Options include Live and Host Play #1-8
Save button	Click to save the settings made in this section.	Only applies Device Name and Stream fields. The other fields are dynamically updated.

Management Setup Settings

The **Management Setup** section of the **Home** page is shown.

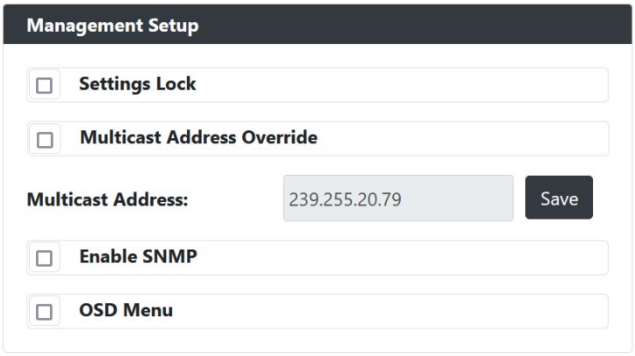


FIG. 49 Management Setup Settings

TABLE 32 Home Page: Management Setup Settings

Option	Description	Notes
Settings Lock	Enable to lock the Encoder IP settings and stream number, preventing automated processes (from N-Able or N-Command) from occurring.	
Multicast Address Override	When enabled will allow for setting of a custom multicast address for the MWC stream	Only the first 2 octets can be modified, example: 239.250.0.0. Ensure to use 0's for the 3rd and 4th octet.
Multicast Address	Enter custom address and press save once done.	Only the first 2 octets can be modified, example: 239.250.0.0. Ensure to use 0's for the 3rd and 4th octet. All Decoders need to match the custom address to view video stream.
OSD Menu	Enables the On-Screen Display (OSD) for 10 seconds then turns off for 10 seconds. The process repeats until disabled.	

Current Source Section

The **Current Source** section of the **Home** page is shown.

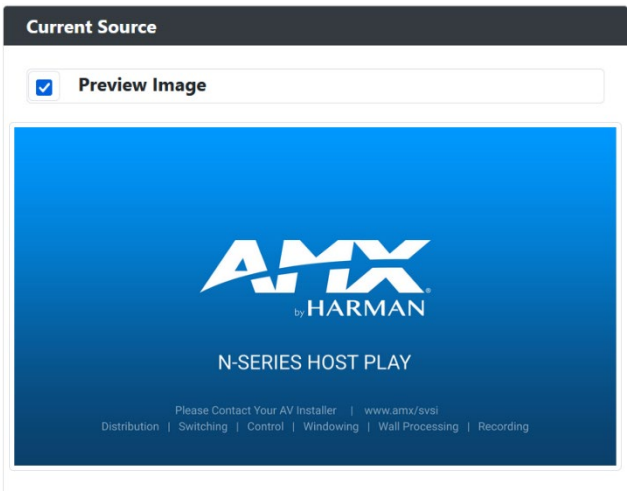


FIG. 50 Current Source Section

TABLE 33 Home Page: Current Source Section

Option	Description	Notes
Preview Image	When enabled, the current source will be shown in the below image preview area.	The preview image is updated approximately every 2 seconds.
Video Preview Area	When Preview Image is enabled, will display a snapshot of the current output source.	Clicking on the preview image will open a pop-up showing a larger preview image.

General Setup Section

The **General Setup** section of the **Home** page is shown.

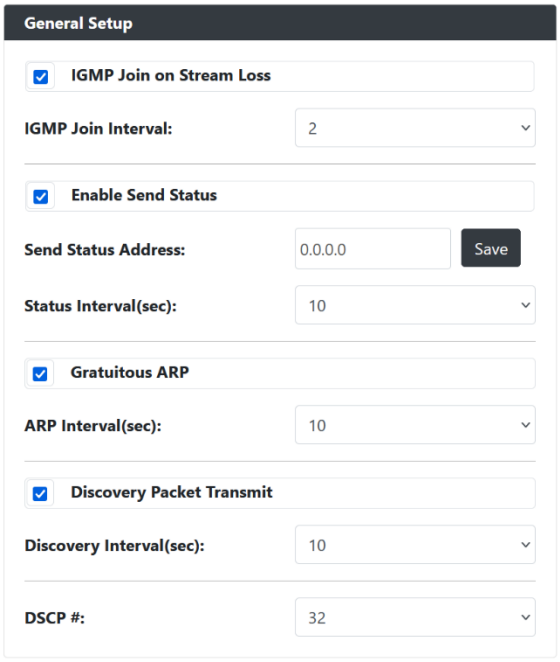


FIG. 51 General Setup Section

TABLE 34 Home Page: General Setup Section

Option	Description	Notes
IGMP Join on stream loss	When enabled, will send IGMP Join messages when no incoming stream is detected.	
IGMP Join Interval	Determines how often (in seconds) the unit transmits IGMP Join messages.	
Enable Send Status	Enables the encoder to send a periodic status packet to the **Send Status Address** listed.	
Send Status Address	When **Enable Send Status** is enabled, the encoder sends a periodic status packet to the IP address specified here.	
Status Interval (sec)	Determines how often (in seconds) the unit transmits status packets.	
Gratuitous ARP	Enables the encoder to send a periodic address resolution protocol (ARP) packet to the network.	
ARP Interval (sec)	Determines how often (in seconds) the unit transmits gratuitous ARP packets.	
Discovery Packet Transmit	Enables the N-Series multicast discovery service (used to identify units)	For N-Series devices to communicate with each other, their multicast settings must be compatible.
Discovery Interval (sec)	Determines how often (in seconds) the unit transmits discovery packets.	
Differentiated services code point (DSCP)	Specifies a mechanism for classifying and managing network traffic and providing quality of service (QoS)	Drop down list containing the optional values to choose from.

Network Page

Click the **Network** link at the top of any of the main web pages to access the page shown. This page is divided into several sections and has links to other dialog boxes for additional configuration options. Refer to the following sections for detailed descriptions:

- IP Setup Settings Section on page 64
- Date/Time Section on page 67
- 802.1x Section on page 68

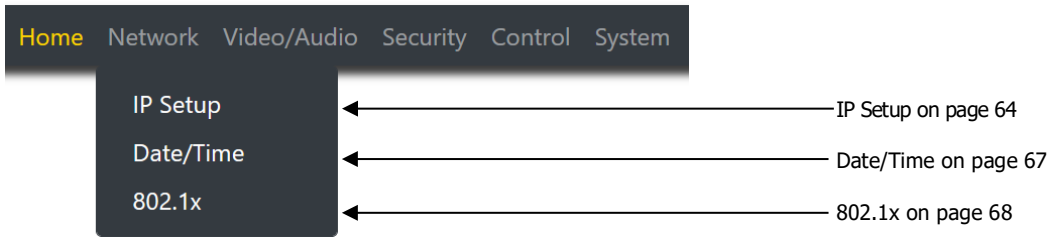


FIG. 52 Network Page

General Section –IP Setup

The **General Section** of the **IP Setup** on the **Network** page is shown.

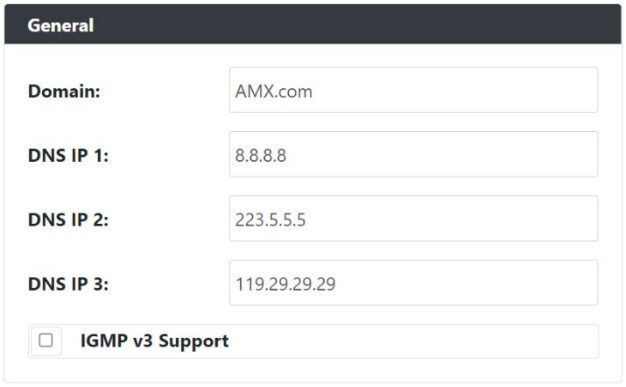


FIG. 53 General Section

TABLE 35 Network Page: General Section of IP Setup

Option	Description	Notes
Domain	Type in the domain name of the network if needed	
DNS IP 1	IP address of a DNS server.	
DNS IP 2	IP address of a DNS server.	
DNS IP 3	IP address of a DNS server.	
IGMP v3 Support	Enable to allow for IGMP v3 support.	
Save	Pressed to save all information on the MWC IP Setup page and apply those settings.	
Cancel	Pressed to discard all settings made on the MWC IP setup page.	

IPv4 Section –IP Setup

The **IPv4** section of the **IP Setup** on the **Network** page is shown.

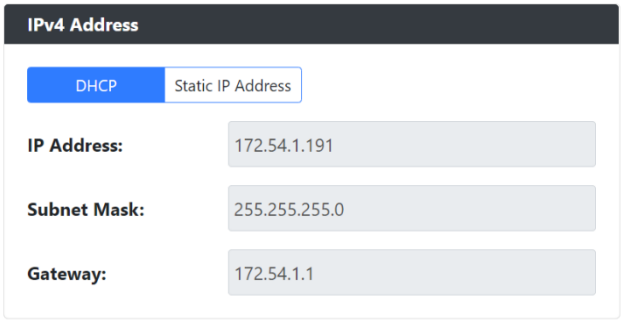


FIG. 54 IPv4 Section

TABLE 36 Network Page: IPv4 Section of IP Setup

Option	Description	Notes
DHCP / Static IP Address	Used to select either DHCP or Static IP Address mode.	
IP Address	View the current IP address of the encoder. When in Static mode, enter an IP address into this field.	
Subnet Mask	View the current subnet mask address of the encoder. When in Static mode, enter a subnet mask address into this field.	
Gateway	View the current gateway address of the encoder. When in Static mode, enter a gateway address into this field.	
Save	Pressed to save all information on the MWC IP Setup page and apply those settings.	
Cancel	Pressed to discard all settings made on the MWC IP setup page.	

IPv6 Section –IP Setup

The **IPv6** section of the **IP Setup** on the **Network** page is shown.

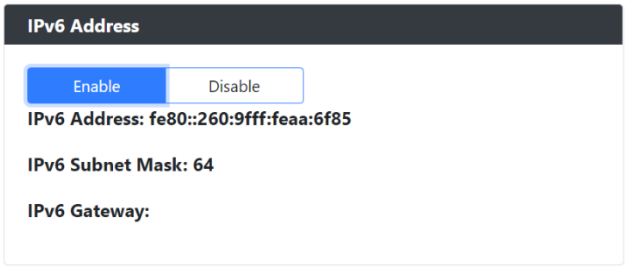


FIG. 55 IPv6 Section

TABLE 37 Network Page: IPv6 Section of IP Setup

Option	Description	Notes
Enable / Disable	When enabled the unit will attempt to obtain a DHCP IPv6 address.	Disabled by default, Requires an IPv6 DHCP server.
IPv6 Address	View the current IPv6 address of the encoder.	
IPv6 Subnet Mask	View the current IPv6 subnet mask address of the encoder.	
IPv6 Gateway	View the current IPv6 gateway address of the encoder.	
Save	Pressed to save all information on the MWC IP Setup page and apply those settings.	
Cancel	Pressed to discard all settings made on the MWC IP setup page.	

Date/Time

The **Date/Time** section of the **Network** page is shown.

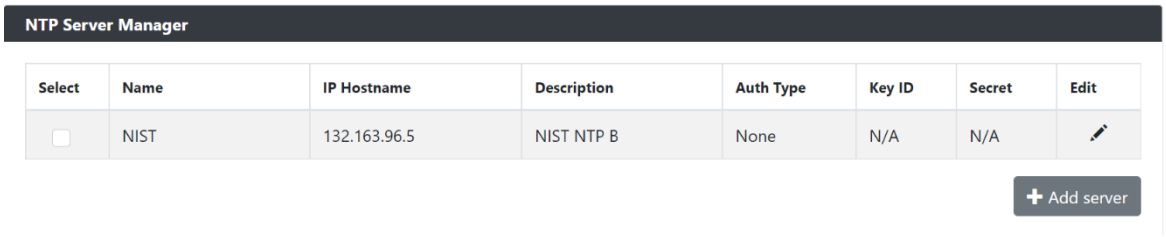


FIG. 56 Date/Time Section

TABLE 38 Network Page: Date/Time

Option	Description	Notes
Select	Used to select the NTP server connection	
Edit	When selected will allow editing of that name server information.	
Add Server	When selected will open a pop-up allowing to input information for the NTP server	

802.1x

The **802.1x** section of the **Network** page is shown.

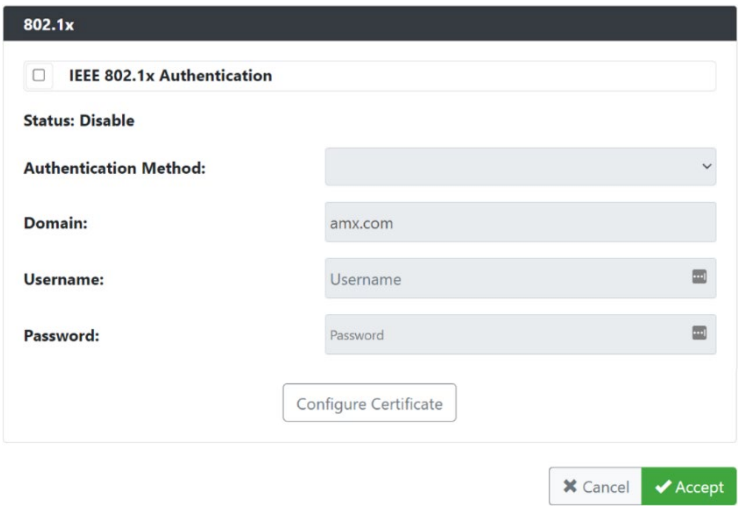


FIG. 57 802.1x Section

TABLE 39 Network Page: 802.1x

Option	Description	Notes
IEEE 802.1x Authentication	When enabled will allow the device to be used with 802.1x network configurations.	
Status	Displays the current port connection as either Disabled, Authorized, or Unauthorized.	
Authentication Method	Select one of the options listed, EAP-TLS Certificate or EAP-MSCHAP V2 Password to connect to the 802.1x server.	
Domain	Type the name of the domain the 802.1x server will be connecting.	
Username	Type the username here to access the 802.1x. Field is used when the Authentication Method is EAP-MSCHAP V2 Password.	
Password	Type the password here to access the 802.1x. Field is used when the Authentication Method is EAP-MSCHAP V2 Password.	
Configure Certificate	When pressed will navigate to the certificate page.	
Accept	Pressed to save all information on the 802.1x page and apply those settings.	
Cancel	Pressed to discard all settings made on the 802.1x page.	

Video/Audio Page

Click the **Video/Audio** link at the top of any of the main web pages to access the page shown. This page is divided into several sections and has links to other dialog boxes for additional configuration options. Refer to the following sections for detailed descriptions:

- Video Settings on page 70
- Audio Settings on page 73
- Wall Settings on page 76
- EDID Settings on page 77
- Playlist Settings on page 78

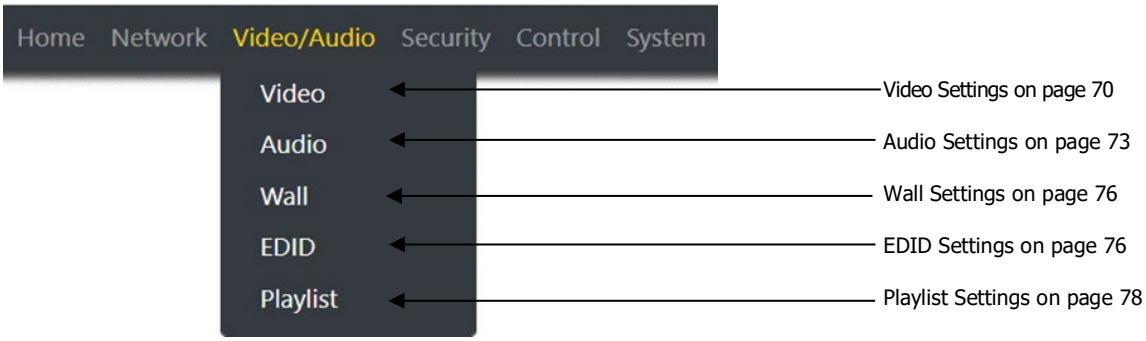


FIG. 58 Video/Audio Page

HDMI Video Section –Video section

The **HDMI Video** section of the **Video** section on the **Video/Audio** page is shown.

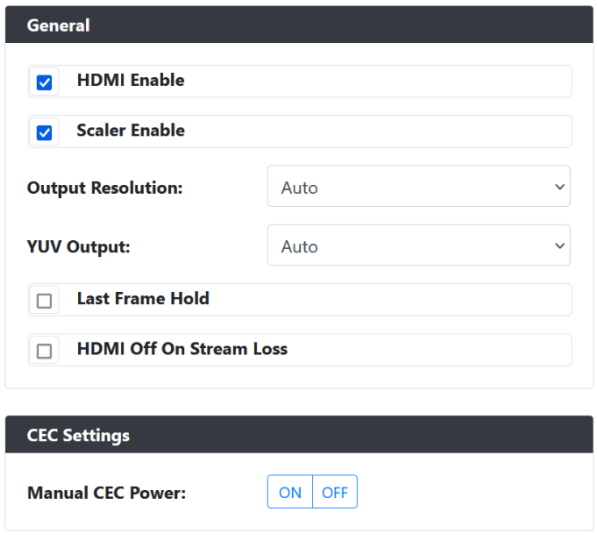


FIG. 59 HDMI Video Section

TABLE 40 Video/Audio: General Video section of the Video tab

Option	Description	Notes
HDMI Enable	Used to Enable or Disable the HDMI output.	
Scaler Enable	Used to Enable or Disable the scaler function	
Output Resolution	Drop down to select the desired resolution to be used by the scaler.	The scaler must be enabled for the selected resolution to be used.
YUV Output	**Auto** - sends out whatever color space it receives. **On** - forces the output to YUV 4:4:4 **Off** - forces the output to RGB	
Last Frame Hold	When enabled will hold the last frame of video during stream changes	Will hold the last video frame received for up to 9 seconds.
HDMI Off on Stream Loss	When enabled will turn the HDMI port off when the video stream is removed from the decoder.	

TABLE 41 Video/Audio: CEC Video section of the Video tab

Option	Description	Notes
Manual CEC Power	Manual Power On / Off	Allows for control of CEC Power over the HDMI cable with monitors equipped and enabled to support the CEC Protocol. **On**: When pressed will turn the monitor on **Off**: When pressed will turn the monitor off

Current Source Section – Video section

The **Current Source** section of the **Video** section on the **Video/Audio** page is shown.

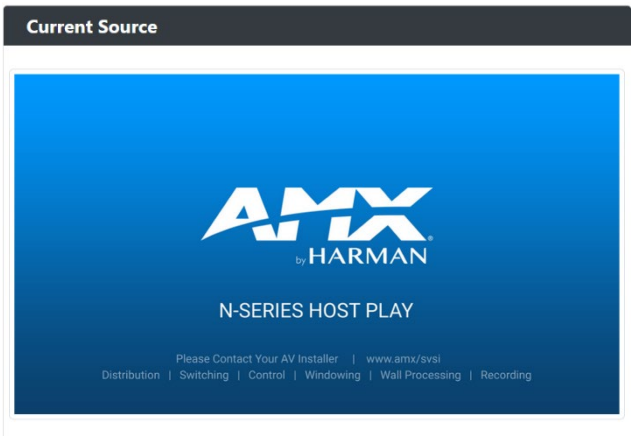


FIG. 60 Current Source Section

TABLE 42 Video/Audio: Current Source section of the Video tab

Option	Description	Notes
Preview Image	When Preview Image is enabled will display a snapshot of the current input source.	Clicking on the preview image will open a pop-up showing a larger preview image.

Status –Video section

The **Status** section of the **Video** section on the **Video/Audio** page is shown.

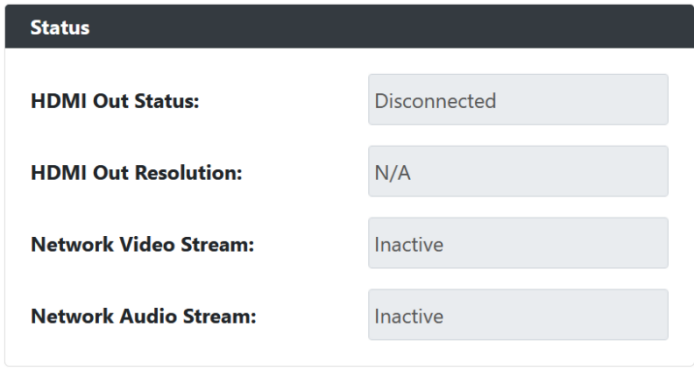


FIG. 61 Status Section

TABLE 43 Video/Audio: Status section of the HDMI Pass-thru section of the Video tab

Option	Description	Notes
HDMI Out Status	Status field displaying connection status of the HDMI Out port **Disconnected**: HDMI cable is not detected **Connected**: HDMI cable is detected	
HDMI Out Resolution	Current resolution of the video stream on the HDMI Out port.	
Network Video Stream	Active: Reports there is active video being received on the stream. Inactive: Reports there is no video being received on the stream.	
Network Audio Stream	Active: Reports there is active audio being received on the stream. Inactive: Reports there is no audio being received on the stream.	

Audio Section – Audio Setup

The **Audio Settings** section of the **Audio** on the **Video/Audio** page is shown.

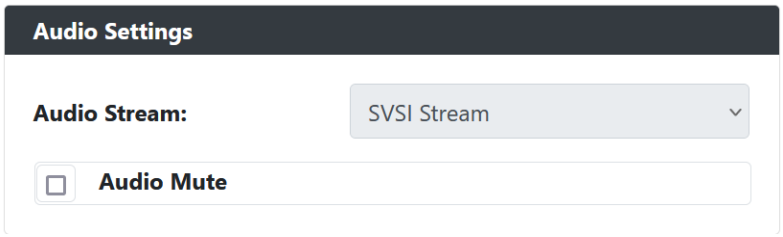


FIG. 62 Audio Settings Section

TABLE 44 Video/Audio Page: Audio Settings Section of Audio Setup

Option	Description	Notes
Audio Stream	Current option to receive desired audio format	
Audio Mute	When enabled will cause the audio to be muted.	

HDMI Audio Section – Audio Setup

The **HDMI Audio** section of the **Audio** on the **Video/Audio** page is shown.

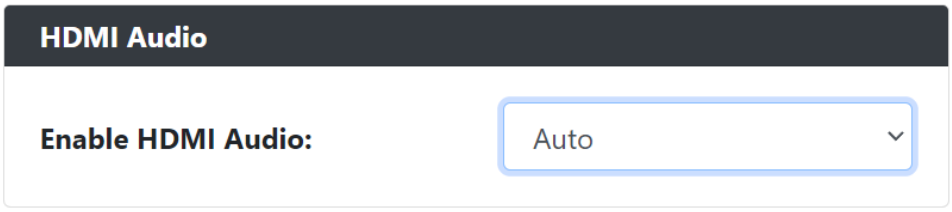


FIG. 63 HDMI Audio Section

TABLE 45 Video/Audio Page: HDMI Audio Section of Audio Setup

Option	Description	Notes
Enable HDMI Audio	Auto: When selected will allow HDMI audio to play from connected device. Off: When selected will disable HDMI audio from being outputted.	

Analog Audio Section – Audio Setup

The **Analog Audio** section of the **Audio** on the **Video/Audio** page is shown.

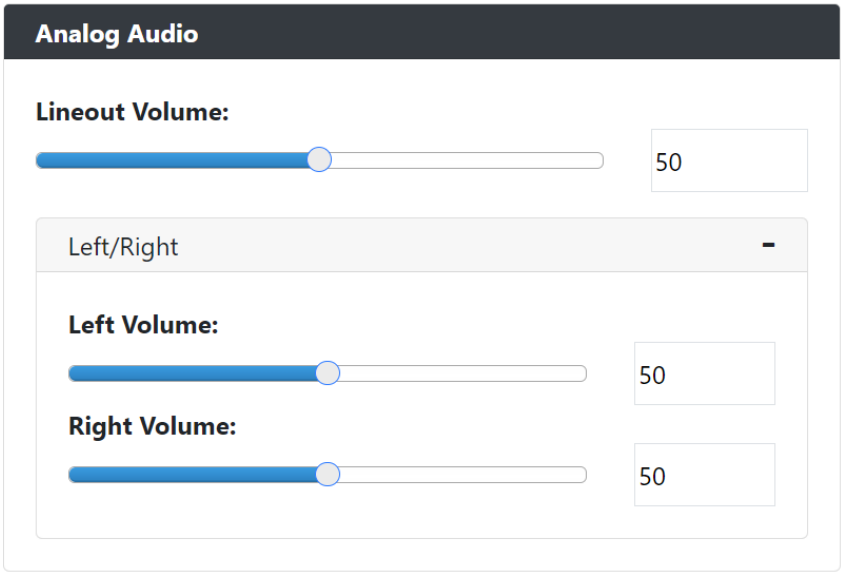


FIG. 64 Analog Audio Section

TABLE 46 Video/Audio Page: Analog Audio Section of Audio Setup

Option	Description	Notes
Lineout Volume:	Lineout volume level adjustment from 0 to 100.	
Left Volume:	Left lineout volume level adjustment from 0 to 100.	
Right Volume:	Right lineout volume level adjustment from 0 to 100.	

Wall Setup Section – EDID

The **Wall Setup** section of the **Wall** on the **Video/Audio** page is shown.

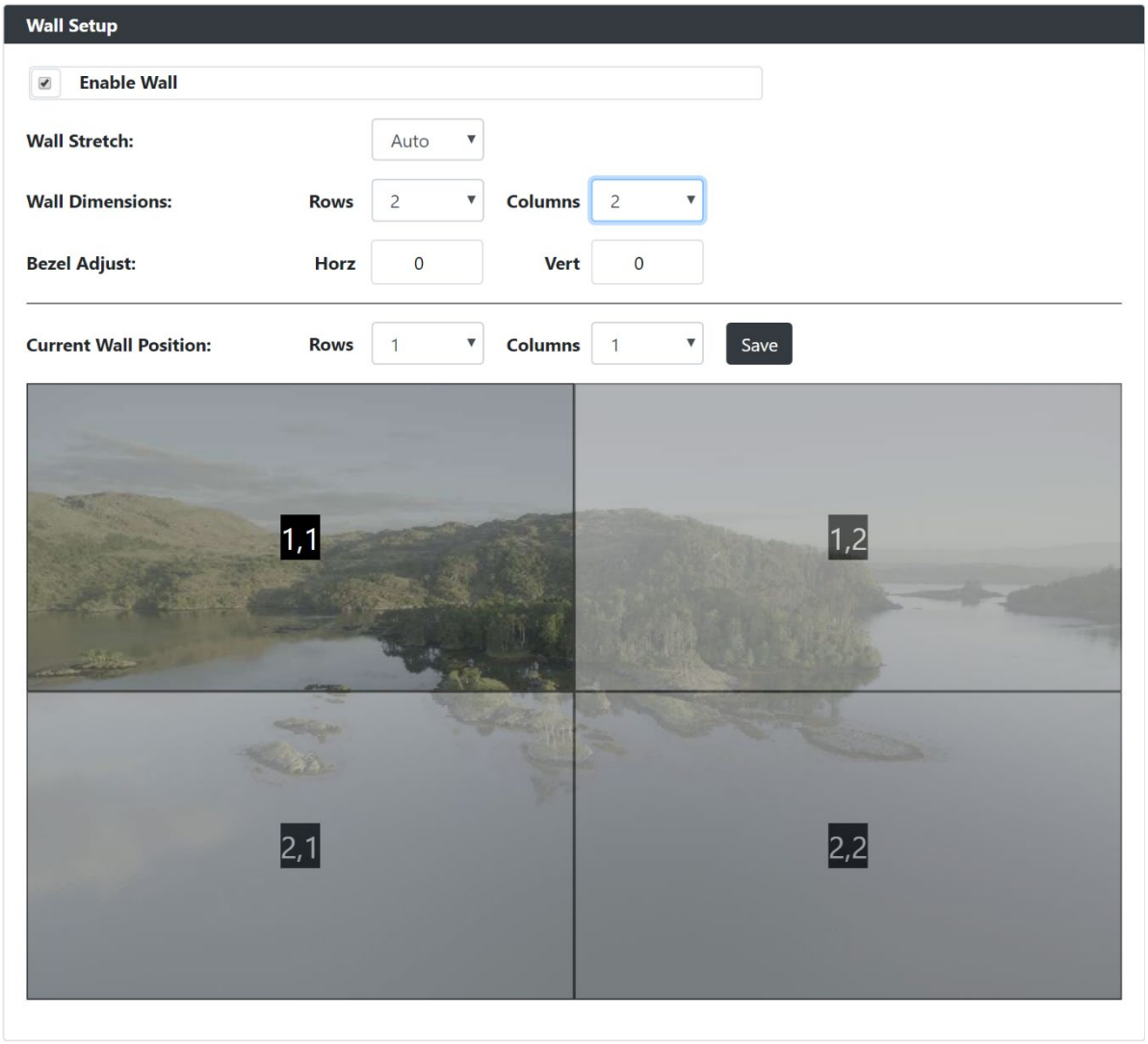


FIG. 65 Wall Setup Section

TABLE 47 Video Page: Wall Setup Section of the Wall

Option	Description	Notes
Enable Wall	When enabled will allow the decoder to operate in Wall Mode	
Wall Stretch	Available options are, Auto, Stretch and Fit	
Wall Dimensions	Used to specify the number of rows and columns for the wall	Max Rows are 16 and max columns is 16
Bezel Adjust	Used to specify the horizontal and vertical offset for the bezel in pixels.	Max for horizontal is 64 and max for vertical is 64
Current Wall Position	Used to specify the selected decoder chosen within the defined video wall	
Save	Used to save the settings applied for the above commands.	

EDID Section – EDID Setup

The **EDID** section of the **EDID** on the **Video/Audio** page is shown.

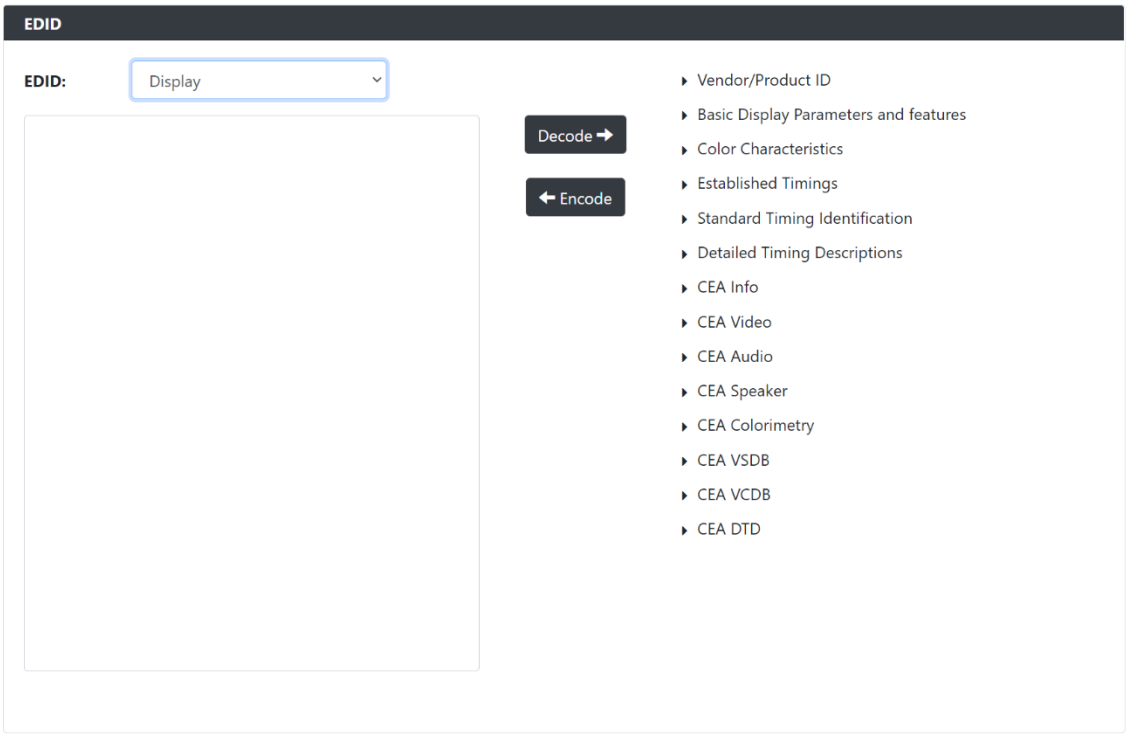


FIG. 66 EDID Section

TABLE 48 Video Page: Audio Section of Audio Setup

Option	Description	Notes
EDID (drop down)	Select EDID information to display.	
Decode	Click to translate the EDID currently displayed on the left to the operating parameters list on the right.	

Playlist Section – Playlist Setup

The **Playlist** section of the **Playlist** on the **Video/Audio** page is shown.

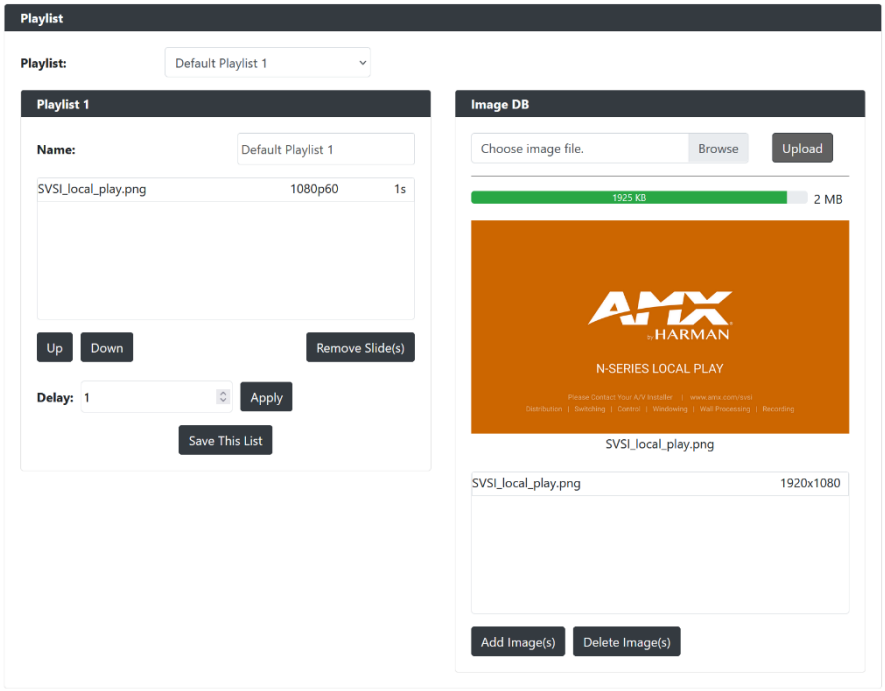


FIG. 67 Playlist Section

TABLE 49 Playlist Page: Playlist Section of Playlist Setup

Option	Description	Notes
Playlist	Dropdown containing Playlists 1-8 to be selected to work with.	

TABLE 50 Playlist Page: Playlist X Section of Playlist Setup

Option	Description	Notes
Name	Name of play list currently selected	
List Area	Listing of the current images in the playlist	
Up	Move the selected image up in the list	
Down	Move the selected image down in the list	
Remove Slides(s)	Delete the selected image(s) from the playlist selected	
Delay	Delay applied to the image until advances to the next image in the list	Measured in seconds and only applies when more than one image in a playlist
Apply	Set the delay for the selected image(s)	Different delay times can be applied to different image(s)
Save This List	Saves the current selected list changes for that selected list	

TABLE 51 Playlist Page: Image DB Section of Playlist Setup

Option	Description	Notes
Browse	Used to select the image wishing to be uploaded	One image can be uploaded at a time
Update	Used to upload the image selected to the unit	
Available Memory	A graphical bar showing the amount of available space for images	Max of 2 Mb is available
Image Preview	Preview of the selected images from the below list area	
List Area	Name of images that were uploaded	
Add Image(s)	Will add the selected image(s) to the playlist chosen	
Delete Image(s)	Will delete the image(s) from the list area above.	

Security Page

Click the **Security** link at the top of any of the main web pages to access the page shown. This page is divided into several sections and has links to other dialog boxes for additional configuration options. Refer to the following sections for detailed descriptions:

- General Settings Section on page 80
- Users Settings on page 82
- LDAP Settings on page 83

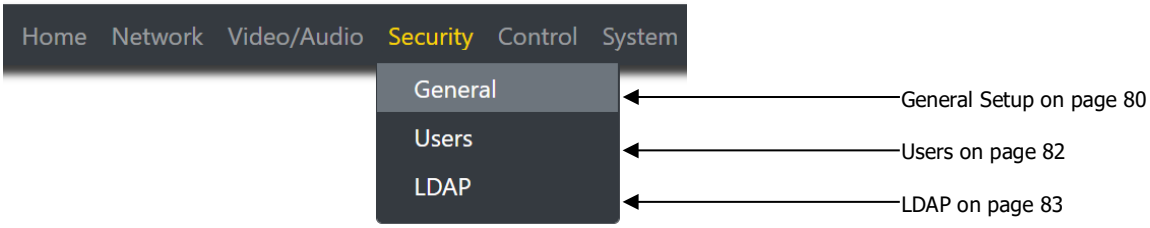


FIG. 68 Security Page

Web Page Section – General Setup

The **Web Page** section of the **General** on the **Security** page is shown.

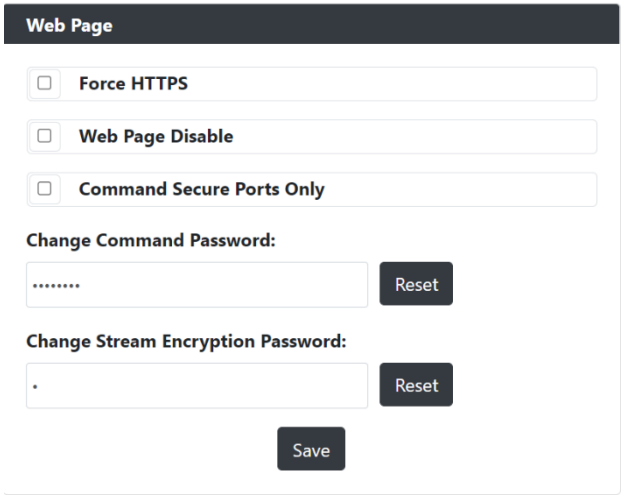


FIG. 69 Web Page Section

TABLE 52 Security Page: Web Page Section of General

Option	Description	Notes
Force HTTPS	When enabled will force the web page access to always be HTTPS	
Web Page Disable	Wen enabled will cause the web pages to fail to load	To enable or disable via API call will need to use secure socket connections.
Command Secure Ports Only	If enabled, commands must be sent using secure sockets (TLS/SSL) and follow the secure command port protocol.	
Change Command Password	Set the default password for command encryption.	When issuing API commands, this password must precede each command in the format: `<password>\r<command>\r`
Change Stream Encryption Password	Set the default password for stream encryption.	To successfully communicate, the Decoder and Encoder passwords must match.
Reset	Click **Reset** to return to default password and settings	
Save	Pressed to save all information on the Security Setup page and apply those settings.	

Security Certificates Section – General Setup

The **Security Certificates** section of the **General** on the **Security** page is shown.

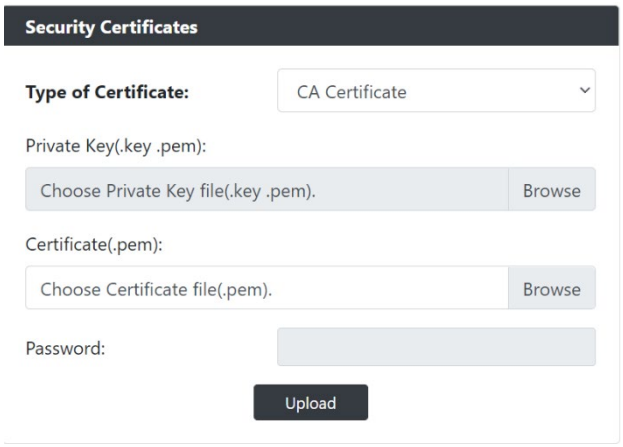


FIG. 70 Security Certificates Section

TABLE 53 Security Page: Security Certificates Section of General

Option	Description	Notes
Type of Certificate	Three options exist for the drop down: CA Certificate Client Certificate Server Certificate	
Private Key	Browse for the Private Key file	
Certificate	Browse for the certificate file	
Password	If required input password for the Private Key or Certificate file	
Upload	Pressed to upload the private key or certificate to the device.	

User Security Details Section – Users Setup

The **Security Certificates** section of the **Users** on the **Security** page is shown.

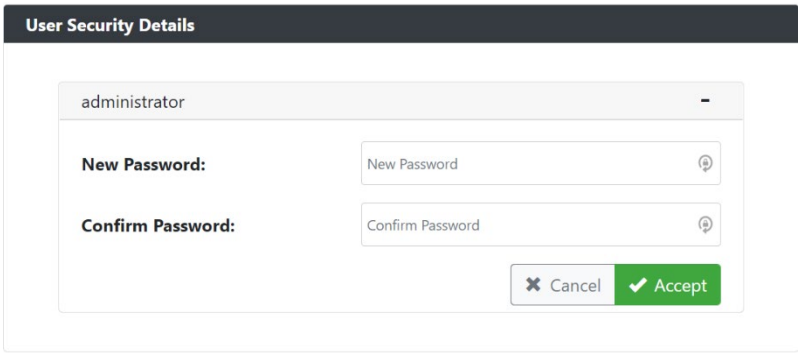


FIG. 71 User Security Details Section

TABLE 54 Security Page: User Security Details Section of Users

Option	Description	Notes
New Password	Input the new password for the Administrator account	
Confirm Password	Input the new password for the Administrator account	
Accept	Press to confirm and apply new password to the user account.	
Cancel	Press to discard changes and retain old password for the user account.	

LDAP Section – LDAP Setup

The **LDAP** section of the **LDAP** on the **Security** page is shown.

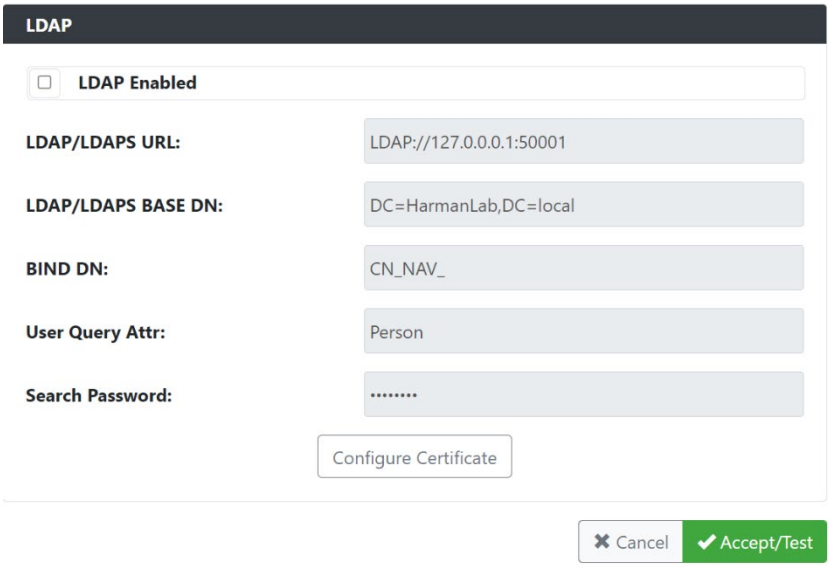


FIG. 72 LDAP Section

TABLE 55 Security Page: LDAP Section of LDAP

Option	Description	Notes
LDAP Enabled	When enabled will allow the device to connect to an LDAP server.	
LDAP/LDAPS URL	Address and port of the LDAP Server	If using LDAP type ldap://<IP>:Port If using LDAPS type ldaps://<IP>:Port
LDAP/LDAPS Base DN	Location of the BIND DN user account with the AD structure	
BIND DN	The binding account being used to form the LDAP connection	
User Query Attr		
Search Password	Password used for the BIND DN account	
Configure Certificate	Pressed will redirect to the certificate management window	
Accept/Test	Press to accept and test the changes to the LDAP settings	
Cancel	Press to discard changes made to LDAP settings	

Control Page

Click the **Control** link at the top of any of the main web pages to access the page shown. This page is divided into several sections and has links to other dialog boxes for additional configuration options. Refer to the following sections for detailed descriptions:

- Serial Section on page 85
- IR Settings on page 88
- N-Act Settings on page 90
- KVM/USB Settings on page 91

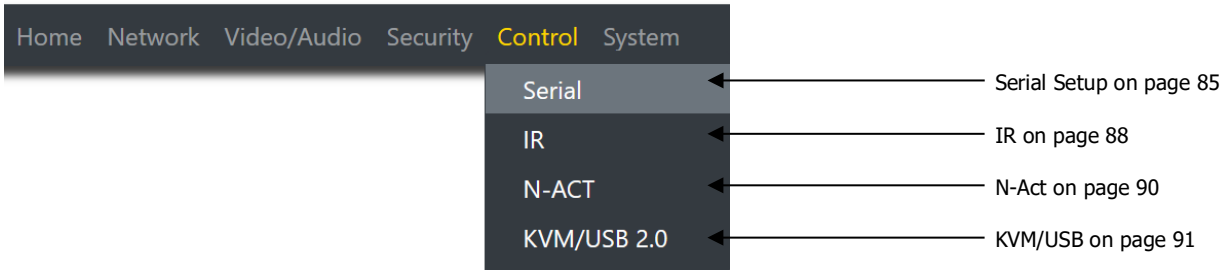


FIG. 73 Control Page

Serial Commands – Serial Setup

The **Serial Commands** section of the **Serial** on the **Control** page is shown.

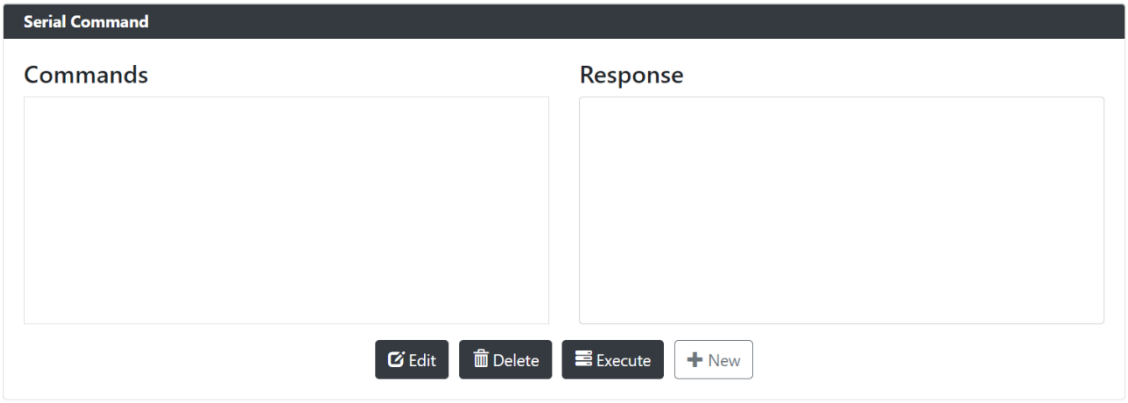


FIG. 74 Serial Commands Section

TABLE 56 Control Page: Serial Commands Section of Serial

Option	Description	Notes
New	Will open a pop-up window where new commands can be stored on the device.	
Execute	Once a command is selected from the list of commands and pressing execute. Any response will be shown in the response box.	
Delete	Once a command is selected from the list of command and pressing delete will remove that command from the list.	
Edit	Once a command is selected from the list of commands and pressing edit will allow changes to be made to the selected commands.	

RS232 Settings – Serial Setup

The **RS232 Settings** section of the **Serial** on the **Control** page is shown.

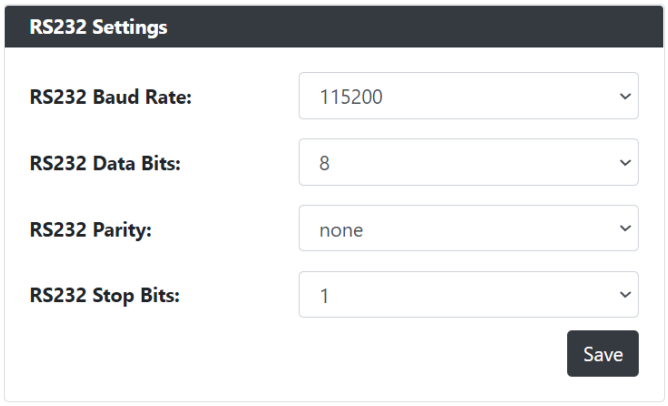


FIG. 75 RS232 Settings Section

TABLE 57 Control Page: RS232 Settings Section of Serial

Option	Description	Notes
RS232 Baud Rate	Select the drop down and choose from the various baud rates.	
RS232 Data Bits	Select the drop down and choose from the various data bits.	
RS232 Parity	Select the drop down and choose from the various parity options.	
RS232 Stop Bits	Select the drop down and choose from the various stop bit options.	

Serial Settings – Serial Setup

The **Serial Settings** section of the **Serial** on the **Control** page is shown.

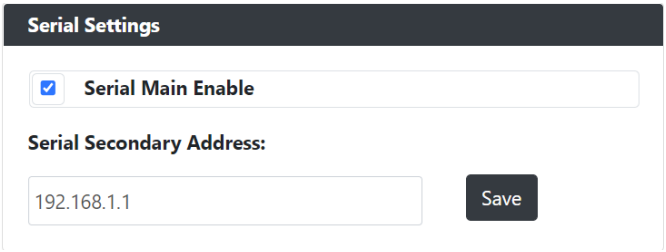


FIG. 76 Serial Settings Section

TABLE 58 Control Page: Serial Settings Section of Serial

Option	Description	Notes
Serial Main Enable	Enables the device to be the server to the designated client.	
Serial Secondary Address	Enter the IP address of the serial client device.	

IR Command – IR Setup

The **IR Command** section of the **IR** on the **Control** page is shown.

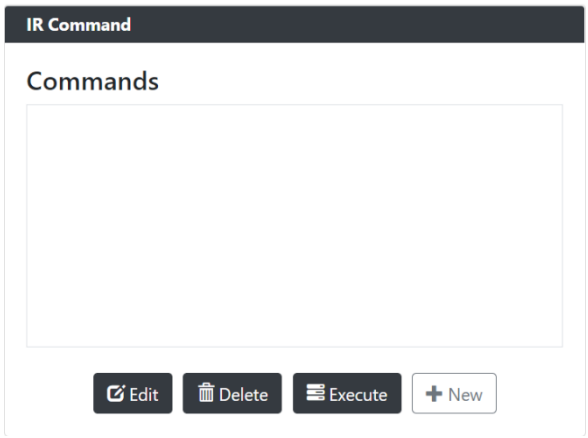


FIG. 77 IR Command Section

TABLE 59 Control Page: IR Command Section of IR

Option	Description	Notes
New	Will open a pop-up window where new commands can be stored on the device.	
Execute	Once a command is selected from the list of commands and pressing execute will transmit that command	
Delete	Once a command is selected from the list of command and pressing delete will remove that command from the list.	
Edit	Once a command is selected from the list of commands and pressing edit will allow changes to be made to the selected commands.	

IR Passthrough Settings – IR Setup

The **IR Passthrough Settings** section of the **IR** on the **Control** page is shown.

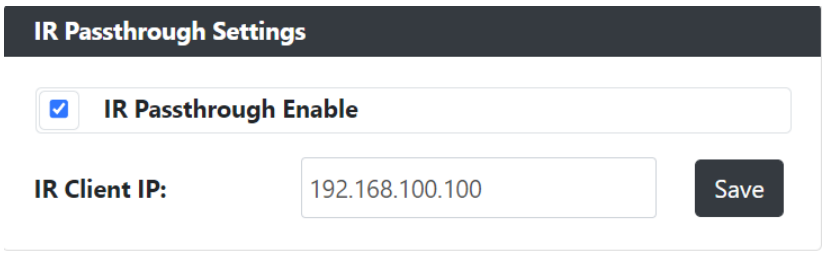


FIG. 78 IR Passthrough Settings Section

TABLE 60 Control Page: IR Passthrough Section of IR

Option	Description	Notes
IR Passthrough Enable	Enables support for passing IR input from one unit to the IR output of another.	
IR Client IP	Specify the IP address of the unit to send the IR passthrough data.	

N-Act Events – N-Act

The **N-Act Events Settings** section of the **N-Act** page is shown.

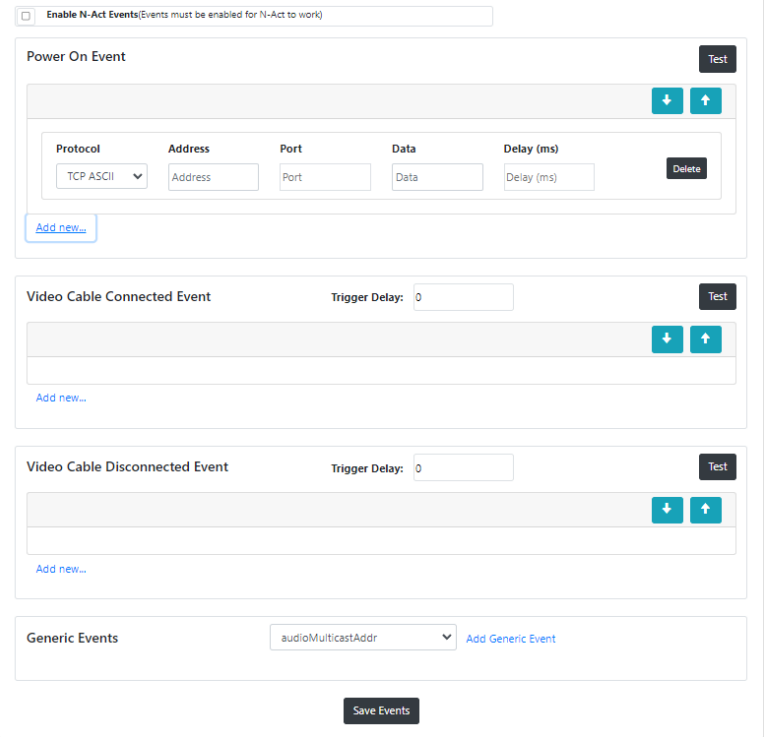


FIG. 79 N-Act Events Section

TABLE 61 N-Act Page: N-Act Events Section

Option	Description	Notes
Enable N-Act Events	Used to enable the N-Act events	
Power On Event	Event is triggered once the device is powered on and running	
Video Cable Connected Event	Event is triggered when a hot plug of the video cable is connected	
Video Cable Disconnected Event	Event is triggered when a video cable is disconnected	
Generic Events	List of different parameters that can be triggered based on the selected parameter	Refer to the N-Act documentation for list of events.
Save Events	Used to save the event parameters	Refer to the N-Act documentation for list of events.
Protocol	Drop down containing the different communication protocol formats to send	Refer to the N-Act documentation for list of events.
Address	IP address of the device to send the data	Refer to the N-Act documentation for list of events.
Port	Network port to send the data	Refer to the N-Act documentation for list of events.
Data	Command or payload to send the device being controlled	Refer to the N-Act documentation for list of events.
Delay (ms)	Can be used to delay the commands being sent to the device. Time is in milliseconds	Refer to the N-Act documentation for list of events.
Test	Once a macro of commands is inputted for event the Test button can be used to force the event without triggering the actual event.	
Trigger Delay	Used to create a delay in seconds until the commands are executed once the event is triggered.	
Add new	Used to add a new command to the event the Add new was clicked in	
Up Arrow	Used to move the selected command up in the event	
Down Arrow	Used to move the selected command down in the event	

USB Setting – KVM/USB

The **USB Settings** section of the **KVM/USB** on the **Control** page is shown.

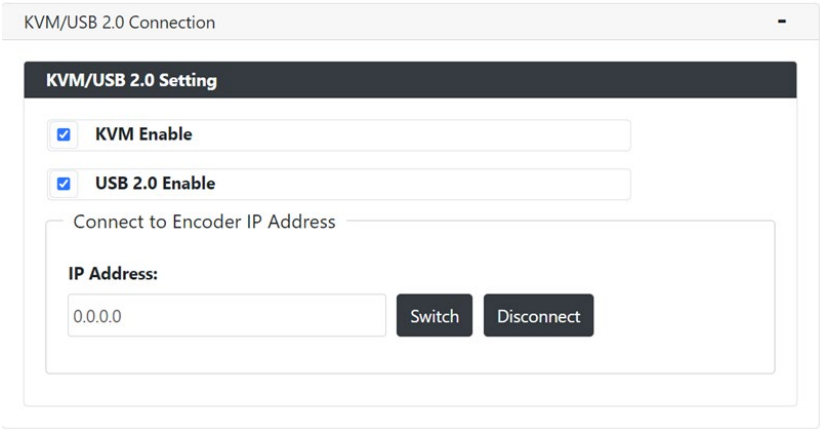


FIG. 80 USB Settings Section

TABLE 62 Control Page: USB Settings Section of USB

Option	Description	Notes
KVM Enable	When enabled will allow the decoder to connect to the encoder listed in the IP Address field for KVM.	
USB 2.0 Enable	When enabled will allow the decoder to connect to the encoder listed in the IP Address field for USB 2.0.	
IP Address	View/edit field of what encoder to connect the decoder	
Switch	When executed will cause the decoder to connect to the encoder listed.	
Disconnect	When executed will cause the decoder to disconnect from the encoder listed.	

System Page

Click the **System** link at the top of any of the main web pages to access the page shown. This page is divided into several sections and has links to other dialog boxes for additional configuration options. Refer to the following sections for detailed descriptions:

- Logs Section on page 93
- Status Settings on page 97

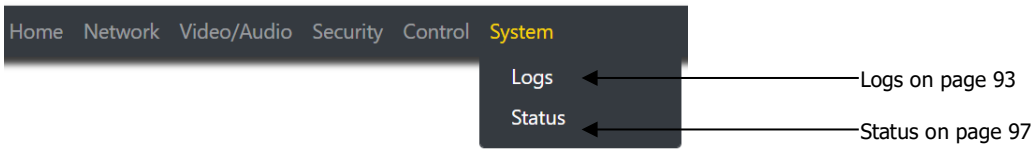


FIG. 81 System Page

Command Log – Log

The **Command Log** section of the **Log** on the **System** page is shown.

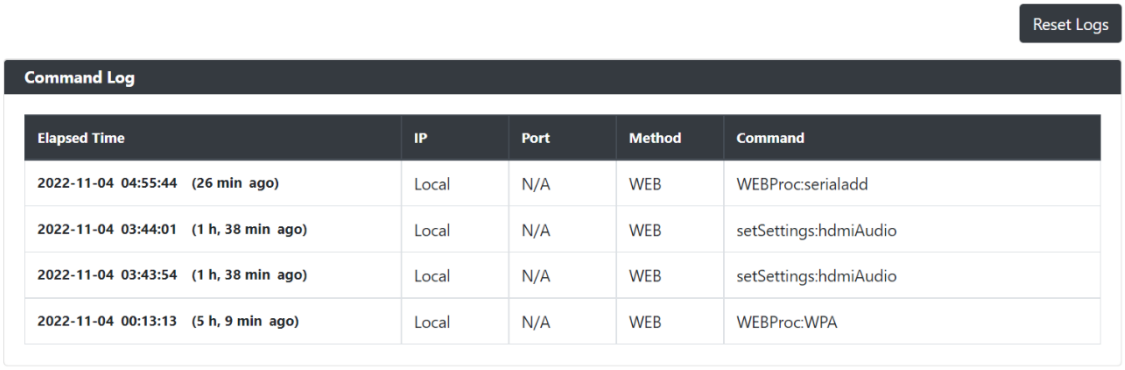


FIG. 82 Command Log Section

TABLE 63 System Page: Command Log Section of Log

Option	Description	Notes
Reset Logs	When pressed will cleat the Command Log history table	

Debug Log – Log

The **Debug Log** section of the **Log** on the **System** page is shown.

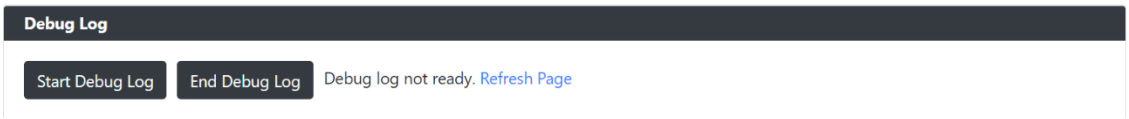


FIG. 83 Debug Log Section

TABLE 64 System Page: Debug Log Section of Log

Option	Description	Notes
Start Debug Log	When pressed will begin enhanced log gathering	Used when troubleshooting an issue with tech support
End Debug Log	When pressed will stop enhanced log gathering	Used when troubleshooting an issue with tech support

Syslog Settings – Log

The Syslog Settings section of the **Log** on the **System** page is shown.

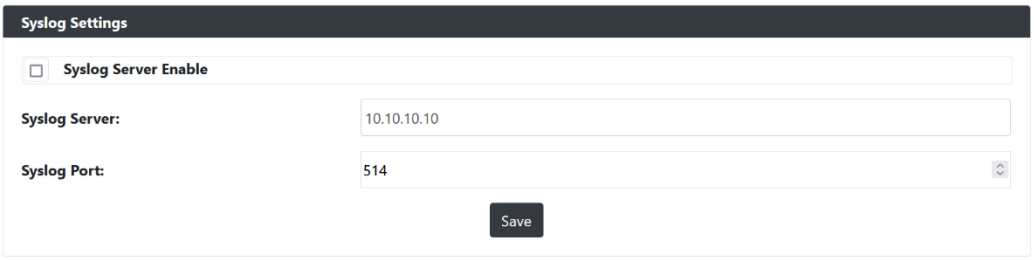


FIG. 84 Debug Log Section

TABLE 65 System Page: Debug Log Section of Log

Option	Description	Notes
Syslog Server Enable	When pressed will enable the Syslog server function	
Syslog Server	IPv4 address of the Syslog Server to connect to	
Syslog Port	Port used to connect to Syslog Server	

Link Layer Discovery Protocol (LLDP) – Status

The **LLDP** section of the **Status** on the **System** page is shown.

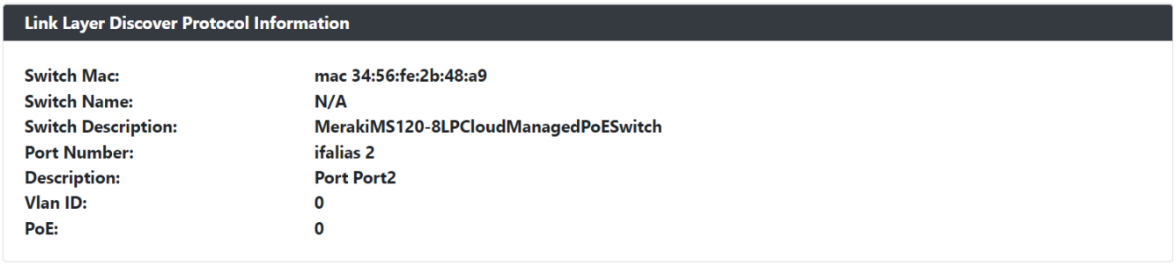


FIG. 85 LLDP Section

TABLE 66 System Page: LLDP Section of Status

Option	Description	Notes
Switch Mac	Mac address of the network switch	
Switch Name	Name of the network switch	
Switch Description	Network description of the switch	
Port Number	Port number the device is connected	
Description	Network port description	
Vlan ID	Vlan of the network device is connected	
PoE	Watts being supplied to the device.	

Status – Status

The **Status** section of the **Status** on the **System** page is shown.

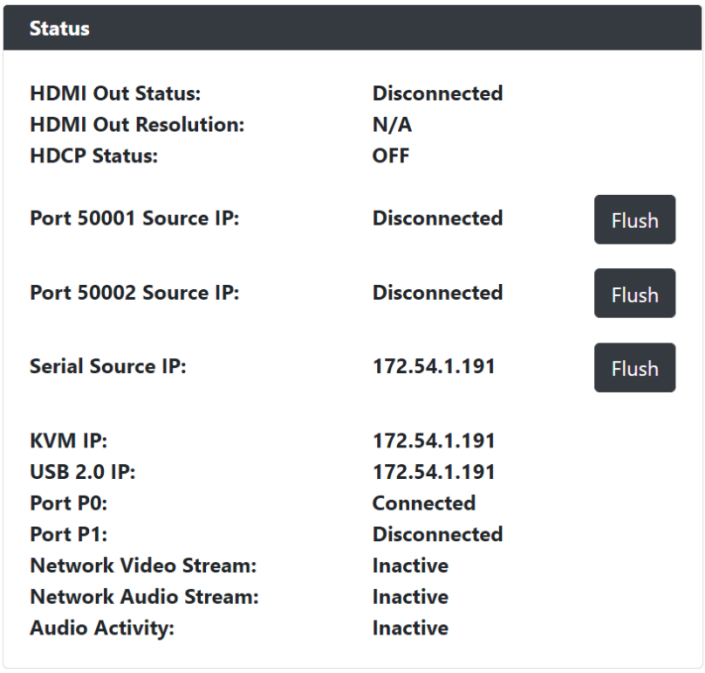


FIG. 86 Status Section

TABLE 67 System Page: Status Section of Status

Option	Description	Notes
HDMI Out Status		
HDMI Out Resolution	Select the output resolution of the video stream to be transmitted to the output device (e.g. LCD).	The Scaler Enabled setting must also be enabled for output resolution to work. Downscaling is supported only if the input stream is 3840x2160 and the scaler is set to 1080P. Any other attempts at downscaling are not recommended/supported.
HDCP Status	Reports status of HDCP along with version information	
Port 50001 Source IP	IP address of the device connected to the port	
Port 50002 Source IP		
Serial Source IP		
KVM IP		
USB 2.0 IP		
Port P0	Displays the ethernet ports as either connected or disconnected.	
Port P1		
Network Video Stream	Displays the status of the streams on the network. **Active**: Stream is detected **Inactive**: Stream is not detected	
Network Audio Stream		
Audio Activity		

Current Source – Status

The **Current Source** section of the **Status** on the **System** page is shown.

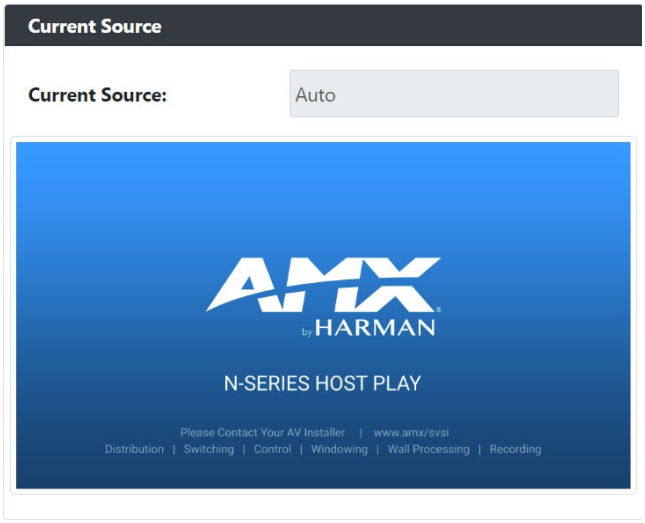


FIG. 87 Current Source Section

TABLE 68 System Page: Current Source of Status

Option	Description	Notes
Current Source	Status field displaying one of three options showing the current input source. **Auto**: Last source plugged in will be the active source **USB-C**: USB-C In will be the active source **HDMI**: HDMI In will be the active source	
Preview Area	When Preview Image is enabled will display a snapshot of the current input source.	Clicking on the preview image will open a pop-up showing a larger preview image.

Software – Status

The **Software** section of the **Status** on the **System** page is shown.

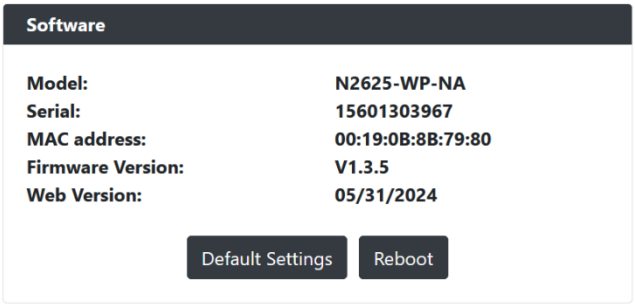


FIG. 88 Current Source Section

TABLE 69 System Page: Current Source of Status

Option	Description	Notes
Model	Displays the model of the N2600 device.	
Serial	Displays the serial number of the N2612 Encoder.	
Mac Address	Displays the MAC address of the network interface of the device.	
Firmware Version	Displays the currently running version of the device internal firmware.	
Web Version	Displays the currently running version of the web interface.	
Default Settings	Click to restore the device to the original factory settings. This resets everything except the IP address (including name, stream number, serial settings, etc.).	
Reboot	Click to reboot the device (does not affect current configuration).	

Troubleshooting

This chapter contains possible solutions to some common issues. Should you encounter any problems not covered by these guidelines, please contact technical support. You can also visit our support webpage at suppot.harmanpro.com

Issues	Suggestions
LocalPlay screen displays instead of the stream from the Encoder.	• Verify Decoder is assigned to view a valid stream (of an active Encoder). • Verify that Encoder and Decoder are on the same subnet. • Verify Decoder is currently in **Live** play mode (its name will display in black text on the **Video Matrix** page). You can change to **Live** mode on the **Settings** page (see the Settings Page: Device Settings Section table on page 59 for more details). • Verify network is properly configured and set up. If needed, connect Encoder's network port to Decoder to bypass the network.
HostPlay screen displays instead of the video from the source.	• Verify Encoder is in **Live** play mode (its name will display in black text on the **Video Matrix** page). You can change to **Live** mode on the **Settings** page (see Settings Page: Device Settings Section table on page 24 for more details). • Verify source is attached and is outputting a valid signal (**HDMI** LED on Encoder is on).
Black screen/no screen displays.	• Set Decoder to **LocalPlay**. If the **LocalPlay** screen does not appear, check the display input settings and cabling. As mentioned previously in this table, you can change to the **Local** mode on the Decoder's **Settings** page. • If **LocalPlay** appears, set Decoder to **Live** play mode and verify network is configured properly. • If screen is black with a slight sparkle effect, verify that your switch has Jumbo Frame support enabled.
No audio is detected.	• If there is no audio on all Decoders, verify audio settings are correct on Encoder. • If there is no audio on a single Decoder, verify audio settings are correct on Decoder.
Device has been discovered in N-Able, but the configuration pages do not open when double-clicking device name on the Video Matrix page.	• Make sure your computer is in the same IP address range as the unit. See *Setting Up Your Host Computer* on page 12 for more information.
When changing the audio type, there are problems with audio in/out.	• Verify that the Encoder's **Enable HDMI Audio** setting is set to **Auto**. • Verify that **Audio Mute** is disabled (Encoder and Decoder).
Not receiving audio.	• Check that the Decoder has proper audio stream setting (typically by enabling **Audio follows Video**).
Serial port is not working as expected.	• Verify the **RS232 Settings** on the **Settings** page. • Connecting the Tx and Rx pins on the RS232 connector creates a loopback that could also help when troubleshooting.

Appendix A: Local/Host Play Error Screens

This section shows and defines the status screens displayed by N2600 Series devices.

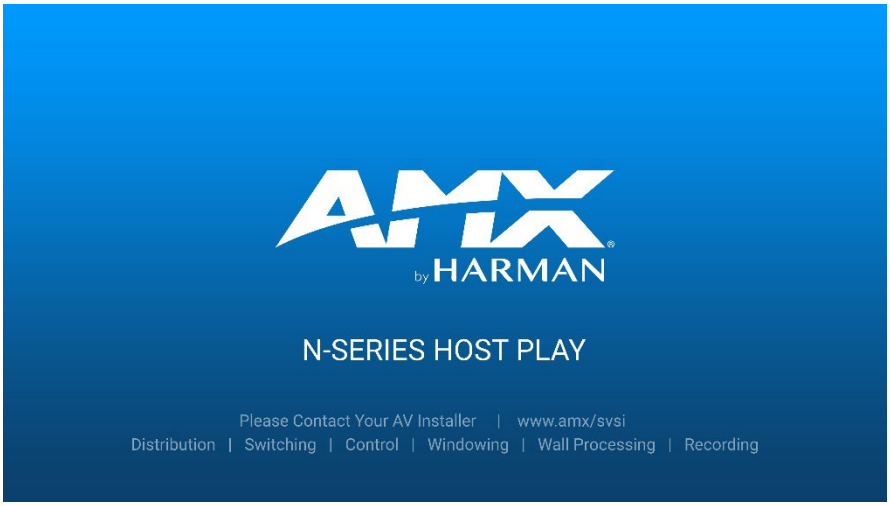


FIG. 89 Host Play Screen

Displayed when Decoder....	...and Encoder....	Notes
• is set to view an Encoder stream on the network	• is set to HostPlay, or • does NOT have a valid input video signal	Seeing this screen means that the Decoder CAN communicate with the Encoder across the network. It is a good way to troubleshoot network communication between segments using only Encoders and Decoders (without the need for source video into an Encoder).

NOTE: *If you see can see the HostPlay screen but cannot see live video, this could mean that the Encoder and Decoder are not on the same subnet.*

FIG. 90 Local Play Screen

Displayed when Decoder....	Notes
• is set to LocalPlay mode	If the Decoder is NOT set to **Local Play** mode, this screen could signify a network communication issue.

FIG. 91 Unsupported Input Resolution Screen

Displayed when Decoder....	...and Encoder....	Notes
• is set to view a encoder stream on the network	• is being fed a video resolution that is does not support	This screen can be useful to show you that the Decoder is receiving the stream from the intended Encoder. However, the video signal being sent to the encoder is not supported.

FIG. 92 Restricted Content Not Supported Screen

Displayed when Decoder....	...and Encoder....	Notes
• is receiving a stream from an Encoder • is connected to a monitor that does NOT support Restricted Content (i.e., the monitor is NOT HDCP compliant)	• is transmitting HDCP-protected content to the Decoder	Once the Decoder detects that the monitor is not HDCP compliant, this screen is displayed. If you suspect that this message was displayed in error, please call Technical Support.

NOTE: *The version of HDCP protection of the source and the monitor must be compatible for the content to display successfully. For example, you can have an HDCP 1.4 compliant monitor and still see the screen in Figure 103 if your source is HDCP 2.2.*

FIG. 93 Video Encrypted Screen

Displayed when Decoder....	Notes
• is receiving a stream from an encoder it cannot decrypt	Make sure the decoder has the correct password for decrypting the stream. To reset the password, go to the security page on both the encoder and decoder and click the reset button. Refer to the security page section if you are not sure where to find this setting.

FIG. 94 Preview Image Disabled Screen

Displayed on Webpage....	Notes
• is set to Preview Disabled	This screen is also displayed in the image preview link and on N-Able Preview.

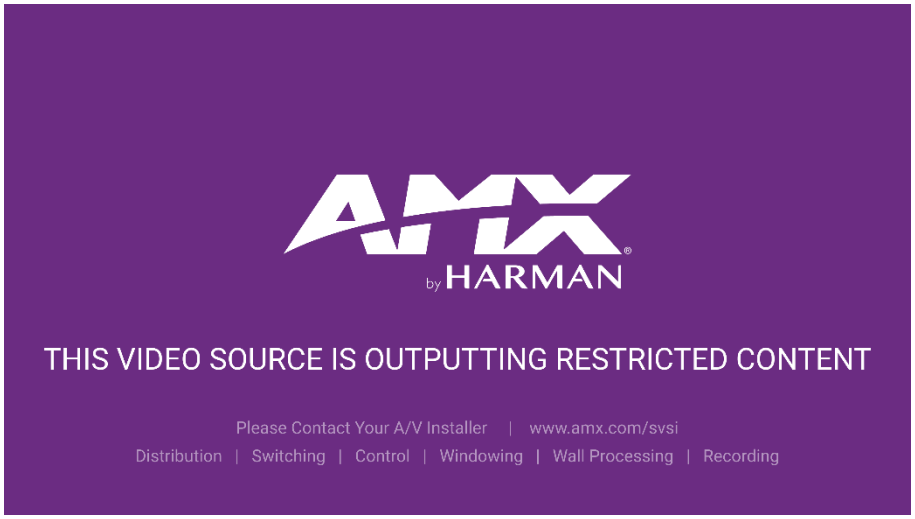


FIG. 95 HDCP Streaming Resolution Screen

Displayed when Decoder....	...and Encoder....	Notes
• is set to view a encoder stream on the network	• setting of disabled HDCP Advertisement	This screen can be useful to show you that the Encoder is streaming HDCP material with the HDCP Advertisement disabled on the encoder.

Appendix B: Minimum Network Requirements

The following list specifies the minimum network requirements that must be considered when deploying your N-Series equipment. These requirements cover the necessary protocols and features needed to drive N-Series streams.

NOTE: *Specific configuration recommendations are based off the Cisco Catalyst series, however this may vary.*

1. **Managed Network Switch**
2. **Gigabit Ethernet**
3. **Internet Group Management Protocol (IGMP) Version 2**
   - IGMP Snooping
   - IGMP Snooping Querying
     - Network must include at least one IGMP Querier to maintain stream connections. It is recommended to have all capable switches with the querier enabled and allow IGMP auto-elect to determine the Designated Querier (DQ).
     - Query Interval – 30 seconds. This is the interval between sending IGMP general queries.
     - Query Response Interval – 10 seconds. This is the maximum time the system waits for a response to general queries.
     - Last Member Query Interval – 100 milliseconds. This is the interval to wait for a response to a group specific or group- and-source-specific query message.
     - Immediate Leave (also known as Fast Leave, etc. depending on switch manufacturer).
       - Immediate Leave breaks any daisy chaining of multiple units together with a single home run; therefore, you will not be able to have both Immediate Leave units and daisy chaining on the same VLAN.

   NOTE: *If Immediate Leave is disabled, set IGMP Robustness to Default 2. Robustness can be adjusted generally from 2-10. The higher the value, the more leave latency is added.*

   - Warnings/Notices
     - There is a known behavior within IGMP that Encoder streams, whether requested across an uplink or not, will be requested by the DQ and will be present on all uplinks between the stream source switch and the DQ.
       - This means that even though you may not be routing a stream to another switch, the DQ's request still puts the stream on the uplink. Therefore, it is important to account for all streams forwarding to the DQ.
       - The presence of a multicast router with PIM-Sparse configured to handle the multicast traffic may eliminate or limit this behavior.
4. **Jumbo Frames Enabled**

   The N2600 Series Encoders/Decoders produce a frame payload larger than 1500 bytes which requires the switch to have the capacity of handling Jumbo Frames.
5. **TCN Flood Off**

   TCN flood protocol will cause unnecessary backplane and bandwidth usage when adding or removing a device on the network. This can cause stream interruptions as the flooding sweeps through the network.
6. **802.1X**

   If the network is using 802.1x the Encoder and Decoder have the ability to generate 2 Mac Addresses depending on configuration. Recommendation is to enable multi-auth on the ports requiring.

Appendix C: Connector Wiring Detail

The following specifies the pinout for the 3.5mm audio connection, 3.5mm IR connection, and the 3.5mm RS-232 connection.

Audio Connection:

IR Connection:

RS-232 Connection:

Appendix D: Video Resolution Detail

Resolution	Refresh Rates	YUV 4:4:4	YUV 4:2:2	RGB	YUV 4:2:0	Interlaced
4096x2160 (DCI)	60	Yes	Yes	Yes	Yes	No
4096x2160	59	Yes	Yes	Yes	Yes	No
4096x2160	50	Yes	Yes	Yes	Yes	No
4096x2160	30	Yes	Yes	Yes	No	No
4096x2160	29	Yes	Yes	Yes	No	No
4096x2160	24	Yes	Yes	Yes	No	No
4096x2160	23	Yes	Yes	Yes	No	No
3840x2160 (UHD)	60	Yes	Yes	Yes	Yes	No
3840x2160	59	Yes	Yes	Yes	Yes	No
3840x2160	50	Yes	Yes	Yes	Yes	No
3840x2160	30	Yes	Yes	Yes	No	No
3840x2160	29	Yes	Yes	Yes	No	No
3840x2160	24	Yes	Yes	Yes	No	No
3840x2160	23	Yes	Yes	Yes	No	No
3440x1440 (WQHD)	60	Yes	Yes	Yes	No	No
3440x1440	59	Yes	Yes	Yes	No	No
3440x1440	50	Yes	Yes	Yes	No	No
3440x1440	30	Yes	Yes	Yes	No	No
3440x1440	29	Yes	Yes	Yes	No	No
3440x1440	24	Yes	Yes	Yes	No	No
3440x1440	23	Yes	Yes	Yes	No	No
3840x1080 (DFHD)	60	Yes	Yes	Yes	No	No
3840x1080	59	Yes	Yes	Yes	No	No
3840x1080	50	Yes	Yes	Yes	No	No
3840x1080	30	Yes	Yes	Yes	No	No
3840x1080	29	Yes	Yes	Yes	No	No
3840x1080	24	Yes	Yes	Yes	No	No
3840x1080	23	Yes	Yes	Yes	No	No
1920x1200	60	Yes	Yes	Yes	No	No
1920x1080	120	Yes	Yes	Yes	No	No
1920x1080 (FHD)	60	Yes	Yes	Yes	No	Yes
1920x1080	59	Yes	Yes	Yes	No	Yes
1920x1080	50	Yes	Yes	Yes	No	Yes
1920x1080	30	Yes	Yes	Yes	No	No
1920x1080	29	Yes	Yes	Yes	No	No
1920x1080	24	Yes	Yes	Yes	No	No
1920x1080	23	Yes	Yes	Yes	No	No
1680x1050	60	Yes	Yes	Yes	No	No
1600x1200	60	Yes	Yes	Yes	No	No
1600x900	60	Yes	Yes	Yes	No	No
1440x900	60	Yes	Yes	Yes	No	No
1400x1050	60	Yes	Yes	Yes	No	No
1366x768	60	Yes	Yes	Yes	No	No

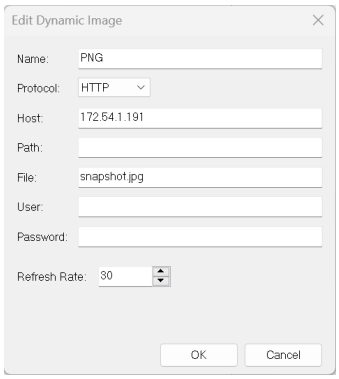
Resolution	Refresh Rates	YUV 4:4:4	YUV 4:2:2	RGB	YUV 4:2:0	Interlaced
1360x768	60	Yes	Yes	Yes	No	No
1280x1024	60	Yes	Yes	Yes	No	No
1280x960	60	Yes	Yes	Yes	No	No
1280x800	60	Yes	Yes	Yes	No	No
1280x768	60	Yes	Yes	Yes	No	No
1280x720 (HD)	60	Yes	Yes	Yes	No	No
1280x720	59	Yes	Yes	Yes	No	No
1280x720	50	Yes	Yes	Yes	No	No
1024x768	60	Yes	Yes	Yes	No	No

Appendix E: Thumbnail and H.26x on Varia Panels

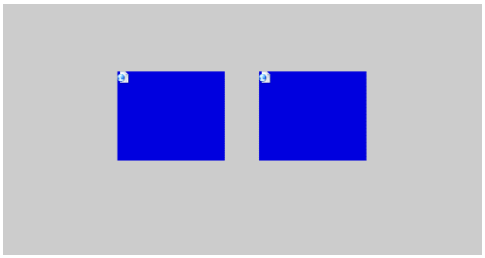
The following will outline the steps and some best practices to provide a video preview to an object in G5.

Thumbnail Preview:

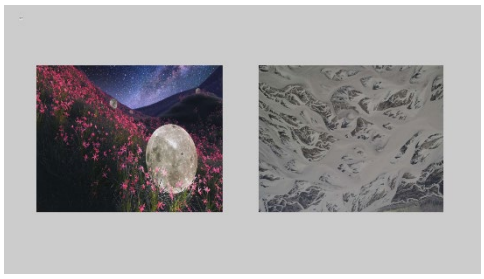
1. Open "Resource Manager" located in the "Panel" menu or by pressing "Ctrl + M".
2. A "Resource Manager" window will open.
3. Click on the "Dynamic Images" tab.
4. Click "New", where a new window will open, "Create Dynamic Image".
5. Provide a unique name.
6. In the protocol field set as "HTTP".
7. In the "host" field is where you type the IP address or DNS name of the Encoder/Decoder.
8. In the "file" field type "snapshot.jpg".
9. In the "Refresh Rate" box type in 30.
   Note: The refresh rate is measured in 10th of a second.
10. An example of what a Dynamic Image should look like.



11. Create a button on the touch panel canvas for the model of Varia you're using.
12. Select the created button.
13. In button properties navigate to the "States" tab then expand "All State".
14. Locate the "Bitmaps" setting and click the box containing the three dots to open the Bitmaps window.
15. Click on the Add button.
16. A window "Select Resource" will open and click on the "Dynamic Images" tab.
17. Select the name of the Dynamic Image you created in step 5.
18. In "Bitmap Justification" it is recommended to select "Scale to Fit".
19. An example of a TP5 project with two Preview Windows.



20. An example of what is seen on the Varia panel.



3000 RESEARCH DRIVE, RICHARDSON, TX 75082 AMX.com | 800.222.0193 | 469.624.8000 | +1.469.624.7400 | fax 469.624.7153
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