INSTRUCTION MANUAL

SVSI N3000 SERIES ENCODERS/DECODERS
WAN H.264 VIDEO OVER IP
DIGITAL MEDIA DISTRIBUTION & SWITCHING SOLUTION

NMX-ENC-N3121, NMX-DEC-N3221, NMX-ENC-N3132, AND NMX-DEC-N3232

AV FOR AN IT WORLD

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.
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.

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.

WARNING: Equipment shall be connected to a MAINS socket outlet with a protective earthing connection.

WARNING: To reduce the risk of electric shock, grounding of the center pin of this plug must be maintained.

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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.

NOTE: This equipment has been tested and found to comply with the limits for a Class A 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 A Digital Device.

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

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

EU COMPLIANCE INFORMATION:

Eligible to bear the CE mark; Conforms to European Union Low Voltage Directive 2006/95/EC; European Union EMC Directive 2004/108/EC; European Union Restriction of Hazardous Substances Recast (RoHS2) Directive 2011/65/EU.

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.

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Introducing Your New N3000 Series Devices

Product Overview

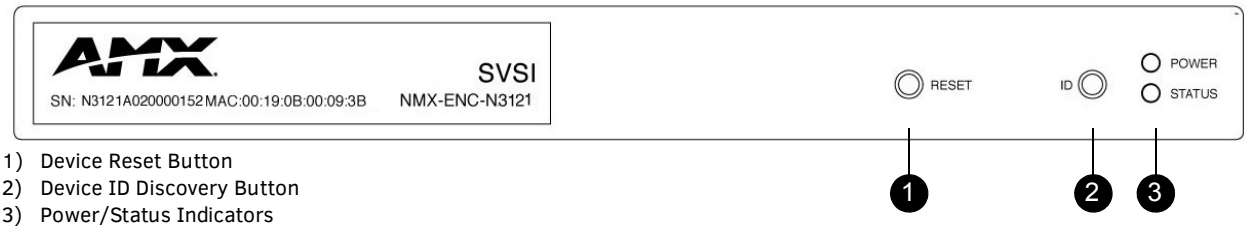
The N3000 H.264 Compressed AV over IP AV Series belongs to the SVSI product family from AMX. This series provides a flexible, feature-rich, and simple-to-deploy digital media distribution and switching solution satisfying the most demanding applications. This series uses standard H.264 to extend the reach of SVSI's Networked AV solutions to the WAN for streaming, video to desktop, digital signage, set-top boxes, or mobile devices applications. The N3000 Series delivers the highest quality HD video content at the lowest bandwidth to anywhere on the global network. Moving video to and from the Cloud is much easier with using this product line.

Features include:

- Input and Output Scaling – scaling performed in Encoders or Decoders for maximum flexibility.
- Power over Ethernet (PoE) – eliminates the need for a local power supply and speeds installation. Units can still be powered locally by 12VDC. This allows easy rack-mountable, high-density installations.
- 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 DVI/HDMI interface allows easy installation with local display, such as desktop PC applications.

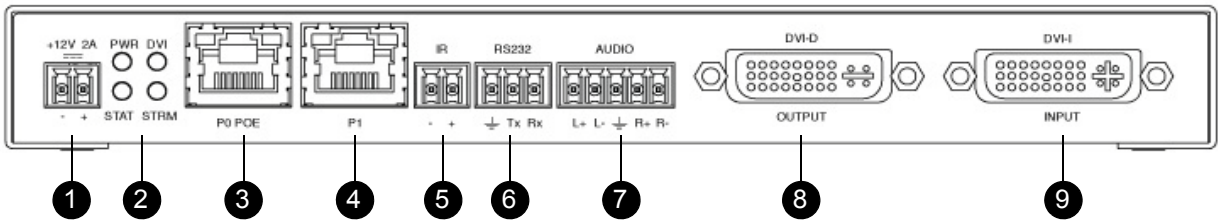
DVI Series

The H.264 Compressed AV over IP DVI Series includes the N3121 Encoder and the N3221 Decoder. Refer to the following figures (front and rear panel drawings of these devices) and the Front and Rear Panel Descriptions table on page 7 for more details.



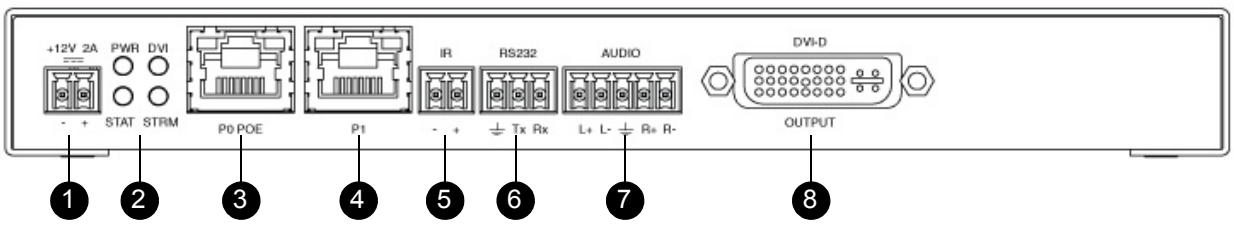
1) Device Reset Button
2) Device ID Discovery Button
3) Power/Status Indicators

FIG. 1 Front Panel (N3121/N3221)



1) 12VDC Input (not needed with PoE)
2) Status Indicators
3) RJ45 Auto-Sensing Gigabit Ethernet Switch Port — PoE
4) RJ45 Auto-Sensing Gigabit Ethernet Switch Port
5) IR Emitter Connection
6) RS232 Connection
7) Analog Audio Input
8) Passthru DVI-D Video
9) DVI-I Video Input

FIG. 2 N3121 Encoder Rear Panel



1) 12VDC Input (not needed with PoE)
2) Status Indicators
3) RJ45 Auto-Sensing Gigabit Ethernet Switch Port — PoE
4) RJ45 Auto-Sensing Gigabit Ethernet Switch Port
5) IR Emitter Connection
6) RS232 Connection
7) Analog Audio Output
8) DVI-D Video Output

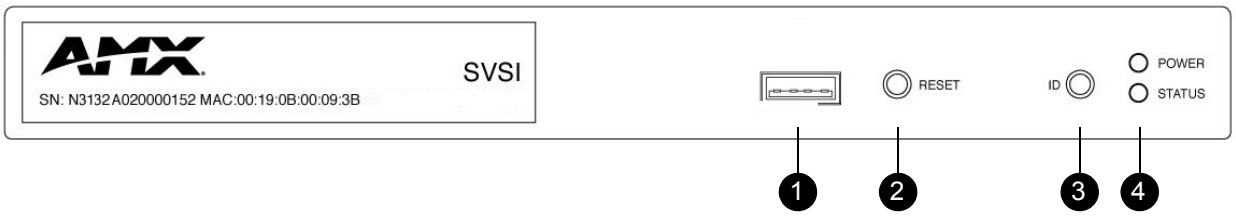
FIG. 3 N3221 Decoder Rear Panel

HDMI Series (with SFP, HDMI, and USB)

SVSI's H.264 Compressed AV over IP HDMI Series includes the N3132 Encoder and the N3232 Decoder. This series differs from the DVI version in the following ways:

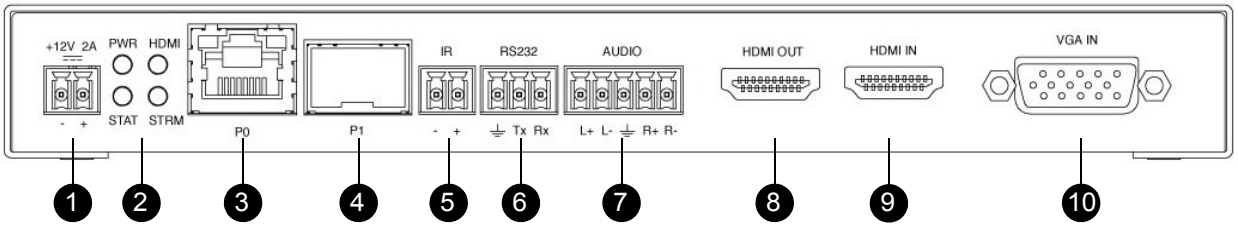
- 1G SFP port (modules for port sold separately)
- HDMI ports
- USB port (for recording on the Encoder)

Refer to the following figures (front and rear panel drawings of these devices) and the Front and Rear Panel Descriptions table on page 7 for more details.



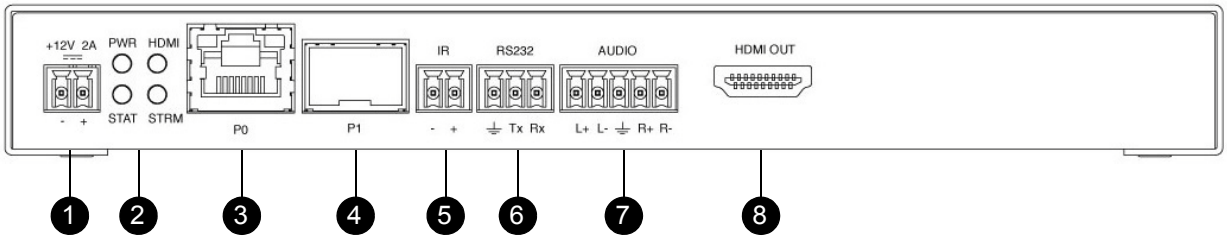
1) USB Standard-A Port for recording on Encoders
2) Device Reset Button
3) Device ID Discovery Button
4) Power/Status Indicators

FIG. 4 Front Panel (N3132/N3232)



1) 12VDC Input (not needed with PoE)
2) Status Indicators
3) RJ45 Auto-Sensing Gigabit Ethernet Switch Port — PoE
4) 1G SFP Port
5) IR Emitter Connection
6) RS232 Connection
7) Analog Audio Input
8) Passthru HDMI Video
9) HDMI Video Input
10) DB-15 Analog Input

FIG. 5 N3132 Encoder Rear Panel



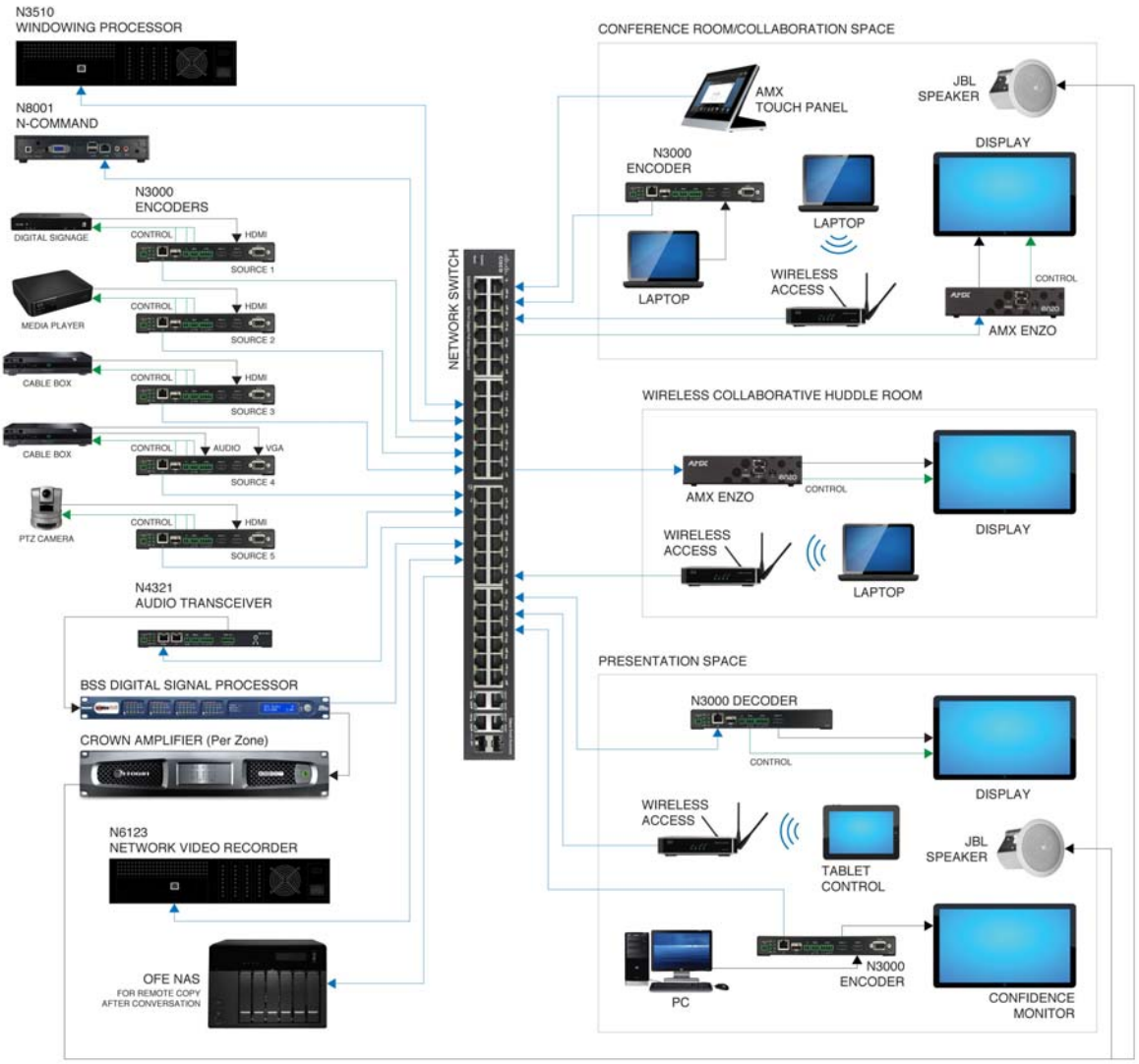
1) 12VDC Input (not needed with PoE)
2) Status Indicators
3) RJ45 Auto-Sensing Gigabit Ethernet Switch Port — PoE
4) 1G SFP Port
5) IR Emitter Connection
6) RS232 Connection
7) Analog Audio Output
8) HDMI Video Output

FIG. 6 N3232 Decoder Rear Panel

Front and Rear Panel Descriptions	
Front Panel	
USB Standard-A port	Use this port to plug in a flash drive (or any other drive that can be recorded to) for recording on the Encoder (N3132 only).
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.

Front and Rear Panel Descriptions (Cont.)	
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. If you wish to factory restore all settings on the unit (including the IP address) boot the box with the **ID** button held down.
POWER LED	On solid (green) when operating power is supplied (via PoE or local power supply). This activity is also shown by the **PWR** LED on the rear panel.
STATUS LED	On flashing (green) when there is software activity. This activity is also shown by the **STAT** LED on the rear panel.
Rear Panel	
+12V 2A	12 Volt DC power input.
PWR LED	Same as **POWER** LED described above.
DVI LED	On (green) when a DVI connection exists (applies to the N3121/N3221).
HDMI LED	On (green) when an HDMI connection exists (applies to the N3132/N3232).
STAT LED	Same as **STATUS** LED described above.
STRM LED	On (green) when the unit is streaming video.
P0 POE	8-wire RJ45 female. 10/100/1000 Mbps 10/100/1000Base-T auto-sensing gigabit Ethernet switch port. Provides both the network connection and the power to the Encoders and Decoders.
P1	8-wire RJ45 female. 10/100/1000 Mbps 10/100/1000Base-T auto-sensing gigabit Ethernet switch port. OR 1G SFP port which accepts compatible fiber transceivers or direct attach cables (copper or fiber). Modules sold separately. *Note: SFP support is model-dependent. Depending on the model, the P1 port is either an SFP (N3132/N3232) or an RJ45 (N3121/N3221) network connection.*
IR	2-pin terminal Phoenix connector. Provides IR output only (33 to 60 kHz). An emitter may be necessary (not included).
RS232	3-pin terminal Phoenix connector which provides a serial control interface. Full duplex communication. Available terminal speed settings: 1200 to 115200 baud rate.
AUDIO	5-pin terminal Phoenix connector which provides user-selectable balanced/unbalanced, dedicated audio input (for Encoders) and output (for Decoders).
DVI-I IN	Video input (applies to N3121Encoders).
DVI-D OUT	Video output (N3221 Decoders). Passthru video (N3121Encoders).
HDMI IN	HDMI video input (N3132 Encoders).
HDMI OUT	HDMI video output (N3232 Decoders). Passthru HDMI video (N3132 Encoders).
VGA IN	DB-15 analog input. Allows for the use of analog video sources. **Applies to N3132 Encoders only.*

Application Example



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 67 for help.

Installation Overview

The N3000 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 13.

Basic Installation Guidelines	
Connections	**Options**
Power	**Power over Ethernet (PoE):** Connect the unit's P0 port to an active, PoE-enabled network switch.
	External power supply: If not using PoE for power, connect a 12V regulated power supply (part number N9312) to the unit's two-pin terminal block plug connector labeled +12V 2A.
Network	**PoE units:** If using PoE to power the unit, you should already have a network connection.
	Externally powered units: If not using PoE, connect either the P0 or P1 port to the network using the appropriate cable.
	Daisy-chain configuration: Once network connection is established to one unit, you can daisy-chain additional units by connecting Ethernet cables between devices using their P0 and/or P1 ports. Keep in mind that the number of units supported in this configuration is limited by bandwidth (total aggregate streams must be less than 1 Gb/s). **NOTE:** *PoE power is only supplied to the unit connected directly to the network. All other units in the daisy-chain must have an external power supply.*
Video	**N3000 Encoders with HDMI Ports** • For video encoding of a *digital* source, connect the source to the Encoder's **HDMI IN** port using a video cable with an HDMI connector (or adapter). • For video encoding of an *analog* source, connect the source to the Encoder's **VGA IN** port using a video cable with a VGA connector (or component adapter). **N3000 Encoders with DVI Ports** • For video encoding of a *digital* source, connect the source to the Encoder's **DVI-D** port using a video cable with a DVI-D connector (or adapter). • For video encoding of a *digital or analog* source, connect the source to the Encoder's **DVI-I** port using a video cable with a DVI-I connector (or adapter).
	N3000 Decoders with HDMI Ports • For video decoding, connect a digital display to the Decoder's **HDMI OUT** port using a video cable with an HDMI connector (or adapter). **N3000 Decoders with DVI Ports** • For video decoding, connect a digital display to the Decoder's **DVI-D OUT** port using a video cable with a DVI connector (or adapter).
Audio	**N3000 Encoders** • For audio encoding, connect a line level analog audio source to the **Audio** input terminal block plug connector, or • Use the embedded audio from the video source.
	N3000 Decoders • For audio decoding, connect a line level analog audio device to the **Audio** output terminal block plug connector, or • Send embedded digital audio (embedded in the HDMI connection) to a monitor's speakers.

NOTE: *When the unit is not in use, remove the power cable and disconnect any other cables (e.g., Ethernet, audio, video) connected to the Encoders and Decoders.*

Mounting Options

The N3000 units are available in stand-alone and card versions. The stand-alone version can be free standing, surface mounted, wall mounted, or rack mounted. All cards *must be rack mounted* using the N9206 Card Cage (sold separately).

Surface and Wall Mounting

To mount your N3000 stand-alone unit to a flat surface or wall, follow these steps:

1. Remove the four screws from the bottom of the unit and use them to attach the mounting wings (not included in shipment - part number N9101). See Figure 7.
2. Place the unit against the solid surface to which you want it mounted.
3. Using standard hardware, attach the unit through each of the slots of the newly-attached mounting wings.
4. Connect the appropriate cables necessary for your application. Refer to the sections *Connecting Decoders to the Network* on page 15 and *Connecting Encoders to the Network and Configuring Stream Settings* on page 16 for more information on these connections.

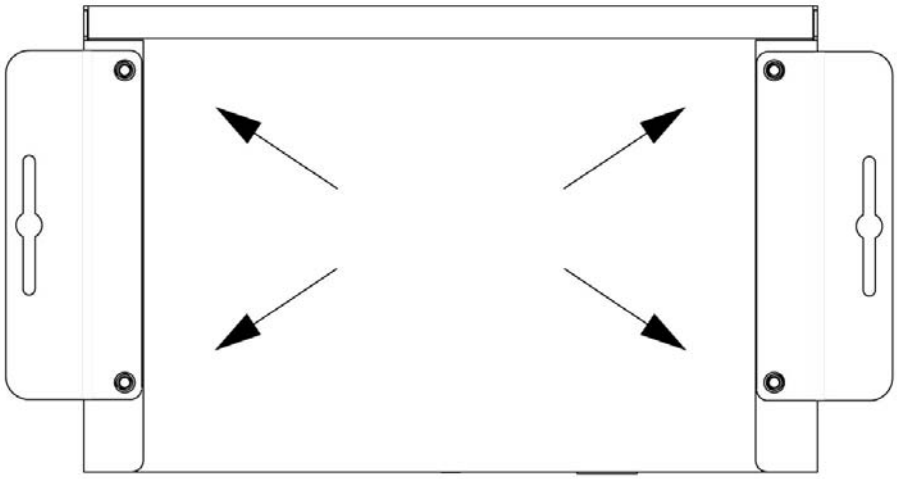


FIG. 7 Installing Mounting Wings

Rack Mounting

N3000 Series Stand-Alone Units

A Rack Shelf (part number N9102) accommodates up to two stand-alone N-Series Encoders or Decoders, side by side (mix and match).

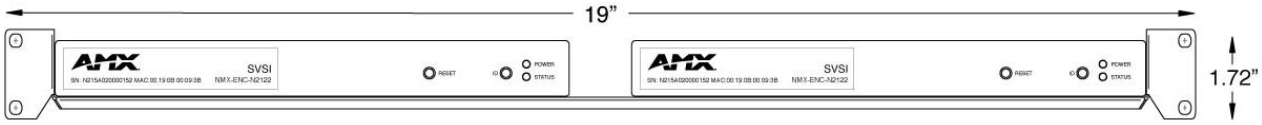


FIG. 8 Rack Mounting Stand-Alone Units

N3000 Series Cards

A Card Cage (part number N9206) accommodates up to six N-Series Encoder/Decoder cards (mix and match). The 12V power supply of the N9206 is the primary power source for the installed cards. If the 12V power supply fails or is unplugged, the cards will power down, detect PoE (if provided by switch) and restart normally using PoE. This usually results in a power loss of about one to two seconds. The unit then reboots (which takes another one to two minutes).

Use either of the following formulas to calculate how much power is required for the N9206. Formulas are based on the power requirements of each installed card (e.g., *Power_Slot1* = the power requirements for whatever card is installed in the first slot). There is extra power added into the calculation to allow for power to the fans (as well as power supply losses).

*Total Power = (Power_Slot1 + Power_Slot2 + Power_Slot3 + Power_Slot4 + Power_Slot5 + Power_Slot6) * 1.2*
or
*Total BTU/hr = (BTU/hr_Slot1 + BTU/hr_Slot2 + BTU/hr_Slot3 + BTU/hr_Slot4 + BTU/hr_Slot5 + BTU/hr_Slot6) * 1.2*

To rack mount N3000 Series cards into the N9206 Card Cage, follow these steps:

1. Gently slide the card into cage slot. Make sure the card is properly aligned with guides. The card's front LED indicators should align with holes in the cage's faceplate. See Figure 9.

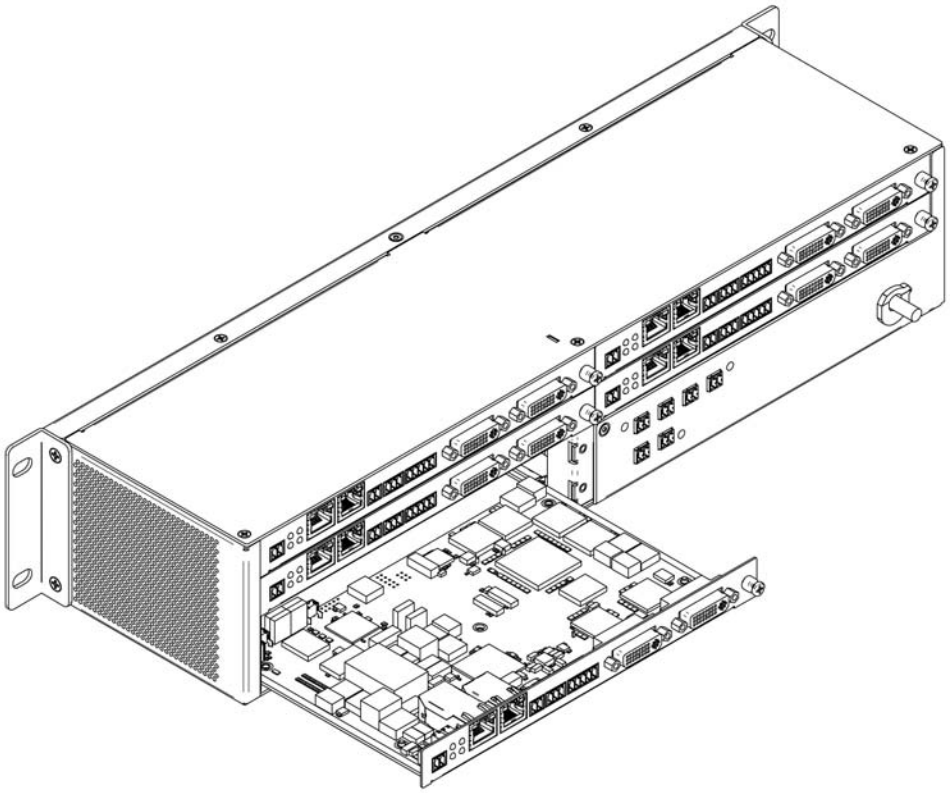


FIG. 9 Rack Mounting Cards

2. Align the thumb screw on back plate before seating card into cage.
3. Firmly seat the card and tighten the thumb screw by hand to secure card placement.
4. Use one of the six Phoenix connector cables (included in shipment with the Card Cage) to connect the card's 12VDC input Phoenix connector to one of the cage's six 12VDC outputs.
5. Repeat these steps until all cards are properly installed. See Figure 10.

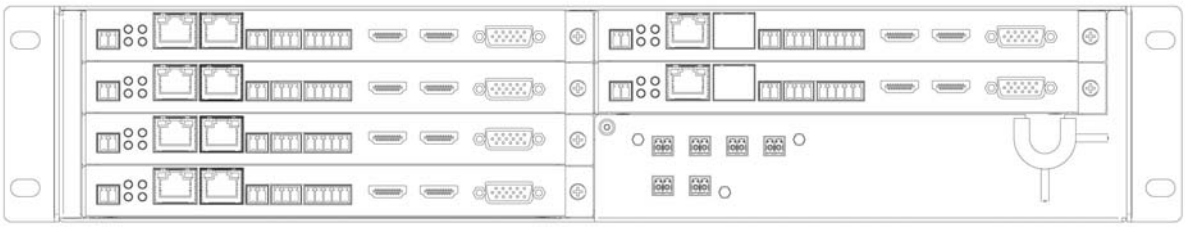


FIG. 10 Fully-Populated Card Cage

6. For proper airflow, cover any unused card slots with faceplate blanks. Blanks are sold separately (part number N9210).
7. Make sure the Card Cage's power cord is plugged in for proper cooling.

CAUTION: *Keep the Card Cage's power cord plugged in at all times so that the internal fans are always running. Not doing so could void the warranty of the cage and all installed cards. Fans are not powered while in backup PoE power mode. Please remedy power losses immediately to avoid potential overheating hazards.*

NOTE: *Mounting accessories are sold separately and are compatible with most N-Series devices. Contact a sales representative or visit our website for details.*

Step-by-Step Installation Instructions

This section provides step-by-step guidance for installing and configuring equipment from the SVSI product family on your network. The steps provided here assume the following to be true:

1. *There are PoE switches operational on the network.*
   SVSI 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 and installed a pre-configured switch from SVSI or that your existing equipment meets the following physical and protocol requirements:
   - 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)

NOTE: *To proceed with this installation, the switches must already be successfully connected to your network. If needed, refer to your product's 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 SVSI 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. *You loaded N-Able onto the computer you are using to configure the equipment.*
   From your host computer, download N-Able (our free setup utility software):
   PC version - http://www.amx.com/products/N-ABLE-PC.asp
   Mac version - http://www.amx.com/products/N-ABLE-MAC.asp

   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 22 for details on the available control options.

Step 1: Setting Up Your Host Computer

In order to communicate with SVSI products, your devices must be on the same subnet as the host computer. The default IP mode differs depending on product model:

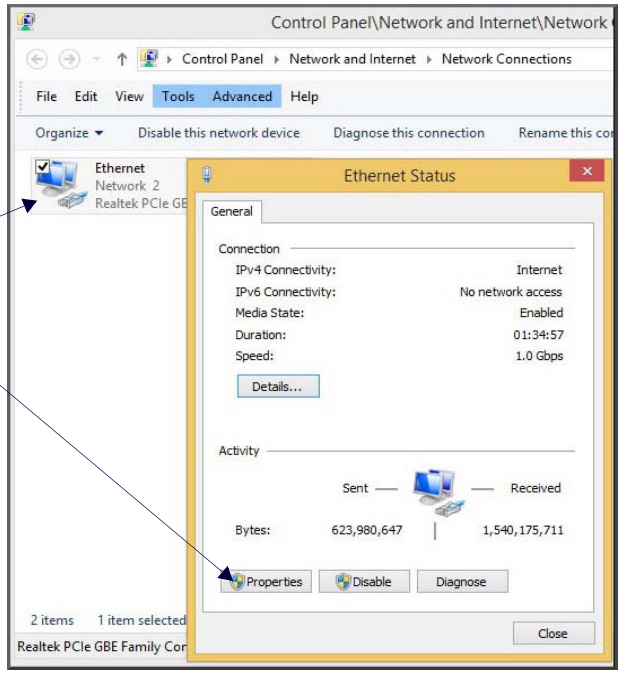
- N3121/N3221 devices are shipped in **Auto IP** mode with a default IP address of 169.254.xxx.xxx.
- N3132/N3232 devices are shipped in **DHCP** mode and the IP address will be assigned automatically based on the network DHCP server. If no DHCP server is found, the unit will use **Auto IP** mode with a default IP address of 169.254.xxx.xxx.

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

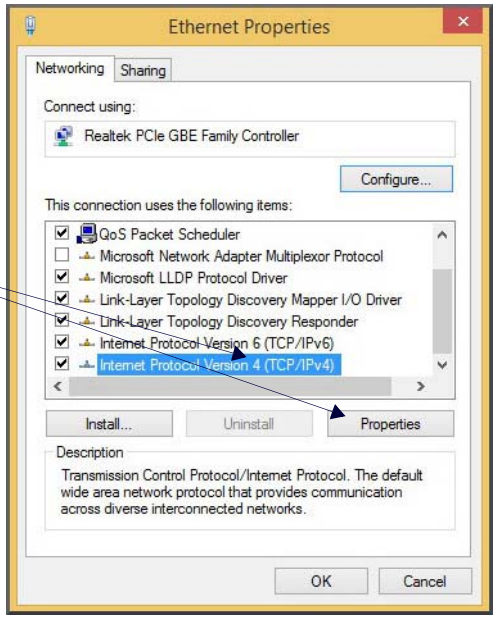
1. From the **Start** menu, select **Control Panel > Network and Sharing Center**.

2. Select **Change adapter settings**.

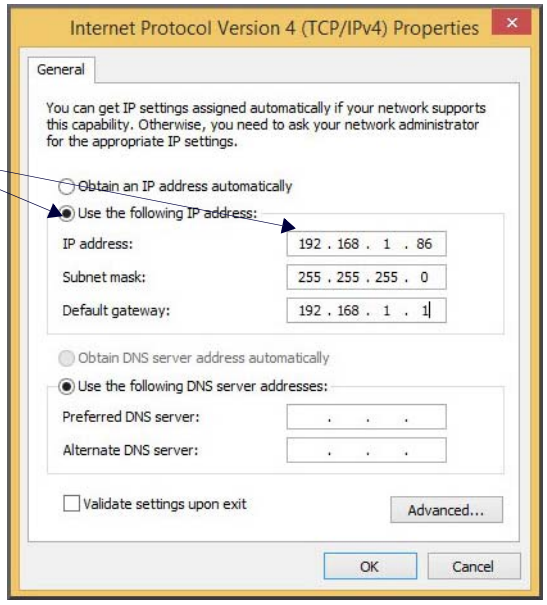
3. Double-click the wired interface to your AV network, and then click the **Properties** button.



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. SVSI units in Auto IP mode 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's video out port (**HDMI OUT** or **DVI-D OUTPUT**, depending on model) to a display is accomplished using the appropriate cable/adapter. N3000 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 or an external power supply. Refer to the following steps and Figure 11 for guidance.

1. Using a Cat-5 cable, connect your SVSI Decoder's **P0** port to a PoE-enabled switch. This provides both network and power connection. In non-PoE applications connect a 12V regulated power supply (N9312) to the two-pin terminal block plug connector (labeled **+12V 2A**).
2. Connect the display you would like to use for that Decoder (monitor, projector, etc.) to the Decoder's video out port (**HDMI OUT** or **DVI-D OUTPUT**) using the appropriate cable/adapter. For **HDMI OUT**, this must be a digital video connection.

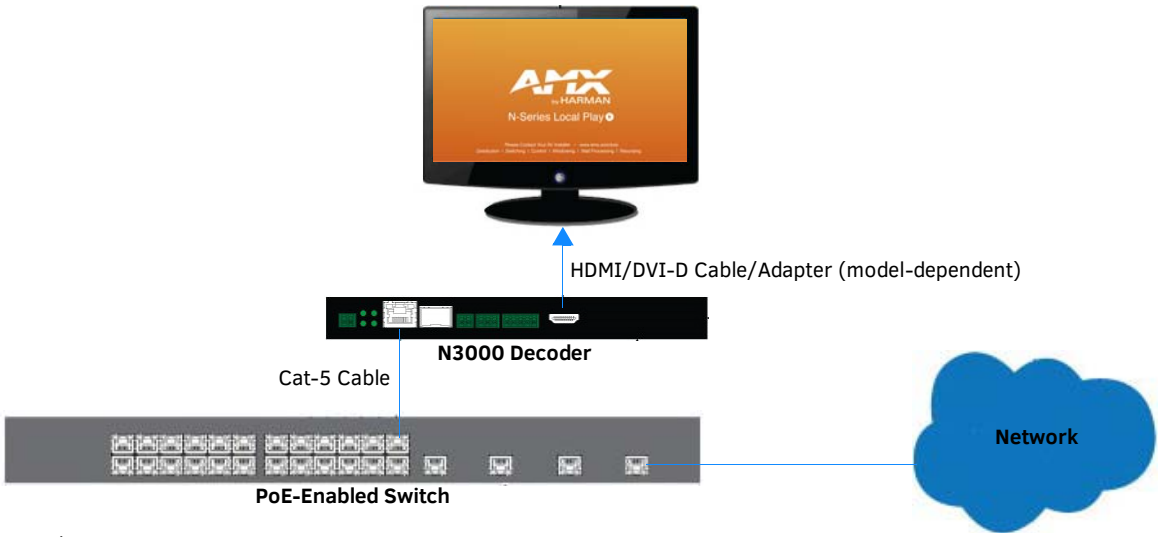


FIG. 11 Decoder Connections

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 Chapter 5, Troubleshooting 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. PoE does not pass through the daisy chain (P1) 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-5 cable, connect your SVSI Encoder's **P0** port to a PoE-enabled switch. In non-PoE applications connect a 12V regulated power supply (N9312) to the two-pin terminal block plug connector (labeled **+12V 2A**).

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). See Figure 12.

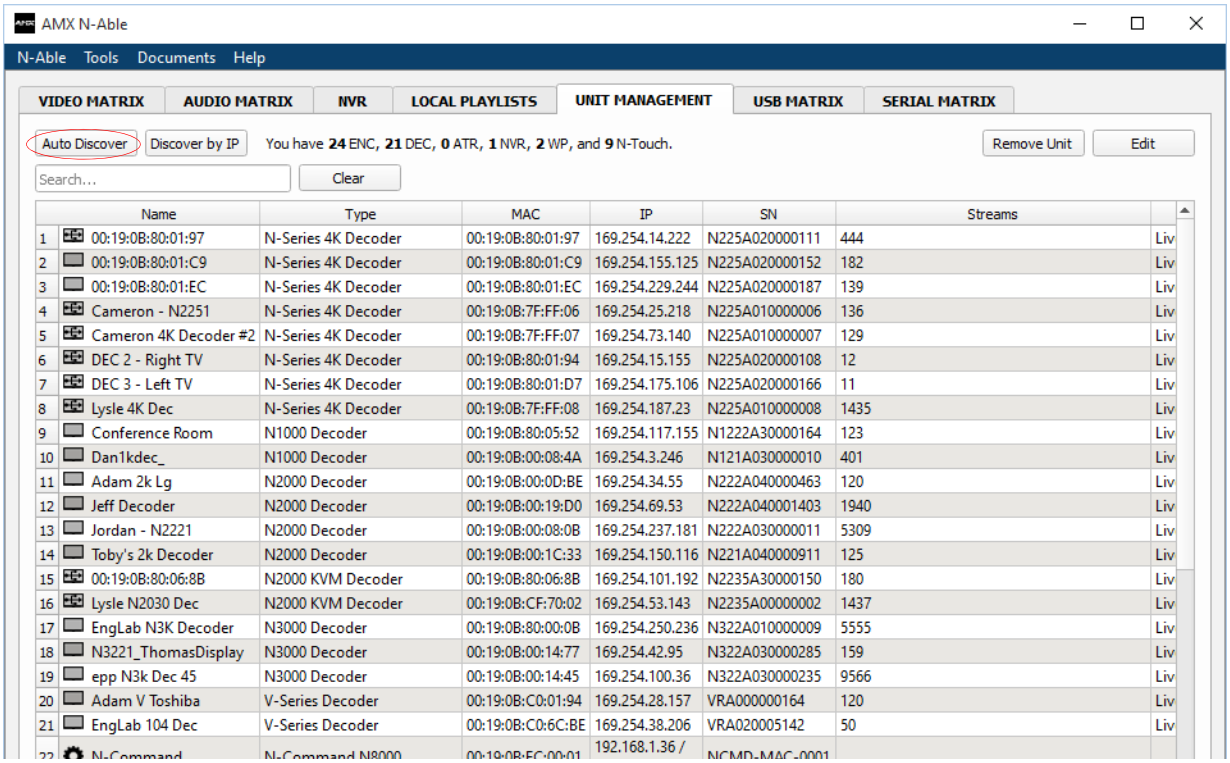
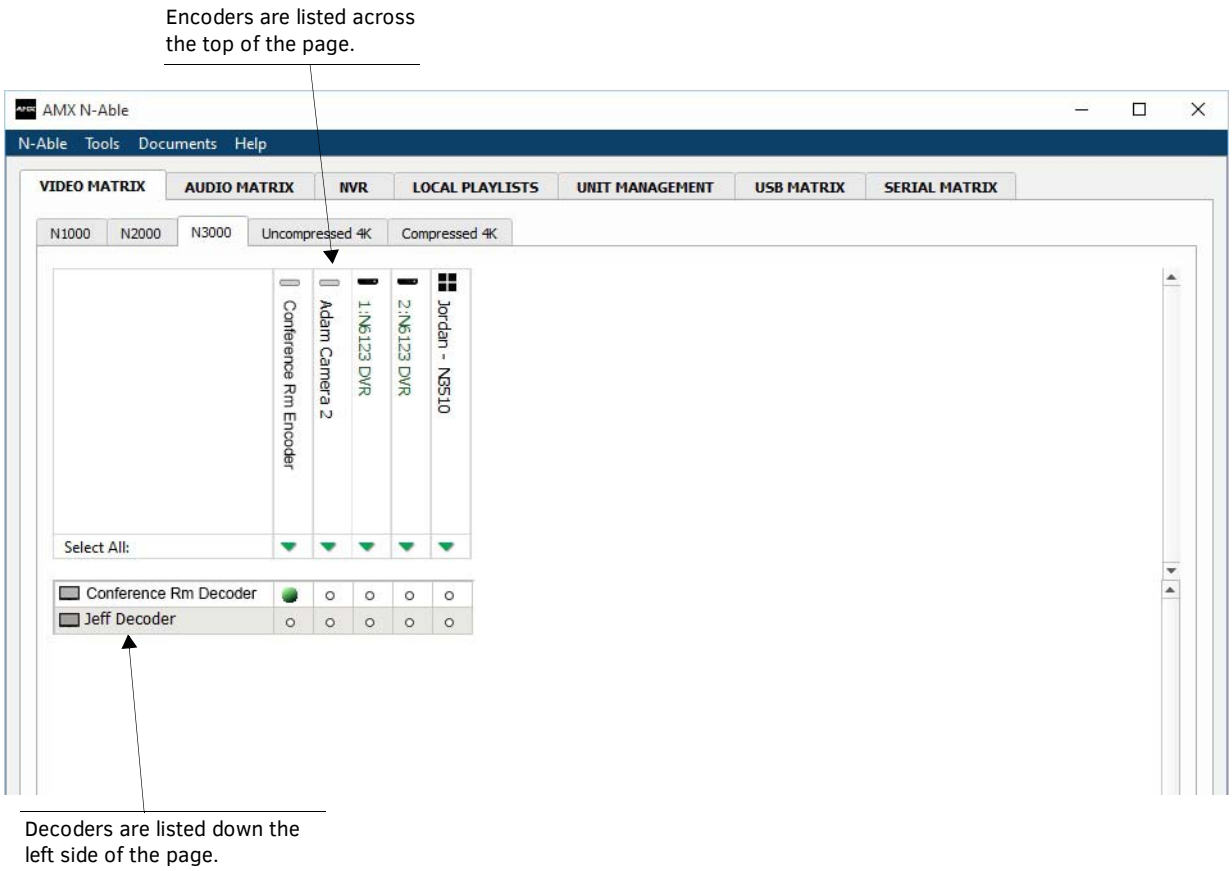


FIG. 12 Unit Management Page

3. Find your Encoder in the list. N3000 units are displayed on the following tabs:
   - **Unit Management** tab — N3000 units have **N3000 Encoder/Decoder** listed in their **Type** fields.
   - **Video Matrix** tab — N3000 units are found on the **N3000** sub-tab (as shown in Figure 13).

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 1. 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).
Gray Text - Video output for this unit is disabled.
Black Text - Unit is in live play mode.
Blue Text - Unit is playing locally-stored content.

FIG. 13 Video Matrix Page

4. Double-click the Encoder's name in the list. The **N-Series Encoder Login** page is displayed (see Figure 14). If prompted, use the following default login credentials to log in for the first time. These can be changed later on the **Settings** page.
   Default username: **admin**
   Default password: **password**

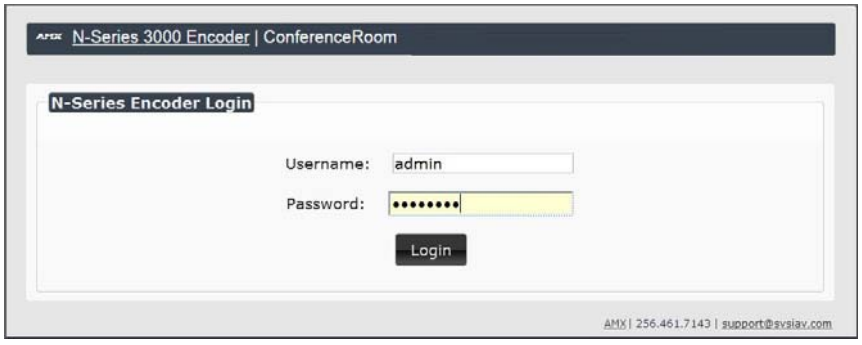


FIG. 14 Login Page

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 (see Figure 15).
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).

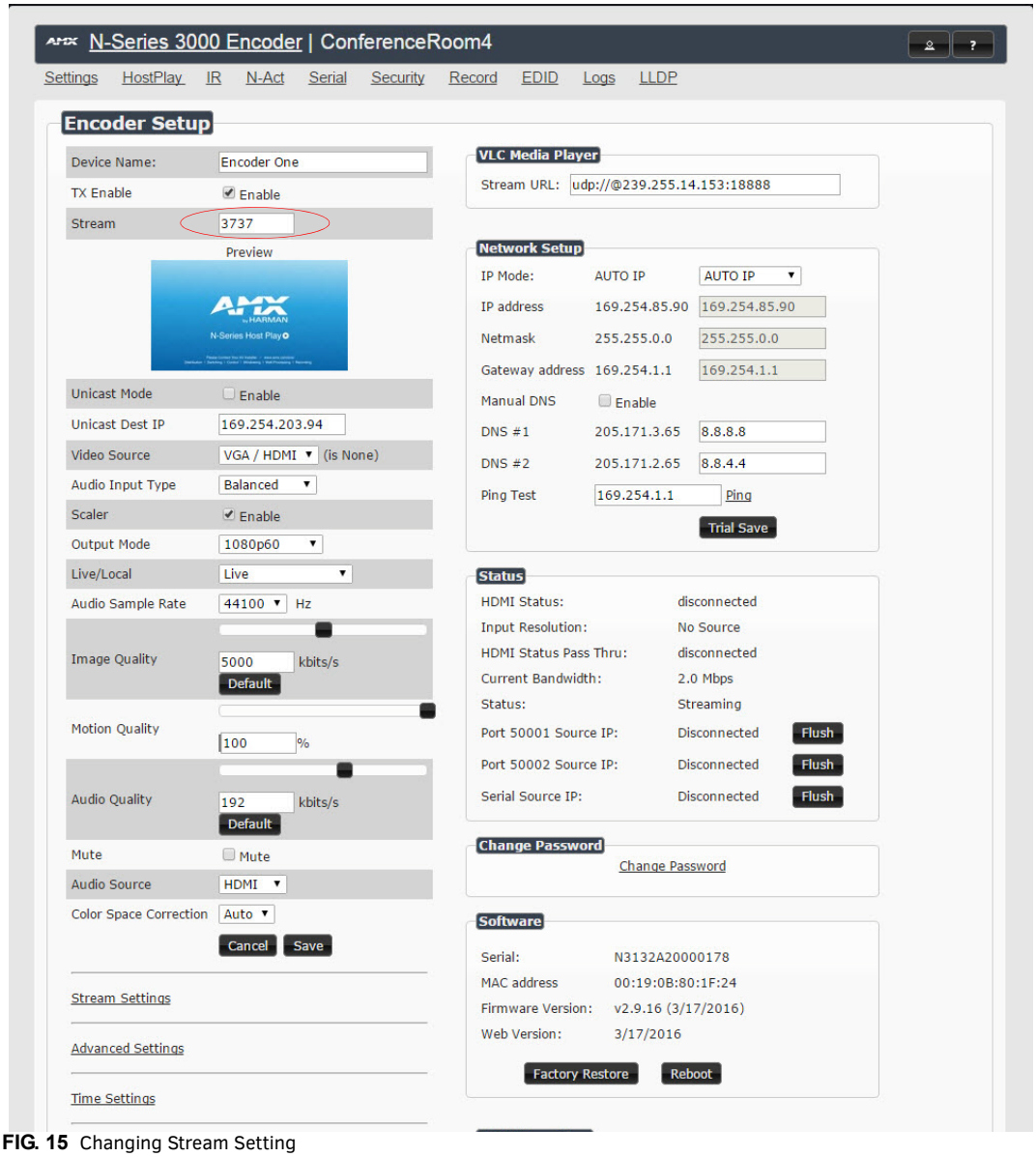


FIG. 15 Changing Stream Setting

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 23 *and the* *Decoder Configuration Options* section on page 47.

Configuring Decoder and Encoder IP addresses (if needed)

IP configuration changes must be done correctly to avoid any communication disruptions with the N3000 unit.
As mentioned previously, the default IP mode differs depending on product model:

- N3121/N3221 devices are shipped in **Auto IP** mode. This means that the IP address is pre-configured to 169.254.xxx.xxx with a subnet mask of 255.255.0.0. When first connected to the network, **Auto IP** checks the for available IP addresses in the 169.254.xxx.xxx range and then makes an appropriate, static assignment to each unit.
- N3132/N3232 devices are shipped in **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 **Auto IP** mode.

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 SVSI devices. Therefore, before making any N3000 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 N3000 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 > N3000** tab).
2. Double-click the unit and log in.
3. Go to the **Settings** page and make IP address changes for that unit either by setting a **STATIC** address or by enabling **DHCP** (see Figure 16).

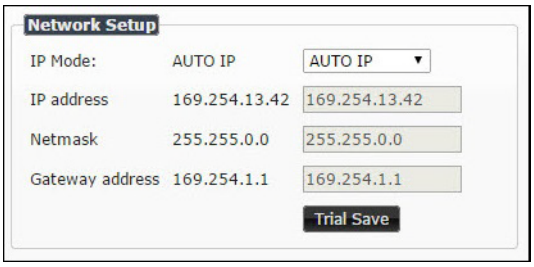


FIG. 16 Network Setup Section of the Settings Page

4. Click the **Trial Save** button.
5. Return to the **Settings** page through the newly-configured IP address.
6. Once the **Settings** page appears (successfully using the new IP address) click the **Confirm** button to lock in your changes.

NOTE: *If you lose communication for any reason, unplug the N3000, wait one minute, and plug it back in. This restores the unit to the original 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) since connecting all of the new units to the network.
2. From N-Able's main menu bar, select **N-Able > Export CSV**.
3. Click **Yes** on the pop-up box informing you that a CSV file is about to be generated.

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

4. The folder containing your CSV file displays. Double-click the file to open it.
5. 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.
6. Go back into N-Able and select **N-Able > Import CSV**.
7. Browse to your saved CSV file and click **Import**.

Step 4: Connecting Encoders to an Input Source

Having already connected the Encoder(s) to the network and made the appropriate settings changes, you can now connect to the appropriate AV source(s). This connection from an Encoder to an input source is accomplished using either an HDMI 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 input port (**HDMI IN** or **DVI-I INPUT**, depending on model) using the appropriate cable/adapter combination. This connection can be digital or analog.
2. Repeat until all Encoders are connected to their sources.

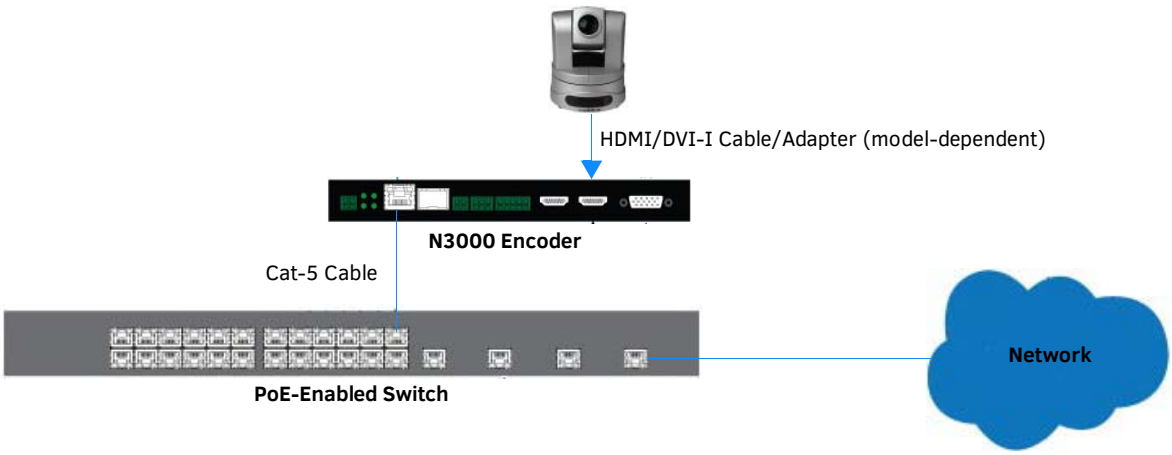


FIG. 17 Encoder Connection to Source

Switching and Scaling Options

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

Seamless Switching

The N3000 Series supports seamless switching capability if the scalers in the Encoders 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. See Figure 18 for an example.

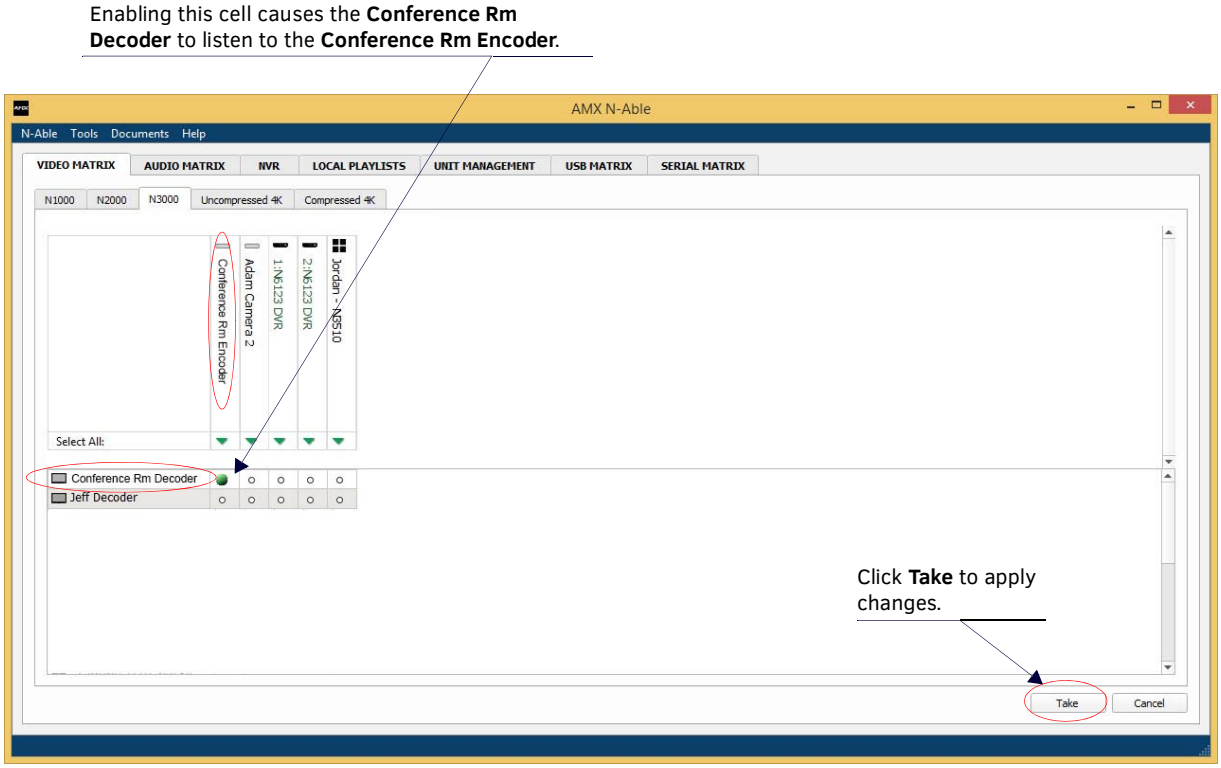


FIG. 18 Seamless Switching Using the Video Matrix

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. SVSI’s N-Control solutions (N-Command, N-Act, and N-Touch) 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 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, NVR recording/playback, 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 and N8012 controllers have master/client failover protection.
- N8012 controller has hot-swappable drives and redundant power supplies.
- Graphical presentation of video network connections.
- Full configuration control: assign fixed IP addresses for each SVSI component, adjust variable bit-rate 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 N3000 Series is capable of interfacing with third-party control systems such as Crestron. For direct control of N3000 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. See the section *N-Act Page* on page 40 for more information.

N-Touch | IP Wall Controller

This 240 x 320 capacitive touch display has Wi-Fi and Bluetooth for expanding control to mobile devices. Programming is done individually through the built-in web server or collectively to multiple units using an N-Command N8000 Series Controller. Multi-page custom graphics can be created using the free Panel Builder software (stored internally).

Encoder Configuration Options

This chapter defines N3000 Series 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. Figure 19 shows the navigation bar and provides hot links to the sections of this chapter which describe each main page.

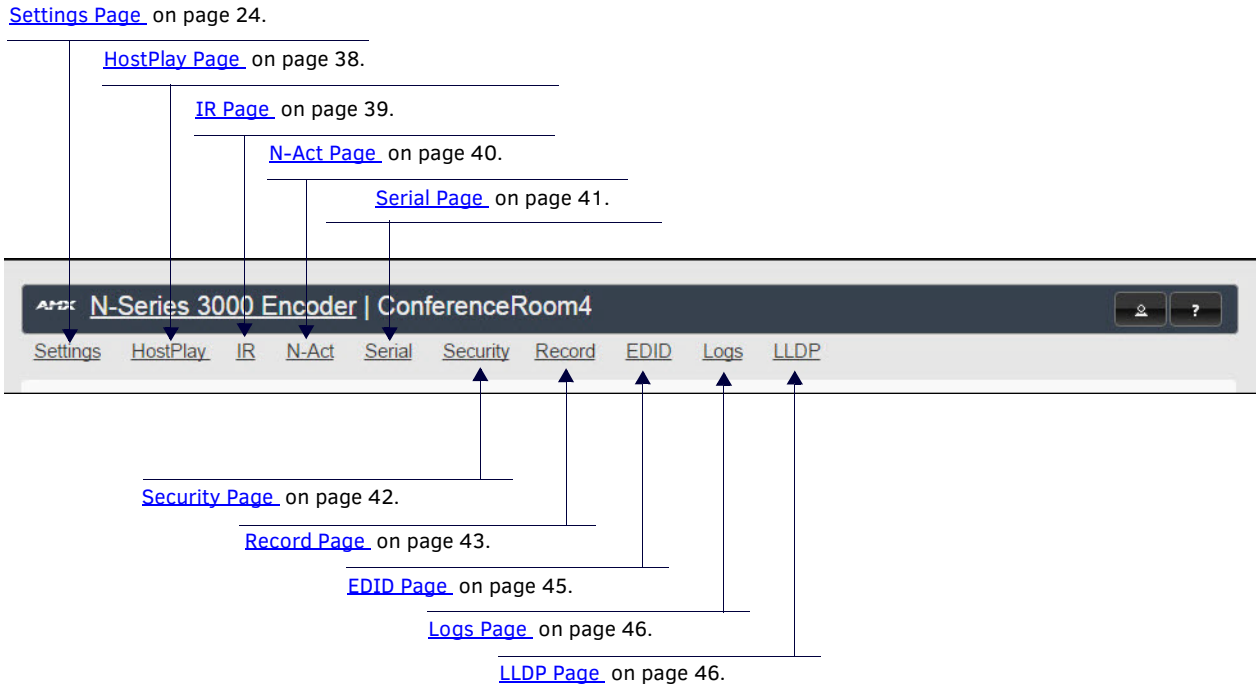


FIG. 19 Section Links

Settings Page

Click the **Settings** link at the top of any of the main web pages to access the page shown in Figure 20. This page is divided into several sections and also has links to other dialog boxes for additional configuration options. Refer to the following sections for detailed descriptions:

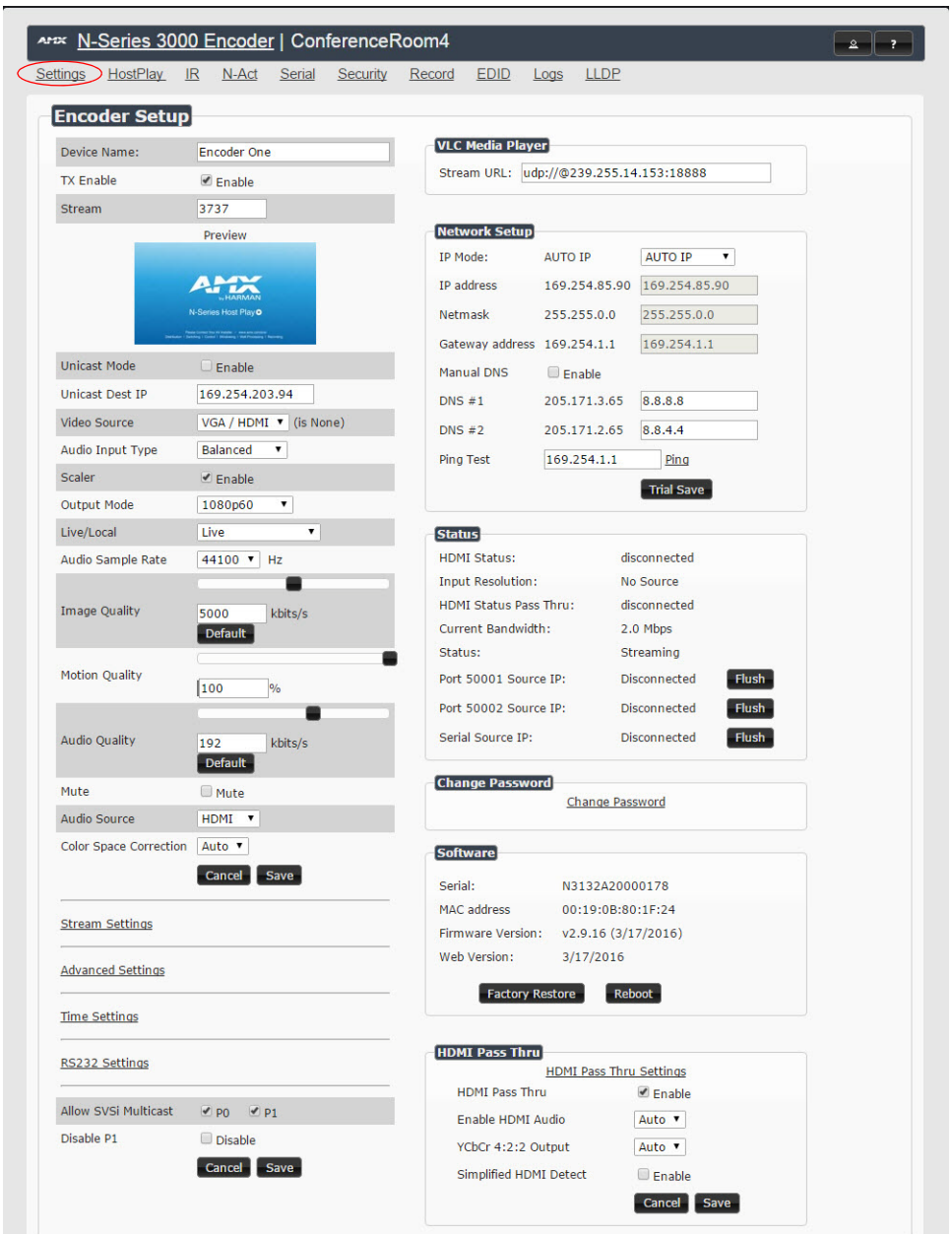


FIG. 20 Settings Page

Encoder Setup Section

The **Encoder Setup** section of the **Settings** page is shown in Figure 21. Options are described in Table 1.

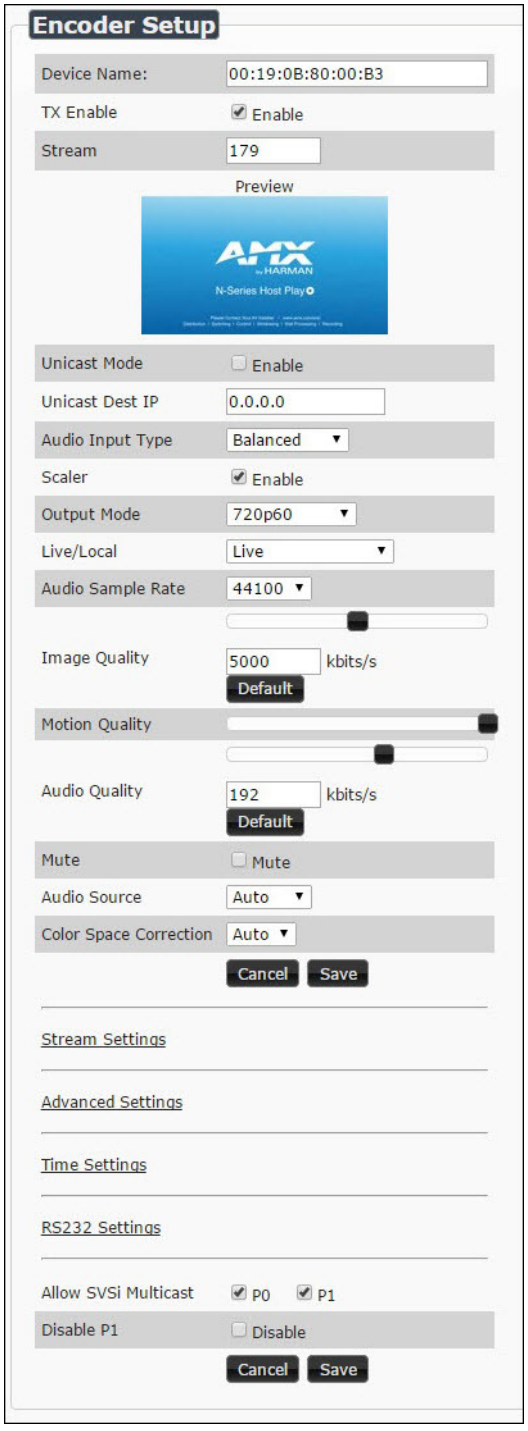


FIG. 21 Encoder Setup Section

TABLE 1 Settings Page: Encoder Setup 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 SVSI system efficiently. Names based on the unit's location and function are very useful. Some good examples are **Lobby-Left-VGA** (for left side of lobby, VGA input) or **CR201-HDMI** (for Conference Room 201, HDMI input). Keep in mind the matrices are organized alphanumerically.
TX Enable	Enable to broadcast the AV signals. Disable to turn off/ stop broadcasting.	
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).
Unicast Mode	Enable to have the Encoder output a unicast video stream (rather than multicast).	The N3000 Series Encoders can output unicast natively at a bandwidth compatible with lower speed links. N3000 also supports standard streaming protocols like RTP, RTSP, RTMP, and HTTP Live (commonly used with content delivery services).
Unicast Dest IP	Enter the IP address of the unit you want to send the unicast stream to. **Unicast Mode** must be enabled.	Both units must be in the same subnet. If the **Encoder Output Mode** is set to **RTSP**, then an IP address is not necessary in this field. See the *Stream Settings* section on page 28 for more details.
Audio Input Type	Select **Unbalanced** (single-ended) or **Balanced** analog audio input.	
Scaler	Enable to scale outgoing content to a fixed resolution.	
Output Mode	Select the output resolution of the video to be transmitted onto the network. The **Scaler** check box must be enabled for this to be applicable (see **Scaler** above).	
Live/Local	Select live video or locally stored images for transmission onto the network. When video is not available, it automatically goes into local mode.	When video is not available, the most recently played local playlist is displayed.
Audio Sample Rate	Select the sample rate, in Hz, for the analog audio.	
Image Quality	Adjust the compression level of the image. The further to the left on the slider, the more compression (which will display as pixelization of the image).	
Motion Quality	Adjust the frame rate reduction. Slide all the way to the right to match the source's frame rate. As you slide left, you reduce frame rates.	The quickest way to reduce overall bandwidth is to reduce motion quality. However, this increases latency.
Audio Quality	Adjust the compression level of the audio. The further to left of the slider, the lower the quality.	
Mute	Enable to stop the transmission of audio data onto the network.	
Audio Source	Set the audio source to be disabled, enabled or selected automatically (see note).	The **AUTO** setting always corresponds to HDMI audio as long as there is an HDMI source. If the source is unplugged, it will automatically fall back to analog audio (if there is an analog source plugged in).
Color Space Correction	Set the color space settings for the Encoder (YcbCr, RGB) to be disabled, enabled, or selected automatically based on the source.	If you see a pink/green washed out screen (across the entire image), this can be changed by modifying color space settings. Most sources function with **Auto** selected but (for problematic sources) hard-set the value to what the source requires. It is best to do hard-set for all permanently installed sources (e.g., cameras, cable boxes, etc), but leave **Auto** on for periodic sources (e.g., laptop inputs).
Stream Settings	Refer to Stream Settings on page 28 for details on the options available from this link.	
Advanced Settings	Refer to Advanced Settings on page 30 for details on the options available from this link.	

TABLE 1 Settings Page: Encoder Setup Section (Cont.)

Option	Description	Notes
Time Settings	Refer to Time Settings on page 32 for details on the options available from this link.	
RS232 Settings	Refer to RS232 Settings on page 32 for details on the options available from this link.	
Allow SVSI Multicast	Disable this option to prevent the port from outputting multicast video traffic.	Particularly useful if you are connecting a non-SVSI device to a port for network-based control.
Disable P1	Completely disables the P1 port for all traffic.	Once disabled, anything connected to the P1 port will no longer be available on the network.
Cancel	Click to return all controls to the last saved configuration.	
Save	Click to accept changes made to these controls.	

Stream Settings

The section of the **Settings** page shown in Figure 22 is displayed when you click the **Stream Settings** link. Options are described in Table 2.

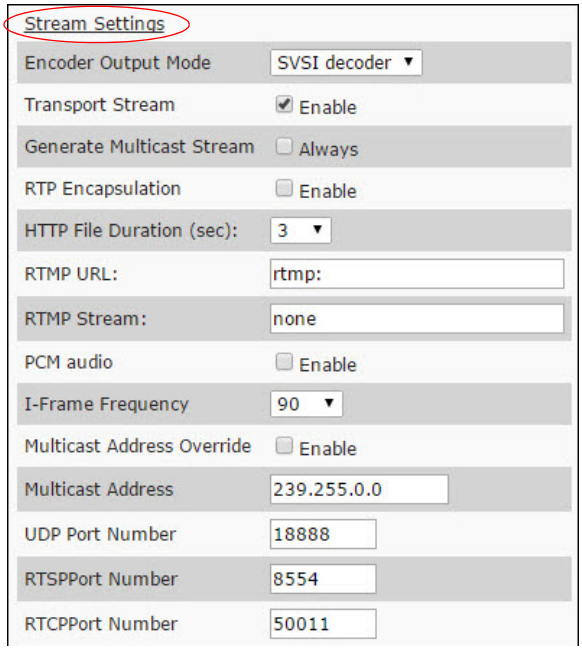


FIG. 22 Stream Settings Section

TABLE 2 Settings Page: Stream Settings Section

Option	Description	
Encoder Output Mode	Set the Encoder's output type to **SVSI decoder**, **HTTP live**, **RTSP**, or **RTMP.**	Refer to Table 3 on page 29 for more details on Encoder and Decoder configuration considerations (based on which **Encoder Output Mode** option you choose).
Transport Stream	Enable to encapsulate the stream as an MPEG2 transport stream	This setting only applies if **Encoder Output Mode** is set to **SVSI decoder**.
Generate Multicast Stream	Enable to cause the Encoder to also generate an SVSI-compatible multicast stream.	This setting only applies if **Encoder Output Mode** is set to **HTTP live** or **RTMP**.
RTP Encapsulation	Enable to prepend RTP headers to the AV stream.	This setting only applies if **Encoder Output Mode** is set to **SVSI decoder**.
HTTP File Duration (sec)	Selects the duration (in seconds) of the individual HTTP Live Streaming (HLS) files.	This setting only applies if **Encoder Output Mode** is set to **HTTP live**.
RTMP URL	Specifies the content delivery service that you want to send the stream to.	This setting only applies if **Encoder Output Mode** is set to **RTMP**.
RTMP Stream	Specifies the content delivery service that you want to send the stream to.	This setting only applies if **Encoder Output Mode** is set to **RTMP**.
PCM Audio	If enabled, the Encoder will also generate an SVSI-compatible PCM audio stream.	
I-Frame Frequency	Determines how often an I-frame is injected into the stream. Example: If set to 10, one I-frame will be injected for every ten frames.	A higher number in this field results in a better video quality for the amount of bandwidth used. However, keep in mind that this setting will affect switching speed on the Decoder. The higher the number, the more switching delay experienced.
Multicast Address Override	Enable to override the upper two octets of the multicast address with the values specified in the **Multicast Address** field (see below).	
Multicast Address	If **Multicast Address Override** is enabled, enter the upper two octets.	
UDP Port Number	Specifies the UDP port number for the AV stream.	

TABLE 2 Settings Page: Stream Settings Section (Cont.)

Option	Description	
RTSP Port Number	Specifies the port number for the RTSP connection.	
RTCP Port Number	Specifies the port number for the RTCP connection.	

TABLE 3 Stream Modes and Related Settings

Stream Mode	Encoder Output Mode	Unicast	Transport Stream	RTP Encapsulation	Notes
UDP	SVSI Decoder	Disabled	Enabled	Disabled	
RTP	SVSI Decoder	Disabled	Enabled	Enabled	
RTP Unicast	SVSI Decoder	Enabled	Enabled	Enabled	• Enter the Decoder's IP address into the Encoder's **Unicast Dest IP** field.
RTSP Multicast	RTSP	Disabled	N/A	N/A	
RTSP Unicast	RTSP	Enabled	N/A	N/A	• On the Decoder's **Settings** page (under **Stream Settings**) enter the **Stream URL** OR on the Encoder's **Settings** page, enable **Generate Multicast Stream**.
HTTP Live	HTTP	N/A	N/A	N/A	• On the Decoder's **Settings** page (under **Stream Settings**) enter the **Stream URL** OR on the Encoder's **Settings** page, enable **Generate Multicast Stream**. • Encryption is not supported in this mode.
RTMP	RTMP	N/A	N/A	N/A	• Encryption is not supported in this mode. • RTMP is not supported by the Decoder. To stream to the Decoder, enable **Generate Multicast Stream** on the Encoder's **Settings** page.

Advanced Settings

The section of the **Settings** page shown in Figure 23 is displayed when you click the **Advanced Settings** link. Options are described in Table 4.

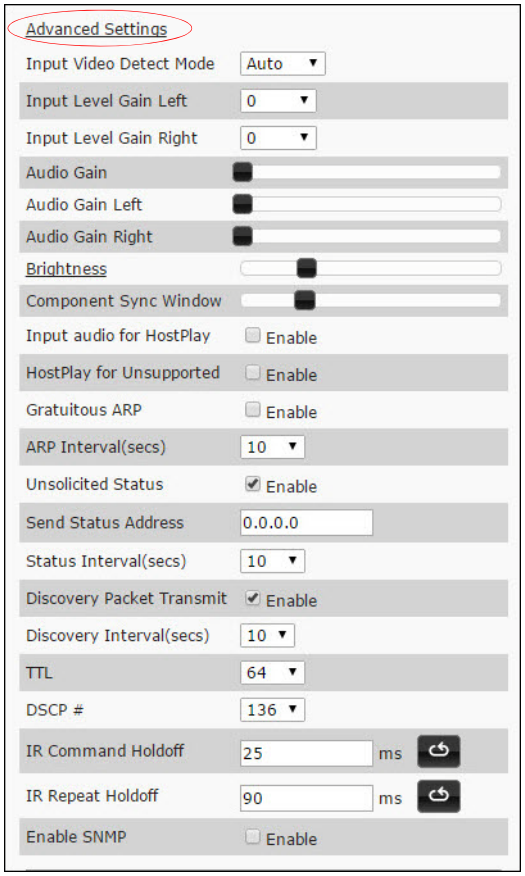


FIG. 23 Advanced Settings

TABLE 4 Settings Page: Advanced Settings

Option	Description	Notes
Input Video Detect Mode	Set to **Digital** to force the Encoder to detect only HDMI/DVI sources. Set to **Analog** to force the Encoder to only detect analog sources. Set to **Auto** for source auto-detection.	
Input Level Gain Left/Right	Select a PRE-ENCODE cut in the audio signal.	This can help prevent distortion of the audio when the source is providing audio that is too loud/clipping. Setting does *not* affect digital audio.
Audio Gain	Slide right to provide a POST-ENCODE boost in the audio signal (to both left and right channels).	This can help compensate when the source is providing a weak audio signal. Does not affect digital audio.
Audio Gain Left/Right	Slide right to provide a POST-ENCODE boost in the left or right channel's audio signal.	This can help compensate when the source is providing a weak audio signal. Does not affect digital audio.
Brightness	Use sliders to raise or lower RGB values of the Encoder (POST-ENCODE).	Only affects analog video. Does not affect digital video.
Component Sync Window	Use this slider to configure the sync on green sensitivity.	Used for computer video input to help with screen flickering.
Input audio for HostPlay	Enable to activate the input audio when the Live/Local menu is set to one of the local images.	
HostPlay for Unsupported	Enable to cause the Encoder to use a custom image whenever an unsupported video mode is supplied to it.	
Gratuitous ARP	Enable the Encoder to send a periodic Address Resolution Protocol (ARP) packet to the network.	

TABLE 4 Settings Page: Advanced Settings (Cont.)

Option	Description	Notes
ARP Interval (secs)	Determine how often (in seconds) the unit transmits gratuitous ARP packets.	
Unsolicited Status	Enable the Encoder to send a periodic status packet to the **Send Status Address** described below.	
Send Status Address	When **Unsolicited Status** is enabled, the Encoder sends a periodic status packet to the IP address specified here.	
Status Interval (secs)	Determine how often (in seconds) the unit transmits status packets.	
Discovery Packet Transmit	Enable the SVSI multicast discovery service (which is used to identify units).	This is useful for larger network integrations when broadcast packets will not cover the entire network. Enabled by default.
Discovery Interval (secs)	Determine how often (in seconds) the unit transmits discovery packets.	
TTL	Select the Time To Live (TTL) for the transmit audio and video streams.	Limits the lifespan of data on the transmit audio and video streams (to improve performance).
DSCP #	Select the Differentiated Services Code Point (DSCP) for the transmit audio and video streams.	
IR Command Holdoff	Set the delay between IR command portions. The default setting is 25 ms.	IR commands are sent in two parts. This setting is the time (in milliseconds) between transmission of part one and part two. The second part of the command is inverted for confirmation purposes.
IR Repeat Holdoff	Set the repeat delay between IR commands. The default setting is 90 ms.	This is the amount of time before a new command is sent. For example, when pressing and holding the volume button on a remote control, this is how long until the command is repeated.
Enable SNMP	Enable to allow the device to handle Simple Network Management Protocol (SNMP) queries.	

Time Settings

The section of the **Settings** page shown in Figure 24 is displayed when you click the **Time Settings** link. Use this section to specify Network Time Protocol (NTP) servers and the time zone. This information is used to provide accurate stream time stamping.

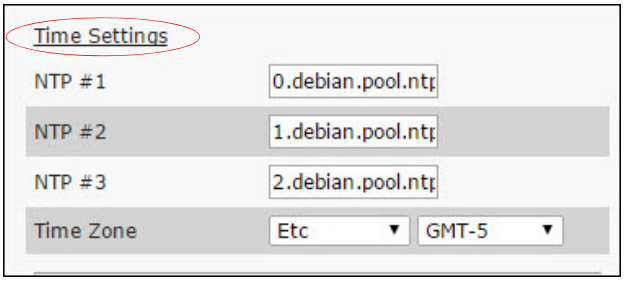


FIG. 24 Time Settings Section

RS232 Settings

The section of the **Settings** page shown in Figure 25 is displayed when you click the **RS232 Settings** link. Options are described in Table 5.

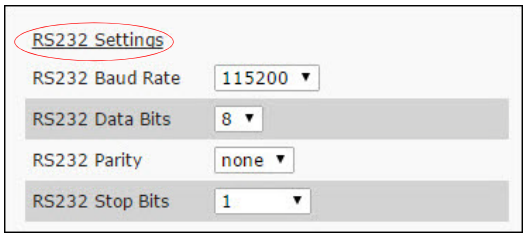


FIG. 25 RS232 Settings

TABLE 5 Settings Page: RS232 Settings

Option	Description
RS232 Baud Rate	Select the appropriate baud rate for the RS232 serial interface. Default is 9600.
RS232 Data Bits	Select the appropriate data bit count for the RS232 serial interface. Default is 8.
RS232 Parity	Select the appropriate parity for the RS232 serial interface. Default is no parity (**none**).
RS232 Stop Bits	Select the appropriate number of stop bits for the RS232 serial interface. Default is 1.

VLC Media Player Section

The **VLC Media Player** settings section of the **Settings** page is shown in Figure 26. This read-only field provides you with the URL for use with third-party decoders.

NOTE: *If the source is protected with HDCP or if the encryption is forced on, the stream will not be viewable by third-party decoders.*

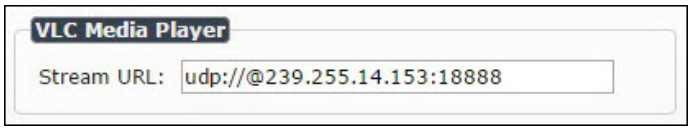


FIG. 26 VLC Media Player Settings Section

Network Setup Section

The **Network Setup** section of the **Settings** page is shown in Figure 27. Options are described in Table 6.

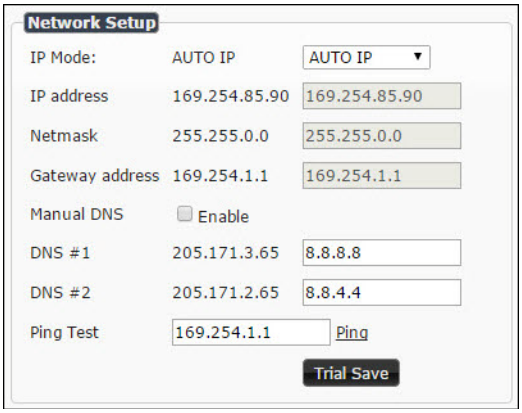


FIG. 27 Network Setup Section

TABLE 6 Settings Page: Network Setup Settings

Option	Description	Notes
IP Mode	Configure the IP address mode. When set to **AUTO IP**, an IP Address in the range of 169.254.xxx.xxx with **Netmask** of 255.255.0.0 and **Gateway address** of 169.254.1.1 will be automatically assigned to the N3000 Encoder by the control software. When set to **DHCP**, an IP Address in the range of the DHCP server on the network will be automatically assigned to the N3000 Encoder. When set to **STATIC**, an **IP address**, **Netmask**, and **Gateway address** must be manually entered.	Using **DHCP** is generally not recommended. If the device is set to **DHCP** and fails to receive an address from the DHCP server in time, it will revert back to the **AUTO IP** Address (169.254.xxx.xxx) until the unit is rebooted.
IP address	View the current IP address of the N3000 Encoder. When in **STATIC** mode, you may enter a new IP address into this field.	
Netmask	View the current **Netmask** of the N3000 Encoder. When in **STATIC** mode, you may enter a new **Netmask** into this field.	
Gateway address	View the current **Gateway address** of the N3000 Encoder. When in **STATIC** mode, you may enter a new **Gateway address** into this field.	
Manual DNS	Enable to override the DNS selection.	This is used for RTMP.
DNS #1 and #2	Specifies the main servers for use for DNS.	
Ping Test	Test connection by specifying an IP address or URL to ping. Click the **Ping** link to initiate the test.	This is useful when in RTMP mode for verifying that the unit can access the RTMP server.
Trial Save	Click to initially save IP address changes. Once you log in to the unit using the new address, you will be able to confirm and accept the changes permanently.	

Status Section

The **Status** section of the **Settings** page is shown in Figure 28. Options are described in Table 7.

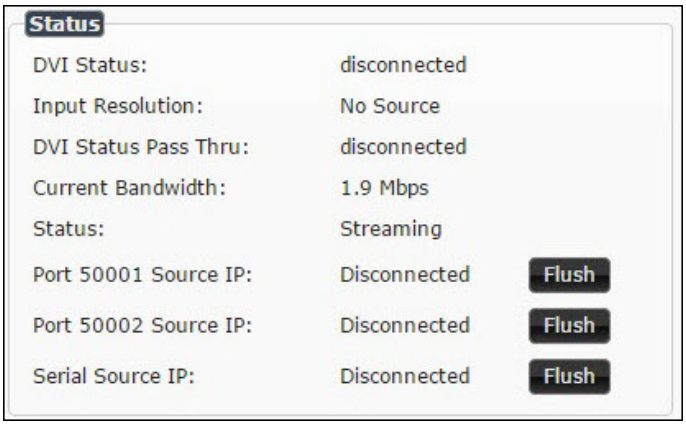


FIG. 28 Status Section

TABLE 7 Settings Page: Status Section

Option	Description	Notes
DVI/HDMI Status	Indicates if a video source is connected to the Encoder.	
Input Resolution	Indicates the video resolution of the currently connected source.	
DVI/HDMI Status Pass Thru	Indicates if a display device is connected to the Encoder.	
Current Bandwidth	This is a snapshot of the unit as properties were loaded to the browser, not a live counter. Refresh the page to get an updated bandwidth.	
Port 50001 Source IP	Shows the IP address of the currently connected device or displays **Disconnected** if no connection exists.	Port 50001 can only accept a single external connection at a time. If a device is currently showing the port occupied (by a control system or other device), then other connections will be rejected. However, connection attempts from the same IP will override the current connection.
Port 50002 Source IP	Shows the IP address of the currently connected device or displays **Disconnected** if no connection exists.	Port 50002 can only accept a single external connection at a time. If a device is currently showing the port occupied (by a control system or other device), then other connections will be rejected. However, connection attempts from the same IP will override the current connection.
Serial Source IP	Shows the IP address of the currently connected device or displays **Disconnected** if no connection exists.	Only a single external connection can be accepted on the port. If a device is currently showing the port occupied (by a control system or other device), then other connections will be rejected. However, connection attempts from the same IP will override the current connection.
Flush buttons	These buttons reset the ports.	

Change Password Section

The **Change Password** section of the settings page is shown in Figure 29. To change the N3000 Encoder interface password (for admin-level access) enter the current password in the field labeled **Old Password**, and enter a new password in the **New Password** and **Confirm Password** fields. Click **Change PW** to accept the new password. To create/change the user password (which provides access to the **Record** page of the N3132) use the **Change User Password** field and button at the bottom portion of this section.

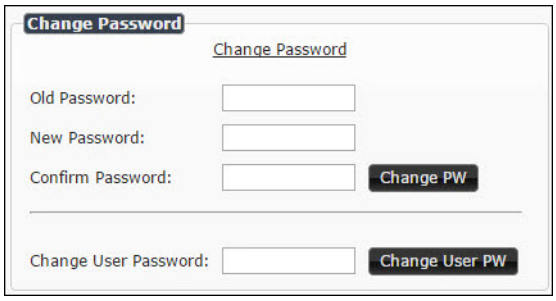


FIG. 29 Change Password

NOTE: *The admin password needs to match N-Able's stored password to allow auto-login using N-Able.*

Software Section

The **Software** section of the **Settings** page is shown in Figure 30. Options are described in Table 8.

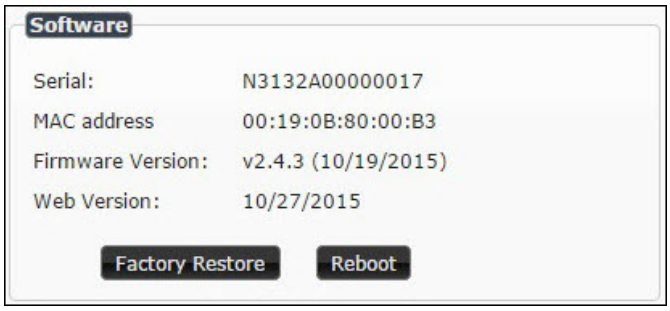


FIG. 30 Software Section

TABLE 8 Settings Page: Software Section

Option	Description
Serial	Displays the serial number of the N3000 Encoder.
MAC Address	Displays the MAC address of the network interface of the N3000 Encoder.
Firmware Version	Displays the date code for the currently running version of the N3000 Encoder internal firmware.
Web Version	Displays the date code for the currently running version of the web interface.
Factory Restore	Click to restore the device to the original factory settings. This resets everything except the IP address (including name, stream number, serial settings, etc.). If you wish to factory restore all settings (including the IP address) boot the box with the ID button held down.
Reboot	Click to reboot the device (does not affect current configuration).

DVI/HDMI Pass Thru Settings

The section of the **Settings** page show in Figure 31 is displayed when you click the **DVI/HDMI Pass Thru Settings** link. Options are described in Table 9.

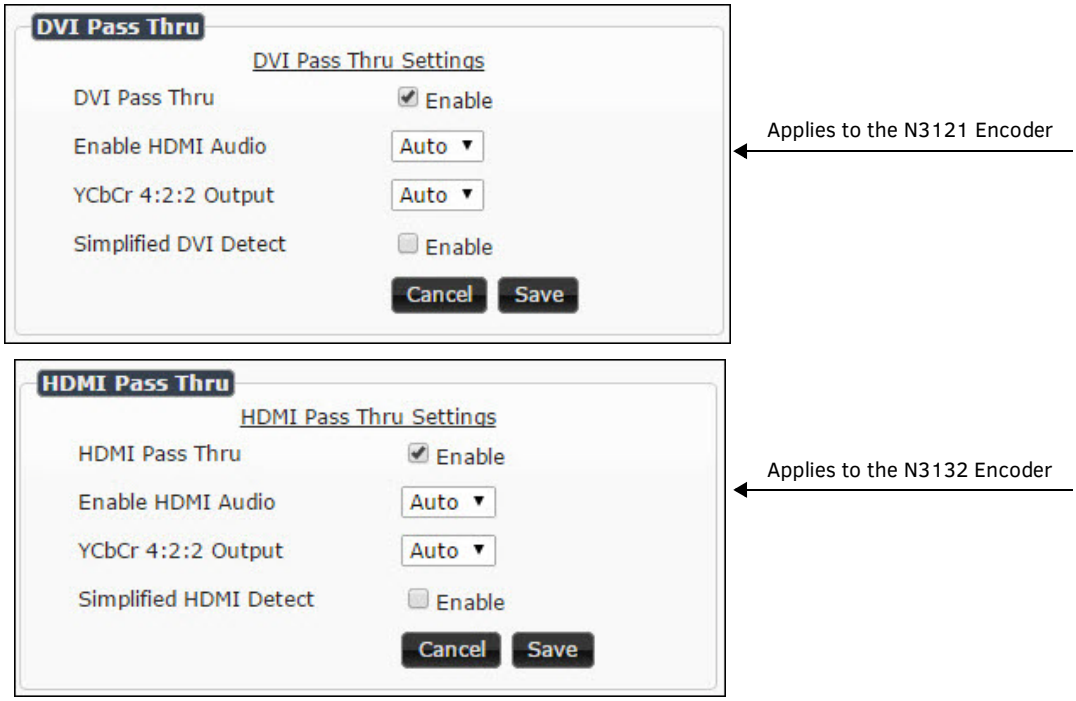


FIG. 31 DVI/HDMI Pass Thru Settings

TABLE 9 Settings Page: DVI/HDMI Pass Thru Settings

Option	Description
DVI/HDMI Pass Thru	Enables looped output.
Enable HDMI Audio	Determines if the unit will output audio over the HDMI connection. Selecting **Auto** bases audio output on the settings of the connected source device.
YCbCr 4:2:2 Output	For color conversion. Can force to RGB output based on connected device's reported settings. Default (and preferred setting) is **Off**.
Simplified DVI/HDMI Detect	When enabled, detects HDMI solely based on the hot plug detection. Enable to help prevent displays/monitors from going to sleep.
Cancel	Click to return all controls to the last saved configuration.
Save	Click to accept changes made to these controls.

HostPlay Page

Click the **HostPlay** link at the top of any of the main web pages to access the page shown in Figure 32. This page allows you to upload new images to the Encoders and configure the image playlists. The playlist will be shown on the display when no video is being transmitted or received. You can show a single image or set up multiple images to be displayed at a customized animation rate. Audio can be uploaded and set to play whenever HostPlay is active. See Table 10 for option descriptions.

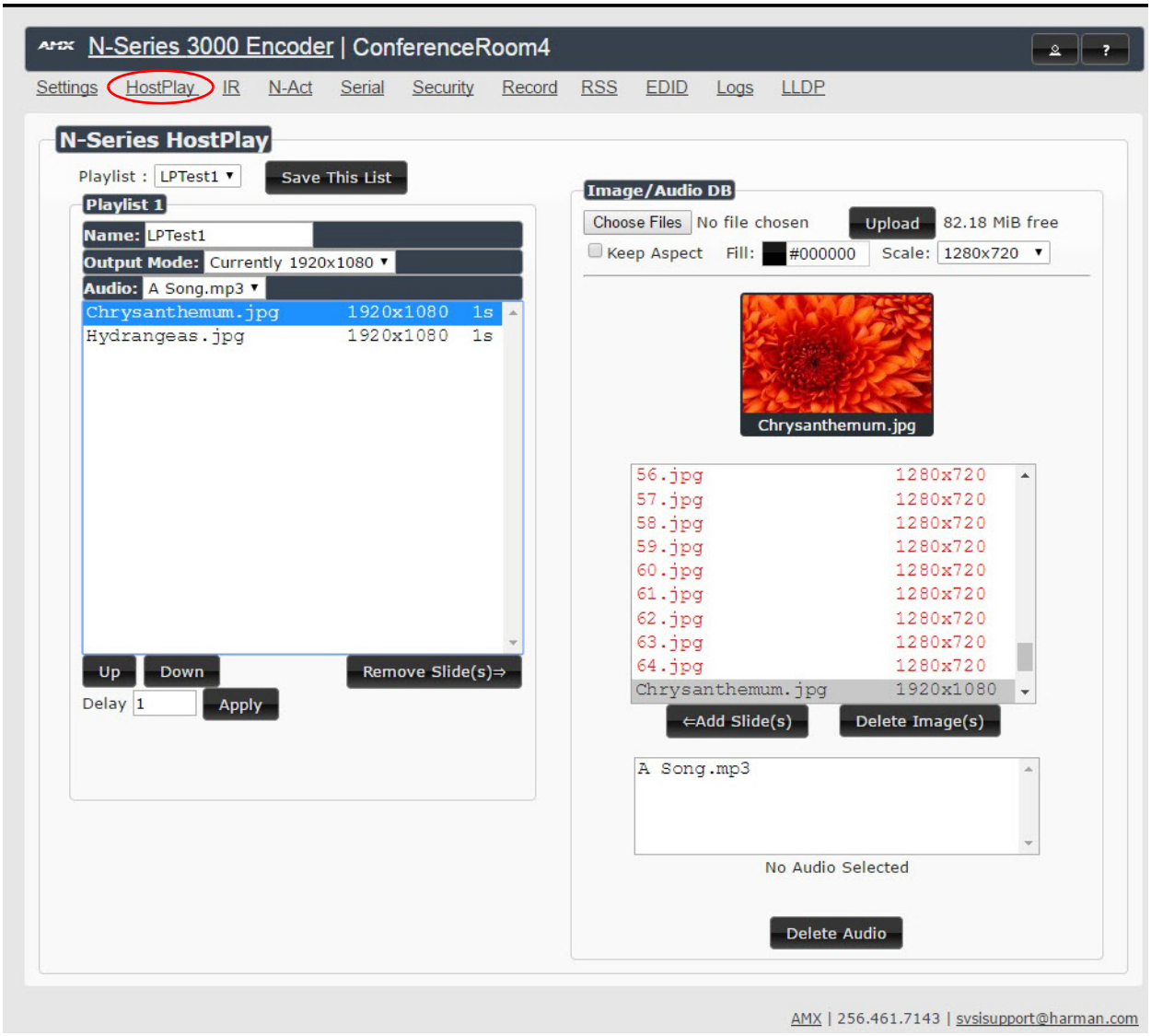


FIG. 32 HostPlay Page

TABLE 10 HostPlay Page Options

Option	Description
Edit Playlist	Select a playlist from the drop-down menu to view/edit the images currently used in the chosen image playlists. If more than one image appears in the list, a transition time can be set for each image (see **Image list** below).
Save	Click to save the current configuration.
Name	Enter a name for the playlist.
Output Mode	Select the HostPlay output resolution. The playlists that were uploaded in that resolution are then displayed for your selection.
Audio	Choose an audio file to play while the HostPlay image is on the screen.
Image list	Allows you to customize what images are displayed, the transition time for each image, etc.

TABLE 10 HostPlay Page Options (Cont.)

Option	Description
Image/Audio DB	This section provides the ability to upload image and audio files to the N3000 Encoder database. You can also use the **Fill** field to customize the background color (used behind HostPlay images that do not take up the entire screen).
Delete Images	Delete the selected image file from the playlist.
Delete Audio	Delete the selected audio file from the playlist.

IR Page

Click the **IR** link at the top of any of the main web pages to access the page shown in Figure 33. This page allows you to upload and execute IR Pronto codes so that other vendor's devices can be controlled through the Encoder's IR connector. Commands can be saved for future use and executed later. The **IR Code** menu lists all saved IR commands. See Table 11 for option descriptions.

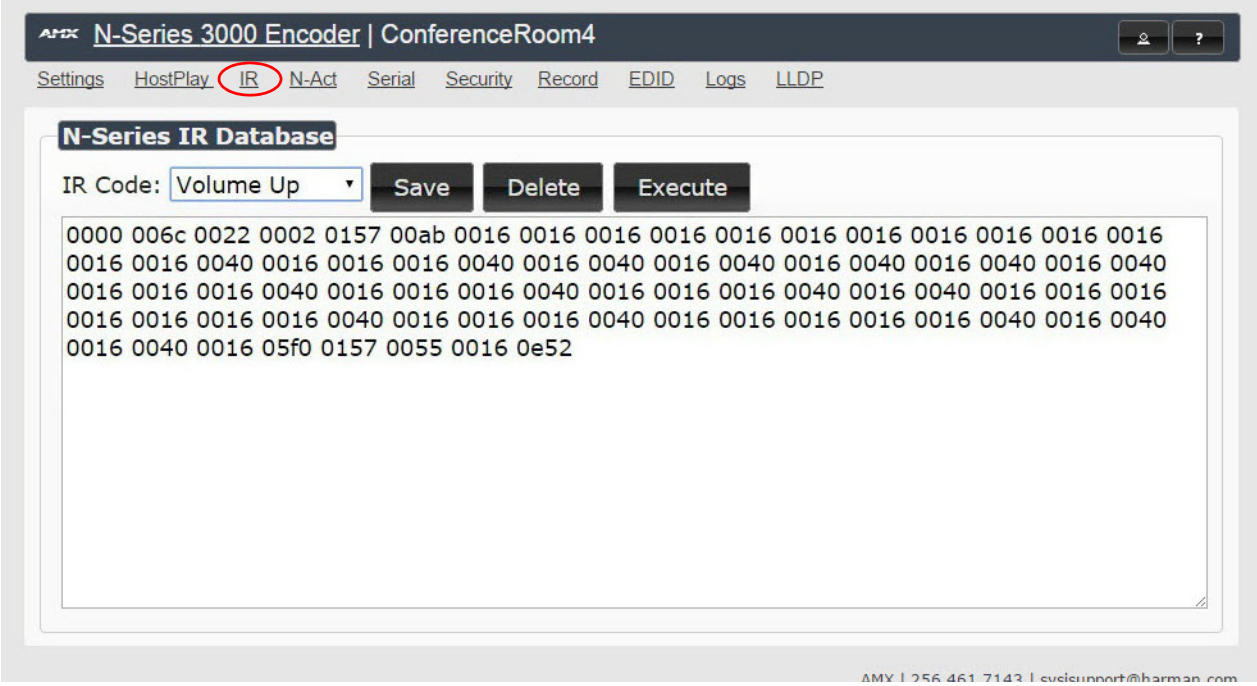


FIG. 33 IR Page

TABLE 11 IR Page Options

Option	Description
IR Code	Create/select IR codes. Different vendors have different IR Pronto codes (that can usually be found through a web search). Copy/paste new IR commands directly into the input space.
Save	Save the current code.
Delete	Delete the current code.
Execute	Activate the selected code through the Encoder's **IR** connector.

N-Act Page

Click the **N-Act** link at the top of any of the main web pages to access the page shown in Figure 34. This page allows you to create command lists which are performed automatically by the unit based on power or video connection (without the use of an outside controller). For example, you can tell a projector and lights to come on when the Encoder powers up. You can add multiple commands for each event. See Table 12 for option descriptions.

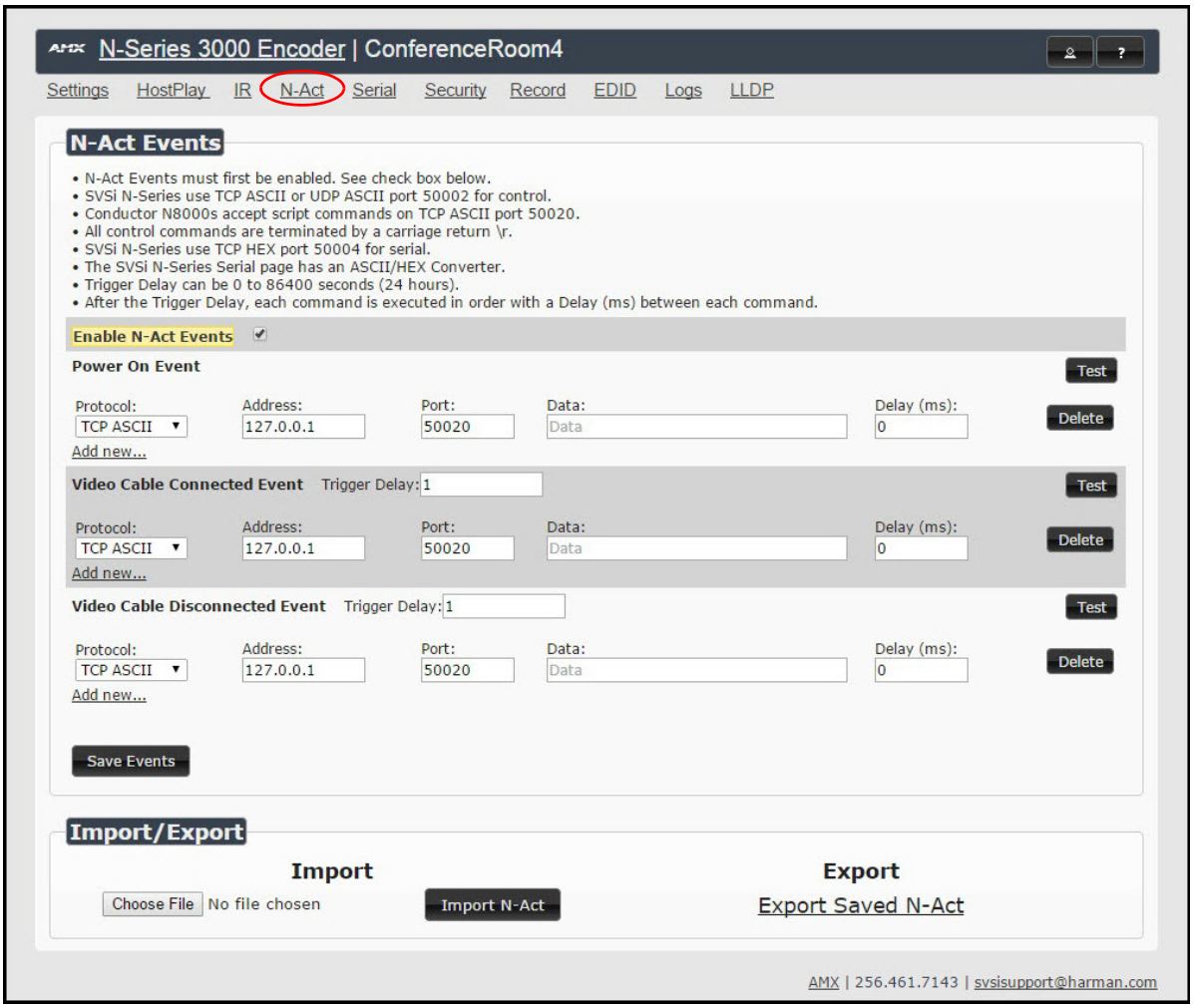


FIG. 34 N-Act Page

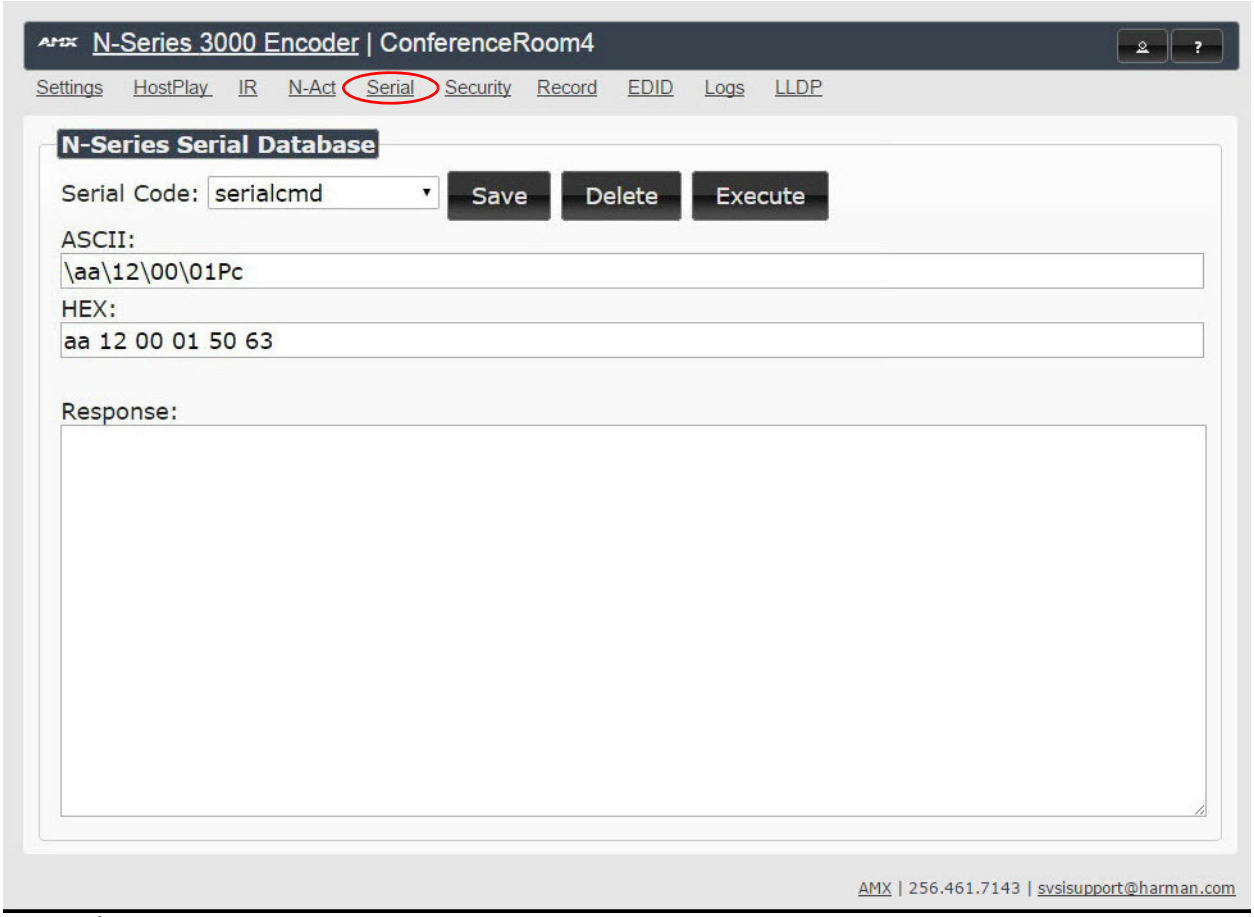
TABLE 12 N-Act Page Options

Option	Description
Enable N-Act Events	Enable to activate the configured events.
Power on Event	Create/delete/test events to be performed when the Encoder powers on. Visit our website for more details on Application Programming Interface (API) commands.
Video Cable Connected Event	Create/delete/test events to be performed when the Encoder is connected to a video source. The **Trigger Delay** field specifies how long (in milliseconds) the device has to be connected for the command to be executed.
Video Cable Disconnected Event	Create/delete/test events to be performed when the Encoder is disconnected from a video source. The **Trigger Delay** field specifies how long (in milliseconds) the device has to be disconnected for the command to be executed. This keeps accidental (momentary) disconnects from triggering the command sequence.
Save Events	Click to save changes made to this page.
Import/Export	Use this section of the page to import/export N-Act event configurations so you can share them from one unit to another.

Serial Page

Click the **Serial** link at the top of any of the main web pages to access the page shown in Figure . This page allows you to upload and execute commands used for direct control of serial devices. Commands may be saved for future use and executed later. The **Serial Code** menu lists all saved commands. See Table 13 for option descriptions.

NOTE: *If the Port 5004/Serial Port is currently in use by another device, sending commands from the Serial page will always return a No Data message and fail to send the commands.*



Serial Page

TABLE 13 Serial Page Options

Option	Description
Serial Code	Create/select serial commands. Different vendors have different codes that can usually be found through a web search. Copy/paste new commands (in either ASCII or HEX) directly into the appropriate input space.
Save	Save the current code.
Delete	Delete the current code.
Execute	Apply the selected code to the Encoder's serial connection.
ASCII and HEX	Paste serial commands directly into either the **ASCII** or **HEX** field.
Response	View responses provided by the device receiving the serial command(s).

Security Page

Click the **Security** link at the top of any of the main web pages to access the page shown in Figure 35. This page allows you to force HTTPS connections and set up a password for stream encryption. To successfully display an encrypted Encoder stream on a Decoder, the Decoder must match the Encoder password.

NOTE: *This page only applies if connected to a web page via HTTPS.*

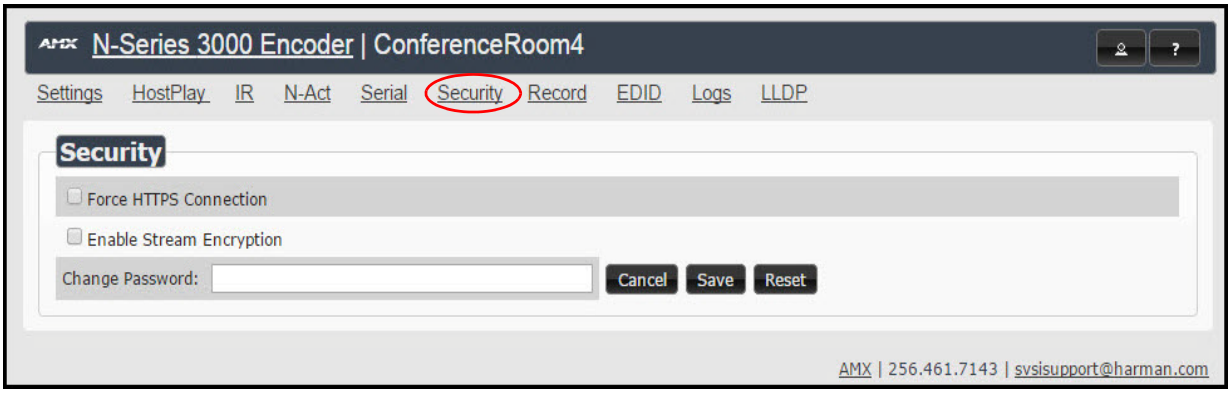


FIG. 35 Security Page

Record Page

Click the **Record** link at the top of any of the main web pages to access the page shown in Figure 36. This page allows you to set up recording options on the Encoder and to customize when/if the unit transfers the recorded files to another location. See Table 14 for option descriptions. This page is only applicable to the N3132 Encoder.

FIG. 36 Record Page

TABLE 14 Record Page Options

Option	Description
Command buttons	
Start Record button	Click to begin recording to the USB device plugged into the front of the N3132 Encoder.
Stop Record/Transfer File button	Click to stop a recording and start the file transfer.
Format USB	Click to format the USB device plugged into the front of the N3132 Encoder.
Status section (read-only)	
USB State	Displays the state of the current USB connection. When the unit is properly configured and the USB device is validated, **Device Ready** is displayed. See the **USB Port** setting below for more information.
Free Space	Indicates file space left on the USB device.

TABLE 14 Record Page Options (Cont.)

Option	Description
Stream URL	URL of the device's network stream. This is shown here for the convenience of users that do not have **admin** privileges (and therefore cannot access the main page for this information).
USB Port	Enable this setting BEFORE plugging in a compatible device into the USB port on the front of the Encoder. Once the device is validated, **Device Ready** will display in the **USB State** field.
File section	
Base Name	Specify a base name for the recording file. The actual file name will be the base name plus a time stamp.
Convert to MP4	Turn **On** if you wish to convert the file to an mp4 before transfer. **NOTE:** *This requires twice the storage space on the USB drive.*
Validate after send	Turn **On** if (after a file is transferred) you would like to automatically pull it back to the unit and verify that it matches the original file. **NOTE:** *This requires twice the storage space on the USB drive.*
File Transfer Settings section	
Transfer Method	Select a transfer method if you would like the file to be transferred somewhere once recording has stopped. Options include **SFTP**, **FTP**, and **Network Share**.
Server Port (FTP or SFTP)	If your **Transfer Method** is set to **FTP** or **SFTP** (see above) enter the port number to be used for transfer.
Server Directory (Share)	If your **Transfer Method** is set to **Network Share** (see above) enter the directory on the share where the file will be stored.
Destination IP Address	The destination IP address applies to all **Transfer Method** modes. It is the address of the server that will receive the file.
Server Username	Enter the username to use when validating the file transfer to the server. The username applies to all modes.
Change Password	Enter the password to use when validating the file transfer to the server. The password applies to all modes.
Delete after Transfer	Turn **On** if you would like the file to automatically delete from the USB drive once it has been transferred via the selected method. **NOTE:** *If you use this option, it is recommended that you also enable the Validate after send feature (to make sure the recording made it to the server).*
File Transfer Schedule section	
Unit Time	The Encoder's current time (read only). In order to get accurate real time, the Encoder must be on an IP address that connects to the Internet and there must be a time server entered (under Settings>Time Settings). See the *Time Settings* section on page 32 for more information.
Schedule	Select when you would like recording files to be transferred. Choices include: **Never** – Do not transfer the recordings. **Immediate** – Begin transfer as soon as the recording has stopped. **At start time** – All completed recordings will be transferred at the start time specified (see **Start Time** below). **Time window** – The recordings will be transferred at a random time during the time window determined by the Start Time and End Time Window settings (see below).
Start Time	If **Schedule** is set to **At start time** or **Time window**, enter the time you would like to begin the recording transfer. The time fields are set as a 24 hour clock (0:0 to 23:59).
End Time Window	If **Schedule** is set to **Time Window**, enter the time you would like to end the window during which recordings are transferred. The time fields are set as a 24 hour clock (0:0 to 23:59).

EDID Page

Click the **EDID** link at the top of any of the main web pages to access the page shown in Figure 37. Every display has stored information that it communicates to the output device. This page allows you to view that information.Options are described in Table 15. Edit the Encoder's EDID if you need to change the display options available to the source. There are four different ways to control the EDID of the Encoders:

Option 1: Use the default settings drop-down menu and select from the options available. Then click **Set EDID**. This will work for most sources and is most often set to **Stereo (2 channel)**.

Option 2: When using an EDID captured from a display connected to a Decoder, paste the data in to the white EDID block, overwriting existing EDID. Then click **Set EDID**.

Option 3: Make changes to the operating parameters displayed on the right side of the screen. Use the **Encode** button to translate the changes into a new EDID and click **Set EDID**.

Option 4: Connect a compatible display to the Encoder's **HDMI OUT** or **DVI-D OUTPUT** port and click **Set EDID to Pass-thru**.

The source will need to be disconnected while modifying EDID settings.

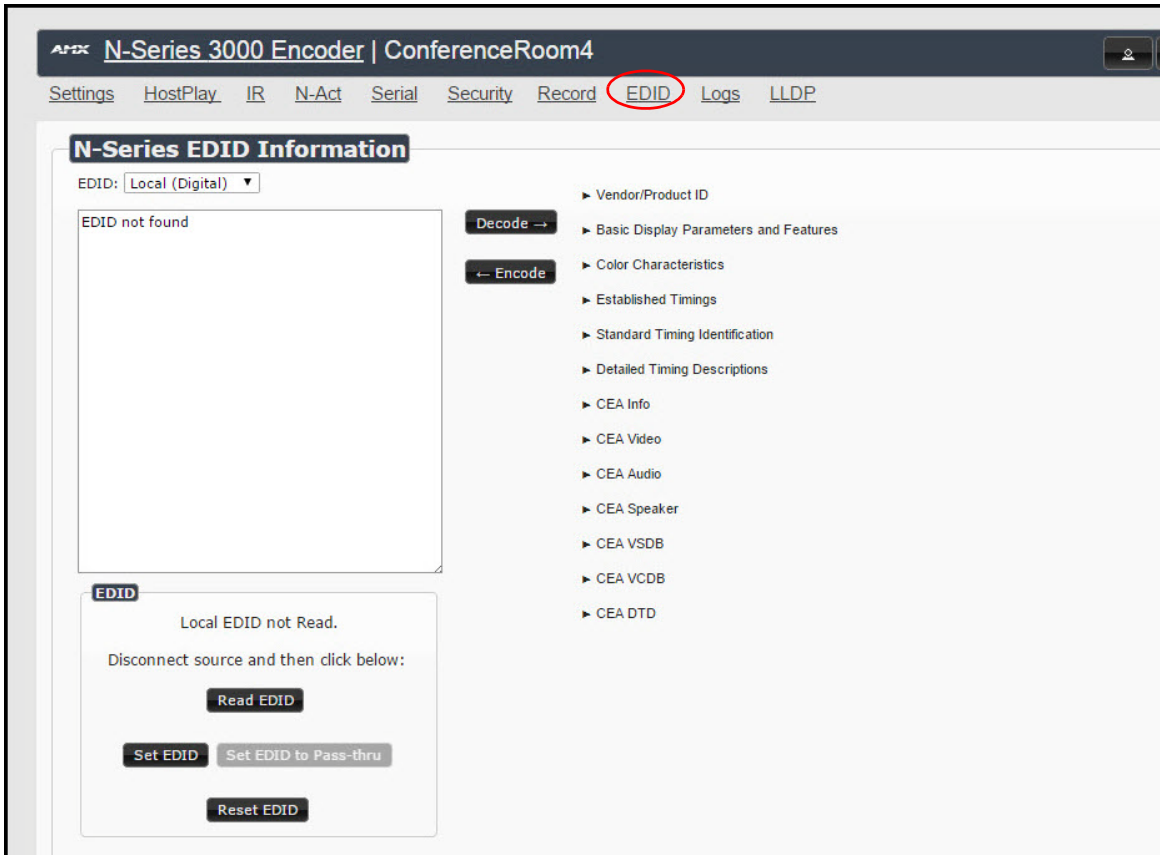


FIG. 37 EDID Page

TABLE 15 EDID Page Options

Option	Description
EDID drop-down box	Select what EDID information to display. **Pass-thru:** Displays EDID information for the display connected to the Encoder's pass thru port. **Local (Digital/Analog)**: Displays EDID information for the Encoder. This information is being provided to the source connected to the Encoder.
Decode button	Click to translate the EDID currently displayed on the left to the operating parameters listed on the right.
Encode button	After making any changes to the operating parameters listed 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 to refresh the EDID table if the source EDID has changed.
Set EDID	If creating a custom EDID, click to apply the changes.
Set EDID to Pass-thru	Set the EDID to the pass-thru EDID of the connected display to the **HDMI OUT** or **DVI-D OUTPUT** port.
Reset EDID	For **Digital**, choose a standard EDID from the drop-down menu and click **Reset EDID** to apply. For **Analog**, no selection is necessary.

Logs Page

Click the **Logs** link at the top of any of the main web pages to access the page shown in Figure 38. The **Logs** page displays a command log that lists all TCP and UDP messages the unit receives. It also displays the web browser's IP address and gives you options to **Refresh** and **Reset Logs**.

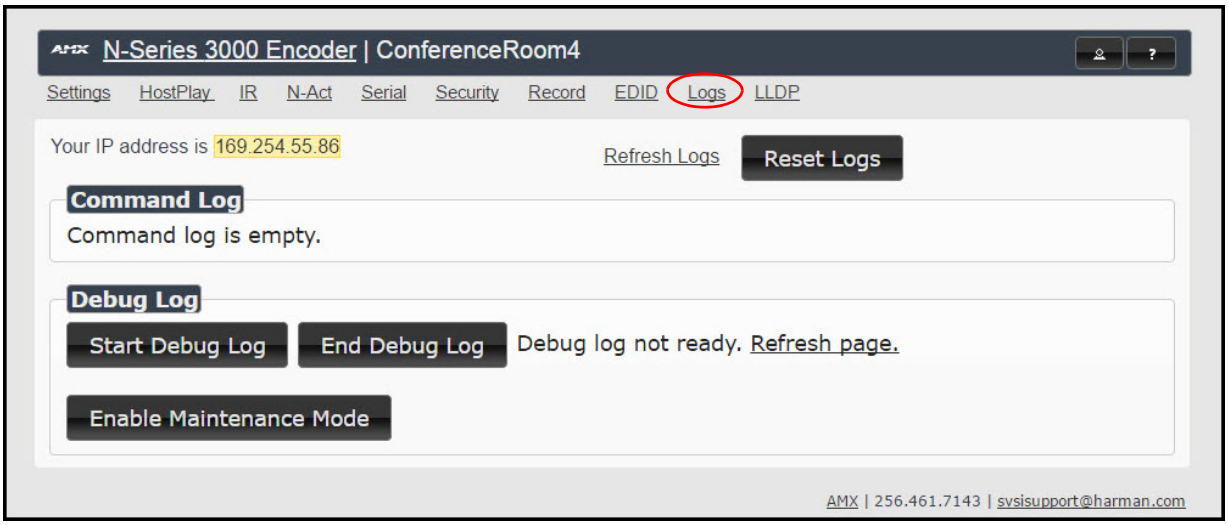


FIG. 38 Logs Page

NOTE: *For security reasons, only use the Enable Maintenance Mode if instructed to by SVSI/AMX Technical Support.*

LLDP Page

Click the **LLDP** link at the top of any of the main web pages to access the page shown in Figure 39. The **LLDP** page displays information from the Link Layer Discover Protocol (LLDP) packet which identifies the port number and the switch the device is connected to. The **Sys Name ID**, **Sys Description**, **Port ID**, and **Port Description** fields all reflect the information that was entered on the connected switch's web interface.

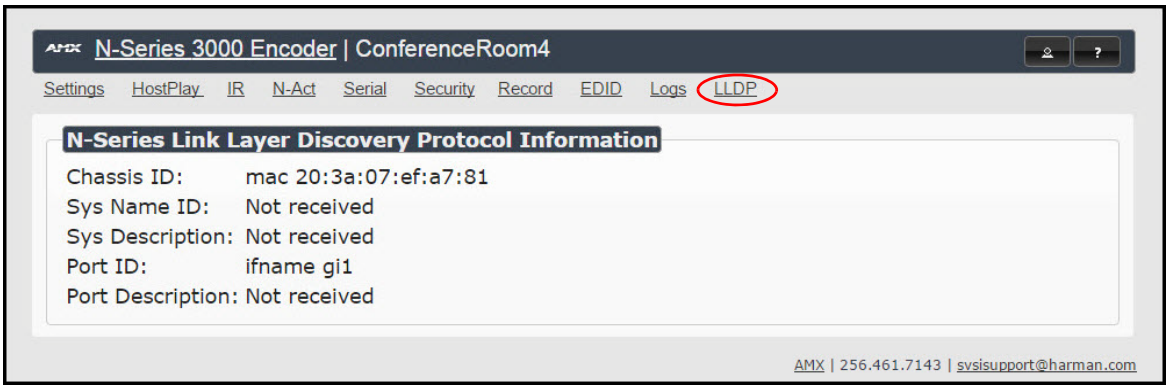


FIG. 39 LLDP Page

Decoder Configuration Options

This chapter defines N3000 Series 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 23, you can access the GUI main pages by clicking the links in the top navigation bar. Figure 40 shows the navigation bar and provides hot links to the sections of this chapter which describe each main page.

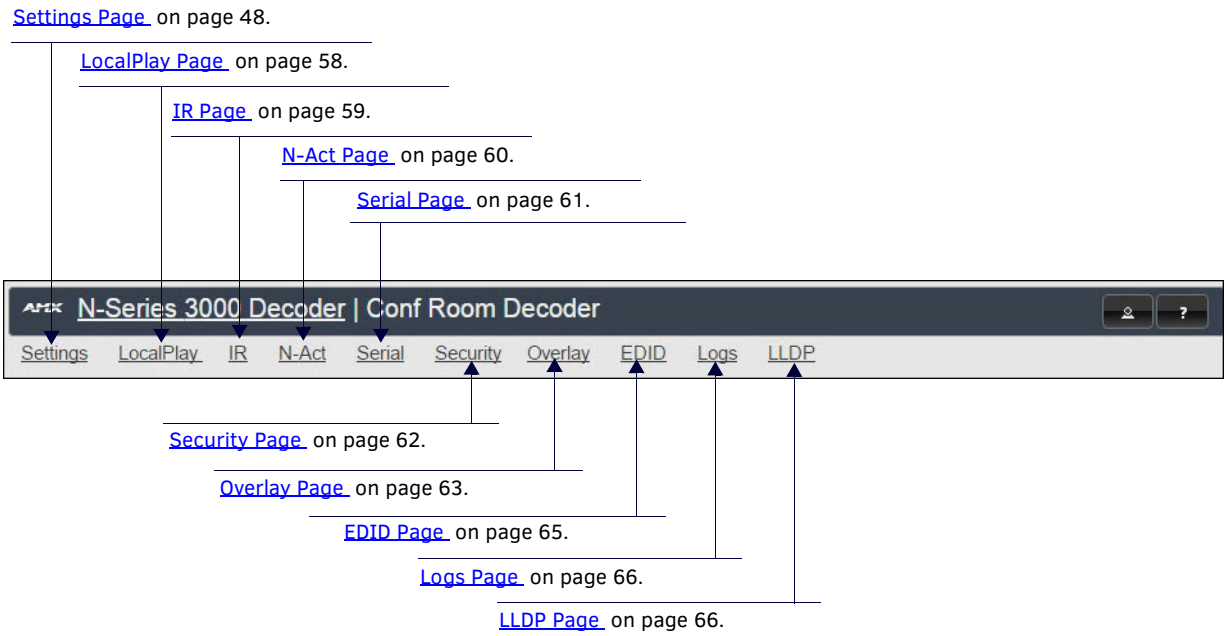


FIG. 40 Section Links

Settings Page

Click the **Settings** link at the top of any of the main web pages to access the page shown in Figure 41. This page is divided into several sections and also has links to other dialog boxes for additional configuration options. Refer to the following sections for detailed descriptions:

- Decoder Setup Section on page 49
- Stream Settings on page 51
- Advanced Settings on page 52
- Time Settings on page 54
- RS232 Settings on page 54
- Network Setup Section on page 55
- Status Section on page 56
- Change Password Section on page 57
- Software Section on page 57

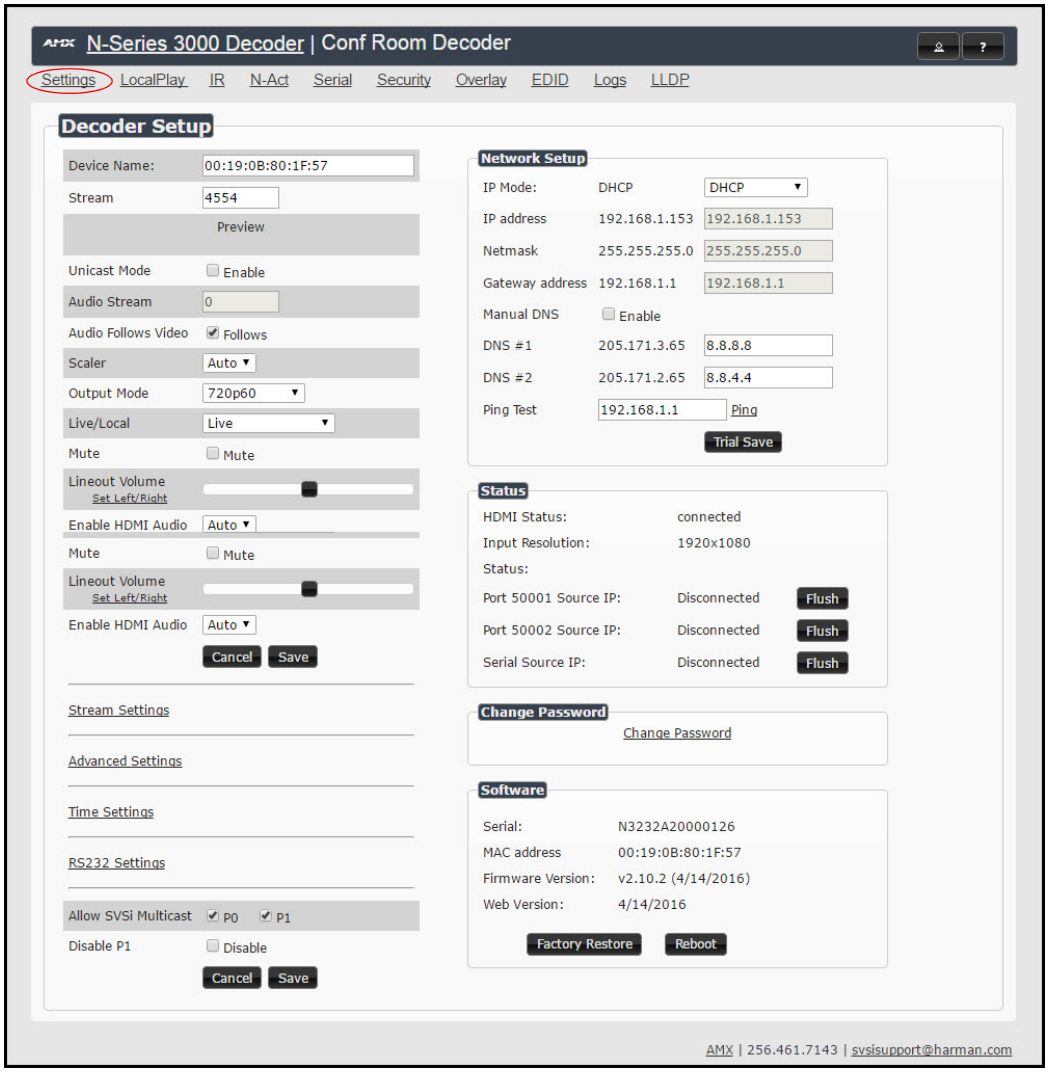


FIG. 41 Settings Page

Decoder Setup Section

The **Decoder Setup** section of the **Settings** page is shown in Figure 42. Options are described in Table 16.

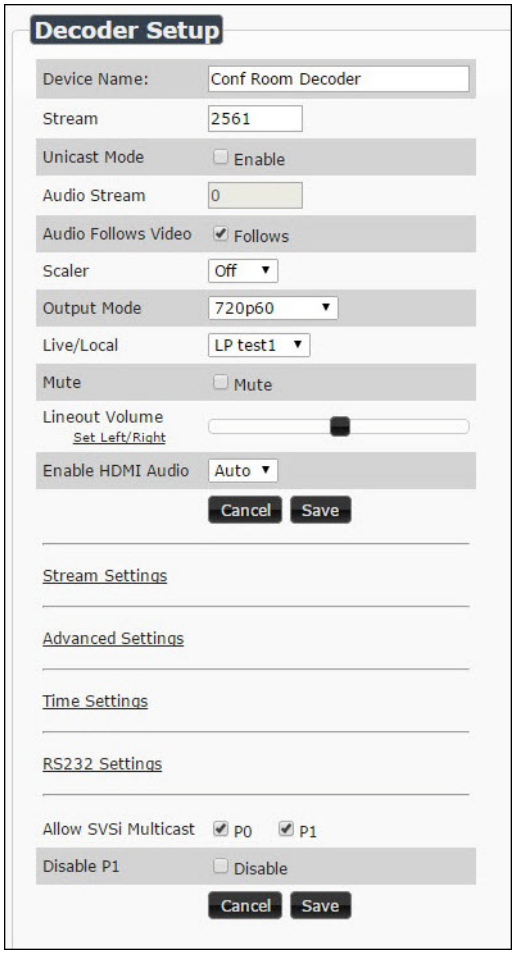


FIG. 42 Decoder Setup Section

TABLE 16 Settings Page: Decoder Setup 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 SVSI system efficiently. Names based on the unit's location and function are very useful. Some good examples are **Lobby-Left-VGA** (for left side of lobby, VGA 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 Decoders dialing up channels on a cable box, rather than a traditional AV matrix. Each Decoder can dial in a different active channel.
Unicast Mode	Enable to prevent the Decoder from joining a multicast stream.	If enabled, the Encoder must direct the stream to the Decoder using unicast (or the stream may be specified by its URL).
Audio Stream	View/edit the current audio receive stream number. This allows the N3000 to play audio streams from other AMX devices such as the N4321.	When the audio source is an N3000 Encoder, the Encoder must have **PCM audio** enabled. See the Encoder's *PCM Audio* section on page 17 for more details.
Audio Follows Video	Enable to force the **Audio Stream t**o the same as the video stream.	
Scaler	Enable to scale outgoing content to a fixed resolution.	

TABLE 16 Settings Page: Decoder Setup Section (Cont.)

Option	Description	Notes
Output Mode	Select the output resolution of the video to be transmitted to the video output device (e.g., LCD). The **Scaler** check box must be enabled for this to be applicable (see **Scaler** above).	
Live/Local	Select live video or locally stored images for transmission to the video output device (e.g., LCD). When video is not available, it automatically goes into local mode.	When video is not available, the most recently played local playlist is displayed.
Mute	Enable to mute output audio.	
Lineout Volume	This slider controls the output gain on the analog audio output. By default, it controls both the left and right lineout channels. Click the **Set Left/Right** link to control channels individually.	
Enable HDMI Audio	Set HDMI audio to be disabled, enabled, or selected automatically based on the source.	**ON** forces audio on at all times. **AUTO** reads the EDID of the connected device to determine whether or not to send audio.
Stream Settings	Refer to Stream Settings on page 51 for details on the options available from this link.	
Advanced Settings	Refer to Advanced Settings on page 52 for details on the options available from this link.	
Time Settings	Refer to Time Settings on page 54 for details on the options available from this link.	
RS232 Settings	Refer to RS232 Settings on page 54 for details on the options available from this link.	
Allow SVSI Multicast	Disable this option to prevent the port from outputting multicast video traffic.	Particularly useful if you are connecting a non-SVSI device to a port for network-based control.
Disable P1	Completely disables the P1 port for all traffic.	Once disabled, anything connected to the P1 port will no longer be available on the network.
Cancel	Click to return all controls to the last saved configuration.	
Save	Click to accept changes made to these controls.	

Stream Settings

The section of the **Settings** page shown in Figure 43 is displayed when you click the **Stream Settings** link. Options are described in Table 17.

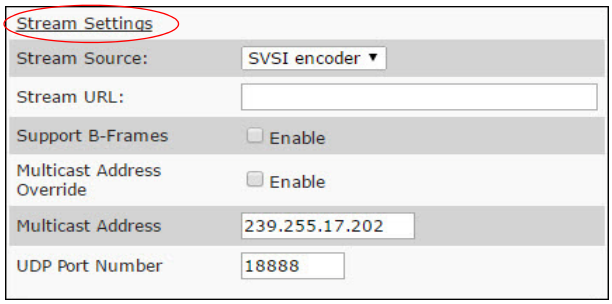


FIG. 43 Stream Settings Section

TABLE 17 Settings Page: Stream Settings Section

Option	Description	
Stream Source	Choose the source type from which the Decoder will receive the AV stream (**URL** or **SVSI encoder**).	
Stream URL	If **URL** is selected for the **Stream Source** (see above) enter the URL from which the Decoder will receive the AV stream.	Supported formats include: rtp:// udp:// rtsp:// http://
Support B-Frames	Enable if the stream has B frames to avoid jittery video.	Enabling this setting adds 100 ms of latency.
Multicast Address Override	Enable to override the upper two octets of the multicast address with the values specified in the **Multicast Address** field (see below).	Must match the upper two octets of the Encoder's multicast address.
Multicast Address	If **Multicast Address Override** is enabled, enter the upper two octets.	Must match the upper two octets of the Encoder's multicast address.
UDP Port Number	Specifies the UDP port number for the AV stream.	Must match the Encoder's UDP port number.

Advanced Settings

The section of the **Settings** page shown in Figure 44 is displayed when you click the **Advanced Settings** link. Options are described in Table 18.

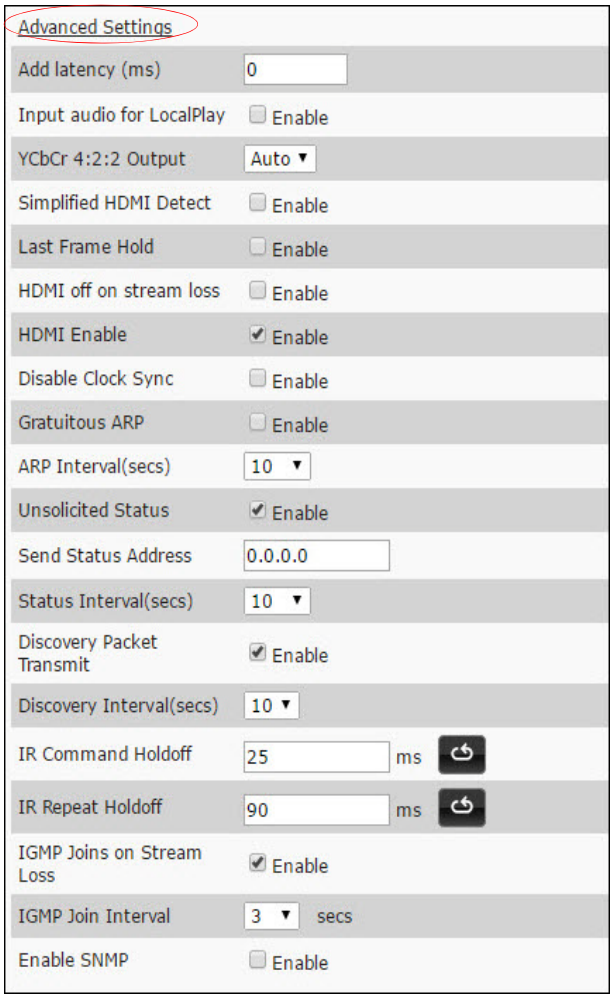


FIG. 44 Advanced Settings

TABLE 18 Settings Page: Advanced Settings

Option	Description	Notes
Add latency (ms)	Enter number of milliseconds to add to latency.	Increase this number if you are having video or audio drop issues. A higher latency increases the tolerance to jitter in the stream timing.
Input audio for LocalPlay	Select to enable the input audio when the Live/Local menu is set to one of the local images.	In order to get input audio for LocalPlay: • On the Encoder's **Settings** page, enable **PCM audio.** • On the Decoder's **Settings** page, disable **Audio Follows Video** and set the **Audio Stream** to the Encoder (or audio source).
YCbCr 4:2:2 Output	Set YCbCr output to be disabled, enabled, or selected automatically based on the connected display.	
Simplified DVI/HDMI Detect	Select to enable the detection of a display device using a simple line level check.	
Last Frame Hold	Select to cause the Decoder to continue playing the last valid video frame if the network connection is lost.	When enabled, Local Play will not appear.
DVI/HDMI off on stream loss	Select to disable the video output drive when the video stream is not available.	
DVI/HDMI Enable	Select to enable output video.	

TABLE 18 Settings Page: Advanced Settings (Cont.)

Option	Description	Notes
Gratuitous ARP	Enable the Decoder to send a periodic Address Resolution Protocol (ARP) packet to the network.	
ARP Interval (secs)	Determine how often (in seconds) the unit transmits gratuitous ARP packets.	
Unsolicited Status	Enable the Decoder to send a periodic status packet to the **Send Status Address** described below.	
Send Status Address	When **Unsolicited Status** is enabled, the Decoder sends a periodic status packet to the IP address specified here.	
Status Interval (secs)	Determine how often (in seconds) the unit transmits status packets.	
Discovery Packet Transmit	Enable the SVSI multicast discovery service (which is used to identify units).	This is useful for larger network integrations when broadcast packets will not cover the entire network. Enabled by default.
Discovery Interval (secs)	Determine how often (in seconds) the unit transmits discovery packets.	
IR Command Holdoff	Set the delay between IR command portions. The default setting is 25 ms.	IR commands are sent in two parts. This setting is the time (in milliseconds) between transmission of part one and part two. The second part of the command is inverted for confirmation purposes.
IR Repeat Holdoff	Set the repeat delay between IR commands. The default setting is 90 ms.	This is the amount of time before a new command is sent. For example, when pressing and holding the volume button on a remote control, this is how long until the command is repeated.
IGMP Joins on Stream Loss	Enable to send Internet Group Management Protocol (IGMP) join messages when no incoming stream is detected.	
IGMP Join Interval	Delay in seconds between sending IGMP join messages (if **IGMP Joins on Stream Loss** is enabled).	
Enable SNMP	Enable to allow the device to send Simple Network Management Protocol (SNMP) packets.	

Time Settings

The section of the **Settings** page shown in Figure 45 is displayed when you click the **Time Settings** link. Use this section to specify Network Time Protocol (NTP) servers and the time zone. This information is used to provide accurate stream time stamping.

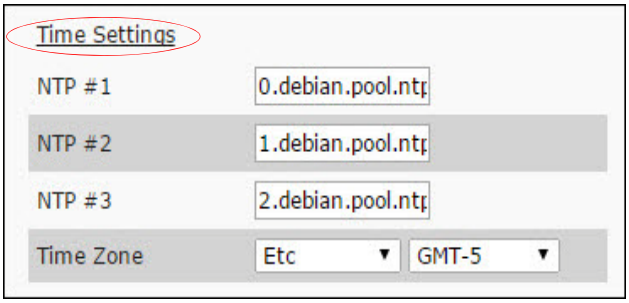


FIG. 45 Time Settings Section

RS232 Settings

The section of the **Settings** page shown in Figure 46 is displayed when you click the **RS232 Settings** link. Options are described in Table 19.

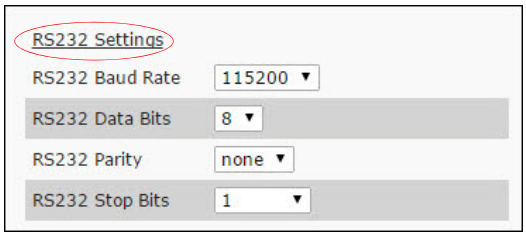


FIG. 46 RS232 Settings

TABLE 19 Settings Page: RS232 Settings

Option	Description
RS232 Baud Rate	Select the appropriate baud rate for the RS232 serial interface. Default is 9600.
RS232 Data Bits	Select the appropriate data bit count for the RS232 serial interface. Default is 8.
RS232 Parity	Select the appropriate parity for the RS232 serial interface. Default is no parity (**none**).
RS232 Stop Bits	Select the appropriate number of stop bits for the RS232 serial interface. Default is 1.

Network Setup Section

The **Network Setup** section of the **Settings** page is shown in Figure 47. Options are described in Table 20.

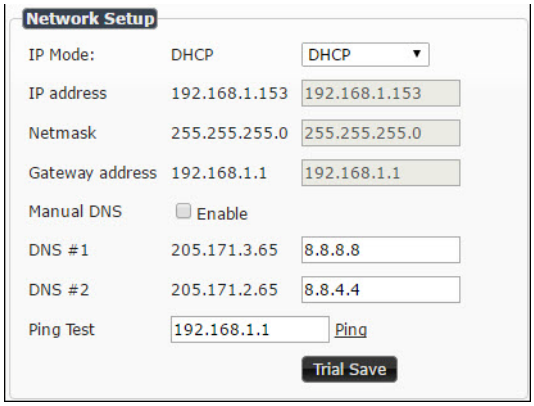


FIG. 47 Network Setup Section

TABLE 20 Settings Page: Network Setup Settings

Option	Description	Notes
IP Mode	Configure the IP address mode. When set to **AUTO IP**, an IP Address in the range of 169.254.xxx.xxx with **Netmask** of 255.255.0.0 and **Gateway address** of 169.254.1.1 will be automatically assigned to the N3000 Decoder by the control software. When set to **DHCP**, an IP Address in the range of the DHCP server on the network will be automatically assigned to the N3000 Decoder. When set to **STATIC**, an **IP address**, **Netmask**, and **Gateway address** must be manually entered.	Using **DHCP** is generally not recommended. If the device is set to **DHCP** and fails to receive an address from the DHCP server in time, it will revert back to the **AUTO IP** Address (169.254.xxx.xxx) until the unit is rebooted.
IP address	View the current IP address of the N3000 Decoder. When in **STATIC** mode, you may enter a new IP address into this field.	
Netmask	View the current **Netmask** of the N3000 Decoder. When in **STATIC** mode, you may enter a new **Netmask** into this field.	
Gateway address	View the current **Gateway address** of the N3000 Decoder. When in **STATIC** mode, you may enter a new **Gateway address** into this field.	
Trial Save	Click to initially save IP address changes. Once you log in to the unit using the new address, you will be able to confirm and accept the changes permanently.	

Status Section

The **Status** section of the **Settings** page is shown in Figure 48. Options are described in Table 21.

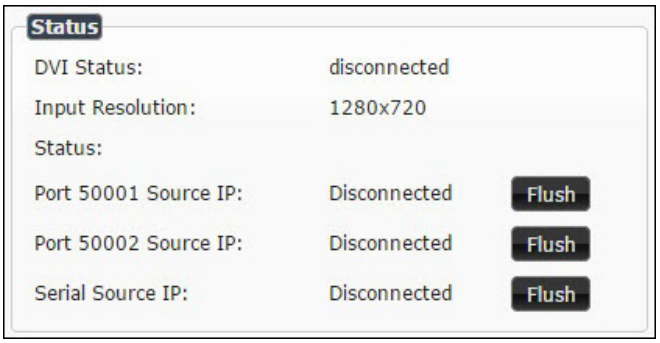


FIG. 48 Status Section

TABLE 21 Settings Page: Status Section

Option	Description	Notes
DVI/HDMI Status	Indicates if video is connected to the Decoder.	
Input Resolution	Indicates the video resolution of the incoming video source.	
Port 50001 Source IP	Shows the IP address of the currently connected device or displays **Disconnected** if no connection exists.	Port 50001 can only accept a single external connection at a time. If a device is currently showing the port occupied (by a control system or other device), then other connections will be rejected. However, connection attempts from the same IP will override the current connection.
Port 50002 Source IP	Shows the IP address of the currently connected device or displays **Disconnected** if no connection exists.	Port 50002 can only accept a single external connection at a time. If a device is currently showing the port occupied (by a control system or other device), then other connections will be rejected. However, connection attempts from the same IP will override the current connection.
Serial Source IP	Shows the IP address of the currently connected device or displays **Disconnected** if no connection exists.	Only a single external connection can be accepted on the port. If a device is currently showing the port occupied (by a control system or other device), then other connections will be rejected. However, connection attempts from the same IP will override the current connection.
Flush buttons	These buttons reset the ports.	

Change Password Section

The **Change Password** section of the settings page is shown in Figure 49. To change the N3000 Decoder interface password (for admin-level access) enter the current password in the field labeled **Old Password**, and enter a new password in the **New Password** and **Confirm Password** fields. Click **Change PW** to accept the new password.

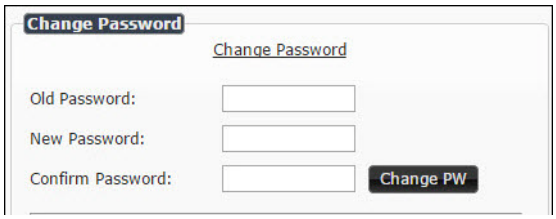


FIG. 49 Change Password

NOTE: *The admin password needs to match N-Able's stored password to allow auto-login using N-Able.*

Software Section

The **Software** section of the **Settings** page is shown in Figure 50. Options are described in Table 22.

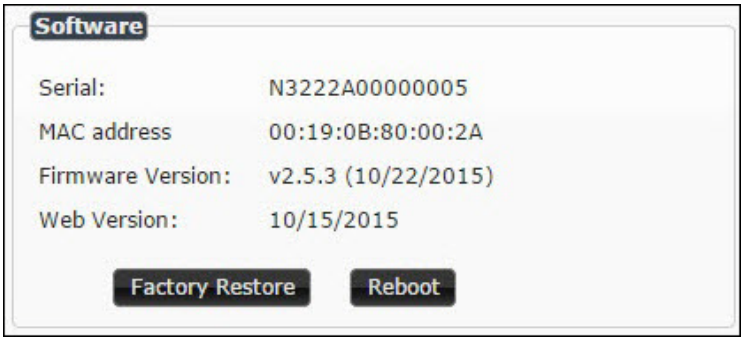


FIG. 50 Software Section

TABLE 22 Settings Page: Software Section

Option	Description
Serial	Displays the serial number of the N3000 Decoder.
MAC Address	Displays the MAC address of the network interface of the N3000 Decoder.
Firmware Version	Displays the date code for the currently running version of the N3000 Decoder internal firmware.
Web Version	Displays the date code for the currently running version of the web interface.
Factory Restore	Click to restore the device to the original factory settings. This resets everything except the IP address (including name, stream number, serial settings, etc.). If you wish to factory restore all settings (including the IP address) boot the box with the ID button held down.
Reboot	Click to reboot the device (does not affect current configuration).

LocalPlay Page

Click the **LocalPlay** link at the top of any of the main web pages to access the screen shown in Figure 51. This page allows you to upload new images to the Decoders and configure the image playlists. The playlist will be shown on the display when no video is being transmitted or received. You can show a single image or set up multiple images to be displayed at a customized animation rate. Audio can be uploaded and set to play whenever LocalPlay is active. See Table 24 for option descriptions.

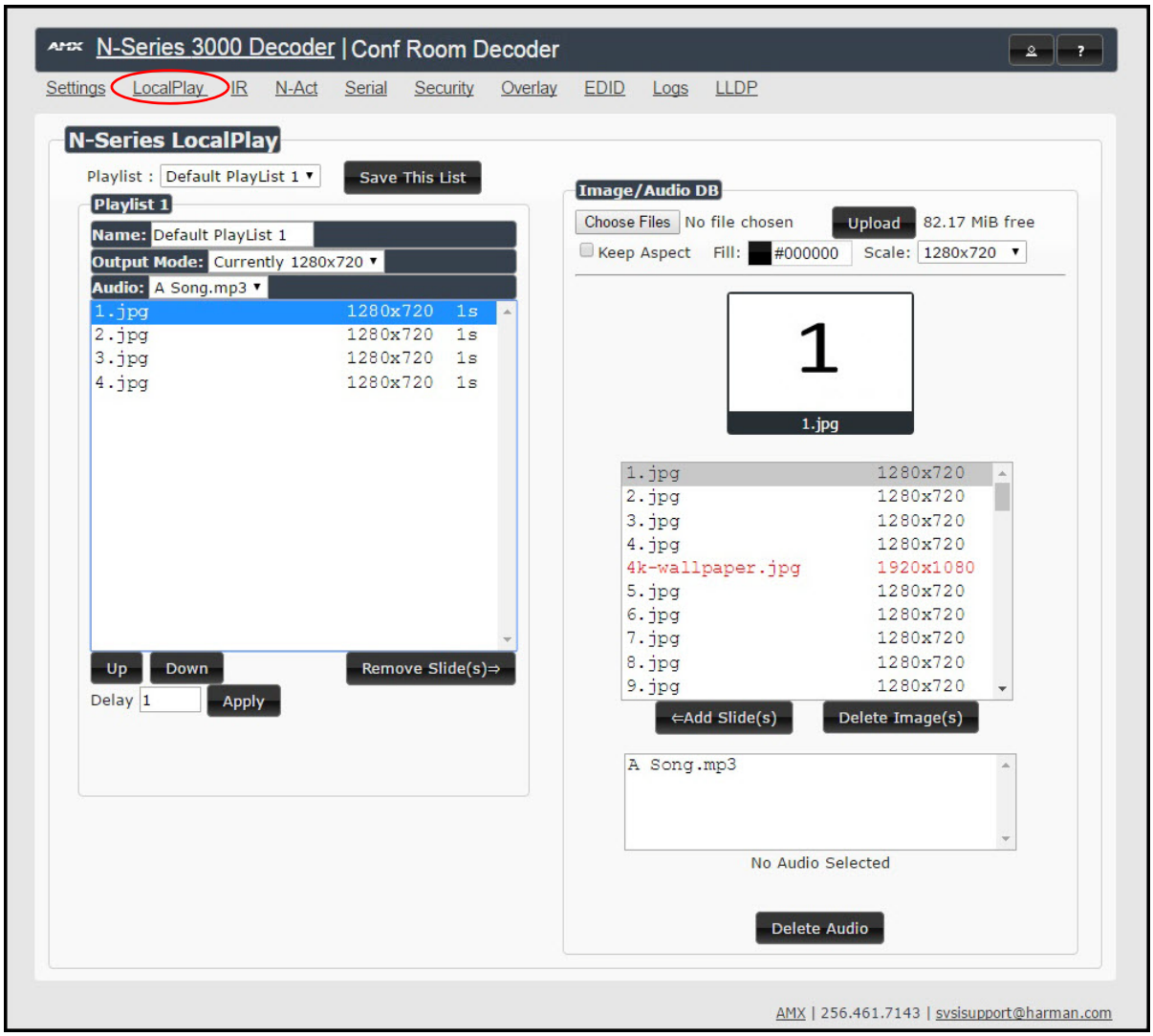


FIG. 51 LocalPlay Page

TABLE 24 LocalPlay Page Options

Option	Description
Edit Playlist	Select a playlist from the drop-down menu to view/edit the images currently used in the chosen image playlists. If more than one image appears in the list, a transition time can be set for each image (see **Image List** below).
Save	Click to save the current configuration.
Name	View/edit playlist names.
Output Mode	Select the resolution you want the image(s) to play in.
Audio	Select an audio file to play while the LocalPlay image is on the screen.
Image List	Allows you to customize what images are displayed, the transition time for each image, etc.
Image/Audio DB	This section allows you to upload image and audio files to the N3000 Decoder database. You can also use the **Fill** field to customize the background color (used behind LocalPlay images that do not take up the entire screen and when **Keep Aspect** is selected).
Delete Image(s)	Delete the selected image file from the playlist.
Delete Audio	Delete the selected audio file from the playlist.

IR Page

Click the **IR** link at the top of any of the main web pages to access the page shown in Figure 52. This page allows you to upload and execute IR Pronto codes so that other vendor's devices can be controlled through the Decoder's IR connector. Commands can be saved for future use and executed later. The **IR Code** menu lists all saved IR commands. See Table 25 for option descriptions.

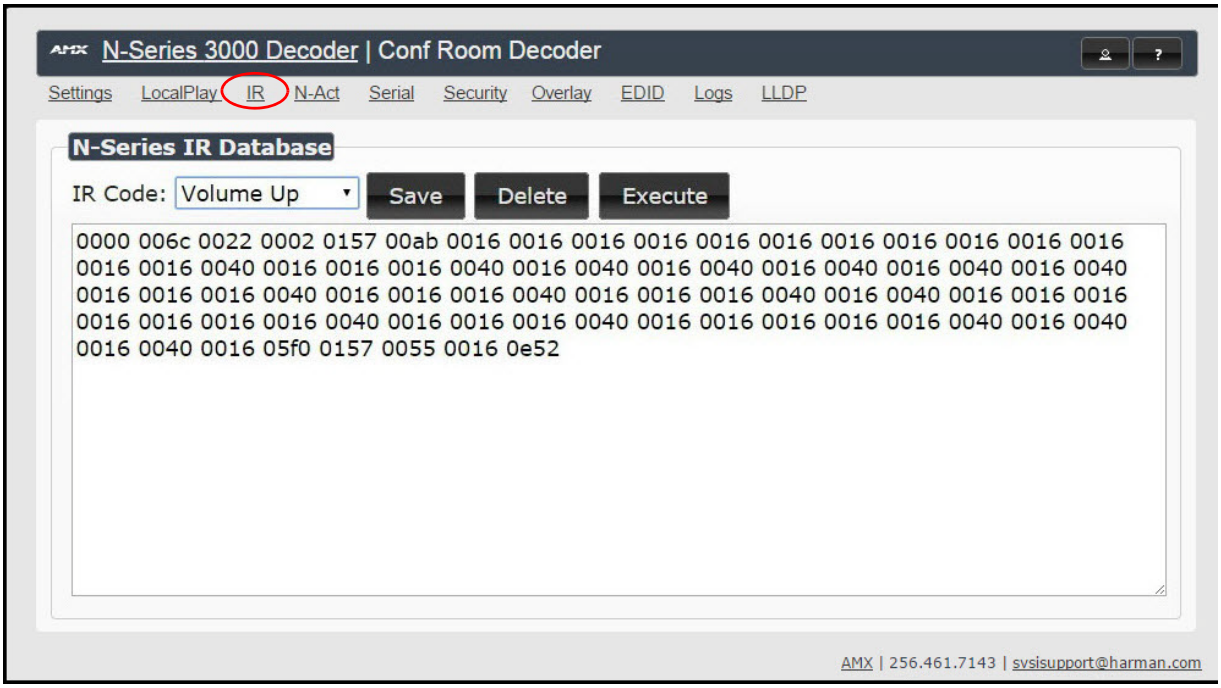


FIG. 52 IR Page

TABLE 25 IR Page Options

Option	Description
IR Code	Create/select IR codes. Different vendors have different IR Pronto codes (that can usually be found through a web search). Copy/paste new IR commands directly into the input space.
Save	Save the current code.
Delete	Delete the current code.
Execute	Activate the selected code through the Decoder's **IR** connector.

N-Act Page

Click the **N-Act** link at the top of any of the main web pages to access the page shown in Figure 53. This page allows you to create command lists which are performed automatically by the unit based on power or video connection (without the use of an outside controller). For example, you can tell a projector and lights to come on when the Decoder powers up. You can add multiple commands for each event. See Table 26 for option descriptions.

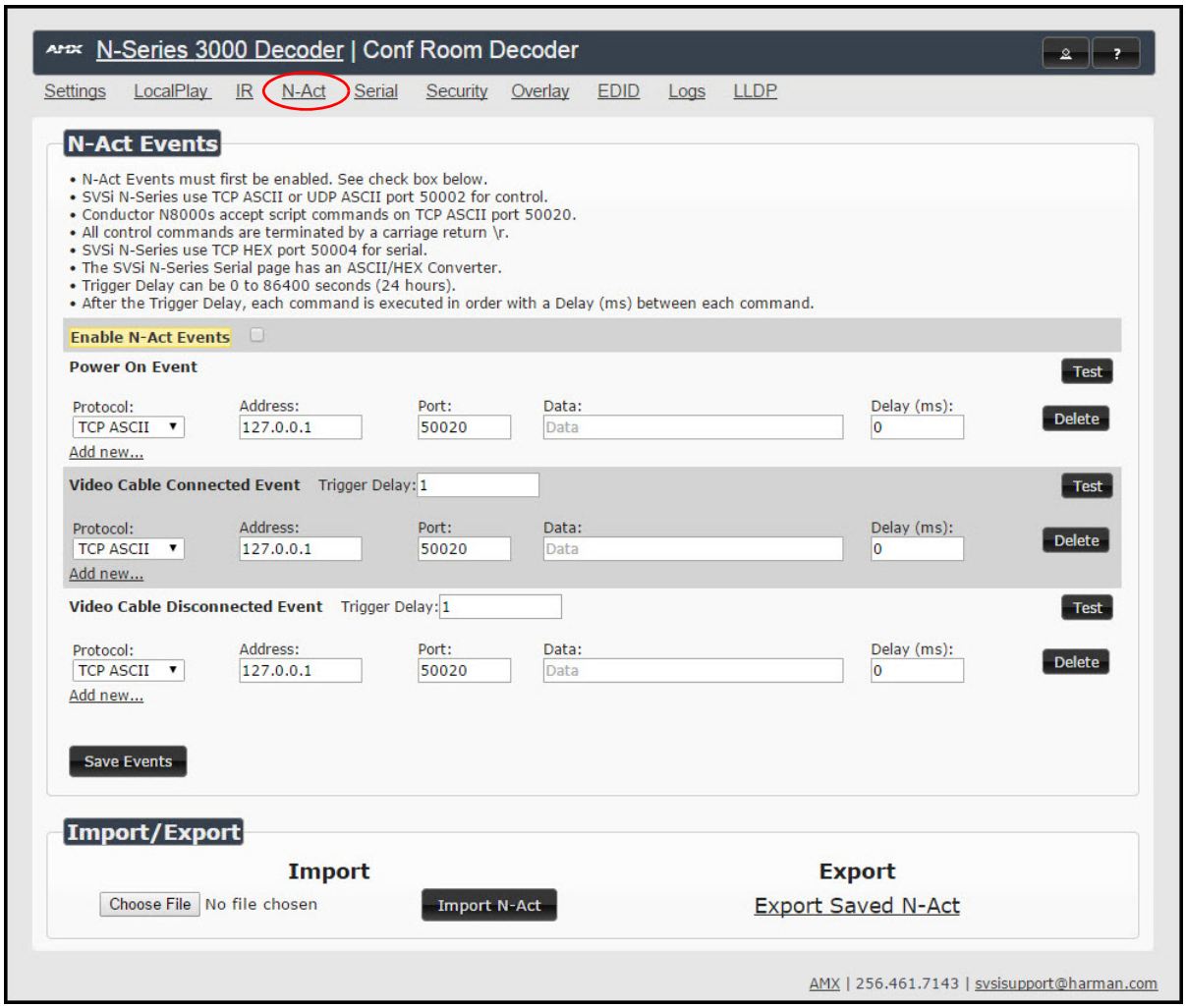


FIG. 53 N-Act Page

TABLE 26 N-Act Page Options

Option	Description
Enable N-Act Events	Enable to activate the configured events.
Power on Event	Create/delete/test events to be performed when the Decoder powers on. Visit our website for more details on Application Programming Interface (API) commands.
Video Cable Connected Event	Create/delete/test events to be performed when the Decoder is connected to an output display. The **Trigger Delay** field specifies how long (in milliseconds) the device has to be connected for the command to be executed.
Video Cable Disconnected Event	Create/delete/test events to be performed when the Decoder is disconnected from the output display. The **Trigger Delay** field specifies how long (in milliseconds) the device has to be disconnected for the command to be executed. This keeps accidental (momentary) disconnects from triggering the command sequence.
Save Events	Click to save changes made to this page.
Import/Export	Use this section of the page to import/export N-Act event configurations so you can share them from one unit to another.

Serial Page

Click the **Serial** link at the top of any of the main web pages to access the page shown in Figure 54. This page allows you to upload and execute commands used for direct control of serial devices. Commands may be saved for future use and executed later. The **Serial Code** menu lists all saved commands. See Table 27 for option descriptions.

NOTE: *If the Port 5004/Serial Port is currently in use by another device, sending commands from the Serial page will always return a No Data message and fail to send the commands.*

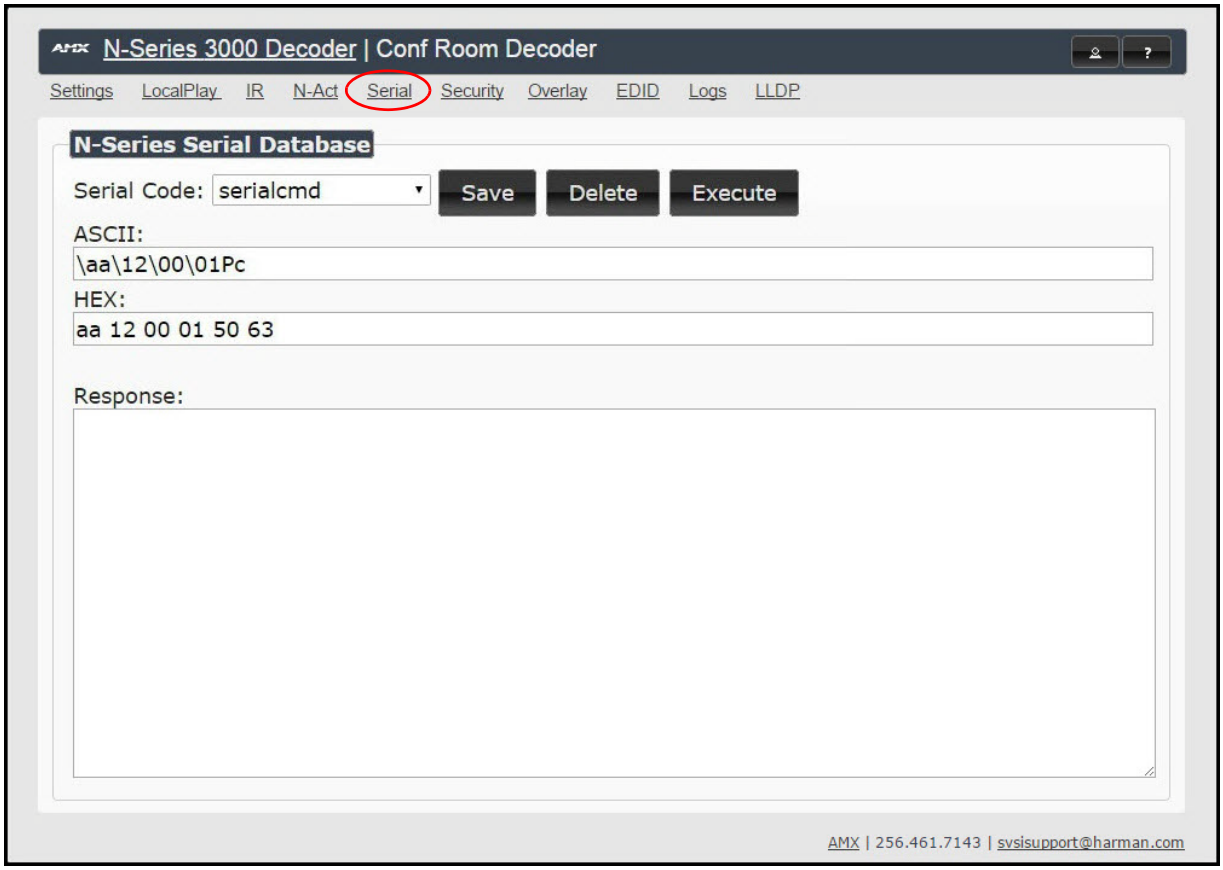


FIG. 54 Serial Page

TABLE 27 Serial Page Options

Option	Description
Serial Code	Create/select serial commands. Different vendors have different codes that can usually be found through a web search. Copy/paste new commands (in either ASCII or HEX) directly into the appropriate input space.
Save	Save the current code.
Delete	Delete the current code.
Execute	Send the selected code out the Decoder's serial connection.
ASCII and HEX	Paste serial commands directly into either the **ASCII** or **HEX** field.
Response	View responses provided by the device receiving the serial command(s).

Security Page

Click the **Security** link at the top of any of the main web pages to access the page shown in Figure 55. This page allows you to force HTTPS connections and set up a password for stream encryption. To successfully display an encrypted Encoder stream on a Decoder, the Decoder must match the Encoder password.

NOTE: *This page only applies if connected to a web page via HTTPS.*

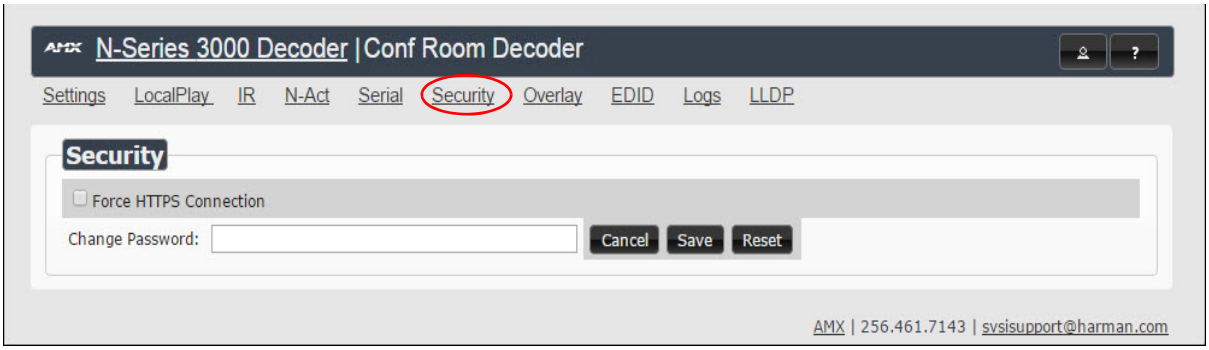


FIG. 55 Security Page

Overlay Page

Click the **Overlay** link at the top of any of the main web pages to access the page shown in Figure 56. This page allows you to upload and select image files to be displayed as small images on top of the video stream. See Table 28 for option descriptions.

NOTE: *The Overlay page's settings and images are not retained during a system reboot.*

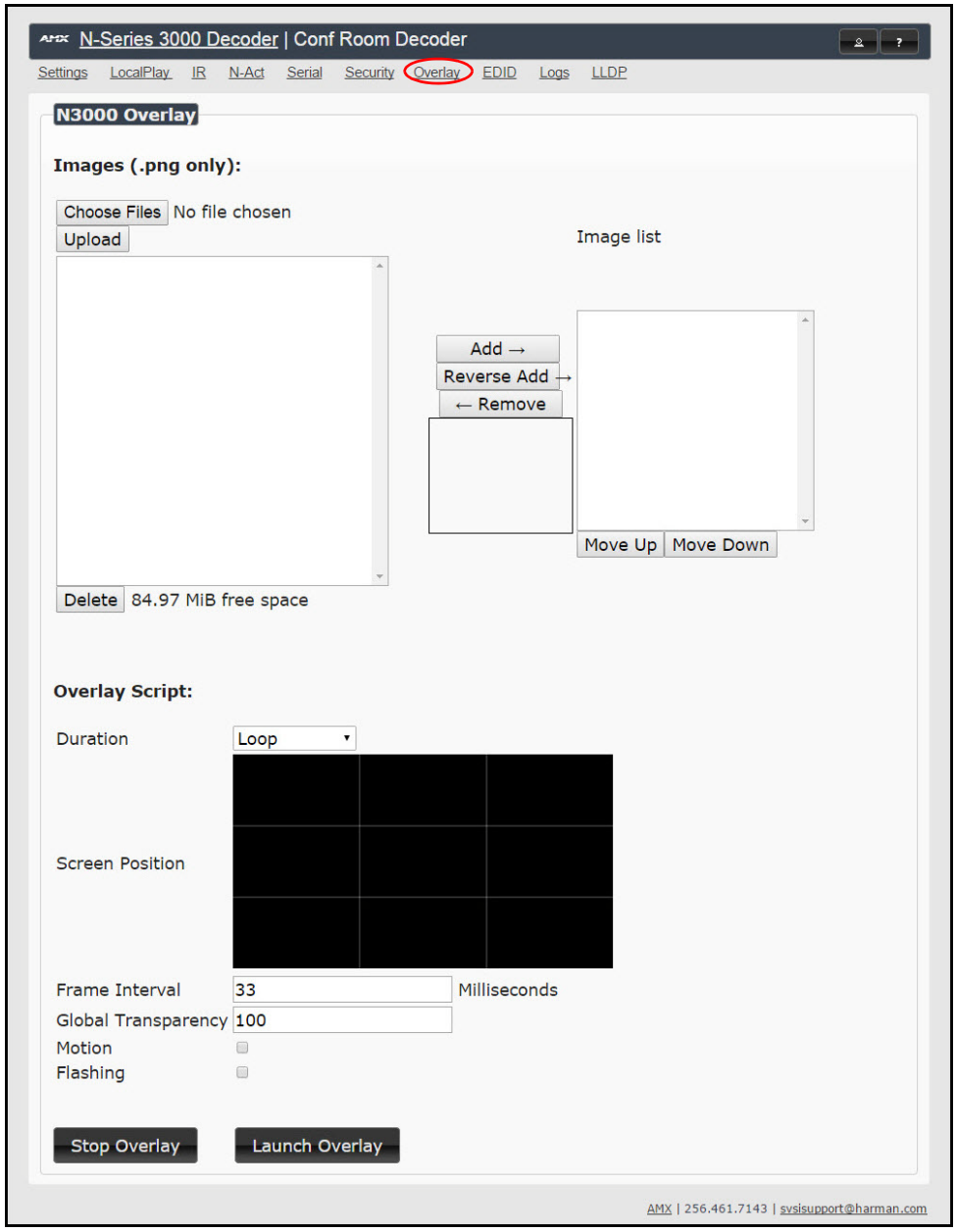


FIG. 56 Overlay Page

TABLE 28 Overlay Page Options

Option	Description
Choose Files button	Click to browse to the .png files you would like to upload to the N3000 Decoder.
Upload button	Click to upload the selected file to the unit.
Delete button	Click to delete the selected file from the unit.
Add button	Click to add an uploaded file to the image play list.
Reverse Add button	Click to upload the selected files in the image play list in reverse order. This is especially helpful when creating animations that play backwards and forwards.

TABLE 28 Overlay Page Options (Cont.)

Option	Description
Remove button	Click to remove an uploaded file from the image play list.
Move Up/Down	Use these buttons to put the playlist images into the desired order.
Duration	Determines how long the overlay is presented. Set to Loop to have it run indefinitely.
Screen Position	Choose a starting position for the image(s) by clicking on the sample screen. The target icon represents the current placement.
Frame Interval	Enter how long (in milliseconds) each image file should be displayed before the next file in the playlist appears.
Global Transparency	Enter a transparency value (so that the image is blended with the video).
Motion	Enable to cause the image to move randomly on the screen.
Flashing	Enable to cause the image to flash on the screen.
Stop Overlay button	Click to disable the overlay function.
Launch Overlay button	Click to enable the overlay function.

EDID Page

Click the **EDID** link at the top of any of the main web pages to access the page shown in Figure 57. Every display has stored information that it communicates to the output device. This page allows you to view the EDID information of the connected output display.Options are described in Table 29.

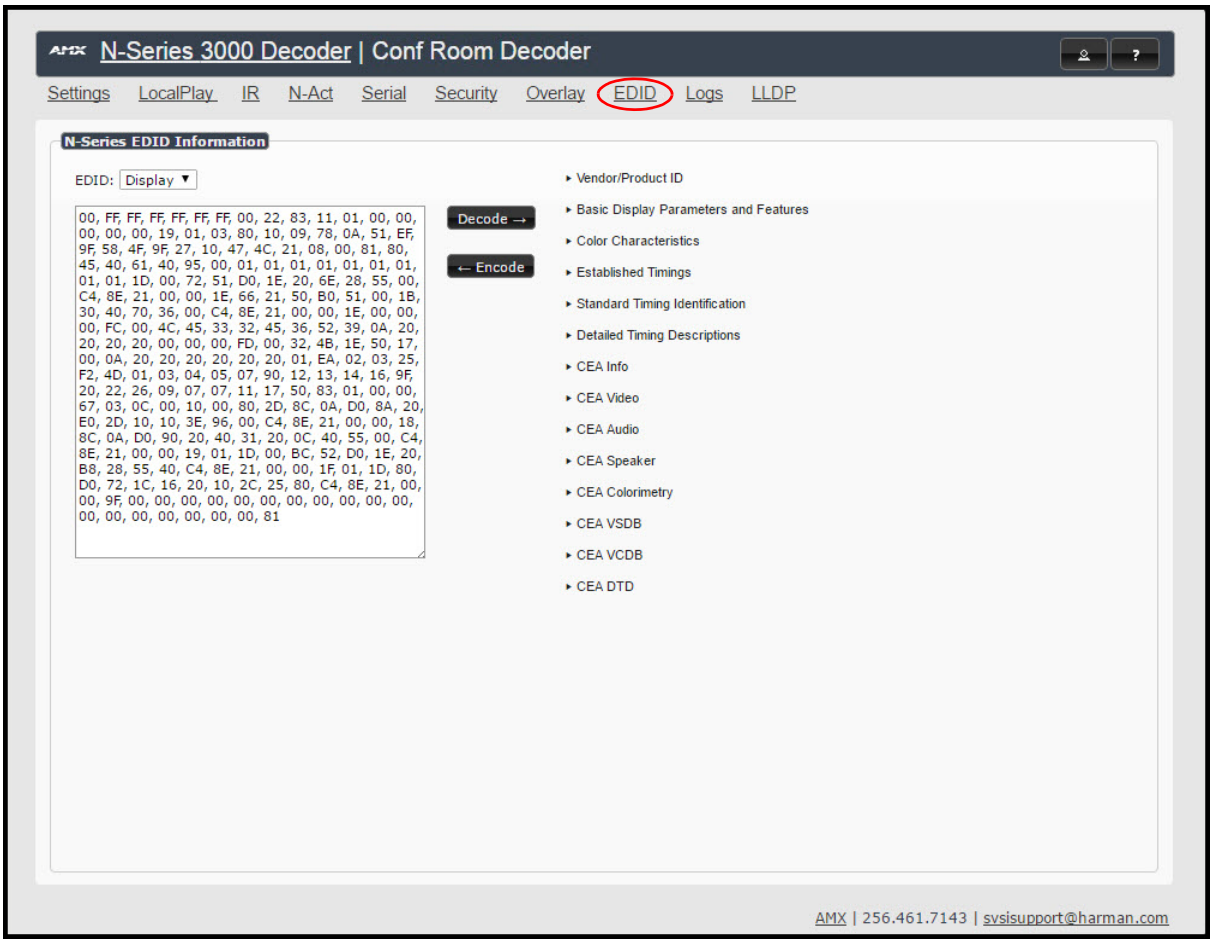


FIG. 57 EDID Page

TABLE 29 EDID Page Options

Option	Description
EDID drop-down box	Select what EDID information to display. **Pass-thru:** Displays EDID information for the display connected to the Decoder's pass thru port. **Local (Digital/Analog)**: Displays EDID information for the Decoder. This information is being provided to the source connected to the Decoder.
EDID Display box	Shows the EDID of the display that is connected to the Decoder.
Decode button	Click to translate the EDID currently displayed on the left to the operating parameters listed on the right.
Encode button	After making any changes to the operating parameters listed on the right, click this button to update the EDID information on the left.

Logs Page

Click the **Logs** link at the top of any of the main web pages to access the page shown in Figure 58. The **Logs** page displays a command log that lists all TCP and UDP messages the unit receives. It also displays the web browser's IP address and gives you options to **Refresh** and **Reset Logs**.

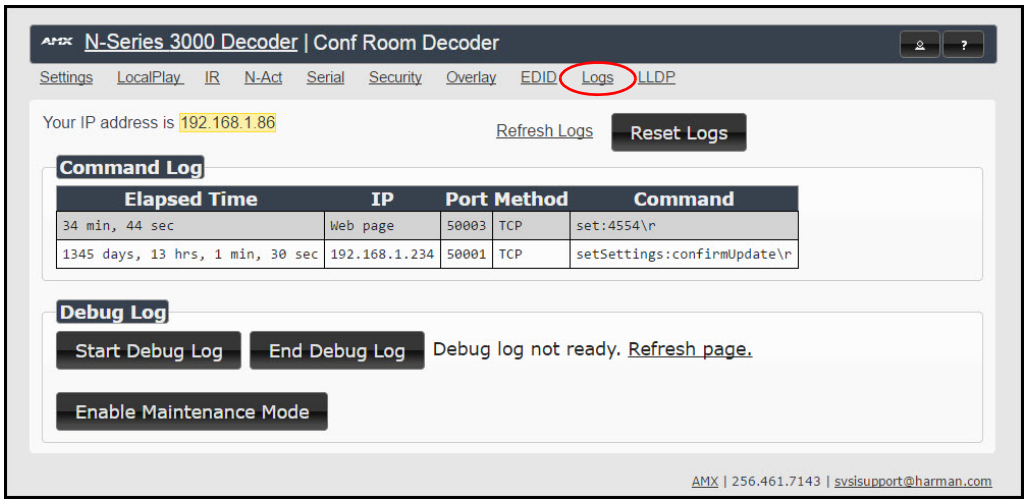


FIG. 58 Logs Page

NOTE: *For security reasons, only use the Enable Maintenance Mode if instructed to by SVSI/AMX Technical Support.*

LLDP Page

Click the **LLDP** link at the top of any of the main web pages to access the page shown in Figure 59. The **LLDP** page displays information from the Link Layer Discover Protocol (LLDP) packet which identifies the port number and the switch the device is connected to. The **Sys Name ID**, **Sys Description**, **Port ID**, and **Port Description** fields all reflect the information that was entered on the connected switch's web interface.

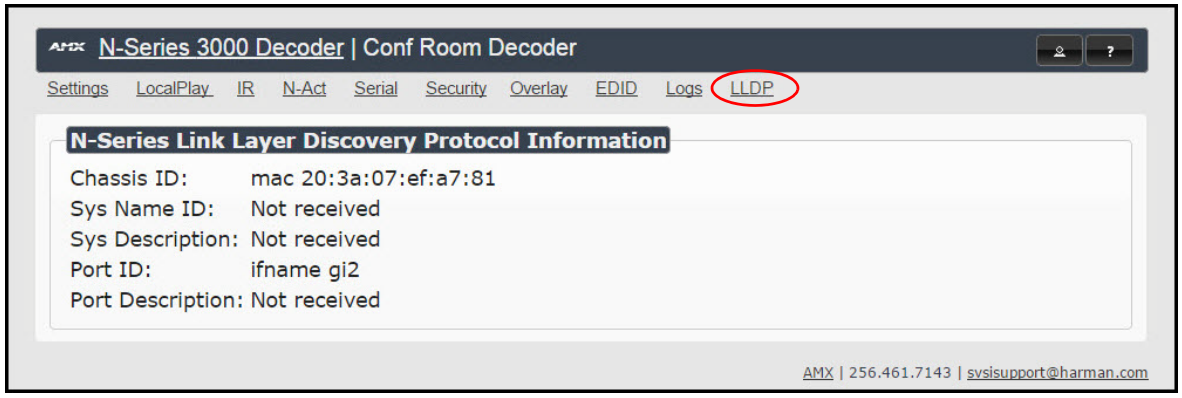


FIG. 59 LLDP Page

Troubleshooting

This chapter contains possible solutions to some common issues. Should you encounter any problems not covered by these guidelines, please contact SVSI technical support via email (svsisupport@harman.com) or call 256.461.7143 x9900. You can also visit our support webpage at support.svsiav.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 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: Decoder Setup Section table on page 49 for more details). • Verify network is properly configured and set up. If needed, connect Encoder's network port to Decoder to bypass the network. • If **Multicast Address Override** is enabled, verify that the upper two octets of the **Multicast Address** match between Encoder and Decoder (**Settings >Stream Settings**). • Encoder and Decoder UDP port numbers do not match. • Set the Encoder to **SVSI Decoder** mode (**Settings >Stream Settings >Encoder Output Mode**) and set the Decoder to **SVSI Encoder** mode **Settings > Stream Settings> Stream Source**). Other Encoder and Decoder modes are primarily intended for third-party device support. • If the Decoder **Stream Source** is set to **URL**, make sure the **Stream URL** is correct. *Note: When Decoder is set to URL mode, it is not switchable via N-Able*
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: Encoder Setup Section table on page 26 for more details). • Verify source is attached and is outputting a valid signal (**HDMI** LED on Encoder is on).
Unsupported Input Resolution screen displays.	• Change source resolution to a valid resolution (try **720p60**). • On the **Settings** page, turn the Decoder's **Scaler** on. • Verify cabling is correct.
Copy Protected Content screen displays.	• Contact SVSI technical support.
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.
Decoder displays decryption error.	• Use HTTPS to view the web pages for the Encoder and Decoder. On the **Security** page, enable **Set to Default Password** or **Change Password** so that the Encoder and Decoder passwords match.
Decoder audio or video is stuttering.	• Increase the latency on the Decoder's **Settings** page (**Advanced Settings > Add Latency**) in 20 ms increments until stutter is resolved. See xxx for more details.
Encoded stream is not displaying on a third-party player.	• Content may be encrypted (**Enable Stream Encryption** on the Encoder's **Security** page). Setting is viewable via HTTPS only. • Content is HDCP protected. • Stream may not be compatible with the third-party device.
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 13 for more information.
When changing the audio type, there are problems with audio in/out.	• Check the **Audio Source** (Encoder) and **HDMI Audio** (Decoder) settings on the **Settings** page. For example, if you are trying to change the audio type to make the input of the Encoder HDMI embedded audio in/analog audio out from the Decoder, these settings cannot be set to **Auto**. Set the Encoder to **Audio Source > ON** (embedded digital audio on an HDMI connection) and the Decoder to **Enable HDMI Audio > OFF** (analog output on the Phoenix connection).
Not receiving audio.	• Check that the Decoder has proper audio stream setting (typically by enabling **Audio follows Video**).

Issues	Suggestions
Not receiving analog video through the Encoder.	• If using a Y cable (N9420) and an HDMI source is already connected to the Encoder, disconnect the HDMI source. Encoders give preference to HDMI and will not allow analog signal to pass while it is connected.
Video output is stuttering.	• This could be a network bandwidth issue where the full video stream is not reliably getting from Encoder to Decoder. Contact your network administrator for assistance.
Serial port is not working as expected.	• Verify the **RS232 Settings** on the **Settings** page. Flush the serial port on the **Settings** page if another device is connected. • Connecting the Tx and Rx pins on the RS232 connector creates a loopback that could also help when troubleshooting.

Series Default Local/Host Play Troubleshooting Screens

This section shows and defines the status screens displayed by N3000 Series devices.

FIG. 60 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).

FIG. 61 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. 62 Unsupported Input Resolution Screen

Displayed when Decoder....	...and Encoder....	Notes
• is set to view an Encoder stream on the network	• is being fed a video resolution that it 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. Please refer to our website for a listing of supported resolutions.

FIG. 63 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 Encoder must first be set up to pass HDCP-protected content.*

FIG. 64 Video Source Outputting Restricted Content Screen

Displayed when Decoder....	...and Encoder....	Notes
• is receiving a stream from an Encoder	• is receiving HDCP-protected content from the video source, but is not set up to pass it.	Please call SVSI Technical Support to enable this feature.

FIG. 65 Video Encrypted Screen

Displayed when Decoder....	Notes
• is receiving a stream from an Encoder it can not 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 on page 62 if you are not sure where to find this setting.

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