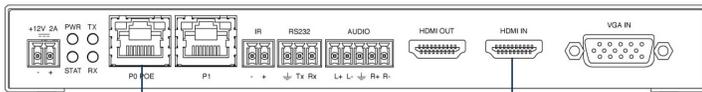


**Overview**

The N2000 JPEG 2000 Video over IP series provides a flexible, feature-rich, and simple-to-deploy Digital Media Distribution and Switching solution satisfying the most demanding applications. N2000 Encoders are used to encode and distribute sources of almost any format onto an existing IP network making that stream available to any endpoint in the facility. N2000 Decoders are used to decode the Networked AV streams back to HDMI format for display on any monitor. With the ability to direct any source stream to any display, large, low-cost switching and distribution systems are simple to deploy without proprietary cabling or dedicated switching hardware. This quick start guide will familiarize you with your new device and step you through initial setup.

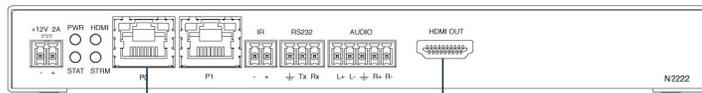
**N2000 Encoder**



To PoE-Enabled Switch

To Source

**N2000 Decoder \***



To PoE-Enabled Switch

To Display

\*The N2222 Decoder is pictured above. The N2212 Decoder does not have the PO, IR, or AUDIO ports.

**FIG. 1** N2000 ENCODER AND DECODER PORTS

**Basic Installation Guidelines**

Connections	Options
Power:	<p><b>PoE*</b>: Connect the unit's <b>P0</b> port to an active, PoE-enabled network switch.</p> <p><b>External power supply</b>: 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 <b>+12V 2A</b>.</p>
Network:	<p><b>PoE units</b>: If using PoE to power the unit, you should already have a network connection.</p> <p><b>Externally powered units</b>: If not using PoE, connect the <b>P0</b> port to the network using an Ethernet cable, or connect the <b>P1</b> port to the network with the appropriate cable (fiber transceiver or direct-attach cable is required).</p> <p><b>Daisy-chain configuration</b>: Once network connection is established to one unit, you can daisy chain additional units by connecting Ethernet cables between devices using their <b>P0</b> and/or <b>P1</b> 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).  <i>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.</i></p>
Video:	<p><b>N2000 Encoders</b></p> <ul style="list-style-type: none"> <li>For video encoding of a <i>digital</i> source, connect the source to the Encoder's <b>HDMI IN</b> port using a video cable with an HDMI connector (or adapter).</li> <li>For video encoding of an <i>analog</i> source, connect the source to the Encoder's <b>VGA IN</b> port using a video cable with a VGA connector (or component adapter).</li> </ul> <p><b>N2000 Decoders</b></p> <ul style="list-style-type: none"> <li>For video decoding, connect a digital display to the Decoder's <b>HDMI OUT</b> port using a video cable with an HDMI connector (or adapter).</li> </ul>
Audio:	<p><b>N2000 Encoders</b></p> <ul style="list-style-type: none"> <li>For audio encoding, connect a line level analog audio source to the <b>Audio*</b> input terminal block plug connector, or</li> <li>Use the embedded audio from the video source.</li> </ul> <p><b>N2000 Decoders</b></p> <ul style="list-style-type: none"> <li>For analog audio decoding, connect a line level analog audio device to the <b>Audio</b> output terminal block plug connector, or</li> <li>Send embedded digital audio (embedded in the HDMI connection) to a monitor's speakers.</li> </ul>
<p>*The PoE port (P0) and the IR and Audio terminal blocks are not provided on the N2212 Decoder.</p>	

**Product Specifications**

Models Available:	N2122 Encoders N2222 Decoders N2212 Decoders
Power Requirements:	<b>PoE</b> : Can be powered via a PoE switch or other equipment with a PoE source. Conforms to IEEE 802.3af Class 3 (802.3at Type 1). Does not apply to the N2212. <b>External power supply</b> : 2.0 Amp @ 12 Volts DC; 100-240 Volts AC power supply; Part number N9312 (included with the N2212, but sold separately for the N2122/N2222).
Dimensions (HWD):	1.05" x 7.888" x 5.5" (2.67cm x 20.04cm x 14cm)
Weight:	1.55 lbs (0.7kg)
Certifications:	FCC, CE, and NTRL
Environmental:	<b>Temperature</b> : 32° to 104°F (0° to 40°C) <b>Humidity</b> : 10% to 90% RH (non-condensing)
Mounting Options:	Stand alone, surface mount, wall mount, or rack mount.*

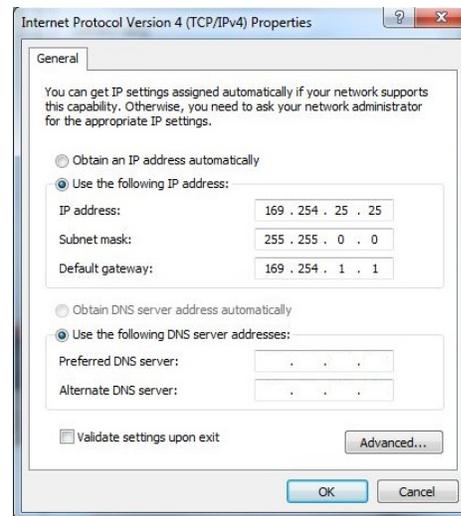
*NOTE: \*Mounting wings (part number N9101) required for surface and wall mounting. Rack shelf (part number N9102) or card cage (part number N9206) required for rack mounting. Shelf accommodates two side-by-side N-Series Encoders and Decoders. Card cage accommodates up to six N-Series Encoder and Decoder cards (mix and match any series). Mounting accessories sold separately and are compatible with most N-Series devices.*

**Establishing Connection**

Before using your N2000 unit, it must be configured using the free N-Able device management software. However, you will not be able to configure units until they are in the same subnet as the host computer. N-Series devices are shipped in Auto-IP mode with a default IP address of 169.254.xxx.xxx. The sample steps below show how the required changes (to the host computer's IP settings) are made in a Windows environment.

**Steps for IP address configuration (for Windows 8):**

- From the **Control Panel > Network and Internet** dialog box, select **Network and Sharing Center**.
- Select **Change adapter settings**.
- Select the wired interface connected to your AV network.
- Click the **Properties** button.
- Scroll down in the list to the **Internet Protocol Version 4 (TCP/IPv4)** option. Highlight it and click the **Properties** button.
- Enable the **Use the following IP address** option, and enter the static IP address *provided to you by your network administrator*.



**FIG. 2** SETTING A STATIC IP ADDRESS

*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. Please contact your network administrator if you are unsure of how to configure the existing interface. If the computer has a statically-assigned IP address, click on the Advanced button. Then click Add to enter a unique 169.254.xxx.xxx address with a subnet of 255.255.0.0.*

### Steps for auto discovering devices on the network:

1. Use the host computer to download and install the latest version of N-Able:  
PC version - <http://www.amx.com/products/N-ABLE-PC.asp>  
Mac version - <http://www.amx.com/products/N-ABLE-MAC.asp>
2. Attach your N2000 unit(s) to the layer-3 network switch.
3. Disable the wireless adapter on your computer (it must be hard-wired to the switch).
4. Connect the host computer to the layer-3 network switch.
5. Open the N-Able application.

If all devices do not appear automatically, click the **Auto Discover** button on the **Unit Management** tab. This issues a broadcast command that will discover all units even if they are not in the same IP subnet.

### Logging in Using N-Able Software

Once the host IP address is configured properly, you can view all discovered units using the N-Able software. Access the N2000 units from the following tabs:

- **Unit Management** tab - N2000 Encoder/Decoder is listed in the **Type** field.
- **Video Matrix** tab - N2000 units are found on the **N2000** sub-tab of this screen.

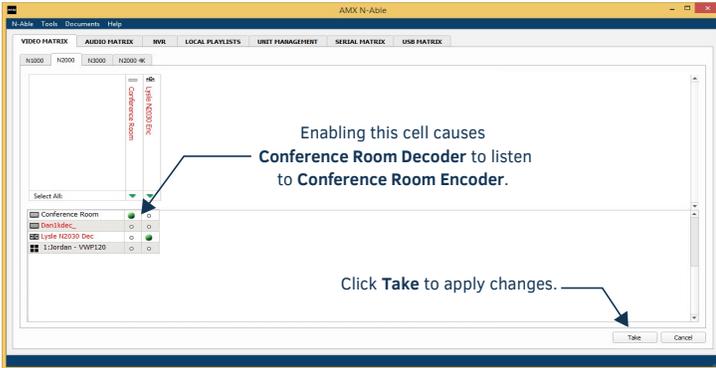


FIG. 3 VIDEO MATRIX

Double-click the unit's name (in one of the lists mentioned above) to view its control pages. If prompted, enter **admin** and **password** for the default username and password. Once logged in, you can change the username and password (using the options on the unit's **Settings** page, shown below).

*NOTE: If you would like for N-Able to support auto-login to your units, make sure N-Able's Device Auto-login settings match the unit's username and password (by selecting N-Able > Settings from the N-Able tool bar).*

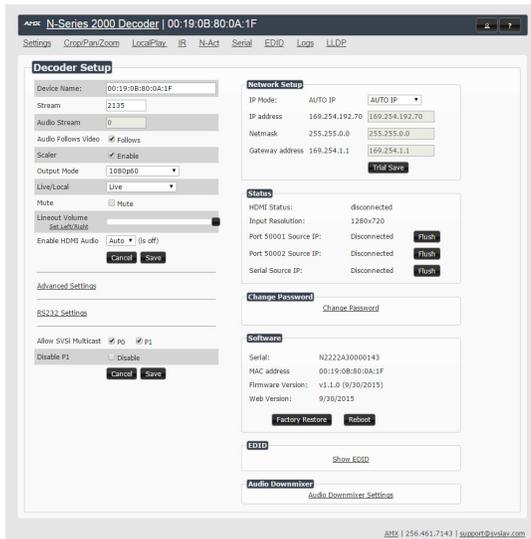


FIG. 4 N2000 SETTINGS PAGE

### Troubleshooting Guidelines

Problem	Possible Solution
Video is not transmitting.	<ul style="list-style-type: none"> <li>• Verify that the Encoder <b>TX Enable</b> setting is turned on. (Encoders ship from the factory with their video output turned off by default.)</li> </ul>
Local Play graphic is displayed.	<ul style="list-style-type: none"> <li>• Verify Decoder is assigned to view a valid stream in the N-Able matrix.</li> <li>• Verify Decoder is currently in live play mode (black text on matrix view).</li> <li>• Verify network is properly configured and set up. If needed, connect Encoder directly to Decoder to verify network issues.</li> </ul>
Host Play graphic is displayed.	<ul style="list-style-type: none"> <li>• Verify Encoder is in live play mode (black text in matrix).</li> <li>• Verify source is attached and is outputting a valid signal (<b>HDMI LED</b> on Encoder is on).</li> </ul>
Unsupported Resolution graphic is displayed.	<ul style="list-style-type: none"> <li>• Change source resolution to a valid resolution (try 720p60).</li> <li>• Verify cabling is correct.</li> </ul>
Copy Protected Content screen is displayed.	<ul style="list-style-type: none"> <li>• Contact technical support.</li> </ul>
Black screen/no graphic is displayed.	<ul style="list-style-type: none"> <li>• Set Decoder to local play. If the local play graphic does not appear, check the display input settings and cabling.</li> <li>• If local play appears, set Decoder to live play and verify network is configured properly.</li> </ul>
No audio is detected.	<ul style="list-style-type: none"> <li>• If there is no audio on <b>all</b> Decoders, verify audio settings are correct on Encoder.</li> <li>• If there is no audio on a <b>single</b> Decoder, verify audio settings are correct on Decoder.</li> </ul>

### Optional Accessories

- N2510 4x1 Windowing Processor
- N6123 Dual-Channel Networked Video Recorder
- N9101 Rack Mounting Wings
- N9102 1RU Rack Shelf (holds 2 stand-alone units)
- N9206 2RU Card Cage (holds 6 cards)
- N9312 12V External Power Supply
- N9382 1RU 12V/16-Unit Power Supply

Contact SVSI technical support at [svsisupport@harman.com](mailto:svsisupport@harman.com) or 256.461.7143 x9900 for any installation issues.

