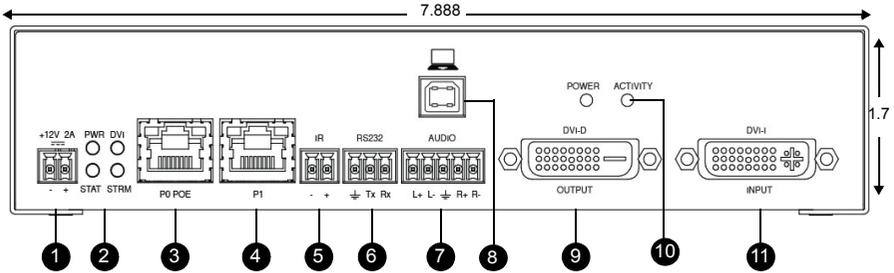


N2X43 QUICK START

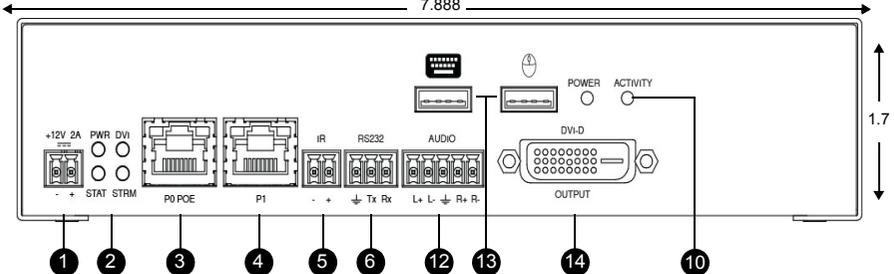


Congratulations on the purchase of your N2X43 series product — part of SVSi's family of Networked AV products. SVSi's N2X43 product line includes the N2143 HD Encoder and the N2243 HD Decoder. An SVSi Networked AV system is comprised of video and/or audio encoders, decoders, and other network accessories including recording solutions, multi-window processing, audio-only end points, and system controllers. The system allows you to distribute HD Video, Audio and Control across a gigabit Ethernet network. Options are available for recording, playback, and wall processing.

N2143 HD Encoder Rear View



N2243 HD Decoder Rear View



- | | |
|--|--|
| <ul style="list-style-type: none"> 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) Infrared (IR) Emitter Connection 6) RS232 Connection 7) Analog Audio Input Connection | <ul style="list-style-type: none"> 8) USB (Standard-B) PC Host Connection 9) Pass-Through DVI-D Connection 10) KVM Status Indicators 11) DVI-I Digital with 7.1 Audio or Analog Video Input 12) Analog Audio Output Connection 13) USB (Standard-A) Keyboard or Mouse Connection |
|--|--|

Network Bandwidth per video stream = 20-500Mbps (user-selectable). Units should be connected to a gigabit Ethernet layer-3 switch supporting IGMP-query. Please contact SVSi to obtain a pre-configured switch.

Product Overview

The N2143 HD Encoder converts video, audio, and control to IP packets for low-latency switching and distribution over standard networks. The N2243 HD Decoder accepts the HD over IP streams and converts them back to synchronized audio and video to allow any video source to any display. Both models feature keyboard and mouse extension over IP, input and output scaling, encryption, embedded 7.1 audio, de-embedded balanced analog audio, and Power-over-Ethernet (PoE).

N2X43 Ports

The **DVI-I** port on the N2143 HD Encoder auto-senses either analog or digital video and converts input video to network packets for output through the RJ45 port. Audio can be input as embedded digital audio through the **DVI-I** port or as balanced analog audio through the 5-pin phoenix **AUDIO** port. Keyboard and mouse control over IP is provided through a USB standard-B port to the PC.

The N2243 HD Decoder accepts the network packets and reconstitutes synchronized video and audio for display through its **DVI-D** port. Digital-only video is output by the Decoder. Keyboard and mouse control over IP is provided through two USB standard-A ports. For keyboard/mouse combos (with a single connection), use the keyboard port.

IR and serial commands can be transmitted by either Encoder or Decoder using SVSi's free N-Able configuration software, SVSi's N8000 series controller, or using third-party controllers. **IR** and **RS232** serial ports are not pass-through and must use a central controller to direct commands to each device. Both Encoder and Decoder can be powered either using the 12V optional external power supply or by PoE.

Establishing Connection to Your New Networked AV Product

Before using your N2X43 unit, it must be configured using SVSi's free N-Able software. Please download the latest version of N-Able for PC or Mac at <http://svsiav.com/support/resources/> software.

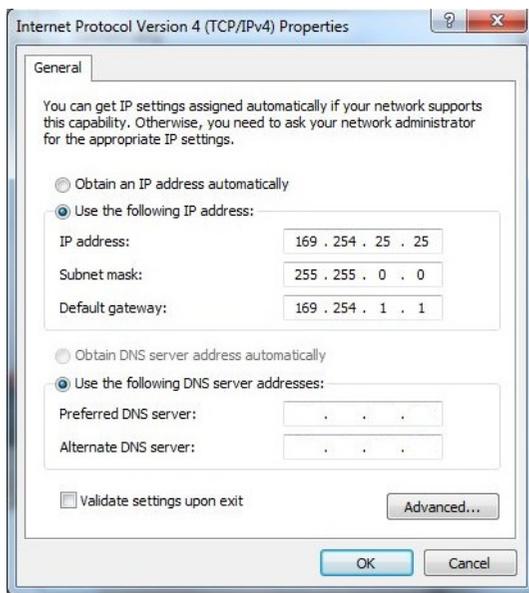
Steps for auto discovering devices on the network:

1. Download and install N-Able.
2. Attach devices 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 PC running N-Able to the layer-3 network switch.
5. Open the N-Able application.
6. Discover the devices on your network by clicking **Auto Discover** on the **Unit Management** tab.

Auto discovery is a broadcast command and will discover all units even if they are not in the same IP subnet. However, you will not be able to configure units until they are in the same subnet as the host PC. N-Series devices are shipped in Auto-IP mode with a default IP address of 169.254.xxx.xxx. Before attempting configuration, some changes must be made to the host PC.

Steps for IP address configuration (for Windows 8):

1. Select **Control Panel > Network and Sharing Center** from the **Start** menu.
2. Select **Change adapter settings**.
3. Select the wired interface connected to your AV network.
4. Click the **Properties** button.
5. Scroll down in the list to the **Internet Protocol Version 4 (TCP/IPv4)** option. Highlight it and click the **Properties** button. The screen shown on the following page is displayed.
6. Enable the **Use the following IP address** option, and enter the static IP address *provided to you by your network administrator*.



*Note: If the PC 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.*

*Note: If the PC 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.*

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 N2X43 units from the following tabs:

- **Unit Management** tab - N2X43 units have **KVM Encoder/Decoder** listed in their **Type** field.
- **Video Matrix** tab - N2X43 units are found on the N2000 sub-tab of this screen.

Double-click the unit's name (in one of the lists mentioned above) to view its control page.

Note: N2X43 units force HTTPS connections, so your web browser may give you a security warning.

Basic Configuration (No Security Features)

Follow these steps for basic configuration. With the basic setup, hotkey support and stream encryption are not supported.

1. On the N2143 HD Encoder, connect the USB PC port to the PC to be controlled.
2. Connect the PC's video output to the N2143 HD Encoder's DVI-I Input.
3. On the N2243 HD Decoder, connect the DVI-D Output to the LCD screen.
4. Connect a USB keyboard and mouse to the USB ports on the back of the unit (they can be plugged into either port).

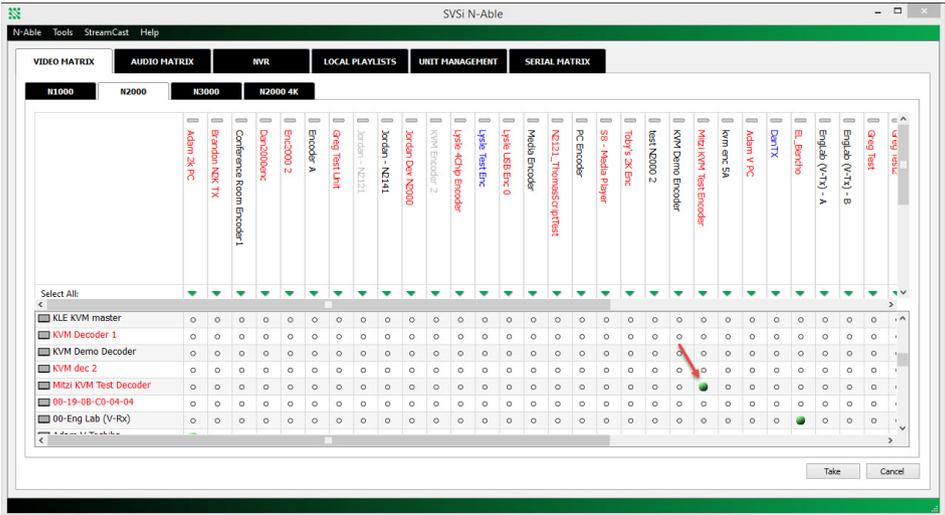
Note: For wireless devices, simply plug the wireless signal receivers into these ports. For keyboard and mouse combos (with a single connection) use the keyboard port.

5. Using N-Able, click the **Unit Management** tab.

(Continued on next page.)

Basic Configuration (continued)

- Click the **Auto Discover** button to discover your new devices (if you have not already done so).
- Once discovery is complete (and you see the new units listed in N-Able), click the **Video Matrix** tab.
- On the matrix, click the cross-point for the Encoder/Decoder combination. See the screen shot below.
- Click the **Take** button to make the change to your matrix. The radio button turns green to indicate the connection was successful.

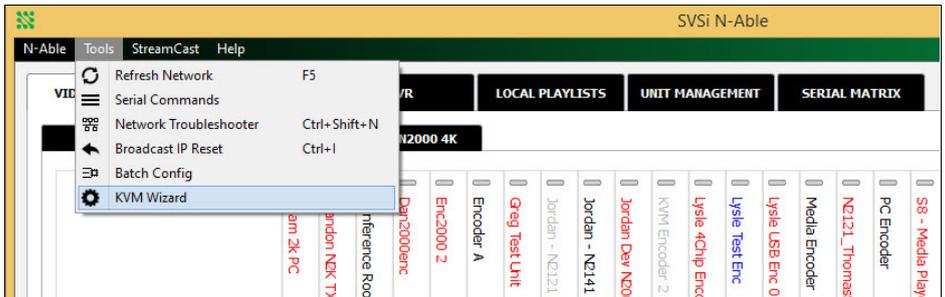


Note: By default, units can be switched using N-Able without modifying configuration.

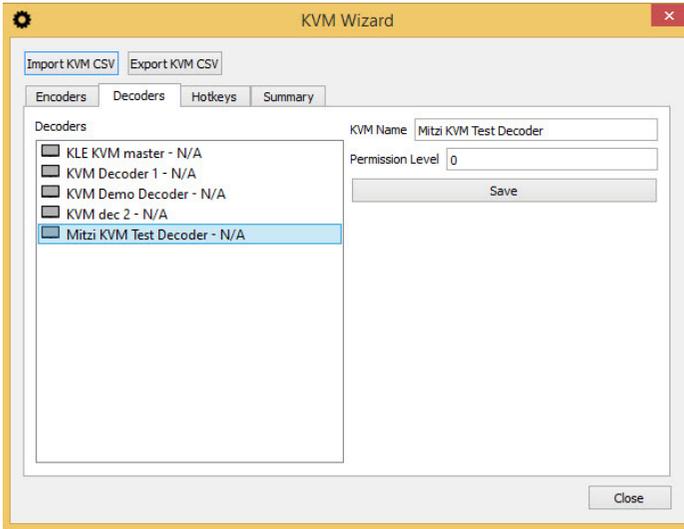
Note: Switching video streams in N-Able forces the audio and keyboard/mouse on N2X43 units to follow the video

Advanced Configuration (With Security Features)

- Follow step 1-6 (in the previous section) to connect the units physically and discover them in N-Able.
- Once discovery is complete, select **Tools > KVM Wizard** from N-Able's main menu bar.



3. The following screen displays.



4. Use the wizard to:

- Assign a **KVM Name** to the devices.
- Assign passwords to your N2143 HD Encoders.
- Assign permission levels to your N2243 HD Decoders.
- Associate Encoders with Decoders by assigning hotkeys.
- View a configuration status summary of all KVM units on your network.
- Import and export CSV files (useful for security features and larger installations).

5. Once all changes are made, click the **Export KVM CSV** button to download the CSV file to your computer. The file must then be uploaded to each unit. See the section [CSV File Use](#) for details on how this is done.

Understanding the Use of Hotkeys, Passwords, and Permission Levels in the Wizard

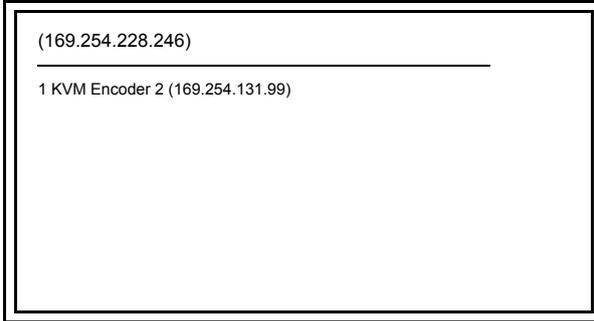
- **Hotkeys:** Click on the **Hotkeys** tab to assign Encoder hotkey numbers (1-999) for each Decoder. See the section [Using the N2X43 Hotkey Feature](#) for more information.
- **Passwords:** Click on the **Encoders** tab to assign a password to the Encoder, allowing for data encryption. A Decoder must know the password in order to communicate with the Encoder.
- **Permission Levels:** Click on the **Decoders** tab to assign a permission level to each Decoder. This feature determines which Decoder takes precedence in the event that multiple Decoders attempt to communicate with the same Encoder. The Decoder with the highest assigned **Permission Level** takes over communication. In the case of a tie, the Decoder attempting to gain communication takes over from the previously-connected Decoder (unless Multiaccess is enabled on the Encoder, in which case both Decoders are allowed to connect).

*Note: By default, the KVM streams are encrypted with a common password. You can change the password using the **KVM Wizard**. If you change Encoder passwords, you will need to supply the new information to the Decoders to allow communication to continue. See the section [CSV File Use](#) for more details.*

*Note: A Decoder only receives password information for the Encoders on the network that have been associated with that Decoder via the **Hotkey** assignment.*

Using the N2X43 Hotkey Feature

As discussed in the previous section, hotkeys are necessary for communication between the Encoders and Decoders on your network. When an N2243 HD Decoder first boots, it displays the N2143 HD Encoder directory on the connected PC. This directory lists all Encoders assigned to the Decoder (via the **Hotkeys** function) along with their associated hotkey numbers:



You can access this screen at any time by pressing the **<Scr Lk>** button twice on the keyboard. Once displayed, enter the hotkey number of the Encoder desired, followed by **<Enter>** (or wait five seconds). The units are now connected with each other and will recognize the mouse and keyboard. If there are problems with the connection, it is reported on the screen. If a message appears, consult the following table:

Message/Error	Possible Reasons and Steps to Take
Disconnected	The connection has been terminated. Enter the number of another Encoder to continue.
Unit In Use	The Encoder is in use and multi-access is disabled.
Permission Denied	The Decoder has a lower permission level (than the Decoder currently communicating with the selected Encoder). Try another Encoder or check with your administrator for access.
Could Not Connect	The Encoder could not be found. Be sure the Encoder is powered on and is on the same network.
Incorrect Password	The password you entered for the Encoder is not correct. Check with your administrator or try a different password.
Unit Configured Incorrectly	The unit being connected to is not an Encoder. Check with your administrator and check your IP number settings.
Internal Error	The internal configuration is not valid. Please re-enter your data into the directory and save. If there are repeated problems, contact SVSi.

CSV File Use

Multiple N2143 HD Encoders and N2243 HD Decoders can be configured from a single CSV file. Click the **KVM Wizard's Export KVM CSV** button to download the CSV file to your computer. The file must then be uploaded to each unit. To do this, go to N-Able's **Unit Management** page and double-click the unit name. Once the **Settings** page displays, click the **KVM** link. Click the **Choose File** button, browse to the CSV file you exported, and click the **Upload** button.

The following screen shot shows an example CSV file in Excel 2010:

	A	B	C	D	E	F	G	H	I	J	K
1	type	name	ip	multiaccess	permission	new password	encrypted password	1	2	3	
2	encoder	Encoder1	169.254.53.251	1		Password1					
3	encoder	Encoder2	169.254.54.251	0		Password2					
4	encoder	Encoder3	169.254.58.251	0			05281271b40c29d5				
5	decoder	Decoder1	169.254.58.250		7			169.254.53.251	169.254.53.252	169.254.53.253	
6	decoder	Decoder2	169.254.58.251		10			169.254.53.251	169.254.53.252	169.254.53.253	
7											
8											

Each column has the following uses:

Column	Usage
type	Defines if the unit is an Encoder or a Decoder.
name	Name of the unit.
ip	IPv4 address of the unit.
multiaccess	Set to 1 if multiple users can access this N2143 HD Encoder. Otherwise, set to 0 for all Decoders.
permission	Permission level of the Decoders.
new password	Password for the Encoder. <i>Note: A password is only required for the Encoders. Enter to override previous password.</i>
encrypted password	Encrypted password when exported from unit. Leave blank if entering new password.
<hotkey numbers>	Enter a Decoder's IP address to assign it a hotkey number connection to an Encoder. The number at the top of the column represents which hotkey you are assigning.

Troubleshooting Guidelines

Problem	Possible Solutions
"Local Play" graphic is displayed.	<ul style="list-style-type: none"> • Verify Decoder is assigned to view a valid stream in the N-Able matrix. • Verify Decoder is currently in "live play" mode (black text on matrix view). • Verify network is properly configured and set up. If needed, connect Encoder directly to Decoder to verify network issues.
"Host Play" graphic is displayed.	<ul style="list-style-type: none"> • Verify Encoder is in live play mode (black text in matrix). • Verify source is attached and is outputting a valid signal (DVI light on Encoder is lit).
"Unsupported Resolution" graphic is displayed.	<ul style="list-style-type: none"> • Change source resolution to a valid resolution (try 720p60). • Verify cabling is correct.
"Copy Protected Content" screen is displayed.	<ul style="list-style-type: none"> • Contact SVSi technical support.
Black screen/no graphic is displayed.	<ul style="list-style-type: none"> • Set Decoder to local play. If the local play graphic does not appear, check the display input settings and cabling. • If local play appears, set Decoder to live play and verify network is configured properly.
No audio is detected.	<ul style="list-style-type: none"> • If there is no audio on <u>all</u> Decoders, verify audio settings are correct on Encoder. • If there is no audio on a <u>single</u> Decoder, verify audio settings are correct on Decoder.

Optional Accessory:

N9312 12V External Power Supply

Please contact SVSi technical support at support@svsiav.com or 256.461.7143 x9900 for any installation issues. Visit our support webpage at support.svsiav.com.

Distribution | Switching | Recording | Windowing | Wall Processing | Control

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