

N2300 Series N2312 4K Encoder

NMX-ENC-N2312 (FGN2312-SA), Stand Alone

NMX-ENC-N2312 -C (FGN2312-CD), Card



Overview

The NMX-ENC-N2312 Encoder and NMX-DEC-N2322 Decoder provide a flexible, feature-rich, and simple-to-deploy Digital Media Distribution and Switching solution that can be used in 4K applications with resolutions up to 4096x2160, with support for HDCP 2.2. This motion-based wavelet codec solution delivers video with nearly imperceptible latency at an incredibly low 200 Mb/s bandwidth allowing 4K distribution over standard gigabit Ethernet networks.

Any source can be sent to one or more displays by routing through layer-2 / layer-3 switches utilizing standard Cat5e cable. The NMX-ENC-N2312 includes standard features like input scaling, bi-directional serial, IR, embedded 7.1 audio, and KVM-over-IP extension. It also comes in a card version compatible with SVSI's N9206 card cage for high-density applications.

Features

- **Design Flexibility** – Start as small as 1x1 and grow the system in increments of single sources and devices by simply adding additional encoders and decoders.
- **Power Over Ethernet (POE)** – eliminates requirement for local power supply and speeds installation. Units can still be powered locally from 12VDC allowing for easy rack-mountable, high-density installations
- **Infrared (IR)** – Emitter connection allows control of IR-only display devices.
- **Fast Install** – With Phoenix connectors for Power, IR, RS232 serial, and analog audio interfaces
- **Balanced and Unbalanced Audio** – Embedded 7.1 digital audio or balanced/unbalanced analog audio
- **Pass Through HDMI** – allows easy installation with local display such as desktop PC applications
- **Multiple Connection Options** – RJ-45 and SFP network connectors and HDMI video connections
- **KVM** – Single USB-B for KVM applications
- **Native NetLinx** – NetLinx Studio will easily recognize the device

Specifications

VIDEO	
Digital Video Input	HDMI 2.0, DVI-D* (through adapter), Dual-Mode DisplayPort (DP++)* *These signal types are supported through a passive adapter
Analog Video Input	HD-15 VGA
Video Output	Network video over Ethernet via RJ45 port or SFP via 1G SFP port, HDMI, DVI-D* *These signal types are supported through a passive adapter
Formats	HDMI 2.0, DVI-D (through adapter), Dual-Mode DisplayPort (DP++), HDCP 2.2 content protection support, RGBHV DVI-D and Dual-Mode DisplayPort (DP++) are supported through a passive adapter
Progressive Input Resolutions	Supports 4K30 4:2:0 and most common HD resolutions up to 1920x1200 See NMX-ENC-N2312 Installation Manual for all supported resolutions HDMI and DVI (Progressive) <ul style="list-style-type: none"> •Pixel clock between 27 MHz – 300MHz •Minimum resolution of 720x480p60 •Maximum horizontal resolution of 4096 or a vertical resolution of 2160* •Common acceptable resolutions include: 720x480p60 – 480p, 720x576@50, 800x600p60, 1024x768p60, 1280x720@60Hz - 720p60, 1600x1200@60Hz, 1920x1080@60Hz - 1080p60, 3840x2160(4:2:0)@30Hz - UHD30 aka 4K30, 4096x2160(4:2:0)@30Hz - DCI 4K30
Interlaced Input Resolutions	Supports 1080i60 See NMX-ENC-N2312 Installation Manual for all supported resolutions HDMI and DVI (Interlaced) <ul style="list-style-type: none"> •1920x1080@50Hz - 1080i50 •1920x1080@60Hz - 1080i60 <p>Note: Interlaced resolutions will be de-interlaced if scaled on the decoder; otherwise, the interlaced signal will pass through to the display</p>
Analog Input Resolutions	Supports most common HD resolutions up to 1920x1200 See NMX-ENC-N2312 Installation Manual for all supported resolutions VGA <ul style="list-style-type: none"> •Pixel clock between 27 MHz - 165 MHz •Minimum resolution of 640x480 •Maximum horizontal resolution of 1920 or a vertical resolution of 1200 •Common acceptable resolutions include: 640x480p60, 720x480p60 – 480p, 720x576@50, 800x600p60, 1024x768@60Hz, 1280x720@50Hz (720p50), 1280x720@60Hz (720p60), 1280x768@60Hz, 1280x800@60Hz, 1280x960@60Hz, 1280x1024@60Hz, 1360x768@60Hz, 1366x768@60Hz, 1400x1050@60Hz, 1440x900@60Hz, 1600x1200@60Hz, 1680x1050@60Hz, 1920x1080@50Hz (1080p50), 1920x1080@60Hz (1080p60), 1920x1200@60Hz (reduced blanking) <p>Note: Input resolutions supported @60Hz refresh rates are also supported @59.94Hz</p> <p>The N2312 Encoder does not accept Composite or S-Video (YC)</p>
Analog-To-Digital Conversion	8-bit 165 MHz per each of three color channels
Color Space	4:4:4 – HD (1920x1200 and lower)
LocalPlay/HostPlay	8 playlists
HostPlay	1 image/list
Note	Jumbo Frames Required
Video Wall Construction	Supported within the NMX-DEC-N2322, the N2300 Series is not compatible with SVSI Windowing Processors at this time
Network Video Recording	Not compatible with SVSI NVR at this time

AUDIO	
Input Signal Types	Embedded audio on HDMI (DVI-D through adapter) or Analog Stereo (Balanced or Unbalanced)
Output Signal Types	Ethernet, Embedded audio on HDMI or DVI-D (through adapter)
HDMI Audio Formats	8ch PCM
Analog Audio Format	Stereo 2-channel
Analog-To-Digital Conversion	48 kHz

KEYBOARD AND MOUSE	
Keyboard & Mouse	Connect the Decoder to the keyboard and mouse, and an N2300 Series Encoder to the PC being controlled

LATENCY	
Latency	17-ms at 60 fps for 1920x1080 and lower resolutions 34-ms at 30 fps for 4K30 NOTE: This is the combined encode plus decode latency. Total latency from source to screen will also include any network latency. Scaling adds one frame of latency (17ms at 60fps)
Switching	Up to 1.5s delay, not seamless

BANDWIDTH	
Bandwidth	Approximately 160 Mb/s Note: Minimum bandwidth is 50 Mb/s for resolutions <= 1080p60

COMMUNICATIONS	
Ethernet - PO	10/100/1000 Mbps, auto-negotiating, auto-sensing, full/half duplex, DHCP, Auto IP, and Static IP
Ethernet - P1	1 Gbps port which accepts compatible fiber transceivers or direct attach cables, DHCP, Auto IP, and static IP
HDMI	HDCP, EDID management

PORTS	
+12V 2A	One 12 Volt DC power input
P0	8-wire RJ45 female 10/100/1000 Mbps 10/100/1000Base-T auto-sensing gigabit Ethernet switch port Provides network connection, network AV video, and power to the Encoders and Decoders PoE power
P1	1-Gbps SFP port (SFP fiber transceiver or direct attach cable not included) Provides network connection and networked AV video
IR IN (front panel)	3-pin terminal Phoenix connector. Provides Infrared (IR) input only and passes signal back to connected decoder (33-60 kHz; typically 39 kHz) IR receiver is necessary (not included)

IR OUT	<ul style="list-style-type: none"> •2-pin terminal Phoenix connector •Provides Infrared (IR) output only (33-60 kHz; typically 39 kHz). Emitter is necessary (not included)
RS232	3-pin terminal Phoenix connector which provides a serial control interface. Full duplex communication. Available terminal speed settings: 1200-115200 baud rate
AUDIO	5-pin terminal Phoenix connector which provides user-selectable balanced/unbalanced input Dedicated audio input
HDMI OUT	HDMI video output (passive pass-through from HDMI IN only)
HDMI IN	HDMI video input
VGA IN	DB15 analog input

CONTROLS AND INDICATORS – FRONT PANEL	
RESET Button	Recessed pushbutton Press to initiate a 'warm restart' causing the processor to reset, but not lose power. A reset does NOT affect the current settings
ID Button	Recessed pushbutton Press to send a notification out on the network to identify the unit (the notification causes a pop-up dialog in N-Able and N-Command)
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

CONTROLS AND INDICATORS – REAR PANEL	
PWR LED	Same as POWER LED described above
HDMI LED	On (green) when there is a connection to a valid HDMI source but will not light for VGA source
STAT LED	Same as STATUS LED described above
STRM LED	On (green) when the unit is streaming video
FAN	None

POWER SUPPLY	
Power Supply, External, Optional	2.0 Amp @ 12 Volts DC; 100-240 Volts AC power supply; optional NMX-ACC-N9312 (FGN9312)
Power over Ethernet (PoE), External, Optional	<p>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)</p> <p>NOTE: In order for the unit to receive Power over Ethernet (PoE), it must be connected to a switch or other equipment that has a PoE PSE (Power Sourcing Equipment) port</p>

	Warning: 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
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ENVIRONMENTAL	
Temperature	32° to 104°F (0° to 40°C)
Humidity	10% to 90% RH (non-condensing)
Heat Dissipation	Up to ~44 BTU/hr.

GENERAL	
Dimensions (HWD)	1.05" x 7.888" x 5.5" (2.67 cm x 20.04 cm x 13.8 cm)
Weight	1.6 lbs (0.66 kg)
Mounting Options	Stand alone, surface mount, wall mount, or rack mount Surface and wall mounting requires (not included): •NMX-ACC-N9101 (FGN9101), Mounting Wings for SVSI N-Series Encoders and Decoders Rack mounting requires one of the following (not included): •NMX-ACC-N9102 (FGN9102), 1RU Rack Shelf for Two Side-by-Side for SVSI N-Series Encoders and Decoders •NMX-ACC-N9206 (FGN9206), 2RU Rack Mount Cage with Power for Six SVSI N-Series Card Units
Regulatory Compliance	FCC, CE, and NTRL
Recommended Accessories	•NMX-ACC-N9312 (FGN9312), Power Supply 12V External •NMX-ACC-N9382 (FGN9382), 1RU Power Supply 16-Channel 12V for up to 16 SVSI N-Series Encoders and Decoders •NMX-ACC-N9101 (FGN9101), Mounting Wings for SVSI N-Series Encoders and Decoders •NMX-ACC-N9102 (FGN9102), 1RU Rack Shelf for Two Side-by-Side SVSI N-Series Encoders and Decoders •NMX-ACC-N9206 (FGN9206), 2RU Rack Mount Cage with Power for Six SVSI N-Series Card Units

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