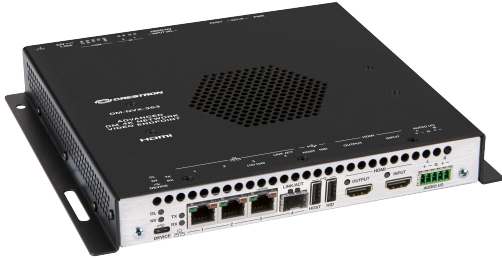# DM NVX® 4K60 4:4:4 HDR Network AV Encoder/Decoder with Downmixing and Dante® Audio

- 4K60 4:4:4 video over standard Gigabit Ethernet
- HDR10, HDR10+, and Dolby Vision® video support
- Real-time video performance over the network
- Pixel Perfect Processing technology
- Enterprise-grade security including 802.1X, Active Directory® credential management, TLS, and AES-128
- HDCP 2.3 compliant
- Configurable as an encoder or decoder
- One HDMI® input
- One HDMI output with 4K60 4:4:4 scaler
- Video wall processing
- Dynamic text overlay
- Image preview
- Background image for on-screen display
- Test pattern generator
- Fixed, adaptive, or variable bit rate
- Analog audio embedding or de-embedding
- 7.1 surround sound audio with downmixing
- Dante® or AES67 audio embedding and de-embedding
- Breakaway audio
- USB 2.0 and KVM signal extension and routing
- Copper and fiber Ethernet connectivity
- Network port selection
- Automatic point-to-point connectivity
- Device control via RS-232, IR, and CEC
- Easy setup via built-in web pages
- Streamlined management using DM NVX Director® virtual switching appliances
- .AV Framework™ technology support
- XiO Cloud® service support
- Crestron Home™ OS support
- API for full control of the DM-NVX-363
- Compact, surface-mountable design
- Powered via POE+ or optional power pack (sold separately)

DM NVX® technology transports ultra high-definition 4K60 4:4:4 video over standard Gigabit Ethernet with no perceptible latency or loss of quality. Using standard network switches and CAT5e UTP wiring, a DM NVX system delivers a high-performance virtual matrix routing solution that is economically advantageous and infinitely scalable for any enterprise or campus-wide 4K content distribution application. Professional onboard scaling, HDR (High Dynamic Range) support, and HDCP 2.3 compliance ensure the ultimate in picture quality and compatibility for all of today's varied media sources.[1, 2]

The DM-NVX-363 is a compact AV-over-IP encoder/decoder designed to function as either a transmitter or receiver. Capable of handling a network AV installation of any size, the DM-NVX-363 includes features such as secure web-based control and management, a scaling HDMI® output, video wall processing, an analog audio input or output, surround sound audio with downmixing, native Dante® and AES67 transmit and receive capability, USB 2.0 and KVM integration, and support for copper and fiber Ethernet connectivity.[2, 3]

Real-Time 4K60 Video Distribution

Engineered for demanding conference room and classroom applications, DM NVX technology ensures real-time, full-motion 4K60 video performance for the presentation of multimedia, videoconferencing, and live camera images. Interactive functions such as gameplay and using a mouse are fluid and natural.

A DM NVX system also provides stability and reliability. Line-synchronized outputs ensure perfect synchronization of content across multiple displays for applications such as digital signage and video walls. Variable Multicast TTL (Time To Live) enables traversing multiple network routers for optimal flexibility.

Pixel Perfect Processing Technology

A DM NVX system incorporates Pixel Perfect Processing technology, which provides flawless video transport in all applications. Depending on the operating mode, the DM-NVX-363 can encode or decode a video signal to achieve imperceptible end-to-end latency of less than 1 frame. The image quality of the source is maintained across a 1-Gigabit network at any resolution up to 4K60 4:4:4.

Enterprise-Grade Security

Using advanced security features and protocols such as 802.1X authentication, Active Directory® credential management, AES-128 content encryption, PKI authentication, TLS, SSH, and HTTPS, a DM NVX system delivers a true enterprise-grade network AV solution engineered to fulfill demanding IT policies.

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Encoder or Decoder Functionality

The DM-NVX-363 is configurable to operate as either a network AV encoder or decoder:

- As an encoder, the DM-NVX-363 allows the HDMI signal of a laptop computer, camera, or other media source to be transmitted over the network to one or many decoders.[1]
- As a decoder, the DM-NVX-363 receives the signal from a DM NVX encoder and feeds it to a display device via the HDMI output. The decoder can quickly and easily switch between multiple encoders on the network alongside a locally connected HDMI source.[1]

The DM-NVX-363 provides a versatile and cost-effective solution for applications that require encoder and decoder operating modes in a single device. The operating mode can be reconfigured dynamically in less than 1 minute via a control system or web browser or can be changed by using the onboard Setup button.

HDMI® Input

The DM-NVX-363 includes one HDMI input. When the DM-NVX-363 is used as a decoder mounted behind a typical conference room display device, the HDMI input provides a convenient way to connect to a Crestron AirMedia® presentation gateway, videoconferencing codec, or small form factor computer.[1]

HDMI Output with 4K60 4:4:4 Scaler

When the DM-NVX-363 is configured as a decoder, the HDMI output feeds the decoded signal to the HDMI input of a local display device or other equipment. The built-in scaler ensures an optimal image, scaling the encoded source resolution up or down to match the native resolution of the display device. When the DM-NVX-363 is configured as an encoder, the HDMI output can be used to feed a local display, confidence monitor, or audio system.[1, 4]

Video Wall Processing

A video wall composed of up to 64 individual displays can be configured using multiple DM NVX endpoints. Each endpoint provides fully adjustable zoom capability and bezel compensation to accommodate a range of video wall configurations and display types. One DM NVX endpoint is required per display, supporting configurations of up to eight wide by eight high.

Dynamic Text Overlay

The DM-NVX-363 enables the display of dynamic text, providing a means to label the video source or to display special instructions, schedules, announcements, alerts, and other messaging.

Image Preview

Image preview provides still images (thumbnails) that show the current video being received by an input of a DM NVX encoder or displayed by an output of a DM NVX decoder. Still images are shown at one frame per second. Image preview supports the maximum resolution of the source and scales the image, while maintaining the aspect ratio. Images can be previewed in the DM NVX web interface and accessed remotely using a web browser. The images can also be previewed on a Crestron touch screen or third-party interface.

Background Image for On-Screen Display

When the DM-NVX-363 is configured as a decoder, an image can be uploaded to the device for use as a background image on a display whenever active video content is not being displayed. Supported image file types are .jpeg, .jpg, and .png. The supported maximum resolution of an image is 3840x2160 pixels. Up to 20 image files can be uploaded for a total storage capacity of up to 100 MB.

Test Pattern Generator

When the DM-NVX-363 is configured as an encoder, the built-in test pattern generator can be used during setup to ensure that video streaming is functional and can also be used as a tool for the adjustment, calibration, and alignment of displays, projectors, and video walls. The DM NVX encoder can send the test pattern to any routed DM NVX decoder.

Fixed, Adaptive, or Variable Bit Rate

In DM NVX encoder mode, the bit rate of a stream can be set to fixed, adaptive, or variable:

- A fixed bit rate, also referred to as Constant Bit Rate (CBR), is user specified and can be set to a value ranging from 200 Mbps to 950 Mbps.[5]
- Adaptive bit rate (ABR) enables the encoder to automatically set a fixed bit rate based on the input resolution of the stream. For example, the adaptive bit rate for a common resolution such as 1920x1080p@60Hz (1080p60) would automatically be set to 400 Mbps. Adaptive bit rate makes better use of the available bandwidth than a user-specified fixed bit rate.
- Variable bit rate (VBR) enables the encoder to automatically vary the bit rate based on the content and input resolution of the stream. The bit rate can vary from less than 150 Mbps to a maximum of 750 Mbps. A variable bit rate results in the use of less bandwidth to produce the same image quality as a user-specified fixed bit rate or an adaptive bit rate.

The web interface or a control system can be used to set a fixed bit rate or to enable adaptive or variable bit rate functionality.

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Analog Audio Embedding or De-embedding

A balanced stereo analog audio port is included, which can be configured as either an input or output. As an input, the port allows a stereo audio source to be connected and combined with the video signal from the HDMI input or the incoming network video stream. As an output, the port can provide a stereo line-level signal to feed a local sound system or soundbar. The output volume is adjustable via a control system or web browser.

7.1 Surround Sound Audio with Downmixing

DM NVX technology supports the lossless transport of 7.1 surround sound audio signals, including Dolby® TrueHD, Dolby Atmos®, DTS HD®, DTS:X®, and uncompressed linear PCM.[6] The DM-NVX-363 can decode the incoming multichannel surround sound signal from the network or an HDMI input and then downmix that signal to stereo. The stereo downmix signal is automatically routed to the onboard analog output[7], while the HDMI output can be configured to output either stereo or multichannel signals. As an encoder, the DM-NVX-363 distributes both stereo and multichannel signals simultaneously over the network, allowing either signal to be selected at any decoder on the network.

> **NOTE:** The DSP of the DM-NVX-363 is compatible with Dolby Atmos audio using True HD or Dolby Digital Plus audio formats.

Dante® or AES67 Audio Embedding and De-embedding

Dante and AES67 support enables the selected audio source to be transmitted as a 2-channel Dante or AES67 audio stream while another 2-channel Dante or AES67 audio stream is received from a Crestron DSP or other third-party device and combined with the video signal.

In DM NVX encoder mode, the received Dante or AES67 audio stream can be output via the local HDMI output, primary AV stream, and analog audio output. In DM NVX decoder mode, the received Dante or AES67 audio stream can be combined with the video and then output via the HDMI output and analog audio output.

NOTE: *A Dante or AES67 audio stream that is received by a DM NVX endpoint cannot be transmitted from that endpoint.*

Breakaway Audio

A DM NVX decoder can select and combine separate video and audio signals from two different inputs—even two different encoders. Combining signals from two separate encoders is limited to 2-channel stereo audio.[8]

Copper and Fiber Ethernet Connectivity

The DM-NVX-363 includes two RJ-45 1000BASE-T ports (Ethernet ports 1 and 2), one RJ-45 100BASE-TX port (Ethernet port 3), and one SFP port (Ethernet port 4). The SFP port enables connection to a fiber-optic network with the use of the appropriate Crestron SFP-1G Series transceiver module (sold separately). A selection of modules is offered to accommodate various multimode and single-mode fiber types.[3]

Ethernet port 1, 2, or 4 can be used to transport video over a Gigabit Ethernet network. Ports 1 and 2 can also be used to provide network connections for an AirMedia gateway, display device, or other local device. In addition, the ports can be used to daisy-chain multiple endpoints feeding a single-source video wall or individual displays that show the same video image. Port 1 is also capable of receiving power from a Crestron power injector (DM-PSU-ULTRA-MIDSPAN), POE+ compliant Ethernet switch, or third-party IEEE 802.3at compliant PSE (power sourcing equipment).[2, 9]

An RJ-45 100BASE-TX port is included for connection to a dedicated audio network or for use as a convenience port.

A DM NVX system can be deployed on an existing corporate or campus network or on a dedicated network. For information about network requirements and guidelines, refer to the DM NVX AV-over-IP System Design Guide, Doc. 7977, at https://www.crestron.com/nvx.

Network Port Selection

Network port selection enables network traffic to be managed and segregated based on traffic type. Internal VLANs are used to route different traffic types to specific external Ethernet ports, which can then be assigned to the various traffic types. AES67 or Dante audio can be separated from the primary video and control network resulting in a dedicated audio network.

Automatic Point-to-Point Connectivity

Point-to-point connectivity enables a DM NVX 4K60 4:4:4 encoder to be connected directly to a DM NVX 4K60 4:4:4 decoder to stream video, audio, and USB signals. Rather than being connected to a Gigabit Ethernet network, a 1000BASE-T Ethernet port of an encoder is connected directly to a 1000BASE-T port of a decoder. By default, point-to-point mode is enabled and can be disabled if desired.

When point-to-point mode is enabled and a direct connection between an encoder and decoder is automatically detected, no additional configuration is required for the encoder or decoder to operate in point-to-point mode; however, the operating mode of a DM-NVX-363 device must be configured correctly. If the device is to function as an encoder, the operating mode of the device must be configured as an encoder. If the device is to function as a decoder, the operating mode must be configured as a decoder.

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In addition, a control system is required for CEC (Consumer Electronics Control), RS-232, and IR control.

USB 2.0 and KVM Integration

DM NVX technology supports the extension of USB signals, which can be switched and routed alongside the AV signal or separately via a control system. USB 2.0 HOST and DEVICE ports are provided on the DM-NVX-363, allowing a USB mouse, keyboard, or other peripheral device to be connected to a remote endpoint and routed to a computer or other host at the local endpoint. In addition to KVM switch functionality, various types of USB peripherals are supported, including whiteboards, touch screens, game controllers, cameras, mobile devices, headsets, and flash drives.[10]

USB 2.0 data transport can be configured for Layer 2 or Layer 3. Layer 2 supports USB signal extension in DM NVX point-to-point and multipoint applications. USB signals can be routed from the HOST port of up to seven remote DM NVX endpoints to the DEVICE port of a single local DM NVX endpoint. Layer 2 also supports Crestron USB over Ethernet Network extenders, which consist of the DM-NUX-L2, DM-NUX-R2, DM-NUX-L2-1G, DM-NUX-R2-1G, and legacy models (USB-NX2-LOCAL-1G, USB-NX2-REMOTE-1G, USB-EXT-DM-LOCAL, and USB-EXT-DM-REMOTE). The USB extenders can be used in locations that do not include DM NVX endpoints. USB signals can be routed between DM NVX endpoints and USB extenders under the management of a control system.[11]

USB 2.0 Layer 3 data transport supports USB signal extension in DM NVX point-to-point applications across VLANs. DM NUX, USB NX2, and USB EXT DM devices do not support Layer 3.

In addition to USB 2.0 HOST and DEVICE ports, the DM-NVX-363 includes a USB 2.0 HID port that can provide hot key functionality when enabled via the web interface or a control system. When the DM NVX device is operating as a receiver, the HID port can detect a series of hot key sequences on a keyboard and route USB traffic to the control system and then to selected source devices (for example, PCs).

Device Control

The DM-NVX-363 includes built-in COM (RS-232) and IR ports for control of the connected display, camera, or other devices under the management of a control system. Additional control capability is provided by CEC over the HDMI connections. Under the management of a control system, the DM-NVX-363 can control the display and source devices, potentially eliminating the need for dedicated serial cables or IR emitters.

The COM port, IR port, and CEC over the HDMI output can also enable the display device to be turned on or off automatically without the use of a control system.

Web-Based Setup

Setup of the DM-NVX-363 is accomplished by using a web browser. Full control and monitoring of the device is enabled through integration with a control system or with a DM NVX Director® virtual switching appliance.

Streamlined Management Using DM NVX Director Virtual Switching Appliances

Use of a DM NVX Director virtual switching appliance (DM-NVX-DIR-80, DM-NVX-DIR-160, or DM-NVX-DIR-ENT) streamlines the entire configuration and control process. A DM NVX Director appliance provides a central point of management and enables the creation of multiple virtual matrix switchers through one easy-to-use web-based portal.

Low-Profile Installation

The DM-NVX-363 mounts conveniently onto a flat surface or rack rail, and fits easily behind a flat panel display, above a ceiling-mounted projector, beneath a tabletop, or inside a lectern, AV cart, or equipment cabinet. All connectors and LED indicators are positioned on the front and rear of the device, offering optimal access and visibility for a clean, serviceable installation. Power is provided using POE+ or the optional Crestron PW-2412WU power pack (sold separately).[9]

For additional design tools and reference documents, refer to the DM NVX web page at https://www.crestron.com/nvx.

DM NVX® 4K60 4:4:4 HDR Network AV Encoder/Decoder with Downmixing and Dante® Audio

Specifications

Encoding/Decoding

Stream Type	Encoder: Pixel Perfect Processing (default) or DM-NVX-D10/D20/D200 Series[12] Decoder: Pixel Perfect Processing or DM-NVX-E10/E20 Series[12]
Video Resolutions	Up to 4096x2160@60Hz (DCI 4K60); 4:4:4 color sampling; HDR10, HDR10+, Dolby Vision, and Deep Color support
Audio Formats	Multichannel (up to 8-channel LPCM or encoded HBR 7.1 surround sound), 2-channel LPCM[13]
Bit Rates	Encoder: Fixed (200 to 950 Mbps - user specified)[5], Adaptive (dependent on input resolution of the stream), or Variable (less than 150 Mbps to maximum of 750 Mbps, dependent on content and input resolution of the stream) Decoder: Based on the stream received from the encoder
Streaming Protocols	RTP, SDP
Container:	MPEG-2 transport stream (.ts)
Session Initiation	Multicast via secure RTSP
Copy Protection	HDCP 2.3, AES-128, PKI

Video

Input Signal Types	HDMI with HDR10, HDR10+, Dolby Vision, Deep Color, and 4K60 4:4:4 support[1, 14] (Dual-Mode DisplayPort™ interface and DVI compatible[15])
Output Signal Types	HDMI with HDR10, HDR10+, Dolby Vision, Deep Color, and 4K60 4:4:4 support[1] (DVI compatible[15])
Switcher	2x1 in decoder mode (HDMI, Stream), manual or auto-switching, breakaway audio,[7] Crestron QuickSwitch HD™ technology
Scaler (Decoder Mode Only)	4K60 4:4:4 video scaler with motion-adaptive deinterlacing, intelligent frame rate conversion, Deep Color support, HDR10, HDR10+, and Dolby Vision support, widescreen format selection (zoom, stretch, maintain aspect ratio, or 1:1), video wall processing up to 8 wide x 8 high

Copy Protection	HDCP 2.3
Resolutions	Common resolutions are listed in the following table.

Scan Type	Resolution	Frame Rate	Color Sampling	Color Depth
Progressive	4096x2160 DCI 4K and 3840x2160 4K UHD	30 Hz	4:4:4	12 bit
		60 Hz	4:2:0	12 bit
		60 Hz	4:2:2	12 bit
		60 Hz	4:4:4	8 bit
	2560x1600 WQXGA Reduced Blanking	60 Hz	4:4:4	8 bit
	2560x1440 WQHD Reduced Blanking	60 Hz	4:4:4	8 bit
		120 Hz	4:4:4	8 bit
	2560x1080 UWFHD	60 Hz	4:4:4	8 bit
	2048x1152 QWXGA	60 Hz	4:4:4	12 bit
	2048x1080 DCI 2K	60 Hz	4:4:4	12 bit
	1600x1200 UXGA	60 Hz	4:4:4	12 bit
	1920x1200 WUXGA	60 Hz	4:4:4	12 bit
	1920x1080 FHD 1080p	60 Hz	4:4:4	12 bit
		120 Hz	4:4:4	8 bit
		240 Hz	4:4:4	8 bit
Interlaced (Input Only)	1920x1080 HD 1080i	30 Hz	4:4:4	12 bit

NOTE: The maximum supported resolution is 4096x2160 at 60 Hz with 4:4:4 color sampling. Custom resolutions are supported at pixel clock rates up to 600 MHz.

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DM NVX® 4K60 4:4:4 HDR Network AV Encoder/Decoder with Downmixing and Dante® Audio

Audio

Input Signal Types	HDMI (Dual-Mode DisplayPort interface compatible[15]), analog stereo[7]
Output Signal Types	HDMI (multichannel pass-through), analog stereo (2-channel downmix)[7]
Digital Formats	Dolby Digital®, Dolby Digital EX, Dolby Digital Plus, Dolby TrueHD, Dolby Atmos, DTS®, DTS ES, DTS 96/24, DTS HD High Res, DTS HD Master Audio, DTS:X, LPCM up to 8 channels[6]
Analog Formats	Stereo 2-channel
Analog-to-Digital Conversion	24-bit 48 kHz
Digital-to-Analog Conversion	24-bit 48 kHz
Dante or AES67	24-bit 48 kHz
Analog Performance	Frequency Response: 20 Hz to 20 kHz ±0.5 dB S/N Ratio: >95 dB 20 Hz to 20 kHz A-weighted THD+N: <0.005% @ 1 kHz Stereo Separation: >90 dB
Analog Output Volume Adjustment	-80 to +20 dB

Communications

Ethernet	Auto-switching, auto-negotiating, auto-discovery, full/half duplex, TCP/IP, UDP/IP, CIP, DHCP, SSL, TLS, SSH, SFTP (SSH File Transfer Protocol), IEEE 802.1X, IPv4 only or both IPv4 and IPv6, Active Directory authentication, variable Multicast TTL, HTTPS web browser setup and control, Crestron 3-Series or later control system integration
USB	USB 2.0 host or device signal extension and routing, Layer 2 or Layer 3
RS-232	2-way device control and monitoring up to 115.2k baud with hardware and software handshaking via control system
IR/Serial	1-way device control via infrared up to 1.1 MHz or serial TTL (0-5 V) up to 19.2k baud (via control system)
HDMI	HDCP 2.3, EDID, CEC

DM NVX (via Ethernet)	HDCP 2.3, AES-128 AV content encryption with PKI authentication, RTP, secure RTSP, SDP, ONVIF, IGMPv2, IGMPv3, SMPTE 2022, FEC (Forward Error Correction)

Connectors

USB DEVICE	(1) USB 2.0 Type-C™ connector, female; USB 2.0 device port; USB signal extender port for connection to a computer or other USB 2.0 host[10, 11]
USB HOST	(1) USB Type-A connector, female; USB 2.0 host port; USB signal extender port for connection to a mouse, keyboard, or other USB 2.0 device;[10] Available Power: 500 mA at 5 VDC[16]
USB HID	(1) USB Type-A connector, female; USB 2.0 host port; USB signal extender port for connection to a mouse, keyboard, or other USB 2.0 device; Available Power: 500 mA at 5 VDC[16]
Ethernet 1	(1) 8-pin RJ-45 connector, female; 100BASE-TX/1000BASE-T Ethernet port;[2] PoE+ PD (powered device) port, IEEE 802.3at Type 2 PoE+ Class 4 (25.5 W) compliant[9, 17]
Ethernet 2	(1) 8-pin RJ-45 connector, female; 100BASE-TX/1000BASE-T Ethernet port[2]
Ethernet 3 (10/100)	(1) 8-pin RJ-45 connector, female; 100BASE-TX Ethernet port
Ethernet 4	(1) SFP port; Accepts one Crestron SFP-1G Series transceiver module[3]
HDMI OUTPUT	(1) HDMI Type A connector, female; HDMI digital video/audio output[1] (DVI compatible[15])
HDMI INPUT	(1) HDMI Type A connector, female; HDMI digital video/audio input;[1] (DVI and Dual-Mode DisplayPort interface compatible[15])
AUDIO I/O	(1) 5-pin 3.5 mm detachable terminal block; Balanced/unbalanced stereo line-level audio input or output;[7] Input Impedance: 24k Ohms balanced/unbalanced; Maximum Input Level: 4 Vrms balanced, 2 Vrms unbalanced; Output Impedance: 200 Ohms balanced, 100 Ohms unbalanced; Maximum Output Level: 4 Vrms balanced, 2 Vrms unbalanced

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IR 1 – 2	(1) 4-pin 3.5 mm detachable terminal block; Comprises (2) IR/Serial ports; IR output up to 1.1 MHz; 1-way serial TTL (0-5 V) up to 19200 baud; IRP2 emitter sold separately
COM	(1) 5-pin 3.5 mm detachable terminal block; Bidirectional RS-232 port; Up to 115.2k baud, hardware and software handshaking support
24VDC 1.25A	(1) 2.1 x 5.5 mm DC power connector; 24 VDC power input; PW-2412WU power pack (sold separately)
G	(1) 6-32 screw; Chassis ground lug

Controls and Indicators

PWR	(1) Bi-color green/amber LED, indicates operating power is being supplied, lights amber while booting and green when operating
SETUP	(1) Red LED and (1) push button, displays onscreen IP address and also used to change operating mode (TX or RX)
RESET	(1) Recessed push button, reboots the device
INPUT SEL	(1) Push button, enables manual input selection; (2) Bi-color green/amber LEDs, indicate the current active input and signal presence at each corresponding input (HDMI and NV)
OL	(1) Green LED, indicates an online connection to a control system via Ethernet
NV	(1) Green LED, indicates unit is encoding (transmitting) or decoding (receiving) network video
TX	(1) Green LED, indicates unit is in encoder (transmitter) mode
RX	(1) Green LED, indicates unit is in decoder (receiver) mode
Ethernet 1-2	(2) LEDs per port, green indicates Ethernet link status, amber indicates Ethernet activity
Ethernet 3	(2) LEDs, amber indicates Ethernet link status, green indicates Ethernet activity
Ethernet 4 LNK	(1) Green LED, indicates Ethernet link status
Ethernet 4 ACT	(1) Green LED, indicates Ethernet activity
HDMI OUTPUT	(1) Green LED, indicates video signal transmission at the HDMI output
HDMI INPUT	(1) Green LED, indicates sync detection at the HDMI input

Power

PoE+	IEEE 802.3at Type 2 Class 4 (25.5 W) compliant; Compatible with Crestron DM-PSU-ULTRA-MIDSPAN, PoE+ compliant Ethernet switch, or third-party IEEE 802.3at compliant PSE[15]
Power Pack (Optional)	Input: 1.5 A maximum @ 100-240 VAC, 50/60 Hz Output: 1.25 A @ 24 VDC Model: PW-2412WU (sold separately)
Power Consumption	22 W typical

Environmental

Temperature	32° to 104° F (0° to 40° C)
Humidity	10% to 90% RH (non-condensing)
Heat Dissipation	74 BTU/hr
Acoustic Noise	33 dBA typical

Enclosure

Chassis	Metal, black finish, integral mounting flanges, fan cooled; vented top, front, rear, and sides
Mounting	Freestanding, surface mount, or attachment to a single rack rail

Dimensions

Height	8.61 in. (219 mm)
Width	9.27 in. (236 mm)
Depth	1.25 in. (32 mm)

Weight

2.0 lb (0.91 kg)

Compliance

Intertek® Listed for US and Canada, CE, IC, FCC Part 15 Class B digital device

Model

DM-NVX-363
DM NVX 4K60 4:4:4 HDR Network AV Encoder/Decoder with Downmixing and Dante® Audio

DM NVX® 4K60 4:4:4 HDR Network AV Encoder/Decoder with Downmixing and Dante® Audio

Management Tools

DM-NVX-DIR-80
DM NVX Director Virtual Switching Appliance
for 80 Endpoints

DM-NVX-DIR-160
DM NVX Director Virtual Switching Appliance
for 160 Endpoints

DM-NVX-DIR-ENT
DM NVX Director Virtual Switching Appliance
for 1000 Endpoints

Accessories

For a list of accessories, visit the DM-NVX-363 product page.

Notes:

1. 4K60 4:4:4 performance and HDR support require the use of HDMI cables and couplers with a minimum TMDS bandwidth of 18 Gbps. If 4K60 4:2:0 or 4K30 4:4:4 performance is acceptable, cables and couplers with a minimum bandwidth of 10.2 Gbps may be used. Bandwidth loss is cumulative; therefore, performance may be reduced when inserting multiple cables and couplers inline.

2. The minimum cable required for DM NVX over 1000BASE-T Ethernet (copper) is unshielded CAT5e. All Ethernet ports on the DM-NVX-363 are for connection to an Ethernet network or device. The Ethernet ports cannot be connected to the DM® ports of other Crestron devices.

   A nonblocking network is required for DM NVX devices.

3. Use of the SFP port requires the purchase of a Crestron SFP-1G Series transceiver module (sold separately). All Ethernet ports on the DM-NVX-363 are for connection to an Ethernet network or device. The Ethernet ports cannot be connected to the DM ports of other Crestron devices.

4. When the DM-NVX-363 is in encoder mode, the HDMI output resolution is matched to the resolution of the encoded source.

5. The minimum bit rate for 4K60 video is 350 Mbps. A bit rate below 350 Mbps may display a black screen.

6. The DM-NVX-363 does not down-mix Dolby Atmos MAT 2.0 audio

7. The analog audio port can function as an input or output—not both.

8. Combining audio from one encoder with video from another encoder is possible using the 2-channel AES67 or Dante audio stream only. Multichannel audio from one encoder cannot be combined with video from another encoder.

9. Refer to the "Power" specifications section for powering options.

10. The DM-NVX-363 can be configured to accept the connection of a USB device or a USB host—not both. Crestron DM NVX products are engineered to deliver maximum compatibility with the widest possible range of USB products. Crestron does not guarantee that all USB products are compatible with DM NVX products. Consult the DM NVX AV-over-IP System Design Guide, Doc. 7977, for USB bandwidth considerations.

11. USB 2.0 extension and switching over LAN may not work when directly connecting a host PC's USB-C port to a DM-NVX-36X series endpoint's USB-C port. This is a known hardware limitation. Connect the host PC's USB-A port (if available) to the DM NVX endpoint using a USB-A to USB-C cable. A USB OTG USB-C to USB-A adapter may also be used at the host PC's USB-C port, which would be connected to the DM NVX endpoint using a USB-A to USB-C cable.

12. In encoder mode, the stream type of the DM-NVX-363 must be set by using the web interface or a control system. The default setting is **Pixel Perfect Processing** for interoperability with DM NVX 4K60 4:4:4 decoders. For interoperability with a DM-NVX-D10, DM-NVX-D20, or DM-NVX-D200 decoder, the stream type of the DM-NVX-363 encoder must be set to **DM-NVX-D10/D20/D200 Series**. In addition, the resolution of the encoder must be set so that it does not exceed the maximum resolution of the DM-NVX-D10, DM-NVX-D20, or DM-NVX-D200 decoder.

    In decoder mode, the proper stream type of the DM-NVX-363 is automatically used. For interoperability with DM NVX 4K60 4:4:4 encoders, **Pixel Perfect Processing** is automatically used as the stream type of the DM-NVX-363 decoder. For interoperability with DM-NVX-E10/E20 Series encoders, **DM-NVX-E10/E20 Series** is automatically used as the stream type of the DM-NVX-363 decoder.

13. As an encoder, the DM-NVX-363 transmits audio via the 2-channel AES67 or Dante stream when it receives a 2-channel stereo input signal via the HDMI or analog input.

14. 3D formats are not supported.

15. HDMI connections require an appropriate adapter or interface cable to accommodate a DVI or Dual-Mode DisplayPort signal. CBL-HD-DVI interface cables are available separately.

16. When PoE+ is used to power the DM-NVX-363, a maximum of 500mA is available to power both the USB HOST and USB HID ports. To prevent possible instability issues, it is recommended that the PW-2412WU power pack (sold separately) be used.

17. In order for Ethernet port 1 to receive PoE+, the port requires connection to a PoE+ compliant Ethernet switch or other equipment that has a PoE+ PSE port. Cabling that connects to a PoE+ PSE port is designed for intrabuilding use only.

This product may be purchased from select authorized Crestron dealers and distributors. To find a dealer or distributor, please contact the Crestron sales representative for your area. A list of sales representatives is available online at www.crestron.com/How-To-Buy/Find-a-Representative or contact us for additional information by visiting www.crestron.com/contact/our-locations for your local contact.

This product is covered under the Crestron standard limited warranty. Refer to www.crestron.com/warranty for full details.

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DM NVX® 4K60 4:4:4 HDR Network AV Encoder/Decoder with Downmixing and Dante® Audio

HDMI

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