



Q-SYS NV-32-H

Network Video Endpoint
for the Q-SYS Ecosystem

Features

- Native integration and control for the Q-SYS Ecosystem
- Q-SYS Shift™ adaptive video compression codec
- Software-configurable as encoder or decoder
- Simultaneous streaming capabilities
- Enterprise scalability without additional hardware
- Q-SYS Reflect Enterprise Manager ready
- Route USB signals (mouse, keyboard, touchscreen) over Q-LAN networks
- 802.1x authentication support



The Q-SYS NV-32-H is a network video endpoint native to the Q-SYS Ecosystem, serving as a multi-stream, software-configurable HDMI encoder/decoder that enables network-based video distribution. Optimized for the meeting room, the NV-32-H delivers the right balance of high quality (supporting resolutions up to 4K60 4:4:4), low-latency and network-efficient video distribution across a standard gigabit infrastructure.

- **Streamlined Video Integration for the Q-SYS Ecosystem:** The Q-SYS NV-32-H enables native HDMI video and audio distribution for the Q-SYS Ecosystem without additional control processors, bridges or complicated programming.
- **Optimized for the Connected Meeting Space:** The Q-SYS NV-32-H delivers the right balance of quality, latency, network efficiency for meeting room video applications, and offers the scalability to fit the needs of your enterprise.
- **Unique Flexibility and Interoperability in a Single Device:** The NV-32-H is software-configurable as either an encoder or decoder inside Q-SYS Designer Software, and offers I/O capabilities that provide maximum design flexibility with less hardware.

Benefits

Quality: The NV-32-H provides high-quality, low latency video streaming with resolutions of up to 4K60 4:4:4 over a standard gigabit network.

Network optimized compression scheme: Q-SYS Shift™ video compression codec actively adjusts network bandwidth resources according to content, affording massive network savings for common meeting room content without compromising on the ability to stream full-motion video.

Consolidated processing: The network-based video endpoint integrates seamlessly into the Q-SYS Ecosystem, which provides native audio, video and control in a single processor.

Native integration and control: Q-SYS software-based control allows you to add native Q-SYS peripherals, including the NV-32-H, to your system design and route them anywhere on the network with simple drag-and-drop components. This simplifies setup, configuration, and firmware management and eliminates the need for additional hardware or advanced programming knowledge.

Single device solution: The NV-32-H is configurable as an encoder or decoder, simplifying the ordering and specification process and providing flexibility for meeting spaces.

Simultaneous streaming: With 3x HDMI inputs and 2x HDMI outputs, the NV-32-H enables flexible room design scenarios, such as simultaneous 1080p60 streaming for dual-monitor rooms, with a single device. It also enables soft codec applications that support dual video output.

Q-SYS web conference integration: The NV-32-H features built-in connectivity for Q-SYS web conference integration, allowing for driverless USB connectivity to a PC for plug-and-play access to Q-SYS audio and conference camera feeds from soft codec applications; removing the need for a Q-SYS I/O USB Bridge and reducing hardware (and cost).

Q-SYS audio integration: The NV-32-H allows audio feeds from connected video sources to be routed natively, along with the video stream, to any other endpoint on the network, or use the decoder HDMI output as a Q-LAN audio destination for source audio, paging or any other Q-SYS asset.

Local output switching: When set as a decoder, the NV-32-H can provide local video source selection in addition to displaying content from network streams.

Enterprise scalability without hardware: As a Q-SYS peripheral, unlimited NV-32-H units can be added to enterprise designs without a separate, hardware-based video endpoint manager.

USB Routing over IP: Allows users to connect USB HID devices (keyboard, mouse or touchscreen) and route the signals over the network, simplifying installation and reducing costs by removing equipment from the room.

Test your network: The NV-32-H features a Network Test feature, accessible in Q-SYS Designer Software, that sends full video data loads across your network to check for potential network configuration issues without needing sources and/or sinks connected.



Control

RS-232: Three-pin Euro terminal connection to control third-party devices with Q-SYS Control, user configurable.

GPIO: Three inputs and two outputs for control of third-party devices via Q-SYS Control, user configurable.

USB

USB HID routing over IP: Support for USB HID sources, including keyboard, mouse, and touchscreen.

Bridging: In addition to HDMI video distribution, the NV-32-H can act as an endpoint for the Q-SYS Web Conferencing solution, similar to the Q-SYS Core 110f processor and Q-SYS I/O-USB Bridge. This mode is available when configured as an encoder or decoder. The NV-32-H emulates a webcam video driver (for video streams from the Q-SYS PTZ-IP conference cameras), AEC speakerphone audio driver and multi-channel soundcard driver over a single, driverless USB connection.

Audio

HDMI audio input: Each HDMI input is able to receive up to eight channels of PCM audio, which are routable within Q-SYS Designer Software.

HDMI audio output: Each HDMI output has the ability to output up to eight channels of PCM audio, making each HDMI output a full-featured Q-SYS audio destination for source audio content, or any other Q-SYS audio feature such as paging, audio playback etc.

Analog audio input: Mic/line input on a 3.5 mm TRS connector, routable within Q-SYS Designer Software, for direct connection of microphones or audio players.

Analog audio output: Line output on a 3.5 mm TRS connector, routable within Q-SYS Designer Software, for direct connection of QSC non-networked amplifiers, external speakers or audio recorders.

Security

Supports AES-128 encryption for audio and video signals from encoders to decoders as well as 802.1x authentication

Content Protection: HDCP 2.2 compliant

Q-SYS Shift™ adaptive video compression codec

- **Modes:** Multicast and unicast
- **Bitrates:** 10 Mbps – 800 Mbps
- **Streaming Protocol:** RTP

Supported video formats

Resolution	Frame Rate (Hz)	Chroma Sampling Level
3840 x 2160 (4K UHD)	60, 59.94, 50, 30, 29.97, 25, 24	4:4:4
2560 x 1600	60	4:4:4
2560 x 1440	60	4:4:4
1920 x 1200	60	4:4:4
1920 x 1080 (1080p)	60, 59.94, 50, 30, 29.97, 25, 24	4:4:4
1280 x 720 (720p)	60, 59.94, 50, 30, 29.97, 25, 24	4:4:4
640 x 480	60	4:4:4

*All video formats are progressive

Scaler

Each HDMI output features a robust, polymorphic 4K60 4:4:4 scaler that can accommodate the most challenging resolution and frame rate conversions. The scaler on each HDMI output is capable of operating in three modes (configurable within Q-SYS Designer Software):

- Stretch-to-Fit
- Maintain Aspect Ratio
- 1:1 Pixel Mapping



Connectors

- **USB type A:** For direct connection of USB audio peripherals, such as headsets, microphones or speakers to integrate with the Q-SYS Ecosystem. Connect keyboard, mouse or touchscreen and route signal over Q-SYS network.
- **USB type B:** For Q-SYS Web Conference integration, delivering video feeds from Q-SYS cameras and audio feeds from Q-SYS to host PC for web conference applications such as Zoom, WebEx and Microsoft Teams and/or for capturing and recording needs. Bridge USB HID signals to host PC.
- **Analog audio input:** 3.5 mm TRS connection for PC-Level audio input from a microphone or media player, such as mobile phone or tablet.
- **Analog audio output:** 3.5 mm TRS connection for audio output to external loudspeakers or audio recorders.
- **LAN A:** Connection to Q-LAN (Q-SYS Ecosystem network); includes PoE++ capability for the NV-32-H via 802.3bt Type 4 midspan injector or network switch.
- **LAN B:** No functionality at this time.
- **Power input:** Two-pin euroblock terminal connection for external 48 V DC, 1.5 A power supply (not included).
- **RS-232:** Three-pin euroblock terminal connection for extension of Q-SYS Control to third-party devices.
- **General purpose I/O:** Euroblock terminal connection for extension of Q-SYS Control to third-party devices.

Software-configurable I/O configurations

When set as an encoder:

- **Encode:** Encode one 4K60 HDMI video stream or up to three 1080p HDMI videos streams for distribution across a standard gigabit network.
- **Courtesy monitor:** Use one of the HDMI outputs as a “courtesy monitor”, displaying any of the three locally connected HDMI sources at resolutions up to 4K60.

When set as an decoder:

- **Decode:** Decode one 4K60 network stream or up to two simultaneous 1080p60 streams (for dual display rooms) for displaying at formats up to 4K60 on a connected display.
- **Local source switching:** Toggle between network streams or locally connected HDMI sources (single 4K60 or dual 1080p60 sources).

Specifications

Video I/O		General	
HDMI 2.0 inputs	3x HDMI capable of receiving source input video formats up to 4K60 4:4:4	Dimensions	8.66 in x 11.28 in x 1.72 in 220 mm x 286.6 mm x 43.6 mm
HDMI 2.0 outputs	2x HDMI capable of scaling and outputting video formats up to 4K60 4:4:4	Weight	4.0 lb (1.81 kg)
Scaler	Each HDMI output features a robust, polymorphic 4K60 4:4:4 scaler that can accommodate the most challenging resolution and frame rate conversions.	Mounting options	Rack-mountable, 1 RU half-rack width Surface-mountable, table or wall-mount All mounting hardware is included
Color formats	RGB Full or Limited, BT.601 & BT.709 (supported in Q-SYS Designer Software v8.3 or higher)	Regulatory compliance	CE, FCC Part 15 Class B, RoHS
Audio I/O		Environmental	
HDMI inputs	8-channel PCM audio, Q-SYS routable	Ambient operating temperature range	0-50° C
HDMI outputs	8-channel PCM audio, Q-SYS routable	Humidity	5 to 85% non-condensing
Analog audio input	3.5 mm unbalanced stereo mic/line input Q-SYS routable Signal-to-noise: 80 dB THD+N: 0.009% @ 0 dB Input frequency response: 20 Hz to 20 kHz +0.05% / -0.5% Input Impedance (unbalanced): 5 kΩ nominal Analog to digital converters: 24 bit, 48 kHz	Storage temperature	-20 to 70° C
	3.5 mm unbalanced stereo line output Q-SYS routable Signal-to-noise: 90 dB THD+N: 0.0167% @ 0 dB Output frequency response: 20 Hz to 20 kHz +0.2% / -0.5%	Other Connectors	
Analog audio output	3.5 mm unbalanced stereo line output Q-SYS routable Signal-to-noise: 90 dB THD+N: 0.0167% @ 0 dB Output frequency response: 20 Hz to 20 kHz +0.2% / -0.5%	USB	Supports bridging of Q-SYS camera feeds, audio and USB HID
		RS-232	Three-pin Euroblock terminal connector for extension of Q-SYS Control to third-party devices, user configurable
		GPIO	Euroblock terminal connector for extension of Q-SYS Control to third-party devices, user configurable
		LAN A	Gigabit LAN connection for interface with Q-LAN; PoE++ 802.3bt Type 4 for power
		LAN B	No functionality at initial release
		Power over Ethernet specification/wattage	Conforms to IEEE 802.3bt Type 4
		Physical power supply info	48 V DC Nominal, 1.5 A on 2-pin Euro connector

What's in the box

- NV-32-H network video endpoint
- Euro-terminal connectors for RS-232, GPIO and power
- Rack mounting accessories (side-by-side with other QSC device or standalone)
- Surface mounting accessories
- Safety and warranty statement

