



## Q-SYS NV-32-H

Native Network Video Endpoint  
for the Q-SYS Ecosystem

### Features

#### Core Mode

- Fully integrated Q-SYS Core processor
- Onboard 3 x 2 HDMI video switcher
- 32 x 32 network audio channels
- 8x AEC channels
- 1 x VoIP softphone instance
- audio I/O via HDMI, USB and 3.5 mm

#### Peripheral Mode

- Native HDMI video and audio distribution for the Q-SYS Ecosystem
- Q-SYS Shift™ adaptive video compression codec
- Software-configurable as an encoder or decoder
- Simultaneous streaming capabilities



The NV-32-H (Core Capable) is a multipurpose, software-configurable video endpoint native to the Q-SYS Ecosystem that offers two distinct operating modes to choose between, based on the needs of the application.

**Core Mode:** consolidated Q-SYS AV processor, control engine, and local HDMI video switcher to support video collaboration in small and medium sized meeting rooms and classrooms.

**Peripheral Mode:** native HDMI and audio distribution without the need for additional control processors, bridges or complicated programming.

Like all Q-SYS devices, the NV-32-H (Core Capable) offers native integration and control, simplifying setup, configuration and firmware management while eliminating the need for advanced programming knowledge.

## Benefits

### Core Mode

**Fully integrated Q-SYS processor:** 'Core Mode' enables the same integrated audio, video and control features as the rest of the Q-SYS Core portfolio, but with specific I/O and processing capabilities specifically tuned for video collaboration in small meeting rooms or classrooms.

**Onboard HDMI switch:** The 3 x 2 HDMI I/O enables in-room users to easily share presentation or video content from their laptops or other video sources (video encoding/decoding is unavailable in this mode). Onboard HDMI switching is 3 x 1 @ 4K60 or 3 x 2 @ 1080p.

**Consolidated AV functionality:** The 1 RU, half-rack unit consolidates disparate AV functionality to free up physical space and reduce hardware and installation costs.

### Peripheral Mode

**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.

**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.

**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.

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

### Shared Benefits

**Native integration and control:** Q-SYS software-based control allows you to add native Q-SYS devices, 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.

**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.

**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 HDMI output as a Q-LAN audio destination for source audio, paging or any other Q-SYS asset.

**USB HID 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.



## 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:** 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 in both Core and Peripheral Mode. 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

**Network audio:** Use a total network channel count of 32 x 32, including Q-SYS native audio channels or Dante channels (licensable up to 32x32).

**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 (available in Q-SYS Designer Software v8.4 or higher).

**Content Protection:** HDCP 2.2 compliant

## Q-SYS Shift™ adaptive video

**compression codec** (Peripheral Mode only)

- **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:** Redundant connection for audio and control traffic (Core Mode only). Can be used to connect to alternate network for monitoring/management traffic.
- **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 (Peripheral Mode only)

### 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 HDMI Out 1 as a “courtesy monitor”, displaying any of the three locally connected HDMI sources at resolutions up to 4K60.

### When set as a 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

### Channel Capacity (Core Mode Only)

Q-LAN / AES67	32 x 32
Dante channels	Licensable up to 32 x 32 (none included)
AEC processors	8 @ 200 ms
VoIP instances	1
Audio recording / playback	4 ch recording / 16 ch playback
Q-SYS peripheral limit*	32

### Video I/O

HDMI 2.0 inputs	3x HDMI capable of receiving source input video formats up to 4K60 4:4:4
HDMI 2.0 outputs	2x HDMI capable of scaling and outputting video formats up to 4K60 4:4:4
Scaler	Each HDMI output features a robust, polymorphic 4K60 4:4:4 scaler that can accommodate the most challenging resolution and frame rate conversions.
Color formats	RGB Full or Limited, BT.601 & BT.709 (supported in Q-SYS Designer Software v8.3 or higher)

### Audio I/O

HDMI inputs	8-channel PCM audio, Q-SYS routable
HDMI outputs	8-channel PCM audio, Q-SYS routable
Analog audio input	3.5 mm unbalanced stereo mic/line input Q-SYS routable <b>Signal-to-noise:</b> 80 dB <b>THD+N:</b> 0.009% @ 0 dB <b>Input frequency response:</b> 20 Hz to 20 kHz +0.05% / -0.5% <b>Input Impedance (unbalanced):</b> 5 kΩ nominal <b>Analog to digital converters:</b> 24 bit, 48 kHz
Analog audio output	3.5 mm unbalanced stereo line output Q-SYS routable <b>Signal-to-noise:</b> 90 dB <b>THD+N:</b> 0.0167% @ 0 dB <b>Output frequency response:</b> 20 Hz to 20 kHz +0.2% / -0.5%

\*includes native Q-SYS cameras, I/O, NV, TSCs, paging stations), Extensions and plugins with their "Is Managed" property set to "Yes". It does not include Streaming I/O, Loudspeakers, Scripts or plugins with their "Is Managed" property set to "No".

### General

Dimensions	8.66 in x 11.28 in x 1.72 in 220 mm x 286.6 mm x 43.6 mm
Weight	4.0 lb (1.81 kg)
Mounting options	Rack-mountable, 1 RU half-rack width Surface-mountable, table or wall-mount <b>All mounting hardware is included</b>
Regulatory compliance	CE, FCC Part 15 Class B, RoHS

### Other Connectors

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	Redundant connection for audio & control traffic (Core Mode only)
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

### Environmental

Ambient operating temperature range	0-50° C
Humidity	5 to 85% non-condensing
Storage temperature	-20 to 70° C

## What's in the box

- NV-32-H (Core Capable) 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



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