Q-SYS NV-32-H (Core Capable)

STANDARD FEATURES

Core mode

- Fully integrated Q-SYS Core processor
- Onboard 3 x 2 HDMI video switcher
- 64 x 32 network audio channels
- Supports up to 32 x 32 Software-based Dante channels (none included)
- 8x AEC channels
- Supports up to three (3) Q-SYS NM-T1 tabletop microphones
- 1 x VoIP softphone instance
- Audio I/O via HDMI, USB and 3.5 mm
- Local decoding of Q-SYS Mediacast streams

Peripheral mode

- Native HDMI video and audio distribution for Q-SYS
- Q-SYS Shift™ adaptive video compression codec
- Software-configurable as an encoder or decoder
- Simultaneous streaming capabilities
- Local decoding of Q-SYS Mediacast streams

Licensable Features*

- Q-SYS Scripting Engine
- Q-SYS UCI Deployment
- Software-Based Dante
- Core Mode Video Streaming

Certified for Microsoft Teams

works with Google Meet

*To learn more about Licensable Features visit qsys.com/licenses

Q-SYS NV-32-H (Core Capable)

Native Network Video Endpoint for Q-SYS

The NV-32-H (Core Capable) is a multipurpose, software-configurable video endpoint native to Q-SYS that offers two 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.

CORE MODE STREAMING LICENSE FEATURE

The Q-SYS NV-32-H Core Mode Video Streaming license expands the NV-32-H (Core Capable) by combining Core mode and Peripheral mode to simultaneously offer Core processing and network video encoding/decoding, streamlining installations while lowering product and installation costs.

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.

Q-SYS NV-32-H (Core Capable)

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 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 Products, 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 AV Bridging:** The NV-32-H allows users to connect their device via USB to integrate Q-SYS audio and camera feeds easily enabling remote meetings.
- **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. Additionally, the onboard analog audio output allows for direct connection of Q-SYS non-networked amplifiers, external loudspeakers, or audio recorders.
- **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.

Q-SYS NV-32-H (Core Capable)

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 touch screen.
- **Q-SYS AV Bridging:** The NV-32-H is a native endpoint for Q-SYS AV Bridging. This feature is available in both Core and Peripheral Mode. The NV-32-H allows users to connect their device via USB to integrate Q-SYS audio and camera feeds by emulating a webcam video driver, AEC speakerphone audio driver, and multi-channel soundcard driver over a single USB connection.

AUDIO

- **Network audio:** Use a total network channel count of 64x32, 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.
- Supports up to three (3) Q-SYS NM-T1 network tabletop microphones.
- **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 CODEC*

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

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

*Supported in Peripheral Mode and with the NV-32-H Core Mode Video Streaming license

Q-SYS NV-32-H (Core Capable)

CONNECTORS

- **USB type A:** Connect USB audio peripherals (headsets, microphones, or speakers) or USB HID devices (keyboard, mouse, or touchscreen); route signals over Q-SYS network.
- **USB type B:** The NV-32-H allows users to connect their device via USB to integrate Q-SYS audio and camera feeds by emulating a webcam video driver, AEC speakerphone audio driver, and multi-channel soundcard driver over a single USB connection.
- **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 Q-SYS non-networked amplifiers, external loudspeakers, or audio recorders.
- **LAN A:** Connection to 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*

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 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).

*Supported in Peripheral Mode and with the NV-32-H Core Mode Video Streaming license

Q-SYS NV-32-H (Core Capable)

Channel Capacity (Core Mode Only)	
QLAN / AES67	64 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
NM-T1 Capacity (Wideband)	3
Q-SYS peripheral limit*	32
Encoding/Decoding	
Video compression	Q-SYS Shift™ compression codec Q-SYS Mediacast compression codec (decode only)
Bitrates	Q-SYS Shift™: 10Mbps – 800Mbps Q-SYS Mediacast: 1Mbps – 25Mbps

Q-SYS Shift Resolution	**Framerate**	**Chroma sampling**
3840 x 2160p	60, 59.94, 50, 30, 29.97, 25, 24	4:4:4
3440 x 1400p	60	4:4:4
2560 x 1600p	60	4:4:4
2560 x 1440p	60	4:4:4
2560 x 1080p	60, 59.94, 50, 30, 29.97, 25, 24	4:4:4
1920 x 1080p	60, 59.94, 50, 30, 29.97, 25, 24	4:4:4
1280 x 720p	60, 59.94, 50, 30, 29.97, 25, 24	4:4:4
640 x 480p	60	4:4:4

Q-SYS Mediacast Resolution	**Framerate**	**Chroma sampling**
1920 x 1080p	30	4:2:0

Content protection	Q-SYS Shift™: HDCP 2.2 compliant, AES-128 encryption for all audio and video signals between encoders and decoders Q-SYS Mediacast: HDCP is not supported
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 **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 k Ω nominal **Analog to digital converters:** 24 bit, 48 kHz
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 +0.02% / -0.5%
General	
Dimensions	8.66 x 11.28 x 1.72 in (220 x 286.6 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, **All mounting hardware is included.**
Regulatory options	CE, FCC part 15 class B, RoHS

Q-SYS NV-32-H (Core Capable)

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++ 802.3 bt 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
Heat Loss	
Average observed @ 25°C ambient	40 W power, 136 BTU/HR
Maximum predicted @ 25°C ambient	57 W power, 195 BTU/HR
What's in the box?	NV-32-H (Core Capable) video endpoint, Euro-terminal connectors for RS-232, GPIO and power, Rack mounting accessories, Surface mounting accessories, Safety and warranty statement.

*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".

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