Q-SYS NV Series NV-2 1-HU

STANDARD FEATURES

- Single cable solution for video distribution, AV bridging¹, and device charging².
- Native HDMI video and audio distribution for Q-SYS
- Q-SYS Shift™ adaptive video compression
- Software configurable as an encoder or decoder
- HDMI and USB-C Mode selection

LICENSABLE FEATURES

- Q-SYS AV Bridging feature license¹

The Q-SYS NV Series NV-2 1-HU enables native video distribution on the Q-SYS Platform. The NV-2 1-HU is a software configurable endpoint offering a comprehensive single-cable solution for video distribution, AV bridging, and device charging via USB-C. The NV-2 1-HU's compact size and reduced I/O make it ideal for supporting meeting rooms, learning spaces, hospitality and entertainment installations. The NV-2 1-HU can be used alongside other Q-SYS NV Series video endpoints, providing system design flexibility. Like all Q-SYS products, the NV-2 1-HU offers native integration and control, simplifying configuration and operation.

SINGLE CABLE SOLUTION

The Q-SYS NV-2 1-HU simplifies the user experience and intuitively supports a wide range of devices. A single USB-C connection to the NV-2 1-HU enables a user's device to distribute video formats up to 4K60 4:4:4 via Q-SYS Shift™ video codec, integrates Q-SYS video camera and audio feeds into a supported collaboration application¹ and charges their device simultaneously².

MAXIMIZE FLEXIBILITY IN DESIGN & SPECIFICATION

The NV-2 1-HU is software-configurable as an encoder or decoder in Q-SYS Designer Software and offers the ability to operate in either HDMI or USB-C mode, supporting a broader range of user devices without adapters or converters. In addition, the NV-2 1-HU supports the AV Bridging feature license to function as an AV bridging endpoint when needed.

- **HDMI Mode:** In HDMI mode, the NV-21-HU enables video distribution from the HDMI input and uses the USB-C connection to offer AV bridging and device charging.

- **USB-C Mode:** In USB-C mode, the NV-21-HU enables video distribution, AV bridging and device charging via the USB-C connection.

RIGHT-SIZED

The NV-2 1-HU provides designers with a more compact endpoint within the NV Series. The smaller design and reduced I/O (compared to the Q-SYS NV-32-H) enable simple and scalable designs across various applications, including meeting rooms, learning spaces, hospitality, and entertainment installations.

DESIGNED FOR Q-SYS

Q-SYS NV Series network video endpoints are native to Q-SYS, which is powered by the Q-SYS OS; this software foundation manages NV Series endpoints and all other Q-SYS Products from a single application. The Q-SYS Platform’s modern IT architecture and development tools enable an entire ecosystem of third-party integrations developed by approved Q-SYS Partners and a worldwide community of developers using the available tools found in Q-SYS Open.

IMPORTANT NOTE: There are temporary software limitations for the NV-21-HU. Please visit qsys.com/nv21 for more details and for on targeted resolution dates.

¹ Optional AV Bridging feature license is required to activate AV Bridging on the NV-21-HU. However, for a limited time until the release of Q-SYS Designer Software v9.10, AV Bridging feature license is included with NV-21-HU purchase.

² An external power supply is required for any device charging over the USB-C connection. NV-21-PSU available separately.
Q-SYS NV-21-HU

CONTROL

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

USB

- **USB HID control**: Control host PCs with a USB connection using USB HID components in Q-SYS Designer Software.

- **Q-SYS AV Bridging**: The Q-SYS AV Bridging feature licenses¹ expands the functionality of the NV-21-HU, allowing users to connect their devices via USB-C directly to the network video endpoint to integrate Q-SYS audio and camera feeds for remote meetings easily. The NV-21-HU emulates a webcam (for video streams from Q-SYS network cameras), a speakerphone, and a multichannel soundcard over a single driverless USB connection.

AUDIO

- **HDMI Audio Input**: Receive up to 8 channels of PCM audio from your video source, which are routable within Q-SYS Designer Software.

- **USB-C Audio Input**: Receive up to 8 channels of PCM Audio* from your video source, which are routable within Q-SYS Designer. Additional 1x1 Speakerphone and 2x2 Soundcard options are available with the Q-SYS AV Bridging feature licenses¹.

- **HDMI Audio Output**: Embed up to 8 channels of PCM audio from Q-SYS to the HDMI output of the NV-21-HU to utilize the built-in speakers of a display as a Q-SYS audio destination for source audio content or any other audio, including paging, background music, etc.

SECURITY AND AUTHENTICATION

- **AES-128**: NV Series supports AES-128 encryption for audio and video signals from encoders to decoders.

- **Content Protection**: HDCP 1.4 & HDCP 2.3 complaint

- **802.1x**: 802.1x authentication is available and configurable through Q-SYS Peripheral Manager

Q-SYS SHIFT™ ADAPTIVE BITRATE CODEC

The NV-21-HU uses Q-SYS Shift™ video compression to provide high-quality, low-latency video streaming supporting video formats up to 4K60 4:4:4 over a standard gigabit network. Q-SYS Shift™ leverages DCT and temporal compression technologies, much like those found in H.264 and H.265 video compression codecs. Q-SYS optimized Shift™ to provide flawless image quality from the most demanding content sources. Further, Shift™ intelligently manages and optimizes the resulting network bitrate by only refreshing changes within each frame, allowing for significantly reduced bandwidth usage as compared to other compression codecs.

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

SUPPORTED VIDEO FORMAT

<table>
<thead>
<tr>
<th>Resolution</th>
<th>Frame rate (Hz)</th>
<th>Chroma sampling level</th>
<th>Bit Depth</th>
</tr>
</thead>
<tbody>
<tr>
<td>3840 x 2160 (4K UHD)</td>
<td>60, 59.94, 50, 30, 29.97, 25, 24</td>
<td>4:4:4</td>
<td>8 bit</td>
</tr>
<tr>
<td>3440 x 1400</td>
<td>60</td>
<td>4:4:4</td>
<td>8 bit</td>
</tr>
<tr>
<td>2560 x 1600</td>
<td>60</td>
<td>4:4:4</td>
<td>8 bit</td>
</tr>
<tr>
<td>2560 x 1440</td>
<td>60</td>
<td>4:4:4</td>
<td>8 bit</td>
</tr>
<tr>
<td>2560 x 1080</td>
<td>60, 59.94, 50, 30, 29.97, 25, 24</td>
<td>4:4:4</td>
<td>8 bit</td>
</tr>
<tr>
<td>1920 x 1200</td>
<td>60</td>
<td>4:4:4</td>
<td>8 bit</td>
</tr>
<tr>
<td>1920 x 1080 (1080 p)</td>
<td>60, 59.94, 50, 30, 29.97, 25, 24</td>
<td>4:4:4</td>
<td>8 bit</td>
</tr>
<tr>
<td>1920 x 720 (720 p)</td>
<td>60, 59.94, 50, 30, 29.97, 25, 24</td>
<td>4:4:4</td>
<td>8 bit</td>
</tr>
<tr>
<td>640 x 480</td>
<td>60</td>
<td>4:4:4</td>
<td>8 bit</td>
</tr>
</tbody>
</table>

* All video formats are progressive
* 4:2:0 Chroma subsampling and HDR not supported

¹ Optional AV Bridging feature license is required to activate AV Bridging on the NV-21-HU. However, for a limited time until the release of Q-SYS Designer Software v9.10, AV Bridging feature license is included with NV-21-HU purchase.

*Not supported at initial release, please use the 2x2 USB Soundcard for USB-C audio routing.

SCALER

The NV-21-HU features a robust 4K60 4:4:4 scaler that can accommodate the most challenging resolution and frame rate conversions from network streams or local HDMI and USB-C sources. The scaler is capable of operating in three modes (configurable within Q-SYS Designer Software):

- Stretch-to-fit
- Maintain aspect ratio
- 1:1 pixel mapping
Q-SYS NV-21-HU

CONNECTORS

- **Power In**: Two-pin euroblock terminal connection for an external 12 V DC, 9 A power supply (not included; NV-21-PSU available separately). An external power supply connection is required for any device charging over the USB-C connection.

- **POE/LAN**: Connection to Q-LAN network; includes PoE Type 3, Class 5 capability via a network switch or midspan injector. When powered via PoE, the NV-21-HU cannot charge devices over the USB connection.

- **USB-A**: Supports USB HID Routing (5 V DC 900 mA)

- **RS-232**: Three-pin euroblock terminal connection for extension of the Q-SYS Control Engine to third-party devices.

- **USB-C**: USB-C connection capable of receiving alt-mode DisplayPort video formats up to 4K60 4:4:4, Q-SYS Audio and Video Bridging and device charging up to 65 W. An external power supply is required for any device charging over the USB-C connection.

- **HDMI IN**: HDMI connection capable of receiving video formats up to 4K60 4:4:4, up to 8 channels PCM Audio from a connected source.

- **HDMI OUT**: HDMI connection capable of transmitting video formats up to 4K60 4:4:4, up to 8 channels PCM Audio to a connected output.

- **Simple Mounting**: Optional surface mounting brackets (included) provide installers with multiple options to optimize airflow in various installation scenarios. Mounting options and installation instructions are available in the hardware user guide.
## Video I/O

<table>
<thead>
<tr>
<th>Feature</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>HDMI 2.0 input</td>
<td>1x HDMI 2.0, capable of receiving input video formats up to 4K60 4:4:4</td>
</tr>
</tbody>
</table>
| USB-C input            | USB 3.2 Gen 1x1 (5Gbps) Type-C Device Port  
- supporting DisplayPort Alt-Mode (DP 1.4 Sink)  
- USB Power Delivery up to 65 W |
| HDMI 2.0 output        | 1x HDMI capable of scaling and outputting video formats up to 4K60 4:4:4 |
| Scaler                 | HDMI output features a robust 4K60 4:4:4 scaler that can accommodate the most challenging resolution and frame rate conversions. |

## Audio I/O

<table>
<thead>
<tr>
<th>Feature</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>HDMI inputs</td>
<td>8-channel PCM audio, Q-SYS routable</td>
</tr>
<tr>
<td>USB Type C input</td>
<td>8-channel PCM audio¹, 1x1 speakerphone², 2x2 soundcard², Q-SYS routable</td>
</tr>
<tr>
<td>HDMI output</td>
<td>8-channel PCM audio, Q-SYS routable</td>
</tr>
</tbody>
</table>

## Other Connectors

| Feature                | Details |
| AV Bridging            | Route Q-SYS network camera and audio feeds to a host via USB connection². |
| Device Charging        | Supports charging up to 65 Watts⁴  
- 3A: 5V, 9V, 12V, 15V  
- 3.25A: 20V |
| USB Type A input       | USB HID Routing  
- 5V DC 900 mA |
| LAN                    | 1000BASE-T, 2.5GBASE-T compliant |
| Power Over Ethernet    | PoE Type 3, Class 5 (40W at PD, 45W at PSE)³ |
| Auxiliary Power Supply | 12 V DC 9 A Power Supply. NV-21-PSU sold separately⁴ |

## General

| Feature                | Details |
| Dimensions             | 7.3 x 5.2 x 1.2 in (183 x 131.5 x 30.5 mm) |
| Weight                 | 1.75 lbs (794 g) |
| Mounting options       | Flexible surface mounting hardware included |

## Environmental

| Feature                | Details |
| Amb. Operating temp.   | 0° to 40° C |
| Humidity               | 5 to 90 RH % non-condensing |
| Storage temp.          | -20 to 70° C |
| Expected Product lifecycle | 10 years |

## What’s in the box?

| Feature                | Details |
| NV-21-HU video endpoint| Euro Terminal connector for RS-232  
Surface mounting accessories  
Safety and warranty statements |

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¹ Not supported on initial release of Q-SYS Designer Software v.9.8.1. Please use the 2x2 USB Soundcard for USB-C audio routing. Visit qsys.com/nv21 for more information and resolution schedule.

² Requires optional AV Bridging feature license. However, for a limited time until the release of Q-SYS Designer Software V9.10, AV Bridging feature license is included with NV-21-HU purchase.

³ When powered via PoE, the NV-21-HU cannot charge devices over the USB-C connection.

⁴ An external power supply is required for any device charging over the USB-C connection.