Q-SYS Core 24f

Network + analog I/O processor

KEY FEATURES

- Up to 160 × 160 network I/O channels
- 24x channels of analog I/O, including 8x software-definable flex channels
- 8 × 8 GPIO to integrate third-party device control connectivity
- Includes 8 × 8 Software-based Dante channels (licensable up to 64 × 64)
- 24x AEC channels @ 200 ms
- Integrated AV bridging via USB-C
- Two (2) 2.5 Gbps Ethernet ports for redundant networked audio (QLAN, AES67, VoIP, WAN, Media Streaming, etc.)
- Two (2) 2.5 Gbps independent, auxiliary Ethernet ports
- Supports up to ten (10) Q-SYS NM-T1 tabletop microphones
- 8x VoIP instances
- Includes OLED front display
- 1RU form factor

The Q-SYS Core 24f ushers in the next-generation of Q-SYS processing capabilities, delivering a fully integrated audio, video, and control solution that enables a blank canvas to deliver unique experiences across a broad range of application types. Combining the convenience of ample onboard I/O with robust processing and network I/O capacity, the Core 24f can serve a broad range of corporate, higher education, entertainment and hospitality applications requiring in-room processing.

THE RIGHT CAPABILITIES FOR DEMANDING APPLICATIONS

As the evolutionary successor to the Q-SYS Core 110f, the Core 24f expands on the foundation set by the industry's first truly integrated audio, video, and control processor, offering a significant increase in processing power and updated I/O to meet the performance needs of modern AV environments. It features 24x onboard audio channels, integrated AV bridging via USB-C, GPIO and RS232 control connectivity and 4x network ports for a variety of applications requiring in-room processing.

Q-SYS CONTROL IS INTRINSIC TO Q-SYS

The Core 24f processor leverages the full capabilities of the Q-SYS control engine without the need for feature licenses. This allows you to design and deliver a user control & automation experience tailor-made for each unique space, with a set of tools that match any programming comfort level on a single, scalable platform.

INTEGRATED AUDIO, VIDEO AND CONTROL

The Core 24f processor is driven by the Q-SYS Full Stack AV Platform, which unifies data, devices and a cloud-first open architecture to deliver a fully integrated audio, video and control solution that offers simpler integration and software-based scalability.

Q-SYS CAPACITIES	
Network audio I/O	160 × 160
Analog I/O	8x mic/line in, 8x line out, 8x software-definable flex channels
Dante channels	8 × 8 included (up to 64 × 64 with Software-based Dante feature license)
AEC channels	24
Q-SYS NM-T1 capacity	10
WAN / Media channel capacity	36 × 36
Network peripherals	Up to 96 (including 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”)
VoIP softphones	8
Audio recording / playback	4 channels recording / 16 channels playback, [expandable up to 64 channels playback with optional multi track playback license (SLMTP-32) stackable up to 2x]
Media drive capacity	128 GB (at least 100 GB available for user media, or at least 200 hours of uncompressed 48kHz, 24 bit, mono WAV format audio files)
PROCESSING	
Processor	Intel 64-bit architecture
Audio processing	32-bit floating point
Q-LAN network audio transport	32-bit floating point
CONTROL	
RS232	2 ports
GPIO	8 × 8
CONTROLS AND INDICATORS	
Front	Power LED 2 × 20 character OLED display PAGE button provides navigation between screens on the front display (forward direction only) ID button and indicator (blinks when enabled from Q-SYS designer Software)
USB INPUTS & OUTPUTS	
USB	2x USB-A and 1x USB-C port
AV bridging	Via USB-C
USB HID routing	Via USB-C
USB audio device hosting	Support for standard USB headset, speakerphone on USB-C connection (3 devices max at a time, each having up to 8 × 8 USB audio channels, up to 16 × 16 total channels)
USB-C (Audio bridging)	
Bit depth	24 bit
Channel count	16 × 16
Sample rate	48 kHz
USB-A Input	
Sample rate	48 kHz or 16 kHz, mono
Resolution	8-bit, 16-bit, 24-bit or 32-bit, float
Format	Little-endian, signed or unsigned

USB-A Output	
Sample rate	48 kHz only, stereo
Resolution	8-bit, 16-bit, 24-bit or 32-bit, float
Format	Little-endian, signed or unsigned
AUDIO INPUTS	
Phantom power	+48 VDC, 10 mA per input channel
A/D-D/A converters	24 bit
Sample rate	48 kHz
Input frequency response, 20 Hz to 20 kHz	+/- 0.5 dB, all sensitivites
EIN (120 Ω termination, no weighting, 20 Hz to 20 kHz)	< -123 dB
Input impedance	5 kΩ single-ended, 10 kΩ balanced
Input sensitivity range (1 dB steps)	-36 dBu minimum to +24 dBu maximum
Input common mode noise rejection @ 20 Hz - 20 kHz	< 70 dB, all input sensitivities
Input to input crosstalk @ 1 kHz	> 111 dB typical, all input sensitivities
INPUT THD+N @ 1KHZ	
@ +24 dBu sensitivity & +24 dBu input	< 0.0008%
@ +10 dBu sensitivity & +8 dBu input	< 0.0005%
@ -10 dBu sensitivity & -10.5 dBu input	< 0.0006%
@ -36 dBu sensitivity & -36.5 dBu input	< 0.006%
INPUT DYNAMIC RANGE	
@ +24 dBu sensitivity	> 111 dB
@ +10 dBu sensitivity	> 110 dB
@ -10 dBu sensitivity	> 106 dB
@ -36 dBu sensitivity	> 88 dB
AUDIO OUTPUTS	
Output frequency response, 20 Hz to 20 kHz	+/- 0.5 dB
Output THD @ 20 Hz to 20 kHz	< 0.008% at max output level
Output crosstalk @ 1 kHz	> 110 dB typical, > 100 dB max
Output dynamic range	> 111 dB
Output audio range level	-36 dBu to +24 dBu
Output impedance (balanced)	100 Ω

PHYSICAL	
Product dimensions (L x W x H)	19.0 × 12.2 × 1.7 in (482.6 × 310.9 × 43.6 mm)
Product weight	12.0 lb (5.44 kg)
Shipping carton dimensions (L x W x H)	22.4 × 16.1 × 4.65 in (569 × 410 × 118 mm)
Shipping weight	12.3 lb (5.58 kg)
Included accessories	Removable rack ears 1x AC mains power cords I/O connector kit Regulatory and safety pamphlet Warranty statement

ENVIRONMENTAL & SAFETY	
Power consumption	60 W typical, 150 W maximum
Line voltage	100 - 240 VAC, ~50 / 60 Hz
Operating temperature range	0°C to +50°C
Storage temperature	-20°C to +70°C
BTU / hour	136 BTU / Hr
Humidity	5% to 85%
Regulatory	FCC 47 CFR Part 15 Subpart B, Canada ICES-003, EN 55032, EN 55035, EU RoHS directive 2011/65/EU, WEEE directive 2012/19/EU, REACH, China RoHS GB/T26572, RCM, IEC/EN/UL 62368-1