



Q-SYS Core 110f

Flex Channel DSP Appliance

Features

- 128x128 Network Audio Channels
- 16x16 USB Audio Channels
- 24 Channels of Analog I/O
- 8 Configurable Flex Channels
- 16x16 GPIO Logic Ports
- 16 Channels of Routable AEC
- Multiple Instance VoIP Lines
- 1 POTS Telephone line
- 3 Year Warranty

The Q-SYS™ Core 110f is the latest addition to the Q-SYS Core family, providing a solution for small, single room projects up to the largest Enterprise scale deployments. QSC's software based DSP platform Q-SYS, gives the systems integrator and end-user a unified software design tool and feature set suitable for projects of any scale. The continuity of the Q-SYS software based DSP platform is unique within the competitor space and allows the Q-SYS Core 110f to leverage all the features that are available across the entire Q-SYS platform to be used in the following applications: Acoustic Echo Canceling (AEC) and sound reinforcement in small to large meeting or multipurpose rooms, sound reinforcement in performance venues such as house of worship and theater, background music systems, wide area paging in airports, convention centers and hospitals.

The Q-SYS Core 110f is a multipurpose software based digital audio signal processor with a total of 8 balanced analog microphone/line level audio inputs and 8 balanced analog microphone/line level audio outputs. In addition to the fixed 8x8 analog audio I/O, the Core 110f features a software definable bank of 8 balanced

analog audio Input/Output Flex Channels, a unique QSC innovation, where each channel can be independently configured during design or run time as either a microphone/line level input or a microphone/line level output. As such, the Core 110f offers class leading 24 analog I/O density in one rack space plus additional specialized I/O such as VoIP, POTS, Internal Media Playback/Recording HDD and USB; all included in one chassis SKU.

The Q-SYS Core 110f supports a class leading USB Audio Device port connection that enables the processor to appear in a Microsoft Windows or Mac OS host operating system simultaneously as both a USB Audio and Communications device. The USB Device port (B type) implementation supports up to 16x16 digital audio channels in a flexible, design time configuration environment that can advertise as multiple virtual USB device instances to the host operating system concurrently over a single physical USB connection. In addition to the USB Device port, the Core 110f provides 6 USB Host ports (A type) which enable the Core to host external USB devices and future Q-SYS peripheral products.

Benefits

- **Class leading I/O:** Q-SYS Core 110f has 24 analog I/O + USB, POTS and VoIP simultaneously in a single rack space and one SKU, offering the best cost to I/O ratio in a single chassis product available on the market from any manufacturer.
 - **Flex Channels:** Nearly all the flexibility of a card based DSP solution without the cost and inconvenience of multiple SKU's and custom parts ordering.
 - **Unified software platform:** Single training investment in one software design tool rather than needing to learn several platforms to scale from small to large systems or support different applications.
 - **Industry leading hardware design:** Future proof investment in standards based software and computer technology running on Intel processors.
 - **Industry first, software based DSP:** Q-SYS suite of conferencing technology applications built and owned by QSC from the ground up allowing for continued refinement.
 - Software based routable AEC; no additional hardware needed
 - SIP Softphones offering multiple instances per Q-SYS Core; no additional hardware needed
 - Gain sharing and gating automixers
 - **True IT Software Integration:** The Core 110f provides more than just networked audio integration and is not just another hardware DSP. Q-SYS is primarily a software platform that offers greater software integration functionality such as native support for LDAP contact server integration, SNMP monitoring, SIP Softphones, and software based routable AEC implementation; it truly is a next generation AV/IT product that is free of the fixed hardware limitations seen in competing products.
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Key Features

- 128x128 channels of Q-LAN network audio in single channel streams
- Up to 24 configurable analog audio I/O
- 8 mic/line level analog audio inputs
- 8 line level analog audio outputs
- 8 Flex Channel mic/line level analog audio inputs or outputs
- Up to 16 assignable and routeable AEC processor instances
- Dual Gigabit Ethernet ports with assignable application resources offering any combination of VoIP, Q-LAN Control, Q-LAN audio or network redundancy
- Up to 16x16 channels of digital audio in and out via software definable USB instances advertised to the host operating system
- 16 General Purpose Inputs (GPI) x 16 General Purpose Outputs (GPO)
- Internal Universal Power Supply plus 12 Volt DC External Power Supply input for redundancy or non-mains power supply sources
- Single software platform for system configuration, control and monitoring via Q-SYS Designer software over Ethernet with support for static or Auto/DHCP TCP/IP addressing
- POTS telephone interface via a standard RJ-11 connector
- Supports up to 2 VoIP Softphone instances in addition to the onboard POTS telephone interface
- Fully compatible with all existing and future Q-SYS accessories such as IO Frames, Paging Stations, and Touch Screen Control Surfaces running Q-SYS user control interfaces
- CE marked, UL listed, and RoHS compliant
- Covered by QSC Systems 3-year warranty

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Input Frequency Response

20Hz to 20kHz @ +21dBu +0.05dB/-0.5dB

Input THD+N @ 1KHz

@ +21 dBu Sensitivity & +21 dBu input < 0.1%
 @ +21 dBu Sensitivity & +10 dBu input < 0.0015%
 @ +10 dBu Sensitivity & +8 dBu input < 0.0007%
 @ -10 dBu Sensitivity & -10.5 dBu input < 0.0006%
 @ -39 dBu Sensitivity & -39.5 dBu input < 0.007%

EIN (no weighting, 20Hz to 20kHz) < -121dB

Input to Input Crosstalk @1kHz >110dB Typical, 90dB Max

Input Dynamic Range

@ +21 dBu Sensitivity > 109.5dB
 @ +10 dBu Sensitivity > 106.4dB
 @ -10 dBu Sensitivity > 104.6dB
 @ -39 dBu Sensitivity > 104.6dB

Input Common Mode Noise Rejection

@ +21 dBu Sensitivity 50.7
 @ +10 dBu Sensitivity 56.5
 @ -10 dBu Sensitivity 73.2
 @ -39 dBu Sensitivity 63.2

Input Impedance (balanced) 5K Ohms Nominal

Input Sensitivity Range (1dB Steps) -39 dBu min to +21 dBu max

Phantom Power +48v DC, 10mA per input max

Sampling Rate 48kHz

A/D – D/A Converters 24-bit

Overall Dimensions/Weight	Device Height: 1.75 inches (44 mm)	Shipping Height: 6.0 inches (152 mm)
	Device Width: 19.0 inches (483 mm)	Shipping Width: 23 inches (584 mm)
	Device Depth: 11.12 inches (282.5 mm)	Shipping Depth: 14 inches (356 mm)
	Device Weight: 11 lbs. (5.0 kg)	Shipping Weight: 12.4 lbs. (5.6 kg)

Output Frequency Response

20Hz to 20kHz @ all settings +0.2/-0.5 dB

Output THD 0.003%, +10 dBu Max output level

Output Crosstalk @1kHz >100dB Typical, 90dB max

Output Dynamic Range >108dB

USB B

Bit Depth Selectable 16-bit, 24-bit

Number of Channels up to 16x16

Sample Rate 48kHz

Output Impedance (balanced) 220 Ohms

Output Level Range: (1dB Steps) -39 dBu min to +21 dBu max

Power Consumption 60 watts, typical. 120 watts max

BTU/Heat load: 205 BTU/Hour

Compliance FCC Part 15B (USA), FCC part 68 / TIA-968-B (USA), JATE (Japan), AS/ACIF S002 (Australia), PTC200 (New Zealand), ES203 021 (Europe), ANATEL Resolution 473 (Brazil), NOM-151-SCTI (Mexico), PSTN01 (Taiwan), Industry Canada CS-03 (Canada), CE marked (Europe), UL and C-UL listed (USA & Canada), RCM (Australia), EAC (Eurasian Customs Union) & RoHS Directive (Europe)



Specifications subject to change without notice.

A&E SPECIFICATIONS

The system processor shall have a minimum network channel capability of 128 channels and an end node capacity of at least 128 channels of Q-LAN audio. The system processor shall support 24 total analog I/O capacity and shall be presented in the following groupings; 8 Mic/Line inputs, 8 Mic/Line outputs and 8 Flex Channel I/O which shall be software definable analog inputs or outputs in single channel increments in any combination ratio.

The system processor shall have the following front panel controls and indicators: blue monochrome OLED display with page forward capacitive touch button, Unit ID capacitive touch button, Power On blue LED, Two USB A Type ports. The system processor shall provide a monochrome 304x96 blue OLED graphics display displaying the device name, design name and system status, LAN A and B settings, and the firmware version. Device Status shall be displayed on the OLED display including I/O status, muting, level present indication, and system status.

On the rear panel, the system processor shall have one 3-pin RS232 Euro Block Connector, HDMI Video Out, 16 GPI general purpose control inputs on 20-pin Euro Block Connector, 16 GPO general purpose control outputs on 20-pin Euro Block Connector. Q-SYS Network: LAN A RJ45 1000 MBps only, LAN B: RJ45 1000 MBps only. The dimensions of the System processor shall be 1.75" x 19" x 11.12" (44 mm x 483 mm x 356 mm).

The system processor shall store a single design which can be comprised of components, wiring, links, text, and graphics on a single or multiple schematic pages. Designs shall include any of the following DSP function blocks, test and measurement components, control components, and layout components: Acoustic Echo Cancellers, SIP Softphone instances, USB Audio host and device blocks, Audio Players, Audio Streaming components, Crossfaders, Crossovers, Delay components, Auto Gain control elements, Compressors, Gates, Duckers, Expanders, Ambient Noise Compensators, Limiters, Gain blocks, Graphic Equalizers, Parametric Equalizers, FIR Filters, All-Pass Filters, Band-Pass Filters, Band-Stop Filters, High-Pass Filters, Low-Pass Filters, FIR High-Pass filters, FIR Low-Pass Filters, Dual-Shelf Equalizers, Notch Filters, Meters, Matrix Mixers, Gain-Sharing Automatic Mixers, Gated Automatic Mixers, Signal Routers, Public Address Routers, Room Combiners, Signal Presence Meters, Tone Generators, Tone and Noise Generators, Dual Trace FFT Measurement Modules, Real Time Analyzers, Signal Injectors, and Signal Probes.

The system processor shall support custom user control interfaces on either proprietary touch screen controllers, or network computers utilizing a control application, or iOS devices on Wi-Fi. Custom control interfaces shall be capable of having multiple user-selectable pages with different controls on each.

The system processor and control engine shall be the QSC Q-SYS Core 110f Flex Channel DSP.

