Q-SYS™

Cinema Core 510c Processor

Features

- Q-SYS Core processing in a flexible chassis featuring 8 onboard I/O card slots

- Install any combination of Q-SYS I/O cards for maximum flexibility

- Audio, video and control processing on a dedicated Linux™ realtime OS

- "Q-SYS Core mode" or "I/O Frame mode" configurable via software

- Built using standard computer industry hardware and IT industry networking protocols

- Control and interface with external devices using TCP/IP, RS232 and GPIO

- Design with powerful and intuitive Q-SYS Designer Software application

- Seamlessly integrates with Q-SYS AV-to-USB bridging peripherals

- Provides simple integration with QSC amplifiers and loudspeakers

- Multiple levels of system redundancy

Introduction

The Q-SYS™ Cinema Core 510c processor is an audio, video, control and monitoring system that leverages Intel™ CPUs and motherboards as well as a dedicated, Linux™ realtime operating system developed by QSC to provide class-leading capabilities for cinema systems of any scale.

The Q-SYS Cinema Core 510c processor offers the most flexible audio I/O of any Core in the Q-SYS catalog, perfect for applications that require a diversity of analog, digital and networked audio connectivity. It features eight onboard I/O card slots that can be populated with any combination of Q-SYS Type-II I/O card allowing diverse connectivity options. The Core 510c processor also offers two modes of operation whereby it can be deployed as a processor in "Q-SYS Core mode" with full processing capabilities, or configured as an I/O only device in "I/O Frame mode".

Applications – Q-SYS Core mode

When deployed in "Q-SYS Core mode", the Core 510c processor provides an abundance of raw processing power for audio, video, control and monitoring processing requirements.

Applications – I/O Frame mode

When deployed in "I/O Frame mode", the Q-SYS Core 510c processor offers the ability to integrate up to 128 x 128 audio channels into the Q-SYS system for processing on a separate Q-SYS Core. It can accommodate any combination of Q-SYS Type-II I/O cards.

Network

The Q-SYS platform utilizes IEEE networking standards and solutions for audio, control and video distribution over a standard Ethernet / IP network. QSC's Q-LAN limits deterministic system latencies with analog input to analog output to no more than 3.167ms. The Q-SYS platform uses Q-LAN for audio, video and control connectivity with all Q-SYS peripherals. Additionally, the Q-SYS Core supports VoIP, SIP, LDAP, AES67, TCP/IP and HTTP Web Sockets among many other standard IT networking systems.

Scalable Redundancy

While QSC is dedicated to building the most reliable products, some applications call for additional assurance. Any element on the Q-SYS platform – Cores, networks, I/O-Frames and even amplifiers may be deployed in a redundant configuration. The system designer has the choice of making one or all system elements redundant.

Peripherals

The capabilities of the Q-SYS platform are further enhanced by the ever growing suite of Q-SYS peripheral devices, all of which are compatible with all Q-SYS Core processors, including the Q-SYS Core 510c. The catalog of Q-SYS networked peripheral devices includes amplifiers, touchscreen controllers, paging stations, I/O channel expanders, PTZ-IP cameras for the conference room and AV-to-USB Bridging devices.

Preliminary Specifications subject to change without notice.

Q-SYS™ Cinema Core 510c Processor

Description	System processor and control engine with integrated I/O
Configuration Modes	Q-SYS Core mode - centralized processor and control engine for a Q-SYS system I/O Frame mode - I/O expander suited to integrating high channel-count networked I/O cards (Dante, CobraNet, AVB), peripheral to an additional Q-SYS Core processor on the system
Supported Peripherals	I/O-8 Flex Channel Expander, I/O-USB Bridge, PTZ-IP Camera series, I/O Frame, I/O-Frame 8s, I/O-22, I/O-11 Series, Page Station Series, TSC Series touchscreens (when configured in Q-SYS Core mode)
Software Requirements	Q-Sys Designer 6.x.x

Channel Capacity

Network Channel Capacity	256 x 256
Audio I/O Capacity	8 audio I/O card slots - accommodates up to 128x128 total onboard I/O channels
Multitrack Player Capacity	16 tracks, expandable to 128 tracks (available in Q-SYS Core mode only)
Media Drive Capacity	Approximately 6GB on the default drive (accessible in Q-SYS Core mode, upgrade options are available)

Configure-to-Order Inputs/Outputs Options

Audio I/O Cards	CIAES16: AES3 digital input card (16 channels) COL4: Line output card (4 channels) CODP4: DataPort card (4 channels) CIML4: Mic/line input card (4 channels) CIML4-HP: High Performance mic/line input card (4 channels) CAES4: AES3 digital I/O card (4x4 channels) CCN32: CobraNet network bridge card (up to 32x32 channels) CAN32: AVB network bridge card (up to 32 channels) CDN64: Dante network bridge card (up to 64x64 channels)
Media Drives	MD-S-M2: 128GB MD-M-M2: 256GB MD-L-M2: 512GB
Multitrack Players (MTP):	MTP-32: 32 tracks MTP-64: 64 tracks MTP-128: 128 tracks

Controls and Indicators

|	
Front Panel Controls	NEXT OLED page forward capacitive touch button ID device identification capacitive touch button Clear Network Settings - invoked when NEXT and ID are pressed simultaneously
Front Panel Connectors	AUX USB: USB Host x2 (Type A connectors)
Front Panel Indicators	Blue POWER LED 304x96 monochrome OLED display
Rear Panel Connectors	RS232: Male 9-pin D shell connector (DB-9) Video out: HDMI AUX USB: USB Host x4 (Type A connectors) AUX Network: RJ45 10/100/1000 Mbps GPIO: Female 15-pin D shell connector x2 (DA-15) Media Network LAN A: RJ45 1000 Mbps (QLAN, AES67, VoIP, WAN, Media Streaming, etc) Media Network LAN B: RJ45 1000 Mbps (QLAN, AES67, VoIP, WAN, Media Streaming, etc) AC Mains Power: IEC connector
Rear Panel Indicators	Link, Speed and Activity LEDs on all LAN ports

Q-SYS Cinema Core 510c Processor

Miscellaneous

Line Voltage	100 VAC - 240VAC, 50-60 Hz
Current Draw	3.7A Max @100 VAC (actual current draw depends on configuration options such as I/O cards and/or Media Drive, DSP loading and network loading)
Operating Temperature Range	0°C - 50°C
BTU/Hour	600 BTUs (power conversion estimate under typical load)
Humidity	85% RH maximum
Regulatory	FCC 47 CFR Part 15 Class A, IC ICES-003, CE (EN55032, EN55035), EU RoHS directive 2011/65/EU, WEEE directive 2012/19/EU, China RoHS directive GB/T26572, EAC, RTL, UL, C-UL
Product Dimensions	3.5" x 19" x 15" (89mm x 483mm x 381mm)
Shipping Carton Dimensions	23.5" x 20" x 6.5" (597mm x 508mm x 165mm)
Shipping Weight	23 lbs. (10.5 kg) minimum (installation of I/O cards increases shipping weight)
Included Accessories	6' UL/CSA/IEC line cord, installation manual, I/O connectors (included when purchasing I/O cards with Euro style terminal blocks)

Preliminary Specifications
subject to change without notice.
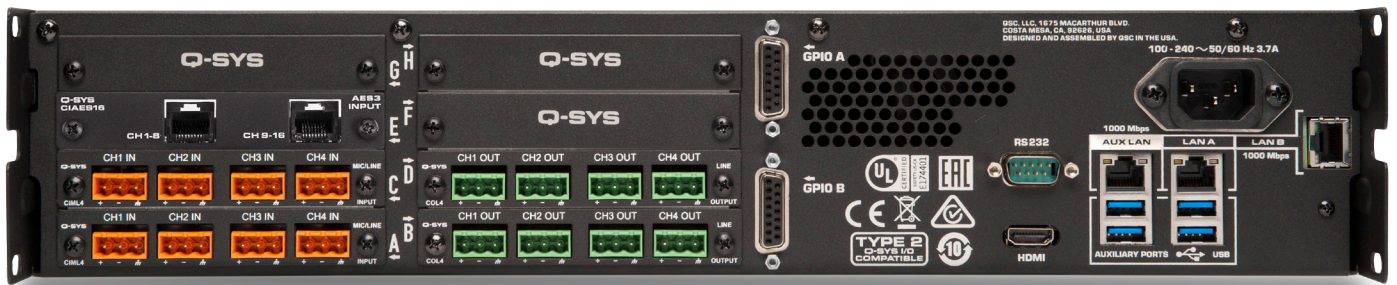
1675 MacArthur Boulevard • Costa Mesa, CA 92626 • Ph: +1.800.854.4079 or +1.714.957.7100 • Fax: +1.714.754.6174

please recycle

Q-SYS Core 510c Spec Sheet 2/22/2017