



## Q-SYS Core 510i

Integrated Core 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™ Core 510i processor is an audio, video and control processing 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 AV systems of any scale.

The Q-SYS Core 510i 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 510i 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 510i processor provides an abundance of raw processing power for all audio, video and control processing requirements including integration with the new Q-SYS AV-to-USB Bridging solution. Onboard acoustic echo cancellation (AEC) processing coupled with high channel capacity networked audio provide the ability to manage multiple small to mid-sized conference spaces or a single large space.

### Applications – I/O Frame mode

When deployed in “I/O Frame mode”, the Q-SYS Core 510i processor offers the ability to integrate up to 128 x 128 audio channels in to 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.

This is particularly useful when integrating large numbers of networked audio channels from Dante™, CobraNet™ or AVB™ devices and subsystems in to the Q-SYS platform.

### Network

The Q-SYS platform utilizes IEEE networking standards and solutions for audio, control and video distribution over a standard Ethernet / IP network. Q-LAN provides deterministic system latencies with analog input to analog output guaranteed at 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 510i. The catalog of Q-SYS networked peripheral devices include amplifiers, touchscreen controllers, paging stations, I/O channel expanders, PTZ-IP cameras for the conference room and AV-to-USB Bridging devices.

# Q-SYS Core 510i Integrated Processor

Description	System processor and control engine with integrated I/O (or I/O Frame peripheral in "I/O Frame mode")
Configuration Modes	"Q-SYS Core mode" - centralized processor and control engine for a Q-SYS system "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
AEC Channel Capacity	64 at 200ms tail length (available in "Q-SYS Core mode" only)
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	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) CIAES16: AES3 digital input card (16 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 (DE-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

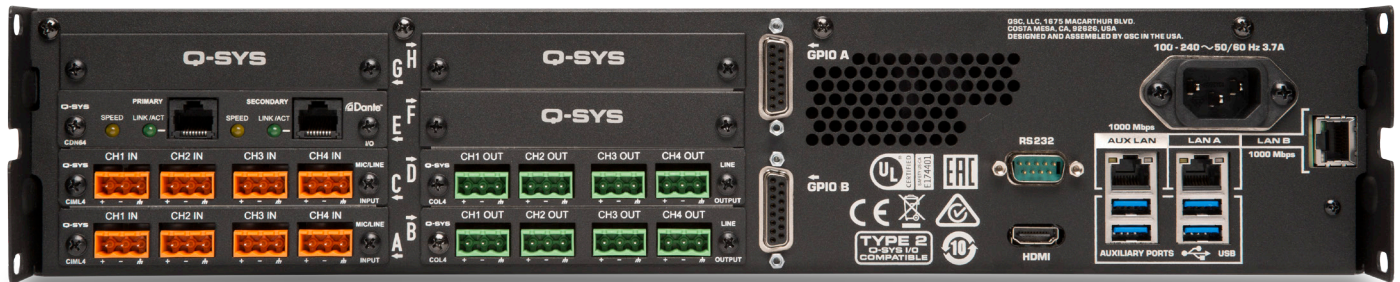
*Preliminary Specifications  
subject to change without notice.*

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## 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	0C - 50C
BTU/Hour	600 (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" (60mm x 51mm x 17mm)
Shipping Weight	23 lbs. 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)

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