Q-SYS™

2015

QSC

Q-SYS™ The world's most powerful networked audio solution

"The centralized topology and immense processing power of Q-Sys has transformed our entire design and implementation methodology to a far simpler process."

Rod Louey-Gung, Integrated Media Pty Ltd — Australia

QSC Headquarters
Costa Mesa, CA

Voted A Top Workplace for
three consecutive years.

QSC THE COMPANY

A HERITAGE OF QUALITY AND VALUE

In today's media-rich world, installed sound is an integral part of nearly every public environment, from shopping malls, conference centers and airports, to theaters, arenas, and stadiums. No longer an afterthought, installed sound is rightly seen as an investment in building infrastructure, with significant impacts to consider in areas such as system utility, operational costs, and code compliance. While there's no shortage of installed sound equipment on the market, only one company offers a complete, integrated, IT-friendly solution that is backed by a decades-long record of performance and reliability. That company is QSC.

THE VALUE OF QSC

Founded over four decades ago, QSC has long been known for high-quality professional audio products and unparalleled service. Our amplifiers define reliability, our concert loudspeakers represent the epitome of high performance, and our digital cinema processors thrill theater audiences worldwide with levels of sonic clarity unmatched in the industry. QSC also excels at delivering real value over the long term, where the true benefit of quality products is reflected in the total cost of ownership. We build that value into each individual product, and we extend the value proposition by designing solutions that work together seamlessly as efficient integrated systems. Q-Sys™, our advanced audio control solution for installed sound, is the centerpiece of this integrated strategy. Bringing together everything we've learned about quality, reliability, and ease-of-use, Q-Sys is the ultimate installed sound platform for both commercial and performance environments.

INNOVATION THROUGH TECHNOLOGY

Q-Sys represents the latest advance in QSC's long history of defining the state of the art in audio routing and control systems. As the world's first licensee of CobraNet™, QSC created DSP-based audio processing products that enabled new capabilities in both commercial and performance sound reinforcement systems. As developments in IT continued to enhance the capabilities of CPUs and IP networking, we responded with new solutions offering far greater power and flexibility than the proprietary approach still being embraced by our competitors. That's the QSC way; Building on our heritage while constantly evolving through new technologies.

ONE ROOF, ONE GOAL

With a single brand that represents all aspects of installation audio, QSC is uniquely positioned to develop and support integrated solutions that fulfill our customers' needs. Our support reach is global, but our product development teams are centralized, working together toward common goals. Digital processing, routing, amplification, and loudspeakers are all designed and tested under the same roof. Q-Sys devices and DataPort amplifiers even share the same production line at our Costa Mesa headquarters in Southern California. This results in products that function flawlessly together, and provide the synergy that makes a QSC system far more than the sum of its parts. We also offer a field-proven record of reliability, and back every Q-Sys system with an industry-leading 24/7 customer service commitment. The bottom line is that an investment in Q-Sys is an investment in your facility's future, assuring you the same quality, performance, reliability, and service that has made QSC the envy of the professional audio industry for over 45 years.

Boulder, CO office

Hong Kong office

University of Southern California, Ronald Tutor Campus Center — Photograph by Joel Zink

A SUPERIOR SOUND INVESTMENT

"QSC worked with us in a lot of ways, with a lot of great support and attention, to make sure that it stayed advantageous for us to keep all of our equipment common."

Brandon Operchuck, University of Southern California — Los Angeles, California

Director of Performance Venues at USC

THE INTEGRATED SYSTEMS APPROACH

As a worldwide manufacturing leader of installed sound solutions, QSC believes that complete, tightly integrated systems are inherently more efficient at every stage of the life cycle than systems assembled from a grab bag of discrete parts. That's why QSC designs and builds processing, amplification, and loudspeaker products with the total system in mind. Creating complete integrated systems allows us to think through every detail of how each component can and should work together, and to benefit from the resulting efficiencies in the form of products that are easier to design, install, configure, operate, and maintain than anything else on the market.

- **Efficient to design** – everything needed to ensure smooth inter-operation between the various parts of a system has already been well thought-out and built into Q-Sys™ and related QSC components. Once you've defined your needs, simply select the system size and configuration that matches your requirements. Because QSC designs and tests system components together, the way they are used in the real world, we've taken the guesswork out of building a system that fully meets your needs.
- **Efficient to implement** – Q-Sys can piggy-back onto a facility's existing Gigabit network infrastructure, and with QSC's unique centralized processing topology, many connections between functional blocks are handled by a single processor. This greatly minimizes wiring and labor costs, while simultaneously eliminating multiple points of failure. It all adds up to fast, smooth deployment, reducing the facility downtime and allowing you to start recouping your investment quickly.
- **Efficient to operate** – the Q-Sys Designer software interface is incredibly simple for systems staff to learn and to use, allowing fast system configuration and modification. And Q-Sys is designed throughout to facilitate the flow of status information and control signals both internally and to human-facing interfaces. With centralized operation and status monitoring of multiple zones from on-site or off, Q-Sys enables a more cost-effective allocation of staffing resources for system supervision, diagnostics and maintenance, and helps ensure that problems are caught and addressed before they cause costly downtime.

The result of these efficiencies is a significant reduction in the total cost of ownership for your entire audio system and a faster and far greater return on your investment.

BUSINESS SOLUTIONS

Airports and Transportation Centers

TOTAL COST OF OWNERSHIP

No matter how a facility is owned and operated — by a business, a public agency, an educational institution, or a non-profit organization — the purchase of an installed sound system is a capital investment. As such, the true cost of the system isn't simply the line item price on the quote, but rather the total cost of buying, operating, and maintaining the system over its useful life. Here are some of the key performance factors that can help to calculate the true value of a Q-Sys™ system:

- **Reliability** – Q-Sys exemplifies the build quality and trouble-free operation that has made QSC a coveted nameplate for decades.
- **Scalability** – Q-Sys is powerful enough for any installation, yet flexible enough to accommodate system growth beyond currently anticipated needs. Expansion is very simple to implement, requiring only the connection of additional I/O interfaces to the network and the enabling of the new components in Q-Sys Designer software.
- **Future-proofing** – Designed to enterprise-class standards of quality, the Q-Sys Core is actually an Intel® server running rock-solid Linux software. Unlike systems based on proprietary chips, the Q-Sys platform will benefit from gains in processing power and speed as the worldwide computer market drives continued advances in processor performance.
- **Redundancy** – Q-Sys offers the most advanced redundancy measures of any digital audio networking product, ensuring smooth failover in the unlikely event of a component failure. That protects your operations against costly loss of revenue from downtime, and protects your customers from danger when the system's built-in emergency paging/voice alarm capabilities are activated in a life safety event.
- **Performance** – QSC is renowned for superb audio fidelity. Q-Sys is no exception, offering unsurpassed sound from concert stages and nightclubs to stadiums, airports, and malls.
- **Security** – protecting the system from unauthorized tampering reduces maintenance calls and downtime. Q-Sys guards access with a multi-level security scheme, customizable for every venue, that lets system administrators decide what functions are accessible to whom.

United States Senate

- **Support** – Q-Sys is backed with industry-leading 24/7 technical support to help keep your mission-critical systems up and running, minimizing downtime and loss of revenue. The system is also designed for remote diagnostics, enabling QSC service and support personnel to help you from afar.

24/7

Q-Sys™ Customer Support

- **Single-vendor responsibility** – Buying a complete Q-Sys-based solution from QSC eliminates the common headaches of dealing with multiple vendors. With components that are designed from the ground up to work together as a single unit, there's no question about who takes responsibility for the overall system.

QSC Technical Support

New World Center, Miami Beach, FL — Photograph by Claudia Uribe

Q-SYS™
THE NEW TECHNOLOGY

"Q-SYS is the new century's version of the old system, with a lot more power, capability, expandability and far less hardware. When you add it all up, Q-SYS knocked everything else off the charts."

Rod Sintow, Pro Sound & Video — Florida and California

Installer - New World Center, Miami Beach, FL

A COMPLETELY NEW TECHNOLOGY PLATFORM

Q-Sys™ has no equal as an integrated, scalable audio solution. Built from the ground up on a powerful, open, IT-friendly foundation, the Q-Sys platform transcends the limitations in scope, performance, and usability that have kept previous networked audio control systems from reaching their full potential:

- **Architecture** – Alternative systems use old-school architectures based on dedicated DSP chips. By comparison, Q-Sys uses fast, flexible, server-grade CPUs whose constant improvement is driven by the entire global IT market.
- **Networking** – Alternative systems are limited to Layer 2 networking, which doesn't scale beyond its chosen network hardware. Q-Sys uses the same Layer 3 hardware-independent IP technologies that enable wide area networking and the Internet.
- **Scalability** – Alternative systems struggle with capacity chokepoints that are inherent in distributed processing. Q-Sys uses centralized processing to ensure that the system's full power can be flexibly allocated as needed.

Simply put, by starting with this smarter approach, Q-Sys is able to achieve vastly superior results, enabling you to do more with your system while worrying less about critical issues such as scalability, latency, and redundancy.

POWER, RELIABILITY, AND EASE-OF-USE

With the bandwidth to handle even the most complex configurations, Q-Sys is ready for any sized job, from boardrooms and clubs, to airports and stadiums. But it's not just power that sets Q-Sys apart:

- **Ease of use** – An intuitive user interface that supports remote access makes Q-Sys easy to configure, operate, and maintain.
- **Reliability** – Field-proven for over 45 years, QSC reliability ensures that you can depend on Q-Sys for mission-critical deployments.
- **Support** – Our worldwide support network is ready to help 24/7, keeping you running around the clock.

Combining unprecedented capabilities and performance with extraordinary reliability and support, Q-Sys offers unsurpassed value for facilities across the spectrum of installed sound.

Q-SYS SYSTEM ELEMENTS

The primary elements of a Q-Sys system are the Core, the Designer software, the Q-LAN network, and the peripherals.

- **Q-Sys Core** is the brain of the system, performing all audio routing, processing, and control functions.
- **Q-Sys Designer** software provides the interface for system design, configuration, and control.
- **Q-LAN** is the IP-friendly network that connects the system into an integrated whole.
- **Q-Sys peripherals** such as I/O Frames, I/O cards, page stations and touch screen controllers provide fully customizable, application-specific functionality.

WHAT'S AT THE CORE

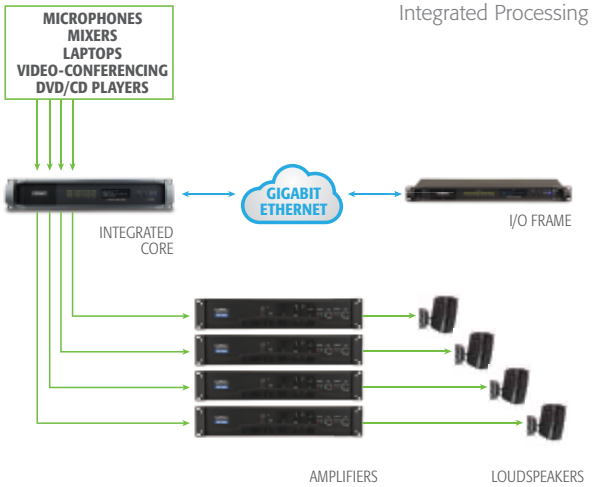
Core 1100 / Core 3100

The heart of the Q-Sys™ centralized processing architecture is the Q-Sys Core. The Core runs QSC-developed DSP algorithms under a customized Linux operating system running on Intel® microprocessors and motherboards. This Intel hardware already meets industry-best reliability standards and is used in many of the world's most mission-critical projects. The Core has a number of distinct advantages over systems based on proprietary DSP chips:

- **Simple, flexible architecture** – Centralized processing allows the routing of any input to any output without convoluted variable-latency signal paths. This approach, also common in the IT industry with centralized servers, eliminates the capacity chokepoints inherent in distributed processing, allowing allocation of the system's full power as needed. Furthermore, it vastly simplifies system design, allowing configuration to be driven by actual needs rather than by hardware limitations.
- **IT-standard connectivity** – Each Core utilizes Gigabit Ethernet ports, providing options for redundancy or third party control communications (when desired).
- **Efficient networking** – With the Core handling all control and monitoring, there's less control traffic between remote devices, leaving greater useable bandwidth for audio.
- **Hardware-independent processing** – Q-Sys doesn't depend on proprietary hardware that is sustained exclusively by narrow, specialized markets. Instead, advances in processing power are driven by the entire global IT industry, and software improvements don't require new hardware.
- **Fewer points of failure** – Cables and connectors are far more prone to failure than digitally wired and routed signal paths. By keeping processing in the Core, Q-Sys maximizes system reliability by minimizing the number of interconnections required to complete a whole system.
- **Straightforward system redundancy** – With Q-Sys, it doesn't take a truckload of different components to provide full system redundancy. Every Core is designed to function as a backup unit that can sense failure of the primary Core and immediately assume all system functions. This simple, fail-safe redundancy approach provides the ultimate in dependability for mission-critical applications.

Core 250i / Core 500i

Integrated Processing



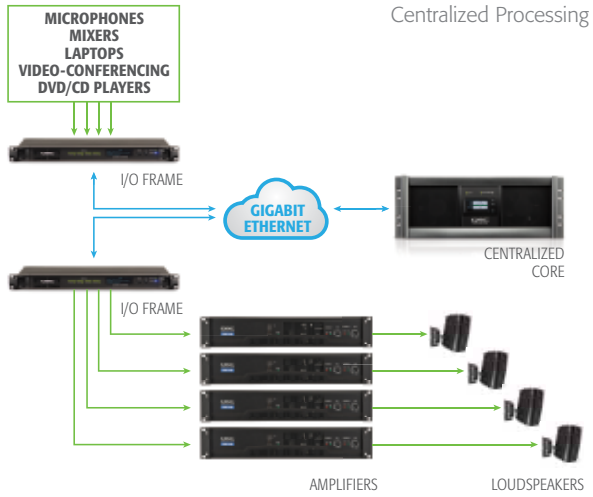
CORE MODELS

The Q-Sys Core is currently available in four sizes tailored to the varying requirements of different facilities. The Core 1100 and Core 3100 are each designed to work with ins and outs provided by one or more external I/O Frames. Core 250i and 500i combine I/O Frame and Core functionality into a single integrated unit supporting up to eight internal I/O cards.

Any Core may be ordered with one of three Media Drive expansion options (MD-S, MD-M, MD-L) to increase the Audio Player storage capacity up to a maximum of 1200 hours of uncompressed audio. Additional Multi-track Player expansion options increase the internal multi-track capability from 16 channels (default) up to either 64 channels (MTP-64) or 128 channels (MTP-128).

	Total Network Channel Capacity
Core 250i	64 Flex
Core 500i	128 Flex
Core 1100	256 x 256
Core 3100	512 x 512

Centralized Processing



Q-SYS™
ON THE NETWORK

"Q-Sys is supported over a very broad range of network equipment. So with Q-Sys you get choice, you get lower cost, and in most cases you won't have to replace your existing network gear."

Kevin Gross, AVA Networks, LLC — Boulder, Colorado

Inventor - Cobranet™ Layer 2 protocol

NETWORKING WITH Q-LAN

One of the major strengths of a Q-Sys™ system is Q-LAN, our IT-friendly third-generation networked media distribution technology. Instead of reinventing the wheel, we designed Q-LAN around off-the-shelf networking components, enabling Q-Sys to operate over standard Gigabit Ethernet with no proprietary network equipment required. That means many existing facilities are already equipped to run Q-Sys without network upgrades, and new networks can take advantage of lower costs and broader equipment choices by using standard hardware. It also means that your IT staff will already be familiar with the networking required for Q-Sys operation, allowing you to leverage existing tools and training in support of your new advanced audio capabilities.

Q-LAN ADVANTAGES

Q-LAN enables the following Q-Sys advantages:

- **Existing network hardware** – Q-LAN passes audio through standard Gigabit Ethernet switches. We don't rely on uncommon switches with costly proprietary features.
- **Familiar IP-standard protocols** – Q-LAN transports audio-stream packets using the same Layer 3 networking protocols (UDP/IP) that IT staff everywhere already implement and troubleshoot on a daily basis.
- **Wide area access** – Q-LAN's compatibility with standard protocols and networking hardware allows remote connection of user interface and control components through standard network segments (e.g. fast Ethernet, WiFi, or WAN), extending control beyond the confines of the local area.
- **Infrastructure sharing** – Q-LAN uses Layer 3 DiffServ QoS to categorize and prioritize network traffic, thereby allowing Q-Sys to run over a shared network without segregating audio traffic via tedious VLAN configuration.
- **Low, fixed latency** – Q-LAN audio latency is less than 0.66 ms, allowing overall system latency to be fixed at a low 2.5 ms from any input, through the Core to any output. With fixed latency, the complex calculations and adjustments required for distributed DSP systems are a thing of the past.
- **Precise timing** – Q-LAN uses the IEEE 1588 Precision Time Protocol (PTP) to establish and distribute a master clock for audio packet synchronization.
- **Fault tolerance** – For maximum protection against failure, Q-Sys accommodates a fully redundant networking configuration, and Q-LAN supports all standard Ethernet and Layer 3 fault tolerance strategies (spanning tree, link aggregation, IP routing, vendor-specific meshing and fail-over, self-monitoring, and redundant power supplies).
- **Voice over IP** – in addition to Q-LAN, the Q-Sys Core also contains a VoIP telephony feature, which when combined with the multi-channel AEC component can support high performance teleconferencing. This feature is not dependent on hardware, but rather is implemented in software within the Q-Sys Core, allowing multiple VoIP endpoints to be used in a single Q-Sys design. The VoIP component supports ITU standard Codecs such as G.711 (μ-law and A-law), G.722 and G.726, and uncompressed PCM.

Q-SYS™ DESIGNER SOFTWARE

Q-SYS DESIGNER

Q-Sys™ Designer is a software application that provides the interface for design, configuration, and control of the Q-Sys system. The strength of Designer lies in its combination of power and simplicity. Remarkably intuitive and easy to use for even the most complex audio systems, Q-Sys Designer enables straightforward and detailed configuration, giving system managers powerful control without clutter or complication.

Q-SYS CONFIGURATOR

The Configurator is accessed from within the Designer application and is Q-LAN's network discovery utility. It allows the system installer or IT technician to quickly identify Q-Sys devices on the network, and easily assign desired static IP addresses. An auto-IP option is also available per device.

Q-SYS ADMINISTRATOR

The Administrator is an extremely powerful utility used to setup user access rights, schedule events, load audio files into the Core, and monitor event logs. The Administrator can be accessed from within Designer, or run as a standalone application specifically for the system administrator staff.

Q-SYS USER CONTROL INTERFACE (UCI)

User interfaces can be quickly and easily created in the Q-Sys Designer software that provide as much or as little control as desired. These interfaces can be viewed on any network PC or specific control panel devices (iPad, iPhone, QSC TSC-3 and TSC-8).

EASY SYSTEM DESIGN

Creating a system with Designer is a matter of dropping in components selected from easy-to-access inventories, clicking to set properties, and dragging to connect. With Designer's Design and Emulate modes, you don't need to be connected to a Q-Sys Core to work on the design. As you build the system graphically in the Schematic window, Q-Sys automatically handles all the network configuration details behind the scenes, and the Design Inspector automatically checks your current configuration looking for orphaned controls or un-terminated signals that could cause potential issues. Within minutes, you'll be able to create not only a clear picture of your overall system but a fully-operational configuration that's ready to use on the Q-Sys Core as well.

Once your Q-Sys Designer configuration is complete you can connect to a Core and deploy the design in Run mode. Unlike many competing systems, designs are compiled and ready to run in just seconds. With no barrier to trying different options, you can rapidly refine your designs for the best results while still saving valuable time during system set-up and commissioning.

Q-Sys Designer

POWERFUL SYSTEM CONTROL

While Q-Sys Designer's interface is straightforward, the system's capabilities are deep and powerful:

- **Mixing and routing** – Mix signal from any input with any other input, and route it to any output.
- **DSP processing** – Apply a complete range of DSP processing including EQ, dynamics, crossovers, delays and Acoustic Echo Cancellation.
- **Speaker optimization** – QSC loudspeakers benefit from optimized, pre-specified voicings in Q-Sys. For non-QSC speaker models, "custom" configurations can be created, named, and used throughout the system.
- **System supervision** – Monitor the status, on-site or remotely, of the Q-Sys system and all QSC DataPort amplifiers.
- **Real time metrics** – Insert meters and virtual test probes anywhere in the signal path to take real-time measurements and remotely diagnose and correct issues.
- **Acoustical analysis** – Connect a measurement microphone for on-site acoustical measurements.
- **Event logging** – Keep a history of system performance and events using integrated logging tools.

In short, Q-Sys Designer provides everything you need to configure, operate, and maintain your audio system at peak performance, and does so in a centralized environment that is simultaneously straightforward and powerful.

NETWORKING AMPLIFIERS

NETWORKING FOR AMPLIFIERS

While Q-Sys™ works well with any standard power amplifier, the full benefit of an integrated solution is realized when Q-Sys is used with either the new CXD-Q networked amplifiers or DataPort-equipped QSC amplifiers. QSC was first to commercialize Ethernet-enabled amplifier control and monitoring, and Q-Sys reflects that longstanding expertise. Using CXD-Q or DataPort-equipped QSC amplifiers simplify wiring and speeds installation and make the amplifier part of a smart, centrally-controlled system that enables efficient system supervision and control.

SYSTEM MANAGEMENT

Keeping track of the condition of each amp and loudspeaker in a complex, facility-wide system can be a daunting, labor-intensive task. QSC's networked amplifier solutions allow Q-Sys to handle this for you by monitoring the performance of every component in the system. Information passed between Q-Sys and the network-enabled amplifier enables far more effective management of the overall installed sound system:

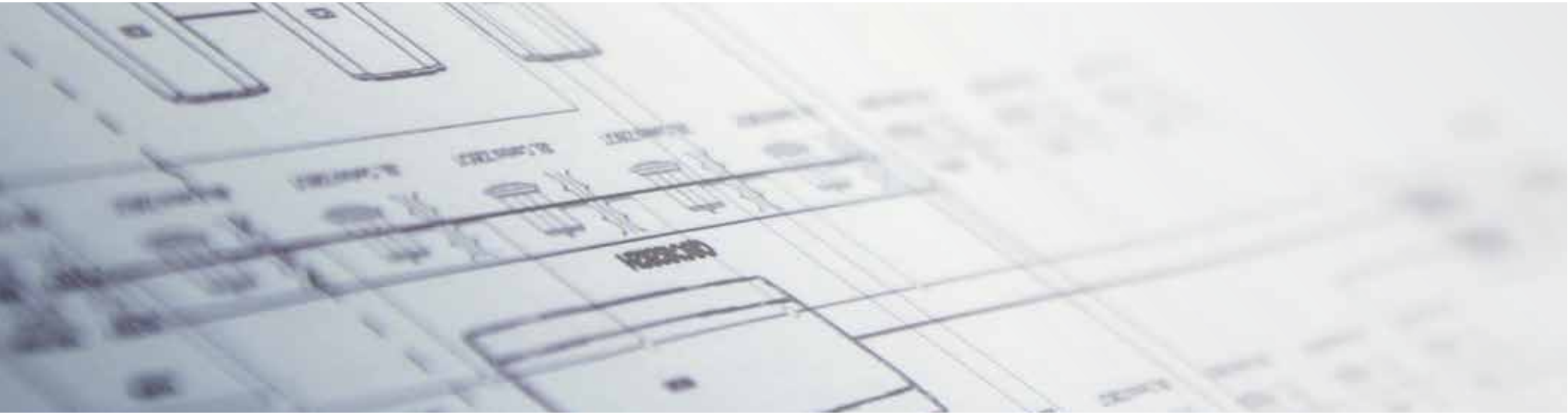
- **Real-time performance metrics** – CXD-Q and DataPort amplifiers relay real-time reporting on the status of each amplifier channel and its attached loads, including speaker fault detection, output voltage monitoring (VMON), current monitoring (IMON), clip/protect monitoring, and thermal monitoring. Status and events are logged in the Q-Sys Event Log.
- **Reduced downtime** – Component metrics can be reported back to the system, allowing the system manager to note changes in performance and respond with appropriate maintenance before component failure results in costly downtime. Alerts may also be scheduled to prompt regular maintenance.
- **Remote status reporting** – System status can be checked remotely from any location with an Internet connection. Amplifier status, channel status, channel metering, and channel monitoring are all available for display via any Q-Sys control panel. The system can also alert the operator to issues at the first sign of unusual activity.
- **Remote diagnostics** –Use Q-Sys diagnostic tools to remotely troubleshoot issues of CXD-Q or DataPort amplifiers.
- **Increased productivity** – With Q-Sys supervising system components, staff can concentrate their valuable time on known issues rather than randomly troubleshooting.
- **Optimization and protection** – When selected QSC loudspeakers, subwoofers or line arrays are configured and connected to a CXD-Q or DataPort amplifier, Q-Sys automatically supplies tailored settings for Intrinsic Correction™, crossover, and other DSP parameters. Q-Sys even calculates peak voltage limiter settings for each specific QSC amplifier to prevent the overdriving of loudspeakers.

Q-Sys DataPort Card

ADDED INPUT CONNECTIVITY & SPACE EFFICIENCY

Since the new CXD-Q amplifiers offer four channels of routable Mic/Line inputs, eight bi-directional GPIO connections, and four channels of amplification in just 2RU space, the CXD-Q amplifiers combine the functionality of amplifiers and I/O Frames, replacing equipment that would have taken up as much as three times the rack space.


CXD-Q Amplifiers



Q-SYS™ REDUNDANCY

"Meeting both audio and life safety needs with a single integrated system saves a lot of money and is architecturally more pleasing. Q-Sys can fulfill both requirements simultaneously."

Roland Hemming, RH Consulting, Tunbridge Wells — United Kingdom

Independent Audio and Life Safety Consultant

Q-SYS™ FOR LIFE SAFETY

Today's buildings and facilities are often complex environments encompassing a wide variety of different activities. It's difficult to fully address the requirements of such multi-zone spaces by stringing together commodity life safety systems that are manufactured for less critical applications. With Q-Sys™, however, there's more than enough horsepower to give every zone its due, to centrally track and coordinate the specific requirements of each zone, and to prepare and deploy conditional responses for a broad spectrum of contingencies.

Capable of addressing complex environments with virtually unlimited customized zones, Q-Sys is also easily configured for complete redundancy, providing unsurpassed protection against system failure. That makes Q-Sys deployment consistent with codes and standards that authorize custom emergency paging systems, especially when determined by risk assessment that such a system will afford greater overall safety.

DUAL PURPOSE

In facilities such as theaters, auditoriums, gymnasiums or other performance and/or sports venues, where in addition to life safety the sound system is also required to provide quality performance audio, Q-Sys easily handles both tasks. The result — a more cost-effective and less visually obtrusive solution than two completely separate systems.

REDUNDANCY

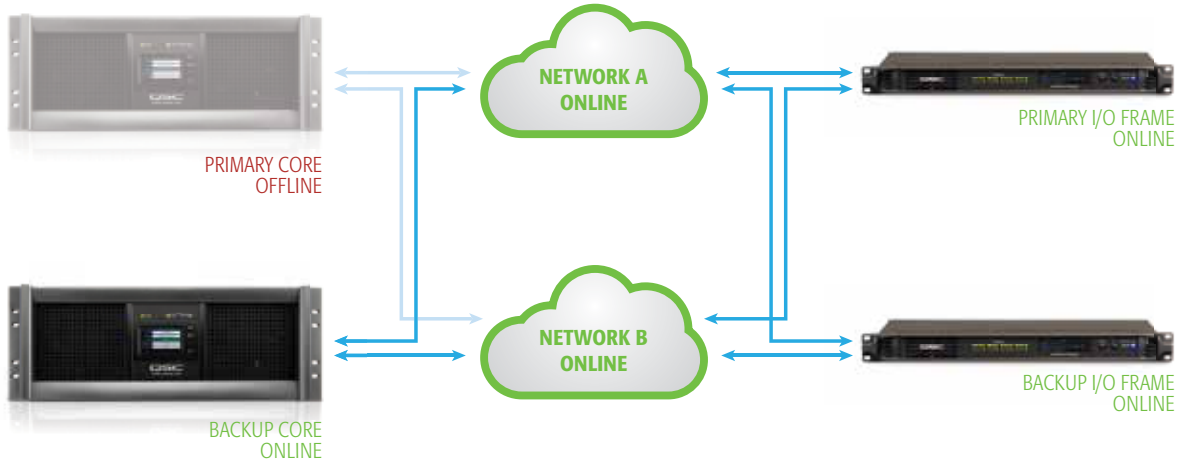
In mission-critical applications — particularly those involving life safety — it is imperative to ensure continued operation of an emergency paging system, even when individual components are compromised by an adverse event such as power failure, fire, or flood. Whether dozens or thousands of people, the public depends on timely and clearly audible evacuation guidance. Eliminating any single point of failure becomes a vital aspect of preventing injury or death. Every component of Q-Sys has been developed with full awareness of this fact. Building on our well-earned reputation, we've taken reliability to the next level with a redundancy-friendly architecture that offers the best possible protection against system failure.

As illustrated on the following pages, the streamlined architecture of the Q-Sys system facilitates multiple levels of redundancy, including network, Core, I/O, and amplifier (using the DAB-801 DataPort amplifier backup panel). If fully implemented at each level, and by adding backup power to each component via a Universal Power Supply (UPS), a Q-Sys system achieves full overall redundancy and offers unmatched protection against system interruption.

SYSTEM REDUNDANCY

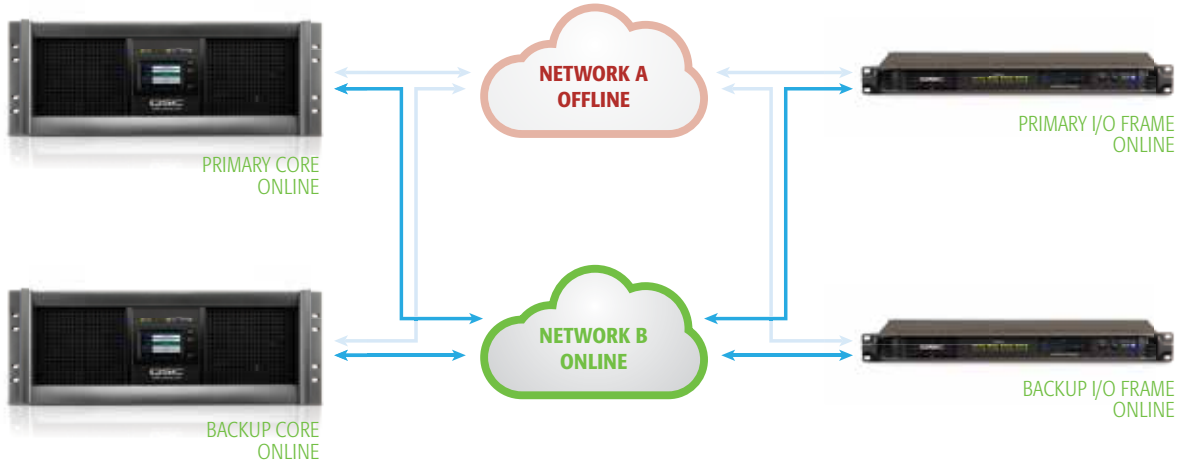
CORE REDUNDANCY

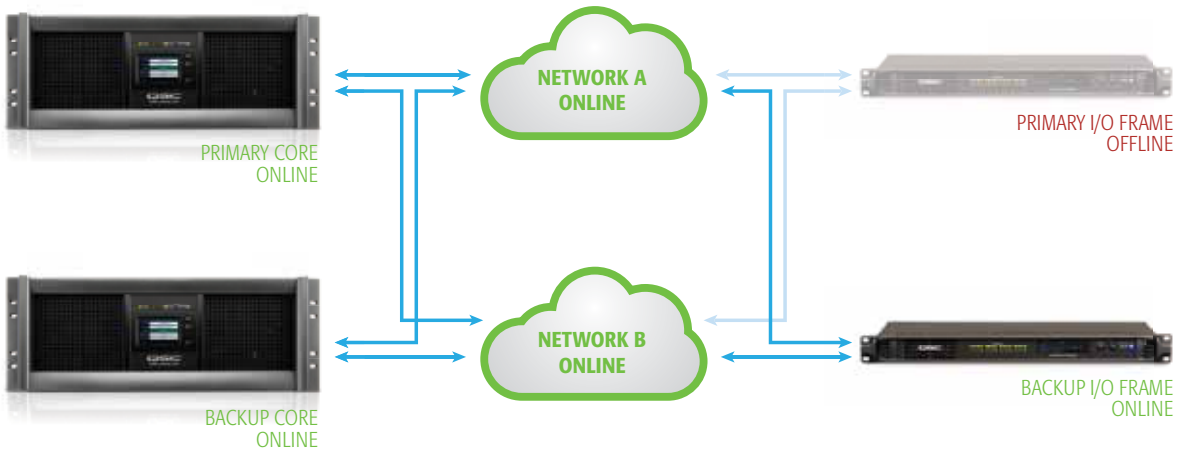
Core redundancy allows a second Core to be connected to the network. Should the primary Core go offline for any reason, the backup Core takes over.



NETWORK REDUNDANCY

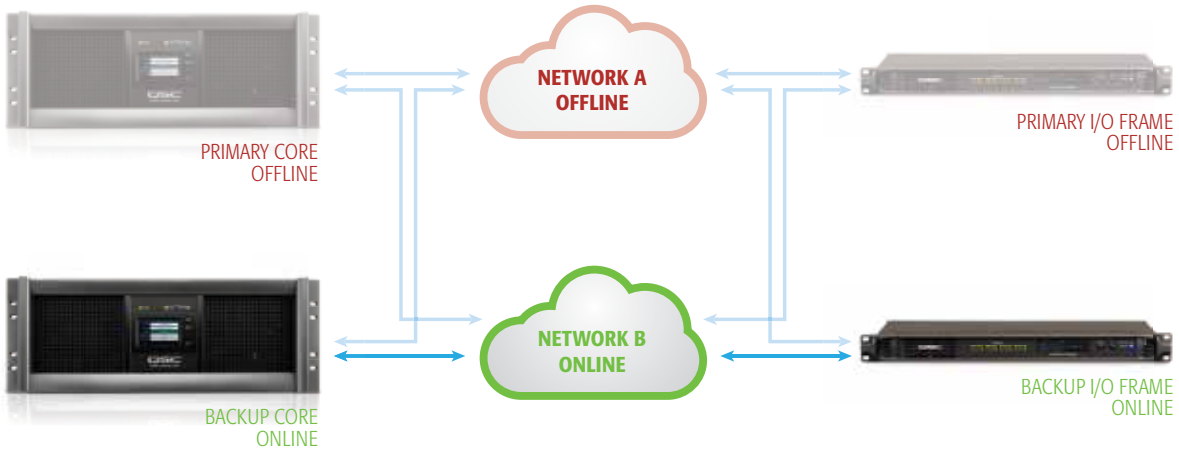
Network redundancy may be implemented by simply adding additional network switches and cabling. In the event of a network failure, the Q-Sys™ components switch over instantly to the backup network.





INPUT/OUTPUT REDUNDANCY

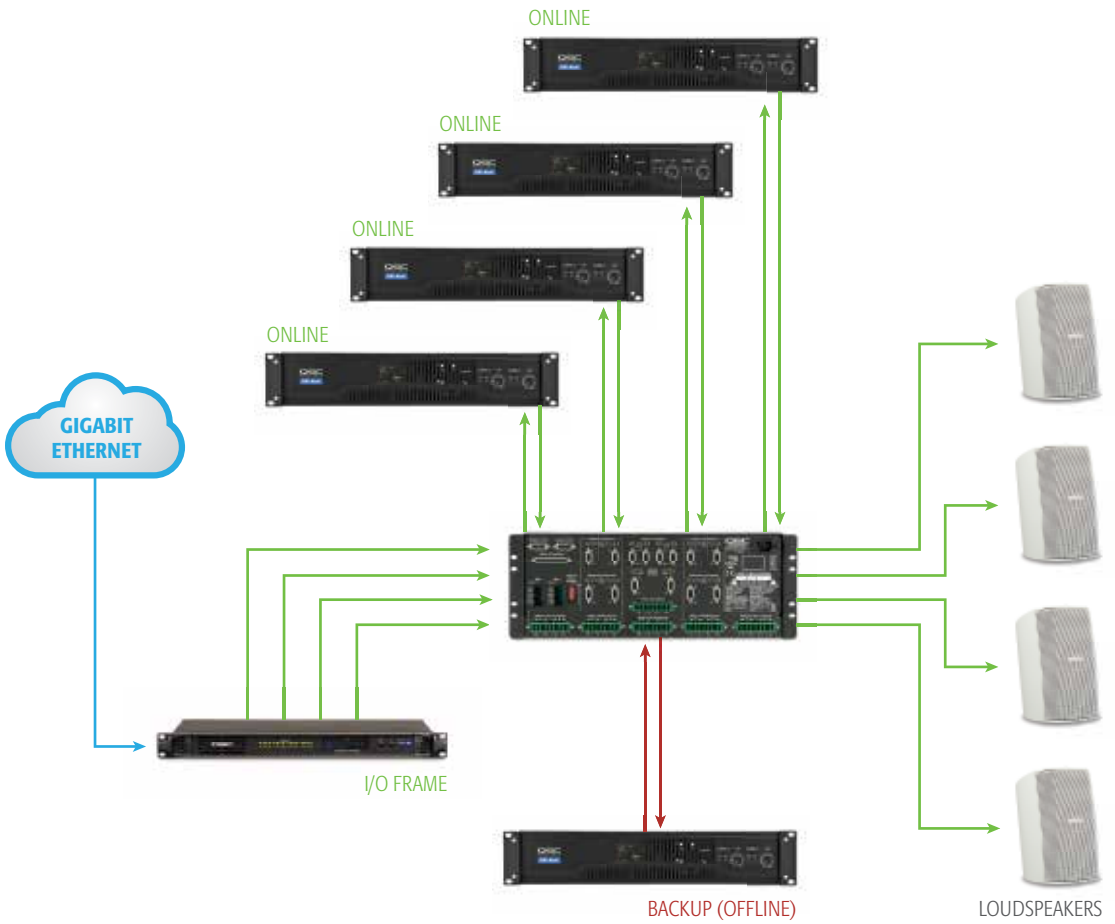
I/O redundancy gives the designer the option of adding redundant I/O peripherals for high-priority areas.



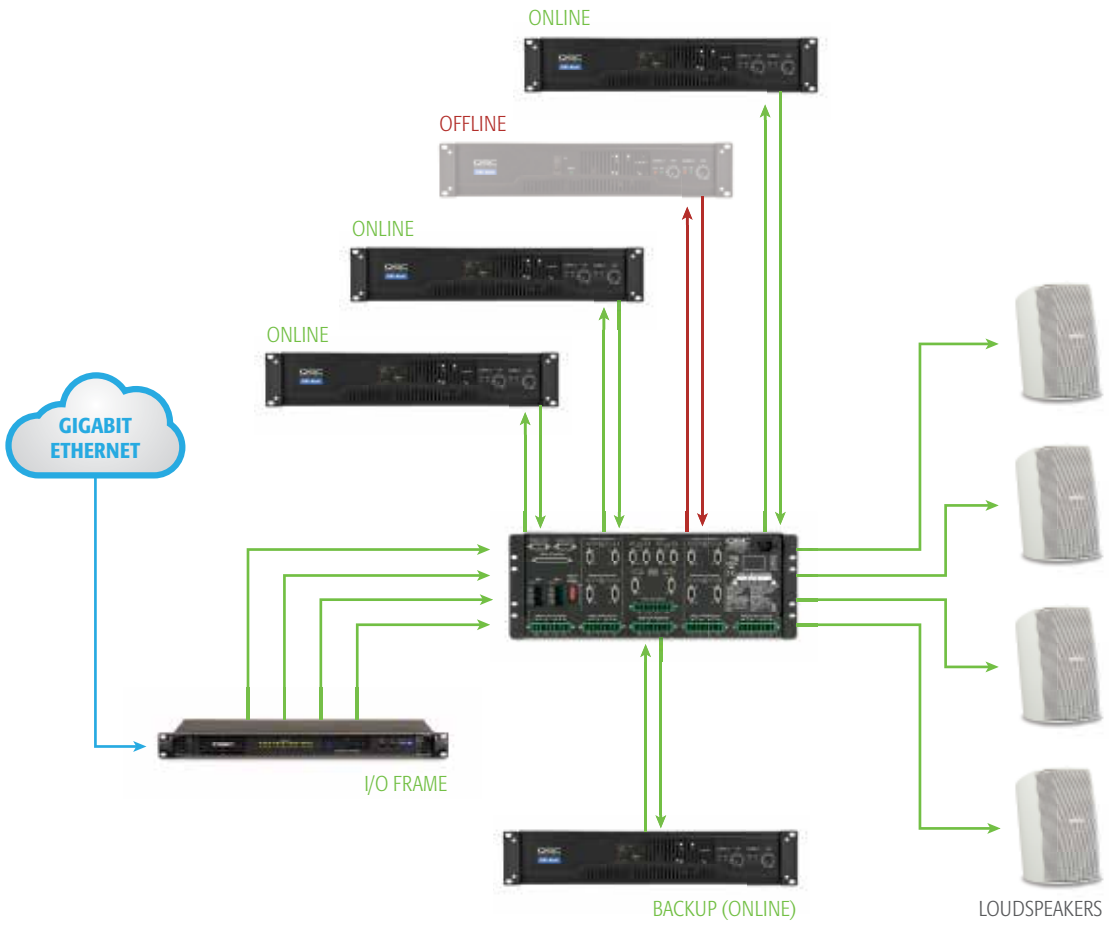
TOTAL SYSTEM REDUNDANCY

Total System Redundancy eliminates any single point of failure by combining all four primary redundancy types: network, Core, I/O, and amplifier.

N+1 AMPLIFIER REDUNDANCY



DAB-801 DataPort
Amplifier Backup Panel



Amplifier redundancy is made possible with the QSC DAB-801 (DataPort amplifier backup panel), which configures five 2-channel QSC DataPort amplifiers so that the fifth amplifier automatically kicks in if a problem is detected with any of the other four (4 + 1 redundancy). A second DAB-801 may be added to implement 8 + 1 redundancy.

When 4-channel amplifiers are selected, a single DAB-801 provides 2 + 1 redundancy, while adding a second DAB-801 will implement 4 + 1 redundancy.

Q-SYS™ PERIPHERALS

"Switching to Q-Sys, where everything is processed from the Core, made the design and installation so much easier — we simply chose the I/O peripherals we needed for each area of the resort. I really love the power, the flexibility, and how easy it is to use."

Kheng Keong Tan, Electro-Acoustics Systems Pte Ltd — Singapore

Installer – Resorts World Sentosa, Singapore

I/O FRAME & I/O FRAME 8s

The Q-Sys™ I/O Frame and the new I/O Frame 8s provides the points of connection that interface Q-Sys with other components of the audio system, including microphones, mixers and power amplifiers. Both Frames convert analog audio input signals to digital and passes them over the network to the Core. They also receive the processed digital audio signal back from the Core, converts it back to analog and feed it to the output devices. High-performance A/D and D/A converters are used to ensure audiophile quality throughout. I/O Frame offers 4 available card slots while the new I/O Frame 8s offers 8 available card slots. In the case of the Q-Sys Core 250i and 500i, the I/O Frame functionality and the Core are integrated into a single unit.

I/O Frame 8s

I/O Frame

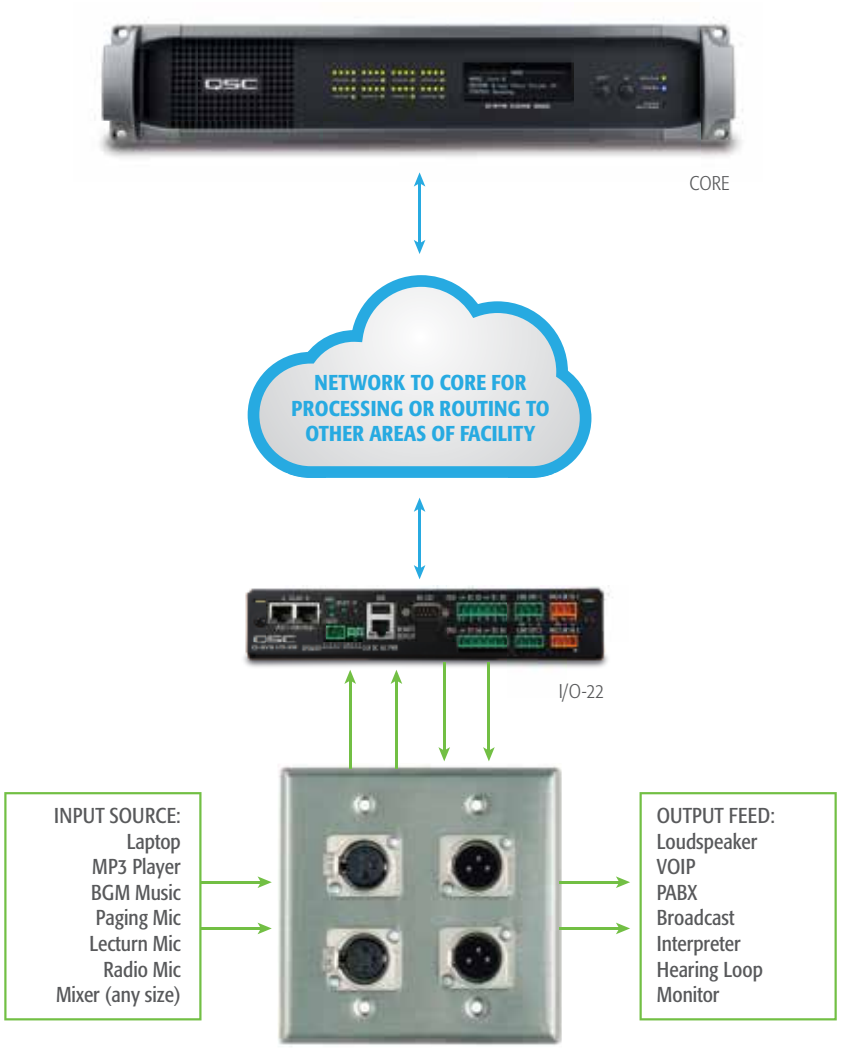
THE INS/OUTS OF Q-SYS™

I/O-22

I/O-22

Our analog I/O box, the Q-Sys I/O-22, is a compact, standalone unit designed for use when audio sources and destinations are physically spread out, such as the individual seats in a conferencing system or individual rooms in a multi-room venue. Providing two line mic/line inputs and two line outputs, the I/O-22 is ideal for applications such as legislative or judicial chambers, meeting rooms, ballrooms, ancillary zones, classrooms, VIP suites, and stage patching.

The I/O-22 connects directly to the Gigabit Ethernet network via redundant Q-LAN ports (RJ-45 Ethernet connectors). Other connections include a scriptable RS-232 port and eight GPIO ports, as well as USB and remote display ports that are reserved for future use. The unit is powered via PoE (Power over Ethernet) or 24 VDC and includes an 8.5 watt mono amplifier to drive a local monitor speaker. Compact in size, the I/O-22 includes a mounting plate that allows it to be used in numerous hideaway locations such as under a desk or attached to a rack tray.



Core 500i

Mic/Line Analog Input Card

Analog Line Output Card

AES-3 Digital Input/Output Card

DataPort Output Card

CobraNet™ Digital Input/Output Card

Dante™ Network Audio Bridge Card

I/O CARDS

The following cards are available for both the integrated Cores (up to eight cards total) and the I/O Frame:

- **Mic/Line Analog Input Card (CIML4/CIML4-HP)** – Four channels of switchable mic/line-level analog audio input with 48 V phantom power. This input card provides the interface between Q-Sys and input devices such as microphones, mixers, and CD/DVD players. The input card is also available in a high performance version (CIML4-HP) featuring broadcast quality pre-amps and A/D converters.
- **Analog Line Output Card (COL4)** – Four channels of balanced, line-level analog output for interfacing between Q-Sys and outboard equipment such as non-DataPort amplifiers, recording devices and tele-conference systems.
- **AES-3 Digital Input/Output Card (CAES4)** – Four input and four output channels of AES-3 digital audio for interfacing between Q-Sys and digital devices such as mixing consoles and recording devices.
- **DataPort™ Output Card (CODP4)** – Four audio output channels (2 DataPorts) for connection to DataPort equipped QSC amplifiers. The DataPort interface allows audio, status monitoring, and control between Q-Sys and QSC DataPort power amplifiers.
- **CobraNet™ Digital Input/Output Card (CCN32)** – Input/output interfacing with legacy CobraNet-based audio networks. The CobraNet card allows for several operating modes, 4x4, 8x8, 16x16, and 32x32. In an I/O Frame, the CobraNet card can be used in 4x4, 8x8, and 16x16 mode, whereas inserting it into a Core allows all of these as well as the additional 32x32 mode.
- **Dante™ Network Audio Bridge Card (CDN64)** – Network bridge card provides a link for up to 32x32 channels at 48 kHz from any Dante™ edge network, directly into a QSC Q-Sys Core for advanced processing and redistribution over larger LAN and WAN IT infrastructures.

PAGING PERIPHERALS

Handheld Page Station

Q-SYS™ PAGING OPTIONS

Paging is a key function in a huge variety of installed sound applications including shopping centers, convention centers, corporate offices, military bases, transportation terminals, theme parks, factories, health care facilities, and campuses. Q-Sys™ offers a suite of tools that provide sophisticated paging and messaging functionality to support any sized paging application. Q-Sys also offers a set of rugged wall-mounted or desktop (Networked Page Stations) with handheld or gooseneck microphones.

INTEGRATED FULL-FEATURED PAGING

Q-Sys is a full-featured, fully-integrated paging solution, covering all of the paging requirements of large-scale organizations in all types of facilities. Q-Sys provides:

- **High-fidelity** to ensure voice intelligibility at every stage in the system from microphone to loudspeaker.
- **Easy zone setup** with naming of discrete amplifier outputs and combining of zones into logical groups.
- **Priority system** for urgent announcements, with flexible priority levels.
- **Pre-recorded announcements** for one-time or scheduled playback.
- **Store and forward** for assured re-transmission of pages if zone is busy.
- **Management, reporting, and logging,** including detailed logging of hardware status and pages, as well as long-term storage of announcements.
- **Third-party interfacing** for compatibility with complimentary systems (FIDS, Courtesy, TSA, etc.).
- **Secure access** to lock out unauthorized users, with passcodes and multiple levels (e.g. user, administrator).
- **Life safety capabilities,** including redundancy and the ability to act as an alternate in case of emergency override.

Q-SYS PAGING ADVANTAGES

Q-Sys offers a number of paging-specific advantages that set it apart from alternative approaches:

- **Simple, integrated platform** – Q-Sys enables paging with a vastly simplified bill of materials. Features such as Playback, Record, and Store-and-Forward for example, are all stored to the Q-Sys Core. Competing systems require separate, expensive hardware.
- **Ample paging capacity** – With Cores supporting up to 1024 total network channels, there's no need to cascade multiple units to form a central matrix. A single Q-Sys Core supports more than enough paging capacity for even the largest facilities.
- **Networked Page Stations** – Ruggedly built to withstand daily use, our line of desktop and wall-mount page stations are powered over Ethernet and offer secure access, high-fidelity gooseneck or handheld microphones, and capacitive touch buttons rather than failure-prone push buttons.
- **Scriptable control** – Q-Sys scripting capabilities allow paging functions to be added or customized as needed for your installation. For example, Q-Sys can be enabled to communicate with visual displays or building management systems using their serial or Ethernet protocols.

- **PA Router** – Designed to support live and delayed paging as well as scheduled messaging, the PA Router provides functions such as announcement recording, live page routing, triggered playback, and event scheduling.

Q-SYS NETWORKED PAGE STATIONS

Available with either gooseneck or handheld microphone (push to talk), the Q-Sys Networked Page Station is a dual-port network device that is fully configurable from Q-Sys Designer. Each station connects to a Q-Sys system via Q-LAN, which handles all audio deliveries to and within the station. Two Q-LAN network interfaces are provided, allowing each station to connect to two switch ports or to be deployed on two separate networks to support a variety of redundant operation modes for mission critical applications. The network port also delivers power to the page station using PoE (Power over Ethernet).

The Page Station front panel's user interface includes a capacitive touchpad that offers visible feedback and audible cues. Paging status, alerts, and operational details are also reported via illuminated status indicators and a built-in 240 x 64 monochrome graphics LCD display. The Page Station rear panel offers a variety of auxiliary connectors to expand its capabilities. Auxiliary audio inputs accommodate accessories such as a secondary microphone (located near the gangway or rail platform) or other local sources. An auxiliary output can drive a local amplifier, powered loudspeaker or other destination device. And a GPIO interface can be configured to use external events to affect paging operation or to be the source of events to affect external control systems.

Q-Sys Networked Page Stations are designed for both desktop and wall-mounted installation. All models include a microphone, either handheld (H) or gooseneck (G). The handheld is a push-to-talk, dynamic paging microphone with a unique magnetic docking system and cable strain relief for flexible placement when not in use. The gooseneck is a high-fidelity dynamic microphone optimized for paging applications. Four Networked Page Station models are currently available:

- **PS-1600H/G** – 16 buttons total, including four command buttons (command code A-D). Also includes a numeric keypad and supports security features including automatic logoff timeout, logon requirements, and user restrictions.
- **PS-1650H/G** – 16 command buttons (command code A-P).
- **PS-X** – a handheld paging accessory for any Q-Sys Page Station, providing a secondary remote microphone (for applications such as an airport gangway or rail platform). It is designed to fit into a standard U.S. 2-gang wall box.
- **Virtual Page Station** – Used in conjunction with a local control interface (TSC-3 or UCI Viewer), an I/O-22 plus a microphone of choice, the Virtual Page Station will emulate the exact same functionality as any of the physical models listed above.

Gooseneck Page Station

PS-X handheld paging accessory

"The Q-Sys interface lessens the complexity of operating the system even for a complete novice."

John Miller, BAi Consultants — Austin, Texas

Consultant – Bryant-Denny Stadium, University of Alabama

Q-SYS™ CONTROL OPTIONS

System control is a vital element of a complete installed audio solution. In addition to its powerful audio signal processing, Q-Sys™ offers extensive control capabilities, addressing the entire range of system control needs across facility types:

- **Zone control** – The ability to assign control by zone allows facility managers to selectively enable staff the control of sound system parameters based on controller location and/or user permissions. In facilities including multiple rooms such as ballrooms, meeting rooms, training rooms, VIP lounges, nightclubs, and bars, for example, a Q-Sys touch screen controller installed in each room allows staff to access system parameters that are specific to that environment.
- **User access rights** – Permissions defined by the facility administrator may allow general staff to control a subset of specific parameters directly related to their own particular responsibilities. Control may be from a desktop or laptop PC, or from an iPad or iPhone anywhere there is a wireless access point connected to the Core.
- **3rd-party control** – Sound system parameters may be placed under the control of external systems that control, for example, lighting, projection, video conferencing, and even pyrotechnics. In settings such as board rooms and lecture halls, control may be exercised via a touch screen controller in an AMX or Crestron system. For museum exhibits, themed attractions, and live performances, control may be exerted by a show control system such as Medialon or Alcorn McBride.
- **Storage and transmission** – The Q-Sys Core can even store control data and transmit it "out" to external outboard devices, such as video switchers, lighting dimmers and CD/DVD players, allowing a Q-Sys touch screen, PC, or handheld device to control multiple external devices via TCP/IP, RS232 or GPIO.

Q-SYS CONTROL IMPLEMENTATION

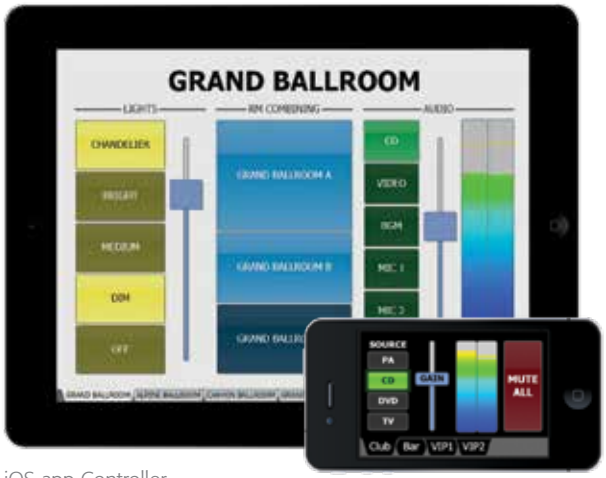
Designed for true, one-touch system control of audio functions, Q-Sys also manages a wide variety of equipment utilizing built-in GPIO and TCP/IP instruction sets. With Q-Sys, nearly every audio processing parameter can be a command source or command destination — as can switch closures and potentiometers. Snapshots of any or all functions can also be created and recalled using the Snapshot tool.

In addition to these general control capabilities, Q-Sys also includes several additional tools addressing specific aspects of system control:

- **User Control Interface tool** – Q-Sys Designer's UCI tool lets you create custom control panels that may be viewed and operated by an end-user from any computer on the network or Wi-Fi connected iPad or iPhone. Allowing a unique look and feel, these controls may be built either from scratch, or from provided templates, by pulling in elements directly from the system schematic. An IP-based external control protocol is also enabled, ensuring that Q-Sys can connect with 3rd-party controllers for truly limitless control capabilities.

TSC-3 Touch Screen Controller

TSC-8 Touch Screen Controller



iOS app Controller

- **Administrator Utility** – Designed for configuration and maintenance of a deployed Q-Sys system, the powerful Administrator application includes controls such as the setting of priority modes and levels, creating and scheduling commands, defining access levels for different users, managing PA zones, scheduling playback of core-hosted audio files, and logging of events. Every aspect of efficient system-wide operation has been considered and addressed.

INTUITIVE CONTROL

Whether you're recalling a few simple snapshots or using faders, knobs, and buttons to manipulate multiple parameters, touch screens provide an ideal user interface for system control. Q-Sys Designer's UCI tool allows creation of an endless variety of custom control interfaces for every conceivable location and need, including audio source selection buttons, lighting dimmer controls, projector on/off selector, signal meters, screen up/down, snapshot recall buttons, volume control faders, and user security PIN prompts.

Q-Sys allows UCI screens to be hosted on QSC touch screen controllers, multiple PC workstations, and also on an iOS app for iPad, iPhone, or iPod touch:

TOUCH SCREEN CONTROLLERS

For user-friendly layout of control elements such as buttons and faders, QSC offers two full-color LCD capacitive touch controllers, each with their own templates in the Q-Sys Designer UCI tool. A given control may be assigned to multiple controllers simultaneously, with changes made on one unit instantly reflected on the display of the others. Available in both black and white, each model supports full-color bit-mapped images for display of room diagrams, corporate logos, or other graphical elements:

- **TSC-3** features a 3.5 inch screen with 320 x 240 resolution. It is powered via PoE (Power over Ethernet) and designed for flush-mount installation in a standard U.S. 2-gang wall box, or for surface mounting with the included surface mount kit.
- **TSC-8** features an 8.4 inch screen with 800 x 600 resolution. It is designed for flush-mount installation in a wall, lectern or other flat surface using the TSC-8-BX wall box.

SOFTWARE CONTROL APPLICATIONS

- **Q-Sys UCI Viewer** – The Q-Sys UCI Viewer can run on multiple PC workstations throughout a facility, providing every staff member with a customized user control interface specifically tailored for their area of responsibility. Designer's Administrator utility allows the facility manager to create password and user access rights for each UCI.
- **Q-Sys Controller App** – The Q-Sys Controller App is a downloadable application for iOS that turns any iPad, iPhone, or iPod touch into a mobile host for a UCI created in the Q-Sys Designer software. Designer's UCI tool includes templates for building UCIs with the correct aspect ratios for these devices.

Knott's Berry Farm, Buena Park, CA

COMMERCIAL SOUND SOLUTIONS

"The performance of the new audio equipment was certainly a big attraction, but there was an even bigger factor behind our selection of QSC for this project — We also get amazing customer support from the folks at QSC."

William Ammerman III, Independence Communications — U.S. mid-Atlantic Region

Installer – MacArthur Center, Norfolk, VA

COMMERCIAL SYSTEMS

Designed for distributed playback of background music (BGM) as well as for paging and voice alarm, commercial sound systems are found in virtually every public space, including shopping malls, transportation hubs, hotel resorts, office buildings, and public walkways. If sound design for such spaces is left as an afterthought, the result can be a commodity system with limited routing and control, low-fidelity loudspeakers, and under-powered amplifiers using line-matching transformers. In contrast, QSC provides high-quality commercial systems offering real long-term value. High-performance loudspeakers and high-impedance transformerless amplifiers combine to deliver not just greater fidelity for music, but also more uniform coverage and greater intelligibility for speech — a key requirement when designing a dual-function system for both BGM and voice alarm.

INTEGRATED COMMERCIAL SOUND SOLUTIONS

QSC commercial sound products such as CX Series amplifiers and AcousticDesign™ loudspeakers integrate seamlessly with Q-Sys™, creating complete solutions that meet the audio needs of any commercial space including:

- **Meeting rooms** – Offering big sound with a compact footprint, QSC commercial systems provide intelligible speech reinforcement and high-fidelity media file playback.
- **Hospitality and nightlife** – With premium fidelity and a contemporary look to match any decor, QSC commercial systems provide high quality music playback and in smaller rooms may also be used to amplify DJs or singers.
- **Multi-venue environments** – In facilities with multiple spaces that are used for a wide variety of activities, Q-Sys™- based commercial systems provide efficient, centralized management of sound across multiple environments.
- **Exhibits and themed entertainment** – Available with robust weatherization, QSC commercial systems provide high fidelity playback of media files from third party media players, and are also used for intelligible playback of public announcements.

APPLICATIONS

- Shopping Malls
- Transportation Hubs
- Amusement Parks
- Museums
- Office Buildings
- Stadiums
- Concourses
- Convention Centers
- Hotels
- Restaurants and Cafes
- Casinos
- Cruise Ships
- Fairgrounds
- Health Clubs

CX SERIES POWER AMPLIFIERS

CX1102 2-channel Model

DESCRIPTION

The CX Series is a range of 2-, 4-, and 8-channel amplifiers designed for installations requiring premium sound quality for multiple zones. Compared with traditional amplifiers, the CX Series has the added capability for advanced control, monitoring and diagnostics via Q-Sys™ peripherals. This includes monitoring every loudspeaker line for open or short circuits.

Recognized by sound contractors worldwide as the standard for reliability, the CX Series features the revolutionary QSC PowerLight™ power supply technology which greatly reduces weight while also improving audio quality and eliminating AC mains hum. The PowerLight power supply is also extremely efficient, meaning CX amplifiers draw less power from the electrical mains and produce less heat. This results in considerable energy and air conditioning cost savings.

FEATURES AT A GLANCE

- Active inrush limiting brings the amplifiers online gently — not with a bang.
- Front panel gain controls can be protected by tamper-proof security covers.
- DataPort connects directly to Q-Sys peripherals for remote real time control, monitoring & diagnostics of amplifier functions via Q-Sys Designer.
- Selectable clip limiters and infrasonic filters protect loudspeakers from damage due to distortion or over-driving.
- Sleep (standby) mode for additional energy savings.
- Both high impedance (clean transformerless 70 V) and low impedance options available.
- RoHS compliant

CX 2-channel Models

CX 4-channel Models

CX 8-channel Models

CX Series			Watts per channel	
2-Ch Models	**70 V***	**8 Ω**	**4 Ω**	**2 Ω****
CX302V	250	-	-	-
CX602V	440	550	-	-
CX1202V	1000	700	1100	-
CX302	-	200	325	600
CX502	-	300	500	800
CX702	-	425	700	1200
CX902	440	550	900	1500
CX1102	1000	700	1100	1700
4-Ch Models	**70 V***	**8 Ω**	**4 Ω**	**2 Ω****
CX204V	220	-	-	-
CX254	-	170	250	450
CX404	-	250	400†	-
8-Ch Models	**70 V††**	**8 Ω**	**4 Ω§**	
CX108V	100	-	-	
CX168	-	90	130	

All channels driven.
20 Hz – 20 kHz, 0.05% THD
**1 kHz, 0.05% THD*
***1 kHz, 1% THD*
†1 kHz, 0.1% THD
††20 Hz – 20 kHz, 0.2% THD
§20 Hz – 20 kHz, 0.1% THD

RoHS

ACOUSTICDESIGN™ LOUDSPEAKERS

DESCRIPTION

The AcousticDesign™ Series is a line of installation loudspeakers designed for trouble-free installation and operation in a wide variety of applications.

AcousticDesign loudspeakers offer natural and pleasing sound reproduction with very low distortion. The AcousticDesign Series is comprised of models in two product categories, the AD-C (in-ceiling) loudspeakers and the AD-S (surface-mount) loudspeakers. Each is voiced to provide seamless sonic integration with the other for mixed use in any installation.

FEATURES AT A GLANCE (IN-CEILING)

- Paintable
- 70/100 V or low impedance
- Integral steel backcans meet UL2043 & UL1480 ratings for voice alarm use

AcousticDesign In-Ceiling Loudspeakers

FEATURES AT A GLANCE (SURFACE-MOUNT)

- Weather resistant
- Powder coated aluminum grilles
- Available in black or white
- Paintable
- High-impact injection molded enclosures
- 70/100 V transformer versions available

AcousticDesign Surface-Mount Loudspeakers

	AD-C42T	AD-CI52T	AD-CI52ST	AD-C820/821	AD-C1200	AD-C81Tw
System Type	2-way, ceiling / flush mounted, sealed system	2-way, ceiling / flush mounted, ported system	Shallow can, 2-way, ceiling / flush mounted, ported system	Subwoofer, ceiling / flush mounted, ported system	2-way, ceiling / flush mounted, ported system	Subwoofer, ceiling / flush mounted, ported system
Driver Information	3.5" woofer 0.75" tweeter	5.25" woofer 1" tweeter	5.25" woofer 1" tweeter	8" woofer 1.4" compression driver	12" woofer 1.75" compression driver	8" woofer N/A
Power Handling	40 W	40 W	40 W	200 W	300 W	100 W
Impedance	8 Ω or 70/100 V Selectable	8 Ω or 70/100 V Selectable	8 Ω or 70/100 V Selectable	16 Ω or 70/100 V Selectable	16 Ω or 70/100 V Selectable	8 Ω or 70/100 V Selectable

RoHS

	AD-S32T	AD-S52	AD-S6T	AD-S8T	AD-10T	AD-S12	AD-S112sw	AD-S28Tw
System Type	Compact 2-way, surface mount, ported loudspeaker system	Compact 2-way, surface mount, ported loudspeaker system	Compact 2-way, surface mount, ported loudspeaker system	Compact 2-way, surface mount, ported loudspeaker system	Compact 2-way, surface mount, ported loudspeaker system	Compact 2-way, surface mount, ported loudspeaker system	Surface mount bandpass subwoofer, ported	Surface mount bandpass subwoofer, ported
Driver Information	3.5" woofer 0.75" tweeter	5.25" woofer 1" tweeter	6" woofer 1" tweeter	8" woofer 1.4" compression driver	10" woofer 1.4" compression driver	12" woofer 1.4" compression driver	12" woofer N/A	Dual 8" woofer N/A
Power Handling	30 W	60 W	150 W	200 W	250 W	300 W	300 W	450 W
Impedance	8 Ω or 70/100 V Selectable	8 Ω or 70/100 V Selectable	8 Ω or 70/100 V Selectable	8 Ω or 70/100 V Selectable	8 Ω or 70/100 V Selectable	8 Ω	8 Ω	8 Ω or 70/100 V Selectable

RoHS

Bryant-Denny Stadium, University of Alabama

PERFORMANCE SOUND SOLUTIONS

"QSC is one of the most reliable manufacturers we work with, and this new system has the horsepower to control all the ancillary systems throughout the building."

Keith Book, North American Theatrix — Southington, Connecticut

Installer – Ryan Center, University of Rhode Island

PERFORMANCE SOUND

A complete installed sound system for an audience area involves much more than simply front-of-house sound reinforcement. Instead, an effective design addresses all of the venue's audio requirements in a single integrated solution, combining efficient centralized control with the flexibility to optimize each area for its specific needs. Q-Sys™ meets that description perfectly, especially when combined with DataPort-equipped amplifiers and high-quality QSC loudspeakers, subwoofers, and line arrays.

MANY SPACES, ONE SYSTEM

A complete QSC solution, built around Q-Sys, addresses each of the main types of spaces within a performance venue:

- **Front of house** – An auditorium or sports venue FOH system should be a high-quality, concert-proven sound system with amplifiers and loudspeakers that work together seamlessly, producing clean, punchy sound at high-output concert levels. An outstanding solution for this application is the combination of powerful QSC PowerLight™ 3 Series amplifiers and the QSC WideLine™ Series line array system, which is capable of both high SPL and the intelligibility that is crucial for both live performance and emergency paging. Q-Sys provides advanced DSP that voices the system's enclosures, optimizes system response for the space, provides crossovers for low-, mid-, and high-frequency drivers, and protects the system from damaging overloads.
- **Back of house** – In ancillary public spaces such as lobbies, concourses, ticketing areas, bars, and VIP suites, each zone requires independent processing and control. With its flexible routing, built-in paging capabilities, and nearly unlimited inputs and outputs, Q-Sys is the ideal brain of a house-call system addressing these areas of the venue. QSC commercial amplifiers and loudspeakers, such as the CX Series and AcousticDesign™ Series, provide excellent sound quality and reliability for these ancillary areas.
- **Backstage** – Multiple dressing rooms and the all-important green room are the primary areas that each need to be independently addressed in a stage-call system. Once again, the combination of a Q-Sys paging system with QSC commercial amplifier and speaker products delivers the required control and fidelity.

APPLICATIONS

- Auditoriums
- Gymnasiums
- Houses of Worship
- Theaters
- Live Clubs
- Dance Clubs
- Ballrooms
- Banquet Halls
- Stadiums (main grandstands)
- Sports Arenas (main grandstands)
- Television Studios
- Amphitheaters
- Themed Attractions

CXD-Q SERIES POWER AMPLIFIERS

CXD4.2Q

DESCRIPTION

The QSC CXD-Q Series represents a revolutionary advancement in amplifier technology and innovation, coupled with outstanding integration capability as part of a Q-Sys system. Designed specifically for the needs of integrators, CXD-Q provides efficient, robust and extraordinarily high fidelity power to drive multiple channels and configurations of loudspeakers – all with optimal energy and rack space efficiency. The CXD-Q Series consists of three powerful, four-channel amplifiers, each act as a Q-Sys peripheral enabling audio routing, processing, and control. Provided in the amps is the capability to configure and combine channels in various ways to drive a wide range of loudspeaker systems. These amplifiers not only provide the power and processing make your system perform better, they offer outstanding efficiency ensuring that energy costs will be kept to a minimum over the life of the installation.

FEATURES AT A GLANCE

- Q-Sys integration with audio transport, control and monitoring via standard Gigabit Ethernet protocols and hardware
- Flexible Amplifier Summing Technology™ (FAST) permits total amplifier power to be distributed across one, two, three or all four channels.
- Drive 70V and 100V speaker lines without the use of transformers (on CXDQ 4.3 & CXDQ 4.5)
- Four channels of Mic/Line inputs (with optional phantom power) can be routed anywhere on the Q-Sys network.
- Power Factor Correction (PFC) enables CXD-Q Series amps to draw current from the wall in resulting in incredible power from a single standard AC breaker.

	CXD4.2Q		CXD4.3Q		CXD4.5Q	
	Burst	**Continuous**	**Burst**	**Continuous**	**Burst**	**Continuous**
4 Ch.						
100 Vrms	N/A	N/A	N/A	500	N/A	1000
70 Vrms	N/A	N/A	N/A	625	N/A	1250
8Ω	500 Watts	400 Watts	900 Watts	625 Watts	1200 Watts	1150 Watts
4Ω	700 Watts	400 Watts	1400 Watts	625 Watts	2000 Watts	1250 Watts
2Ω	600 Watts	350 Watts	1200 Watts	625 Watts	1600 Watts	625 Watts
2 Ch.						
8Ω	1200 Watts	800 Watts	2400 Watts	1250 Watts	4000 Watts	2250 Watts
4Ω	1500 Watts	800 Watts	2000 Watts	1250 Watts	2400 Watts	2250 Watts
2Ω	1500 Watts	650 Watts	2500 Watts	1250 Watts	4000 Watts	2100 Watts
1 Ch.						Continuous
8Ω	1600 Watts	1500 Watts	3500 Watts	2500 Watts	4500 Watts	4200 Watts
4Ω	2500 Watts	1600 Watts	5000 Watts	2500 Watts	7500 Watts	4200 Watts
2Ω	1700 Watts	1600 Watts	3500 Watts	2500 Watts	4500 Watts	4250 Watts
1Ω	2500 Watts	1600 Watts	5000 Watts	2500 Watts	7500 Watts	3700 Watts

Burst Power - 20 ms 1 kHz sine burst, all channels driven
Continuous Power - EIA 1 kHz 1% THD, all channels driven

WIDELINE™ LOUDSPEAKERS

WL2802-i with
WL118-sw

WL3082

WL2102

DESCRIPTION

The WideLine™ Series is a line of performance loudspeakers designed to provide concert quality sound reinforcement in any size venue. Proven on the road and in venues around the world, the WideLine Series features a revolutionary waveguide design which provides extremely wide coverage from a single array. The advantages gained from this unique design are twofold; a broader (hi-fi like) stereo image, and more importantly, fewer arrays are required to cover an audience, largely eliminating the need for multiple supplemental fill speakers.

	WL2802-i	WL3082	WL2102
System Type	Dual 8", 3-way line array element, Bi-amp or Tri-amp	Dual 8", 3-way, line array element, tri-amp	Dual 10", 3-way line array element, Bi-amp or Tri-amp
Power Handling	200 W + 200 W + 100 W	250 W + 250 W + 85 W	600 W + 600 W + 80 W

GP118-sw

WL212-sw

GP218-sw

	WL118/GP118-sw	WL212/GP212-sw	WL218/GP218-sw
System Type	18" Vented box, direct radiating subwoofer	Dual 12", 4th order bandpass subwoofer	Dual 18" Vented box, direct radiating subwoofer
Power Handling [1]	1000 W	1100 W	1700 W

The integral rigging hardware and wide coverage angles of WideLine make it extremely easy to install into any venue, while the factory presets already pre-loaded into Q-Sys™ Designer make every WideLine array quick and easy to configure and tune.

FEATURES AT A GLANCE

- Weatherized versions available
- 140° wide coverage
- Tunings available on Q-Sys
- Subwoofer array integration (WL2082 & WL3082)
- Load rated hardware for 10:1 safety factor

K FAMILY ACTIVE LOUDSPEAKERS

KW SERIES

The KW Series is a line of four high-output, active loudspeakers, featuring integral power amplifiers and digital processing, for installations where a smaller form-factor is required. The KW Series have been voiced to match the AcousticDesign™ range of compact loudspeakers, providing seamless sonic integration with the other for mixed use in any installation.

The highly efficient 1000 watt, Class D amplifier onboard each KW loudspeaker delivers clean, punchy power yet draws very little current from the AC mains.

The sleek appearance and wide range of mounting options make the KW Series the ideal choice for many installation applications.

KLA SERIES

The KLA Series features the same integral 1000 watt, Class D amplifier as the KW Series, while offering a line array option for installations where a smaller array size is required due to low ceilings or sightline obstructions. The KLA Series have been voiced to match the WideLine™ range of line array loudspeakers, providing seamless sonic integration with the other for mixed use in any installation.

FEATURES AT A GLANCE

- Connects to Q-Sys™ via COL4 card
- 1000 W, Class D amplification
- Internal digital processing
- Eyebolt points for installation
- Paintable

KLA Series

	KLA12	KLA181
Configuration	2-way Line Array Element	Ported Subwoofer
Driver Information		
LF	12" cone transducer	18" cone transducer
HF	1.75" diaphragm compression driver	–
Amplifier Power	1000 W continuous Class D	1000 W continuous Class D
AC Requirements	100-240 VAC, 50-60 Hz	100-240 VAC, 50-60 Hz

RoHS

	KW122	KW152	KW153	KW181
System Type	Multipurpose 2-way	Trapezoidal 2-way	Trapezoidal 3-way	Ported Subwoofer
Driver Information				
LF	12" cone transducer	15" cone transducer	15" cone transducer	18" cone transducer
MF	–	–	6.5" midrange cone transducer	–
HF	1.75" diaphragm compression driver	1.75" diaphragm compression driver	1.75" diaphragm compression driver	N/A
Amplifier Power	1000 W continuous Class D	1000 W continuous Class D	1000 W continuous Class D	1000 W continuous Class D
AC Requirements	100-240 VAC, 50-60 Hz	100-240 VAC, 50-60 Hz	100-240 VAC, 50-60 Hz	100-240 VAC, 50-60 Hz

RoHS

KW Series

ACOUSTICPERFORMANCE™ LOUDSPEAKERS

	AP-5102	AP-5122	AP-5152	AP-5122m
System Type	Trapezoidal 2-way	Trapezoidal 2-way	Trapezoidal 2-way	Multipurpose 2-way
Driver Information				
LF	10" cone transducer	12" cone transducer	15" cone transducer	12" cone transducer
HF	3" diaphragm compression driver	3" diaphragm compression driver	3" diaphragm compression driver	3" diaphragm compression driver
Power Handling	450 W	550 W	650 W	550 W

DESCRIPTION

The AcousticPerformance™ Series is a line of high powered loudspeakers ideal for a wide range of installed sound reinforcement applications requiring high sound pressure levels. The AcousticPerformance Series have been voiced to match both the AcousticDesign and KW Series, providing seamless sonic integration with the other for mixed use in any installation.

With four models to choose from, AcousticPerformance enclosures feature an elegant design and minimal logo treatment to offer the greatest aesthetic compatibility.

FEATURES AT A GLANCE

- Eyebolt points for installation
- Available in Black or White*
- Paintable
- Tunings available on Q-Sys
- Matched for use with GP118 / 218-sw

* AP-5122m Black only

Q-SYS™

"Q-Sys was the only system platform that I could find with enough horsepower to do what I wanted to do."

Scott Leonard, Vice-President, Professional Audio Designs, Inc. – Milwaukee, Wisconsin
Installer - Wisconsin State Assembly

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