

# Q-SYS™ ECOSYSTEM

audio | video | control | processing | networking | integration | monitoring



# QSC®

# imagine if ...



... I could **standardize** on a single audio, video and control (AV&C) ecosystem.

Provide consistent support and user experience across our global organization.

... our AV&C ecosystem could **integrate seamlessly.**

Native QSC and third-party audio, video and control without cumbersome integration workarounds to tie all components together.

... I could **remotely monitor & manage** my entire AV&C ecosystem.

Reduce AV support costs and increase AV system uptime via browser-based GUI or integrated with an IT enterprise management dashboard.

... our AV&C ecosystem was **prepared for tomorrow's challenges.**

Software-based architecture enables feature updates at the software layer without the need for additional hardware.



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# Q-SYS<sup>TM</sup> ECOSYSTEM

AUDIO | VIDEO | CONTROL | PROCESSING | NETWORKING | INTEGRATION | MONITORING



The Q-SYS Ecosystem is the world's only integrated audio, video and control platform that's built on standard off-the-shelf IT hardware/network infrastructure, allowing it to easily integrate with other IT platforms. The flexible software foundation of the Q-SYS Ecosystem scales simply and cost effectively, reducing the need for dedicated hardware and eliminating complex integration workarounds that are common to traditional AV&C solutions.

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### **faster installation, simplified configuration**

The Q-SYS Ecosystem lets system designers take full advantage of its software-based architecture, native devices and drag-and-drop control programming to enable a smoother, expedited installation process. This also eliminates additional costs and effort required to tie disparate components together.

### **maximized performance, born under one roof**

QSC engineers design components across the signal chain that draw the very best performance from each other, creating a synergy that makes a QSC system far more than the sum of its parts. Said more plainly, when a Q-SYS Core processor and touch screen controller are paired with a Q-SYS network amplifier and QSC loudspeaker, the system can deliver more value with less effort and a uniquely optimized user experience.

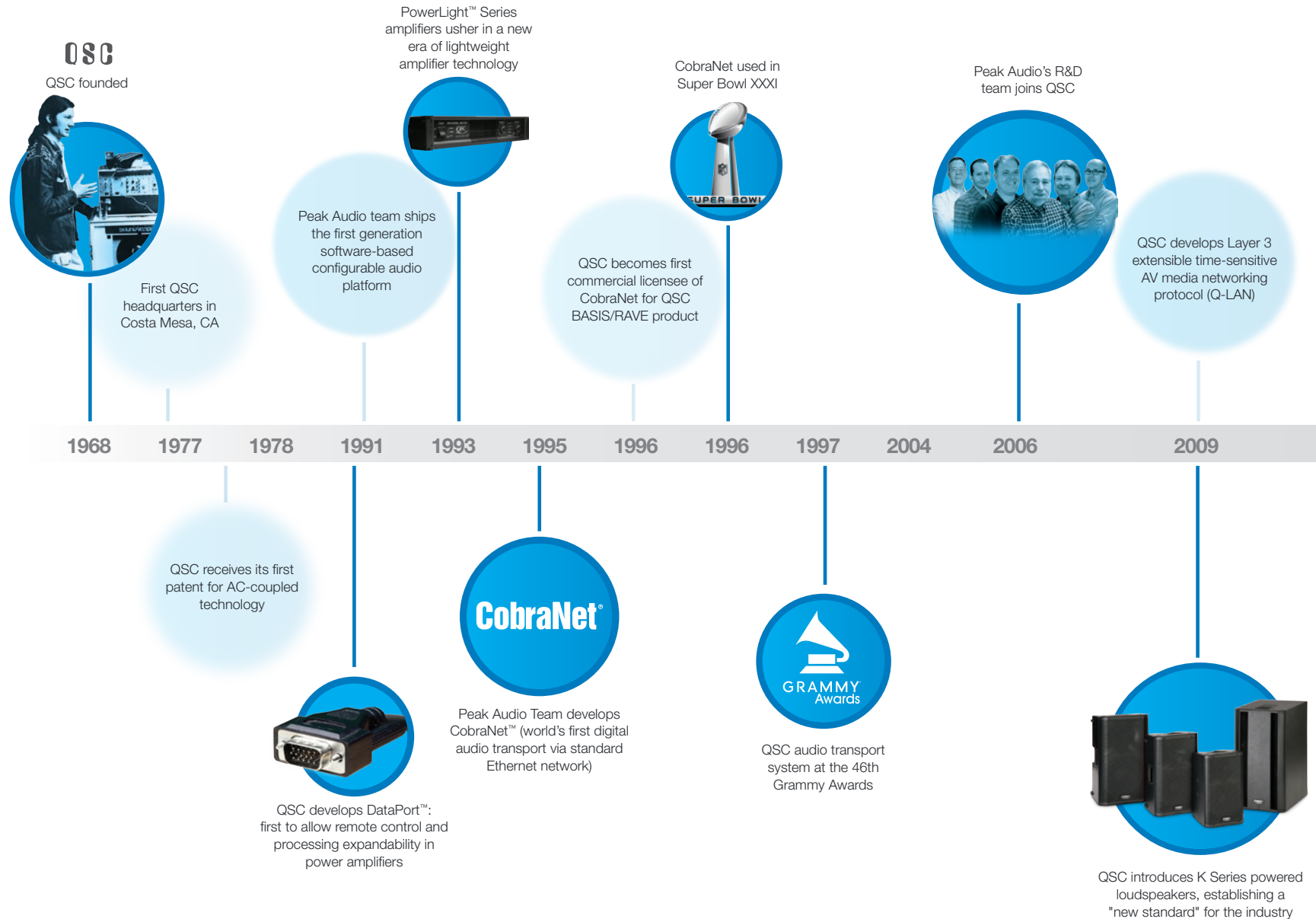
### **greater system stability and uptime**

Native Q-SYS Ecosystem components work flawlessly together, which provides tighter integration and reduces possible points of failure. Q-SYS also offers remote monitoring and management of every native Q-SYS device and connected third-party peripheral. This will equip your AV/IT staff with the tools to diagnose system issues while ultimately increasing AV system uptime.

### **future ready, software-based architecture**

Its flexible foundation provides a cost-effective opportunity to scale your system. Whether you start with a small installation or apply it to a large enterprise, the philosophy remains the same – the software-based architecture allows Q-SYS to accommodate the growth of your system while supporting your desired business outcomes as they change.

# QSC history in systems solutions



# Q-SYS™

Initial launch, focused on the largest and most complex projects

QSC adds software-based echo cancellation & software-based VoIP connectivity for meeting room applications



QSC launches Q-SYS Web Conference Integration solution

QSC introduces 2<sup>nd</sup> generation AcousticDesign™ Series



QSC release first native network amplifiers for Q-SYS

QSC deploys world's first AV&C RTOS on common off-the-shelf server



QSC adds network video distribution to Q-SYS Ecosystem



2009

2011

2012

2013

2014

2014

2015

2016

2017

2018

2019

QSC adds Q-SYS Integrated Core processors for midsized channel projects



Q-SYS becomes the standard in cruise ships, airports, stadiums and theme parks



QSC introduces Q-SYS Core 110f processor for smaller, single room applications

QSC focuses on software-based control within the Q-SYS Ecosystem

Q-SYS  
**REFLECT™**  
ENTERPRISE MANAGER

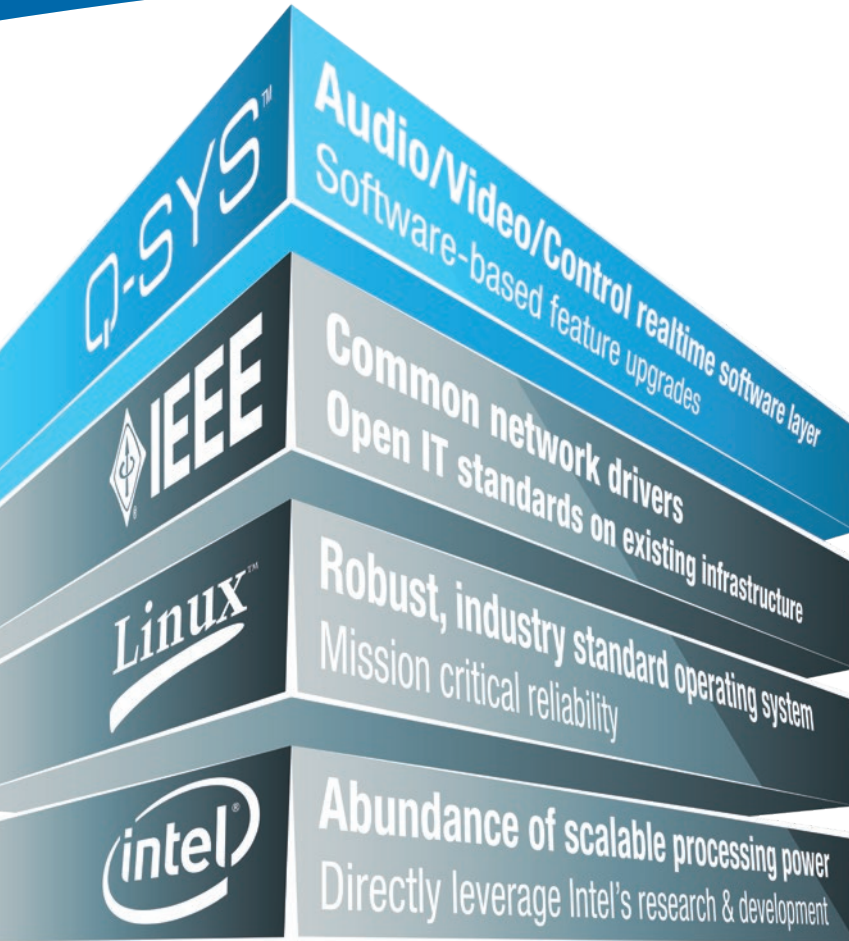
QSC adds remote monitoring and management to the Q-SYS Ecosystem



QSC releases Premium Business Music Solutions



# processing



**Q-SYS has no equal** from a processing and architecture perspective. The capabilities of Q-SYS software-based processing and control transcend the limitations found in traditional, hardware-based, single-purpose AV products.

## Intel processing

By standardizing on Intel processing, QSC takes full advantage of Intel's current and future chipset roadmap, while giving Q-SYS enough processing headroom to handle features at the software level, rather than relying on dedicated hardware.

## Realtime AV&C operating system

Q-SYS Realtime operating system (RTOS) allows QSC to place Q-SYS on purpose-built hardware from QSC or on mainstream commercial IT servers.

## Linux backbone and IEEE compliant drivers

Standard Layer 3 networking allows for converged AV data on an existing IT infrastructure, as well as non-proprietary switch hardware. Modern programming architecture enables rapid software development and deployment, while allowing for simpler communication with third-party devices and other IT platforms.

## software-based features include ...



acoustic  
echo cancellation



robust  
scripting engine



VoIP  
interface



multi-track  
playback



remote  
monitoring



touch screen  
processing



audio and  
video bridging



scheduling



wide-area  
paging

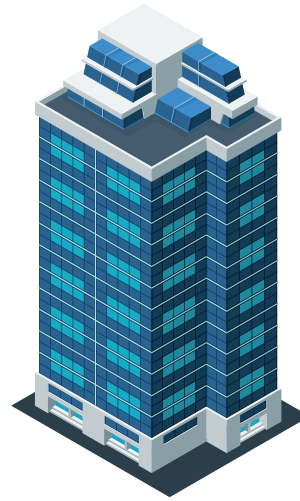


third-party  
device control

**... and many more**

## Q-SYS Core processors

The Q-SYS Core processor is the heart of the system. Three Core processing tiers provide options for any installation type, based on I/O requirements and scale. However, regardless of Q-SYS Core model, the breadth of software features and design environment remains constant throughout the processor line.



### Enterprise Cores

entire building installations



### Integrated Cores

multi-room or divisible spaces



### Unified Cores

small/single rooms



#### Core 110f Unified

128 x 128 networked audio I/O | 24x local I/O | 16 AEC processors

#### Core 510i Integrated

256 x 256 networked audio I/O | 128 x 128 local I/O | 64 AEC processors

#### Core 5200 Enterprise

512 x 512 networked audio I/O | 160 AEC processors

## processing architecture for any installation type



### distributed

separated systems with siloed processing and endpoints



### centralized

shared processing with distributed endpoints



### hybrid

separate systems with centralized oversight



## you have options.

**Q-SYS was built on standard IT networking protocols, which means your system can be deployed on common off-the-shelf networking hardware.**

### ► **Configure any modern switch**

If you have experience with custom network configurations, QSC provides all of the necessary resources to manually configure your network for the Q-SYS Ecosystem.

### ► **Use existing network infrastructure**

If you have a preferred network switch or if you need assistance configuring existing IT network infrastructure, QSC has partnered with University of New Hampshire InterOperability Laboratory (UNH-IOL) to provide independent switch qualification services for peace of mind with your Q-SYS system.



## ► Plug-and-play networking solution

### Q-SYS NS Series network switches

NS Series network switches offer a turnkey solution for installers deploying Q-SYS on local AV networks. QSC has partnered with Dell to provide enterprise-grade network switches that are preconfigured specifically to meet the performance requirements of the Q-SYS Ecosystem.

They support Q-LAN, AES67 and Dante™ audio streams, in addition to Q-LAN video streaming and distribution simultaneously within the same VLAN, without the need for manual configuration of switches or endpoint devices.





# a legacy

## of music experiences

Since 1968, QSC has delivered on a promise to provide unparalleled audio experiences for customers all over the world. From the meeting space to the world's largest theme parks, from the cinema to your favorite restaurants, and from the concert venue to the sports stadium, QSC has been enabling these experiences for decades.

QSC audio solutions offer simple integration into the Q-SYS Ecosystem, while QSC-developed technologies, such as Intrinsic Correction™ and Directivity Matched Transition™ (DMT) enable those solutions to work together in perfect harmony.



# agnostic I/O

When it comes to audio, QSC can handle it. The Q-SYS Ecosystem supports analog and digital audio standards along with edge networks and is prepared for new digital audio standards that may arise in the future.

## analog / digital

Q-SYS networked I/O peripherals allow for seamless integration of analog or digital audio peripherals. Additionally, Q-SYS offers the ability to stream audio between Q-SYS Core processors or between a Core and other devices over wide area networks (WAN).

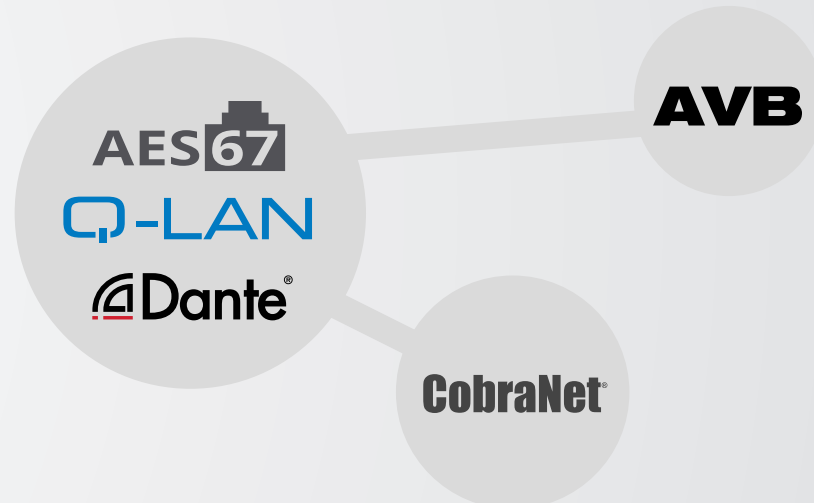


## native

Q-LAN is the native protocol suite for audio and video distribution as well as device discovery, synchronization, control and management. Q-SYS also provides software-based native integration with AES67 and Dante™ (coming soon in 2019).

## edge network

Q-SYS is truly an open platform, offering support for edge networks such as CobraNet™ and AVB.







# amplifiers

**our 50-year heritage** with power amplifiers delivers unmatched audio quality and reliability. The complete portfolio includes 70+ models for installed AV, live sound and cinema applications.

“ what's past is **prologue.** ”

William Shakespeare



# featured amplifiers

## CX-Q Series network amplifiers

Four- and eight-channel network amplifiers designed specifically for the Q-SYS Ecosystem. Robust, high-efficiency power amplifiers with native Q-SYS transport, control and monitoring capabilities.

- **Q-SYS Ecosystem integration:** Simple drag-and-drop design integration, enabling networked audio routing, advanced processing and real-time control and monitoring.
- **Legacy of power redefined:** Fifth-generation, high-efficiency, Class-D hybrid powertrain design, built upon the dependable PL380 PowerLight™ amplifier platform.
- **Flexible & efficient channel power distribution:** CX-Q Series network amplifiers feature FlexAmp™ and FAST (Flexible Amplifier Summing Technology™), which combine to provide extreme power flexibility in output deployment.



## MP-A Series music and paging amplifiers

- FlexAmp™ allows for pairs of channels to be combined to deliver up to 400 W of output power in any ratio per channel.
- Two-, four- and eight-channel models, able to drive 4  $\Omega$ , 8  $\Omega$ , 70 V or 100 V loads on each channel.



## SPA Series small power amplifiers

- Half-RU power amplifiers for virtually any meeting space or single BGM zone.
- Two- and four-channel models, provide up to 200 W per channel into 4  $\Omega$  or 8  $\Omega$ .
- EnergyStar® qualified, class-D amplifiers conserve energy and require no active cooling.

For the full amplifier portfolio listing, visit [qsc.com](https://www.qsc.com)





# loudspeakers

engineered for a uniquely optimized performance within the Q-SYS Ecosystem, QSC loudspeakers elevate the listening experience to a higher level.

we've got you **covered.**



# featured loudspeakers

## AcousticDesign™ Series

Specifically tailored for the demands of high-fidelity applications, AD Series loudspeakers deliver pristine audio reproduction for a wide range of installation applications.

- **Consistent tonal characteristics** across the entire AcousticDesign™ Series family, including surface-mount, ceiling-mount and pendant-mount enclosure types.
- **Directivity Matched Transition™ (DMT)** waveguide ensures smooth, uniform frequency response over the coverage area.
- **Intrinsic Correction™** optimizes the auditory experience and loudspeaker protection when pairing QSC loudspeakers with QSC amplifiers.



## AcousticCoverage™ Series

Cost-effective solution for applications where voice reinforced coverage is of primary concern, while providing a high level of musicality not often seen in typical paging or BGM class products.

## K.2 Series™

The world's best-selling active loudspeaker series, featuring advanced on-board DSP and installed mounting options.

For the full loudspeaker portfolio listing, visit [qsc.com](https://www.qsc.com)





## seamless meeting experience

**native control and management of these video peripherals simplifies the user experience without the need for additional control and management hardware.**

### Q-SYS network video endpoints

NV Series provides high-quality (resolutions up to 4K60 4:4:4), low-latency and network-efficient video distribution across a standard gigabit infrastructure.

#### Unique flexibility in a single device

High-density I/O enables emerging design scenarios, such as simultaneous streaming for dual-monitor rooms.

#### Network optimized compression scheme

Dynamically adjusts network bandwidth consumption based on video content, without compromising quality.

#### Q-SYS web conference integration

Plug-and-play access to Q-SYS audio and camera feeds for web conferencing applications.







## Q-SYS PTZ-IP conference cameras

Native Q-SYS cameras deliver professional quality conference video feeds for small- and medium-sized rooms. These cameras quickly integrate into the Q-SYS system via standard PoE network cable - no USB extenders, HDMI switches or power cables required, and no programming to integrate them.

## universal compatibility

 Skype for Business

 zoom

 GoToMeeting

 Cisco webex

 Google Cloud

 BlueJeans

 Microsoft Teams



## software-based control

Q-SYS leverages its powerful processing capabilities to offer a full-featured, scalable control environment without dedicated control processors. Single-platform, integrated audio, video and control eliminates unnecessary programming and costly points of failure.

### Q-SYS Scripting Engine\*

Modern, agile and widely-used programming technologies to help you quickly integrate third-party devices into your Q-SYS system.

*\* Optional software license required*



Visual coding tool offers simple, drag-and-drop method for building control scripts. No programming knowledge required.



Growing library of third-party control plugins enable quick integration of common devices.



Full featured scripting component lets programmers program with Lua, a modern, accessible scripting language.



## Q-SYS UCI Editor\*

Quickly deploy custom user control interfaces for your customers. Simple, drag-and-drop GUI design tools let you create a fully customized, functional and aesthetic user experience without the need for programming experience.

\* Optional software license required

## Q-SYS TSC Series native touch screens

Quickly deploy custom UCIs onto a portfolio of native Q-SYS touch screen controllers. Wall mount and table mount options available.





## key technology collaborations



Zoom recommends Q-SYS for integrating with their Zoom room hardware in medium to large conference rooms. This is further expedited with the Zoom Room control plugin for Q-SYS.



Q-SYS Core 110f processor is certified for Google Hangouts Meet Hardware Peripheral Qualification Program.



QSC collaborated with Audinate to develop software-based Dante integration for Q-SYS (coming soon in 2019).

## open framework for third-party plugin development

As an open ecosystem, Q-SYS has the unique ability to offer simpler means of integrating common third-party devices. QSC works closely with third-party device manufacturers and cultivates an active community of Q-SYS programmers and integrators.



## universal compatibility







# monitoring

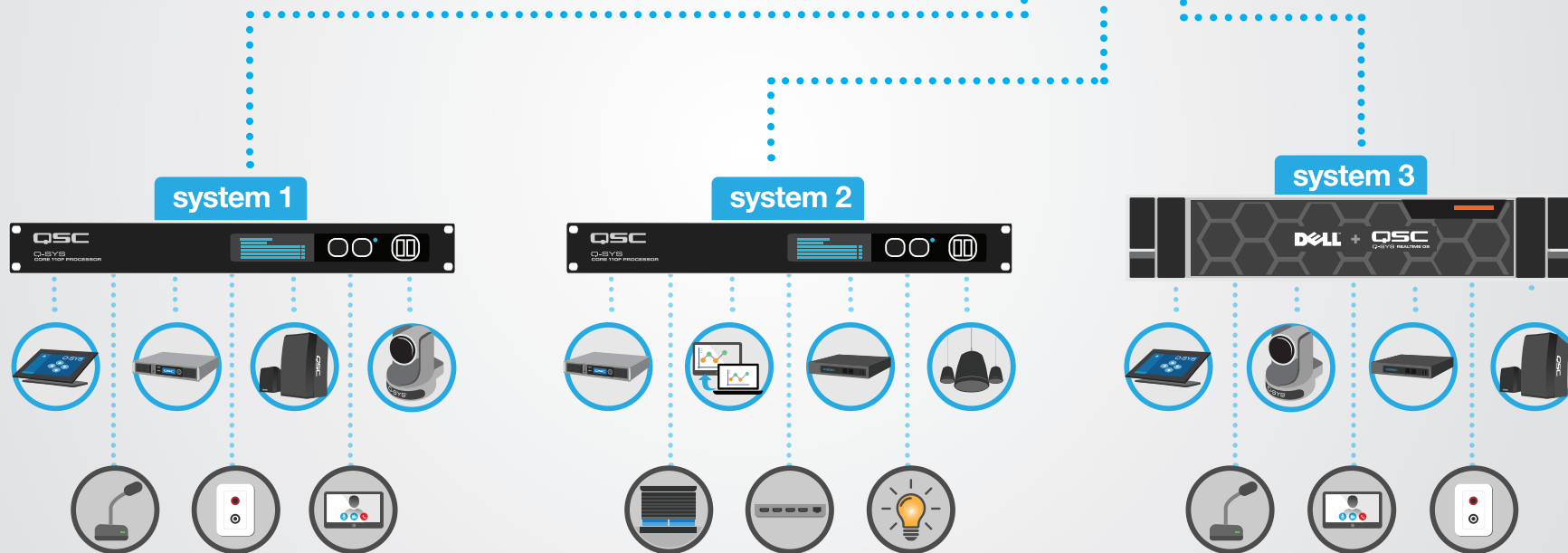
## done simply. done right.

remotely monitor and manage your AV&C systems.

Powerful, simple-to-use monitoring and management platform with secure web technologies to assist in the fundamental support needs of IT/AV system administrators.

Simply register each Q-SYS Core with Q-SYS Reflect Enterprise Manager, and Cores will automatically report data on all connected Q-SYS native and third-party peripherals.

**No programming required.**



 native Q-SYS devices

 third-party peripherals

Q-SYS  
**REFLECT**  
RESTful API

splunk>

others

solarwinds

## view, monitor and manage, your way

Manage and monitor your AV devices directly from Q-SYS Reflect Enterprise Manager or use the 3rd party API to present real-time Status and Eventlog data to any software application for a single-pane-of-glass view of your entire AV / IT architecture.



## reduce AV support costs



### preventive maintenance to avoid reactionary maintenance

comprehensive **real-time system monitoring** enables informed decisions about backend issues before they become front-end problems.



### deploy support equipped with the right information

**alerts & event notifications** let you react quickly and **system event logs** allow for better system diagnosis.



### remote assistance before putting boots on the ground

**remote UCI viewing and operation** allows you to remotely assist users with setting up or troubleshooting rooms without deploying staff members to site.

## increase AV system uptime



### easier deployment of replacement hardware

**backup, store and redeploy** Q-SYS Core configurations to/from the cloud in event of critical failure.



### restore your system to its last working state

quickly rollback previous configurations to aid with system deployment issues.

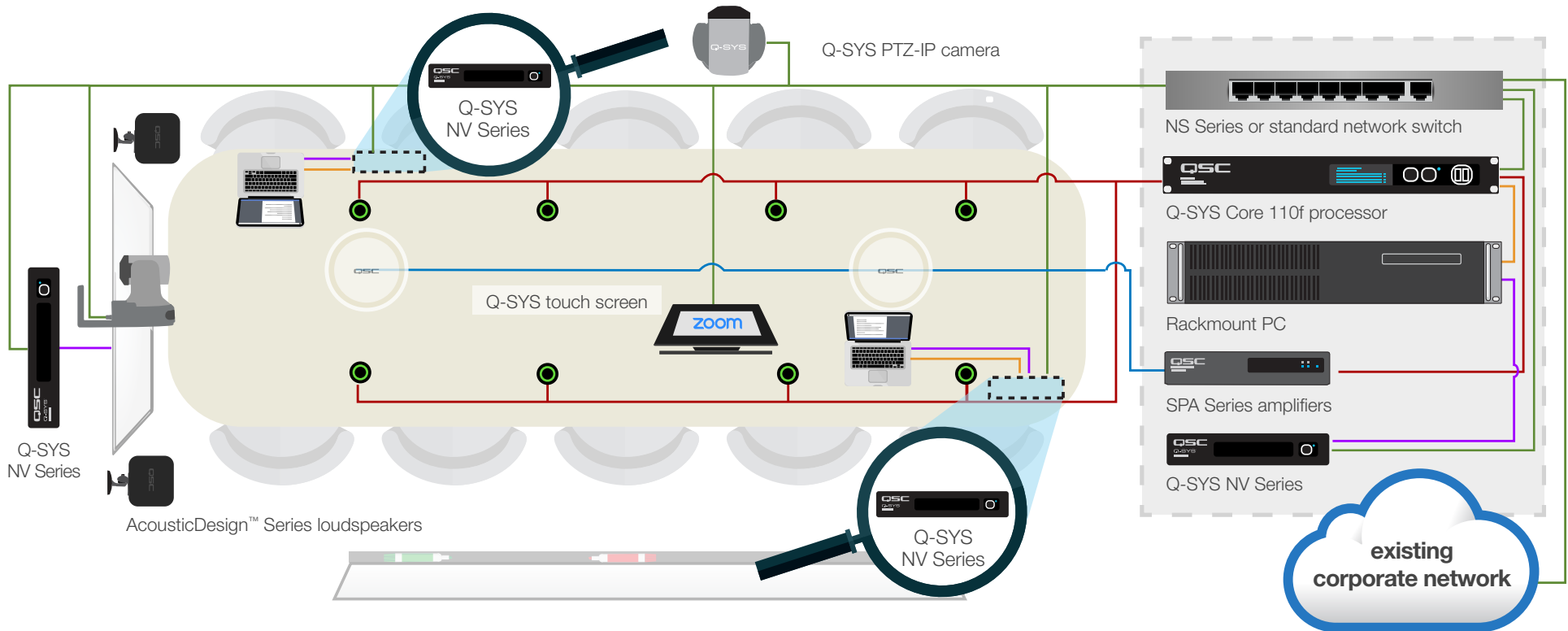
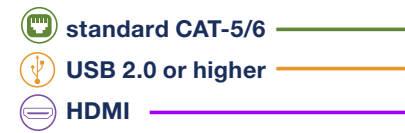


# Q-SYS connected meeting room

## applications



- Platform-agnostic web conferencing integration via Q-SYS NV Series
- Fully integrated network video streaming without the need for additional control processors or complicated programming
- Q-SYS touch screen with Zoom Room control plugin to provide Zoom Room experience plus in-room device control without additional hardware
- Multiple PTZ conferencing cameras without the need for a dedicated video switcher
- Enterprise connectivity for fault monitoring and usage analytics
- Standards-based networking for IT-friendly deployment



## small meeting room

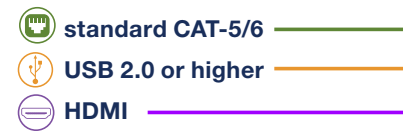


# wide area audio & paging distribution

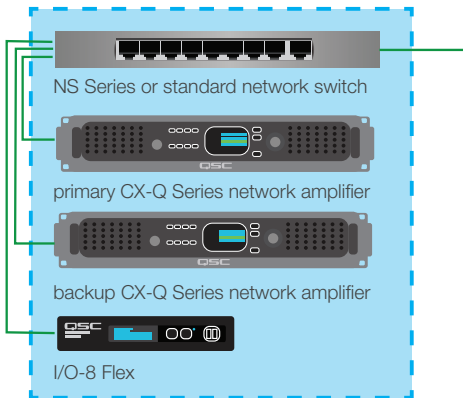
applications



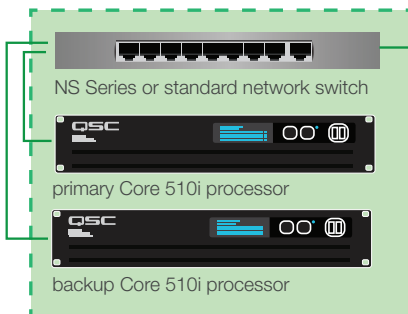
- Robust multi-zone paging platform including live and delayed paging, page routing, event scheduling and store-and-forward.
- Q-SYS accommodates centralized processing as well as full redundancy, including backup failover options for processing, peripheral, amplification and networking.
- Enlist a full portfolio of dedicated Q-SYS paging peripherals or utilize virtual paging station options.



## zone rack



## centralized processing rack



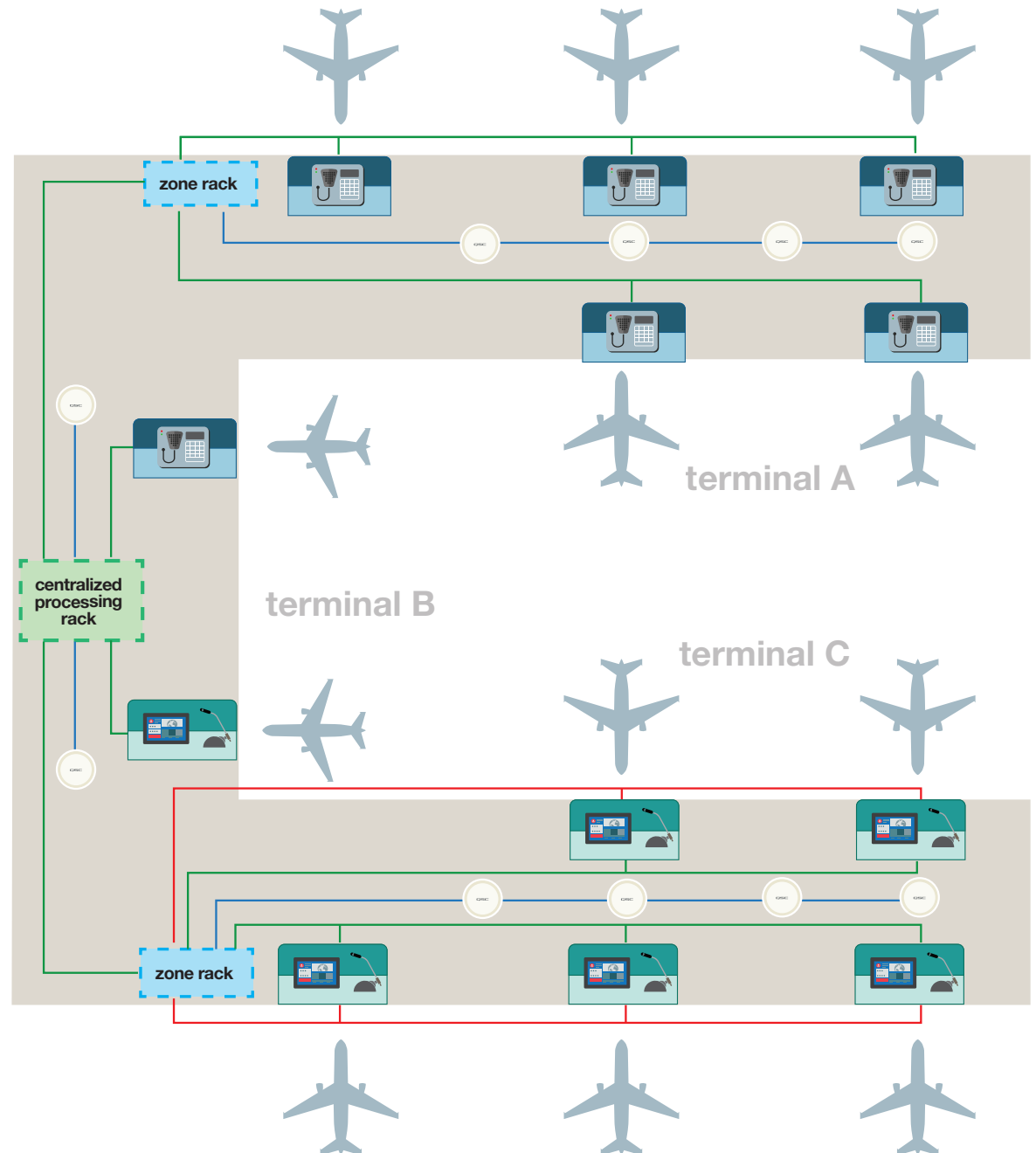
## Q-SYS page station options



**hardware-based paging solution**  
with Q-SYS network page station  
with built-in microphone and keypad



**software-based paging solution**  
with virtual page station via  
Q-SYS touch screen and  
separate microphone



airports

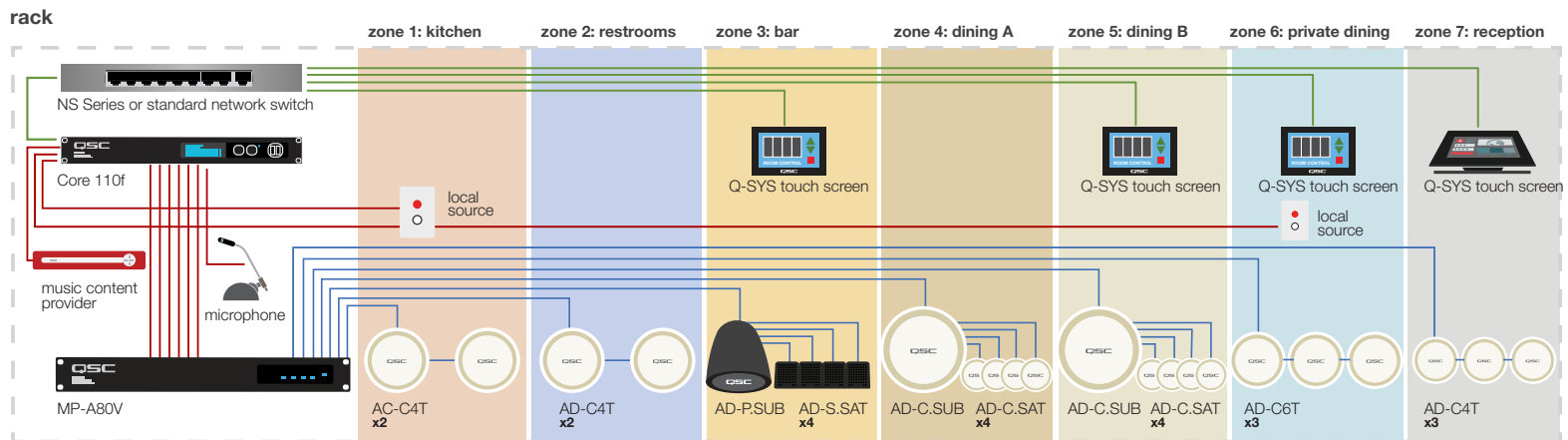
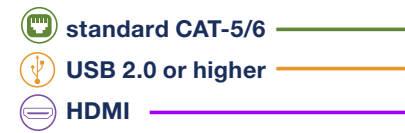


# hospitality & retail

applications



- Multi-zone background music and paging solution
- Q-SYS touch screen enables full zone audio control via custom user control interface (UCI)
- Kitchen and private dining area allow for local audio source (phone, MP3 player, etc.)
- AcousticDesign™ Series loudspeakers allow for mix-and-match of enclosure types without any noticeable audio transition between zones



# fine dining restaurant

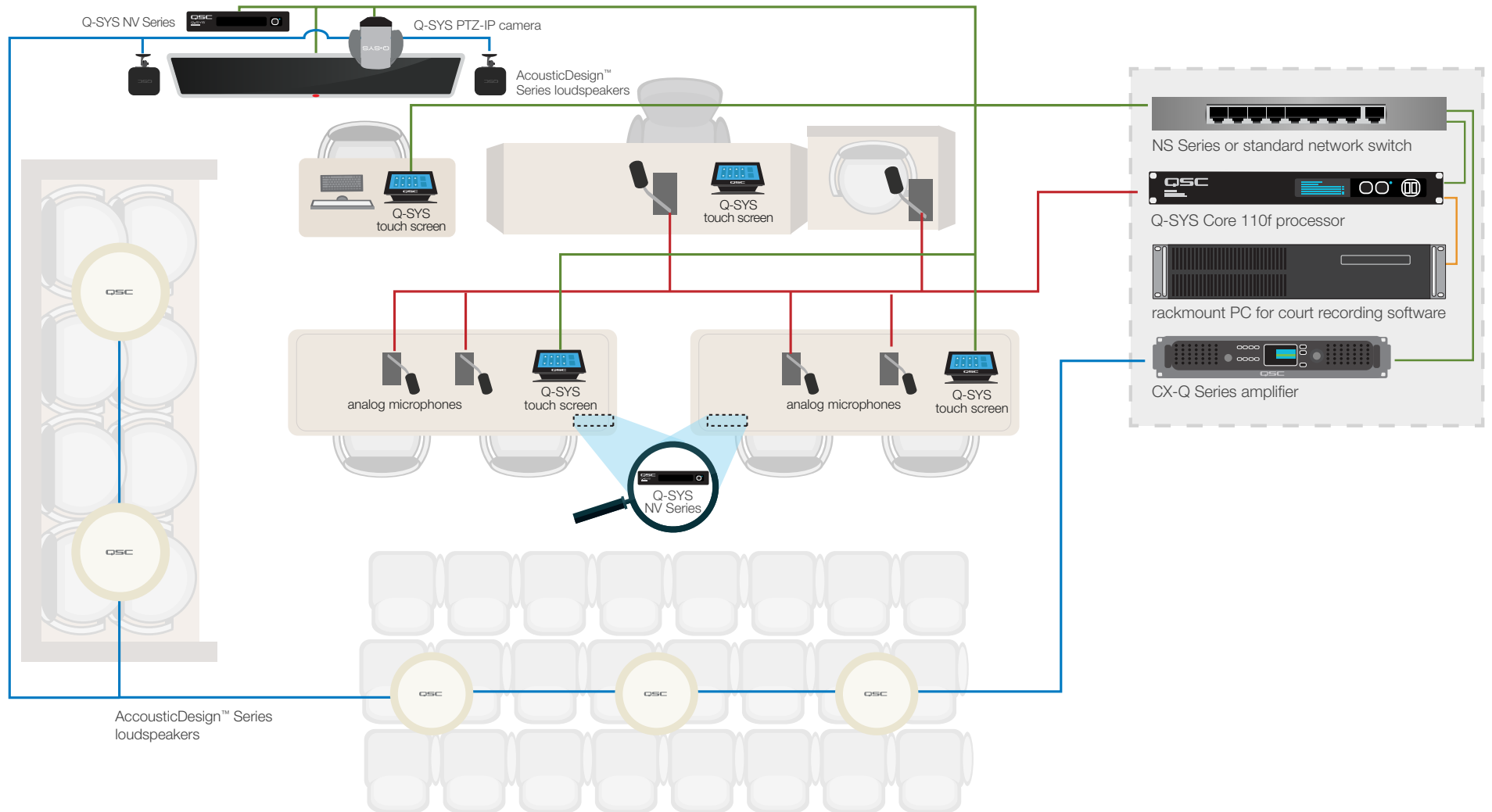
# courtroom & government

## applications



- Fully integrated network video distribution and PTZ conference cameras without the need for additional control processors or complicated programming
- Custom user control interfaces (UCI) deployed on Q-SYS touch screen controllers
- Mix-minus processing for larger chamber scenarios
- USB audio output (via Core or Q-SYS AV endpoint) for court recording software





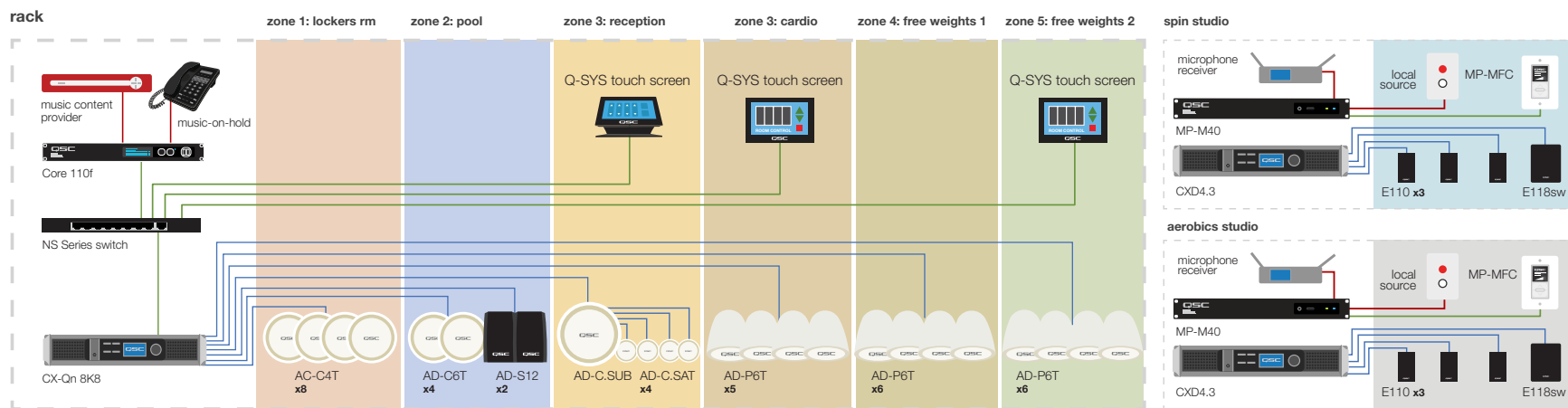
# Q-SYS + QSC Premium Business Music Solutions

applications

Depending on the needs of your installation, you may want to combine elements of the QSC Premium Business Music Solutions with the Q-SYS Ecosystem.

- Customized user control interfaces & touch screen controllers
- Third-party device control (video switching for displays, environmental controls, room automation)
- Cloud-based remote monitoring and management of multiple Q-SYS installations via Q-SYS Reflect™ Enterprise Manager
- Support for standard AV network distribution, networked amplifiers, higher channel/zone counts and advanced audio processing and distribution





# fitness studio

# go native.

[www.qsc.com/qsys](http://www.qsc.com/qsys)

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