passionate about sound

Concert Systems | Entertainers | Musicians | DJs | Cinema | Installed Sound

QSC™

QSC

2006
AMPLIFIERS | DIGITAL/NETWORK | LOUDSPEAKERS

Passion

Contents

Hear the Power of Technology

We're passionate. About who we are as a company,

the audio products we create, the service we provide our

customers, and the people who work here. We make products that

continue to push the envelope, that make your job easier, and our

job more fun. Innovative design. Outstanding performance.

Commitment to customer service. Dedication to quality.

Professional sound reinforcement is mission critical, with little room for compromise. Performing artists demand the best. Audiences demand the best. Most importantly, you demand the best. That's where QSC enters the picture, with systems and factory support that truly exceed expectations, no matter how demanding, and without compromise.

Earning Confidence

Live audio is not for the faint of heart. There are no second takes or second chances — it has to be right the first time, every time. Real success lies in navigating the unique intersection of the creative and the technical. All the while, you've got a business to run.

QSC is your partner in meeting each of these distinct challenges. It starts with carefully conceiving and engineering professional audio systems with the bigger picture — the total show — always in mind. These systems must be transportation friendly, quick to set up and strike, and easy to integrate. They must be adaptable and reliable. They must reproduce studio reference sound quality — show after show, no exceptions.

Most importantly, every system must be backed with unmatched support at both product application and system design levels — at all hours of the day, everyday. There's one chance to get it right while meeting so many challenges. QSC makes sure you won't go it alone.

"When I put them up for Bocelli at Lake Las Vegas, the arrays looked small, but I wasn't worried about it — I knew the power, performance, and sonic quality would be there. It was amazing, I had about 50 people come to up to me and ask 'what is that PA?' They couldn't believe all that sound was coming out of those small boxes. Behind the scenes the production people, the lighting people, the band, staff, management, everyone — WideLines were a home run for them too, no question."
JD Brill
Soundworx/Clair Brothers LA
Los Angeles, CA

"Not only was the experience really rewarding, the new QSC products actually changed our entire business. Now we've got more business than we know what to do with."
Larry Schmidt
Reel Rock Partners
Tallahassee, Florida

"The sound of the WideLines was exceptionally clear, natural, and intelligible, and they provided nice even coverage to every seat."
Mauro Melloni
FOH Engineer
The Piazza Maggiore
Bologna, Italy

ANDREA BOCELLI CONCERT
Wynn Casino, Las Vegas, Nevada

Without Compromise

Every show matters. Every note matters. Every moment matters.
Otherwise, what's the point? QSC shares your obsession, providing the audio
tools that stand up night after night, no matter what. Working without fail, not to
just support, but to enhance the art of musical performance.
Every time.

Sharing The Obsession

Defining Quality

What does the term "quality" really mean when it comes to sound equipment? Start with great audio — an accurate and dynamic representation that furthers your unique artistic vision.

But the definition of sound equipment with true quality goes much further. Quality means unfailing reliability — it works every time without a hitch. Quality means ease of use — plug it in and go. Quality means confidence — it will do what you need when you need it, helping you stay true to your goals. Quality means value — it must provide the highest return on your investment of precious funds.

Finally, true quality means people who completely stand behind the products they design and build. Like you, many at QSC share a true passion for performance, reflected not only in the company's professional-grade equipment but also with unparalleled at-the-ready support.

"In my 31-year career as a professional mobile DJ, this was the first time I have ever used or tested powered speakers and not wanted to go back to using my separate components."
Ray Martinez
DJ
Goodyear, AZ

"We've been carrying QSC products for as long as we've been in business. Their amplifiers are virtually bullet-proof, and their support is among the best in the industry. The HPR speakers offer great features and incredible value. We knew they would sound amazing, but they've exceeded even our highest expectations."
Eric Burgess
General Manager, Alpha Music
Virginia Beach, VA

"I've been using QSC amps for over 15 years, I've used every series, and I've never ever had one fail."
Stash Roberts
President, Stormrider Sound Systems
Pittsburgh, PA
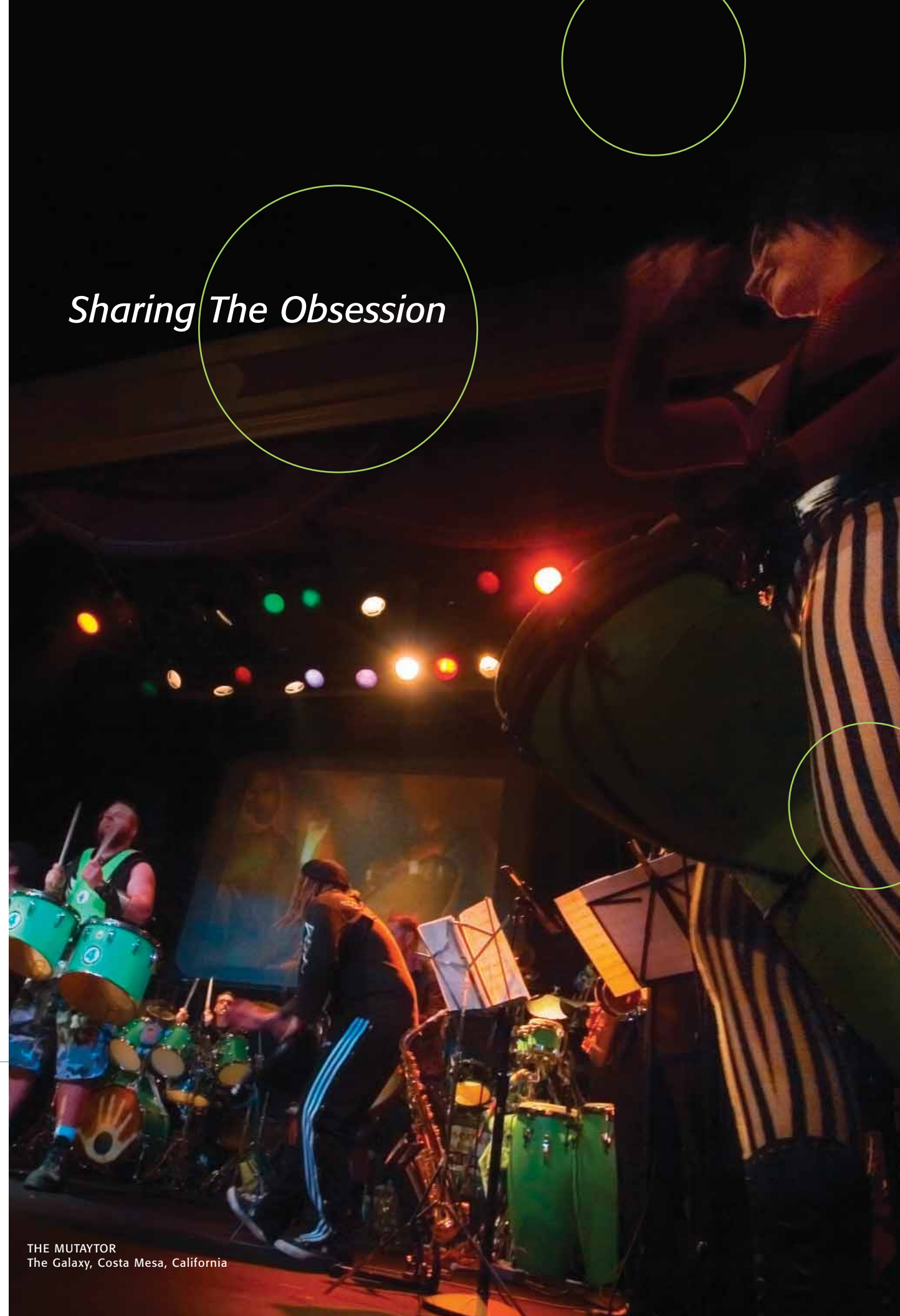
THE MUTAYTOR
The Galaxy, Costa Mesa, California

Intensifying Experiences

There is nothing quite like a night at the movies. Motion pictures transport audiences to entirely new worlds. Dynamic sound reproduction is critical to this experience. QSC intensifies the authentic motion picture experience, setting the standard worldwide, with leading edge power amplification, DSP and loudspeakers. From the highest highs to the lowest lows, QSC delivers the impact that audiences expect.

All Under One Roof

Who provides the cinema sound technologies you really need? Look no further than QSC, offering the deepest line of professional audio products designed specifically for the specialized needs of cinema. It's a line that started with renowned power amplifiers, with the same parameters of excellence now extended to loudspeakers, DSP and networked audio.

All QSC products are designed to work cohesively as a system. There is no compromise at any point in the signal chain, but rather a unified approach to motion picture sound that is unmatched. No other supplier can approach this level of complete system integration.

Top it off with the cinema-trained QSC professional staff, prepared to provide any type of design or application support needed, and the picture becomes crystal clear: pristine and yet dynamic audio provided by systems that make a real difference to the movie-going public worldwide.

"The three most important things about a cinema sound system are that it goes in easy, it sounds great and it doesn't fail. QSC excels on all counts."
Charlie Budinger
Technical Services Coordinator
Kerasotes Theatres

"QSC is a company that understands our business objectives, delivering superior products and services which make them a trusted provider. QSC is genuinely interested in our success which makes us interested in theirs. Working with QSC makes my job easy."
Richard Shue
Director of Technical
Carmike Cinemas
Columbus, GA

"... they are intuitive to use and reliable. In terms of the problems commonly experienced in audio management, the technology offers some very good solutions. Since we installed the BASIS units, I can quickly spring from one system configuration to another to accommodate virtually any mode of listening."
Tom Bruchs
Dolby Technical Facilities Manager
San Francisco, CA

Field-tested Reliability

More than ever, installed sound design and systems integration requires components that deliver rugged, fail-safe dependability. Customers expect levels of sound quality, flexibility and convenience that seemed impossible just a few years ago. QSC is there with an ever more comprehensive product line that gets the job done quickly, done thoroughly, and done right.

Integrated Solutions

It all started with the world's greatest power amplifiers, which served as the basis for what has grown into the industry's most ingenious yet cohesive product line: DSP. Networking. Remote Control/Monitoring. Loudspeakers.

Every QSC product is engineered and manufactured to the highest standards. But that's not enough.

Every QSC product is also painstakingly designed to stand proudly on its own or to be teamed with any of its siblings to form a tight, cohesive and functional system.

Yet all of this would be meaningless without addressing the crucial aspect of reliability. It's why every QSC product is built to withstand not just the test of

time, but the world's most demanding installed sound applications.

The final piece of the puzzle is renowned QSC support, consistently at the top of the charts with system contractors. Every project presents unique aspects, but working with the people and products of QSC insures the optimum solution every time.

"We can buy products from any company, but when we come to QSC, we buy an experience."
Michael Garrison
Michael Garrison Associates
Springfield, MO

"The system is designed to be an integral part of the décor. The owners' request was to create a first-class system specifically for this environment, both sonically and visually, and with the QSC system we have achieved that."
Vladimir Samberger
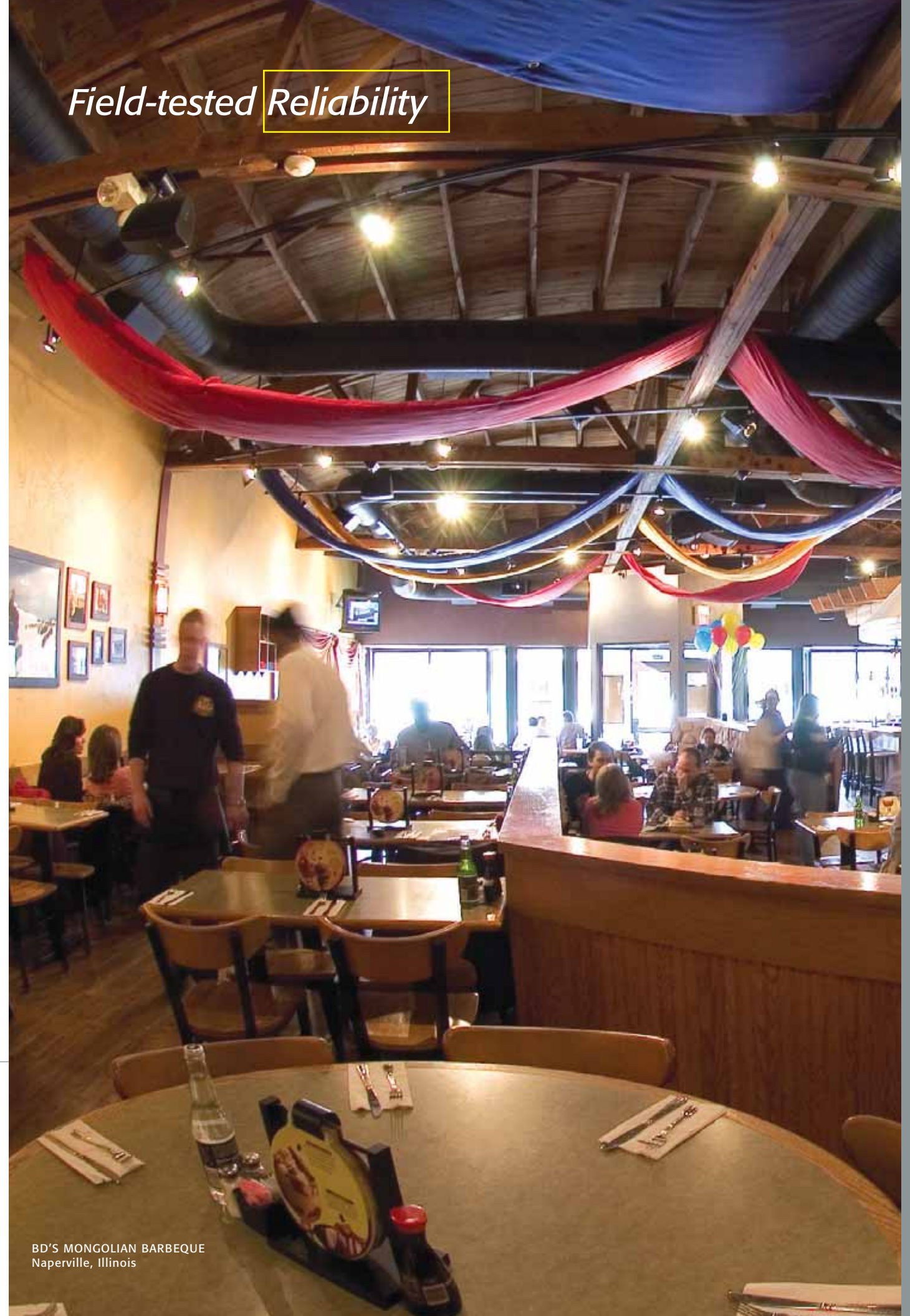Prodance Light and Sound
Prague, Czech Republic

"The main thing I noticed was the volume and clarity coming from such small cabinets. I figured we might be pushing the system, but the speakers are more than capable. While we were tuning the room I clocked 123 dB at the back of the room with no distortion at all. The speakers performed well past what they were rated at."
Brian Kimball
Vanguard University
Costa Mesa, CA

"The look of the loudspeakers had to be congruent with the room. The Sugar Bar is definitely not the kind of place where you want to see big cabinets hanging in your face. By selecting QSC loudspeakers, we left the aesthetics undisturbed, yet still provided the punch and quality needed."
Eddie Decker
MYI Audio/Video Design &
Installation, Hackensack, NJ

BD'S MONGOLIAN BARBEQUE
Naperville, Illinois

CX Series
Installed Sound

CX 2-channel Models

The CX series is a range of two, four and eight channel amplifiers designed for installations requiring premium sound quality and high output power. Recognized by sound contractors worldwide as the standard for reliability, the 2RU CX series features PowerLight power supply technology which reduces weight while also improving audio quality and eliminating AC mains hum.

• *Active Inrush Limiting* brings the amplifiers on line gently, eliminating the need for costly AC power sequencers.
• Front-panel gain controls with 1 dB detents allow precise level adjustment and are protected by tamper-proof security covers.
• DataPort connects directly to QSC accessories and digital signal processors for extensive remote control and monitoring of amplifier functions via QSControl.net.
• Selectable clip limiters and infra-sonic filters protect loudspeakers from damage due to distortion and overexcursion.
• Transformerless 70V and low-impedance models are available.
• Connectors: Input – XLR/F and 3-pin Euro-style. Output – barrier strip.

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

CX 4-channel Models

CX 8-channel Models

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

ISA Series
Installed Sound

ISA amplifiers are ideal for installations where the budget is tight but reliability and sonic performance can't be compromised. The 3RU ISA series offers models capable of driving 2 ohm loads and models with selectable 25, 70 and 100 volt outputs. "Ti" versions will drive a distributed and a 4 or 8Ω system simultaneously from the same channel.

• Rear-mounted gain controls with 2 dB detents provide repeatable settings.
• Independent, defeatable clip limiters reduce distortion and protect speakers.
• Selectable high-pass filters protect against transformer saturation and driver overexcursion.
• Includes extensive DC, infrasonic, thermal overload, and short circuit protection.
• DataPort V2 is included for connection of DPV2-compatible signal processing accessories. (Not compatible with BASIS products.)
• Connectors: Input – XLR/F and 3-pin Euro-style. Output – barrier strip.

ISA Series	Watts per channel			
Model	70V*	8Ω**	4Ω**	2Ω†
ISA280	–	185	280	430
ISA450	–	260	425	700
ISA750	–	450	650	1200
ISA1350	1500††	800	1300	2000
ISA300Ti	300	185	280	430
ISA500Ti	500	260	425	700
ISA800Ti	800	450	650	1200

*50 Hz – 16 kHz, 0.5% THD
**20 Hz – 20 kHz, 0.1% THD
†1 kHz, 1% THD
††Direct Output, 70V, less than 0.1% THD, 20 Hz – 20 kHz, +0/-0.3 dB

Advanced Thermal Management Technology

All QSC amps feature the *Advanced Thermal Management™* (ATM) system that maintains a safe operating temperature, even under high-output conditions. ATM utilizes a powerful, variable-speed fan to draw cool air into the rear of the amp, propel it through the heat sinks, and out of the amp. The fan speed automatically changes to maintain a safe temperature, which maximizes the longevity and reliability of the amp.

AMPLIFIERS

DIGITAL | NETWORK

LOUDSPEAKERS

QSC

PowerLight Series
Concert Systems
Installed Sound

The PowerLight series are powerful (up to 3500 W/channel), rugged 3RU amplifiers designed to meet the rigorous demands of extremely high-output professional PA. Featuring *PowerLight* technology, these amps deliver superb audio quality and offer features and performance well suited for demanding live sound reinforcement:

- DataPort connects to accessory processors and QSControl DSP which provides network monitoring and control of the amplifiers.
- Independent, defeatable clip limiters reduce distortion and protect speakers.
- Protection circuitry guards against DC, infrasonic, thermal overload, open circuit, and short circuit.
- Front panel LED status indicators enable system monitoring and troubleshooting.
- Front panel gain controls (2 dB detents) allow repeatable level adjustment.
- Connectors: Input – XLR, 1/4" TRS, 3-pin Euro-style. Outputs – Speakon®, binding post.

PL Series	Watts per channel		
Model	8Ω	4Ω	2Ω*
PL3.4	725	1150	1700
PL3.8ᵏ Ch 1	900	1400	2400
PL3.8ᵏ Ch 2	450	800	1400
PL4.0	900	1400	2000
PL6.0II	1150	2050	3500

20 Hz – 20 kHz, 0.1% THD
*1 kHz, 1% THD

PowerLight™ Technology
PowerLight is QSC's proprietary switching power supply that charges the supply rails more then 200,000 times/sec through an ultra-low impedance circuit. This maintains higher rail voltages that do not sag under heavy loads.

PowerLight technology:
- Reduces weight to 50% of a conventional amp;
- Minimizes RF and EMI which virtually eliminates hum and noise (30 dB quieter than most amps);
- Minimizes heat which dramatically improves performance, reliability, and longevity;
- Produces instantaneous transient response with more articulate bass and cleaner highs.

PowerLight 2 Series
Concert Systems
Installed Sound

The PowerLight 2 series are powerful (up to 1850 W/channel), rugged 2RU amplifiers designed to meet the rigorous demands of professional concert and installation applications. Featuring QSC's revolutionary *PowerLight* technology, PowerLight 2 amplifiers deliver superb audio quality yet weigh only 21 lbs. (9.5 kg).

PowerLight 2 amplifiers are also available as "A" versions. These models feature integrated analog signal processing functions that can eliminate the need for external crossovers and limiters.

- DataPort connects to accessory processors and QSControl DSP which provides network monitoring and control of the amplifiers.
- Independent, defeatable clip limiters reduce distortion and protect speakers.
- Selectable high-pass filters (off/30/50 Hz) protect speakers with minimal effect on program material.
- Protection circuitry guards against DC, infrasonic, thermal overload, open circuit, and short circuit.
- Front panel gain controls (1 dB detents) allow precise level adjustment.
- Active Inrush Limiting eliminates the need for expensive AC power sequencers.
- Connectors: Input – XLR, 1/4" TRS, 3-pin Euro-style. Outputs – Speakon®, binding post.

PL2 Series	Watts per channel		
Model	8Ω	4Ω**	2Ω*
PL218	310	525	900
PL224	440	740	1200
PL230	575	900	1500
PL236	725	1100	1850

20 Hz – 20 kHz, 0.03% THD
*1 kHz, 1% THD
**20 Hz – 20 kHz, 0.05% THD
Represents PL2A and PL2 base models.

PLX2 Series
Entertainers | Musicians | DJs
Concert Systems

The PLX2 series are powerful, lightweight amplifiers designed to meet the rigorous demands of live musicians, mobile entertainers, and portable PAs. Featuring third generation *PowerLight* technology, the PLX2 Series delivers superb overall audio quality with especially powerful low frequency performance. The PLX2 series amps have a professional, attractive appearance, with a die-cast aluminum front panel acting as an integral I-beam, to create an extremely rugged, road-worthy device.

PLX2 consists of two series. The "02" models (1802, 2502, 3102, 3602) can drive 2Ω loads and include subwoofer filtering and other signal processing amenities. For applications that do not require bridging, 2Ω operation, or internal subwoofer signal processing, the "04" models (1104, 1804) deliver the same audio performance as the "02" models in a lighter-weight, more cost-effective unit.

- Front panel LED status indicators enable system monitoring and troubleshooting.
- Front panel gain controls (1 dB detents) allow precise input sensitivity adjustment.
- Speakon® NL-4 output connectors provide a positive-locking speaker connection. Channel 1's output can use all four wires to connect to bi-amplified speakers with a single cable.
- Balanced XLR and TRS parallel inputs accommodate the most commonly used input connectors for live sound and support loop-through routing.
- *Active Inrush Limiting* prevents AC mains circuit breakers from popping during turn-on.

PLX2 Series	Watts per channel			
		Stereo		Bridged
Model	8Ω*	4Ω*	2Ω**	4Ω**
PLX1104	325	550	—	—
PLX1804	600	900	—	—
PLX1802	330	575	900	1800
PLX2502	450	750	1250	2500
PLX3102	600	1000	1550	3100
PLX3602	775	1250	1800	3600

*1 kHz, 0.1% THD, both channels driven
**1 kHz, 1% THD, both channels driven

RMX Series
Entertainers | Musicians | DJs
Concert Systems

The RMX series is a proven line of amplifiers combining legendary QSC reliability, audio performance and affordability. Entertainers and touring users have made RMX one of the leading amplifier series in the world. For mid-power applications, the 2RU models offer 4Ω power ratings from 300 to 750 watts per channel. For premium loudspeaker systems with extremely high power capacity the 3RU models (RMX4050HD and RMX5050) are unchallenged.

- Independent, defeatable clip limiters reduce distortion and protect speakers.
- Selectable low-frequency filters (30 or 50 Hz) protect speakers and increase headroom.
- High-current toroidal transformers yield higher power and less noise for 2Ω operation.
- Front panel LED status indicators enable system monitoring and troubleshooting.
- Extensive protection circuitry and thermal protection ensure long-term reliability.
- Connectors: Input – XLR and 1/4" TRS. Outputs – Speakon®, binding post.

RMX Series	Watts per channel			
		Stereo		Bridged
Model	8Ω	4Ω	2Ω*	4Ω*
RMX850	200	300	430	830
RMX1450	280	450	700	1400
RMX1850HD	360	600	900	1800
RMX2450	500	750	1200	2400
RMX4050HD	850	1400	2000	4000
RMX5050	1100	1800	2500	5000

1 kHz, 0.1% THD   *1 kHz, 1% THD

XC-3 Two-way Crossover

The XC-3 is an active, two-way crossover module that mounts to the rear panel DataPort of two-channel QSC amps (DCA, PL2, CX, ISA).

The XC-3 features 4th-order Linkwitz-Riley filters (24 dB/octave) with the low frequencies routed to amp channel 1 and the highs to channel 2. Each channel has an all-pass filter delay for time alignment of low- and high-frequency drivers, and a trim control (0-20 dB attenuation) to balance the frequency bands. The high-frequency channel offers up to 10 dB of boost at 20 kHz to compensate for cinema screen loss or to properly equalize constant-directivity horns. A three-way crossover can be implemented using the XC-3's low-frequency high-pass filter with the LF-3.

SF-3 Subwoofer Filter

The SF-3 Subwoofer Filter provides subwoofer signal processing without the need for a conventional crossover. The unit mounts to the rear panel DataPort of two-channel QSC amps (DCA, PL2, CX, ISA) to conserve cost and rack space. A 4th-order Linkwitz-Riley low-pass filter may be set to 80, 150 or 250 Hz. The subsonic filter offers roll-off frequencies in the range 20-50 Hz to prevent driver overexcursion. An optional EQ is provided to extend the response of B6 speaker enclosures and is especially useful for cinema applications including the QSC SB-5218 and SB-7218 subwoofers. A trim control (0-20 dB of attenuation) allows balancing the various frequency bands.

DataPort

The QSC DataPort provides a simple, convenient means of connecting and powering digital and analog accessory devices to expand the capabilities of QSC CX, DCA, PowerLight and PowerLight2 amplifiers. Devices supported include the DSP-3, DSP-4, XC-3, LF-3 and SF-3. Note that ISA models require an external power adapter for the DSP devices.

In addition, the DataPort's HD15 connector provides a single-cable interface to Basis processors and QSControl. QSControl allows remote amplifier monitoring and control via Ethernet. This functionality is supported by CX, DCA, PowerLight and PowerLight2 amplifiers.

Please see the specifications for the specific accessory devices and amplifiers before planning a system.

LF-3 Low Frequency Filter

The LF-3 Low-Frequency filter, when used with the XC-3 two-way crossover, provides a three-way active crossover system. The LF-3 mounts to the rear panel of two-channel QSC amps (DCA, PL2, CX, ISA) to conserve cost and rack space. The LF-3 is comprised of two discrete channels with 4th-order Linkwitz-Riley low-pass filters (24 dB/octave slope). Each channel has a delay to time-align low-, mid-, and high-frequency speakers, and a trim control (0-20 dB of attenuation) to match levels. One amp-mounted LF-3 supports up to two other amps (even in stereo) with XC-3 accessories installed.

OT-300a Output Autoformer

The OT-300a is a robust step-up autoformer accessory that adapts power amplifier outputs (maximum voltage range 17-35 V) to drive a 70 V distributed line with up to 300 W. Four voltage taps can be selected to match the output voltage of your amplifier. Conversely, the OT-300a can be used as a high-power speaker transformer, driving speakers with up to 300 W from a 70 volt distributed line. The OT-300a is compatible with any amplifier rated at up to 350 W at 4Ω.

OT-600 Output Autoformer

The OT-600 is a robust step-up autoformer accessory that adapts power amplifier outputs (maximum voltage range 40-50 V) to drive a 70 V distributed line with up to 600 W. Three voltage taps can be selected to match the output voltage of your amp. The OT-600 can also drive a 100 V line when used with an amp with a maximum output voltage in the range 55-70 V. Conversely, the OT-600 can be used as a high-power speaker transformer, driving speakers with up to 600 W from a 70 V distributed line. The OT-600 is compatible with amps rated between 350 and 650 W at 4Ω.

IT-42 Output Isolation Transformer

The IT-42 is an output isolation transformer accessory for the QSC CX302 amplifier, allowing it to drive two 25, 70 and 100 volt distributed lines in stereo or parallel or a single 140 or 200 volt line in bridged mono. The IT-42 is pre wired for quick and convenient mounting to the back of the CX302 amplifier and requires no additional rack space.

DSP-3 | DSP-4 | DSP-30

The DSP-3 and DSP-4 are compact, two-channel signal processing modules that can plug into the back of DataPort-equipped QSC amps to conserve rack space and simplify interconnection. They can also be mounted into a DPX-4 remote rack mounting bracket for use as a standalone, rack-mounted processing unit. The DSP-3/4 are professional audio processors featuring 24-bit/48 kHz A/D converters, balanced inputs, and presets that can be selected without turn-on pops or *zipper* noise. Their processing power is *dynamically allocated*, removing the limitations imposed by fixed signal-chain designs. The power and flexibility of the DSP-3/4 eliminates expensive outboard DSP gear, which reduces cost and installation time and simplifies setup.
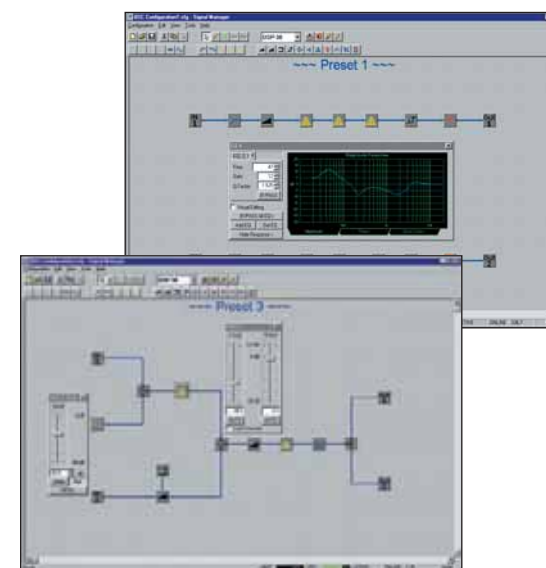
The DSP is configured with an easy-to-use software interface. Signal processing icons from the toolbar are dropped onto the workspace and the signal path is routed with simple drawing tools.

Our PC-based Signal Manager software uses simple drag-and-drop tools to:

- Configure the processing functions and signal flow
- Display a graphical representation of DSP resources
- Produce hardcopy printout of signal flow and/or parameter settings
- Perform firmware upgrades via RS-232

Each channel includes:

- Crossover filters: Bessel, Butterworth, Linkwitz-Riley
- Compressors and limiters
- Multiple parametric EQs
- Precision attenuation (0.1 dB steps)
- High- and low-shelf filters
- Mix post-crossover audio (2-to-1 mixer)
- Multiple delays (max. 910 ms)
- Variable-frequency tone generator
- Pink and white noise generators
- Signal mute, splitter, and polarity reversal

The DSP-30 is a rack-mount device almost identical to the DSP-3. The other main differences between these three devices are their dynamic range specifications and output connectors:

Model	Dynamic Range (unweighted)	Output Connectors
DSP-3	>93 dB, 20 Hz to 20 kHz 1.5, 4, 9 V sensitivities	3-pin Euro-style
DSP-4	>104 dB 20 Hz to 20 kHz, 1.5, 4, 9 V sensitivities	XLR
DSP-30	>95 dB 20 Hz to 20 kHz, 1.5, 4 and 9 V sensitivities	XLR

Networked Audio Systems

QSControl.net | BASIS | RAVE

QSControl.net

QSControl.net is a networked audio system platform that seamlessly integrates QSC's *Amplifier and Loudspeaker Management, Configurable Digital Signal Processing,* and *Digital Audio Transport* into a unified system administered through a user-friendly GUI. QSC's BASIS, RAVE (520uz, 522aa/ua) and DSP 322ua devices all operate under QSControl.net, networked and controlled from Venue Manager software. Furthermore, multiple networked computers can control and monitor all units simultaneously. QSControl.net is AMX® and Crestron® compatible.

QSC has developed a revolutionary signal transport system that employs CobraNet™ technology to route multiple audio channels over standard Ethernet cables and hardware. This network can replace hundreds of audio cables, dramatically reducing installation time, effort and cabling costs while improving routing flexibility and audio performance. This technology, integrated into our RAVE and BASIS products, is the ideal audio transport system for arenas, theaters, and broadcast facilities that must route multiple channels over long distances without noise or hum.

Venue Manager Software

- Snapshots: recall config, block and/or parameter settings
- Matrix mixer: any size up to 24x24
- Automixers: gain sharing
- Routers: any size up to 24x24
- Gain controls: up to 24 channels
- Graphic EQs
- Filters: high/low/all-pass, shelf, parametric, parametric shelf, Butterworth, Bessel-Thomson, and Linkwitz-Riley high- and low-pass
- Crossovers: Linkwitz-Riley, Butterworth, Bessel-Thomson (in-phase, symmetrical, 2/3/4-way general purpose adjustable)
- Dynamics Processors: Compressors, peak limiters, AGCs, gates, duckers (up to 8 channels, up to 60 s fade-in/out times, priority mix)
- Tone Generators: Pink/white noise, sine wave
- Delays
- Macros: user-definable custom blocks

BASIS

BASIS processors include Amplifier and Loudspeaker Management, Configurable DSP, and CobraNet Digital Audio Transport (except the BASIS 722az) in a compact 1RU device. BASIS processors can be generally considered a superset of the RAVE and DSP 322ua devices.

Automatic Power Limiting is one of the most powerful features of the BASIS products. This technology establishes a feedback loop between QSC's speakers and amps that assesses the driver's thermal response to the true power delivered to it, and uses this information to dynamically limit the power allowed to reach the driver. Power Limiting has no effect on the sound until the designated thermal limit is exceeded, beyond which the power to the driver is reduced to a safe level. This maximizes each loudspeaker's performance without exceeding its safe operating range.

Previous configurable DSP systems have often suffered from the problem of variable latency for signals propagating through different processing paths. QSC has solved this problem by yielding a short, fixed processing latency through its DSP subsystem, regardless of the signal path.

BASIS processors connect directly to the DataPort on select QSC amplifiers, providing network control and monitoring of amplifier functions. All models incorporate the DSP functions discussed in Venue Manager Software.

RAVE

In addition to their Digital Audio Transport functions, the RAVE 520uz, 522aa, and 522ua models incorporate DSP functions controlled by Venue Manager Software.
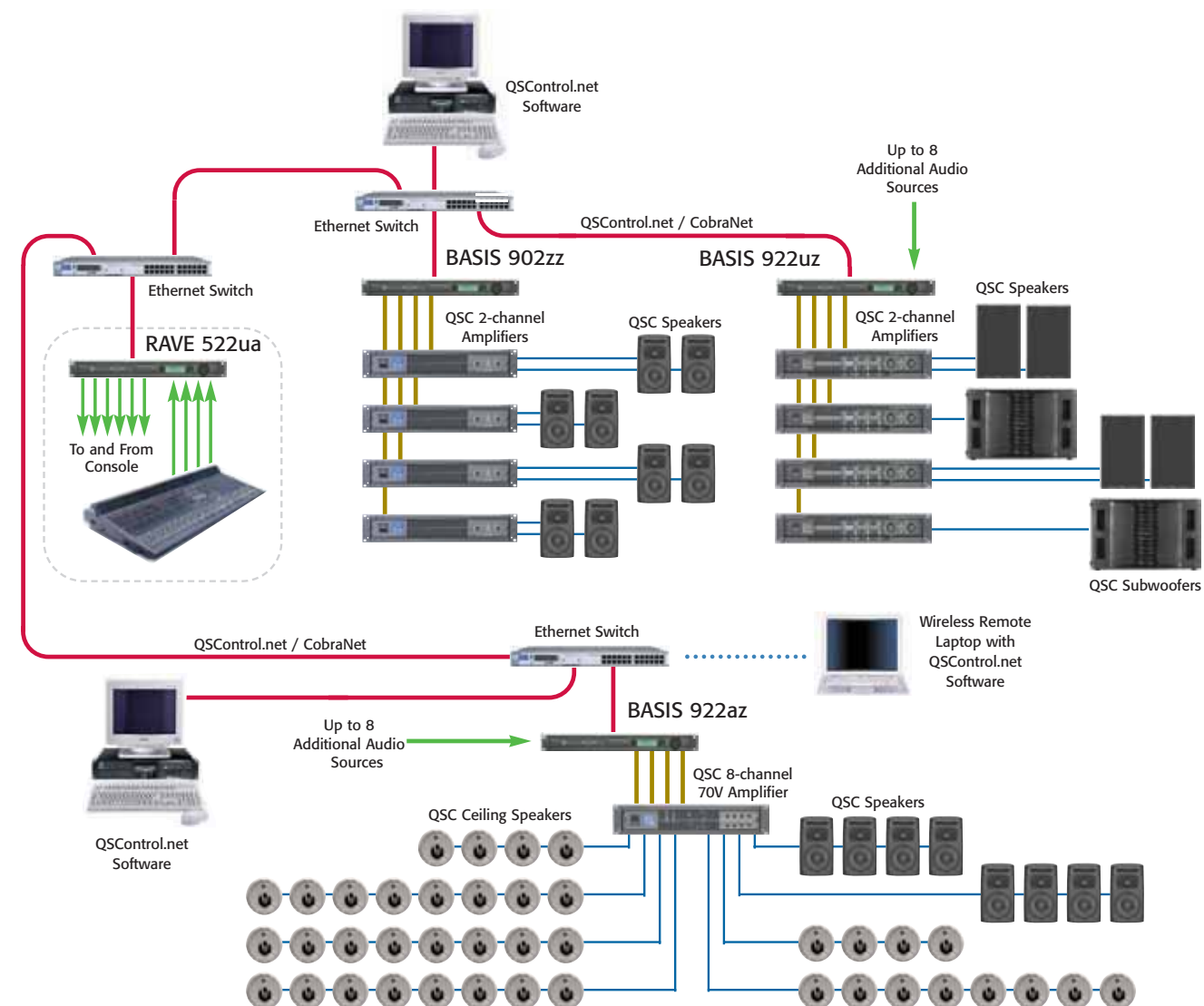
DSP 322ua

The DSP 322ua operates under QSControl.net but without CobraNet Digital Audio Transport capability. It incorporates DSP functions controlled by Venue Manager Software.

RAVE Without QSControl.net

QSC's RAVE devices without QSControl.net are cost-effective alternatives for applications that require Digital Audio Transport only, without DSP or computer control. The I/O of these devices is summarized here:
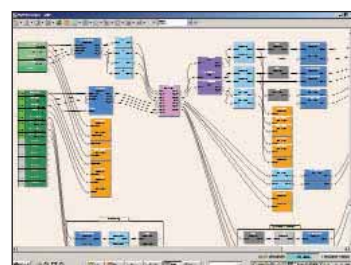
Model	No. of Outputs	No. of Inputs	I/O Connector
RAVE 160S-24	16 ANALOG		Terminal block x 16
RAVE 161S-24		16 ANALOG	Terminal block x 16
RAVE 188S-24	8 ANALOG	8 ANALOG	Terminal block x 16

QSControl.net System Example

| | Inputs | | | Outputs | | | |
Model	Analog	Digital	CobraNet	Analog	DataPort	CobraNet	Monitor I/O
BASIS 722az	8 line level	-	-	-	4 (8 channels)	-	YES
BASIS 902zz	-	-	24 of 32	-	4 (8 channels)	32	YES
BASIS 904zz	-	-	24 of 32	-	8 (16 channels)	32	YES
BASIS 914lz	4 XLR line level	-	16 of 32	-	8 (16 channels)	32	-
BASIS 922az	8 line level	-	16 of 32	-	4 (8 channels)	32	YES
BASIS 922dz	-	25 pin AES/EBU (8 channels)	16 of 32	-	4 (8 channels)	32	YES
BASIS 922uz	8 universal mic/line	-	16 of 32	-	4 (8 channels)	32	YES
DSP 322ua	8 universal mic/line	-	-	8 line level	-	-	-
RAVE 520uz	8 universal mic/line	-	16 of 32	-	-	32	-
RAVE 522aa	8 line level	-	16 of 32	8 line level	-	32	-
RAVE 522ua	8 universal mic/line	-	16 of 32	8 line level	-	32	-

Loudspeakers

AcousticDesign™ | AD Series

Installed Sound

AD-S52

The AD-S52 is a full-range, surface-mount loudspeaker intended for background / foreground music and paging applications where accurate reproduction and audio quality are key requirements. Its flat response also makes it an ideal candidate for coverage of secondary spaces in live performance facilities. Sleek, contemporary yet unobtrusive styling meets the needs of multiple venues including hotels, restaurants, sports bars, convention facilities, and multimedia environments. The low-frequency driver is magnetically shielded, making the AD-S52 suitable for use near a CRT monitor.

The AD-S52's high-output, two-way design includes a 5.25" weatherproof, low-frequency transducer and a 1" neodymium tweeter. Dynamic power protection is incorporated into the crossover network to ensure system reliability even during overload conditions.

The AD-S52T models are equipped with a 70/100 V matching transformer for distributed systems. A switch on the rear panel selects the power level and may also be set for 8Ω operation (bypassing the transformer completely), providing greater flexibility than many competing products.

The AD-S52 system package includes a ball-mount assembly for conveniently installing the enclosure in a wide variety of orientations. If desired, the ball mount adapter's back plate can be removed, reducing the overall depth of the assembly and the footprint of the wall mount on the wall. Furthermore, the assembly includes a weather-resistant, input connection cover to protect the input terminals. The AD-S52 is available in black or white and can be painted to match any specific decor.

Available AD-S52 Accessories

• YM-5 Yoke Mount

AD-S82 | S82H

The AD-S82 and AD-S82H are full-range, surface-mount loudspeakers intended for background / foreground music and paging applications where higher acoustic output, accurate reproduction and audio quality are key requirements. Their flat response also makes them ideal candidates for coverage of secondary spaces in live performance facilities. Sleek, contemporary, yet unobtrusive styling meets the needs of multiple venues including hotels, restaurants, sports bars, convention facilities, and multimedia environments. The low-frequency driver is magnetically shielded, making the AD-S82 suitable for use near a CRT monitor.

The AD-S82 is a two-way system housed in a weather-resistant, ported enclosure made from injection-molded, high-impact polystyrene. The low-frequency transducer is an 8" weatherproof driver with a heavy-duty, double-roll cloth surround. For applications requiring higher power handling and acoustic output, choose the AD-S82H (High output). This version replaces the 1" titanium dome tweeter used in the AD-S82 with a 1" (exit) compression driver. Both versions use QSC's patented, rotatable, *Advanced Directivity*™ waveguide (90° H x 60° V). Both versions are available with or without a transformer (70/100 V).

The AD-S82 features QSC's revolutionary *IntelliDock*™ (patent pending) intelligent mounting system, which sets a new standard for ease of installation and security. The IntelliDock system includes all necessary components to mount, wire, and position the speaker. The speaker locks onto the docking station, making electrical connections and securing the speaker in one step. This unique and innovative design reduces installation time and wiring, while decreasing the possibility of theft. Four mounting configurations are available, including a standard yoke mount. The AD-S82 is available in black or white and can be painted to match any specific décor.

Available AD-S82 Mounting Accessories

• ID-8/ ID-8T IntelliDock™
• YM-8/YM-8T Yoke Mount

AD-S282H

For applications in which additional low-frequency performance and higher acoustical output are required, choose the dual-woofer AD-S282H. It has the same good looks as the single 8-inch AD-S82H combined with a 1" (exit) compression driver. For mounting flexibility, a yoke bracket is included.

The AD-S282HT is equipped with a 70/100 V matching transformer for distributed audio systems. A switch on the rear panel selects the power level and may also be set for 8Ω operation (bypassing the transformer completely), providing greater flexibility than many competing products.

	AD-CI52T	AD-CI52ST	AD-S52	AD-S52T	AD-S82 (standard output)	AD-S82H (high output)	AD-S282H	AD-S282HT
System Type	Two-way, ceiling / flush mounted, ported system	Shallow can, two-way, ceiling / flush mounted, ported system	Compact two way, ported system	Compact two way, ported system	Compact two way, ported system	Compact two way, ported system	Compact two way, ported system	Compact two way, ported system
Frequency Range (-10 dB)	65 Hz - 20 kHz	53 Hz - 20 kHz	60 Hz - 20 kHz	60 Hz - 20 kHz	65 Hz - 19 kHz	60 Hz - 22 kHz	60 Hz - 29.5 kHz	60 Hz - 29.5 kHz
Frequency Response (±3 dB)	85 Hz - 20 kHz	63 Hz - 20 kHz	75 Hz - 19 kHz	75 Hz - 19 kHz	85 Hz - 18 kHz	80 Hz - 21 kHz	80 Hz - 27.7 kHz	80 Hz - 27.7 kHz
Nominal Coverage	90° conical	100° conical	90°H x 90°V	90°H x 90°V	90°H x 60°V (rotatable)	90°H x 60°V (rotatable)	90°H x 60°V	90°H x 60°V

Full Range
  Power Capacity [1]
  Sensitivity [2]
  Peak SPL [3]
	40 W (100 hrs)
	86 dB
	108 dB
		40 W (100 hrs)
		87.5 dB
		109 dB
			60 W (100 hrs)
			86.5 dB
			110 dB
				60 W (100 hrs)
				86 dB
				110 dB
					110 W (8 hrs)
					90.5 dB
					117 dB
						240 W (8 hrs)
						90.5 dB
						120 dB
							450 W (8 hrs)
							93 dB
							125 dB
								450 W (8 hrs)
								93 dB
								125 dB

Driver Information LF	5.25" (13 cm) weather resistant, low distortion fiberglass cone woofer, 25 mm voice voil, neodymium magnet	5.25" (13 cm) weather resistant, low distortion fiberglass cone woofer, 25 mm voice voil, neodymium magnet	5.25" shielded, weather-resistant	5.25" shielded, weather-resistant	8" fiberglass cone, 1 1/4" voice coil	8" high power treated paper cone, 2" voice coil, neodymium magnet	8" high power treated paper cone x 2, 2" voice coil, neodymium magnet	8" high power treated paper cone x 2, 2" voice coil, neodymium magnet
HF	1" titanium dome tweeter, rubber surround	1" titanium dome tweeter, rubber surround	1" neodymium tweeter	1" neodymium tweeter	1" titanium dome tweeter, neodymium magnet	1" high output compression driver	1" high output compression driver	1" high output compression driver
Controls / Selectors	70 V: 30, 15, 7.5, 3.8 W 100 V: 30, 15, 7.5, 3.8 W 8Ω Externally Selectable	70 V: 30, 15, 7.5, 3.8 W 100 V: 30, 15, 7.5, 3.8 W 8Ω Externally Selectable	N/A	70 V: 60, 30, 15, 7.5 W 100 V: 60, 30, 15 W 8Ω Selectable Rotary Knob	70 V: 60, 30, 15, 7.5 W 100 V: 60, 30, 15 W 8Ω	70 V: 60, 30, 15, 75 W 100 V: 60, 30, 15 W 8Ω	N/A	70V 200, 100, 20, 25 W 100V 200, 100, 50 W 8Ω Externally Selectable
Input Connectors	4-pin Euro terminals, fire protective sub-chamber	4-pin Euro terminals, fire protective sub-chamber	5-way binding posts x 2	5-way binding posts x 2	Concealed 5-way binding posts x 2, IntelliDock mounting/ connection system	Concealed 5-way binding posts x 2, IntelliDock mounting/ connection system	Barrier Strip (switchable: passive/active)	Barrier Strip
Suspension / Attachment Point	N/A	N/A	N/A	N/A	N/A	N/A	OmniMount Pro60.0 Attachment	OmniMount Pro60.0 Attachment
Dimensions (HWD) inches	8.5" x 8.5" x 9.3"	12.6" x 12.6" x 3.75"	11.3" x 7.0" x 8.3"	11.3" x 7.0" x 8.3"	17.4" x 10.0" x 11.2"	17.4" x 10.0" x 11.2"	26.2" x 10.2" x 11.4"	26.2" x 10.2" x 11.4"
Dimensions (HWD) mm	216 mm x 216 mm x 236 mm	321 mm x 321 mm x 95 mm	287 mm x 178 mm x 212 mm	287 mm x 178 mm x 212 mm	445 mm x 255 mm x 285 mm	445 mm x 255 mm x 285 mm	445 mm x 255 mm x 285 mm	445 mm x 255 mm x 285 mm
Net Weight (each)	7.5 lb / 3.4 kg	8 lb / 3.7 kg	15 lb / 6.8 kg	18 lb / 8.2 kg	16.9 lb / 7.4 kg	16.2 lb / 7.7 kg	27.7 lb / 12.6 kg	27.7 lb / 12.6 kg

1 Continous IEC specified test signal, 2 hours unless otherwise stated.   2 Based on nominal impedence, measured in full space, subwoofers and ceiling speakers measured in half space. 1 W @ 1 m.
3 Calculated using specified power capacity and system sensitivity. 6 dB peak-to-average signal ratio assumed.

AD-CI52T | AD-CI52ST

The AcousticDesign AD-CI52T/AD-CI52ST are state-of-the-art ceiling speakers that deliver accurate, high-fidelity sound in foreground / background music and paging systems. They are ideal for a wide range of commercial applications including hotels, restaurants/pubs, corporate offices, retail spaces, convention centers, recreation facilities, houses of worship, and airports. The series shares driver technology and "sonic signature" with the surface-mount AD-S series for acoustic consistency when blending ceiling and surface mount loudspeakers.

The AD-CI52T and AD-CI52ST speakers employ a 5.25", weather-resistant, low-frequency transducer with a fiberglass cone, 25-mm voice coil, and a rubber surround. The high-frequency driver is a 1", pure titanium, dome tweeter with a neodymium magnet. The AD-CI52ST's large, ported enclosure extends the low frequency response, but its shallow depth is ideal for installations with limited space, such as cruise ships or wall placement. The AD-CI52T is smaller and even less visually intrusive. While both models are weather-resistant, the AD-CI52T does not have a port and is thus a fully sealed system.

Available AD-C Accessories

• Mud Ring Bracket (ADC-MR)
• Mud Ring Bracket, shallow version (ADC-MRS)
• New Construction Bracket (ADC-NC)
• New Construction Bracket, shallow version (ADC-NCS)

AMPLIFIERS   DIGITAL | NETWORK   LOUDSPEAKERS

HPR Series
Powered Loudspeakers

Entertainers | Musicians | DJs
Concert Systems

The HPR Series offers performers the convenience of a powered loudspeaker system combined with the legendary performance and reliability of QSC's rack mount amplifiers. The power module is designed with the same top-quality components and rigorous standards as QSC amplifiers and precisely matched to high-quality drivers. When you buy an HPR Series powered loudspeaker, you know it is backed by the QSC quality and reliability you've come to expect.

Many powered speaker amplifier modules use low-cost, consumer-grade "chip amps" to decrease costs and simplify design. The HPR Series features a professional, discrete component design, hardened to withstand abuse and engineered to deliver the best possible performance even when pushed to the limit. The amp module is constructed using a large heat sink with ample radiating surface so your HPR speakers won't shut down just when the show gets hot.

An advantage of powered speakers is that the design engineers know everything about the system. This means that all the signal processing — crossover frequencies and slopes, EQ transfer functions, phase corrections and limiting — can be precisely tailored. So the drivers (and your performance) can be protected from damage caused by an overdriven amplifier.

The HPR Series loudspeakers are roadworthy, constructed of premium quality 13-ply birch coated with a tough, professional sprayed finish. Carefully engineered bracing keeps the enclosures rigid for tight, accurate low-frequency performance.

The attractive, tour-grade 16-gauge steel grille is built tough to withstand anything that you can throw at it. If you look closely, you can see the slight concave shape of the grille which goes even further to keep it rigid.

HPR152F

The HPR152F is a versatile, bi-amplified, 15", two-way speaker appropriate for almost any sound reinforcement setting. A high-power, low-frequency driver with a 3" voice coil extends response down to 48 Hz. A 1.75" compression driver on a 90° x 60° horn delivers smooth high frequencies up to 20 kHz. The power module includes an input level control, a loop-through XLR connector and a 100 Hz high-pass filter for use with subwoofers.

HPR153F

The HPR153F is a three-way loudspeaker with the warmth, clarity, and projection you expect from a horn-loaded mid-range design. The 15" low-frequency driver extends response down to 37 Hz while the 6" mid-range driver seamlessly handles the critical vocal region. A 1.4" compression driver delivers brilliant, clear high-frequency response. The power module includes an input level control, a loop-through XLR connector and a 100 Hz high-pass filter for use with subwoofers.

Rear panel controls for the HPR152F and HPR153F.

	HPR152F	HPR153F	HPR151W	HPR181W
System Type	15" 2-way system	15" 3-way speaker system	15" subwoofer	18" subwoofer
Frequency Range (-10 dB)	50 Hz - 20 kHz	38 Hz - 20 kHz	43 Hz - 140 Hz	39 Hz - 140 Hz
Frequency Response (-6 dB)	53 Hz - 18 kHz	42 Hz - 19 kHz	47 Hz - 110 Hz	42 Hz - 110 Hz
Nominal Coverage	90° x 60°	90° x 40°	N/A	N/A
System Performance				
Output [1] (Peak SPL @ 1M)	135 dB	133 dB	133 dB	134 dB
Amplfier Power LF	400 W	400 W	700 W	700 W
MF	N/A	100 W	N/A	N/A
HF	100 W	100 W	N/A	N/A
Current Consumption 1/8 Average Power [2] (120 V / 230 V)	1.5 A (0.8 A)	1.8 A (0.9 A)	2.2 A (1.1 A)	2.5 A (1.3 A)
Driver Information LF	15" cone transducer, 3" voice coil	15" cone transducer, 3" voice coil	15" cone transducer, 3" voice coil	18" cone transducer, 4" voice coil
MF	N/A	6.5" horn loaded mid-range	N/A	N/A
HF	1.75" diaphragm compression driver	1.4" diaphragm compression driver	N/A	N/A
Controls / Selectors	Gain, Low-cut filter, Front LED On/Off, Power, Circuit breaker			
Indicator LEDs	Power on, signal present, limiter active			
Signal Connectors	Balanced female XLR line level input Balanced male XLR full range line level output		Balanced female XLR line level inputs x 2 (L+R) Balanced male XLR full range line level through puts x 2 (L+R) Balanced male XLR low-cut line level outputs x2 (L+R)	
AC Power Connector	IEC AC Inlet	IEC AC Inlet	IEC AC Inlet	IEC AC Inlet
Dimensions (HWD) inches	32" x 19" x 18"	44.75" x 19" x 18"	25" x 22" x 20.75"	28" x 23.5" x 23"
Dimensions (HWD) mm	813 mm x 485 mm x 455 mm	1137 mm x 485 mm x 455 mm	635 mm x 559 mm x 525 mm	711 mm x 597mm x 582 mm
Net Weight (each)	100 lb / 45.5 kg	118 lb / 54 kg	98 lb / 44.5 kg	127 lb / 58 kg

1 Calculated for 1 m, based on sensitivity (full-space for full range systems and half-space for LF-only and subwoofer systems) and peak power capability of amplifier.
2 1/8 power is representative of current draw with typical music program material with occasional clipping.

HPR151W | HPR181W Subwoofers

The HPR Series subwoofers supply the extended low frequency response required for dance music, bass instruments and kick drums. Both HPR subwoofers use a 700 W QSC amplifier. Flexible input signal processing and connectivity allow configuration of systems consisting of a single sub with two mid-high speakers, or larger systems employing multiple subwoofers. The signal processing includes a stereo electronic crossover with XLR line-level outputs for connection to any powered two- or three-way mid-high speaker. A top-mounted, 35-mm pole socket is provided for mounting a mid-high speaker, and heavy-duty 3" casters on the HPR181W facilitate load-in.

The compact HPR151W subwoofer uses a single 15-in low-frequency driver. It produces 133 dB SPL peak (at 1 m) with frequency response down to 43 Hz. The HPR151W's tight, punchy sound quality rivals many 18-in subwoofers.

The HPR181W subwoofer uses a single 18" low-frequency speaker with a 4-in voice coil. It produces 134 dB SPL peak (at 1 m) with frequency response

Rear panel controls for the HPR151W and HPR181W.

down to 39 Hz. The HPR181W offers truly impressive, uncompromising low frequency response and output.

Available HPR Accessories

• HPR Cover 152
• HPR Cover 153
• HPR Cover 151
• HPR Cover 181
• HPR Pole 26

Installation Line Array ILA Series

Installed Sound

Line array systems have become the loudspeaker configuration of choice for touring sound companies and large installations. By focusing on installation applications and eliminating costly mechanical features required for touring, QSC's Installation Line Array (ILA) Series offers a professional system at a competitive price, making line array systems accessible to a broader range of applications.

WL2082-i

Each ILA WL2082-i uses a pair of high-power, neodymium, 8" low-frequency drivers in a two-and-a-half way configuration. Both woofers produce low frequencies but only one covers the midrange, resulting in more uniform directivity in the crossover region. For high frequencies, the WL2082-i uses a pair of 1.75" titanium dome neodymium compression drivers mounted on a diffraction waveguide with multiple apertures. A WL2082-i system provides extremely wide coverage (140º), which often eliminates the need for side or center fill speakers, and preserves coherent stereo imaging across the entire coverage area. The system may be used in bi-amplified or tri-amplified mode. In general, the tri-amplified mode will produce the best performance and, for arrays larger than four boxes, will not increase the total cost of system amplification.

WL115-sw

The low frequency range of a WL2082-i array will be adequate for speech, voice and many acoustic music uses. For reinforcement of program material with more demanding low frequency content, a companion subwoofer, the WL115-sw, is also available. The WL115-sw is a 15" subwoofer using a 4th order, bandpass enclosure. Tooled ports with gently rounded terminations inside and out eliminate port turbulence distortion. Mesh grilles are integrated into the port design to obstruct the entry of wildlife and foreign

	WL2802-i	WL115-sw
System Type	Three-way line array element, Bi-amp or Tri-amp	15" bandpass subwoofer
Frequency Range (-10 dB)	68 Hz - 22 kHz	35 Hz - 112 Hz
Frequency Response (±3 dB)	80 Hz - 20 kHz	37 Hz - 107 Hz
Nominal Coverage	140° H	N/A
Power Handling [1] LF / MF	400 W	650 W
HF	100 W	N/A
Peak Output [2]	133 dB	124 dB
Driver Information LF	2 x 8" transducers; 2" voice coil; Neodymium magnet	15" transducer, 4" voice coil, ferrite magnet
HF	2 x 1.75" titanium diaphragm, neodymium magnet	N/A
Controls / Selectors	Biamp/triamp selector switch, LF/MF shading switch	
Input Connectors	NL8 x 2	NL8 x 2
Suspension / Attachment Point	Integral rigging sytstem, vertical splay adjustable in 1 degree increments from 0-10 degrees	Integral, non-adjustable (straight array only)
Dimensions (HWD) inches	11.8" x 27" x 13.4"	22.1" x 27" x 30.25"
Dimensions (HWD) mm	300 mm x 686 mm x 340 mm	561 mm x 686 mm x 768 mm
Net Weight (each)	37 lb / 16.8 kg	111 lb / 50.4 kg

1 Continous IEC specified test signal, 2 hours.
2 Calculated at 1 m using power capacity and system sensitivity.
   6 dB peak-to-average signal ratio assumed.

objects into the enclosure. The WL115-sw includes rigging hardware and accessories that allow flying the subwoofers at the top or behind a WL2082-i array. All ILA Series components are available in black or white to blend with venue décor.

Available ILA Accessories

- FB2082-i: Fly-bar, may be used with either WL2082-i or WL115-sw
- EB2082-i: Extension bar allows suspending WL115-sw behind WL2082-I
- PB2082-i: Pullback bar for WL2082-i
- QRP-KIT-1: Four quick release pins to use instead of included bolts
- GS115-sw: Ground-stack kit for WL115-sw
- AB2082-i: Allow increased splay between enclosures
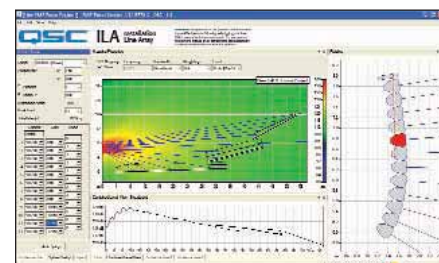
Example of EASE Focus Software used in ILA and WideLine system design. See right for more details.

ISIS WideLine Array ISIS Series

Concert Systems
Installed Sound

The ISIS WideLine WL2102 and WL2102-w are compact, high-output, wide dispersion line array loudspeaker systems renowned for their ability to meet and exceed requirements for applications ranging from corporate meetings to large venue reinforcement of high-level popular music. From ballrooms to churches to concert venues WideLine provides full-range, warm, open, natural sound with exceptionally wide horizontal coverage (140°).

Wide coverage provides more latitude in array placement and may reduce or eliminate the need for supplemental fill speakers. This makes WideLine a favorite when camera angles, video screens or other visual criteria are critical.

Each WideLine array element consists of two 10", long-throw, low-frequency drivers in a ported trapezoidal enclosure. Low-frequency extension (to 52 Hz), is sufficient to reproduce many speech, vocal and acoustic performances without subwoofers. The high-frequency component is a 3" diaphragm, 1.4" exit neodymium

EASE Focus Software

EASE Focus is a software tool that aids in system planning and deployment. This free software may be downloaded from the support section of the QSC website and is available for either WideLine or ILA. Functions performed include:

- Calculating the number of enclosures required for a given space;
- Determining optimum splay angles between enclosures;
- Calculating the angle to set the array grid in a single (variable) pick-point or fixed suspension point application;
- Predicting the acoustical response and SPL throughout the venue.

	WL2102	WL2102-w
System Type	Three-way line array element, Bi-amp or Tri-amp	
Frequency Range (-10 dB)	50 Hz - 19 kHz	
Frequency Response (±3 dB)	55 Hz - 18 kHz	
Nominal Coverage	140° H	
Power Handling [1] LF / MF	760 W	
HF	80 W	
Peak Output [2]	136 dB	
Driver Information LF	2 x 10" transducer, 3" voice coil, ferrite magnet	
HF	3" titanium diaphragm, neodymium magnet	
Controls / Selectors	Biamp/triamp selector switch, LF/MF shading switch	
Input Connectors	NL8 x 2	
Suspension / Attachment Point	Integral rigging sytstem, vertical splay adjustable in 1 degree increments from 0-10 degrees	
Dimensions (HWD) inches	10.75" x 27.5" x 20.25"	
Dimensions (HWD) mm	273 mm x 698 mm x 514 mm	
Net Weight (each)	WL2102: 70 lb / 31.8 kg WL2102-w: 83 lb / 37.7 kg	

1 Continous IEC specified test signal, 2 hours unless otherwise stated.
2 Calculated at 1 m using power capacity and system sensitivity.
   6 dB peak-to-average signal ratio assumed.

high-frequency driver mounted on a patent pending, multiple-aperture, diffraction-slot waveguide.

Both LF transducers handle low frequencies, but only one extends into the midfrequencies thus reducing phase and coverage anomalies in the critical crossover region. The system may be operated in either bi-amplified mode (reducing amp channel count for smaller arrays) or tri-amplified mode (for optimum performance).

Two versions, with identical acoustical performance and compatible mechanical design are offered. The original, weather resistant, WL2102 Composolite version uses an enclosure constructed of a light yet rigid cored composite resulting in a total system weight of only 70 lb including the self-contained rigging hardware. For applications in which prolonged exposure to the elements is not a concern, the WL2102-w is housed in a premium-grade plywood enclosure and offers the same performance at lower cost.

A strong emphasis has been placed on reduction of system setup time and labor costs. The hardware allows simple, vertical splay angle adjustment between enclosures (0, 2-10°). Two array grids are available: The small frame supports up to 8 flown enclosures or 4 stacked; the large frame supports up to 24 flown or 12 stacked.

ISIS Series

Concert Systems
Installed Sound

Self-Powered System Core Module
215PCM | 215SB

The ISIS 215PCM is a dual-fifteen, active subwoofer system with over 6600 watts of total power. It is ideally suited for portable, live sound reinforcement and corporate industrial events. In addition to having ample power for the subwoofer drivers, the attached power/processing module includes two additional high-power amplifier channels and digital signal processing that may be used to drive stereo full-range or mono multi-way mid-high speaker systems. The 215PCM is an ideal companion for WideLine array elements especially when they will be deployed in a ground-stacked array.

The power/processing module is contained in a detachable backpack fastened to the rear of the 215PCM enclosure. The subwoofer amp is equivalent to a QSC PL 230 and provides 3000 W to the sub's 15" woofers. For mid-high speaker systems, a two-channel amp (equivalent to a PL 236) can deliver 1100 W at 4Ω, 1850 W at 2Ω per channel. To complete the package, each amp module contains the processing equivalent of a QSC DSP-3 (page 15).

A non-powered version, the 215SB, is also available.

102W Multipurpose

The ISIS 102W is a full range, two-way system featuring a 10" high powered woofer with 3" voice coil, and a 1.4" exit, 3" titanium diaphragm compression driver with selectable active (bi-amp) or passive crossover operation. The 102W offers an exceptionally wide coverage pattern (150° x 50°) via a rotatable waveguide. Constructed from the finest components and finished in textured black polyurea elastomer coated 13 ply Baltic Birch, it is an ideal mid/high complement to the ISIS 215PCM subwoofer.

	102W	215PCM	215SB
System Type	10" two-way multi-purpose	Dual 15" subwoofer
Frequency Range (- 10 dB)	50 Hz - 21 kHz	29 - 440 Hz
Frequency Response (± 3 dB)	60 Hz - 20 kHz	36 - 360 Hz
Nominal Coverage	150°H x 50°V	N/A
Power Capacity [1] / Sensitivity [2] / Peak SPL [3]		
Full Range	300 W / 93 dB / 124 dB	N/A
LF	300 W / 94 dB / 125 dB	215SB only: 1300 W / 101 dB / 138 dB
HF	80 W / 103 dB / 128 dB	N/A
Driver Information LF	10" transducer, 3" voice coil, ferrite magnet	2 x 15" transducer, 4" voice coil, ferrite magnet
Driver Information HF	3" voice coil, titanium diaphragm compression driver	N/A
Controls / Selectors	Bi-amp/passive selector	215PCM only: AC Power switch and MODE switch (Combination Mode/Discrete Mode)
Input Connectors	Neutrik® NL4MP	215PCM: XLR/F 215SB: Neutrik® NL4MP
Suspension / Attachment Point	L-track rail x 5	16" L-Track rail x 4
Dimensions (HWD) inches	24" x 13" x 10.5"	215PCM: 26" x 40" x 30" 215SB: 26" x 40" x 25"
Dimensions (HWD) mm	610 x 331 x 267 mm	215PCM: 660 mm x 1016 mm x 762 mm 215SB: 660 mm x 1016 mm x 635 mm
Net Weight (each)	45 lb / 20.45 kg	215PCM: 230 lb / 104.3 kg 215SB: 175 lb / 79.4 kg
215PCM only: Current Consumption 1/8 Average Power [2] (120 V / 230 V)		19 A / 9.5 A
215PCM only: AC Power Connector		NEMA L5-30 receptacle
215PCM only: Onboard Power		1 x 3000 W 2 x 1300 W @ 4Ω

1 Continuous IEC specified test signal, 2 hours unless otherwise stated.
2 Based on nominal impedance, measured in full space, subwoofers and ceiling speakers measured in half space. 1 W @ 1 m.
3 Calculated using specified power capacity and system sensitivity. 6 dB peak-to-average signal ratio assumed.

The 102W features a full assortment of versatile hardware to make the task of rigging and installation a straightforward process. Integrated fly track hardware on top and bottom plus an independent rear center point allows for easy, safe rigging. A dedicated yoke mount accessory is available, and there's also a built-in pole cup for stand mounting. The symmetrical multi-angle cabinet design facilitates both FOH and stage monitor applications.

ISIS Series

Concert Systems
Entertainers | Musicians | DJs

I-82H

The QSC I-82H is an 8-inch, 2-way, full-range loudspeaker that is well suited to applications in which low to moderate levels and very high-quality sound reinforcement are required. With the ability to be pole and mic stand mounted, truss mounted, or used as a floor monitor / stage fill, these injection molded speakers are an excellent choice for musicians, mobile entertainers, and others needing a high-quality, light-weight SR package that sounds great, is visually unobtrusive, and is easy to transport.

The I-82H enclosure incorporates an 8" weatherproof, LF transducer with a heavy-duty double roll cloth surround and a 1" exit HF compression driver. Dynamic Protection circuitry is included in the network to protect the HF driver from overload damage. The HF driver is coupled with QSC's unique Advanced Directivity™ Rotatable Waveguide — enabling the loud-speaker to deliver well-controlled coverage, regardless of its orientation. For quick and secure input setup, the I-82H provides two parallel Speakon® connectors.

An ideal solution for a variety of mobile SR applica-tions, the I-82H includes a pole cup bracket for pole mount applications as well as a 5/8"-27 mic stand adapter that fits most mic and boom stand hardware. With the addition of QSC's optional I-YM8 Yoke Mount / Floor Monitor Kit, the I-82H can be horizontally pole mounted for pan and tilt aiming or used as a floor monitor. For truss mounting, the I-YM8 accepts most industry standard truss clamps.

I-82H Accessories Included:

• Pole cup bracket
• Mic stand adapter

Optional I-82H Accessories:

• I-YM8 Yoke Mount/Floor Monitor Kit (P/N: I-YM8)

	I-82H	I-282H
System Type	Compact two way, ported enclosure	Compact two way, ported enclosure
Frequency Range (-10 dB)	60 Hz - 22 kHz	60 Hz - 29.5 kHz
Frequency Response (±3 dB)	80 Hz - 21 kHz	80 Hz - 27.7 kHz
Nominal Coverage	90°H x 60°V	90°H x 60°V
Power Capacity [1] / Sensitivity [2] / Peak SPL [3]		
Full Range	240 W (8 hrs) / 90.5 dB / 120 dB	450 W (8 hrs) / 93 dB / 125 dB
Driver Information LF	8" high power treated paper cone, 2" voice coil, neodymium magnet	8" high power treated paper cone x 2, 2" voice coil, neodymium magnet
Driver Information HF	1" exit compression driver	1" exit compression driver, 1.7" voice coil
Input Connectors	NL4 in parallel x 2	NL4 in parallel x 2
Suspension / Attachment Point	Yoke mount optional, pole mount socket, mike stand adapter included	Yoke mount optional, pole mount socket, mike stand adapter included
Dimensions (HWD) inches	17.4" x 10" x 11.2"	26.17" x 11.44" x 10.21"
Dimensions (HWD) mm	442.0 mm x 254 mm x 284.5 mm	561 mm x 686 mm x 768 mm
Net Weight (each)	17.5 lb / 7.9 kg	28.5 lb / 12.9 kg

1 Continous IEC specified test signal, 2 hours unless otherwise stated.
2 Based on nominal impedence, measured in full space. 1 W @ 1 m.
3 Calculated using specified power capacity and system sensitivity. 6 dB peak-to-average signal ratio assumed.

I-282H

The QSC I-282H is a dual 8-inch, 2-way, full-range loudspeaker that is well suited to applications in which moderate levels and very high-quality sound reinforce-ment are required. Pole mounted, truss mounted, or used as a floor monitor/stage fill, these injection molded speakers are an excellent choice for musicians, mobile entertainers, and anyone else needing a high-quality, lightweight SR package that sounds superb, is visually unobtrusive, and with its built-in handles, is easy to transport.

The I-282H enclosure incorporates two 8" weather resistant, LF transducers with heavy-duty double roll cloth surrounds and a 1" exit HF compression driver. Bi-amplified or full-range operation may be selected by means of a rear-panel switch. The HF driver is coupled with QSC's unique Advanced Directivity™ Rotatable Waveguide — enabling the loudspeaker to deliver well-controlled coverage, regardless of its orien-tation. For quick and secure input setup, the I-282H provides two parallel Speakon® connectors.

An ideal solution for a variety of mobile SR applications, the I-282H includes a pole cup for pole mounting with either 1 1/2" or 1 3/8" diameters. Or by using the included yoke mount with swivel extension feet, the I-282-H can be vertically or horizontally mounted for pan and tilt focusing or used as a floor monitor. For truss mounting, the yoke accepts most industry standard truss clamps.

I-282H Accessories Included:

• Yoke Mount

ModularDesign™ | MD Series

Installed Sound
Concert Systems

MD Loudspeakers

The MD (ModularDesign™) Series offers exceptional performance in a wide variety of installed, live performance applications, including houses of worship, performing arts facilities, hotels, casinos, night clubs, and sporting facilities. MD Series is appropriate anywhere there is a need for dependable high performance loudspeakers with predictable coverage and extended frequency response.

Designed as a family of modular, arrayable loudspeakers, the full-range MD family includes six models: three models with 12" LF sections, and three with 15" LF sections. Nominal coverage patterns of 60° x 40°, 90° x 40° and 120° x 40° are available with either low-frequency complement. In addition, two low-frequency only MD systems, the MD-L115 and MD-L118, share the common form factor of the full-range systems.

The form factor common to all MD loudspeaker models makes creating full range or combined full range/low-frequency clusters painless. The enclosures are designed with 30° angles; wall-to-wall tight packing enclosures splay the 60° x 40° horns perfectly and provide uniform coverage in any multiple of 60° to 360°. No gaps or spacers are required and the radial form of the front surface of the enclosures forms a contiguous cylindrical surface for a clean and aesthetically pleasing appearance. Each enclosure is equipped with a total of fifteen 3/8"-16 threaded attachment points offering the installer tremendous flexibility in suspension and mounting. MD Series loudspeakers are available in both black and white finishes.

Clusters of MD speakers can provide up to 360 degrees of coverage.

Low-frequency transducers feature technically advanced 4" voice coils assembled with proprietary high temperature adhesives, vented magnet assemblies and highly optimized motor design to provide excellent dynamic range, flat frequency response and a very low distortion figure.

High-frequency compression drivers feature a Neodymium magnet motor structure and 65 mm (2.5") aluminum voice coil and titanium diaphragm plus a pole piece mounted copper shorting cap for extended HF response.

MD Powered Loudspeakers

The MD Series Powered Loudspeakers combine the superb loudspeaker performance of MD with the latest generation of QSC's legendary amplification and signal processing technologies. The series is powered by QSC's revolutionary PM Series modules. The PM Series power modules are the most compact, lightweight, and efficient devices of their kind. The modules actually weigh little more than MD-series passive crossover networks and fit into the same enclosure cutout.

Both modules integrate QSC's latest Class D amplification technology with signal processing specifically tailored to individual speaker models.

- PM1000: 800 W low frequency channel; 200 W high frequency channel.
- PM1400: 1400 W at 4Ω into one channel.

The linear amplifier technology utilized in most powered loudspeaker designs delivers acceptable audio performance but heat dissipation and other design constraints have limited their maximum power to 300-500 W. QSC has broken through these barriers with power ratings exceeding 800 W (8Ω), and 1400 W (4Ω). Peak voltages can reach 120 V, at up to 30 A of current, which translates to 3600 W peak power.

For the MD powered models, response is fine-tuned with high-order crossover slopes, signal alignment, LF roll offs, and multiple parametric equalizer sections. Internal processing includes long-term power limiting, allowing high long-term output capability without risk of damage or failure.

The PM modules are built on a solid aluminum, three-sided extrusion that functions as a chassis, heat sink, and mounting flange. To keep exposed surfaces within required temperature limits and prevent thermal overload in hot environments, a temperature-activated fan turns on when heat sink temperature exceeds 122°F (50°C).

MD (Non-Powered)	MD-F122/64r	MD-F122/94r	MD-F122/124r	MD-F152/64r	MD-F152/94r	MD-F152/124r	MD-L115	MD-L118
System Type	12" two-way full range	12" two-way full range	12" two-way full range	15" two-way full range	15" two-way full range	15" two-way full range	15" Low Frequency	18" Low Frequency
Frequency Range (-10 dB)	45 Hz – 18.5 kHz	45 Hz – 20 kHz	45 Hz – 18 kHz	45 Hz – 18.5 kHz	45 Hz – 20 kHz	45 Hz – 20 kHz	35 Hz – 1.9 kHz	45 Hz – 2.5 kHz
Frequency Response (±3 dB)	50 Hz – 18 kHz	50 Hz – 17 kHz	50 Hz – 15 kHz	50 Hz – 16.5 kHz	50 Hz – 17 kHz	50 Hz – 17 kHz	48 Hz – 1.8 kHz	55 Hz – 2.2 kHz
Nominal Coverage	60° x 40° rotatable	90°H x 40°V rotatable	120°H x 40°V rotatable	60°H x 40°V rotatable	90°H x 40°V rotatable	120°H x 40°V rotatable	N/A	N/A
Power Capacity [1] / Sensitivity [2] / Peak SPL [3]								
Full Range	400 W / 95 dB / 127 dB	400 W / 95 dB / 127 dB	400 W / 95 dB / 127 dB	400 W / 96 dB / 128 dB	400 W / 96 dB / 128 dB	400 W / 96 dB / 128 dB	900 W / 96 dB / 131.5 dB	900 W / 98 dB / 133.5 dB
LF	500 W / 95 dB / 128 dB	500 W / 95 dB / 128 dB	500 W / 95 dB / 128 dB	500 W / 96 dB / 129 dB	500 W / 96 dB / 129 dB	500 W / 96 dB / 129 dB	900 W / 96 dB / 131.5 dB	900 W / 98 dB / 133.5 dB
HF	63 W / 110 dB / 134 dB	63 W / 109 dB / 133 dB	63 W / 107 dB / 131 dB	63 W / 110 dB / 134 dB	63 W / 109 dB / 133 dB	63 W / 107 dB / 131 dB	N/A	N/A
Driver Information LF	12" transducer, 4" voice coil, ferrite magnet			15" transducer, 4" voice coil, ferrite magnet				18" transducer, 4" voice coil, ferrite magnet
HF	2.5" titanium diaphragm, neodymium magnet						N/A	N/A
Controls / Selectors	Biamp/passive switch						N/A	N/A
Input Connectors	Barrier Strip, 4 position							
Suspension / Attachment Point	15 x 3/8-16 threaded insert							
Dimensions (HWD) inches	35" x 20.5" x 16.7"							
Dimensions (HWD) mm	889 mm x 519 mm x 423 mm							
Net Weight (each)	86 lb / 39 kg	86 lb / 39 kg	86 lb / 39 kg	86 lb / 39 kg	85 lb / 38 kg	85 lb / 38 kg	90 lb / 41 kg	89 lb / 40 kg

1 Continous IEC specified test signal, 2 hours unless otherwise stated.   2 Based on nominal impedence, measured in full space, subwoofers and ceiling speakers measured in half space. 1 W @ 1 m.
3 Calculated using specified power capacity and system sensitivity. 6 dB peak-to-average signal ratio assumed.

MD Powered	MD-FP122/64r	MD-FP122/94r	MD-FP122/124r	MD-FP152/64r	MD-FP152/94r	MD-FP152/124r	MD-LP115	MD-LP118
System Type	12" 2-way full range	12" 2-way full range	12" 2-way full range	15" 2-way full range	15" 2-way full range	15" 2-way full range	15" low frequency	18" low frequency
Frequency Range (-10 dB)	50 Hz - 18 kHz	50 Hz - 20 kHz	50 Hz - 20 kHz	45 Hz - 18 kHz	45 Hz - 20 kHz	45 Hz - 20 kHz	35 Hz - 110 Hz	33 Hz - 110 Hz
Frequency Response (±3 dB)	55 Hz - 17.5 kHz	50 Hz - 19.5 kHz	55 Hz - 19 kHz	50 Hz - 17.5 kHz	50 Hz - 19.5 kHz	50 Hz - 19 kHz	38 Hz - 100 Hz	36 Hz - 100 Hz
Nominal Coverage	60° x 40° rotatable	90° x 40° rotatable	120° x 40° rotatable	60° x 40° rotatable	90° x 40° rotatable	120° x 40° rotatable	N/A	N/A
System Performance								
Output [4] (Peak SPL @ 1M)	139 dB	138 dB	137 dB	139 dB	138 dB	137 dB	129 dB	131 dB
Amplifier Power LF	800 W	800 W	800 W	800 W	800 W	800 W	800 W	800 W
HF	200 W	200 W	200 W	200 W	200 W	200 W	N/A	N/A
Current Consumption	2.5 A / 1.25 A 1/8 Avg Power [5] (120 V / 230 V)							
Driver Information LF	12" transducer; 4" voice coil; ferrite magnet			15" transducer; 4" voice coil; ferrite magnet				18" transducer; 4" voice coil; ferrite magnet
HF	2.5" titanium diaphragm, Neodymium magnet						N/A	N/A
Controls / Selectors	Gain control, 100 Hz high-pass filter, Power on/off						Gain control, 100 Hz low-pass filter, Power on/off	
Indicator LEDs	Power on, signal present, limiter active							
Signal Connectors	1 ea XLR female & male, wired in parallel, balanced							
AC Power Connector	Neutrik® PowerCon							
Suspension / Attachment Point	15 x 3/8-16 threaded							
Finish	Wear resistant textured paint. Available in black or white (handles on black only)							
Dimensions (HWD) inches	35" x 20.5" x 18"							
Dimensions (HWD) mm	889 mm x 521 mm x 457 mm							
Net Weight (each)	88 lb / 40 kg	88 lb / 40 kg	88 lb / 40 kg	88 lb / 40 kg	88 lb / 40 kg	88 lb / 40 kg	96 lb / 43.6 kg	95 lb / 43.2 kg

4 Calculated for 1 m, based on sensitivity (full-space for full range systems and half-space for LF-only and subwoofer systems) and peak power capability of amplifier.
5 1/8 power is representative of current draw with typical music program material with occasional clipping.

ModularDesign™ | MD Series
Installed Sound

MD-S215/S218 Subwoofers

The MD-S215 and MD-S218 subwoofers offer dual 15" and 18" front-loaded drivers, respectively. The centrally located port features an expansive area and radius ends to reduce turbulence and port noise while significantly contributing to the stability of the cabinet. With 16 rigging points, these subs can be flown anywhere in your venue; or tuck them away under a stage, their elegant yet unobtrusive design allows them to blend into the decor of most venues. Their versatile input connection panel features both Neutrik Speakon® connectors and terminal strips to easily interface with your existing system design. The inputs are wired in parallel with all pins wired as a loop-through. MD subwoofers are available in both black and white finishes, with a sleek, foam backed, powder-coated steel grille.

MD-SP215/SP218 Powered Subwoofers

MD powered subwoofers are identical to their non-powered counterparts, except with the addition of the PM1400 Power Module.

MD (Non-Powered)	MD-S215	MD-S218
System Type	Dual 15" subwoofer	Dual 18" subwoofer
Frequency Range (-10 dB)	22 Hz – 2.3 kHz	22 Hz – 2 kHz
Frequency Response (±3 dB)	26 Hz – 2 kHz	26 Hz – 1.8 kHz
Power Capacity [1] / Sensitivity [2] / Peak SPL [3]		
Full Range	1800 W / 99 dB / 138 dB	1800 W / 101 dB / 140 dB
Driver Information	2 x 15" transducer, 4" voice coil, ferrite magnet	2 x 18" transducer, 4" voice coil, ferrite magnet
Input Connectors	Barrier Strip, 4 position; 2 x Neutrik® Speakon NL4	
Suspension / Attachment Point	16 x 3/8-16 threaded insert	
Dimensions (HWD) inches	26" x 40" x 23.25"	28" x 48" x 24"
Dimensions (HWD) mm	660 mm x 1016 mm x 591 mm	711 mm x 1219 mm x 610 mm
Net Weight (each)	180 lb / 81 kg	200 lb / 91 kg

1 Continous IEC specified test signal.
2 Based on nominal impedence, measured in half space. 1 W @ 1 m.
3 Calculated using specified power capacity and system sensitivity. 6 dB peak-to-average signal ratio assumed.

MD Powered	MD-SP215	MD-SP218
System Type	Dual 15" subwoofer	Dual 18" subwoofer
Frequency Range (-10 dB)	25 Hz - 110 Hz	24 Hz - 110 Hz
Frequency Response (±3 dB)	27 Hz - 100 Hz	26 Hz - 100 Hz
System Performance		
Output [4] (Peak SPL @ 1M)	135 dB	137 dB
Amplfier Power LF	1400 W	1400 W
Current Consumption	2.5 A / 5 A 1/8 Avg Power [5] (120 V / 230 V)	
Driver Information LF	2 x 15" transducers; 4" voice coil; ferrite magnet	2 x 18" transducers; 4" voice coil; ferrite magnet
Controls / Selectors	Gain control, 100 Hz low-pass filter, power on/off	
Indicator LEDs	Power on, signal present, limiter active	
Signal Connectors	1 ea XLR female & male, wired in parallel, balanced	
AC Power Connector	Neutrik® PowerCon	
Suspension / Attachment Point	16 x 3/8-16 threaded	
Finish	Wear resistant textured paint. Available in black or white (handles on black only)	
Dimensions (HWD) inches	26" x 40" x 23.25"	28" x 48" x 24"
Dimensions (HWD) mm	660 mm x 1016 mm x 591 mm	711 mm x 1219 mm x 610 mm
Net Weight (each)	190 lb / 86.2 kg	210 lb / 95.3 kg

4 Calculated for 1 m, based on sensitivity (half-space for subwoofer systems) and peak power capability of amplifier.
5 1/8 power is representative of current draw with typical music program material with occasional clipping.

Call 1-800-854-4079 or 714-957-7100 for more information today or click online at qscaudio.com