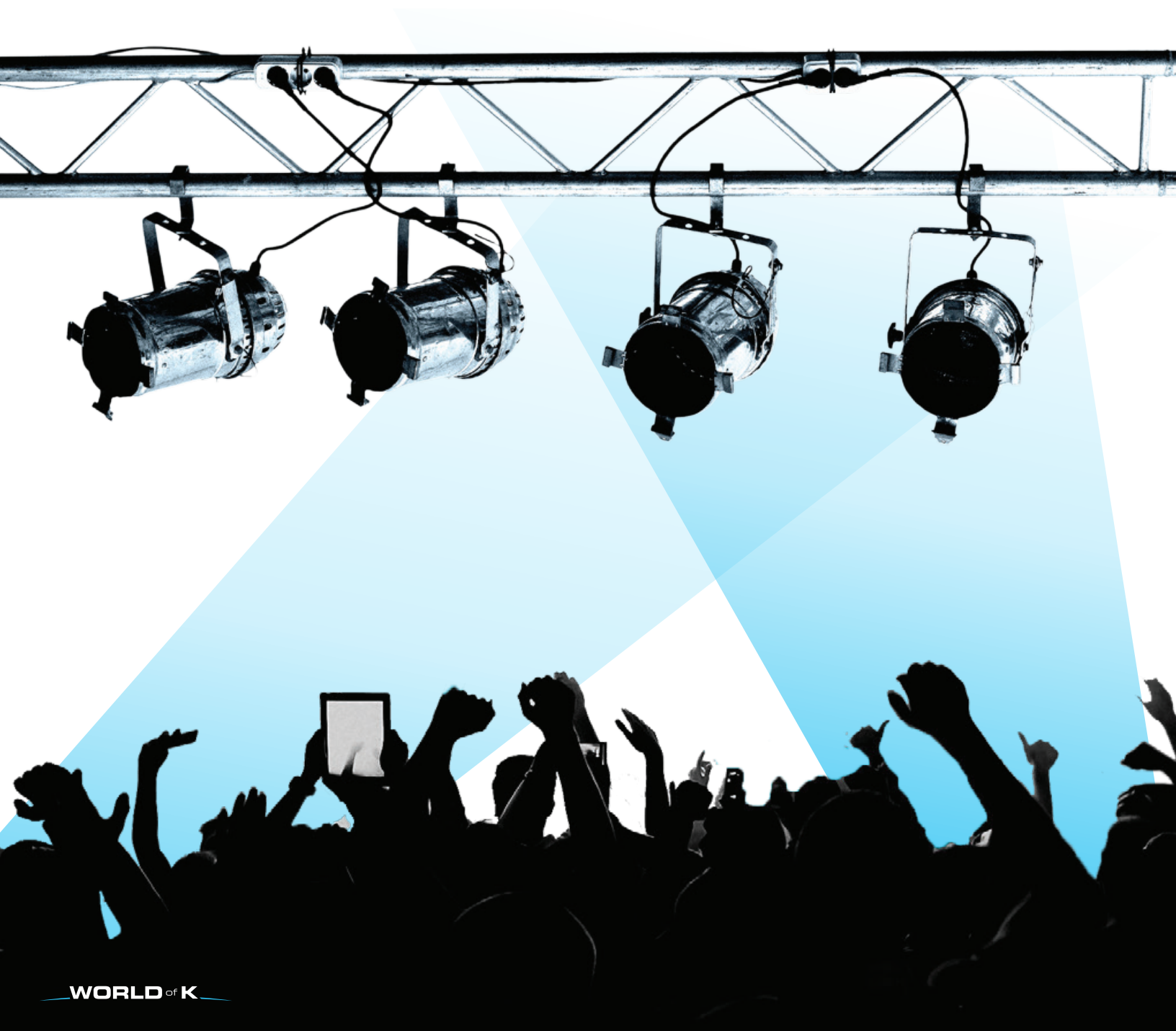


QSC

application guide

Clubs/Venues **AET** Application Engineering Team



SINCE THEIR INTRODUCTION IN 2009, K FAMILY LOUDSPEAKERS HAVE BECOME THE GO-TO FAVORITE PRODUCT FOR PROFESSIONAL AUDIO USERS MORE THAN A MILLION TIMES OVER. CONTINUING THAT TRADITION, THE QSC K.2 SERIES IS QUITE SIMPLY THE “NEXT STANDARD” IN POWERED LOUDSPEAKERS.

THIS APPLICATION GUIDE IS DESIGNED TO OFFER YOU A FEW EXAMPLES OF HOW TO UTILIZE THE K.2 SERIES IN COMMON HOSPITALITY AND ENTERTAINMENT VENUE SITUATIONS. WHILE EACH INDIVIDUAL OR GROUP’S NEEDS MAY VARY, THIS GUIDE SHOULD SERVE AS A GOOD STARTING POINT ON HOW TO CONFIGURE AND DEPLOY THESE PRODUCTS IN YOUR APPLICATION. THERE ARE ALSO MANY OTHER ASSETS AVAILABLE TO YOU ONLINE AT [QSC.COM](https://www.qsc.com) INCLUDING VIDEOS, TECHNICAL DOCUMENTS AND MORE TO HELP YOU GET THE MOST FROM YOUR QSC PURCHASE. WE HOPE YOU TAKE ADVANTAGE OF EVERYTHING AVAILABLE AND WISH YOU A MOST SUCCESSFUL AND ENJOYABLE EXPERIENCE WITH YOUR K.2 SERIES.

WHAT'S NEW

Let's look at the inputs on the K.2 loudspeakers. They're still somewhat familiar to the K user, but updated a bit. As with the original K series, Input A again can be mic or line level, but Input B now can be either a line level input or a high-Z one suitable for musical instruments that have passive magnetic or piezo pickups. That's right—the K.2 Series loudspeakers can be used as guitar or bass combo amp, and they won't load down the instrument like a regular mic or line input would. Input C is a stereo-summed-to-mono channel with a 3.5 mm stereo jack, suitable for playback from portable digital audio devices such as phones, MP3 players, etc.

The three inputs each have their own gain knob and get mixed down to provide signal for the digital signal processing (DSP) and class D amplification stages. A line-level summed output provides a means to send the mixed signal on to other loudspeakers or other devices.

The biggest advance is in the DSP capabilities of the K.2 loudspeakers. In addition to voicing and protection duties, the K.2 Series DSP offers an array of user-configurable parameters that include EQ, delay, and presets. Yes, presets.

K.2 loudspeakers have 11 presets so you can quickly dial in a collection of settings tailored to a certain application.

DEFAULT	The standard voicing of the K.2 speaker
* LIVE	A voicing for live music reinforcement that lowers and balances frequencies that can be prone to feedback in a live mix.
LIVE BRIGHT	A voicing for live music reinforcement that offers slightly more high end than the "Live" voicing.
* DANCE	A voicing that focuses on high-end clarity and low end extension, primarily for Dance/Pop/Hip Hop/etc music.
* STAGE MONITOR 1	A voicing for using a stage monitor with a microphone that lowers and balances frequencies that can be prone to feedback in a monitor mix.
* STAGE MONITOR 2	A voicing for using a stage monitor without a microphone (such as a drum or keyboard monitor) that offers more low frequency extension than Stage Monitor 1.
ACOUSTIC GUITAR/VOX	A voicing for a vocal mic plugged into input A, and an acoustic guitar plugged into channel B that lowers and balances frequencies prone to feedback between those two input sources.
* BASS AMP	A voicing optimized to provide performance similar to that of a combo bass amplifier.
HAND MIC	A voicing that lowers and balances frequencies that can be prone to feedback with common handheld dynamic microphones when used without a mixer.
HEAD MIC	A voicing that lowers and balances frequencies that can be prone to feedback with common headset microphones when used without a mixer.
STUDIO MON	A voicing that provides a more balanced overall speaker response with deeper extension to be used as a nearfield or studio monitor for mixing.

* PRESETS FEATURED IN THIS APP GUIDE

The K.2 Series loudspeakers also offer four bands of user-adjustable EQ:

HIGH	0 to -6 dB	1–10 kHz	Shelving
EQ1	0 to -6 dB	50 Hz–20 kHz	Q 0.4-4
EQ2	0 to -6 dB	200 Hz–20 kHz	Q 0.4-4
LOW	0 to -6 dB	100-500 Hz	Shelving

Up to 100 ms of delay.

80, 100, or 125 Hz high-pass filtering for use with a subwoofer.

The diagram illustrates the control panel's menu structure. A central screen displays the following information:

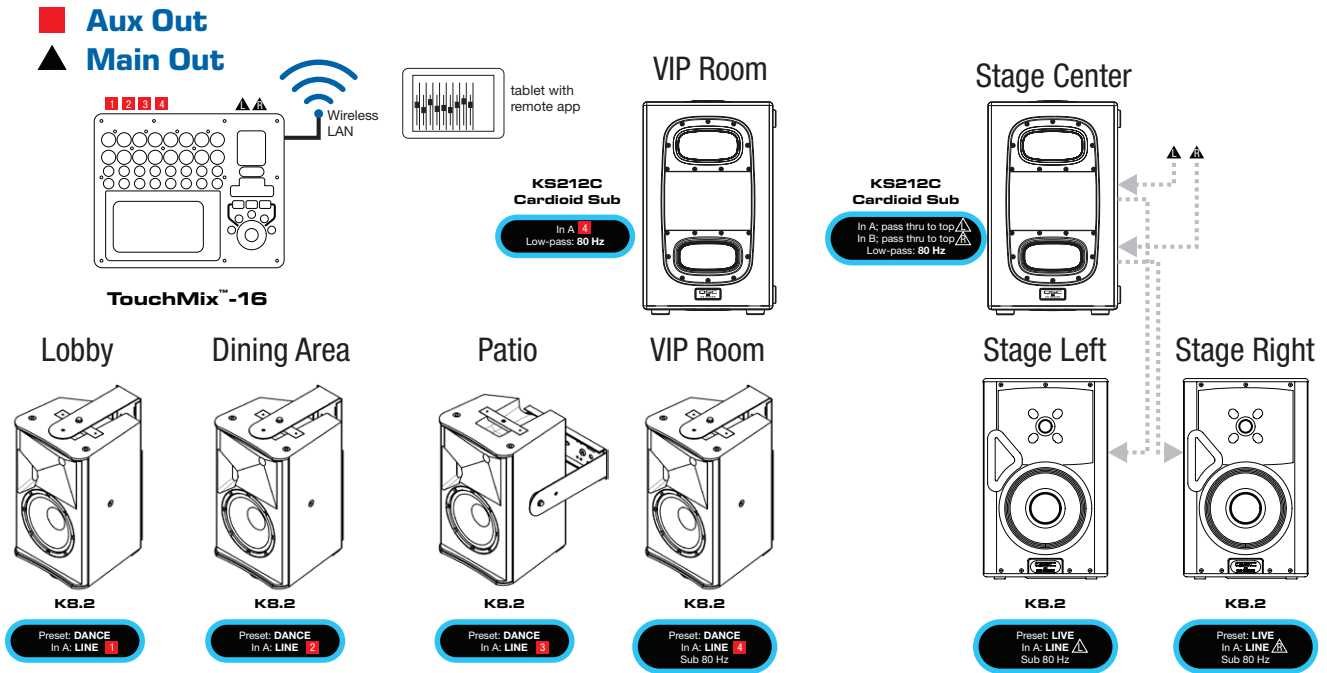
- Input A select: MIC or LINE
- Input B select: HI-Z or LINE
- Sub menu select: NO SUB, 80 HZ, 100 HZ, 125 HZ
- Delay select: 0 ms to 100 ms (0-10 ms in 0.5 ms increments, 10-100 ms in 1 ms increments)
- Factory Preset select: DEFAULT, LIVE, LIVE BRIGHT, DANCE, STAGE MONITOR 1, STAGE MONITOR 2, AC GUIT/VOX, BASS AMP, HAND MIC, HEAD MIC, STUDIO MON
- Settings select: SAVE SCENES, RECALL SCENES, LED, CONTRAST, FACTORY RESET
- EQ select: IN or OUT

The physical control panel features the following controls:

- Gain controls for A, B, and C channels (0dB to +10dB).
- Input select buttons for MIC/LINE, HI-Z/LINE, and STEREO.
- Subwoofer filter buttons (NO SUB, 80 HZ, 100 HZ, 125 HZ).
- Delay select buttons (0 ms to 100 ms).
- Factory Preset select buttons (DEFAULT, LIVE, LIVE BRIGHT, DANCE, STAGE MONITOR 1, STAGE MONITOR 2, AC GUIT/VOX, BASS AMP, HAND MIC, HEAD MIC, STUDIO MON).
- Settings select buttons (SAVE SCENES, RECALL SCENES, LED, CONTRAST, FACTORY RESET).
- EQ select buttons (IN or OUT).
- Limiters and power buttons.
- MIX OUT (POST GAIN) port.
- POWER ON indicator.

RESTAURANT / BAR ZONED SYSTEM

A restaurant or large bar uses a four-zone audio system to allow management of the sound levels throughout the venue. A pair of subs augment the low-frequency response. A digital mixer is set up so its four aux outputs each drive a zone covered by a yoke-mounted K8.2 loudspeaker. The aux feed to the VIP room also drives a KS212C Cardioid Subwoofer there. A stage for live music features two K8.2 loudspeakers and another KS212C Cardioid Subwoofer.



TECH REQUIREMENTS:

The digital mixer allows the selection, mixing, and routing of audio signals from live music performances, media players, satellite TV receivers, and other audio sources to the stage and to the various aux outputs, each of which feeds signal to a zone.

Mains:

Three K8.2 loudspeakers [preset Dance]; one per zone (lobby, dining area, and patio)

One K8.2 loudspeaker [preset Dance; sub at 80 Hz] in VIP Room, paired with a KS212C Cardioid Subwoofer [Low-pass at 80 Hz]

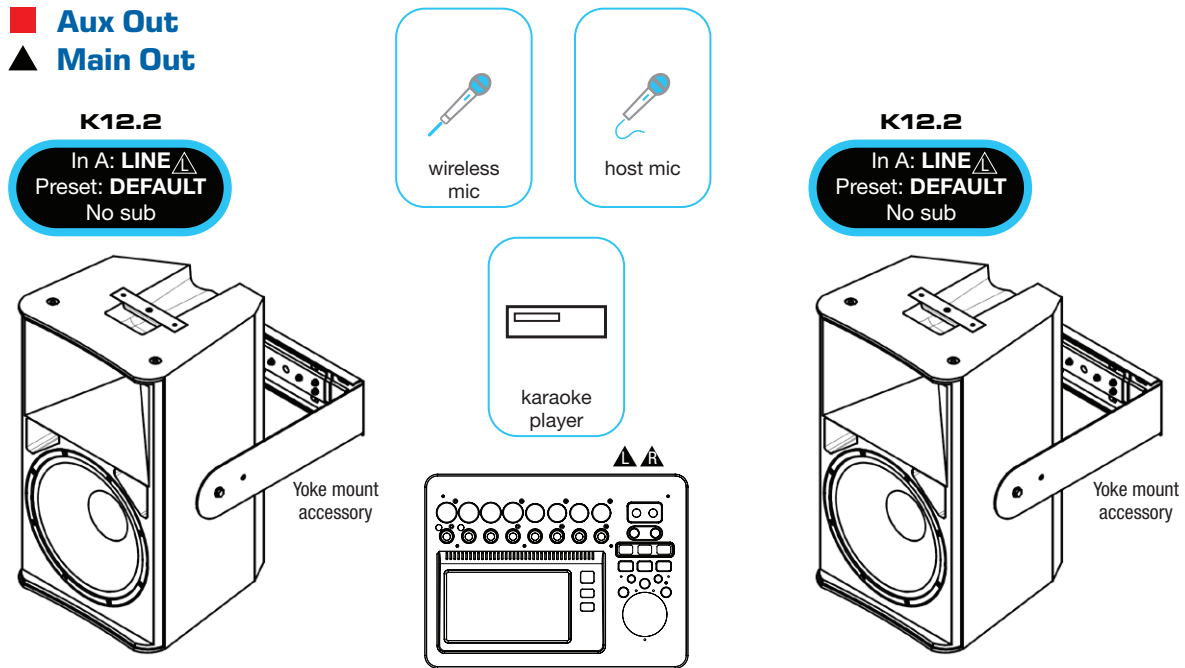
Two K8.2 loudspeakers [preset Live; sub at 80 Hz] and a KS212C Cardioid Subwoofer [Low-pass at 80 Hz] for live music on stage.

Accessories:

Four K8.2 Yoke Mount Kits (accessory yoke mount kits are also available for the other K.2 models)

KARAOKE RIG

For karaoke nights a club runs a permanently installed system consisting of pair of K12.2 loudspeakers attached structurally with accessory yoke mount kits. A digital mixer combines the participant's wireless mic along with the karaoke player and the host's mic.



TECH REQUIREMENTS:

The host uses a digital mixer to combine and control the participant's wireless mic with the music from the karaoke player.

Mains:

Two K12.2 loudspeakers [preset Default]

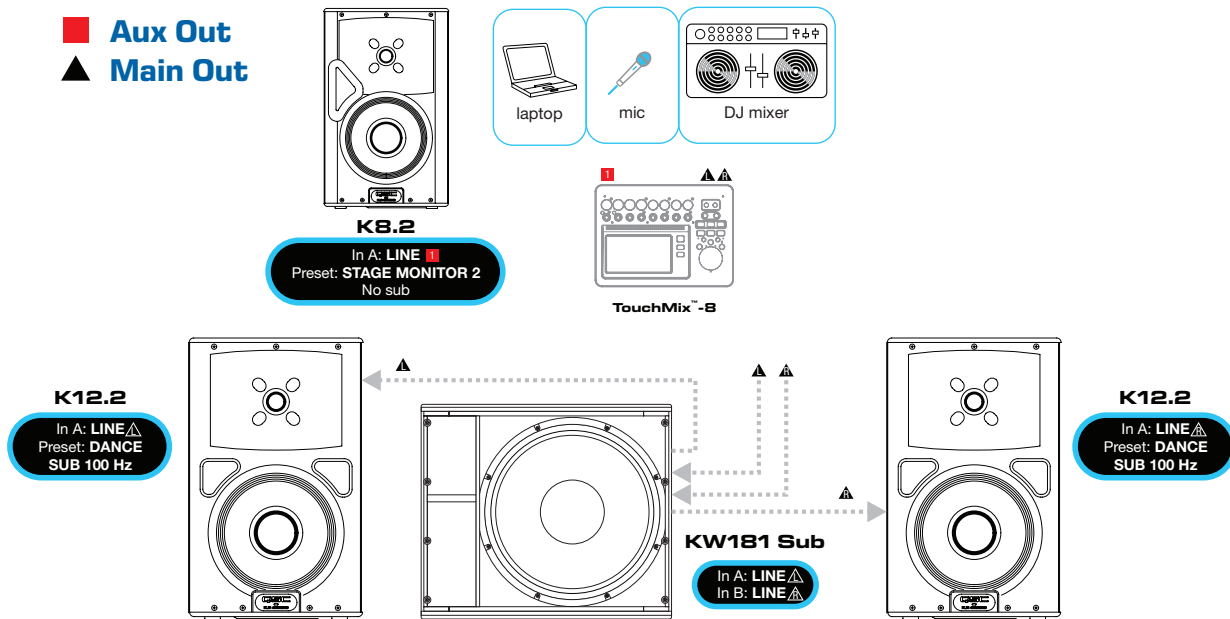
Accessories:

Two K12.2 Yoke Mount Kits (accessory yoke mount kits are also available for the other K.2 models)

DANCE CLUB

This dance club rig uses a DJ mixer with dual CD playback as well as a laptop for playing pre-produced mixes and remixes. The mic is for announcing and otherwise addressing the dancing throngs. The main loudspeakers are the largest K.2 models, the K12.2, along with a KW181 subwoofer. The sub along with the Dance preset on the mains will provide plenty of thump for the dance floor.

A K8.2 loudspeaker serves as the DJ's playback monitor.



TECH REQUIREMENTS:

Laptop and CD sources through a DJ mixer; DJ mixer outputs and announcing mic into a TouchMix-8 portable digital mixer. Digital mixer main outputs drive the sub and mains. The mixer's Aux 1 output feeds the playback monitor.

Mains:

Two K12.2 loudspeakers [preset Dance; Sub at 100 Hz]
One KW181 subwoofer [fixed low-pass filter at 100 Hz]

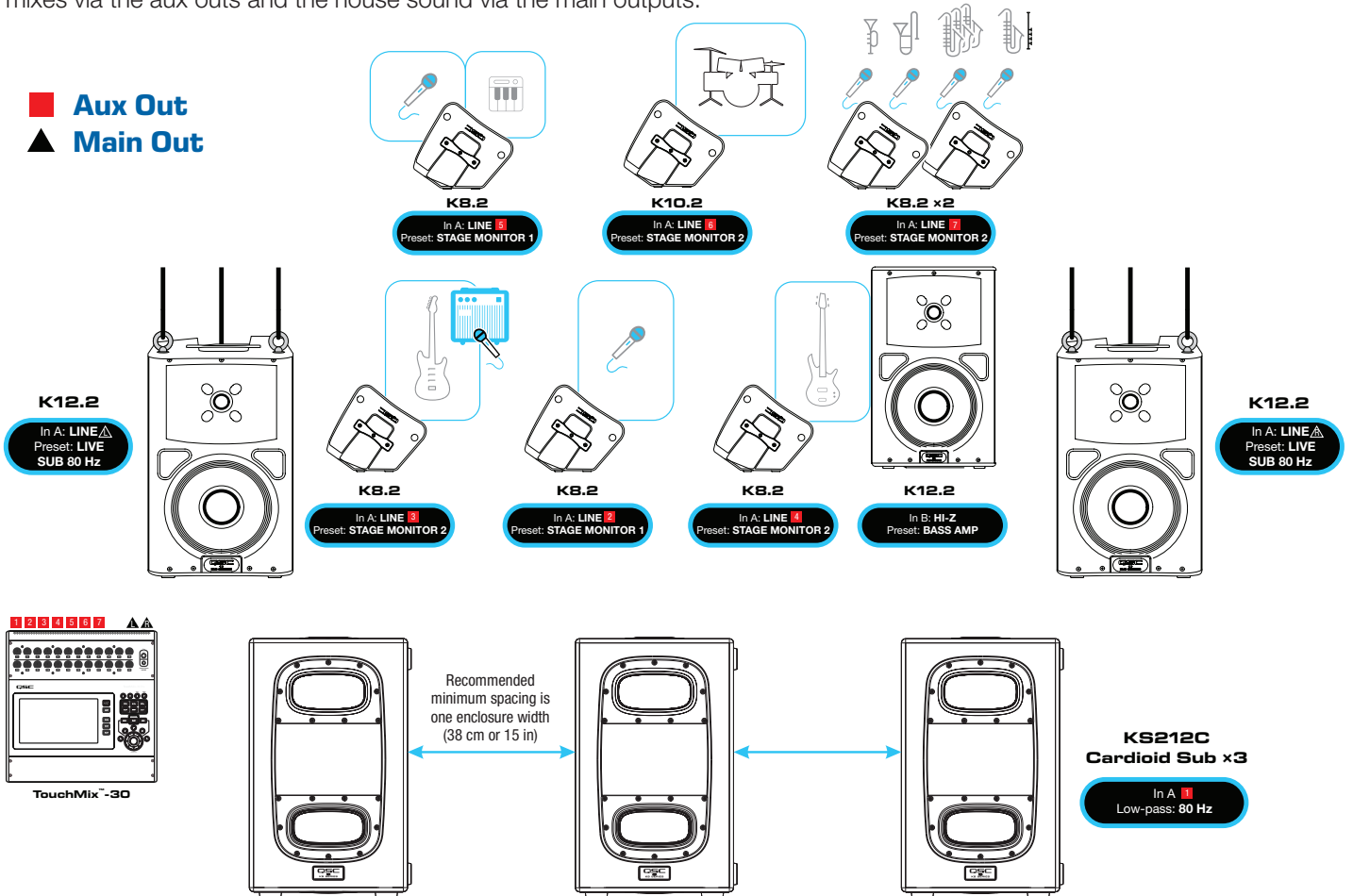
Monitors:

One K8.2 loudspeaker [preset Stage Monitor 1]

LIVE STAGE INSTALLATION

This club features live music with bands performing on a permanent stage. The mains comprise two K12.2 tops plus three KS212C Cardioid Subs clustered just under the stage apron; they're set to an 80 Hz crossover point. The K12.2 loudspeakers are flown using the M10 shoulder eyebolt kits. (Always consult a qualified rigger or structural engineer when you design and install a loudspeaker suspension system.)

Tonight there's a nine-piece band that includes four brass and woodwind players. The drummer has a K10.2 monitor wedge but all the others are K8.2 loudspeakers. The bassist uses a K12.2 as a stage bass amp and uses its MIX OUT to send a line-level signal to the house system. The front-of-house operator mixes the show on a large digital mixer, sending out monitor mixes via the aux outs and the house sound via the main outputs.



TECH REQUIREMENTS:

- Lead vocal, miked
- Background vocal (keyboardist), miked
- Guitar amp, miked
- Drum kit, miked
- Trumpet, trombone, and two woodwinds, individually miked
- Keyboard, direct in
- Bass, direct in

Mains:

- Two K12.2 loudspeakers [preset Live Bright; sub 80 Hz], flown
- Three KS212C Cardioid Subs [low-pass 80 Hz]

Accessories:

- Two M10 Kit-C eyebolt kits

Monitors:

- Eight K10.2 [preset Stage Monitor 1]
- One K10.2 [preset Stage Monitor 2]

Backline:

- Bass: K10.2 [preset Bass Amp]; Mix Out to mixer, for mains and monitors

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