

QSC™ TouchMix™

Application Guide

for Musicians & Bands



AET Application
Engineering
Team

DON'T BE FOOLED BY THE SMALL PACKAGE.

Inside each QSC TouchMix mixer is a versatile and powerful set of features and functions—the equivalent of a large conventional board, a rack of processing, and then some—yet the whole package is remarkably intuitive and easy to use from the very first time.

Among the key features of TouchMix that help you create a better mix faster are:

- Presets—Suites of settings optimized for common voices and instruments.
- Wizards—Guides to setting up the powerful set of on-board digital effects, and to setting gains optimally.
- App—Control your mix or your monitors remotely using a smart-phone or tablet. You can even give each band member real-time remote control over his or her monitor mix.
- Multi-track recording—Record your live performances in high-quality 32-bit WAV files. No computer necessary. Mix them down later on TouchMix or on a DAW.

Indeed, TouchMix can address a wide range of performance situations, from solo artists to extended bands. Let's explore ...



Channel presets

Channel presets in the TouchMix are a quick and convenient tool for setting up individual mixer channels for specific uses, such as male or female vocals, various popular instruments and percussion, etc., with suitable parameters that should work well in most situations but also can be tailored as to your personal preference.

FX Mute

Sure, your singing voice sounds big and spacious with a bit of reverb added in. But when you're introducing the next song or giving a shout out to your loyal fans, those same effects can sound weird and out of place. So TouchMix features an FX Mute button (also selectable from a tablet via the TouchMix app (more about that a couple pages down), or from a MIDI footswitch through a USB port) to switch off the effects when you don't want them and switch them back on when you do.

Wizards: FX and Gain

TouchMix features two "Wizards"—one to help set up the internal effects (FX) available and the other to help set gain structure optimally.

If you're a novice at mixing live audio, the FX Wizard will help you get started in applying effects to the audio to enhance the sound of respective channels, based primarily on what type of voice or instrument they carry. Even if you're a seasoned pro, the FX Wizard can help shave several minutes off your setup time.

For example, when you select the type of instrument or voice you have assigned to a channel, the FX Wizard will present a list of recommended effect presets. Touch **Recall** to load those settings into the mixer. You may use those settings as is, or you might opt to tweak them to your preferences.

The Gain Wizard helps you set the individual input analog gain trims to avoid clipping and distortion. While you're performing, the Wizard compares the peaks of the signals coming out of the analog preamps with the maximum signal levels of the A/D converter stages and indicates how much you should turn down particular input trims to prevent overdriving.

Wireless control

Each TouchMix mixer comes with a WiFi dongle for complete wireless access from smart-phones or tablets. Now you can control your entire mix remotely, or even grant permissions to individual band mates to adjust their aux bus monitor mixes.

For tablet devices, TouchMix can allow either complete control or control over selected aux mixes (monitors). For smart-phone devices, the operator can configure TouchMix to allow control of specific aux mixes—allowing band members, for example, to control their own monitor mixes.

The TouchMix apps for iOS (iPhone, iPod, or iPad Touch) and Android are free and available from the App Store or Google Play Store.



The TouchMix app on a smart-phone (below) lets users remotely control aux (monitor) mixes. On a tablet (left) the app also allows full mix control.



Multi-track recording

Who remembers “board tapes?” Usually they were less-than-top-quality stereo cassette recordings taken from the main outputs or some unused aux buses of a live sound board, meant to capture a live performance. We've come a long way since then! TouchMix, in fact offers full multi-track digital recording to an external USB storage drive. You can mix down later on TouchMix, or export your recording to your Digital Audio Workstation (DAW). It may well be the next best thing to having a mobile recording truck on site. Because of file size limitations, you may record non-stop for up to roughly three hours (the mixer will give you a message about ten minutes before you reach the limit); for longer recording projects, simply stop at a good time and restart.

NOTE: The USB storage device must be FAT32 formatted, and its performance is critical for good recording results. Visit qsc.com to see a list of qualified storage drives.

The TouchMix-8 can record up to 14 simultaneous tracks, and the TouchMix-16 can record up to 22 (all inputs plus a stereo mix), in ultra-high-quality 32-bit 48 kHz WAV file format.

Recording is easy and intuitive. Arm (that is, *select*) the individual channels you want to record. Touch **Play**, and you're recording!



SOLO PERFORMER

A solo artist knows his or her own style and sound. If you're a solo artist, TouchMix allows you to not only find that sound but also save it for future performances. This example depicts a setup for a solo guitarist/vocalist using a TouchMix-8 mixer.

This example shows the mixer feeding a pair of powered loudspeakers, as you might do in a coffeehouse or small club. But the TouchMix in this case could just as easily be feeding a house system in a concert hall. Any venue, any size!

Even the performer who has never set up a mixer before can achieve remarkable results, thanks to TouchMix's built-in selection of presets and effects (FX) for voices and instruments. Once the mixer is set up as desired, the configuration can be saved as a scene for instant recall when needed on subsequent gigs.

Channel presets (solo)

Let's see how we can use some channel presets. Under **Vocals and Speech** > **Music**, TouchMix offers two solo vocal presets: **Vocals Female Comp** and **Vocals Male Comp**. They have subtly different EQ curves for female and male vocalists, respectively, along with compression and gating settings appropriate for singers.

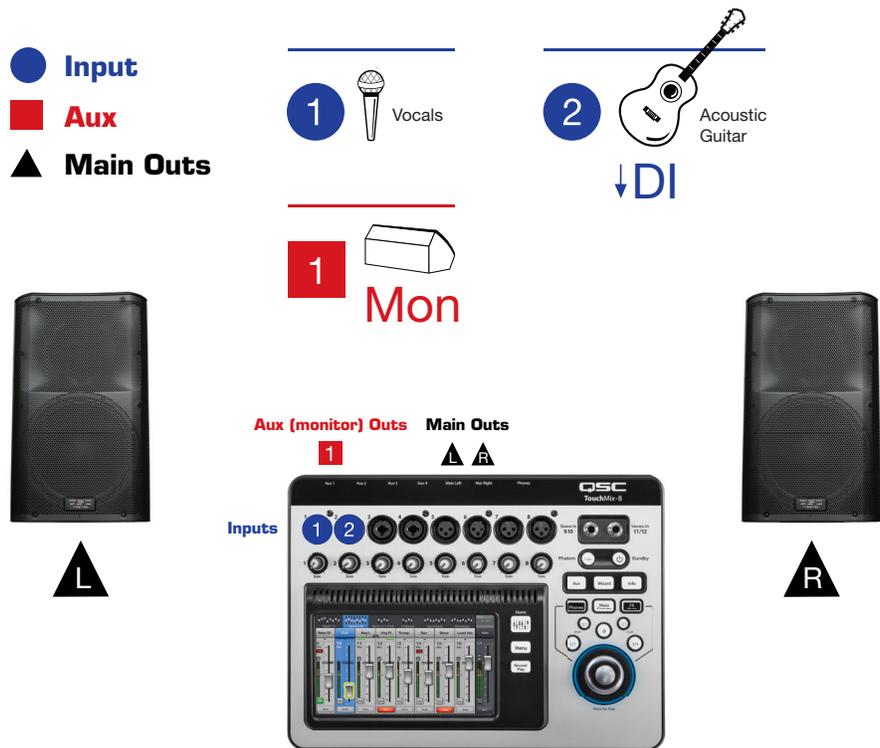
TouchMix offers seven acoustic guitar presets. The acoustic guitar goes into channel 2 through a DI box, so we can reduce the appropriate choices to **Ac Gtr Brg PU Cmp**, **Ac Gtr Bridge PU 1**, or **Ac Gtr Bridge PU 2**, for a guitar with a piezo bridge pickup—or **Ac Gtr Int 1 Comp** or **Ac Gtr Int 2 Comp**, for a guitar with an internal mic. Touch the **Preset Info** button for a short description of the highlighted preset.

Choose the preset that seems right for you, but feel free to make any changes you want!

FX Mute via footswitch

Hey, it's totally a solo act, right? The performer is his or her own sound person. So it's convenient to set up a MIDI footswitch and connect it to a USB port on the TouchMix mixer. In the main menu, go to MIDI Setup and configure one of the eight MIDI channels to toggle the FX on the vocals—on for singing, off for talking to the audience.

Factory Scene: TM8 Songwriter



DUO

This example is a setup for a vocal duo with guitar and keyboard. It includes two vocal inputs, plus a direct injection (DI) for the acoustic guitar and a stereo input for the keyboard. An iPod is plugged into the stereo inputs 9 and 10 to provide music during breaks.

Both members of the duo get their own monitor mix.

Mute groups

A song in the repertoire uses the keyboard and Vocals 1, but not guitar or Vocals 2. Another song is just keyboard and Vocals 2. Sometimes you'll want to mute a mic or instrument, or some combination of them, to reduce unwanted noise or prevent feedback, etc. TouchMix features Mute Groups, to which you would assign and save these combinations of muted channels so you can recall them quickly later

Mute groups can also be selected via MIDI, which allows you to select and engage them via a footswitch, just like FX Mute.

Wizards (duo)

Press the **Wizard** button.

Press **FX Wizard**. You'll see four FX channels, any of which you can simply assign to vocals, drums, or other instruments, and you can select which mixer channels to send to the effects, and also how much.

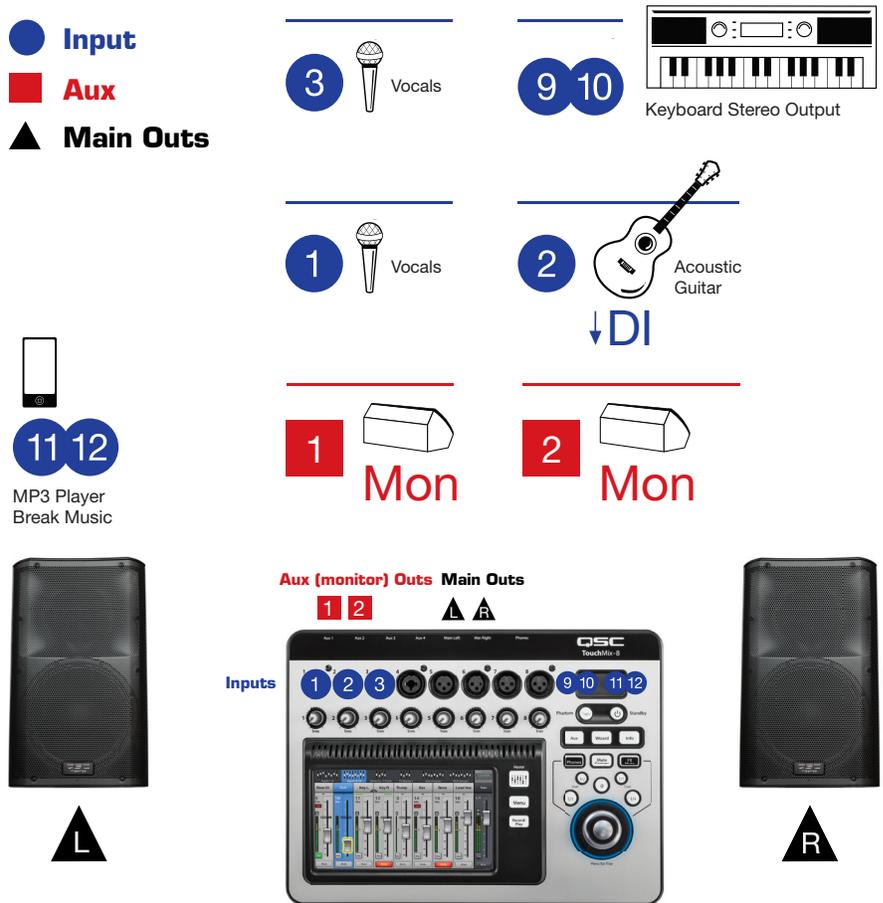
Vocals tend to improve with a judicious use of reverb, and a bit of chorus can thicken up an acoustic guitar. Feel free to experiment!

Factory Scene: TM8 Songwriter

● **Input**

■ **Aux**

▲ **Main Outs**



SMALL GROUP

Factory scene: *TM8 Songwriter*

Let's explore TouchMix's scene capabilities. The mixer comes with several factory-installed scenes that you can use as examples of how it can be configured, or as starting points for arriving at your own mix more quickly.

The scenario:

A four-person group comprising a male and a female vocalist—each of whom play acoustic guitar—along with an electric bass and a percussionist playing congas.

This calls for the scene *TM8 Songwriter*. Scenes are accessible from the menu screen, or by touching the button at the upper right of the home screen. The scene pulls up these presets, highlighted on the screen in cyan.

This scene and others are meant to offer you a quick starting point with some suggested settings. As you can see, other similar presets are available, and you can fully tailor all settings and save them to internal memory or external storage as a new scene.

The factory scene does not include any effects settings, but you are free to make full use of the on-board digital FX processing. (These settings are saved to any scenes that you create.) For example, vocals usually benefit from some added ambiance, such as reverb.

Profile: The Performing Singer / Songwriter

User Profile

The user is a musician performing solo or in a smaller group in a variety of smaller venues. Even at lower volume levels the expectations are high for quality sound and production value.

The Problem

"I record my songs with my DAW at home and I have lots of EQ, compressors and effects available so I can get things to sound the way I want them to. But when I play out live, I just can't get the sound I want. I don't play that loud but even so, I'm always fighting with feedback and boomy sounding acoustic guitar."

"Speaking of recording, I'd really like to record my live performances but when I hook a recorder up to the stereo output on my little analog mixer, it just doesn't sound very good. How can I get great sounding live recordings?"

"I suppose I could get one of those high-end digital mixers with all the EQ and effects built in, but they're too big, too expensive and I don't really know how to run everything."

The Solution

Getting great live sound for an "unplugged" performance takes more technology than one would think plus a good deal of expertise to make it all work. Fortunately QSC has included both the technology and the expertise in the TouchMix.

- All the signal processing capability you need to sound like a concert artist. While the TouchMix is about the size of a laptop computer, every channel has EQ and dynamics processing (compressor and gate) like that found on large concert sound consoles. And there are four on-board effects processors modeled after the "go-to" processors concert engineers rely on.
- Built-in expertise. You might not be a seasoned concert sound guy but the TouchMix will help you sound like one. It includes over one hundred channel presets that were carefully tuned to work in live sound situations with typical instruments and microphones. Not sure what effect to use? There's an FX Wizard that helps you through the process of selecting and routing just the right reverb, delay, chorus or pitch change for every instrument or singer on your stage. Confused about setting input and output gain? There's a Gain Wizard to help with the inputs and a built-in aid for matching the output level with QSC powered speakers and amplifiers.
- How about recordings that combine the energy of a live performance with the quality of a studio session? Ever have one of those nights where you're playing your best and wished you had a recording? The TouchMix makes it easier than ever to capture a live performance to multi-track. All you need is a qualified USB hard-drive. After the gig you can mix down right on your TouchMix or import the tracks to your favorite DAW software.

Serving Suggestion

The following stage plot for an 'unplugged' group based on the TouchMix factory scene "TM8 Songwriter".

Using the Factory Scene

Your group is probably not exactly like this one so you may need to make some changes to the scene.

- Recall the appropriate channel presets to match your instrumentation.
- Go to the FX Wizard (**Wizard > FX Wizard**), then select and assign effects.
- Go to the Aux Output Set tab and name your monitor outputs.

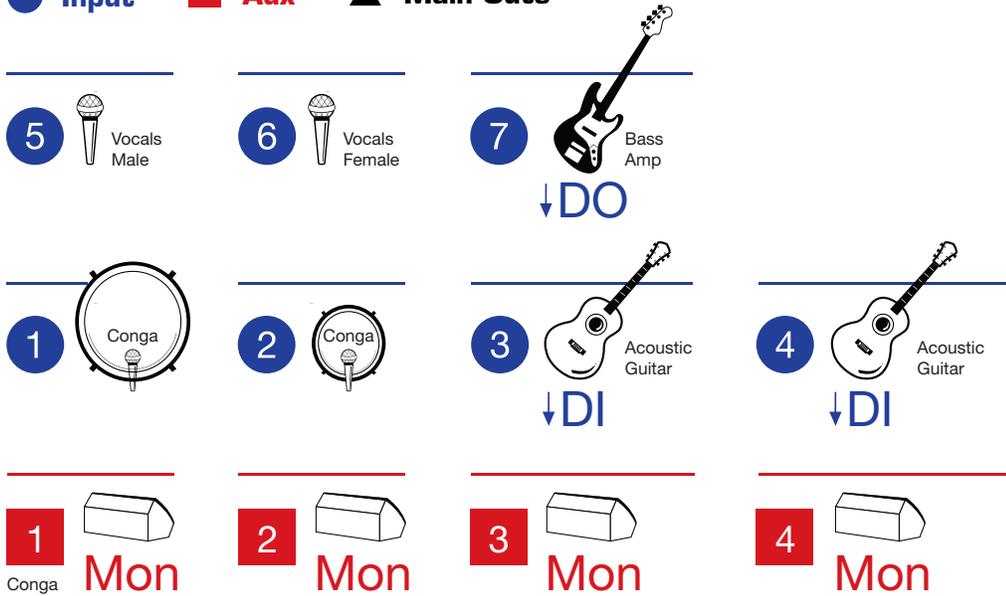
Why?

As you use the presets, you may see and hear some things that seem a bit unusual.

- The low frequencies are rolled off in many of the instrument presets. That's because only a few instruments (for example, bass and kick drum) really produce desirable bass in a live setting. For other instruments, rolling off the lows gets rid of rumble, boominess, and low frequency feedback. As a result, the bass that belongs in your mix will be clear and articulate.
- **Important:** With the presets, some instruments may sound a bit thin by themselves. But the important thing is how the instrument sits in the overall mix.

Factory Scene: TM8 Songwriter

● **Input** ■ **Aux** ▲ **Main Outs**



Channel / Name	Instrument	Type	Preset Name
1 / Conga Hi	Percussion	Conga High	Selections: • Conga Hi Cond • Conga Hi Dyn Comp • Conga Hi Dyn
2 / Conga Lo	Percussion	Conga Low	Selections: • Conga Lo Cond • Conga Lo Dyn Comp • Conga Lo Dyn
3 / Acoustic Guitar 1	Frets	Acoustic Guitar	Selections: • Ac Gtr Brg PU Cmp • Ac Gtr Bridge PU 1 • Ac Gtr Bridge PU 2 • Ac Gtr Condw • Ac Gtr Dyn • Ac Gtr Int 1 Comp • Ac Gtr Int 2 Comp
4 / Acoustic Guitar 2	Frets	Acoustic Guitar	Selections: • Ac Gtr Brg PU Cmp • Ac Gtr Bridge PU 1 • Ac Gtr Bridge PU 2 • Ac Gtr Condw • Ac Gtr Dyn • Ac Gtr Int 1 Comp • Ac Gtr Int 2 Comp
5 / Bass	Bass	Electric	Selections: • Bass DI Comp • Bass DI Slap 1 Comp • Bass DI Slap 2 Comp • Bass Dyn • Bass Slap Dyn 1 • Bass Slap Dyn 2
6 / Male Vocals	Vocals and Speech	Music	Vocals Male Comp
7 / Female vocals	Vocals and Speech	Music	Vocals Female Comp

BAND

Next, let's look at a 7-piece band comprising the following:

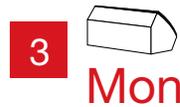
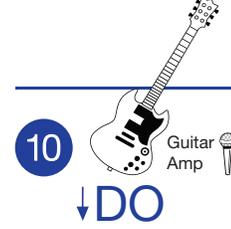
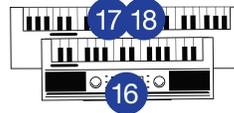
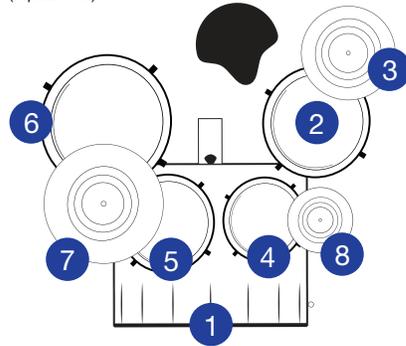
- Lead vocal
- Guitarist / vocalist
- Keyboard
- Bass
- Drums
- Trumpet
- Saxes & flute

Factory Scene: TM16 Songwriter

● **Input** ■ **Aux** ▲ **Main Outs**

Drum Mics

(Inputs 1-8)



Smartphone Personal Monitor
Wi-Fi
Aux 3 Mix Control



▲ L



▲ R



FOH Tablet
Wi-Fi
Full Mix Access

The drums have some elaborate miking. The lead vocalist and guitarist/vocalist have in-ear monitors, so there's a mic to capture ambiance and audience response. All tracks are being recorded live to an external hard drive for later mix-down on a DAW. One keyboard, a synthesizer used mostly for lead, has a mono output. The other is stereo and is used mostly for its piano and organ patches. The keyboardist is also the band leader and uses the TouchMix app on his smart-phone. The phone links to the mixer via WiFi so he can tailor his own personal monitor mix. At front of house (FOH), the sound engineer has a tablet also running the TouchMix app and connected through WiFi, so she can check the sound quality and mix from anywhere in the room. The bass player's rig runs direct into the board. The two wind players share a wedge monitor.

Wireless apps for custom monitors

Other players can use their smart-phones to adjust their monitor mix, too, using the TouchMix app. The sound engineer assigns levels of access to each band member so they can only tweak their mix.

Recording the band

The external hard drive plugs directly into a USB port on the TouchMix mixer. The sound engineer has armed channels 1 through 16, and also the stereo pair 17 and 18. In **Transport control**, she touches **Play** just before the band's introduction. This could be the start of a live album project; the multi-track recording can be mixed down later on a DAW.

Visit the QSC TouchMix page at http://qsc.com/products/mixers/touchmix_series/ for videos, support, user docs, product registration, and more!

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Part C: Preset Libraries

Part D: FX Wizard

Part E: Advanced Effects

Part F: Gain Wizard

Part G: Recording Functions

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