

Mackie

tt24 Digital Audio Mixing Console

When it comes to bang for the buck, few analog mixer manufacturers can top the reputation of Mackie—their low-cost analog mixers have been a mainstay of smaller churches, clubs, and touring bands for decades. Hoping to carry this success into the digital mixer market, Mackie recently introduced the tt24 Digital Live Console. With a List Price of \$7,199 the tt24

is targeted at mid- to large-sized churches, performance venues and smaller touring companies.

The tt24 is a compact 24-bit/96-kHz digital console with a friendly user interface, motorized 100-mm Alps faders, a touch-screen LCD display, and a generous helping of on-board digital signal processing. Ninety-nine

“venues” store basic mixer configurations, and each venue can hold up to 99 snapshots for specific channel settings. A USB connector allows a PC computer

to control all functions of the tt24 remotely, even while someone is using the mixer itself. The tt24’s feature set is too deep for one review to cover, so we’ll hit the high points.

Analog Matters

Whether analog or digital, any live sound mixer should offer plenty of analog inputs and outputs. The tt24 gets high marks in this area, with 24 analog inputs (mic or line, with inserts) plus eight additional line inputs intended primarily for stereo sources or effects returns. The 24 main analog inputs offer a four-band fully parametric EQ, variable high-pass filter, noise gate/expander and compressor/limiter. The eight line inputs offer a four-band parametric EQ.

The tt24 is well-endowed in the analog output department as well. Each of the mixer’s 12 aux sends is available on balanced, 1/4-inch connectors. The main left, right and center outputs leave the mixer on balanced XLR connectors, as do the eight “flex” groups and matrix outputs. Additional analog outputs include left, center and mono monitor outputs on 1/4-inch connectors, and stereo tape outputs on RCA-style jacks.

By Loren Alldrin



When you consider the capabilities of this mixer, and the racks of the outboard gear it can retire, the tt24 is a bargain.

Though they won't have quite as much utility in most live settings, the tt24 offers 24 digital inputs and outputs on ADAT optical connectors. These digital inputs offer no DSP unless you steal the processing *en masse* from the analog inputs, or install the optional UFX II DSP card. The 24 optical digital outputs are mapped directly to the 24 analog inputs for live recording; future firmware updates will likely offer more routing flexibility. The mixer also offers digital I/O on S/PDIF and AES/EBU connectors. Word clock I/O allows the tt24 to sync up with other professional-level audio and video equipment.

Two expansion card slots sit on the back of the tt24. One card is already available, and several more are in the works. Available now is the UFX2 card (\$899), which offers DSP for four additional FX processors, or EQ and compression on all 24 digital inputs.

One Knob, Many Jobs

At first glance, one may be surprised at how few controls the tt24 actually has. Beyond the analog input section with line input button, phantom power button and trim knob, each "channel" has just one knob (called a "V-POT"), three buttons and a fader. Rather than load each channel up with multiple knobs and buttons, the tt24 uses these basic controls for many different operations. The humble V-POT, for example, is a knob, button, and circular meter all in one, and it can control (and display) any number of different things depending on its mode.

To the right of the channel faders lies a bank of buttons that control the mode of the channel knobs and faders. The 24 channel faders can control the main analog inputs; the digital inputs; line inputs, internal effects returns and expansion card inputs; or aux sends and groups. A special user bank allows virtually any input or output bus signal in the tt24 to be mapped to any of the 24 channel faders.

The V-POT control buttons configure the V-POTs to adjust (and display) trim, pan or high-pass filter. The fourth V-POT button toggles the ring of LEDs around each V-POT to show signal level for that channel. Having circular level meters takes some getting used to, but the system works. The latest firmware revision offers a mode where the LED ring shows compression gain reduction while the V-POT knob controls compressor threshold. Very nice.

By choosing one of the 12 aux send buttons, the V-POTs can be set to control send levels for each channel. This makes dialing in a monitor mix an easy affair, but it gets better. Press the "AUX MODE" button, and the tt24 becomes a very capable monitor mixer, with channel faders controlling send levels and the master fader bank controlling aux output levels.

Apart from the V-POTs' LED rings, the main visual feedback from the tt24 comes via its touch-screen display. This display shows countless aspects of the mixer's configuration, from utility menus and settings to EQ curves and high-resolution meters. And while many aspects of the mixer's operation are controlled by the touch-

screen, tt24 users will likely spend as much time with their fingers on the knobs and buttons directly beneath the display. Called the "QuickMix" area, this bank of 12 unlabeled knobs lines up with virtual knobs pictured on the LCD display. Give one a twist, and the corresponding value changes on the LCD display. As with the V-POTs, you can also push on any of the 12 QuickMix knobs to accomplish other functions. Surrounding these 12 knobs are several other buttons used to access channel signal processing, the snapshot recall system, and other aspects of the mixer's configuration.

Hands On

In contrast to digital mixers aimed at the studio recording market, the tt24 was clearly designed from the ground up for live sound applications. Its control surface, signal flow, and feature set are optimized for speed and efficiency. The tt24 strives to offer a "flat" user interface, with very few sub-menus to navigate. Most console functions are a single button press away, which saves valuable time in a live mixing environment. The layout of buttons and knobs is intuitive, and there are very few controls on the mixer that won't be used frequently.

I was consistently impressed with the amount of DSP power tucked under the hood of the tt24. Every aux output has a full dynamics section and four-band EQ with two additional notch filters. The left, right, and center outputs have all this plus a 31-band graphic EQ. Eight additional blocks of DSP can be sprinkled across the

eight groups as needed. Most internal effects algorithms have a built-in three-band EQ.

The Mackie brings its DSP power to bear on signal routing as well as processing. Eight internal groups can be configured as mono, stereo, left, center, right, or VCA. An 11x8 matrix allows signals from almost any point in the mixer to be sent to any of the eight group/matrix outputs. Use matrix outputs for delay speakers, and you can even enter the temperature and set the delay time in feet.

The power and control offered make it possible to really perfect a mix, and the tt24's 40-kHz response and 32-bit internal processing make for a clear, spacious sound. The mixer's EQ and dynamics sections sound excellent, whether they're used for serious sonic correction or gentle enhancement. Despite a somewhat limited palette of programs to choose from, the Mackie's on-board effects proved to be useful and of very high quality.

Is there anything not to like? It appears that effects presets can't be renamed on the tt24 itself, so you're stuck with the default name (like "GatedReverb-43"). It's also a little annoying to have to wait for the motorized faders to settle completely into position after a control surface change before moving them. Grab the fader too quick, and a tug-of-war ensues. The mixer always wins. Hopefully, a future firmware update will address these minor interface snags.

Though fun to play with, the tt24's control software is not essential for day-in, day-out mixing. It basically mimics the controls and graphics of the LCD display, though at a much higher resolution. Churches will

likely find the software's greatest benefit to be backing up the tt24's presets and venues, and updating its firmware.

In years past, Mackie derided its competition for moving manufacturing overseas.

Now virtually every Mackie product—the tt24 included—is made in China. Whether this affects reliability remains to be seen. One fact is clear: local Mackie repair facilities are *not* currently repair-

ing this mixer. If something does break, the mixer has to be shipped to one of four repair facilities. With no quick-fix available for most churches, tt24 buyers should plan accordingly.

Retirement Plan

When you consider the capabilities of this mixer, and the racks of the outboard gear it can retire, the tt24 is a bargain. It's also a space saver—churches cramped for space will appreciate the tt24's compact footprint, and won't likely miss the outboard compressors, effects units, and graphic equalizers it replaces.

The tt24 is one of the simplest digital mixers to operate, but new users will still need some time to acclimate—especially if they've never used a digital mixer before. The feature set of this mixer is deep, and you need to understand a good portion of these features to use the tt24 effectively.

Once you get familiar with its interface, which doesn't take long, mixing live sound on the tt24 is a joy.

Loren Alldrin is a regular contributor to Church Production Magazine.



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