

# KEYBOARD Reports

## Mackie Control

CONTROL SURFACE FOR DIGITAL  
AUDIO WORKSTATION PROGRAMS

The V-Pots are continuously variable, and ringed with LEDs to indicate the approximate value. The LCD shows a more precise value.

The LCD defines what the V-Pots and faders are controlling, while the LEDs show where you are in the song.

The Assignment and Fader Bank buttons select which functions and channels the faders and V-Pots will control.

Channel strip buttons for record ready, solo, mute, and select recall standard mixer layout.

The faders (8 channel and 1 master) are not only motorized, but optically-based and offer 10 bits (1,024 steps) of resolution.



The buttons above the transport are all soft buttons whose function depends on how they were programmed. Mackie provides Lexan overlays for the various supported programs.

The transport section will likely be the most-used group of buttons, and the large-sized jog wheel makes navigation easy.

Control surface with motorized, touch-sensitive faders for Mac and PC software.

**Pros:** Motorized, touch-sensitive, optical, long-throw faders. Good use of display. Compact footprint. Ergonomic design. Requires no special drivers (works with any MIDI interface). Expandable with Extender units (if supported by software). Two footswitch controls for hands-free punching and start/stop. 110-250V supply compatibility. Cost-effective.

**Cons:** Can't be used as a general-purpose MIDI controller. Lettering on Lexan overlays difficult to read. Small V-Pot knobs. Can't communicate via USB — MIDI only.

Mackie, 425-487-4333, [www.mackie.com](http://www.mackie.com)

Mackie Control \$1,299, Mackie Control 8-channel Extender \$1,099

by Craig Anderton

In nature, *symbiosis* is a biotic interaction where two organisms, usually of different species, live in close association with one another. In my favorite type of symbiosis, *mutualistic symbiosis*, both entities benefit from the interaction — the classic example is bees using the pollen from flowers, which benefits both the bees and the flowers.

Say what? Isn't this *Keyboard* magazine?

Well, yes. But the Mackie Control (MC for short) is a fine example of mutualistic symbiosis at work. By itself, it's nothing — just a bunch of high-quality parts, housed in an ergonomic case that interfaces to your computer via MIDI. But team it with a compatible piece of software (the key word here is *compatible* — the MC is not a general-purpose MIDI controller), and the two form a relationship where the software gives the MC something to do, while the MC brings out the best of the software by allowing you to use it more efficiently and rapidly.

Frankly, a lot of people don't recognize the value of hardware controllers. When I asked how musicians used them in my forum at [www.musicplayer.com](http://www.musicplayer.com), the majority of those who

replied said that they were just fine with using a mouse and drawing envelopes, or moving on-screen faders, because it was precise and didn't require any other hardware.

To me, though, that's like step-entering notes in a MIDI sequencer instead of playing on a comfortable, 88-note, weighted keyboard — you can do it with step entry, but playing keyboard makes a whole lot more sense. Let me explain.

### Old-school Mixing

Before getting to the meat of the review, we need to understand the rationale behind control surfaces.

Until digital audio came along, all mixing surfaces had one control per function. Large-format consoles were expensive and huge, but this made it easy to tweak anything you wanted, in real time. Often, more than one person would be involved with the mixing process — in some cases because it was physically difficult for one person to reach all parts of the board.

But there was one other important aspect to physical mixing: Realtime control invited *playing*

the mixer, making it more of an instrument than just a way to balance levels. Many engineers would ride gain in time with the music, making subtle — or not so subtle — spontaneous adjustments to add character to the song. One good example was tweaking send controls to the reverb to deliver a "splash" on a particular drum beat, or patching a compressor into a channel insert, and increasing the trim level at strategic times to hit the compressor harder and "squash" the sound more.

Part of the reason for this fader manipulation was tape's limited dynamic range. Players needed a precise "touch" to play within a range that was low enough to avoid distortion, but high enough to stay out of the noise. So, some of the dynamics would be restored during the mixing process by engineers "playing" the faders.

But moving faders and sends wasn't all. EQs had accessible knobs as well, which likewise invited realtime tweaking. The mixer was not a set-and-forget device, but in the hands of a talented engineer, became a dynamic, living part of the recording process. This type of thinking still exists in DJ and "groove" types of music, but overall, it seems mixing has become a more static process as the world of recording

## Vital Stats

<b>Faders</b>	9 touch-sensitive, Penny & Giles optical faders (8 channels and master)
<b>Fader throw</b>	100 mm
<b>Fader resolution</b>	10-bit, 1,024 steps
<b># of channel strips</b>	8
<b>Programmable knobs</b>	1 assignable "V-pot" per channel strip
<b>Navigation control</b>	fast forward, rewind, stop, pause, record, jog/shuttle wheel
<b>Other edit buttons</b>	automation controls, undo/redo/save, shift modifier, loop in/out points, time line "quick jump" buttons
<b>Display types</b>	2 x 55 backlit LCD and 7-segment LED
<b>Software compatibility and minimum revision level needed</b>	Mackie Soundscape 32 (requires Console Manager 1.5)/Mixtreme, MOTU Digital Performer (V3.0), Steinberg Nuendo (V1.6.1), Steinberg Cubase SX/SL (V1.03; both Nuendo and Cubase anticipate Control Extender support shortly), Cakewalk Sonar (V2.1), Magix Samplitude 7.0 (support for Syntrium Cool Edit Pro 2 and Magix Sequoia 7.0 are slated for early 2003)
<b>Other support</b>	audio plug-ins and soft synths (dependent on software implementation; none currently available for standalone soft synths)
<b>Custom legending</b>	provided by Lexan overlays (request from the Mackie website, sent free of charge)
<b>Interface type</b>	MIDI (extra port required for each Mackie Control Extender unit)
<b>Dimensions/weight</b>	17.4" x 17.5" x 3.8"; 7.6 lbs.

has become increasingly digital. It's time to get some of that control and human element back.

## Control Surface Mixing

You can do the same type of old-school mix tweaks with a mouse by drawing curves or moving on-screen faders, but the process is tedious.

For example, the screenshot on page 104 shows the automation for a recent mix I did using a hardware controller. The two drum parts at the top were from a drum machine and had virtually no dynamics, while the guitar part was distorted so it also had little dynamics. Adding dynamic nuances made the tune far more lively, interesting, and human.

The point here is that to me, a hardware controller is not a luxury, but a necessity. The issue isn't whether you need a hardware controller; the issue is which one is best for you. And that depends on how well the software you want to use integrates with the hardware controller. For example, the MC has touch-sensitive moving faders, where they only start to overwrite old moves once you touch the fader and start moving it. But if the software doesn't have the "hooks" to recognize that you've moved the fader, the touch-sensitive aspect simply doesn't exist.

The MC is very well thought-out, and includes all the tools needed to provide efficient, hands-on mixing. So, now that our little history lesson is complete, let's look at those tools, and how they're exploited.

## Overview

The MC communicates via MIDI, which has both advantages and disadvantages. The main advantage is that unlike devices that communicate

via USB or FireWire, no special drivers are required — if your computer recognizes your MIDI interface, then it will recognize the MC. It doesn't matter whether the MIDI is on a PCI card, USB, or on a Mac or PC.

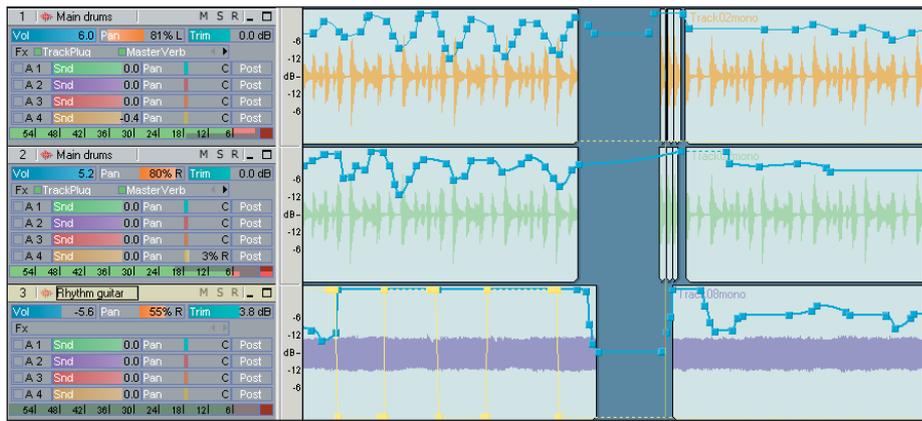
There are five major areas of interest regarding control functions:

**Channel strips.** Each has a Select button, motorized fader, V-pot (continuous rotary encoder), Solo button, Mute button, "signal" LED (no meter bridge, sorry), and Record Ready switch.

**Displays.** The display area is recessed across the top, tilted, and viewable from any rational angle. The main display is a 2-line x 55-character LCD. This defaults to track names (abbreviated to six characters) on the top line and V-pot assignments on the lower one. Next to it are several 7-segment LED displays for assignment type and temporal location, which can be bars/beats/ticks or SMPTE time.

**Transport controls.** These include a jog wheel (or scrub, as selected by a button) and four arrow buttons (augmented by a zoom modifier). In Sonar, the implementation is very good: left and right arrows tab through a track's parameters; if the track is minimized, it will open up enough to show the selected parameter, then snap back to minimized if you tab into the next track. Up and down buttons scroll up and down through the track list to select a particular track. If you hit the Zoom modifier button, the arrow buttons do horizontal and vertical zoom in and out.

**Assignment buttons.** These choose the V-Pot functions: I/O, pan, EQ, sends, plug-ins, EQ, and dynamics. A cool V-Pot feature is that they include a push-on, push-off switch. For example, with Sonar, when controlling the Aux Send Level, pushing the knob restores the setting to



Fader moves performed in real time from the Mackie Control (shown here in Cakewalk Sonar).

zero. Also with respect to Sonar, the EQ and dynamics functions communicate only with DirectX 8-compatible effects. Plug-ins work with whatever you stick in the FX bins, but operation is a bit unpredictable as calibrations may or may not have anything to do with what's written on the plug-in. We'll talk more about plug-ins later.

**Fader bank buttons.** For tunes with more than 8 tracks, you can shift channels one at a time (e.g., show channels 1–8, then shift to 2–9, then shift to 3–10, etc.), or shift in groups of eight. Another button, Flip, reverses the function of the V-Pot and faders — great if you want, for example, temporary use of long-throw faders for panning.

**Lexan-land.** That's not the official name, but there are 39 freely-assignable buttons whose function varies depending on the software. The panel legend shows the default for Soundscape, but Lexan overlays are available free of charge from Mackie for specific DAWs. For example, the four buttons that serve as Modifier buttons for Digital Performer or Sonar perform Undo, Redo, Save, and Revert for Cubase SX or Nuendo.

This is also where differences between templates tend to show up: For example, the Cubase SX/SL template supports editing and automation of VST instrument parameters; the Sonar template does not provide similar support for DXi devices. However, I was very pleasantly surprised that both VST effects *and* instruments running in Sonar under FXpansion's VST-DX Adapter were editable and automatable with the MC (props to FXpansion for that one). It was quite something to use the MC to vary the Steinberg Neon cutoff frequency while having it plugged into a Sonar audio track.

## In Use

The MC got a good workout in Sonar while mixing the tune "Fate of the Heart," by George Toledo. There's a story behind this: George offered his song for mixing by participants in my "Sound, Studio, and Stage" forum. While this sort of thing has been done before, in this case files were posted electronically for those with broadband.

Furthermore, one of the forum's most valued participants, guitarist Lee Flier, had a drummer friend cut new drum tracks, which were made available as alternates for those who didn't like the original drum tracks. As moderator of the forum, I of course wanted to try a hand at mixing; besides, I really liked the tune.

Once I told Sonar there was a MC connected, it was recognized and the faders snapped to attention (or at least, to their current levels). Cool. Sonar exploits the Mackie well: All automatable track/aux/main parameters are controllable, as are mute, solo, arm (record and automation), plug-in effects automation, transport controls, markers (including navigation), assigning of key bindings to function buttons, cut/copy/paste, view selection (e.g., calling particular windows to the front), inserting and moving punch and loop markers...you get the idea.

First order of business was to call up the Properties window and change the jog wheel and transport resolution from measures to beats, so I could move around in finer detail (resolution can also be set to ticks if you're zeroing in on something like the perfect split point). I noticed the option to disable fader movements and relay clicks from the transport controls — a great idea if you're overdubbing vocals in the control room, although I didn't need to use these features just for mixing.

The Properties page is where you also assign function buttons to key bindings, like calling up specific views. As several of the views (Video, Lyrics, Staff, etc.) were irrelevant for mixing digital audio, I changed them to more useful ones — Edit | Bounce to Clips, Edit | Split, and View | Markers. Interestingly, I found some of the less "glamorous" function buttons, like Undo, Close Windows, Dialog OK, Dialog Cancel, etc. to be incredibly useful over the course of the mix.

Next came tweaking levels and pan. Enabling level automation was easy: I just held the M1 modifier button and hit Rec/Rdy for the track. But this is also when I found out the channel 3 button was defective and refused to enable. Bummer. Luckily,

I could shift the tracks over by one; that way channel 3 could “land” over a working button, which provided a useable fix. For pan, you hit the pan button(s) to be automated while holding M1. The familiar red outline appeared around the automation-enabled parameters, and I was good to go.

As several of the tracks already had automation moves, the faders followed right along. The great thing about touch-sensitive faders is they don't overwrite until you grab and move them. One particularly interesting part was where I had chopped pieces of the vocal into a separate track, and applied synchronized echo. With the MC, I went nuts with changing levels and pan for just the echoes. It sounded very cool (well, at least I thought so!) and frankly, doing that huge number of moves would have been way too time-consuming with a mouse.

Within minutes of use, I was flying around the MC. The combination of a jog wheel for transport motion and having all the level/send/automation parameters at one's fingertips was simply wonderful. Redoing selected pieces of automation (oops! went a little crazy there...) was easy.

Plug-ins, EQ, and dynamics were another matter. Sonar's DX8-compatible EQ and Dynamics plug-ins responded well, and I particularly enjoyed that I could enter a mode where all eight EQ bands had their frequencies adjustable by V-Pots, with faders controlling gain. (There are other modes too, such as showing a particular parameter for all tracks, and ways to access other parameters with the modifier buttons). However, until you learn the system, it's a toss-up whether it's faster to adjust EQ and dynamics with the mouse or the Mackie.

When I tried programming some of the WaveArts TrackPlug (EQ/dynamics plug-in) parameters, matters got more complicated. While DX8-compatible, this has a *lot* of parameters. I could set up a mode where the LCD showed eight parameters at a time and switch among nine total screens of parameters, but frankly, it was far quicker just to double-click on the plug-in and adjust its parameters on-screen. A further complication was that TrackPlug numbers its EQ stages as 1–10, but the MC started numbering with 0. So, when I wanted to adjust, say, EQ stage 3, I had to remember that it was showing up as EQ stage 2 in the MC display.

I found that for tweaking parameters to “get in the ballpark,” using a mouse with plug-ins was easier. But where the MC shone was automating plug-in parameters; it was easier to turn a knob for a selected parameter than to try to do the job with a mouse. However, I did run into one problem: You can arm a plug-in parameter for automation by holding the M1 modifier button

and pushing on the parameter's associated V-Pot. But with some effects, like the Cakewalk FxEq, the M1 modifier button selects a different parameter — *e.g.*, you get fine frequency control instead of just frequency. In this case, I had to arm the parameter manually, then return to the MC to do the actual automation. Not a big deal, but it did cause some head-scratching.

Overall, though, there's no doubt the mixing was faster, more fun, and more expressive because I used the MC.

## Conclusions

At one point I was drawn to Cakewalk Pro Audio because Cakewalk, in conjunction with Peavey, had introduced the StudioMix controller with motorized faders. At the time, there was nothing like it, but I put up with some aspects of the program I didn't like because the faders satisfied my thirst for human control.

Now several years later, there are quite a few control surfaces available, from simple MIDI fader boxes to expensive, complex devices. But the Mackie Control hits a very sweet spot of price, functionality, quality, and ease of use. Apparently the software companies supporting it take it seriously, because the implementations I used for Sonar and Cubase SX were both very well done. I like that the MC is expandable, and that the extensions are already enjoying software support.

Just remember that to get the most out of an interface like this, you need to practice and become fluent with it, so reaching for the right button at the right time becomes second nature. Set it up in front of your monitor, put the mouse to the side, and locate the QWERTY keyboard nearby for emergencies — but generally, once you get good at using the MC, you'll find the keyboard becoming less relevant. Granted, just because something can be controlled from a surface doesn't mean it always should be; there are still times when clicking on the screen with the mouse is more efficient. Those times are in the minority, though. The Mackie Control goes a long way toward making a DAW feel like an *instrument* instead of a spreadsheet or word processor.

However, I feel obligated to close with a word of caution: Don't attempt to check out the Mackie Control with your software of choice unless you have enough disposable income to buy it — it's *highly* addictive. ■

*Craig Anderton's latest sample CDs are Turbulent Filth Monsters, a CD of cutting-edge drum loops (distributed by Discrete Drums), and Technoid Guitars, the first guitar sample CD oriented toward techno and dance music (distributed by Steinberg).*