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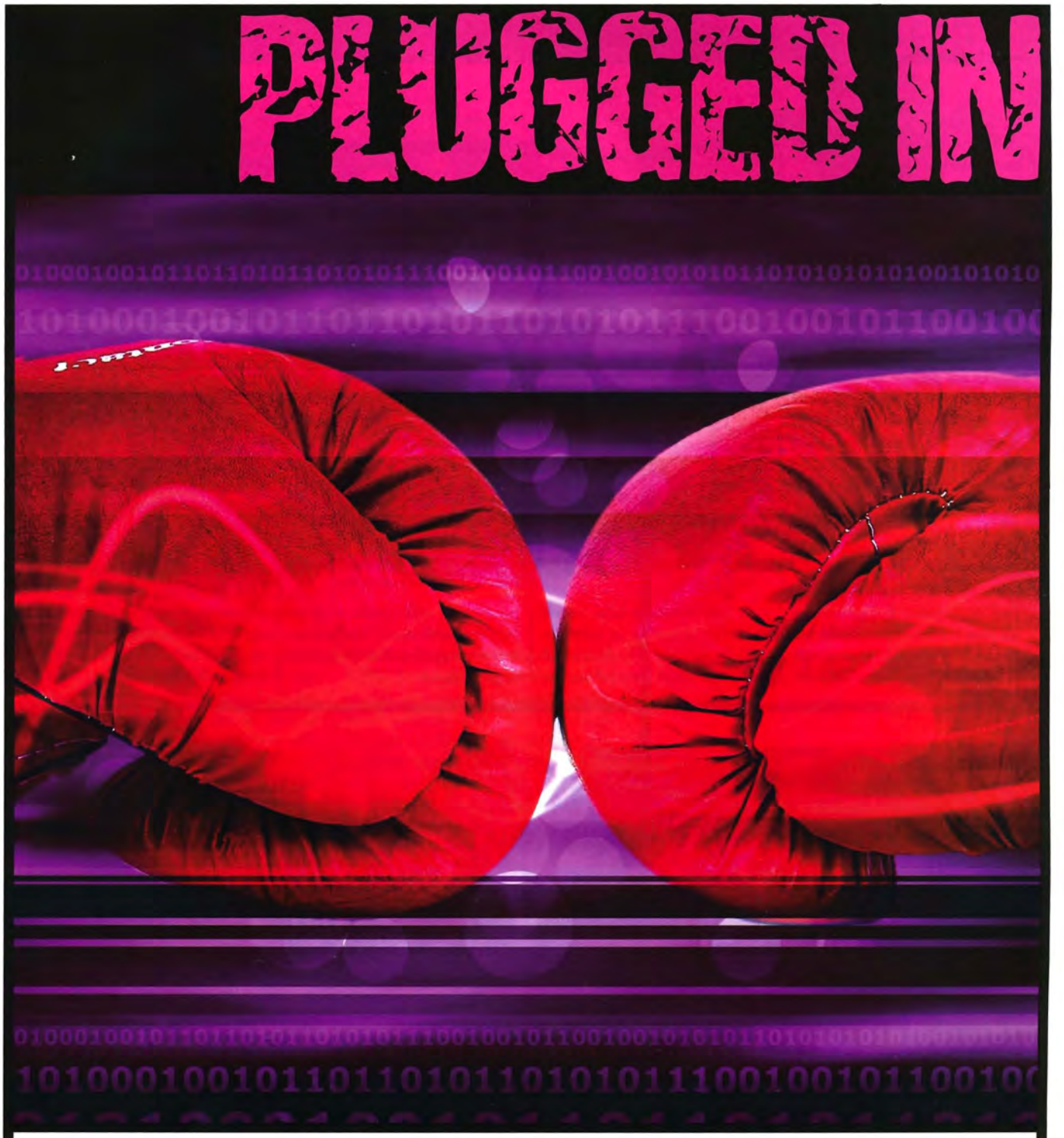

USB MIDI Controller Punchout

Trigger Finger VS. PadKONTROL

BY NORMAN WEINBERG

During the past couple years, very sophisticated software has redefined the landscape of electronic music, and computers have become the de facto workstations for digital audio in both recorded and live formats. Instrument manufacturers also helped usher in this digital revolution by creating keyboard controllers that connect to your computer through a USB cable. The end result was a simple, single connection to a great deal of programming power. It was only a matter of time, then, before manufacturers took those keyboard controllers and morphed them into something that would be more comfortable, and poten-

tially more powerful, for percussionists to use.

Welcome two new machines. M-Audio, well-known for creating high-quality instruments at reasonable prices, comes out swinging with the Trigger Finger. Korg, one of the most respected names in music technology, counterpunches with the padKONTROL. Both machines are perfect for programming drum patterns and techno-style bass and lead lines into your favorite sequencer. However, their potential applications dig much deeper and offer new levels of versatility to your creative output. Simply put: You can do things with these machines that you just can't do with an electronic kit, multipad, or keyboard. Depending on your software, you could use these boxes to fire loops and hits in real-time performance software like Abelton's Live, create an entire video set in software such as ArKaos VJ, or control real-time filter sweeps or pan position in soft synths such as Native Instruments' Absynth or soft workstations like Propellerhead's Reason.

FIG. 1 M-AUDIO PARAMETER EDIT
M-Audio's window is basic and severe

We're going to take a look at these two USB MIDI pad controllers and put them head-to-head in a five-round fight to the finish. Place your bets now.

THE WEIGH-IN

M-AUDIO'S TRIGGER FINGER

11" x 10" x 2.25", 2.3lbs., 16 trigger pads, eight assignable knobs, four assignable sliders. White case with silver trim and translucent buttons.

KORG'S PADKONTROL

12.4" x 9.2" x 2.2", 2.1lbs., 16 trigger pads, x-y pad, two assignable knobs, pedal input. Silver case with black buttons, knobs, and sliders.

ROUND ONE: CASE

Both machines offer a USB connection that provides power to the unit when plugged into your computer. Both also have a 9-volt DC input for power when you don't want to use the USB connection or if your USB hub doesn't supply enough juice. Each has a MIDI-Output that can be used to send signals from the machine to other MIDI compatible devices.

Korg's device has a few more features than M-Audio's does. A pedal input functions just like one of the surface pads. With it, you can attach a bass drum trigger or even a momentary footswitch and use an additional limb for programming or triggering. More important, the padKONTROL also has a MIDI-Input that can be used to interface another MIDI device with your computer. In other words, the padKONTROL doubles as a USB-to-MIDI interface. I tried connecting my drumKAT directly into the padKONTROL, and it worked like a charm. The drumKAT sends messages completely independent of the padKONTROL, and by having both devices sending on the same MIDI channel, the two machines work together as a single unit.

The M-Audio machine can be table mounted, screwed into the top of a microphone stand, or for an additional $24.95, you can purchase a mounting bracket. The Korg unit must sit on a table or other flat surface. If you're worried about someone walking off with your controller, the Trigger Finger offers a Kensington-style security port.

ROUND WINNER: PADKONTROL

FIG. 2 KORG PARAMETER EDIT
padKONTROL's Parameter Edit window is clean and simple to understand

ROUND TWO: PADS

Both the Trigger Finger and the padKONTROL have 16 pads that can fire sounds with their own note number, MIDI channel, and velocity settings. On both machines, pads have the ability to sense velocity or play at a constant, fixed velocity. Both machines also have eight selectable velocity curves to make the instrument more responsive to your playing style.

Pads can be programmed to act as a momentary switch with the note-on message sent when the button is pressed and the note-off message sent when the button is released. This is a great feature when you are programming sounds that have length because you can control the relative duration of each pad. Pads can also be programmed to toggle on and off with each press. This is a useful feature when triggering long pads or working with loops.

The buttons on the padKONTROL are translucent with little red lights mounted under each pad. As you strike one of the pads, a red light illuminates for just a moment, turning the performance into a mini light show. In addition, pads that have been programmed to send control-change information are lit all the time, making it very easy to see which pads are sending notes and which are sending control messages (more about control-change messages in the next round).

ROUND WINNER: DRAW

PHATTIE

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ROUND THREE: CONTROL CHANGES

The fundamental differences between the two machines become brutally obvious in this round. For the newly initiated, control changes are the MIDI commands that alter a sound in some manner. Mod wheel movements, stereo pan position, breath controller, and master volume are common examples of continuous controllers. With contemporary music software and the ability to MIDI map and automate just about any item on the computer's screen, continuous controllers can be called into play to offer a mind boggling mass of sonic control. Just a few examples: turning specific audio channels on and off (great for DJs and remixing on the fly), sweeping a filter's frequency or resonance values, changing an oscillator's waveform in real time, adjusting the amplitude envelope's attack value, or changing the wet/dry mix ratio on a reverb unit. With today's software, nearly anything is possible with control-change messages.

There are eight knobs and four sliders on the Trigger Finger that are just begging for clever assignments

At first blush, it seems as though the Trigger Finger has more flexibility in the control-change department. After all, there are eight knobs and four sliders on the Trigger Finger that are just begging for clever assignments, while the Korg has only two assignable knobs.

But wait. The unique feature of the padKONTROL is the x-y pad on the lower left-hand side of the machine. Based on Korg's well-known Kaos pad, you can program one controller on the x-axis and a different controller on the y-axis. It's then a simple matter to actually control two aspects of a sound at the same time. Next to the x-y pad are three buttons: Hold, Flam, and Roll. When the Hold button is pressed, the values on the x-y pad are held until changed. When the Flam button is pressed, the flam volume and the flam interval (space between the notes) are automatically assigned to the x-y axis. Press the Roll button, and the roll expression and roll speed are assigned to the x-y axis. It's also possible to have the Roll and the Flam buttons active at the same time.

Korg's pads are velocity sensitive, but they are not pressure sensitive. In addition to programming notes from the pads, you can assign a control change message to any pad. When programming control messages from pads, you determine the control change number, the MIDI channel, the switch type (momentary or toggle), the on value, and the release value. Using these features, it's easy to jump from one value to the next – for example, changing the stereo position of a sound from the left to the right channel, or

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QUICK TIPS

BY GREG RULE

Drumming Mixing And Editing

When it comes to manipulating drum tracks, nobody does it better than BT (a.k.a Brian Transeau), the Guinness World Record holder for the most edits in a recorded piece of music (6,178 to be precise). His audio-production and editing skills are legendary, but don't let that scare you: BT's methods, insanely complex as they are at times, can be applied to a wide variety of styles and recording situations. Here are three drum-related mixing tips and tricks from the master himself.

EQ

Always shelve the snare, hi-hat, room mikes, and cymbals between 110Hz and 150Hz. A 12db shelf works great, because you don't want a wall. It is revolutionary how good this sounds in mixing drums.

COMPRESSION

Always compress before you time-correct your drum tracks. That way, when you are fixing attack transients, they are unaffected by the compression. It makes for ten times the punch in drum sounds. Try compressing everything – acoustic drums, electronics, percussion, and so on.

Also try as many compressors as you can. BT recommends compressing not just each individual track but the mix as a whole through multiple compressors, and then comping the different compressed tracks. For example, let's say you're using two compressors: an 1176 and a Distressor. If the bass drum sounds particularly good through the 1176 and the snare sounds great through the Distressor, create two stereo mixes: one of all the drums through the 1176 (minus the snare), and one through the Distressor (minus the kick), and you're rocking.

SIDE-CHAINING

Use a side-chain key gate to trigger a sine wave with a .75- to 1.5-second decay tuned to the lowest root of the song – usually between 30Hz and 80Hz. It should be side-chained with the kick drum and mixed in soft. Compress the sine wave (with a gradual release envelope) with the kick drum before doing the whole mix. This will give live drums ass end for days!

The next projects in BT's queue are a new solo album, a side project called This Binary Universe, and film scores for *Catch And Release* (starring Jennifer Garner) and *Surveillance*. For more on BT, visit btmusic.com and myspace.com/mrbt.

changing the wet/dry mix from 20/80 to 80/20. When pads are set to toggle, the on and off values will be sent alternately each time the pad is played.

The Trigger Finger doesn't have an x-y pad, but each of the 16 pads is pressure sensitive as well as velocity sensitive. This means that a single pad is capable of sending a continuously variable stream of controller messages, not just jumping from one value to another. In fact, it's possible to program a single pad to send MIDI note information and controller information at the same time! If you're programming drums, bass, lead lines, or pads, you can use the continuous controller values to make subtle changes to the character of each note. This is a very cool feature and really makes the Trigger Finger stand out in terms of potential creativity.

ROUND WINNER: TRIGGER FINGER

ROUND FOUR: FRONT-PANEL PROGRAMMING

Both units let you program from the front panel as well as from dedicated GUI software. To program the Trigger Finger, you enter editing mode by pressing the Memory Recall and Prog/Bank

Change buttons at the same time. Once in edit mode, you tap the pad you want to program and use the eight knobs to determine specific values. Knob 1 sets the note number, knob 2 sets the continuous-controller number, knob 3 sets the velocity lock value, knob 4 selects the MIDI channel, knob 5 sets the program number, knobs 6 and 7 set the MSB and LSB values of the bank-change MIDI message, and knob 8 adjusts the MIDI channel used for the program/bank changes messages, making it possible to play a sound on one channel while sending a bank-change message on another channel. To save newly edited programming, you hold down the Memory Recall button while pressing the pad that corresponds to the memory location you wish to save. For example, selecting pad 4 will save your edits to memory location 4. All in all, I found that the programming was easy to understand, but setting exact values with the knobs was tricky. It often took several tries to get the exact value that I wanted, as the knobs are pretty sensitive and a small movement might make the value jump by three or four numbers.

To edit the padKONTOL, you first press the Setting button to move to the editing mode. Once there, you select the pad you want to program and select the Parameter Value button: note number/controller number, MIDI channel, switch function (momentary or toggle), MIDI Output, velocity curve or fixed velocity level, and the USB MIDI port (A or B). If you're programming a pad as a controller, you can also select the on/high value and the off/low. To make value changes to any of the parameters, you

WEIGH-IN DETAILS

	M-Audio's Trigger Finger	Korg's padKONTROL
MODEL		
DIMENSIONS	11" x 10" x 2.25", 2.3lbs.	12.4" x 9.2" x 2.2", 2.1lbs.
PRICE	$249.95	$299.97
MIDI	USB, MIDI-Out	USB, MIDI-Out, MIDI-In
PADS	16 velocity/pressure sensitive pads, 8 velocity curves, fixed velocity	16 velocity sensitive pads, 8 velocity curves, fixed velocity, pedal input
CONTROLS	4 sliders, 8 knobs	2 knobs, x-y axis pad
PRESETS	16 user presets	16 user presets
SOFTWARE	Enigma	padKONTROL Editor Librarian

I've been at this MIDI game for many years, and I welcome the ability to use a single USB device to help with my drum programming

turn the rotary encoder knob. Since the rotary encoder has a tactile *click* for each value change, it's very quick and easy to dial in. To save your edits, you have to press Write and then Scene. Finally, dial in the scene number and press Enter.

ROUND WINNER: DRAW

ROUND FIVE: SOFTWARE PROGRAMMING

Both machines come with proprietary programming software. The Trigger Finger uses M-Audio's Enigma, while the padKONTROL uses Korg's padKONTROL Editor Librarian.

Programming the Trigger Finger with the Enigma software is just a little bit confusing at first. Before programming a note number for a pad, you must first set a continuous controller setting to #147. Once set, you can then assign a note number and a MIDI channel, one of the velocity curves, or a constant velocity. I see no reason why programming a note number requires setting a controller number. In addition, when you want a pad to operate in toggle mode, you set the controller number to 148. While it's not that tough to get used to this particular procedure, it is counterintuitive. To be fair, Trigger Finger's ability to sense both velocity and pressure requires a software-based editor that is perhaps more complex and comprehensive. One bright note is the vast library of nearly 100 controllers, note numbers, MMC, and instrument specific controller numbers included in a huge on-screen library. Programming by dragging these library elements to the pads, knobs, and faders is infinitely easier than programming from scratch!

Korg's on-screen programming is a breeze. The keyboard only lets you program notes A0 through C8, but you can reach the extreme ranges of MIDI note numbers by simply typing in the note you want the pad to send. My note numbers were one octave off from what might be expected. It should be noted that on the padKONTROL, middle C is designated at C4 rather than C3 (both are actually accepted, however C3 is more common). Other than that, programming padKONTROL from my computer was quick and easy.

ROUND WINNER: DRAW

AND THE WINNER IS ...

Both machines have their individual talents, strengths, and skills. If you're looking for a great USB drum controller with quick and easy programming, a clean user interface, and the ability to manage two controller axis at one time, your best bet is the padKONTROL. If you think that you might make use of the built-in MIDI-USB interface, the padKONTROL is your only choice. The back-lit buttons look cool, the programming is rock solid, and the ability to quickly control flams and rolls is unique.

If you want the absolute greatest flexibility in being able to send note numbers and a large number of controller messages at the same time, the Trigger Finger is the machine for you. With 28 potential control messages available in a single preset, it's easy to automate many parts of your home studio.

I've been at this MIDI game for many years, and I welcome the ability to use a single USB device to help with my drum programming and to automate and control much of my music software. The potential of these new machines, to say nothing of their low cost and portability (both are about two bills on the street), makes it a no-brainer to add one to your electronic percussion tool box. So what are you waiting for? Buy one and put it to work. You'll be glad you did!