» REVIEWS: PROPELLERHEAD RECORD | DEVINE MACHINE KRISHNA SYNTH | AND MORE

NOVEMBER 2009

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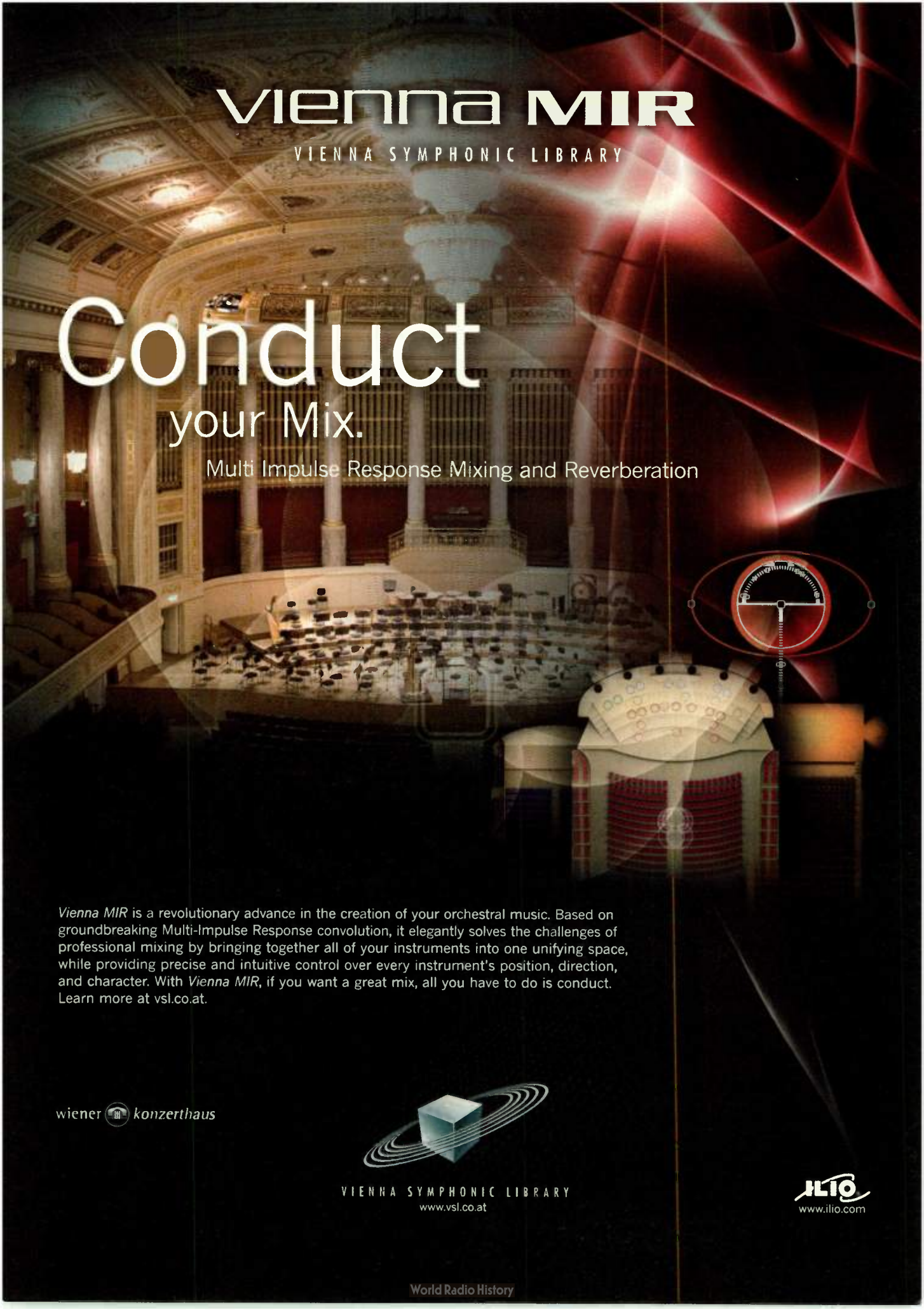

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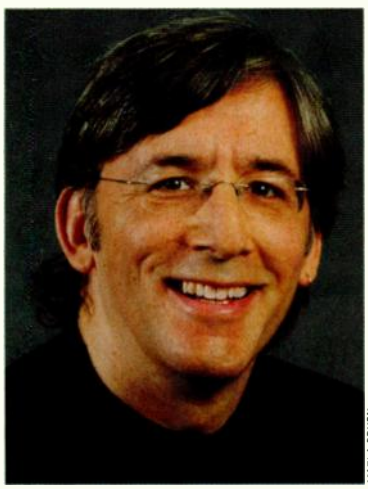
Awash In Possibilities

When you consider the capabilities of the current generation of digital audio sequencers, it's hard not to be awed. An example of a feature that really impresses me is the software mixing board in Propellerhead's brand-new Record application (reviewed on page 44 of this issue). It's an SSL emulation that, to me, comes closer than any other program to date in capturing the vibe of working on a large-format mixer.

Another one of Record's stand-out capabilities is its time-stretching feature, which allows you to change tempo on your entire mix by large amounts, in real time, without any noticeable artifacts.

But it's not just Record. The current crop of DAWs includes such stellar releases as Digidesign Pro Tools 8, Steinberg Cubase 5, Ableton Live 8, Sony Acid Pro 7 and Apple Logic Pro 9. Recently, MOTU Digital Performer 7, Image Line FL Studio 9 and Cakewalk SONAR 8.5 were introduced, all promising substantial additions to their respective feature sets. Although no program will offer everything you want—and none are without drawbacks—they all give you unprecedented production capabilities. Your home-recording counterpart from 10 years ago would be incredibly envious of the tools you have available today. Your peer from 20 years ago, toiling away on a 4-track cassette deck, would be totally blown away.



MARLA COHEN

Between amp models, built-in synths and samplers, pitch correction, beat making, time stretching, incredible mix automation, integration of outboard processors and instruments, pinpoint editing, vintage-processor emulations, high-quality notation editing and lots more, we are awash in possibilities. Perhaps the only downside to having so many options at your fingertips is trying to keep your workflow simplified.

Of course, having access to these amazing programs doesn't necessarily translate to making good music. The old, "garbage in, garbage out" cliché applies, as it always does and always will. You've still got to supply the songwriting, musicianship and engineering skills if you want to make good music. Still, it's hard not to feel like a kid in a candy store when you peruse the features of the new generation of DAWs.

Something else that's new is *The Robair Report*, which you can find in the blog section of emusician.com. Written by none other than former *EM* editor Gino Robair, it will regularly present his take on a range of topics relating to personal-studio recording, synthesizers and more. It's sure to be entertaining and at times controversial. I worked with Gino for many years, and I can tell you that he's very knowledgeable about music technology and unafraid to speak his mind, so you'll definitely want to check this one out.

Mike Levine
Editor

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EDITOR/SENIOR MEDIA PRODUCER Mike Levine, mlevine@emusician.com
SENIOR EDITOR Geary Yelton, gyelton@emusician.com
ASSOCIATE EDITOR Len Sasso, emeditorial@emusician.com
EDITORIAL DIRECTOR Tom Kenny, Tom.Kenny@penton.com
GROUP MANAGING EDITOR Sarah Benzuly, Sarah.Benzuly@penton.com
CONTRIBUTING EDITORS Gino Robair, Michael Cooper, Marty Cutler, Dennis Miller, Larry the O, George Petersen, Scott Wilkinson
ONLINE AUDIENCE DEVELOPMENT MANAGER Brad Erpelding, Brad.Erpelding@penton.com
SENIOR ART DIRECTOR Dmitry Panich, Dmitry.Panich@penton.com
ART DIRECTOR Isabelle Pantazis, Isabelle.Pantazis@penton.com
INFORMATIONAL GRAPHICS Chuck Dahmer, chuckd@chuckdahmer.com

SENIOR VICE PRESIDENT Kim Paulsen, Kim.Paulsen@penton.com
VICE PRESIDENT Wayne Madden, Wayne.Madden@penton.com
ASSOCIATE PUBLISHER Mark Holland, Mark.Holland@penton.com
ONLINE SALES DEVELOPMENT DIRECTOR Angie Gates, Angie.Gates@penton.com
WESTERN SALES DIRECTOR Erika Lopez, Erika.Lopez@penton.com
EASTERN SALES DIRECTOR Paul Leifer, pleifer@aol.com
CONTENT DIRECTOR, ONLINE & EVENTS Erin Hutton, Erin.Hutton@penton.com
LIST RENTAL Marie Briganti, (845) 732-7054, marie.briganti@walterkarl.infousa.com
MARKETING DIRECTOR Kirby Asplund, Kirby.Asplund@penton.com
MARKETING COORDINATOR Tyler Reed, Tyler.Reed@penton.com
CLASSIFIEDS SALES MANAGER Julie Dahlstrom, Julie.Dahlstrom@penton.com
PRODUCTION MANAGER Liz Turner, Liz.Turner@penton.com

Penton Media

CHIEF EXECUTIVE OFFICER Sharon Rowlands, Sharon.Rowlands@penton.com
CHIEF FINANCIAL OFFICER/EXECUTIVE VICE PRESIDENT Jean Clifton, Jean.Clifton@penton.com
EDITORIAL, ADVERTISING, AND BUSINESS OFFICES 6400 Hollis St., Suite 12, Emeryville, CA 94608, USA, (510) 653-3307
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FRONTPANEL

Download of the Month

Genuine Soundware ShakePad

By Len Sasso

ShakePad (Mac/Win, $30 approx.) is an AU and VST effects plug-in designed for hands-on control. It features 50 stereo effects presets and a prominent *xy*-controller to manipulate two parameters for the chosen preset. You can work the controller with your mouse or assign it to a pair of MIDI controllers or to a 2-D MIDI joystick or pad. In addition, you get Wet/Dry and Release sliders and a Hold button. When Hold is on, the *xy*-controller stays where you leave it; otherwise, it drifts back to the lower-left corner (bypass) or to any location you specify by right-clicking with the mouse. The rate of drift is set by the Release slider.

The 50 effects are well chosen for this type of control. You get lots of filters and time-based effects (phasers, flangers, delay, echo and loopback). You'll also find variations on distortion, panning and gating. Many of the presets pair an effect with either delay or phasing. And for good measure, there are a few effects that generate sound on their own—Theremin, warbling oscillators, siren and a chanting voice. With a little automation or great digital dexterity, you can make the chant accompany your melody (see **Web Clip 1**).

The various flavors of distortion, especially coupled with delay, work well with percussion. For those, the snap-back feature (Hold off) comes in handy. Set up MIDI control of the Release slider, then click and release anywhere in the *xy*-controller graphic and change the release time for each click (see **Web Clip 2**). Also try different return locations.

ONLINE BONUS MATERIAL

Of course, you're not limited to one instance of ShakePad. **Web Clip 3** uses eighth-note-triplet gating followed by steep resonant-lowpass filtering. You can purchase ShakePad or download a noise-spewing demo from the Genuine Soundware Website (genuinesoundware.com). It's well-worth checking out.

OPTION-CLICK

By David Battino

Text Fiend

Discover unexpected features and freeware in Windows

Knobs are nice, but you can often use text commands to make audio programs do things they normally won't. For example, Sound Recorder in Windows Vista and Windows 7 saves all recordings as lossy, 96kbps WMA files—unless you launch it from the command line. Click Start, Run and enter soundrecorder/file filename.wav, and the program will launch. When you go to save your recording, it will be a 16-bit WAV.

The command MMSYS.CPL opens the Sound control panel. I assigned it to Ctrl-Alt-S with AutoHotKey (autohotkey.com, free)—*much* easier than groping for the tiny speaker icon in the system tray.

I saved the Sound Recorder command as a shortcut so I can launch the program in high-res mode by double-clicking the icon.

Typing shell:sendto opens the SendTo folder, where you can put shortcuts to other folders and programs. I added a shortcut to the 1by1 player (mpesch3.de1.cc, free) so I can quickly preview audio files by right-clicking them.

—David Battino, Batmosphere.com

This Month on Emusician.com

GUEST BLOGGER: MATTHEW RYAN

The Nashville-based singer/songwriter offers insights into his recording process.

BEHIND THE FAUXHARMONIC ORCHESTRA

Read an exclusive interview with conductor Paul Henry Smith, who talks about his career, must-have gear and more.

THIS MONTH'S SOUNDTRACK

By Mike Levine

These CDs encompass a range of production methods and musical styles, including heavy-metal electronic music, acoustic indie rock, avant-garde singer/songwriter tracks and Pakistani-influenced pop.

JAKE BRUFFMAN

MOLDOVER: *MOLDOVER* **(MOLDOVER)**
With progressive heavy-metal electronica played on software instruments, guitars and a circuit-bent Speak & Spell—and packaging that includes an optical Theremin on a custom circuit board—the debut album by self-described controllerist Moldover rocks.

—Geary Yelton

COURTESY VINELAND RECORDS

THE ECHO FALLS: *THE ECHO FALLS* **(VINELAND RECORDS)**
This San Francisco Bay Area trio's debut CD, much of which was recorded on a laptop, features intelligent, acoustic-tinged indie rock. The band includes guitarist/vocalist Alex Mandel (who has scored short films for Pixar), drummer Dave Brandt and bassist David Arend.

TAKEN BY TREES: *EAST OF EDEN* **(ROUGH TRADE)**
Taken By Trees is the project of singer Victoria Bergsman. She and guitarist Andreas Söderström traveled through Pakistan and recorded with local Sufi musicians, whose ethereal and haunting instrumental tracks, combined with Bergsman's vocals and Söderström's guitars, make for an original and intriguing blend.

COURTESY ROUGH TRADE

JENNY MARTELL

DAVID SYLVIAN: *MANAFON* **(SAMADHISOUND)**
Sylvian, a recording artist with a long and varied musical history, serves up a collection of songs that feature his present, resonant vocals contrasted with minimalist backing tracks that often lean toward dissonance. They were recorded by a group of esteemed instrumentalists (mostly acoustic), who were encouraged to improvise what Slyvian terms "a completely modern kind of chamber music."

DONALD MILNE

FIVE TIMES AUGUST: *LIFE AS A SONG* **(SEVEN PLACES MUSIC)**
Five Times August (aka Brad Skistimas) is an independent artist who has had success building his own fanbase and licensing his music to TV. He even got his CDs into Walmart, a first for an independent artist. For this project, he collaborated with producer Andy Zulla (Kelly Clarkson and Jessica Simpson), and the result is a set of very catchy and well-produced acoustic pop.

Hear excerpts from the music of many of this month's artists in the Online Bonus Material section at emusician.com.

ONLINE BONUS MATERIAL

EM CAST: CHRIS LORD-ALGE

[illegible] as the legendary mix engineer talks shop.

FEATURED VIDEO

Nicolas Godin and Jean-Benoit Dunckel of AIR talk about the production and songwriting process that went into the making of *Love 2*, their new CD.

WHAT'S NEW

By Len Sasso

BUNDLE OF JOY

NATIVE INSTRUMENTS KOMPLETE 6

Native Instruments (native-instruments.com) has just released Komplete 6 (Mac/Win; $559 MSRP, $169 update). The bundle comprises all of Native Instruments' software instruments and effects—Battery 3, FM8, Massive and Reaktor 5—as well as such important upgrades as Absynth 5, Kontakt 4 and Guitar Rig 4 Pro. Akoustik Piano, B4 II and Pro-53 have been discontinued, and Elektrik Piano is now included in Komplete 6 as a Kontakt 4 instrument. The 60GB collection includes more than 7,000 presets accessible with Native Instruments' categorized browser technology. For a limited time, owners of any version of Kontakt or Reaktor can upgrade to Komplete 6 for $339.

CAKEWALK SONAR 8.5 PRODUCER

Cakewalk (cakewalk.com) SONAR 8.5 Producer (Win; $499 MSRP, $99 upgrade) brings a host of new features to the table. The cell-based Matrix view provides live triggering of audio and MIDI clips for performance and nonlinear arranging. AudioSnap 2 time-shifting and audio-quantizing technology offers enhanced performance and improved workflow. Session Drummer 3 sports a new look and plenty of new kits and patterns. You'll find new vocal and percussion effects-processor strips, powerful step sequencing with Step Sequencer 2 and an arpeggiator integrated into each track. Under-the-hood improvements include hot-swapping of devices without restarting, REX file support and BitBridge XR technology for hosting 32-bit plug-ins in 64-bit environments. And SONAR 8.5 Producer is Windows 7–ready.

MORE PING FOR THE BUCK

DAVE SMITH INSTRUMENTS TETRA

QUATTRO MOPHO

Things just got better for fans of the Dave Smith Instruments sound (davesmithinstruments.com). Tetra ($799.99) offers four Mophos in a slightly larger box for less than twice Mopho's price. Configure Tetra as a four-voice poly synth (like a mini-Prophet) or as a multitimbral synth with four separate outputs. You can link Tetras to use them as voice expanders for Prophets or other Tetras. All parameters are accessible with the four assignable rotary encoders, and dedicated knobs serve common performance parameters. The unit ships with software editors for Mac OS and Windows.

D16 TORAVERB

In developing Toraverb (Mac/Win, $50 approximate), plug-in designer D16 (d16.pl) ventured outside the box, eschewing space emulation (spring, room, hall, plate, etc.) in favor of sound design. The AU and VST effect offers high-quality diffusing algorithms using allpass filters to minimize flutter-echo effects that often muddy the reverb tail. Toraverb's reflections algorithms employ crosstalk between stereo channels for enhanced spatial realism. Independent parametric EQs for early and late reflections give you precise control of the reverb character. You can further sculpt the reverb tail with the modulation controls for the diffusion filters. For a different flavor, check out the demo at d16.pl.

REVERBERANT BEHAVIOR

FISHMAN AURA SPECTRUM DI

Bring that studio-miked sound to your guitar pickups with Fishman's (fishman.com) Aura Acoustic Imaging technology. The Aura Spectrum DI ($329.99) holds 128 preloaded images of acoustic instruments, along with 16 user-configurable images that you download with the included Aura Image Gallery software. The ruggedly constructed all-metal unit is powered with a 9-volt battery or (optional) adapter, and it features balanced XLR DI, mono ¼-inch I/O, 24-bit conversion and 32-bit processing. Extras include 3-band EQ, one-knob compression, anti-feedback suppression, automatic ground lift and a built-in chromatic tuner.

SPIFF UP YOUR IMAGE

Sound Advice

Producer Loops *Ambient Glitch 1*

Producer Loops (producerloops.com) moves to the dark side with the release of *Ambient Glitch 1* ($25 approximate, download). The 1.2GB collection of 24-bit, 44.1kHz ACIDized WAV and Apple Loops files will work in a variety of genres, including gothic, dubstep, hip-hop, grime and techno. Most loops are between 90 and 120 bpm, with faster and slower outliers. In adding *ambient* to the name, developer Jeff Rhodes notes, "*Glitch* doesn't have to be dizzying and headache-inducing at every step." He uses and misuses bit-crushing, beat-chopping, heavy compression and weird percussive artifacts to deliver the glitch message without going over the top.

Garritan *GPO 4*

Garritan's (garritan.com) flagship, affordable orchestral library receives a major facelift and content upgrade in *GPO 4* (Mac/Win; $149.95 download, $49.95 upgrade). This version employs the stand-alone and plug-in Aria player that Garritan has developed with Plogue Art et Technologie. Aria features auto-legato for rendering legato transitions for overlapping notes, integrated ambient reverb and stereo-stage imaging, Scala tuning support and MIDI recording (stand-alone version only). The current release is download-only and weighs in at 955 MB, which decompresses to 2 GB. New additions include brass and ensemble presets from Project SAM and extended-range choirs.

Soniccouture *Skiddaw Stones*

In keeping with its tradition of publishing meticulously sampled libraries of little-known instruments, Soniccouture (soniccouture.com) offers its oldest instrument to date. *Skiddaw Stones* ($79 download, $89 boxed) is a mallet instrument dating from 1840 whose tone bars are fashioned from rare hornfels stone from Skiddaw mountain in Cumbria, England. Soniccouture was able to record the stones from the original instrument, which was constructed over 13 years by Joseph Richardson and is now housed in the Keswick Museum. The result is a 2.5GB sampler library formatted for Native Instruments Kontakt 2/3, Apple EXS24 and Ableton Live. Separate sampler instruments were constructed using rubber and wooden mallets, and scrapes.

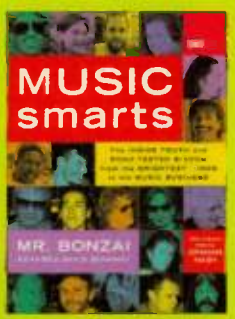
Get Smart

FaderPro *The Art of the Remix*

Producers of video-based online and DVD training courses FaderPro (faderpro.com) and Auraleo (auraleo.com) have released *The Art of the Remix* ($89.99 streaming, $99.99 with DVD). Authors Vincent Di Pasquale, Steven Lee and Charles Dye base the course on Di Pasquale and Lee's remix of Nadia Ali's hit "Crash and Burn." They start by dissecting the original with emphasis on the importance of tempo. Sections cover time-stretching vocals, editing vocals, the beat and bass foundation, building the arrangement, mixing and final passes. The course runs approximately three hours and includes Logic Pro source files.

Hal Leonard *Music Smarts*

Hal Leonard (halleonard.com) calls Berklee Press' *Music Smarts* ($14.99) "a celebration of what it means to make music." The book brings together 600 quotations from musicians and artists reflecting on their influences, heroes and performances as transcribed by renowned journalist Mr. Bonzai (mrbonzai.com). Contributors George Martin, Carlos Santana, Tom Petty, Brian Wilson, k.d. lang and many others give you a behind-the-scenes look at all aspects of music-making, and the book delivers a visual who's who of the industry, complete with headshots.



Course Technology PTR *Becoming a Synthesizer Wizard*

If you have more synths than you know what to do with or how to do it, Simon Cann will get you straight in *Becoming a Synthesizer Wizard: From Presets to Power User* ($34.99) from Course Technology PTR (courseptr.com). Starting with the basics of digital audio and software synthesis and programming, the book takes you through the modules and interactions common to all synths: sound sources, filters, effects, modulators and global controls. The final chapter, "Creating Sounds," takes you beyond technique to the art of synth programming. The examples use readily available soft synths, and the principles covered apply across all synths and platforms.

BANG FOR YOUR BUCK

SONIVOX SOUNDSTAGE

Sonivox (sonivoxmi.com) SoundStage (Mac/Win, $99) brings more than 200 instruments, sound effects and drum kits to your desktop. The content, programmed by company founder Jennifer Hruska, roughly follows the Roland extended General MIDI specification (GM GS) to give you a complete music production library in an affordable and CPU-efficient package. The 1GB download delivers VST, AU, RTAS and stand-alone versions of SoundStage in Sonivox's proprietary DVI format. Its basic set of synth controls is augmented by four effects—reverb, EQ, chorus and delay—and you can save your own tweaks to expand on the factory sound set.

PASS THE BOTTLE

AVANT ELECTRONICS AVANTONE BV-1

The first of Avant Electronics' (avantelectronics.com) new high-end mic series, the Avantone BV-1 Bottle Mic ($999 MSRP) complements the company's popular CV-12. The BV-1 is designed for vocals (lead and background), as well as acoustic and electric instruments across the sonic spectrum. It features premium components including a hand-selected 6072A tube and a custom-designed 3-micron, 34mm dual capsule. The vintage-style power supply supports nine selectable patterns, and the mic has separate -10dB and 80Hz roll-off switches. The BV-1 was vetted through exhaustive real-world testing by industry professionals. The package includes a detachable pop filter, a 15-foot Gotham GAC-7 cable and Switchcraft nickel XLR connectors. em

Record those pure, uncomplicated moments of creation with an **Olympus LS-11 Linear PCM Recorder.** Capture the lyrics, riffs, melodies and other stray musical thoughts running around your brain in superior-to-CD-quality sound. The 8GB of internal memory give you plenty of space to create a rough draft of your music. Instantly listen to everything you've written with two onboard speakers. So before your songs start their long journey, take a minute to appreciate what you and your LS-11 did together.

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Home base: Los Angeles
DAW of choice: Digidesign Pro Tools HD3
Go-to mic: Neumann U87
Website: ourladypeace.net

DUSTIN RABIN

» Our Lady Peace, L-R: Duncan Coutts (bass), Jeremy Taggart (drums), Raine Maida (vocals) and Steve Mazur (guitar).

OLP Goes on Their Own

Our Lady Peace self-produces their latest album

Our Lady Peace's previous album took more than 1,000 days to record. For the band's frontman, Raine Maida, that was 1,000 days too many. Departing Columbia Records after seven studio releases and more than 5 million albums sold, the group decided to go it on their own, so Maida had a studio built in his house and turned it into the new band headquarters. The result: *Burn Burn* (Our Lady Peace, 2009), a self-produced set that many claim is the Canadian alt-rock band's most focused and complex to date.

By Kristi Kates

Taking their usual brand of melodic power ballads and bombastic radio rock a step further with more personal lyrics and perceptive production, Maida calls the record "my single greatest success" as a member of Our Lady Peace. "As a creative unit, we needed to get back to trusting our instincts without outside interference," he says.

» The song came to life when we reset the drum kit.

Maida's King Noise Recorder Studio in Los Angeles includes a control room, a lounge and a 30x40 professionally tuned live space that replicates an old 70s drum room. "It sounds amazing," he enthuses. The studio is built around an old Neve 50 Series console and Pro Tools HD3. Depending on the project and budget, he also has the option to mix down to a Studer ¼-inch 2-track "for added warmth."

Sessions for *Burn Burn* began by recording the bulk of each song live in the room. "We wanted to capture the energy of the instruments and mics bleeding into each other to avoid the record sounding too clean," Maida says. About 90 percent of the guitar work was live, and most of Maida's vocals were recorded in the control room with a Shure SM7, "the only mic I could hold in my hand that wouldn't distort."

Numeorus guitars were used on the project, with the electrics often going through Divided by 13 amps. Maida's acoustic of choice was his 1928 Martin, but he also used a Gibson 185; he found the clarity of the maple helped it sit well in the mix. Nord and Moog Voyager keyboards supplied many of the synth sounds—Maida says he still likes real keyboards as opposed to soft synths—while the live-room piano, a Yamaha C7, was miked with a stereo set of DPAs ("the truest, cleanest mics I've ever heard") and a Neumann U87 as a mono room mic compressed at an 8:1 ratio. Because most of the album was recorded live, only a few songs required extensive overdubbing. "Dreamland" was one of them (see **Web Clip 1**). "A big part of the verses in that song are hammered dulcimer," Maida says. "I tried everything to mike it, but ultimately a beat-up U87 sounded best as the large diaphragm covered the broad spectrum of the dulcimer. We quickly learned that Steve [Mazur, guitar] needed to hammer the instrument very lightly—I didn't want to compress it too much, so he ultimately had to control the dynamics." The track "Refuge" was also handled a little differently. "The original arrangement was boring," Maida says. "The song came to life when we reset the drum kit, adding a 14-inch tom left of the snare; this allowed Jeremy [Taggart] to play the rolling beat that drives the song (see **Web Clip 2**). I went with an [AKG] 451 for the extra tom, and also a mono Coles Ribbon mic, which gave the kit a very live, Keith Moon feel."

ONLINE BONUS MATERIAL

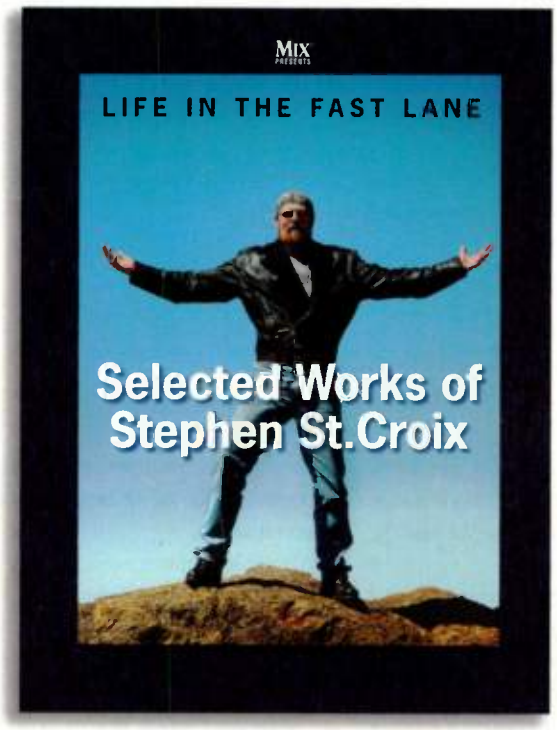
Maida says that while the band, which also includes bassist Duncan Coutts, has worked with "great producers and engineers" during their career, being able to do this album on their own gave the band a new life. "It re-attached us to our musical instincts and empowered us for the future." em

NEW FROM MIXBOOKS

Life in the Fast Lane

Selected Works of Stephen St.Croix

Stephen St.Croix inspired, provoked and educated *Mix* magazine's readers for 18 years in his one-of-a-kind column, "The Fast Lane." As an inventor, musician and engineer, St.Croix offered his audience a wealth of



knowledge and vision, as well as a Harley-riding rock-star attitude. Now, two years after his death, the editors of *Mix* have selected the best of St.Croix's columns, presented with never-before-seen photos, notes and drawings from his personal files. This book takes "The Fast Lane" beyond the pages of *Mix* and lends new insight into the life and mind of Stephen St.Croix.

To order your copy, go to www.mixbooks.com

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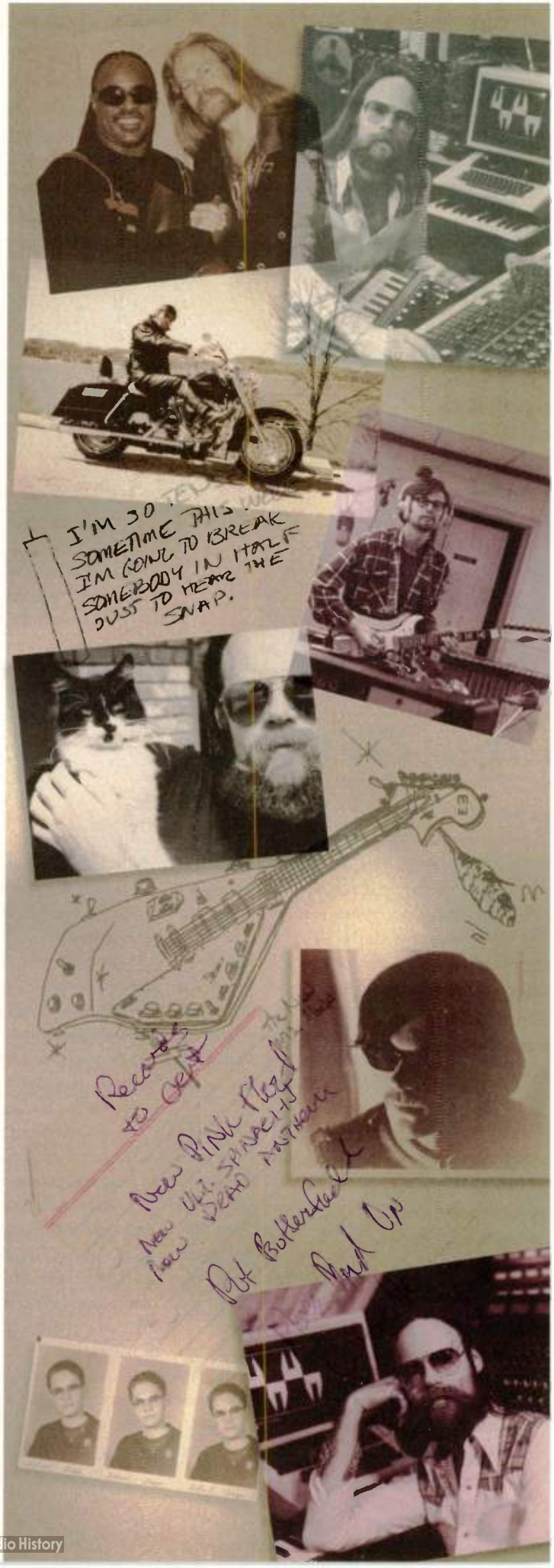
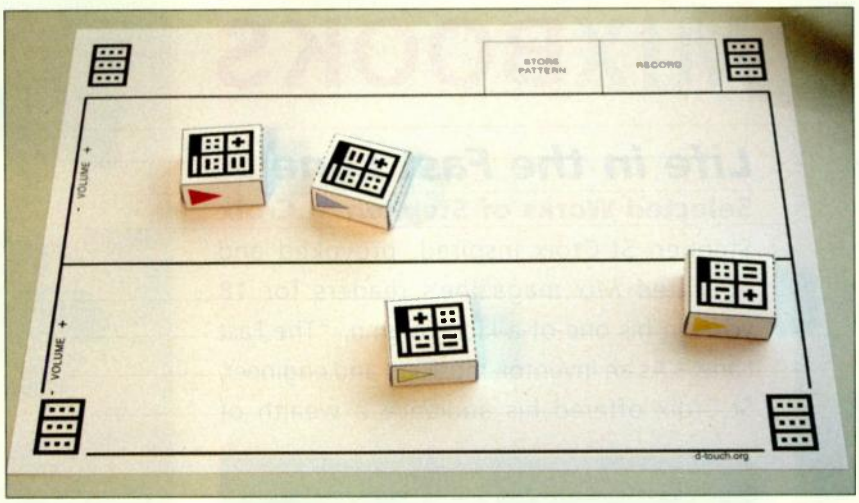




COURTESY D-TOUCH

With the d-touch tangible user interface, you place markers in the interactive area, a Webcam records an ongoing image of where they are, and that information is used to control a software sequencer or drum machine. Pictured here is the interactive area for the sequencer. Notice that the marker patterns are very similar, but they differ in the arrangement and orientation of the elements within each pattern. These differences allow the software to distinguish between them and associate different sounds with each one.

D.I.Y. FYI

Take part in a musical research project | By Scott Wilkinson

Have you ever wanted to participate in cutting-edge computer-music research? Well, here's your chance, and it's free. Several scientists in Switzerland and the Netherlands are studying human-computer interactions by enlisting as many people as possible to use a system they call d-touch (d-touch.org). All you need to join in is an Internet-connected computer (Windows or Mac OS X) with audio I/O, a separate Webcam (not the one built into many computers these days) and a printer.

The d-touch system is based on what's called a *tangible user interface*, in which physical objects are used to control and represent digital information. In this case, you place objects called *markers* on a printed surface called the *interactive area* and move them around. The Webcam captures an ongoing image of the markers in the interactive area, and the associated software interprets their positions to control a loop-based software sequencer or drum machine.

All you do is download the software and image files and mount the Webcam so that it points downward from a certain height. (It needs to see the entire interactive area.) Print the markers and interactive area on A4 or letter-sized paper, cut out the markers and then place them on the interactive area, which is directly below the Webcam. Everything, including complete instructions, is available for free from the d-touch Website.

Once you have everything assembled, the Webcam aligned with the interactive area and the software running, it's time to have some fun. The sequencer and drum machine use different interactive areas; let's take a look at the sequencer first (see the image above). You start by placing a marker in the surface's Record area and playing something into the computer's microphone. The sound you play is linked to the printed pattern on that marker, and different sounds can be linked to different patterns.

Next, place the marker in one of the two playback areas, and the sequencer plays the associated sound in a loop. The marker's horizontal position determines the sound's timing within the loop, the vertical position determines the sound's volume and the marker's rotation determines the sound's playback speed.

In addition, two special markers let you define a start and end point within the loop, and a tempo marker determines the length of the loop. Once you've created a loop, you can place a marker in the Store Pattern area, which links the entire loop to that marker. In this way, you can build ever more complex musical structures.

The drum machine's interactive area includes 11 rows, each corresponding to a different prerecorded sound. As with the sequencer, the horizontal positions of the markers in each row determine the timing of the corresponding sound.

While you're playing with the system, the position of each marker is recorded and sent to the d-touch team to aid in its research into tangible user interfaces. The Website emphasizes that no personal information is ever recorded, and if your data is published, the reference will be completely anonymous. The d-touch team says this is the first time such an experiment has been conducted with a large group of people, which should help determine, for example, if such an interface is useful in everyday activities beyond museum exhibits.

The d-touch Website has several video clips of live performances that feature the system. The resulting music is somewhat minimalist but very interesting nonetheless, and the process looks like a lot of fun. In fact, I might give it a try myself—all in the name of science, of course! em

CHANNEL STRIP SURFING

A look at five affordable mixer-channel plug-ins

By Markkus Rovito

Whether you were an early adopter of mixing in the box or you were dragged kicking and screaming into the console-free world, you're sure to appreciate the utility of channel strip plug-ins. These processors—which help simulate the signal path of a hardware mixing console—combine a compressor, equalizer and a gain stage, and they often tack on a gate, a limiter and more. While some people may consider them jacks of all trades but masters of none, I love the workflow efficiency they provide. Although the elite EQs and dynamics plug-ins on the market will cost you top dollar, you can find plenty of worthy software channel strips that are quite reasonably priced. It is that segment of the market where this comparison test is focused.

I limited my choices to those plug-ins that work without extra DSP hardware, are available for individual purchase and cost less than $350. Some of them are also offered as part of larger bundles. With the exception of the Mac-only Metric Halo ChannelStrip, these plug-ins run on both Mac and Windows, and all are AU/RTAS/VST-compatible except for the RTAS-only McDSP Channel G Compact.

I did my testing in Ableton Live 8 and/or Pro Tools LE 7.3.1 on a 4-core 3GHz Mac Pro running OS 10.5.7. To compare CPU usage, I used a 16-track session with an instance of each respective plug-in on each instrument track, as well as the master fader. The following are my reviews of the five products, presented in alphabetical order by manufacturer. The prices quoted here are direct from the manufacturers.

McDSP Channel G Compact Native

Like the URS Classic Console Strip, which I'll cover later in this story, the McDSP (mcdsp.com) Channel G Compact Native ($295, requires iLok) is a feature-reduced, less-CPU-intensive version of a premium plug-in—in this case, Channel G Native ($495). Channel G Compact doesn't feel like a limited version. It has a beautiful sound, a sharp interface (see Fig. 1) and a formidable amount of functionality.

Its signal path begins and ends with input and output gain knobs. A Filter section then gives you 12dB or 24dB low-cut and high-cut filters, which can be bypassed. Both filters have frequency knobs, and the filter input can be either the original or a sidechain input.

You can select the input for the compressor/limiter from the original signal, the compressor's own output, a sidechain input or the filter section output. Parameters include knee, attack, gain, ratio, release and threshold. The compressor can be bypassed or placed pre- or post-EQ. Each of the four EQ bands includes Q, frequency, gain and bypass controls, while the low and high bands have switches that toggle

between parametric and shelving EQ types. There are also six EQ modes from which you can choose. Music and Post modes are McDSP originals, and the others are based on popular consoles: Type E (SSL E Series), Type G (SSL G Series), Type N (a hybrid Neve setting) and Type A (API 550).

Channel G Compact includes two displays: One shows multiple level meters, and the other toggles between showing the internal signal path of your current settings and the frequency graphs of the comp/limiter, EQ and filter sections.

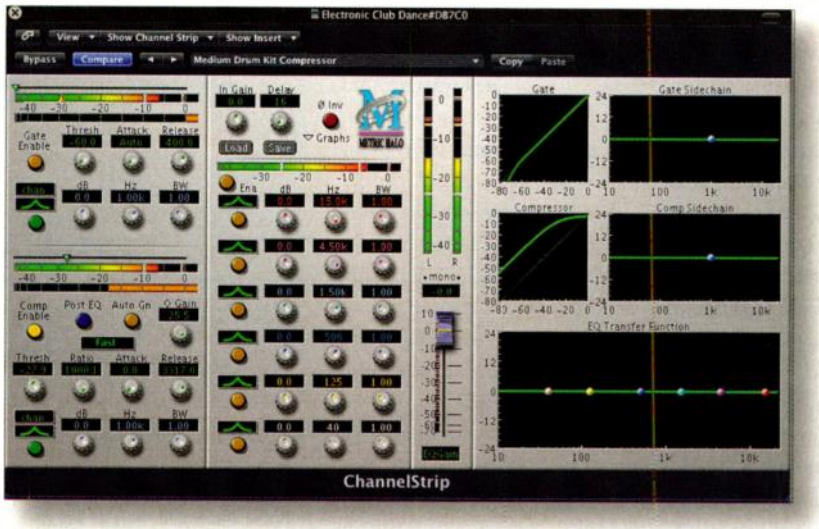


FIG. 2: Metric Halo ChannelStrip's generous 6-band EQ, Graphs section and formidable sound make it a well-rounded contender.

Although Channel G Compact comes with only 32 presets, they are well-organized into six folders and provide good inspiration for your own settings. I really liked loading a preset and then flicking between the EQ modes; the aggressive SSL modes contrast particularly well with the more subdued API setting. I also love the McDSP sound, and Channel G Compact keeps that sound well intact even though it's a limited version of another plug-in. This was one of my favorites of the bunch for placing over multitrack sessions (see **Web Clip 1**). A drawback is that this plug-in is RTAS-only so it can only be used in Digidesign Pro Tools.

Metric Halo ChannelStrip Native

The main components of ChannelStrip Native ($345, see **Fig. 2**) from Metric Halo (mhlabs.com) are an expander/gate, compressor and 6-band parametric EQ. There's also a 255-sample delay for time alignment or to compensate for other plug-ins in your mix.

The expander/gate has threshold, attack and release controls, as well as a selectable sidechain with gain, frequency and bandwidth controls for the single-band sidechain filter. ChannelStrip's compressor has threshold, ratio, attack and release controls, as well as a sidechain just like in the expander/gate. Additional controls let you place the compressor post-EQ in the chain, set auto or manual makeup gain and set the compression character to Smooth, Warm or Fast.

A generous 6-band parametric EQ gives you plenty of tone-shaping control. You get on/off buttons for each EQ band, as well as for the entire EQ section. Each band can be set to one of six filter types: parametric, high-cut, low-cut, high-shelf, low-shelf or bandpass. Finally, each band gets gain, frequency and bandwidth controls. A Graphs section shows you what the entire EQ curve looks like, making this section extremely powerful. Graphs also represent the gate and compressor sections.

Metric Halo providees 120 well-realized presets, including many for different types of drums, guitars and de-essing needs. There are also a few designed for specific genres, specialty instruments or for the master bus. Rather than a single alphabetically ordered list, I'd like to see presets organized in folders by type.

Sonically, ChannelStrip does not disappoint. I wouldn't say it has a distinctive sound, but rather that it boosts, cuts, beefs up and/or tones down where you need it to and then gets out of the way (see **Web Clip 2**). Its functionality strikes a nice balance between hardware-style simplicity and visual illustration. My complaint is that the interface feels dated, which isn't a purely aesthetic concern. Being easy on the eyes quite literally means that an interface design's colors, writing and graphics prevent eye strain, but ChannelStrip's tiny numbers and scrunched controls can be squint-inducing, even on a large, high-end monitor. And plug-ins with more state-of-the-art designs have passed by ChannelStrip in areas such as preset management. Thankfully, ChannelStrip's 39-page PDF manual gives you ample, clearly written instruction. *(Eds. Note: An Apple GarageBand-only version of this plug-in, with all the same functionality, is available for $89.)*

FIG. 1: With flexible signal routing, excellent EQ modes and high-end sound, McDSP Channel G Compact is hard to beat for Pro Tools LE users.

Nomad Factory Studio Channel SC-226

Putting forth a vintage vibe, both visually and sonically, Nomad Factory's (nomadfactory.com) Studio Channel SC-226 ($149, requires iLok; see Fig. 3) attempts to recreate classic tube-based analog compressor/EQ units. The stereo channel supports 24-bit, 192kHz audio and should appeal to those looking for straightforward-yet-still-powerful sound-shaping. SC-226 is also available as part of the company's Analog Signature Pack ($287), which includes Limiting Amplifier LM-662 and Program Equalizer EQP-4.

In addition to input and output level controls, SC-226 includes a brickwall limiter switch, phase-inverter switch, VU-style level meter and a Power (bypass) button. The compressor includes continuous knobs for threshold (0 to -70 dB) and ratio (1:1 to 10:1), and 13-position switches for attack (1 to 500 ms) and release (50 to 6,000 ms).

The 4-band EQ section is switchable from shelving to peaking types on the bass and treble bands. (The mid bands are always peaking.) Each of the four EQ bands has an on/off switch, a gain/cut amount knob and a 13-position Freq switch for determining the frequency for that EQ band. In addition, the EQ section as a whole has an optional high-pass filter with five settings and a switch for applying compression before or after the EQ.

The jewel of SC-226 is the 12AX7, a tube-emulation/saturation effect. When the effect is turned on, a slider controls the amount of tube emulation, which creates warmth and distortion based on vintage tube gear. This effect ranges from soft and subtle to quite harsh, and I really enjoyed using it. For a plug-in of this price, the sound of the 12AX7 and overall sound of SC-226 held up well. Although it's not comparable to classic vintage tube gear, it's a very usable emulation (see Web Clip 3).

SC-226 has only 21 presets, but it's quite simple to operate, and like all the plug-ins tested here, it lets you save and load your own settings. Some additional modern conveniences such as a Restore button to return to the originally loaded setting would enhance the user experience without compromising the old-school integrity of working more with your ear than with the aid of fancy graphic feedback.

FIG. 3: An attractive vintage approach, including a great tube-emulation effect, draws praise for Nomad Factory Studio Channel SC-226.

URS Classic Console Strip

The URS (ursplugins.com) Classic Console Strip ($199, requires iLok) is also based on vintage gear. It's sold individually, but it also comes bundled with the more CPU-intensive premium plug-in, Classic Console Strip Pro ($599.99). The Classic Console Strip is designed to recreate a feed-forward 1975 VCA gain-reduction amplifier with a transformer input.

FIG. 4: URS Classic Console Strip specifically models a feed-forward, 1975 VCA gain-reduction amplifier with a transformer input.

Classic Console Strip (see Fig. 4) has a very straightforward interface, which comprises a compressor and 3-band EQ with an output level control. The compressor has three fully adjustable knobs for threshold, ratio and gain makeup. Three LEDs—labeled A, B and C—set the compressor attack and release to Fast, Normal or Slow, respectively. You can bypass the compressor or set it for pre/post-EQ; the EQ section can also be bypassed. Each of the three EQ bands features a gain knob. The mid band also has a frequency knob, as well as a Q switch that toggles from Sharp to Wide Q. To change the frequency of the low and high EQ bands, there are three selectable LEDs: 80, 100 and 180 Hz for the low band, and 7.5, 10 and 12.5 kHz for the high band. Finally, there is a Phase Reverse control at the output level.

Many of Classic Console Strip's 46 presets are designed specifically for carving out places for multitracked drums in the mix, and certain other presets such as the Room and Overhead settings can work great for that as well. This plug-in takes the opposite approach of some of the others tested here, as the presets generally reduce the gain rather than boost it. In doing so, it tends to color the sound with a smooth, creamy veneer. You have ample opportunity to boost the gain back up, and when you do the result is usually a greater feeling of analog warmth and/or overdriven tubes (see Web Clip 4).

Wave Arts TrackPlug 5

By far the most complex and deeply programmable plug-in of the bunch, TrackPlug 5 ($199.95) from Wave Arts (wavearts.com) gives users who may be intimidated by it plenty

of usable and interchangeable preset settings to easily piece together a great signal path. TrackPlug 5 is also available as part of Wave Arts' Power Suite 5 ($599.95), which includes MasterVerb 5, FinalPlug 5, MultiDynamics 5 and Panorama 5.

In TrackPlug 5's very busy plug-in window (see Fig. 5), you get a gate, two compressors, EQ and a limiter on the output with optional brickwall function for both the high-end and low-end frequencies. Highlight one of the three dynamics modules—Gate, Comp 1 or Comp 2—to gain access to their controls. Each of those modules includes input and gain-reduction meters; a dynamics response display; and controls for threshold, ratio, attack, release, gain, mode, type, knee, look-ahead and sidechain.

The EQ section sports a frequency-response display that shows you the EQ curve, as well as the frequencies of the input audio. You can edit the EQ curve within the display and add or subtract EQ bands to give you 1 to 10 bands. Tabs under the display let you also see the single-band sidechain EQs for the gate and two compressors. Every EQ band has controls for frequency, height, width and bypass, and the EQ can apply pre- or post-compressors.

In addition to coming with 66 preset plug-in settings, each of the four main modules—EQ, Gate, Comp 1 and Comp 2—comes with a dozen or more of its own preset module settings. Each type of preset is individually loadable, tweakable and savable, so you can mix, match and roll your own perfect settings, an amazingly powerful feature. Most of the presets have been designed for drums, and with everything this plug-in can do there are some very inventive settings for carving out and emphasizing particular frequencies (see **Web Clip 5**). There are many other settings for specific instruments and full mixes, and again it would be nice if these were organized into folders instead of long vertical lists.

Other great options include A and B slots so you can load two sets of settings to compare back and forth, as well as an Undo button, which unfortunately has only one step of undo. With so much flexibility, this plug-in comes with the caveat of a steeper-than-average learning curve, but the 20-odd helpful pages on TrackPlug 5 in the Power Suite 5 PDF manual walk you through it.

The Envelope, Please

Overall, I found that TrackPlug 5 has the most elaborate and innovative programmability of the five plug-ins I tested, as well as the best user interface in terms of graphic feedback. When it comes to presets offered, TrackPlug 5 and ChannelStrip rank the highest with well more than 100 each, and they're are not only plentiful, but also well-programmed and immediately usable.

With their stripped-down, hardware-based designs, SC-226 and Classic Console Strip get the nod for ease of use, although Channel G Compact occupies the sweetest spot for a low learning curve as compared to a high degree of programmability.

Judging the sound of a dynamics plug-in is similar to judging the taste of wine: It's highly subjective and varied, and you don't hear significant quality differences until you get to the really high-priced products. While the plug-ins tested here don't fall into that category, they all sound good to me in their own ways. I can't deny my fondness for Channel G Compact's smooth, silky warmth and crisp, biting distortions. Classic Console Strip also has an understated beauty to its sound, and ChannelStrip gets the honorable mention.

When it comes to CPU usage, none of the plug-ins was exceptionally piggish, but ChannelStrip and TrackPlug 5 were essentially equally efficient. Both of those plug-ins increased my CPU load from 4 percent to 13 percent with 17 instances applied. The most intensive plug-in was Classic Console Strip, which increased the load from 4 percent to 19 percent with 17 instances applied. To be fair, URS claims Classic Console Strip makes big CPU improvements over its high-end Classic Console Strip Pro. So I ran the same test on the Pro version, and Classic Console Strip uses about half the CPU juice of its big brother.

If you're talking about overall value, SC-226 makes a good case—not just because it's the least expensive, but because it's a great workhorse plug-in with distinct tube emulation that you can use quickly for just about any purpose. However, if I had to choose a best value, I'd pick TrackPlug 5 because it combines a reasonable price with incredible flexibility and out-of-the-box usability.

Demo versions, often fully functional, are available for all these products so you can try before you buy. Whichever you choose, you'll have a go-to tool that you can adapt to your own particular style.

FIG. 5: Kitchen sink incoming! WaveArts TrackPlug 5 throws it all at you: gate, two compressors, 10-band EQ, 2-stage brickwall limiter and more.

Markkus Rovito is a drummer, bedroom music producer and writer/editor in San Francisco.

STUDIO SYMMETRY

Recording in their brand-new studio, AIR finds new levels of

By Sam Pryor

For years, the French duo AIR has navigated a demarcation zone between soft pop, experimental electronica, trendy lounge and brain-challenging prog rock. If you attended one of their late-'90s shows, you might have thought you'd stumbled into some Pink Floyd revivalist concert: Analog synths spewing mad layers of crunchy sound, a grandiose laser-light show, spastic drumming from premier sideman tub-thumper Joey Waronker, and the passively charming vocals of AIR principals Jean-Benoit Dunckel and Nicolas Godin.

ONLINE BONUS MATERIAL

But if you listened to the band's recordings back then, such as the 1988 *Moon Safari* (Astralwerks) or the 1997 debut EP, *Premiers Symptomes* (Astralwerks), you'd never imagine these musicians—raised playing bass (Godin) and keyboards (Dunckel), and only later learning to work with samplers and computers—are the same ones from the live show. Oozing Godin's coiled, shimmering bass lines that recalled some '70s porn flick, and accompanied by Dunckel's ethereal vocals, synthesizers and then-in-vogue trip-hop beats, *Premiers Symptomes* remains the duo's basic sonic blueprint to which they have added layers of texture and influence over the course of six albums (collaborating with Beck, Francoise Hardy, Jean Jacques-Perrey and Phoenix's Thomas Mars along the way).

AIR's new CD, *Love 2* (EMI, 2009), confirms Godin and Dunckel's mastery of their unique sonic world. The self-produced album, which combines the duo's trademark electronic sound with a spontaneous, live-performed vibe, was recorded in their newly constructed Atlas Studio—a large 40x70-foot room without separate vocal or drum booths. The gear they used included aan Apple Mac G5 running Digidesign Pro Tools; a bevy of period keyboards including an ARP Solina, Korg MS20, Sequential Circuits Prophet 5, Wurlitzer, Memorymoog, Moog Source and Minimoog; a classic Roland TR-808 drum machine; and some modern synths such as an Elektron Monomachine and a Manikin Memotron. They patched and mixed everything through a 24-channel Trident Series 65 console, and also employed a '70s-era Rogers drum set, various MoogerFooger processors and three Neumann U47 mics.

An ominous synth melody, distorted outerspace waves and vocoded vocals lift the opener, "Do the Joy," to Tangerine Dream-meets-Karen Carpenter–worthy heights. The sublime, bass-driven beat-box fury of "Love" follows, and then the buzzing experimentalism of "Be a Bee" and "Tropical Diseases." The latter brings to mind Pink Floyd collaborat-

(l-r) Dunckel and Godin.

PABLO ARROYO

creativity while deftly blending electronic and organic textures

ing with Keith Emerson, Ryuichi Sakamoto and some insane pan-flute player. "Sing Sang Sung" is *Love 2*'s overt play for pop perfection, with Dunckel's stacked vocals sounding like a choir of absurd Japanese pop stars, while sweet synths and gently strummed acoustic guitars lull the senses.

Recording at their own studio, Dunckel and Godin now have plenty of time for experimentation, resulting in tracks that combine exotic rhythms and analog synths, possibly pointing to the group's future. "Eat My Beat," "You Can Tell It to Everybody" and "African Violet" are largely instrumental tracks that blend lush keyboard sounds, jagged beats and Godin's melodic bass mastery into collage pieces as fascinating as Brian Wilson's *Pet Sounds* romanticism, yet as daring as any cutting-edge electronic beat fest.

I recently sat down with AIR at EMI headquarters in New York City and found the duo as in love with sound and style as they are with classic songwriting.

What did you achieve in your new studio that was unavailable to you in a commercial space?

Dunckel: Quality and texture of sound and the stereo image. This album is much more acoustic-sounding. It's a bit like the spirit of a jazz band that records together in a room and you have this incredible acoustic sound.

Godin: When we recorded at professional studios, we weren't thinking of the songs beforehand; the songs were born outside of the recording studio. It was always very slow. Now, for the first time, the songs were born *inside* the recording studio so they have more energy. We can create the songs with the drummer in the room. It's not like we have a demo, then we go into the studio. It's still that vibe, but we can create the recording in a very quiet, private place. And because it's our own studio, we don't have to worry about the clock. As a paradox, we worked super-fast. I was afraid if I had my own studio we would stay in there forever, and in fact it was the opposite. We just recorded so fast.

You didn't record multiple takes?

Godin: No, no. We did a small tour last fall, and the day before going on tour we recorded half of the tracks with Joey Waronker. When we returned, the next day we recorded the rest of the tracks. That's for 12 songs—the fastest album ever.

Is there is a discernable difference between the sound of *Love 2* and your last album,


Dunckel (left) and Godin (right) at a recent live performance

Pocket Symphony (Astralwerks, 2007)?

Dunckel: Yes because we are using more acoustic instruments. Drums, guitars and the Fender Mustang bass through the Ampeg SVT. We played a lot with the position of the microphones.

Godin: Before, we had to have instruments delivered. Now everything is just there. If we have an idea, we can record it on the spot so there is much more creativeness. *Pocket Symphony* was very ice and very cold-sounding—very Zen. For this one, we wanted something more messy.

How did you play with mic positioning?

Dunckel: We had two Neumann U47s for guitar—one on the amp and the other to talk back to the control room—but we ended up using both mics to record the amp. Because the one mic was very far from the amp, it created a small, but very deep stereo sound. We did that for "So Light Is Her Footfall."

Godin: When we worked with producer Nigel Godrich [on their 2004 Astralwerks album, *Talkie Walkie*, and on *Pocket Symphony*], if he wanted to record guitar, he would put the mic in front of the amp and then record it, and if it didn't sound good, he would just put it in a different spot. That was a cool rule that we worked with. We moved the U47 around.

Now that you have six albums under your belt and your own studio, do you have a general recording philosophy?

Dunckel: Yes, the idea that the mix is really important but the concept of having no mix is cool, as well. If the song is good, when you bring up the tracks on the mix console, they should sound good.

Godin: When we push Play, the song has to sound good—even if on the board there is a previous setup from another recording session. A good song should sound good whatever the mix is. Even if the bass is low and the ride cymbal is not perfect, a song should sound good at all times. We set up the Pro Tools session [on an Apple Power Mac G5], we load it, we push Play and it has to sound good. Maybe on the next album we won't mix it all, and we'll send it to mastering right away. We want all the levels set long before we mix.

The bass is more prominent and melodic than even in the past on *Love 2*.

Godin: After all these years, I realized I am a bass player. We come from the home studio world and we recorded many different instruments. The bass is where I express myself the most personally.

How did you record the bass for *Love 2*?

Godin: I recorded direct, then reamped through an Ampeg SVT. The mic is again a Neumann U47. I use old basses, like the Fender Mustang, into a Neve 33135 mic pre and a UREI 1176 compressor. We're not a band so we don't need a lot of mics. We used one or two Neumann U47s for each instrument for the whole record. We did that on *Moon Safari* as well, using an AKG C 414. We also used the Neumann for vocals and drums with a Royer R122 for cymbals. The treble of the U47 would feed back too much but the Royer has a really nice high treble. We have three U47s, all vintage.


Dunckel and Godin's workspace at Atlas Studios

PABLO ARROYO

Dunckel: It's a question of managing the tracks. If you have too many things, it's impossible to keep it clear. The drums are recorded with two or three mics, that's all. Half of the tracks are just one kick and one snare. We have our own set of drums that we bought in L.A.: an old Rogers kit with a Premier snare.

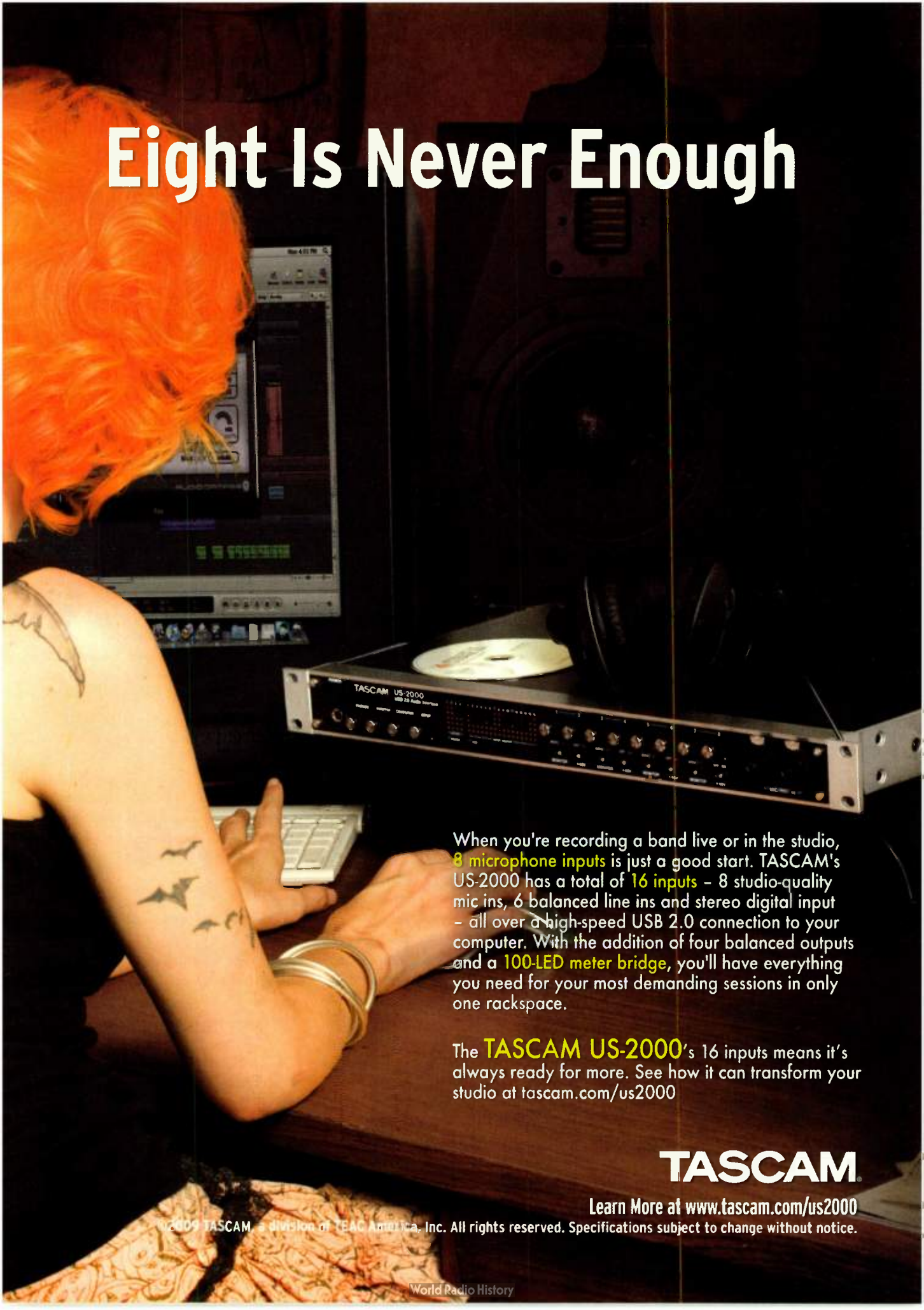
What was the signal path for the synths?

Dunckel: They are all direct except one solo off the Korg MS20. It's going through a delay pedal into an amp. We have a direct box to the Trident console, and the console to the computer.

Godin: The analog keyboards are superfat. The more you record them direct, the more you can feel the soul of the machine inside. The fatness of the keyboard. The direct box is just the classic green one that you see everywhere; it's generic and cheap. We mostly used the Korg MS20 and the Memotron. The string machine you hear is the Solina, which is the ARP String Ensemble in the U.S.

On many songs you literally stack the synths. Do you think of analog synths as different flavors or colors? How do you decide which to use in a given song?

Dunckel: We just try. It's a matter of randomness and chance. But we don't use soft synths. They're like data that you add on to your file. But when you really record the real thing,



something magical happens; it's not the same. For the music that we do, plug-ins don't work very well.

Godin: Plug-ins should be used in an experimental or avant garde way. You should use a plug-in for something that you can't do with analog equipment. We experimented with Nigel Godrich with some crazy plug-ins that were very modern.

Dunckel: But we would rather put our money on something that lasts. A plug-in will disappear when you change your computer. It's virtual, where we like to touch and play with our hands.

How did you record your first EP, *Premiers Symptomes*?

Godin: That was all live, but live in the loops. We didn't have a recorder; we had only a sampler. We would sample parts and loop them, and do some mutes to create a song structure. Then we bought a digital 8-track and started to write songs with a verse, chorus and a breakdown.

So you use Pro Tools primarily as a recording platform?

Godin: Yes. The keyboards go from the direct box to the Trident console. The preamps are going into the console mix but the gains are at zero. So you're hearing the sound amplification of the preamps. It goes to the console mix, then we press the groups and they go to the computer. The internal impedance of the keyboards going to the console mix is almost 0 dB. But maybe you can hear all that. Because of the impedance mismatch, you hear a delay because the computer is recording and playing at the same time.

On *Pocket Symphony*, you assigned different vocal tones to a controller keyboard to create an artificial vocal chorus. Did you do anything similar this time?

Godin: This was more traditional, but we did use vocoders, which we haven't used for nine years. We used to use vocoders live all the time, but it's been a long time since we used them in the studio. It was hard for us because we pushed them on *Moon Safari;* that is how the world knows us. Now they're back. The computer voice on "Do the Joy" was meant to recreate the computer voice in *Phantom of the Paradise*. We used actual vocoders such as the DigiTech Talker.

What was the signal chain for recording vocals?

Dunckel: The Neumann U47 into the Neve 33135 preamp to the Trident console to the computer. Between the Neve and the console is a UREI 1176 compressor.

How did you record the vocals in "Love"? They sound doubled with different attack settings or perhaps koto, which you used on *Pocket Symphony*.

Dunckel: The first part is a vocoder, stacked with four vocals doing the same loop. And on the second cycle there are six tracks of voices, with synths making a high note. I sang the part six times; we didn't cut and paste it in Pro Tools.

Even your vocals have an electronic sound. And Jean-Benoit's high-pitched voice adds to the effect.

Dunckel: We are robots! We were invented in a lab somewhere!

Love 2 is the first CD the band recorded in their new Atlas Studios in France.

PABLO ARROYO

While recording *Love 2*, Godin and Dunckel used only real keyboards and modules, no software instruments.

How were the forest-creature sounds in "Love" created?

Godin: Oh, we can't tell you that!

Do you favor a particular EQ setting on your vocals?

Dunckel: Our assistant adds some EQ from the Neve around 1 kHz. When I sing, I am on the edge. I sing between my natural voice and falsetto—that is very hard on the throat. The muscle is working a lot and it requires exercise. I feel I can really break my voice.

What was the most ambitious track on the album?

Dunckel: "Tropical Disease." It is complicated, a well-arranged piece of art. There is an intro and many parts, and several sounds that play the same melody together. We had to get good track textures all together. It was hard to play and hard to record.

Do you record bass and drums at the same time?

Godin: That is what is good about recording studios: It is spontaneous and it's there forever. Modern music is not only a matter of composition; it's a matter of having the magic take. As human beings, we all have magic moments. If you date a girl and go to a restaurant, at some point in the conversation something magical will happen. In music you play and suddenly something happens. If you record that, when people get the record, they can feel a sensation, they feel good. It's very important to have a good song, then after that you need to wait for the magic take. That's the advantage we have on classical

composers: They only have the power of paper and the score. But in the '50s and '60s, recording was a new element. When I buy music on iTunes now, I realize I need some life and personality. Most of the records don't have magic moments anymore. Even in electronic music—when all the sequencers are running together—at some point something is cooking, then you have to print.

Do you achieve that "magic" by stacking parts or do you and Joey record live together?

Godin: The drum and bass parts we recorded together; there were so many tempo changes it would have been impossible to replay after that. But it's more about suddenly recording something and it makes the magic happen. Jean and I don't need to be together. One is recording, one is operating the console. Even when you record in line with the synthesizer, at some point it's a time thing, at the tenth of a second you played the right note. It's f***ing good and magic. Like in "Be a Bee," the synth flams with the drums; we did it live, and it was crazy.

How do you know when a song is finished?

Godin: You can feel it when you're happy. And you know it's finished if when you add something it's too much, and if you take something away there is a lack of it. So that is the right balance.

How do you work out the contrast between experimental songs like "Night Hunter" with simpler pop songs like "Sing Sang Sung"?

Godin: That's alchemy. I love as much Led Zeppelin as [I love] easy listening. I love The Carpenters. There is spot in *The Pink Panther* where Claudine Longet sings a song; we love that. But we also love Queens of the Stone Age. We like all these influences on our albums.

What advice can you give to musicians who seek to emulate your sound but who also want to find their own style?

Godin: It is impossible to imitate us because we work on the edge, on a thin line. If you don't work on that thin line, you can do something very horrible. If you go more left or more right—it's very edgy what we do. The same tools in the wrong hands could be a disaster!

Dunckel: We are only searching for emotion. It's not a combination of instruments and sounds together. Writing AIR music is really important. The songs, the writing, the words. Even if they sound simple and simplistic.

Godin: We suffer a lot when we buy new records because the songwriting is not very good. We are very happy with MGMT and these new bands in Brooklyn like Vampire Weekend and Dirty Projectors. For the first time in a long time, a band like MGMT is here, a new cool thing has hit the charts. They have good songwriting. So for a new band, I would say learn how to write a good song. em

(For a video interview with Dunckel and Godin, and more information about the band's recording process, see the ***Online Bonus Material*** *at emusician.com.)*

Sam Pryor is a New York–based music journalist.

THE ULTIMATE One-Man Band

Paul Henry Smith's Fauxharmonic Orchestra takes symphonic sample-playback to a new level

By Paul D. Lehrman

The conductor lifts his hands and nods to the others on the stage. He lowers his right hand, and at the bottom of its arc, the orchestra begins to play the first movement of Beethoven's *Symphony No. 1*. The sound is lush and lovely. The blend between the first violins on the left, the cellos on the right and the winds upstage and in the center is perfect. The conductor is wearing an embroidered formal jacket that would not look out of place on the cover of *Sgt. Pepper's*. He is softly lit from beneath, giving him a bit of a mad-scientist aura. As he swings his arms and leans to the left and right, the tempo changes, the balances shift and the music comes to life.

But there is no orchestra—no violins, cellos or winds. The conductor is alone on the stage except for a computer operator, a computer display and five Bang & Olufsen BeoLab 5 towers arranged in a rectangle with one in the center. The sounds originate from a quad-core Mac Pro running Apple's Logic Pro, which is selecting from more than a million samples from Vienna Symphonic Library's *Vienna Instruments*. The conductor is wielding not a baton, but a copper-painted Nintendo Wii Remote (or Wiimote). Another Nintendo controller, a Balance Board, is picking up his body's movements.

Curtain Call

I'm at the world-premiere concert of the Fauxharmonic Orchestra, a six-year-old project by Paul Henry Smith, a conductor, composer and expert in MIDI orchestration (for more about Smith, see the **Online Bonus Material** at emusician.com). Along with about 150 other curious audience members, I'm in the huge Holy Name Church in a residential section of Boston. The reverberation would be overpowering for any acoustic instrument louder than a lute, but it happens to work very well tonight.

Before the Beethoven symphony, Smith and his machines do a short demonstration of how the computer responds to the Wiimote by playing a trifle by Johann II and Josef Strauss, the "Pizzicato Polka." The music follows his motions, speeding up and slowing down as real orchestral players would. We hear a loud pop before the music starts, and the flutes emit a few strange peeps during pauses. Hindemith's *Trauermusik* with violinist Noralee Walker is next, followed by two arias from a modern opera and another from a Handel oratorio, each featuring mezzo-soprano Tynan Davis. The blend between the live and sampled sound sources is quite convincing.

MATTHEW GARRETT

The Beethoven opens with the music stopping and starting again several times. In the last movement, the orchestra decides to skip a few bars. Smith is understandably a bit rattled but forges ahead, and the rest of the movement goes fine. Even if the orchestra and the conductor lose each other, the virtual musicians are always perfectly in sync with one another—which any conductor will tell you is a definite advantage over a real orchestra.

A lot is going on here, and not just inside the Mac. In an age of dwindling resources for arts organizations, is the Fauxharmonic a harbinger of the future? Will virtual-instrument technology supplant the real thing in live performance the way it has revolutionized recording? And is simulating a 19th-century musical institution the best use we can make of the brilliant and cheap new technologies that interactive games are making available to us?

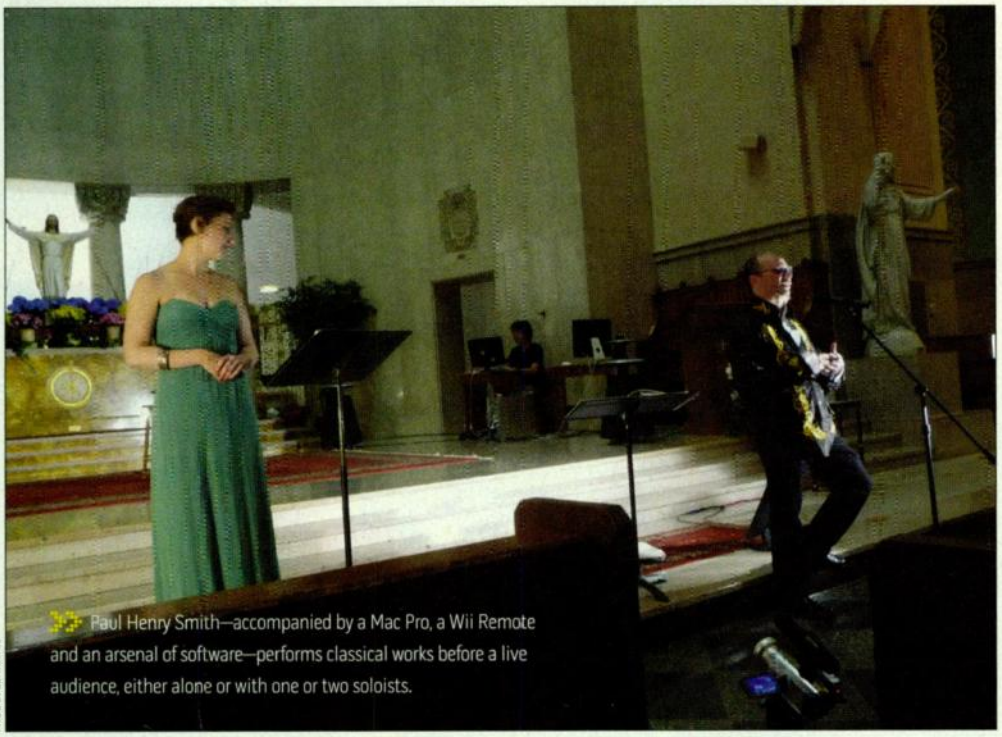
Nuts and Bolts

On a technical level, what Smith is doing is relatively straightforward. He uses a shareware program called OSCulator (see the March 2009 *EM* for more on using this software with the Wiimote) to interpret the Wiimote's accelerometer data and button presses. Information about how quickly he changes the Wiimote's direction is sent directly to Logic Pro's Tempo fader, which controls the sequence he has constructed for each movement or piece. "OSCulator also lets you send application control data, like to move the cursor to the beginning of the file or a specific marker," he says.

Another way to use the Wiimote is to perform beat detection using Cycling '74 Max and an object called aka.wiimote to generate MIDI timing clocks. Smith did not do that in this concert, however. "In the latest version, Logic no longer responds to external tempo changes through MIDI clocks," he says. "So the only way to get it to change tempo in real time is through that fader."

The Balance Board that Smith stands on has four pressure sensors that send data reflecting the amount of force on each one. The data changes when Smith moves his feet or shifts his weight by leaning, for example. "This also goes through OSCulator. I assign the sensors to Transformer functions in Logic and scale them," he says, "and then use them to control velocity values in different sections of the orchestra.

"Sometimes the hall has too much bass resonance so you lean toward the first violins to increase them. But I have to scale the response differently for different sections, so that leaning toward the violins might affect them to one degree while leaning toward the basses affects them differently. And each piece



Paul Henry Smith—accompanied by a Mac Pro, a Wii Remote and an arsenal of software—performs classical works before a live audience, either alone or with one or two soloists.

PAUL D. LEHRMAN

has to be set up differently. I start with a good balance that doesn't need much input, and then I tweak the numbers for each instrument section and each piece to give me just the right amount of flexibility."

In some aspects, this setup is a conductor's dream—an orchestra that always plays the parts correctly and always follows—but for the audience, maybe not so much. "I'm not that self-absorbed that I think it's enough for the audience just to see me," Smith says with a laugh. "The interaction between me and the two soloists in the concert was good for the audience. One person told me she preferred seeing my solo conducting, but that was my mom. For the Beethoven symphonies, it might make sense to have two or three other people to help me; they could be concerned with the balance while I'm working on the tempo. I wouldn't divide the orchestra along timbral lines, but along other factors, like articulation and energy—for example, making the harsher samples play in VSL when I want to give it more edge."

Real Enough?

At the very least, the Fauxharmonic Orchestra is a proof of concept. We now know that a virtual orchestra works with a live conductor, even if it doesn't result in an explosion of similar "ensembles." And it's a great advertisement for the capabilities of Vienna Instruments. In many passages, if you close your eyes—and I did try this—you wouldn't know you're not listening to a real orchestra. Step back a level and imagine you are listening to a *recording* of a real orchestra, and it's even harder to tell that it wasn't made on a concert hall stage with 80 instruments.

Yet little things do give it away, such as one observation I jotted down during the concert, and that Smith agreed with: When the woodwinds get louder, they also seem to get *closer*. "VSL switches sample layers to get dynamics," he explains. "To get smooth crescendos between notes that are in different layers, you can tweak the volume of each note, but because the next note is at a different level, unless you scale back the volume at the exact start of the second note, you'll get a staggered crescendo. That's an awful lot of tweaking.

"They also have samples of crescendos, but unless you can use them just as they are, you'll have problems. For instance, what if I need a 3.8-second crescendo? Do I have it? No, I just have 3.0 and 6.0. So what do I do? It's especially important when I'm performing not to make those notes too long or too short, or I may reach the end of the sample before the end of the note, or else cut it off too soon. You can't have every possible dynamic change on every possible note in the library—it would be impossible to control."

Live in the Future

Smith sees room for improvement in virtual orchestras—both in live performance and in the studio—but he thinks the next major step will not involve sample libraries. "I think we have a short-lived moment in history with these huge sound libraries," he says. "We are always dealing with how to do things *now*, and so the sample libraries are the solution of the moment, but I think it won't last. The future is an algorithmic approach such as the Synful Orchestra, which creates instruments in real time using additive synthesis and reconstructive phrase modeling. When the people at Synful, or whoever else does this, get better at their algorithms, there will be a tipping point at which composers will say, 'Yes that's the way.' With an algorithmic orchestra, I don't need to look in the library to see if I have the right crescendo—I can create it on the fly.

"But the sequencing software needs to get better, too. We're stuck in this paradigm in which you have a track with MIDI or audio on it, and you're applying a transform to it. But there are no 'select by rule' or condition commands [like] they have in every other kind of software, like Microsoft Office. You should be able to tell the software to, say, look for all the dominant chords and change them so they're in Dorian mode. When you select a group of notes in Logic, it will tell you what the chord

> Sample libraries are the solution of the moment, but it won't last.

BRUCE GILBERT

"Orchestras are having a hard time," Smith says. "I don't necessarily love them as institutions, but as musical instruments they still can't be beat."

is, but it doesn't let you do anything with that information.

"And for live performance, why can't the software anticipate gestures so that a performer can set things up, like [changes in] tempo and articulation? A real musician knows what's coming next and adjusts his playing to it. The software knows the score and knows when a note is going to end, so why can't it look ahead and deal with some of these issues, too?"

Going back to my earlier questions about whether technology could someday replace real orchestras and whether we're optimizing current technology, the answers are probably all no. But the answers aren't really the point. The fact that we can ask the questions seriously is more important, and Paul Henry Smith's work is not only making that happen, it's also already leading to a lot more questions. And as the community of musicians creating sophisticated interactive performance systems using tools like the Wiimote grows, what questions are asked should lead to a pretty interesting future for live music. em

Paul Lehrman, the former "Insider Audio" columnist for Mix *magazine, has been doing live musical performances with computers for more than 25 years. He is coordinator of music technology at Tufts University.*

Make Mine Rubato

Use Digital Performer to follow your changing tempo | By Michael Cooper

Many musicians hate recording while following a soulless click track that constrains their playing to a rigid tempo. Unfortunately, recording tracks with a freely shifting tempo results in an edit grid that has no relation to the actual bars and beats of your performance. This makes the copying, pasting and quantizing of subsequent MIDI overdubs (such as virtual drums) difficult because there are no logical grid lines to guide your time-range selections and snap MIDI Notes to.

I'll show you how to use Digital Performer (DP) 6 to make MIDI overdubs march to the beat of a rubato audio track. The key is to create a tempo map with bars and beats that follow all of your robato performance's tempo changes. Doing so automatically creates an edit grid to which you can quantize your MIDI overdubs.

Draw You a Map

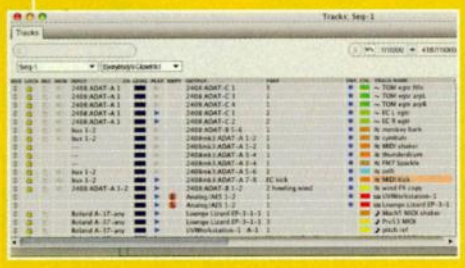
In DP, create a tempo map in the Conductor Track. An option in the Receive Sync dialog allows you to tap on a MIDI controller to record a rubato tempo map directly into DP's Conductor Track in real time. However, I prefer to record a MIDI click track—whose notes I can see and hear for easy editing in the Sequence editor—as the foundation for building my Conductor Track.

Playing to your previously recorded rubato audio track(s) as best you can, record steady half- or quarter-note beats, with a MIDI kick drum for example, throughout your song on a new track; this is your MIDI click track. (Half-notes provide sufficient tempo resolution for fast-tempo songs, whereas quarter-notes are usually needed for slower tempos.) Listening back to your MIDI performance, edit the timing of any MIDI Notes that were played out of sync with your original rubato track so that all notes land exactly on downbeats (see Fig. 1).

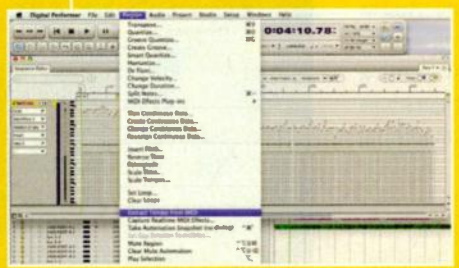
Now you're ready to create your tempo map (see "Step-by-Step Instructions" below). Lock all audio and MIDI tracks in DP's Tracks List. This critical first step preserves all tracks' real-time performances (keeping them in sync with each other) when creating a tempo map.

Next, set DP's Tempo Control menu to the Conductor Track setting, select all of the data in your MIDI click track and choose the

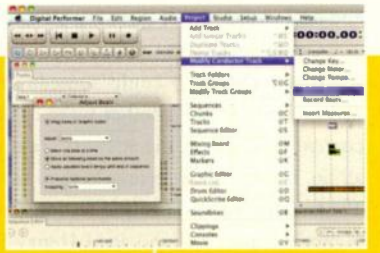
STEP-BY-STEP INSTRUCTIONS



STEP 1: Lock all audio and MIDI tracks in DP's Tracks List.



STEP 2: Choose the Conductor Track to control tempo, make a time-range selection of all the data in your MIDI click track and select Region > Extract Tempo From MIDI.



STEP 3: Select Project > Modify Conductor Track > Adjust Beats and make selections in the Adjust Beats dialog that will move all beats by the same amount.

Extract Tempo From MIDI command in DP's Region menu. This moves the Conductor Track's bars and beats so that they roughly align to your MIDI click track (and to the rubato audio track it was played to).

Off-Beat

Despite the now approximate synchronicity of beats and notes, you may find that beat 1 of each actual bar of music sits under the wrong beat (for example, beat 3) in the time ruler. Correct that by first selecting Project > Modify Conductor Track > Adjust Beats. In the Adjust Beats dialog that appears, check the following boxes and radio buttons: Drag Beats In Graphic Editor, Move All Following Beats By The Same Amount and Preserve Realtime Performance. In the dialog's Adjust and Snapping menus, choose Beats and None, respectively.

With the Adjust Beats dialog open, the mouse cursor becomes a crosshairs cursor when positioned over DP's Sequence editor. Clicking and holding with the crosshairs cursor on a beat division in the MIDI click track causes a vertical line to appear at that point in the Sequence editor. In your MIDI click track, click your mouse under the time ruler's first beat of bar 1 and drag the vertical line so that it aligns with the first note in your MIDI click track.

The placement of bar lines should now make more musical sense, but all beats will likely need to be moved slightly to align them exactly with the notes in your MIDI click track. In the Adjust Beats dialog, check Move One Beat At A Time and choose Notes Or Audio Beats in the Snapping menu. Beginning with the very first beat of your song, drag to the left or right with your mouse in your MIDI click track to make the beat snap to and line up exactly with the start of the first MIDI Note. Use the same technique to snap all following beats in turn to their corresponding MIDI Notes.

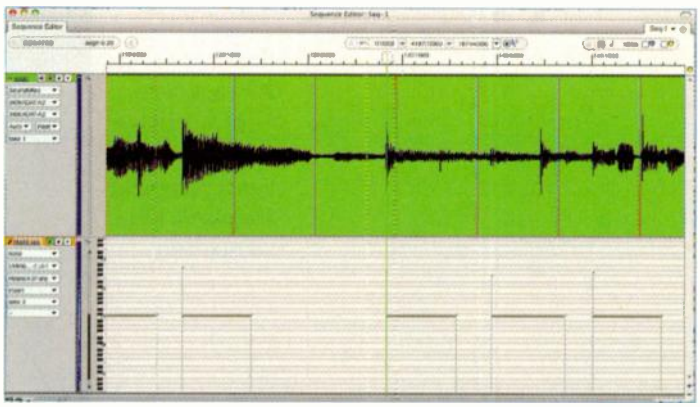


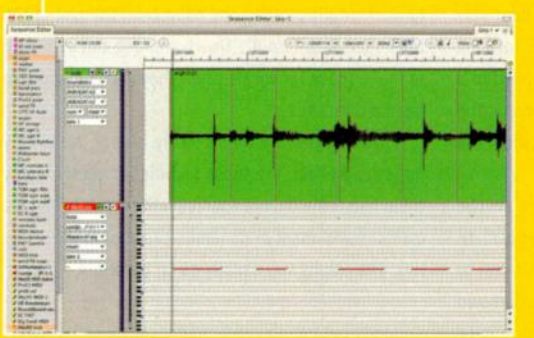
FIG. 1: Before creating a tempo map, record a MIDI click track in real time. Edit it afterward as needed so that all MIDI Notes land squarely on downbeats.

Good Conductor

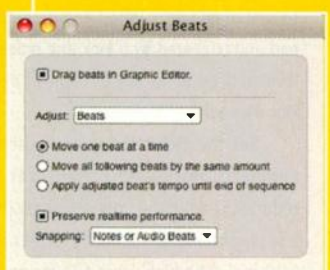
When you are finished snapping all of the Conductor Track's beats to the notes in your MIDI click track, close the Adjust Beats dialog and unlock all your tracks in DP's Tracks List. The tempo map should now follow all the tempo variances of your original rubato audio track(s). Any MIDI tracks you subsequently record in real time may now be copied, pasted, quantized or otherwise edited using the edit grid that DP automatically generated from your new tempo map. EM

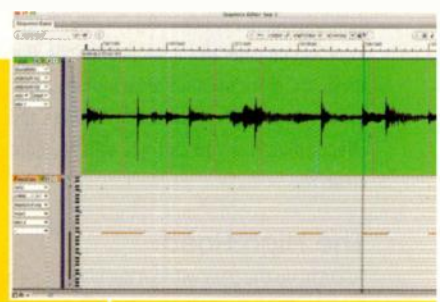
EM contributing editor Michael Cooper is the owner of Michael Cooper Recording in Sisters, Ore.

STEP 4: Align bar 1, beat 1 of the time ruler with the first note in your MIDI click track.



STEP 5: Make selections in the Adjust Beats dialog to move and snap one beat at a time.





STEP 6: Click and drag inside the MIDI click track to snap each beat in turn to its corresponding MIDI Note.

Fig. 1: Use a highpass filter to clean up the bass end of a track by triggering the filter envelope from a kick drum sidechain.

Bottoms Up

Create pulsating pads and leads with sidechain-driven effects | By Simon Langford

Sidechain compression is an industry staple for cleaning up the bottom end of bass tracks. It uses a kick drum as the sidechain input to a compressor applied to the bass channels, which reduces bass peaks without affecting the perceived level or weight of the bass.

Sidechain compression is also used in a lot of dance music to provide a regular and rhythmic ducking effect on pads and sustained sounds. But there are more uses for sidechaining than these two examples. With today's DAWs and effects plug-ins, you can get a little more creative.

The High Road

To clean up the bass without ducking, use a highpass filter on the bass track and use the kick on the sidechain input to trigger the filter envelope. Set the cut-off frequency as low as possible and use a fast attack (10 ms or so) and a long decay (about 500 ms), and then adjust the envelope depth by ear. This will reduce the low frequencies of the bass when the sidechain triggers (see **Fig. 1** and **Web Clip 1**)—an effect similar to ducking that can sometimes feel more subtle.

If your noise gate offers positive gain reduction, use this as an alternative to a compressor for that ducking-pad sound. Use the kick as the sidechain input, set the reduction level to a positive value (+8 dB is a good starting point) and then set a fast attack (10 ms or so) and a medium release (about 150 ms). Next, adjust the threshold level until you get the required depth of effect (see **Web Clip 2**). Depending on the sound of the kick drum, you may need to adjust the sidechain input filters (highpass and lowpass) to get the desired effect.

ONLINE BONUS MATERIAL

Out of the Gate

You can often tighten up the timing of a bass part by using a kick-triggered noise gate on the bass channel. The triggering of the noise gate by the kick gives an incredible tightness to the rhythm section. However, you can use a milder version of this technique to add some rhythmic interest to sustained parts. When a noise gate is applied to a pad and triggered by a kick, the noise gate drops the level of the pad by only a couple of decibels when the kick dies away.

Set the reduction level (called Range on the Sonalksis noise gate I used in this example) to reduce the level by only a few decibels and dial in a fast attack and a slightly longer release (around 300 ms). The kick drum triggering will emphasize the pad in a way that ties in rhythmically with the kick pattern without obviously chopping it (see **Web Clip 3**).

Beyond the Call

You can use similar techniques to tidy up other elements of your mix. If you have a good balance in most of your song but it gets a little cluttered in some places, try using sidechain compression instead of the usual tricks to create some space.

If you have an extra element in some places—say, a guitar present only in the chorus—that is fighting with a part that is present all the way through (strings, for example), then put a compressor on the strings and use the guitar as the sidechain input. Use a slightly quicker release than in the other examples to avoid any obvious ducking and go easy on the gain reduction. That will often make enough room without fundamentally altering the balance of the rest of the track (see **Web Clip 4**). This technique can also help to make space for vocals when they are struggling to be heard in a mix.

Unless you are deliberately aiming for a very noticeable effect, use these techniques gently. Apply them to a few different sources rather than using one overall compressor or dynamics process on the whole mix. The results will usually be far better. em

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Simon Langford is a professional songwriter, producer and remixer who has worked for some of the biggest names in pop music, including Rihanna, Britney Spears, Kelly Clarkson and many more.

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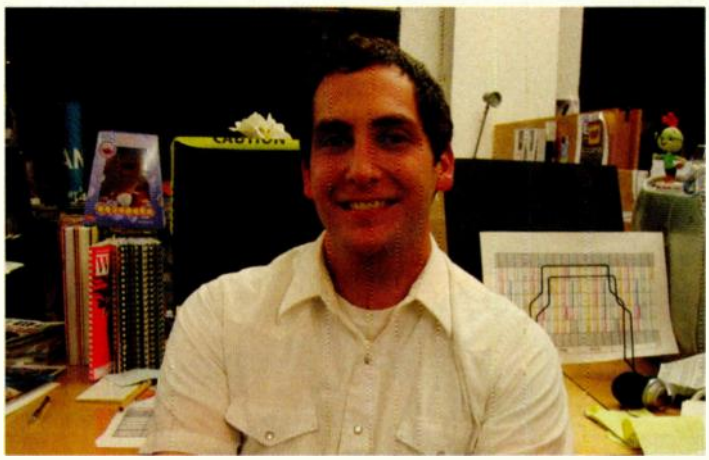

Eric Steuer is the creative director at Creative Commons.

SSENSE MIKE

Q&A: Eric Steuer

Creative Commons' licenses can help you promote your music in new ways

In today's connected world, more people than ever are content creators. Whether they're producing videos, podcasts or other media, many of these folks are looking for music to use on their projects. On the other side of the coin, musicians are always searching for ways to reach new people and make new fans, and allowing content creators to use their music without charge is one way to do so. Standing in between them is copyright law, which simply says "all rights reserved" unless the lawyers get involved. Musicians who wish to get their music into the hands of creators must find a way to license their compositions for these purposes, yet still be able to profit in case a major movie or TV studio calls to use their music.

By Jason Feehan and Randy Chertkow

Enter Creative Commons ("CC"), a nonprofit organization that provides free, easy-to-understand licenses for creators of all types. They are designed to let you license your work for certain uses while keeping the rest of the rights. Stories about successful uses of Creative Commons' licenses abound, by both major-label and independent artists. We talked to Eric Steuer, the creative director at Creative Commons, for the details on these licenses, and on ways musicians can use copyright to get opportunities and exposure for their music.

Why should musicians use CC licenses?

By default, copyright law sets all your rights as "all rights reserved," so people have to ask permission to use, copy or share any of your music. What we do at creativecommons.org is provide you with free and easy-to-use licensing tools that let you choose what you want to allow and restrict by creating ready-made licenses—all without having to hire a lawyer. These licenses can increase your exposure by allowing people to share or use your music legally, while at the same time keeping your work protected through copyright. If you don't make this clear, you're not taking advantage of the full social, distribution and marketing aspects of the Web. There are so many places that people are conversing and spending their time on the Internet that by allowing others to use your music, your reputation as a creator will grow every time someone puts your work somewhere else.

What kind of opportunities can a CC license open up for your music?

By using a CC license to encourage sharing, you release your creations for more people to hear and share with others. Fans can post your music on blogs, share them on peer-to-peer networks and put your music in places that you might not have thought of. And if you allow derivative works to be created through your CC license, you encourage collaborations to take place that can spread your music. Someone might upload a guitar part under a CC license that allows

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everyone in the community to take it and use it for noncommercial purposes. Maybe the next musician will add to it, or instead add a drum track. This type of collaboration is only possible with the legal framework a CC license provides. Artists like Rivers Cuomo of Weezer, The Roots, John Legend and Yo Yo Ma have uploaded stems (vocal tracks, drum tracks, guitar tracks, et cetera) for others to create new music out of. It's through campaigns like this that they build awareness of the original recording and also get the benefit of others sharing thousands of new remixes of the song. Plus, through their CC license, they retain full copyright over the original track. So they don't give away anything and can still sell that track.

What permissions do CC licenses provide and how many are there for musicians to choose from?

Right now there are six licenses you can choose. The most liberal one requires only attribution. That is, you give people the right to do whatever they want with your music—even make money off of it—as long as they attribute you as the creator. The most restrictive requires attribution, forbids the use of your music for commercial purposes and doesn't allow them to make any derivative works based on it. They can't change, edit or build off your music in any way, such as making remixes, collages or editing it down for other purposes.

And musicians can use these licenses and still sell their music?

Yes, if you reserve the commercial rights for yourself. In that case, you'd use the noncommercial CC license, which says: While I may be giving you the right to share my music with friends, add it to YouTube videos, make mix-tapes out of it, et cetera, I'm retaining the exclusive rights to make commercial use of this material. So if someone wants to use your song in a way that would constitute commercial use, a noncommercial CC license states that they have to come back to you and negotiate a separate license (and possibly a royalty) for the commercial use of that song. Just like they would have had to do in the first place if you hadn't licensed your song under a CC license.

And do people buy the music, even when it's free to share?

Yes they do. The two Nine Inch Nails albums that came out last year are a good example of how someone can use a CC license to complement and drive revenue for different versions of their product. So while anyone could freely download and legally share a version of NIN's albums, NIN was still selling a higher bit-rate version of it for something like $5, a CD for $10, a limited vinyl edition for $300 and so on. Within the first weekend, NIN pulled in about $1.2 million, which is a huge amount of revenue to make off of an album available for free under a CC license. The lesson here is if you give people rights to hear and share your music, it's a way to build awareness about it in the marketplace and drive them to your site. From there, you can direct them to other money-making things like higher-cost products, merchandise or to encourage them to see you on tour.

How would a musician go about choosing which Creative Commons license to use? What are the steps?

We have an easy-to-use licensing tool at creativecommons.org that anyone can use. You answer a few questions that define the extent of the rights you want to give to people, put in your attribution and contact information (so it can be included in the license), and we'll point you to the license to use that's the most appropriate for your needs. You then copy the HTML and paste that into your Website, and it will link back to our site. Clicking the link to the license brings up a page on our site that explains what people can and can't do with your music.

Do you have to be a lawyer to understand these licenses?

No, and that's really one of the main problems we were trying to solve when we launched CC. We provide licenses that are easily understood by the public so lawyers don't need to get involved. So if you find something on the Web that has a CC license, all you need to do is click on the icon and you'll see the license written out in very simple language—just the three or four things you can or cannot do. But if you want, you can click from there to read the full 15 to 20-page legal document written by our lawyers and updated throughout the year.

Because you talk about HTML and embedding things on your Website, do these licenses only apply to Web content?

By using a CC license to encourage sharing, you release your creations for more people to hear.

No, you can use a CC license for any copyrightable work—whether it's online or off. This includes your videos, the composition itself (not just the recording), your album's cover art, sheet music, photographs, your Website, your blog and your writing. It's not just for music.

Can you name some of the other high-profile musicians who use CC licenses?

We've worked with all kinds of artists. Beastie Boys, Deerhoof, Dangermouse, Pearl Jam, Girl Talk and T-Pain are just a few that use CC licenses.

How do you think Creative Commons and copyright fits into this new music industry?

We're in a transition period. And I think that an approach like a CC license can be a critical part of the new music industry because it puts the artist in control to permit which rights they want to grant and which rights they want to keep. I think you'll have more luck getting people involved with your music if you're clear about what you want them to be able to do and tell them how you want to be attributed. This clarity will be integral to the relationship between people who consume and listen to music and people who create and publish it. EM

Randy Chertkow and Jason Feehan are authors of The Indie Band Survival Guide: The Complete Manual for the Do-It-Yourself Musician, The D.I.Y. Music Manual *and founders of the open and free musician resource, IndieGuide.com (www.IndieGuide.com).*

Instant Mix Gratification

Marc Moreau was a sales clerk in a music store when he was discovered by legendary music producer Patrick Leonard. Today, the Grammy-winning musician, engineer and producer works with some of music's finest and depends on his Euphonix Artist Series MC Control and MC Mix for every project.

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Marc uses MC Control and MC Mix to control his:

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- Waves and SoundToys plug-ins

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Propellerhead Software

Record 1 (Mac/Win)

Audio recording, sequencing and seamless integration with Reason

By Len Sasso

>> PRODUCT SUMMARY

audio recording and sequencing software, $299
$149 for registered Reason users
$629 bundled with Reason 4

PROS: Easy to learn and use. Excellent time-stretching algorithms. Impressive mixing console emulation. Substantial array of effects. Full Reason integration. First-rate multitake and comping implementation for audio.

CONS: Doesn't host third-party plug-ins. Comping not implemented for MIDI.

FEATURES	1	2	3	**4**	5
EASE OF USE	1	2	3	**4**	5
SOUND QUALITY	1	2	3	4	**5**
VALUE	1	2	3	4	**5**

propellerheads.se

ONLINE BONUS MATERIAL

GUIDE TO EM METERS
5 Amazing; as good as it gets with current technology
4 Clearly above average; very desirable
3 Good; meets expectations
2 Somewhat disappointing but usable
1 Unacceptably flawed

If you're among the many Reason users who from day one have been harping on Propellerhead Software to add audio recording and sequencing to the program, you'll be delighted with Record. It expands on Reason's rack-and-sequencer paradigm by adding full-featured audio recording and tracking, and it boasts an elegant mixer modeled sonically and graphically on the SSL SuperAnalogue XL 9000K. Record includes many of Reason's high-end effects devices, along with new bass and guitar amp-and-cabinet modelers from Line 6 and a sample-based General MIDI–like virtual instrument, the ID8, for laying in utility MIDI tracks. Better still, if you have Reason installed, it becomes fully integrated into Record. (Of course, you can also run Reason by itself.)

To address two hot-button issues up front, Record, like Reason, is a closed system and doesn't host third-party plug-ins. That makes Record much more CPU-efficient, and it eliminates incompatibility issues. But to use third-party plug-ins, you need to run Record as a ReWire slave to a program (typically another DAW) hosting the plug-ins.

With Record, Propellerhead has opted for hardware copy-protection. The company has made a serious effort to mitigate the downside of the USB key by implementing a save-enabled Demo mode (you can save but cannot load while in Demo mode) and real-time online authorization (you only need to be connected when you load projects).

More GUI

Record's user interface is divided into three sections toggled by three hot keys: mixer (F5), device rack (F6) and sequencer (F7). Key combinations reveal multiple sections in the same window, and you can tear off the mixer and rack to their own windows. I found stacking the sequencer and mixer in my main monitor and moving the rack to a second monitor to be an ideal setup. If you recombine the windows (Command + F7) and then tear them off again, Record remembers their former sizes and arrangement—nice!

The mixer is huge; there's the fader section at the bottom and concealable input, dynamics, EQ, inserts and sends areas above. Switches let you rearrange the signal path order of the dynamics, EQ and inserts, as well as route the dynamics processor's sidechain input through highpass and lowpass filters in the EQ section. The EQ section also houses high- and low-

FIG. 1: Sequencer tracks always serve devices in the rack. Audio Track and Mix Channel devices also pair with mixer channels.

shelving filters, and two parametric bands. Eight global send buses round out the mixer, and you can cable those through any combination of effects in the rack.

The rack is almost identical to Reason's, but you can have as many columns as you like. Two special rack devices, Audio Track and Mix Channel, always have matching channel strips in the mixer. Creating an Audio Track device also automatically generates a sequencer track for recording and playing audio clips through that device.

The Mixer Channel device has an audio input. Creating it doesn't generate a sequencer track, but you can add one for automation. The device is primarily used to provide mixer buses for instruments, but it has many other creative applications. Although there are myriad ways to add and configure devices, channel strips and sequencer tracks, Record does an amazing job of ensuring that necessary elements are present and correctly connected.

For example, you can create a real-time vocoder setup in three steps. Create an ID8 device, which gives you a track for playing or recording MIDI and a Mix Channel device for the ID8's output. Create a BV-512 vocoder in the Mix Channel's insert slot, which automatically rewires the ID8 as the vocoder's carrier signal. Create an Audio Track device and cable its output to the vocoder's Modulator (voice) input. You're now set up to vocode from a mic and MIDI keyboard, or from audio and MIDI clips in the sequencer (see **Fig. 1** and **Web Clip 1**).

In Sequence

Time stretching is an essential ingredient of any modern audio sequencer, and Record features an outstanding implementation that works simultaneously across all audio formats, sampling rates and bit depths. Each audio track has two stretch modes—Melody and Allround—which, when applied appropriately, produce high-quality results even for large tempo changes (see **Web Clip 2**).

Although the Stretch mode is track-based, you can disable time stretching for individual clips on the same track. That with the Bounce Clip to New Recording (aka, bounce in place) option makes it simple to mix and match clips with no embedded tempo information. You simply disable time stretching, manually adjust Record's tempo until it matches the clip's, bounce the clip in place, enable time stretching for the bounced clip and then return to the song tempo. Bouncing embeds tempo information in the clip's header, allowing Record to time stretch it as needed.

Record will also bounce clips and mixer channels to disk. The latter makes it extremely easy to create stems from your songs. You choose which tracks and send buses to bounce, set limits (the whole song or the song loop), decide what mixer settings to include and choose a format. You then get a neatly bundled set of stems on disk or as new tracks in your song.

Sequencer tracks always correspond to devices in the rack, although you can have rack devices without sequencer tracks. All track types have multiple drop-down automation lanes, and instrument tracks also offer multiple note lanes that can play simultaneously. All lanes have individual mutes. Automation is easy to create or record, and you can edit it directly in the automation lane without switching to the sequencer's Edit mode. That lets you work with visual reference to other tracks, whereas Edit mode displays one track at a time (see **Fig. 2**).

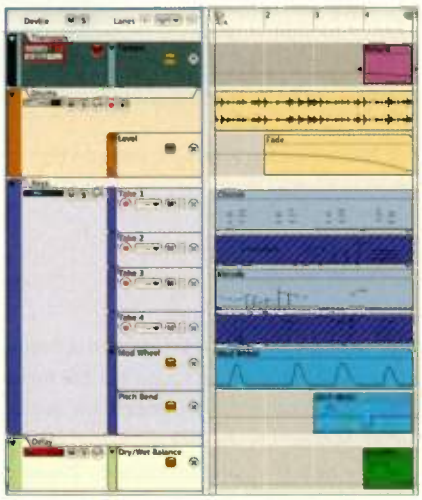
Audio tracks do not have multiple lanes for audio clips, but you can record or import multiple takes on a single audio track and

use Record's powerful Comp mode to create composite takes (see the video in **Web Clip 3**). Compositing is not implemented for MIDI, but with a mouse-click or keystroke, you can start a new take or overdub lane. Unfortunately, that's not a hands-free process, and you must manually slice and mute takes to create comps.

Record You

Record comes with a substantial collection of instrument and effects Combinator patches. The instruments—which include keys, strings, synths and percussion—are mostly performance-oriented. Effects run the gamut from utility (EQ, dynamics, reverb and mastering) to extreme processing (beat manglers, modulation and distortion), and you get a useful collection of bass- and guitar-amp setups to show off the new Line 6 plug-ins. You also get a variety of groove templates for the ReGroove Mixer. And, of course, Reason users have access to the Reason Factory Library and their own collection of ReFills.

Record's documentation comes in two forms: searchable help accessed directly from the application and an 850-page PDF manual. You can get to most functions through context menus, and both those and the menu-bar menus show key-command shortcuts when available. Surprisingly there's no PDF of those shortcuts, but Reason users will find a lot of overlap.



>> FIG. 2: Tracks can have automation lanes, and in the case of MIDI tracks multiple note lanes.

Record on its own is an impressive audio recording and sequencing package. Its sequencer is easy to use, carries a light CPU footprint and includes an impressive array of plug-ins along with a powerful mixer. And its time stretching is as good as I've heard, allowing you to mix and match virtually anything in your audio arsenal. If you're a Reason user, the integration and low upgrade price make Record hard to pass up. If you need third-party plug-ins and instruments and compatibility with other DAWs, Record's ability to render tracks and export stems quickly still makes it a worthy musical tool.

Len Sasso is an associate editor of EM. *For an earful, visit his Website, swiftkick.com.*

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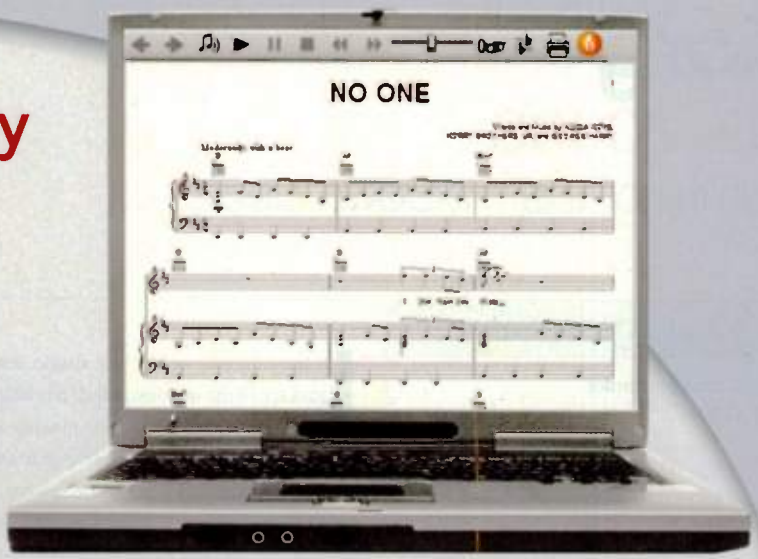

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Korg's new 1-bit stereo recorder, the MR-2000S, looks almost as good as it sounds.

Korg
MR-2000S
Return of the mixdown deck

By Eli Crews

PRODUCT SUMMARY

1-bit studio recorder
$2,499

PROS: Very high-quality sound. USB port allows for easy copying to/from a computer. Menu navigation is surprisingly easy. Units are linkable, providing multiple mono tracks of DSD or PCM recording.

CONS: Can't rename or add new folders to project folder.

FEATURES	1	2	3	4	5
EASE OF USE	1	2	3	4	5
AUDIO QUALITY	1	2	3	4	5
VALUE	1	2	3	4	5

korg.com

ONLINE BONUS MATERIAL

In the majority of current studio setups, the concept of the mixdown deck has fallen by the wayside. Whether we're summing within a DAW or mixing through analog gear and printing the mix back into the same session, most of us find ourselves operating without a dedicated device with which to mix. Despite that trend, Korg offers the MR-2000S ($2,499), a 2-track digital recorder with an 80GB internal hard drive and a variety of format options, including the increasingly popular 1-bit (DSD) format.

A Panel Study

The MR-2000S is housed in a single-rackspace chassis. The display section has an easy-to-read 160x104 backlit LCD, offering visual feedback for menus and file status. Small square LEDs indicate the sample rate (from 44.1 kHz to 5.6 MHz), clock source (internal, S/PDIF or word), analog reference level (-12 dB to -20 dB), and internal disk activity. Two bright 23-segment LED bar graph meters indicate left/right signal levels, from -54 dB to +3 dB, with a peak LED beyond that. (The +3dB spec may seem odd; I'll explain it later.) Controls include a rotary encoder and nine buttons for menu navigation, transport control, changing the menu display and peak/hold clearing. A standby/on switch and headphone jack/volume pot round out the front panel.

Among the rear-panel connections are balanced analog XLR I/Os, RCAs for unbalanced analog I/O, coaxial S/PDIF I/O and word clock I/O on BNCs. The S/PDIF jacks double as ports for linking multiple units for multitrack DSD recording. A USB 2 port connects to a Mac or PC for easy file transfers to/from the unit, with the MR-2000S showing up on your computer desktop like any other FAT32 hard drive for drag-and-drop file copying.

Less is More

The MR-2000S can record/play quite a few audio formats. It can record "regular" PCM files in the BWF (Broadcast WAV) format from 44.1 kHz to 192 kHz, and at the lowest two sample rates it's 16/24-bit-selectable. Above 48 kHz, 24-bit is the only option. As for 1-bit recording, I'll explain it briefly now (and in the **Online Bonus Material** section at emusician.com) for those of you new to the concept. Most of us have been trained to

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think that higher bit rates are better, yet if the sampling rate is high enough (in the millions of samples per second range), that one bit can make accurate calculations when turning an analog input voltage into a digital datastream.

Three 1-bit formats are available on the MR-2000S: DSDIFF, DSF and WSD. All are slight variations on the DSD (Direct Stream Digital) theme, and each can run at the standard 2.8MHz or the doubled 5.6MHz sample rate. If you wondered why the meters go to +3 dB, it's because DSD doesn't hard-clip the way PCM does when it reaches 0 dBfs. DSD exhibits a softer clipping that sounds more similar to the way analog tape saturates, so the meters reflect this saturation region with an extra few LED steps.

Call Me a Convert

Now, what to do with those 1-bit files once you record them? Well, unless you are authoring SACDs yourself or sending the 1-bit files directly to a mastering engineer (more mastering engineers are accepting DSD files all the time), you'll convert them to PCM at some point. Korg includes the handy and easy-to-use AudioGate application, which doubles as an audio player interface, for this conversion process (see Fig. 1). AudioGate lets you play any 1-bit PCM or MP3 file from your Mac or PC, as well as from the MR-2000S directly when the latter is mounted on your computer as an external hard drive. [*Eds. Note: According to Korg, a recent AudioGate update also lets you create 2.8MHz DSD disks on standard DVDs that can play on some Sony Vaio PCs, PlayStation 3s and a few high-end DVD players, such as Sony's SCD-XA5400ES.*]

Of course, there is real-time conversion happening if you play a 1-bit file through your normal computer DAC. Therefore, when listening this way, the quality will be less pristine than when doing a nonreal-time conversion export.

Blind Leading the Blind

I was curious to hear how the sound of the MR-2000S would compare to that of my standard setup. My normal mixdown method is to use Pro Tools like two tape machines—I split its outputs across my console and then run the stereo bus of the console back into Pro Tools via Lynx Aurora converters, which are clocked to an Antelope Audio OCX. For these tests, I clocked the MR-2000S internally, although it can be clocked to the OCX or any other word-clock source. I recorded the mixes off the 2-bus of the console into Pro Tools and the MR-2000S in 5.6MHz DSDIFF (.dff) mode simultaneously, and then I ran the same material into the MR-2000S in 24-bit PCM (.wav) mode at the same sample rate as the original session file (44.1 kHz or 96 kHz). I then used AudioGate to convert the 1-bit file to 24 bits at the appropriate sample rate and visually lined all three stereo files up to the sample in a single Pro Tools session for easy A/B/C comparisons. I sent the session to a group of bat-eared engineer friends, and I listened myself in a double-blind test so I wouldn't know which file was which. The results were quite interesting.

FIG. 1: AudioGate's user interface is simple and effective. You can use your mouse's scroll-wheel to scrub your audio.

At 44.1 kHz, the file from the MR-2000S was similar to the one from the Aurora, with the latter having a slightly tighter bass response; the Aurora's version sounded a little more mastered in the low end. The difference between the 1-bit file and the two PCM samples was more evident: There was general agreement that the 1-bit had more high and high-midrange energy, and was less thick in the low-midrange. There was also more audible decay on the cymbals and snare drum in the 1-bit version, almost as if it were slightly compressed. Opinions varied as to which sounded better, based on the listener's taste, but overall the 1-bit file garnered more votes because of its slightly more finished sound. Very little difference in the stereo imaging was detected.

Interestingly, at 96 kHz the differences between each of the two PCM versions were less detectable, but the differences between 1-bit and PCM were more pronounced, with the DFF file exhibiting a slightly wider stereo field, as well as a more open, airy sound. In a word: more analog-sounding. I contribute this partly to the fact that conversion to 96 kHz retains more of the resolution of the 5.6MHz/1-bit file. Also, the program material was less dense than the 44.1kHz tests (spacious, dynamic acoustic music vs. loud rock music), so the expanded dynamic range of the material let us hear more subtleties of variation between the differing capture formats. If you're working with more dynamic music at higher sample rates, you should benefit more from the MR-2000S' 1-bit conversion. But either way, capturing your mixes at the highest possible resolution has its benefits, archiving them for a time when some form of 1-bit delivery medium becomes more widespread. In the meantime, if the downsampled PCM files sound as good or better than your current capture process, what do you have to lose besides a little hard drive space?

Not 1-Bit Disappointed

In all, I found the build quality and sonics of the MR-2000S to be of the highest caliber; even the integrated headphone amp has a clear, rich sound. Although I would prefer more choices in organizing the files on the hard drive, the process of accessing/renaming files through the menus on the display is quick and easy. In designing the MR-2000S, Korg upgraded the analog signal path of its own MR-1000, which is a cheaper, more mobile 1-bit option. If you're ready to add 1-bit recording to your studio, the MR-2000S is a solid choice.

Eli Crews operates New, Improved Recording (www.newimprovedrecording.com), a studio in Oakland, Calif. Special thanks to Myles Boisen, Christian Hanlon and Jay Pellicci for their help with this review.

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I could capture knob motions as a custom LFO. In fact, moving the knob is one of several ways to assign an LFO to that parameter. Capturing a parameter automatically replaces the default sawtooth LFO with a flatlined LFO waveform, which seems a baffling choice after you have just chosen to animate a parameter.

You can set LFOs to bipolar or unipolar shapes with or without key sync. A second menu lets you choose from a wide variety of rates, including beats, measures (up to 32 bars), dotted values and frequencies that follow in direct proportion to note number. Oddly, KS offers no free-running LFOs. A quadrant of buttons at the upper-right can shift the LFO phase. Unfortunately, the phase does not reset if you select a new LFO type. A small window clearly shows any changes to the LFO shapes and also illustrates the LFO's progress when triggered. That window is also where you draw the step-sequencer LFO shapes.

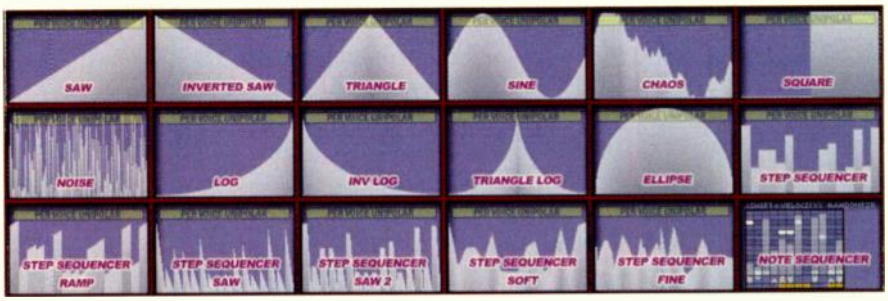

FIG. 1: Krishna Synth's collection of LFOs is impressive. You can redraw the step-sequencer LFOs with varying degrees of resolution.

Frame of Reference

Samples imported into the first oscillator (Osc 1) are parsed into Movies, which divide the analyzed samples into frames. Much as you would animate a film by viewing frames in succession, Krishna Synth's playback of the frames animate the sound. That's most interesting because of the different ways you can play back the frames.

By default, the first LFO assignment modulates the starting frame of Osc 1, but you can easily change or add modulation sources. A small rectangle reads out numbers as frames play. (KS can generate up to 8,192 frames.) Moving the Start knob initiates playback at a later point in the Movie. Modulating that knob with the Chaos LFO after importing a fragment of a political speech produced fascinating results (see **Web Clip 1**).

Bent Frame

Next down the line in Osc 1's panel is the Frame Effect section, which is where KS really distinguishes itself from typical wavetable-scanning synthesizers. This section is primarily a phase-distortion effect that can reshape a series of frames in real time. Eight different types of distortion—including pulse-width and inverse pulse-width modulation, mirrored, repeat and bit reduction—are available from the menu (see **Web Clip 2**).

The Frame Draw window is a sort of sonic Etch A Sketch. Its menu lets you choose the type of shape to superimpose on the waveform, and it is reminiscent of the palette of shapes you might find in a graphics program. Select from sine, triangle, square, noise, harmonic or a simple pencil tool and click-drag in the waveform display window as it plays back. Use the Size knob for higher- or lower-resolution drawing. Use the smoothing tool to iron out rough spots and edgy overtones (see **Web Clip 3**).

Three AHDSR envelope generators add to the modulation circus. Each of the envelope's three destinations offers a knob to control amplitude. The Velocity menu is a bit of a misnomer: It lets you control envelope intensity through velocity, sync envelopes to tempo or modulate envelope rates based on keyboard position, but only one selection is available per envelope generator. A separate key-follow parameter would be useful.

Two analog-modeling oscillators give you sawtooth, square, triangle and noise waveforms with basic amplitude, frequency and pan settings. A balance knob sits between the oscillators to fine-tune their relative levels. The single filter offers lowpass, bandpass and highpass choices, as well as a resonance knob. Although limited in flexibility, it sounds just fine.

Ring the Changes

The Sync section provides several different ways to connect oscillators. Moving the Type knob chooses between FM, AM and ring-modulation routings. I was able to cook up some raw but effective bell-like timbres. As soon as more complex waveforms come into play with the use of frames in Osc 1, it's hard to predict the sonic outcome, and that's part of Krishna Synth's charm.

For all of its sonic horsepower, KS is stupidly easy to use. Click on a modulation source and all possible destinations light up, then drag and drop the source on the destination and you're done. Do you want to modulate an envelope that is modulating the frames? Just drag and drop, wiggle a knob or pull down a routing menu.

What's the Matter With KS?

In spite of its many capabilities, KS has some serious problems. In Digital Performer 6.0.2, it passed the validation but repeatedly crashed the MOTU Audio System on instantiation. It shut off audio and became unresponsive in Apple's GarageBand 4.1.2 and AU Lab host 2, although it worked fine in Logic 8.0.2. Less significant but annoying, the stand-alone version doesn't retain audio or MIDI settings. According to Devine Machine, most of these issues, especially problems with Digital Performer and other host software, will be resolved in Version 1.6.

The manual is in need of a rewrite with a more formal style and more careful, detailed explanations. Built-in links to user forums don't work, and there are links to tutorial videos that don't exist.

I sincerely hope that Devine Machine gets these issues resolved. On most counts, it is a brilliant instrument. It can cut through a mix like a knife and provide a unique sonic stamp (see the **Online Bonus Material** at emusician.com). By all means, try out the demo version and keep an ear out for V. 1.6. em

Marty Cutler is busy programming a new sound set for a hardware synthesizer.

EM HOT PICK

2CAUDIO

Aether (Mac/Win)

By Michael Cooper

Offering more than 40 adjustable parameter controls—many of them unique—Aether ($249.95) may be the most programmable reverb plug-in on the planet. But that wouldn't mean much if this processor didn't also sound good. No worries—Aether sounds incredible!

Aether is available in mono-to-stereo and true stereo versions in VST and AU formats; an RTAS version is planned. I reviewed Version 1.0.1 of the AU plug-in in Digital Performer (DP) 6.02 on an 8-core 2.8MHz Mac Pro running Mac OS 10.5.4.

The reverb plug-in Aether offers a tremendous amount of programmability, including independent control over early and late reflections.

The plug-in's GUI is well organized, with parameter controls divided into color-coded sections pertaining to input, early reflections (initial, discrete echoes) and late reflections (reverb decay). All of the early reflections (ERs) parameters can be tweaked independently of the late reflections (LRs) parameters. Imagine combining the ERs for a bright, large space with a short, heavily damped reverb tail, and you'll begin to understand Aether's tremendous power and flexibility.

Aether's input section includes controls for gain, wet/dry mix and 2-band EQ. EQ types include low and high shelving, and lowpass and highpass filters. You can set the gain and cross-channel stereo imaging for ERs and LRs independently and bypass either section—a terrific feature. By muting the LRs, for example, you can create very short-lived ambience using only ERs that won't clutter your mix with long reverb tails.

GIVE ME SPACE

Choose from 33 Space presets—including stadium, cathedral, hall, stairwell, tunnel and phone booth—as a starting point for customizing your reverb settings. Then change the character of the resulting ERs by tweaking controls for the Space's size, complexity of shape (the number of virtual nooks and crannies), timbral coloration and absorption (damping).

You can also tweak the LRs' size and complexity of shape, along with many other parameters. Adjust the pre-delay, decay time, diffusion and envelope (attack and sustain) of the reverb tail. Boosting the Spread control creates echo-like ripples in the reverb tail. Control over the damping (absorption of frequencies over time) of LRs is at least as sophisticated as that found in high-end hardware 'verbs: You can set the crossover points for low, midrange and high-frequency bands and dial in each band's damping coefficients (degree of absorption). You can even change the slope at each crossover point to fashion either smooth or unnatural transitions.

As with the ERs, a high-shelving cut can also be applied to soften the reverb tail. A frequency graph helps guide your various filter adjustments. And unlike with convolution reverbs, Aether's reverb tail is dynamic, thanks both to adjustable LFO-modulation controls and behind-the-scenes engineering.

ONLINE BONUS MATERIAL

The sheer number of parameter controls—some of them unusual—makes programming Aether a complex affair, but totally worth the effort. Documentation was a work in progress at the time of this writing, making the learning curve steeper still. Thankfully, a built-in browser and a neatly categorized Preset menu provide quick access to more than 250 factory presets, many of which are outstanding and cover a wide range of applications. You can save your own custom presets and switch between A and B setups to compare them.

LET'S GET WET

DP doesn't support Aether's mono-to-stereo operation. My workaround was simple: Send tracks to a stereo aux track on which Aether was inserted, and set the plug-in's Mix control to 100-percent wet. The control settings for Aether's input gain, mix and stereo mode (mono-to-stereo or true stereo) can all be locked to avoid unwanted changes when a new preset is recalled.

Feeding an electric guitar track to Aether, I was immediately impressed by how ultra-smooth the reverb tail sounded (see Web Clip 1). Setting DP's buffer size to 512 samples for mixdown, one instance of Aether consumed only about 10 percent of my CPU's resources using DP, although 2CAudio reported better CPU efficiency than I experienced.

Once I got the hang of what all of Aether's controls did, I was off to the races. Muting LRs, I fashioned complex and gorgeous-sounding ERs for vocals and violin that gave them wonderful dimension. Activating the LRs, I boosted Aether's reverb time to the max to create virtually infinite reverb decay time (lasting well over a minute) for interstellar effects on background vocals and synth pads.

Aether sounds awesome on drums, especially using a high diffusion setting, an envelope with fast attack and long sustain, and very little damping (see Web Clip 2). That said, Aether doesn't offer gated reverb, but that's okay: Aether is an engineer's dream. The outstanding sound quality, deep programmability and great price make Aether the reverb plug-in to beat.

Overall rating (1 through 5): 5

2caudio.com

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EM HOT PICK

AVANT ELECTRONICS

Avantone CV-12

By Myles Boisen

Despite its red metal-flake finish, the Avantone CV-12 ($499) bears a strong physical resemblance to the original 1953 AKG C 12 and Telefunken Ela M 251 microphones. Low-cut and -10dB pad switches are located along the bottom of the thick mesh grille. Unscrewing the nickel cap encircling the 9-pin XLR connector lets you remove the heavy-duty cylindrical brass body and gain access to the Russian-made 6072A tube.

The mic is stored in a well-crafted latching wooden box, with contoured foam and an elegant cloth lining. This vintage European classiness extends to the supplied metal shockmount, which secures and isolates the mic within two fabric-lined rings. The CV-12 offers a choice of omnidirectional, cardioid, figure-8 and six intermediate polar patterns, remotely switchable on the power supply.

SOME FAVORABLE RESPONSES

While most multipattern mics give their flattest response in omnidirectional mode, the CV-12 offers basically flat response in its cardioid setting between 40 and 10k Hz, according to the supplied frequency trace. The absence of a presence boost around 6 kHz on this chart is consistent with my impression of this mic's neutral character in the studio.

In the omni pattern, it has a flatter low-end response, a peak at 600 Hz, a dip at 5 kHz and a noticeable peak above 10 kHz that's also present in cardioid. The mic's figure-8 mode yields a gently rising treble response. It's typical for a microphone's timbre to vary in different pattern settings, and in testing I found that the CV-12 does present usable tonal variations throughout its intermediate patterns.

The Avantone CV-12 harkens back to an age of classic tube microphones. Its neutral sound and nine polar patterns contribute to its versatility, and its sturdy build quality belies its affordability.

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www.mixbooks.com

REAL-WORLD APPLICATIONS

I tried out the CV-12 on a few sessions, first with an up-and-coming boy band called Know Clue. Singing duties are shared by two of the band's guitarists; one had a skilled pop-punk attitude and the other had a more pure and pleasant vocal timbre. The CV-12 worked like a charm on the latter, allowing his unforced vocals to float above the guitar-heavy mix with minimal EQ. In the vocal booth, the punkier singer tended to sound a bit harsh and lacking in air, but the Avantone mic—combined with a tube compressor—smoothed out his tone in the control room. It's a testament to this mic's tonal veracity that I was able to add some high end in the mix without bringing out any sibilance or grit.

For a project I'm producing, I hired classically trained singer Morgan Guberman to realize a vocal arrangement. I used the CV-12 in subcardioid mode through a Grace 101 preamp for up to 10 overdubs at once. Cumulative layering can exaggerate deficiencies or bumps in a microphone's response, but I was very pleased at how the Avantone didn't pile on undesirable components of the vocal sound or room tone. This real-world application was a convincing demonstration of the CV-12's unhyped tone on vocals.

On a session for the reggae/dub project Guerrilla Hi-Fi, the mic was coupled with a Millennia HV3D mic pre on baritone sax. I noted its character as smooth, though slightly thin in the horn's lower range and compressed at louder dynamics. Engineer John Finkbeiner and I liked it better on tenor sax, where it yielded a classic warm sound with just enough presence for our taste. The mic also delivered pleasant tone on a cowbell overdub.

A SOLID HIT

A major selling point is that the CV-12 has sufficient presence and tone to use for crucial tracking with vocals and saxes, but never gets as bright or sibilant as many premium vocal mics. Clearly this mic is all about transparent, usable tone without high-end hype. It doesn't directly emulate the highly prized (and very bright) C 12 of yesteryear, but it certainly looks the part. Likewise, the wood case and shockmount recall the glory days of European tube mics. My only criticism of this entire package is that, like many manufacturers, Avant Electronics uses generic Chinese-made cables and XLR connectors on the power supply. Other than that, the Avantone set exudes pure class.

Another strong suit is the CV-12's affordable price. I went to Avant Electronic's Website after putting the mic through its paces, and my jaw literally dropped when I saw that it costs not $1,500 or more as I'd assumed, but $499. That price includes the power supply, latching wooden box, aluminum carry case and shockmount. A 5-year warranty adds even more value.

Overall rating (1 through 5): 5
avantelectronics.com

MIXOSAURUS

Kit A 1.1 (Mac/Win)

By Rob Shrock

Mixosaurus Kit A is a massive drum library that recreates a single drum kit and emphasizes detail and flexibility. The 122GB library contains approximately 80,000 24-bit stereo samples and ships on either an internal hard drive ($699) or a FireWire 800– and eSATA-compatible external drive ($799). Kit A runs in the latest version of Native Instruments' free Kontakt Player and in Kontakt 3.5 and 4. It comes with note-mapping templates for Roland and Yamaha e-drum kits, Toontrack Superior Drummer and EZDrummer, FXpansion BFD and General MIDI.

ONLINE BONUS MATERIAL

ONE KIT, TONS OF VARIETY

Kit A furnishes a single kick (with four beater types), one snare (with three muffling types), one hi-hat, four toms, three crash cymbals, two rides, a splash and a China cymbal. But don't get the impression that this kit is sonically inflexible, because there are choices galore.

Numerous articulations are available for each instrument. For instance, the snare delivers the full dynamic range of hits for the center, edge and halfway in between; rim-shots in three positions and rim only; and all again in muffled versions. The hi-hat alone includes 29 articulations, with various combinations of tip, shank, crash and foot—all with seven levels of foot pressure that you can control with MIDI. The list of variations in articulation goes on and on to an unprecedented degree.

Every sample offers as many as seven alternate versions, practically eliminating static-sounding grooves with even the most mundane programming. You can choose patches with fewer alternating samples (demanding less RAM) or even one sample per hit if you prefer a stiff drum-machine feel.

Additionally, you can select from three different overhead microphones (small condenser, ribbon and vintage tube M/S) per drum. Kick mics are available inside and outside, and snare mics for top and bottom. Each hit was also recorded through a stereo PZM room pair and a stereo chamber that you can mix with the dry samples to create your own sound. You can load kits in your DAW as a stereo pair or in a 16-channel output configuration.

Mixosaurus uses extensive Kontakt scripting to offer an enormous range of control over each individual sound and over the entire kit. You can independently set each drum's level for the dry signal, from the overheads, and from the room and chamber returns. You can also modify each drum's dynamic response. An elaborate Delay page allows for some very creative grooves, and you can individually tweak the envelope release times to control note length in each microphone output. Extensive filtering and distortion algorithms allow you to mangle sounds to your heart's content.

All this sonic power comes at a price to your system resources, and the upper capabilities of Kit A are at the edge of current computing power. Mixosaurus provides Economy patches that use fewer samples, as well as other versions with fewer or no editing capabilities. To get the most out of Kit A, you'll need an up-to-date computer system and a good understanding of Kontakt resource management. Most likely, you will do your initial work with Economy kits and fewer alternate samples, and then render out your audio files with the more detailed kits later.

SOUND OFF

All that detail in sampling and programming really pays off because Kit A sounds phenomenal. This is the first library I've worked with that I could believably create both a slamming rock track (see **Web Clip 1**) and a subtle jazz performance (see **Web Clip 2**). The seven levels of alternate samples put Kit A in a class by itself for realistic performance subtlety. Dynamically, the soft hits are authentic; you really feel the transient punch at loud levels, and everything in between is faithfully represented. The overall tone is neutral, so you are free to process it in your DAW to your stylistic taste. Kit A is really only limited by your drum-programming chops. It includes a variety of expertly programmed grooves to get you started.

I wasn't crazy about the sound of the studio chamber for reverb; however, I appreciated not having to fight an ever-present room signature and being free to put the kit in whatever convolution "space" I choose in my DAW.

Although older computers may struggle with the bigger kits, you'll solve most issues with a fast processor, lots of RAM and the improvements in Kontakt 3.5 and 4. If you want to program realistic drum tracks that sound great and your computer has the resources to support Kit A, you won't be disappointed. em

Overall rating (1 through 5): 4

Dist. by mvproaudio.com

Mixosaurus Kit A is a Kontakt-compatible sample library whose entire 122 GB content is devoted to a single drum kit with extremely versatile performance options.

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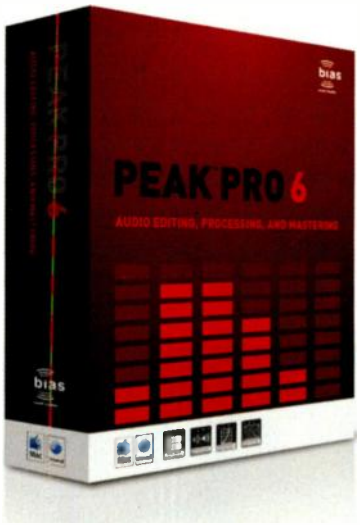

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Large-diaphragm condenser microphone

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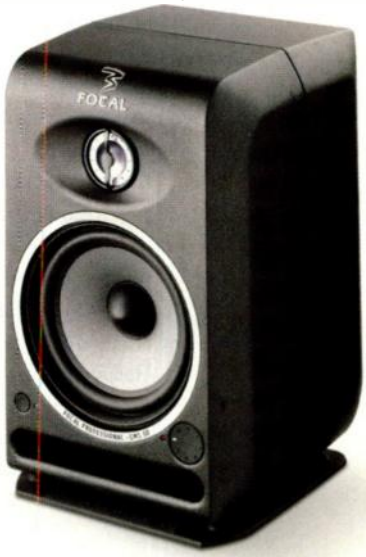

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A Little Bit IT, a Little Bit Rock 'n' Roll

By Nathaniel Kunkel

Okay, it's happened. Knowing about network protocols and their implementations is now as important as mic placement. "Crazy fool!" you say. Not this time, not this time.

My TC Electronic System 6000 will only run on a 192.168.1.x subnet. My Drobo hard drive connects with iSCSI to the second port on the Mac Pro tower, and I am running that network without any DHCP leasing. I need to forward UDP Ports 6000 through 6002 and TCP Ports 80 and 5222 to the machine that hosts my Source-Live broadcast. My Aviom uses a form of POE, and I regularly run my computer remotely from mastering sessions to print and deliver file changes to myself while I'm more than 100 miles away.

Does that sound much like dialing in a guitar tone on a Fairchild or getting a slamming drum sound? Not to me either, but without knowing how to do that other stuff, my sessions might not ever get off the ground in the first place. And I think we can all agree that some of the first luxuries to go during these hard times are unlimited tech visits.

In truth, it's not enough to just be able to navigate this boatload of new stuff in music production. You really need to excel at it. How many times do sessions come to a grinding halt because of computer problems? Maybe you need an update. Maybe your monitor card died and you need to get the files off the machine to your spare CPU. If you're working with a player or a singer, you can't spend two hours getting your system working; it needs to work in 10 minutes. That, believe it or not, is one of the things that will separate the pros from everyone else: They will actually get the take.

Even if you are just a songwriter doing your craft on a computer, that's your rig, and you have to know how to run your rig. We all work on computers in music—heck, the name of this magazine is *Electronic Musician*—yet networking seems to make people run for the hills. Akin to a root canal as it may seem, it's time to get conversant.

A computer's main function for us in society (as well as in music) is communicating, and it does that with a network. It's a pretty logical extrapolation. If we know how to use a computer and we know how to communicate with a computer, knowing how computers do that might be helpful—at least in a fundamental sense.

I know it sucks, but network design, security and maintenance should now be considered part of advanced recording theory. But wait, don't despair, because here's the good news: It's not really that hard. A little DHCP, a little NAT, a little LDAP, some coffee, and you're dancing. Jump in; it's not a bit cold.

Another big upside is that this kind of knowledge has the potential to make you more money all on its own. You can use YouSendIt, which works well. But how much more pro do you look with a secure, verified and branded FTP site that costs you nothing? Remember, perception is reality.

Happy reading.

Nathaniel Kunkel (studiowithoutwalls.com) is a Grammy- and Emmy Award–winning producer, engineer and mixer who has worked with Sting, James Taylor, B.B. King, Insane Clown Posse, Lyle Lovett, I-Nine and comedian Robin Williams.

"I Got a $ix-Figure Indie Label Deal Because I Joined TAXI"

Jenna Drey – TAXI Member – www.jennadrey.com

My name is Jenna Drey. That's me sitting next to TAXI president, Michael Laskow.

For as long as I can remember, I've wanted to be a recording artist. I've studied music my whole life. I've read all the books. I've been to the seminars. In short, I've done all the same things you're probably doing.

Who Hears Your Music?

I'll bet you've also noticed that no matter how much preparation you've done, it doesn't mean anything if you can't get your music heard by people who can sign on the dotted line.

I found out about TAXI a few years ago, and have kept an eye on it ever since. The longer I watched, the more I became convinced it was the vehicle I needed for my music. When my demos were done, I joined. And guess what – it worked!

A Record Deal With Lots of Zeros!

Seven months after joining, TAXI connected me with a great Indie label that's distributed by Universal. The president of the label heard my song, "Just Like That," and just *like* that, I was offered a record deal, and that song became my first single.

Madonna, Bowie, Jagger, and me!

The icing on the cake? The label hired legendary producer, Nile Rodgers (Madonna, David Bowie, Mick Jagger, and the B-52s) to produce it! All these amazing things happened to me because I saw an ad like this and joined TAXI.

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