

# EQ

Defining  
the Future  
of Recording

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# SMILE

The 37-year Saga of  
**BRIAN WILSON'S**  
Masterpiece

- **HOW TO RECORD A DRUM LOOP LIBRARY**
- **HIGH-END HOME STUDIOS**
- **THE BENEFITS OF RIBBON MICS**
- **TRACKING STRATEGIES FOR BRASS**

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**BLUE SKY MEDIA DESK PRO**

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NOVEMBER 2004

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A MUSIC PLAYER PUBLICATION

  
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World Radio History

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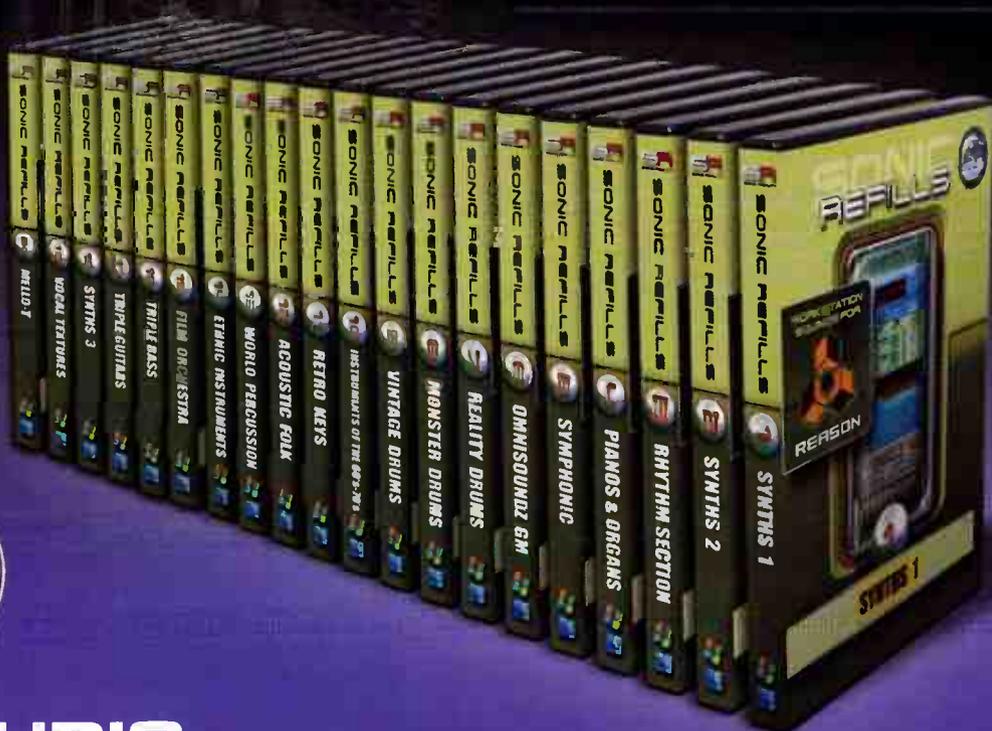


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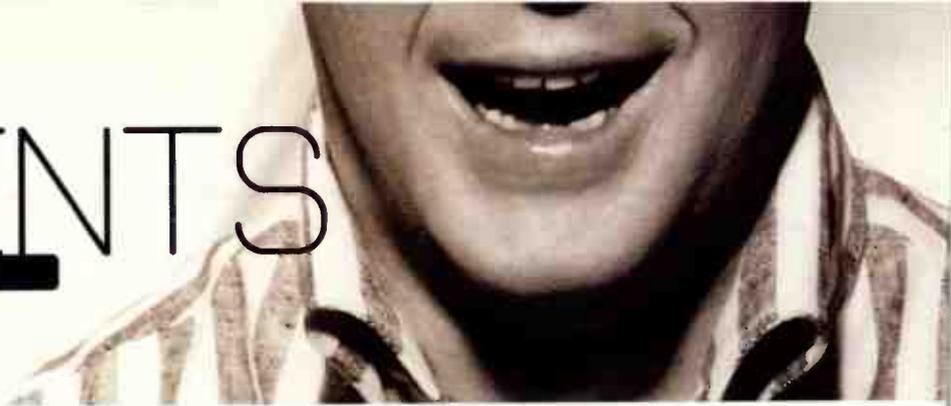
Fully modular, state-of-the-art console control • Pro Tools | HD Accel DSP and I/O resources • 192 kHz sample rate support

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World Radio History

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NOVEMBER 2004



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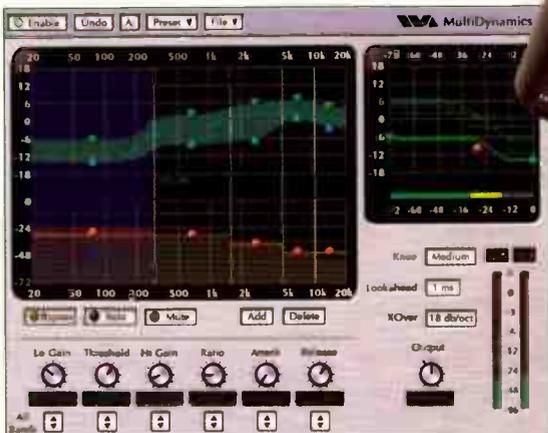
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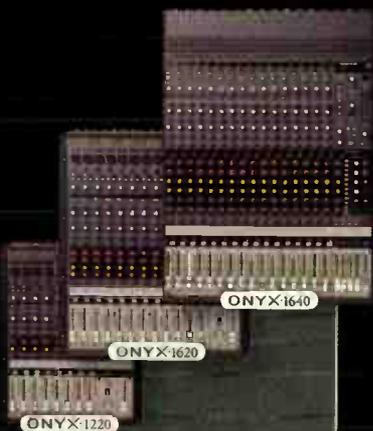


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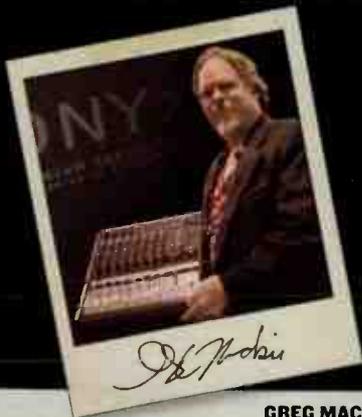




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**GREG MACKIE**, our founding father, shows off a killer shirt and an Onyx 1220.



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# Talk Box



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November 2004

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## PERFECTION

Do me a favor: As much as I appreciate you reading this editorial, I'd like for you to jump over and read this month's cover story. When you're finished trundle back over here and we'll continue. . . .

. . . finished? Great. Now, tell me, what was the most interesting thing about that story? Obviously the whole *SMiLE* saga is intriguing on many levels, not the least of which is how long it took for the whole project to happen. But for me, one thing stood out: Brian Wilson and Mark Linett using today's DAW technology to realize Wilson's 37-year-old creative vision.

In particular, I found it interesting that they used the DAW as a creative and arranging tool. And also that the sounds they wanted were created by live musicians playing together, rather than with each musician overdubbed in isolation. There was mic bleed, there were less-than-perfect vocal doublings, and so on. Bottom line? The music works wonderfully despite these "imperfections" — I'm listening to a pre-release copy as I write this.

I hear so much music today that has been relentlessly "perfected." The rhythms are perfect, the pitch is perfect, any extraneous noise has been thoroughly cleansed from the track, dynamics are carefully leveled out. In some cases the music was supposedly played by musicians, but it could just as easily have been created using samples triggered by a MIDI sequence (heavily quantized).

There are, of course, certain styles of music where this is appropriate. But I find myself growing fatigued of the "sanitized for your protection" approach to production. Where the style calls for it, I want to hear musicians *performing* — making music. All the "imperfections" simply bring that music to life.

Everyone knows that technology can be used for good or for ill — not that editing is *evil*; it's just a tool. But just because we can use that tool to do something doesn't mean we should; certainly the case with sanitizing the life out of tracks.

—Mitch Gallagher

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## The BAND STAND

Which recording cliché would you like to see go away, and why?



**Mitch Gallagher,**  
Editor

Some might say it's more of a trend than a cliché, but hands down, the "My CD needs to be louder than everyone else's, and I don't care what it does to the sound quality" volume wars thing is driving me completely up the wall. I sort of understand wanting to get the most you can out of your productions, level-wise, but not when it gets to the point of doing damage to the music. Anyone else miss dynamics in music?



**Craig Anderton,**  
Editor at Large

The recording cliché I'd most like to nuke right now is the "okay, let's solo the singer here for a bit, then have everything crash back in." This can work really well when it's planned as part of the arrangement, but I get the feeling this happens a lot just because the tune is getting boring and the producer wants something different. And having a solo voice with no "air" around it is kinda creepy, too.



**John Krogh,**  
Technical Editor

I'm tired of all pop/rock singles sounding so formulaic, right down to the drum sounds, guitar tone, "telephone EQ," and song structure. It's as if producers these days are manufacturing generic songs that have no connection to a particular singer or artist. Take female singers, for example. Avril Lavigne, Ashlee Simpson, Hilary Duff, et al — they sound like clones of one another, largely due to their producers.

# NEW! US-2400

## Now shipping! TASCAM's award-winning DAW controller with 2.5 motorized faders per finger.

Now you can use your mouse and keyboard for interfacing with on-screen GUIs — and use the wide-body US-2400 for what it's good at — mixing and hands-on control.



LED ring encoders give you hands-on "analog" of your DAW's pan and aux sends. A special channel strip mode and meters are provided for DAWs that support these functions.

Our US-2400 is the first control surface with enough faders to handle a typical studio session without bank switching: twenty-five 100mm touch-sensitive,

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Mute, Solo and Select buttons on every channel beat the heck out of trying to mouse and click on-screen icons.

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Assignable Function keys can be set to Autopunch, Record arming, Undo, etc.

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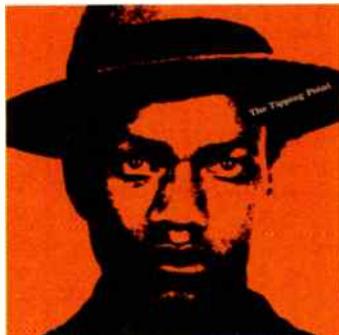
DJ AND PRODUCER

PERSONAL CREATIVITY

World Radio History

# Punch-In

Tips & News You Can Use  
BY CRAIG ANDERTON



## CD of the Month

### The Roots

*The Tipping Point*, Geffen Records

The Roots have always seemed a cut above a lot of other rap, incorporating elements of soul, dub, some cool samples, and pretty sophisticated wordplay. *The Tipping Point* has a more focused sound than the Grammy-winning *Things Fall Apart*, but loses nothing in the process.

For *EQ* readers, one of the most interesting elements is the CD booklet, which provides some serious background info — anything from the inspiration that birthed a particular song, to the drum mic setup on “Guns Are Drawn” (FYI, three mics: SM57 for the snare, kick, and room).

A lot of the music comes out of jams, with considerable cut and paste action before it appears on CD. There’s some tasty use of samples, from the effortless interweaving of Sly Stone’s “Everybody is a Star” in the leadoff cut, to sliding an Al Hirt trumpet riff into “Stay Cool.”

The lyrics speak for themselves: “the tippin point/the rains have saturated the grounds upon which they exist/40 days and 40 nights/musical mediocrity/filling every crack of our space/no more/the kids have been packed to the tops of their lives/with hypnotic donkey rhythms/believe/that the sun will appear/on this 41st day and the dove will bring word/that art has not been drowned and life music/will thrust its branches up from the muck of wackness . . . the sounds have changed.” They have indeed. [www.geffen.com](http://www.geffen.com)



## Blu Does Windows Media

The Blu-ray Disc Association and Microsoft have announced an agreement to include the VC-1 advanced compression video codec (the proposed SMPTE standard based on Windows Media Video 9) as a mandatory codec in Blu-ray Disc’s BD-ROM spec for video playback equipment. (Blu-ray Disc is a next-generation optical disc format being developed for high-definition video and high-capacity software applications; a single-layer Blu-ray Disc holds up to 25GB of data, while double-layer discs hold up to 50GB.) The DVD Forum has also announced VC-1 support within the HD DVD spec.

“Microsoft has been actively working with various standards groups,” said Amir Majidimehr, corporate VP for Microsoft’s Windows Digital Media Division. “Microsoft will maintain its neutral position in supporting the emerging high-definition video formats.”

## How Sweet(water) It Is: The 25th Anniversary Bash

In a few short years, Sweetwater’s annual Gear Fest has become a tradition in the Midwest music scene. But this year they pulled out all the stops to celebrate the company’s 25th anniversary. With product demos from over 50 manufacturers, a free professional guitar setup (with a free restringing) for anyone bringing in a guitar, behind the scenes tours of the facility and recording studio, and even a “kids connection” zone to keep the kids happy while mom and dad communed with all that equipment, the 2004 Gear Fest showed an exponential level of growth compared to previous years.

The seminar schedule was unusually heavy, with clinics on Pro Tools (basic and advanced), plug-ins, Sonar, mic selection and placement (a panel discussion with representatives from Neumann, Sennheiser, Royer, and AKG), room treatment, software synths and samplers, laptop music production with Digital Performer, conquering option anxiety, video for musicians and audiophiles, and project mastering.

Sure, it’s an event sponsored by a major retailer, and yes, they likely expected to sell a bunch of gear. But Sweetwater deserves props for expending the huge amounts of time and money necessary to pull off an event like this, as well as for the educational value that they built into the program. Thanks for the last quarter-century — here’s to the next 25 years.



**Chuck Surack, Sweetwater’s founder, receives an Innovation Award from the Mayor of Ft. Wayne, Indiana.**



**Tower Of Power, the homiest funk band in the world, played to a sold-out crowd at Sweetwater’s 25th anniversary bash at Fort Wayne’s historic Embassy Center**



**You’ve heard the term “wall of sound” — here’s what a wall of guitars looks like. And yes, it’s even more awesome in person.**



**The Sweetwater facilities were packed with bargain-hunters, curiosity-seekers, and seemingly half the musicians in a 400 mile radius.**



## tip

### SILENT RECORDING

My assignment: Record some whispered narration. But no matter what I used — computer, DAT, Masterlink, even Minidisc — there was always some background noise.

Then I remembered that my DigiTech GNX-4 "Guitar Workstation" has a dbx mic pre, the ability to record standard WAV files on a CompactFlash cartridge, and no fan or hard drive. Bingo! I turned it on, recorded the narration, turned on the computer, then transferred the narration from the cartridge to the computer's hard disk via USB for further processing.

The same principle works with any device that records with no moving parts. However, note that many "micro studios" that record to cartridge use a data-compressed format, which may or may not be acceptable. Another option is to record into a sampler's RAM, although you'll likely need an "old school" sampler — many of the

newer ones have a hard drive, or at least a fan.

If you absolutely must use a computer for recording, a notebook placed on the floor, with a cardboard box covering it and a blanket on top of that, should get rid of virtually all noise. To avoid heat build-up, though, don't record for too long.

## tip

### SONAR AND SP2

Windows XP Service Pack 2 adds a security feature called Data Execution Prevention (DEP, also called "NX memory"). As viruses often enter a computer by coming in via a data buffer, then injecting code into the data buffer and running that code, SP2 locks that down by only allowing true code pages to be run.

Sonar 3's mix engine (and that of earlier generations) uses self-generating/modifying code, which is equivalent to code running in data memory. After installing SP2, running Sonar may cause XP to warn about a Windows security problem.

To prevent XP from stopping Sonar, go to the system control panel and find the DEP configuration tab. This lets you specify applications for which NX can be shut off. With Sonar 3, add SONARPDR.EXE or SONARSTD.EXE to the list (the name for the executable file of the version you're using).

Or, configure this via the warning dialog box that XP displays when it detects DEP. Click Advanced in that dialog to get to the DEP configuration and set it as described above. For more detailed instructions, go to <http://support.microsoft.com/default.aspx?scid=kb:en-us:875352> and scroll to the bottom of the page.



## Orchestras in a Downsized World

Television's budget squeeze affects a lot more than contract negotiations with hot hunks and naughty nymphs. Grammy-winning producer and Hollywood composer Russ Landau, whose big break was composing for the TV series *Sea Quest DSV* (and whose current credits include *Survivor 9*, *The Assistant*, *Average Joe*, and *Fear Factor*), says that "The budgets in today's TV programs usually don't support the luxury of using a live orchestra. So my task is to create a sizable score orchestrally, without having to go out and record an entire live orchestra." Although he prefers working with live musicians, Landau relies on the Vienna Symphonic Library to deliver scores he feels "are just about indistinguishable from the small size orchestral stuff."

That fact hasn't escaped the notice of producers and studio music department heads that now depend on composers working with sequencers, programs such as TASCAM GigaStudio, and sample libraries to help rein in the high cost of live music. "Producers know they can shave off \$20,000 from an orchestral budget by using samples," Landau says.

However, saving money isn't Landau's only goal. "I make a lot of my own samples for individual shows and movies I score, because I don't want my [music] to sound like everybody else's," Landau relates. "The great thing about using [VSL], as opposed to using loop-based orchestrals like Apple Soundtrack, is that it allows your work to sound unique as long as you're writing your own music. With the loop-based stuff, a monkey could score a film — but everyone's film is going to sound the same."



## Going . . . Going . . . Gone!



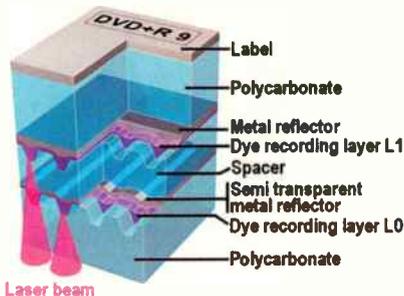
Telefunken North America has acquired what is probably the last large quantity of vintage, "new old stock" 6072A GE tubes.

Toni Fishman, Telefunken NA CEO, says "This is the same tube used by the great Austrian microphone manufacturers and is basically the heart of our new Telefunken NA mics, including our Ela M251 and our recently introduced Ela M12. We are very fortunate to have found this precious stockpile." [www.telefunkenusa.com](http://www.telefunkenusa.com)

## 1-Minute Tech Talk: Double Layer DVD+R

Heard the buzz about Double Layer DVD storage? Here's your 1-minute introduction.

- The format isn't new; stamped Double Layer DVD movie discs (called "DVD-9") have been produced for years.
- You need a DL DVD burner to write data to DVD+R DL media.
- Depending upon your software's data compression, a single disc can store up to four hours of DVD-quality video or 8.5GB of data.
- Multi-session discs are possible if your content-writing software supports the process.
- Double Layer recordable discs are produced with two recording layers (L0 and L1) between dual polycarbonate bases and semi-reflective metal layers. A transparent spacing layer separates these recording layers.
- Recording uses a highly focused laser beam that permanently transforms the dye-recording layer. Playback focuses a lower power laser of the same approximate wavelength onto the surface of the disc.
- DL discs should theoretically be compatible with DVD-ROM drives, DVD players, and DVD recorders because the format is very similar to the existing DVD-9 format. However, DL media compatibility is not as universal as DVD movies, and depends on the DL DVD burner firmware and creation software. Manufacturers hope to surpass 90% compatibility by the end of 2004.
- DVD+R DL supports 2.4x recording (full disc recording in approximately 50 minutes). 4x formats are being developed.
- Rewritable Double Layer technology isn't here yet, but is being explored by the +RW Alliance.



## Forum Exchange

# MusicPlayer.com Forum Watch

From PCI to USB to Firewire, the MusicPlayer.com expert squad expounds upon the current (and future) state of the interface.

Original question posed by MusicMedicine: What's the future direction of audio interfaces — USB, USB2, Firewire, PCI? Personally, I prefer Firewire and see no need to go back to PCI.

**Offramp:** I can't even imagine what's next. I'm pretty smitten (still) with my MOTU 896 and what it can do.

**bpark@prorec.com:** The current hot interface is the RME Fireface; I'll likely get one for my laptop. But my studio needs 32 channels of high-quality 96kHz I/O. The only answer I see is the RME MADI card and their MADI/ADAT converter.

**Doug Osborne:** PCI is still faster. PCI is undergoing a facelift to PCI-X, and Firewire and USB are of course increasing speed. I'd suggest choosing Firewire or USB for exchangeability or portability, or PCI if you want the highest performance and the audio interface isn't going anywhere.

**Dylan PDX:** I'd like to see more products like the MOTU PCI series that support multiple interface boxes on the same card. A company could make a generic PCI controller and then offer external audio, MIDI, and preamp modules. I'd love to find one PCI card with a guaranteed support schedule so I could upgrade via external modules as my needs grew.

**bpark@prorec.com:** This is why I chose RME interface with no converters. When I bought better converters, I just unplugged the old ones and plugged in the new ones. The sound changed, but nothing in the workflow was disturbed.

**Dylan PDX:** When using USB and Firewire cards, make sure that the product that you plan to use has been tested with your controller's chipset. Not all Firewire and USB controllers have equal performance/compatibility.

**Miroslav:** My three Layla24 boxes provide 24 channels in and out . . . no complaints. The third card used to exhibit occasional pops/clicks; I looked at the Windows Device Manager, and saw I had two Laylas on one PCI and the third on another. I moved all the cards over one slot so they were all on the same bus . . . no more pops/clicks!

**Ted Nightshade:** All I want is to get AES/EBU into a computer with no loss or issues. I don't need a bunch of cheap mic pres and no it doesn't have to be ridiculously cheap. Some build quality would be appreciated.

**clusterchord:** I think Lynx AES16 is the best solution for getting multichannel AES/EBU in and out of a computer. I'm planning on hooking it up to a [Apogee] Rosetta 800 via DB25.

**Doug Osborne:** One direction is the trend toward integration with keyboard controllers or control surfaces. True multi-client ASIO drivers and fully realized Core Audio/MIDI will allow multiple interface-equipped instruments, effects, motorized fader controllers, etc., without having to share drivers.

# LET GO AND FLOW

SONAR Producer Edition has earned a reputation for delivering powerful production tools in a streamlined interface. Now in version 4, the new recording, editing, comping, and navigation tools give today's professionals like you the freedom to flow. They're so fast, you just have to see it to appreciate it. And the ride doesn't stop there; version 4 adds innovative surround and AV capabilities, along with precise engineering tools—seamlessly combined together to make SONAR 4 Producer Edition the definitive audio production environment on the Windows Platform.



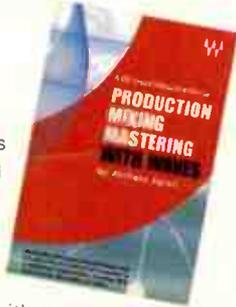
cakewalk  
**SONAR**4

World Radio History

Watch the video at [WWW.SONAR4.COM](http://WWW.SONAR4.COM)

## Production — Mixing — Mastering with Waves

By Anthony Egizil,  
published by Waves  
[www.waves.com](http://www.waves.com)  
184 pages + 7 CDs, \$80



Although independent companies such as Cool School have produced some fine interactive courses, this is the first one I've seen done by a manufacturer. The heart of this hard cover book is seven included CDs, one with a set of Waves plug-ins that are authorized for 14 days (30 days would be better, as there's a lot to absorb in the book). Five more CDs have multitrack recordings in various genres (country, R&B, dance, urban remix, rock), with project files you can load into Cubase SX, Nuendo, Logic Platinum 5 (and version 6.x on the Mac), Sonar, and Pro Tools TDM 5.1 running on Mix+ (Mac only), along with a CD that has material for mastering.

Once you load a song, you then experiment with the suggested plug-in and production/mixing techniques described in the text, making this a truly interactive learning experience. The advice and artistic judgements are spot on, and should be invaluable for people who have questions like "so how much compression should I use on the lead vocal of a rock tune?"

A lot of this knowledge translates to plug-ins other than those made by Waves, so although Waves owners will get the most out of the experience, if you want to learn about plug-ins in general this is a good place to get an education.



## NARAS: ADVANCING THE STATE OF THE ART

NARAS (the National Academy of Recording Arts and Sciences) continues to evolve with the changing world of recorded music by expanding efforts regarding artist's rights and consumer education, new GRAMMY® award categories, and increased advocacy for the arts on Capitol Hill.

The first category in the new **Production, Surround Sound** GRAMMY® award field is **Best Surround Sound Album**. This category encompasses all genres for commercial release on DVD-Video, DVD-Audio, or SA-CD that provide an original surround mix of four or more channels. New categories have also been added in existing fields, including **Best Electronic/Dance Album** in the Dance field, and **Best Gospel Performance** in Gospel.

Furthermore, the P&E (Producers and Engineers)

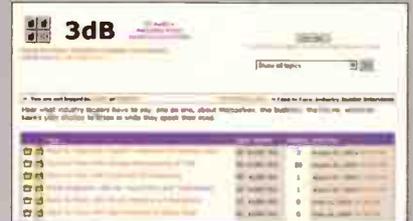
Wing has recognized the convergence of music and video games with a GRAMMY® Recording SoundTable at the 2004 AES Convention titled "Game On! Video Games: The Future of Music & Entertainment." Moderated by Dave Adelson (*Hits* magazine, producer/music correspondent for *E! News Live*), panelists include Buzz Burrowes (Director of Tools, Technology and Services, Sony Computer Entertainment America), multiple GRAMMY-nominated songwriter/producer Nile Rodgers, Tommy Tallarico (President of Tommy Tallarico Studios, Inc., President/Founder of G.A.N.G., the Game Audio Network Guild), and Brian Schmidt (Program Manager for Xbox Audio, Media, and Voice Technologies). For more NARAS-related news, surf over to [www.grammy.com](http://www.grammy.com).

## Surfboard

As we peruse the inner recesses, nooks, and crannies of the web, we're constantly flagging sites, news items, and useful tidbits that we feel will be of interest to you. Such as:

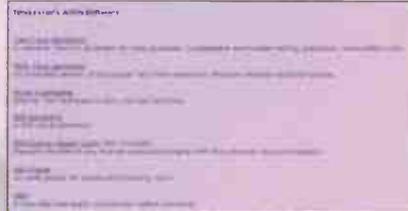
■ <http://www.3daudioinc.com/cgi-bin/ultimatebb.cgi?ubb=forum&f=25>

This forum, part of 3D Audio's site, offers MP3 interviews with top engineers such as David Crane, George Massenburg, "Hutch" Hutchison, and several others. And because it's a forum, after listening to them, you can discuss what they've talked about. There's some really excellent material here and you don't even have to spend download time — the interviews can stream over a dial-up connection.



■ <http://www.esser.u-net.com>

This no-frills web site is a great source for inexpensive, audio-related software such as a software function generator, multi-tone generator, hearing test



software, an audio player for double-blind listening tests, and more. Download the 30-day trial versions, and if you like them, unlocking to full functionality is not expensive (e.g., \$21 for the function generator).

■ <http://www.aes.org>

If you only visit this site once a year to check on the dates for the next convention, you're missing out on a lot. There are technical papers, details on how to purchase the complete AES papers library on CD-ROM, information on activities with the various standards committees, a job board for members, batches of links, and more.



# Waves' Convolution Revolution Continues



## Introducing IR-360

The world's only editable Surround Convolution Reverb

The new IR-360 Reverb is the highly anticipated surround version of IR-1, the only convolution reverb that can be tweaked with familiar controls such as pre-delay, room size, and density—controls that don't just filter the sound, but actually shape the underlying sample itself. Need the sound of the Sydney Opera House in 5.1 but a little smaller? You got it.

## Introducing IR-1 Version 2

Now create your own impulse response samples

Version 2 of Waves' IR-1 Convolution Reverb now lets you capture your own impulse response samples from acoustic spaces and hardware devices—samples you can radically customize with IR-1's unique controls. Crave the sound of that stone courtyard but need it bigger? Go for it.



## Introducing IR-L Convolution Reverb Light

For streamlined use, IR-L is our light version. You get the same exquisite samples but without the extensive controls of IR-1 for efficient, simplified use.

## Introducing [www.Acoustics.net](http://www.Acoustics.net)

The download source for convolution samples

Now IR Series Reverbs come with even more pristine samples of the most revered venues in the world, from London's Wembley Stadium to Manhattan's Birdland jazz club. Recorded under the guidance of renowned acoustics professor Angelo Farina, the samples feature new micing options for even more control. These samples—as well as samples contributed by Waves' IR Reverb users—are available at [www.Acoustics.net](http://www.Acoustics.net), a new Waves website dedicated to impulse response sampling.

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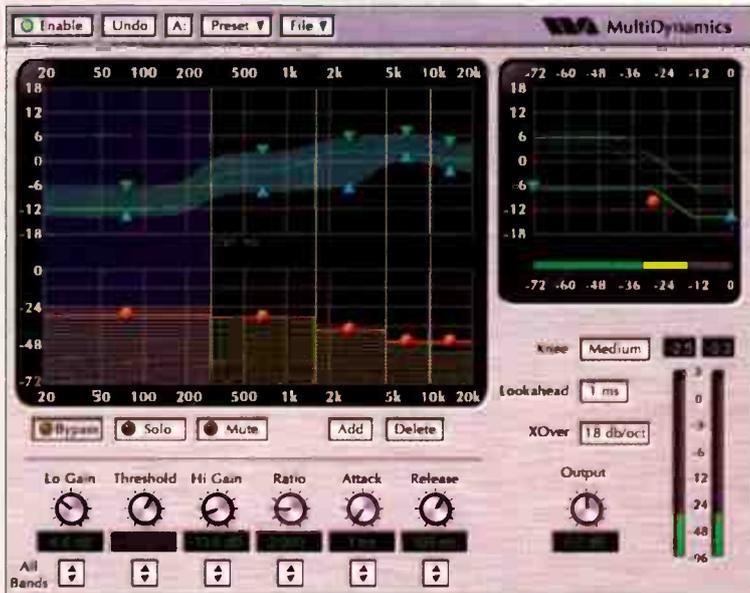
(North & South America) 306 W. Depot Ave., Suite 100, Knoxville, Tennessee 37917

phone: 865-909-9200, fax: 865-909-9245



# Tool Box

BY KEVIN OWENS



## Wave Arts MultiDynamics Multi-band dynamics processor plug-in

**MultiDynamics (\$149.95)** is a multi-band dynamics processor useful for mastering, noise reduction, volume maximization, de-essing, and special tweaks. The plug-in — Mac (OS 9: VST, MAS RTAS; OS X: AU, VST, MAS, RTAS) and Windows (DX, VST) — provides up to six bands with independent compression or expansion/gating per band, and features per-band bypass, solo, and mute controls; visualization of input levels and dynamic EQ response; and mono or stereo operation.

**Wave Arts, [www.wavearts.com](http://www.wavearts.com).**



## URS FullTec EQ 5-band EQ

Designed for and inspired by Digidesign's Icon console, the **FullTec Program EQ (\$499.99 for TDM version; \$249 for native version)** is a 5-band "super program" EQ. One band digitally recreates the Pultec EQP-1's low-frequency shelving with simultaneous boost and attenuation; three bands of peak EQ emulate the midrange boost and attenuation of the Pultec MEQ-5, and the high-frequency boost of the Pultec EQP-1a; and the fifth band features high-frequency shelving with simultaneous boost and attenuation. FullTec EQ is available on its own or as a part of URS's Everything Bundle (**\$2,299.99 TDM; \$1,149.99 Native**).

**Unique Recording Software, [www.ursplugins.com](http://www.ursplugins.com).**

## Drawmer DSL424 Gate/compressor

The **DSL424 (\$840)** combines two frequency-conscious noise gates and two soft/hard knee compressors with variable threshold limiting in a 1U, 4-channel box. Each channel can be operated as a hard or soft gate with switchable attenuation; in hard mode the DSL424 boasts fast but stable triggering and a specialized release contour suited to drums and percussion. In soft mode it functions as an expander capable of handling vocals and submixes. Other features include frequency-selective gating, filter-setting monitoring, a high-resolution bargraph display, balanced XLR I/O, and two 1/4" key inputs.

**Drawmer, U.S. dist. by TransAudio Group, [www.transaudiogroup.com](http://www.transaudiogroup.com).**



## Popless VAC-S3.5 & VAC-S6 Voice screens

Designed to control pops and sibilance before they reach the microphone, both the 3.5" **VAC-S3.5** and the 6" **VAC-S6** voice screens (**\$63 each**) — "VAC" stands for "variable acoustic compression" — clamp onto the suspension mounts of most spider-type microphones and feature a low-profile mini-gooseneck adjusting system for precision placement. Two acoustic screens are included with each pop filter, one for minimum filtering and one for increased filtering; you can control the amount of pop and sibilance filtering by using just one screen or adding the second screen and adjusting the distance between them.

**Popless Voice Screens, [www.popfilter.com](http://www.popfilter.com).**



## Dynaudio BM 5A Active nearfield monitor

The latest addition to Dynaudio's BM series is the **BM 5A (\$1,250 per pair)**, a compact, 2-way active monitor that's powered by two 50-watt amps. It features a 6.7" woofer and a 1" soft-dome tweeter (both manufactured and tested in Denmark), and has a frequency range of 50Hz–21kHz. Its small footprint (7.3" W x 12.5" H x 12.5" D) makes it well suited for project studios, edit suites, and other space-challenged environments.

**Dynaudio Acoustics, [www.dynaudioacoustics.com](http://www.dynaudioacoustics.com).**



## Royer SF-24 Phantom-powered stereo ribbon microphone

Designed to provide uncolored recordings of choirs, pianos, harp, and string instruments — and well-suited for capturing large ensembles as well — the **SF-24 (\$3,795)** consists of two matched ribbon mics placed one above the other and aimed 45 degrees from center. The magnetic/polepiece structure of each ribbon transducer allows a uniform frequency range, and the two 1.8-micron pure aluminum ribbons produce excellent transient response. The SF-24's cable utilizes a "Y" adapter that splits into separate XLR connectors for the mic's upper and lower capsules. The microphone ships with a shockmount, a mic sock, and a protective case.

**Royer, [www.royerlabs.com](http://www.royerlabs.com).**



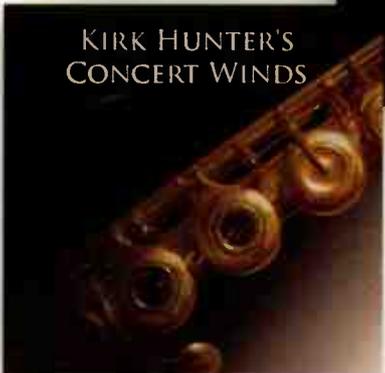
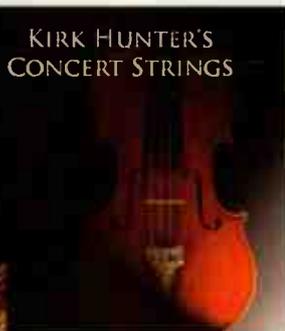
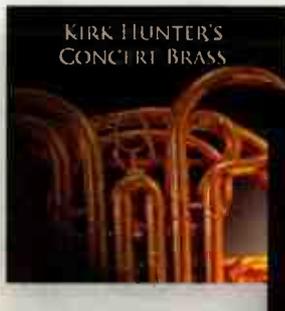


# RealTraps MondoTraps

## Bass traps

**MondoTraps (\$279.99 each)** bass traps are made of rigid fiberglass and metal (instead of foam), and are said to be far more efficient than typical corner foam when it comes to absorbing frequencies below 100Hz. The 2' x 4'9" x 4"-thick panels are class-A fire rated, and can be wall-mounted using standard picture-frame wire or attached to a microphone stand. An optional custom stand (pictured) is also available for **\$60**.

**RealTraps, [www.realtraps.com](http://www.realtraps.com).**



## Kirk Hunter Concert Strings/Brass/Winds

### Orchestral library for GigaStudio

Created especially for TASCAM's GigaStudio 2.54, **Concert Strings/Brass/Winds (\$995)** contains a whopping 180GB of string, brass, and wind musicians recorded in their onstage, seated positions with both close and far microphone placement. *Concert Strings* comes with a full string section, chamber strings, and solo strings, *Concert Brass* comes with solo brass, sectional brass, and muted brass; and *Concert Winds* features solo instruments and woodwind ensembles.

**Kirk Hunter, [www.kirkhunter.com](http://www.kirkhunter.com).**

# Universal Audio Precision Limiter

## UAD-1 plug-in

The **UA Precision Limiter (\$199)** plug-in for the UAD-1 DSP card is a single-band, look-ahead, brick wall limiter that achieves 100-percent attack within a 1.5ms look-ahead window, which prevents clipping and ensures zero overshoot performance. Both the attack and release curves are optimized for mastering, and other key features include an intelligent Auto-Release, Contour Mode switching, which tailors the attack shape to control presentation, and K-System compliant metering with RMS, peak metering, and adjustable peak hold.

**Universal Audio, [www.uaudio.com](http://www.uaudio.com).**





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World Radio History



# GENELEC®



## Propellerhead Reason Drum Kits ReFill

Acoustic drum kits for NN-XT

Created with an emphasis on realism, **Reason Drum Kits ReFill (\$129)** is an extensive DVD-ROM library of multisampled drum kits recorded at "all possible" velocity levels, and from a variety of distances and positions. By adjusting the levels of the included Close, Overhead, and Ambience microphones, users can shape and control the sound of the kits, and add compression, EQ, or effects to individual drums. The collection features 17 NN-XT kits styled for vintage soul, indie pop, and hard rock, as well as 50 ReDrum kits and a generous selection of MIDI files.

**Propellerhead Software, [www.propellerhead.se](http://www.propellerhead.se).**



## Joemeek threeQ Studio channel strip

The **threeQ (\$299.99)** channel strip does triple duty as a preamp, optical compressor, and an EQ. Features include mic and line inputs, 0-60dB of preamp gain, an 8-segment bargraph VU meter, Compress, Attack, and Release controls, and a powerful 4-band EQ.

**Joemeek, [www.joemeek.com](http://www.joemeek.com).**



## Rolls MX152 MixMate Mixer

The 1/2-rackspace **MX152 MixMate (\$130)** is a 2-microphone/3-stereo-source mixer that lets you mix audio sources such as AM/FM tuners and CD players with dynamic and condenser mics. Each mic channel has level and tone controls, and sources 1 and 2 have level adjustment, and bass and treble controls. Six DIP switches allow you apply phantom power to the microphone inputs, switch the program material of source 3 to mono, sum the overall output to mono, and configure the first mic channel as a paging input.

**Rolls, [www.rolls.com](http://www.rolls.com).**

# SPL MixDream

## Analog outboard mixer

The **MixDream (\$3,795)** is an active, cascadable outboard mixer designed to extend any DAW or digital console with high-grade analog stereo summing and insert functionality, without the need for an analog mixing console. The 2U device features 16 balanced inserts, latency-free monitoring, Lundahl output transformers, an analog peak limiter, and a low-noise power supply.

**Sound Performance Lab, [www.spl-usa.com](http://www.spl-usa.com).**



# Music Technology E-Tail

In most cases, convenience isn't without a price.

by Adam Cohen



music technology forums moderated by industry pros, and the most comprehensive tech support database anywhere.

## CUSTOMER EDUCATION IS THE KEY

When the site first went live, the company saw the Internet as a way to help educate customers about the products available, providing not only manufacturer spec sheets but also product reviews and buying advice from their staff of expert sales engineers. "We realized pretty early on the reach that the internet had and that we could use it to keep our customers informed about all sorts of industry related news, including product release dates, price changes, and more," says Chuck Surack, Sweetwater's founder and President. These days, the site offers comprehensive information on thousands of music technology products, including everything from product manuals to audio and video demos.

One of Sweetwater's earliest online innovations was *inSync*, launched in early '97. Long before the concept of "blogging" became popular, *inSync* established itself as a section of the Sweetwater site, updated daily, where the company provides technical tips, music technology glossary terms, assorted industry news and product information. Seven years later, *inSync* is still going strong, updated daily on [sweetwater.com](http://sweetwater.com) and sent out in digest form once a week free of charge to thousands of subscribers. In 2002, Sweetwater added *GearNet*, a weekly e-mail newsletter that specifically addresses price reductions, special deals and new product releases, among other things.

## SUPPORT BEYOND THE ORDINARY

Often, the evolution of [sweetwater.com](http://sweetwater.com) has happened as a function of customer feedback. Sweetwater customers have come to expect a high level of after-the-sale support and want access to that resource online. As a result, there's an entire section of the site devoted to customer support. Dubbed "Sweetcare," it's a comprehensive approach to online support, including the ability to track orders online, searchable technical tip and glossary archives, and the largest music technology support database anywhere. Looking for the hard reset procedure for your old Korg M1? You can find it in the Sweetwater technical support *Knowledge Base*, along with thousands of other tidbits of useful information. The *Knowledge Base* is updated several times a week, based on the research of Sweetwater's award-winning technical support staff.

The innovation at [sweetwater.com](http://sweetwater.com) continues even today. Recently, the company added the *Virtual Guitar Gallery*, where visitors can get an up close and personal look at many of the guitars Sweetwater has in stock and select by serial number the exact instrument they would like to buy.

When asked what the future holds for [sweetwater.com](http://sweetwater.com), Surack simply smiles. "We've got a few more things up our sleeve," he says. If the past is any indication, the online future for Sweetwater looks pretty bright. If you'd like to know more, give them a call at (800) 222-4700, or visit [www.sweetwater.com](http://www.sweetwater.com) for yourself.

The Internet has revolutionized the way we buy things, from music to medication and everything in between. Music technology is no different; in fact, technology savvy musicians, producers and engineers are even more comfortable buying online than the average consumer. However, for most Internet retailers, or "e-tailers," the concept of having an online presence amounts to little more than offering a consumer the option of placing an order any time of the day or night. While the level of convenience in placing an order at 2 a.m. might be nice, it's often gained at the expense of customer service. Music retailers, most of whom are not exactly known for customer service in the first place, don't ever have to interface directly with their online customers who, in turn, are left to fend for themselves when trying to decide what to buy or how to use the gear they've ordered.

## ONLINE EASE PLUS THE PERSONAL TOUCH

Sweetwater is one music technology retailer that sees the Internet as a means to expand the level of support they offer to their clients rather than simply an automated 24/7 order taker. In fact, every single order placed at [sweetwater.com](http://sweetwater.com) is confirmed by a phone call from a sales engineer. Rather than replace competent salespeople, [sweetwater.com](http://sweetwater.com) acts as the virtual gateway to an entire staff of music technology experts, all of whom are willing to engage in a one-on-one discussion of your equipment needs.

Nearly a decade ago, Sweetwater was the first music retailer to go live with a website, and over the years, the company has consistently managed to stay a step ahead of their competition in taking advantage of the value that the web is capable of providing to their customers. What started as purely a content-based site branched out to include a full e-commerce section, weekly e-mail newsletters chock full of information about using the gear they sell, an active community of

# Come Over to Our House and Play

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## *01x — The Only One of its Kind*

The 01x mLAN mixing studio is a 28-channel moving fader digital mixer with world class EQ and Dynamics on every channel. It also features complete computer connectivity via a 96kHz 24-bit mLAN audio/MIDI interface with complete hands-on control over the most popular DAW computer programs like Cubase, Sonar, Logic and Digital Performer. Send your MOTIF ES backing tracks on 16 channels via the mLAN network and add vocals & guitars via the 01x to make a complete computer studio unlike anything else out there.

## *MSP5 Monitors*

Nothing makes your tracks sound better than a pair of MSP nearfield monitors. Bi-amplified to minimize distortion, their deceptively small footprint allows them to fit into your already busy workspace.

## *Magicstamp Multi-Effects Processor*

Great guitar sounds have never been this easy to get. Hot artist presets and a user patch exchange are available at [www.magicstamp.com](http://www.magicstamp.com)

## *AES920 in Honey Burst*

An original classic. Available in Honey Burst, Translucent Black, and an array of custom colors.



### *MOTIF ES - The Next Generation of Inspiration*

With its expressive palette of Voices and Performances, Integrated Sampling Sequencer and Phrase Factory features, the MOTIF ES is the perfect place to start when inspiration strikes. It's the only synth on the market that can be turned into an ASIO soundcard by adding the mLAN16E expansion board.

### *SLG100N Silent Nylon Guitar*

Innovative, functional, and strikingly handsome, the Silent Guitar has caught on with guitarists worldwide.

### *MOTIF Rack*

All the sounds of the original MOTIF in an affordable & space-saving 1U rack.

### *i88x Audio-MIDI Interface*

Two Yamaha DM2000-quality mic preamps and six balanced line inputs, 18 channels of 96 kHz, 24 bit I/O (including ADAT compatibility) make this the perfect stand-alone I/O for a computer recording system or a great way to expand an mLAN system by connecting a single Firewire cable to the O1X or Motif ES.

### *BBT Digital Bass Amp*

Must great bass power and tone also mean great weight? The new BBT 500H says NO. Weighing in at 8.5 pounds, the BBT 500H sports 500 watts at 2 ohm, 11 sound types, 5 user presets, a built-in compressor, a programmable parametric EQ, FX loop, headphone/tuner outs, and MIDI IN/OUT.

### *TRB1005 in Translucent Red*

Stunning looks and top-quality materials define the sweet sounding 5-string.

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# SMiLE

## “The Best Record Never

**A** look at the highlights of the year 1967 will tell you that Lyndon Johnson was president of the United States; a first-class stamp cost a nickel; *Rolling Stone* magazine published its first issue; Frank Sinatra's "Strangers in the Night" won the Best Record Grammy award; John Lennon and Paul McCartney won for Best Song with "Michelle"; and the Boston Red Sox lost the World Series to the St. Louis Cardinals (some things will never change).

What's missing from that list, however, could have changed how 1967 is remembered, and could have changed musical history. While the Beatles were poised to release *Sgt. Pepper's Lonely Hearts Club Band*, the most ambitious album of the decade to date, Brian Wilson, the Beach Boys' brilliant, troubled leader, was embarking on a production that many feel would have eclipsed even that. Where the Beatles were bringing rock together with English music hall influences and stabs at musical psychedelia at Abbey Road Studios, Wilson was ensconced in Sunset Sound and a few other classic L.A. studios trying to put together an album that would span rock, pop, gothic modal harmonies, barbershop quartet, and Aaron Copland.

*SMiLE* — dubbed by *Newsweek* and the *New York Times* as the best album that was never released — had attained mythical status. In the wake of 1966's *Pet Sounds*, even the Beatles were awestruck, and like everyone else in the music business, wondering what Wilson would come up with next. *SMiLE* was to have a grand vision, what Wilson once described as "a teenage symphony to God": a sweeping musical journey across America in three symphonic movements, comprising 17 pieces that are as much motifs as songs, running into each other without a pause. Anticipation for *SMiLE* ran high — Capitol Records had printed 400,000 album covers, awaiting delivery of a finished master.

It would be a long wait — that master took 37 years to arrive. Brian Wilson's well-publicized bouts with mental illness, as well as his fellow Beach Boys' own trepidation about moving too far away from what had become an enormously successful hit formula — by 1966, the Beach

Boys had racked up nearly two dozen Top 40 hits, including "I Get Around" and "Help Me Rhonda," all produced by Wilson — conspired to can *SMiLE*. In 1968, after 85 recording sessions, including more than two-dozen for the song "Heroes and Villains" alone, Wilson abandoned *SMiLE*. What had been recorded — bits and pieces and a few complete songs on acetates that Wilson would spend hours reconfiguring and resequencing — was put into storage, seemingly forever.

When Wilson began to come out of his depressive funk in the 1990s, recording his first solo record, *SMiLE* slowly came back on the radar screen. In early 2003, he assembled an 18-piece band and orchestra and did six sold-out and acclaimed live performances of *SMiLE*'s music in London. Then, in April, Wilson and the ensemble went back into the studio — Sunset Studio One in Hollywood, where he and the Beach Boys had originally recorded parts of *Pet Sounds* — and, after 37 years, put *SMiLE*, finally, into recorded form.

The enormity of *SMiLE* as a piece of music is rivaled by its personal meaning to Brian Wilson's painfully sad self. "[*SMiLE*] has been an albatross around Brian's neck for almost forty years," comments Mark Linett, the audio engineer on the new project and on Wilson's first solo record in 1987, and who continued working with Wilson on subsequent projects including boxed sets of nearly all of the Beach Boys' catalog. "Making *SMiLE* has been more than therapeutic for Brian: It represents him facing his own demons, and now at last he's triumphed over them. *SMiLE* isn't just a turning point in his career — it's a turning point in his life."

In the early '80s, after several years as staff engineer at Sunset Sound, Linett moved to Warner Bros. Records' Amigo studios in Los Angeles, where he did sessions with other legends, including Randy Newman, Michael McDonald, Rickie Lee Jones, and Los Lobos. Ironically, the first Beach Boys song he ever worked on was ex-Van Halen lead singer David Lee Roth's hit-single version of "California Girls," which featured Brian's late brother Carl on background vocals.

# SMILE

by Dan Daley

## “Made” Is Finally A Reality

Linett went freelance in 1984, when Warner's studios closed. In 1987, when booking a session at Ocean Way (the former Western Recorders), the studio manager said that Brian Wilson had booked a last-minute session at the studio and needed an engineer. Would he be interested? "I said of course I would," Linett recalls, a spur-of-the-moment session that turned into a year's worth of work on Wilson's eponymously titled first solo record. He would go on to supervise the digital remastering of *Pet Sounds*, and later mixed a 5.1 surround version of that record released in 2002.

Wilson and Linett work easily together, and Linett describes himself as a technological bridge for Wilson, with experience from an era of limited analog tracks and expertise with the digital hard-disk recording techniques that so much of Brian Wilson's visions for *SMiLE* prefigured.

"I don't think *SMiLE* is a record that had to wait for Pro Tools to be recorded," Linett says in response to a question. "But [Pro Tools'] ability to randomly and precisely edit pieces of music together would have made making *SMiLE* easier back then. I remember [record label executive] David Anderle telling me stories about how Brian would sit for hours with acetates of sections of 'Heroes and Villians,' scrambling them around, constructing and reconstructing the song over and over again out of little pieces. What began as the tag of one song would sometimes become part of another. In 1966, [Brian] was working in

modular fashion — if a song had two verses and two choruses, he'd only record one of each and copy them, just as we fly in parts today on hard disk recorders. The limits of the technology of the time — 3-track, 4-track tape decks — was getting in the way of what he wanted to accomplish." (Although Linett adds that Wilson liked the idea of eight tracks: "He could overdub leads and vocals and not have to do them at the same time," he says.)



# SMiLE!



Mark Linett, Brian Wilson, and Darian Sahanaaja mixing *SMiLE* at Your Place Or Mine Recording



Mark Linett at the console at Sunset Sound

Wilson and Linett went back to Studio One at Sunset Sound with the band and orchestra that backed the live London performances of *SMiLE*. It was a reprise of the milieu in which Wilson conceived most of his masterpieces: a group of talented musicians playing together in a single room (the 8-piece orchestral section was placed in a single large iso booth). "Brian is a master at creating textures by putting fifteen guys in a studio with no headphones and arranging the music," Linett explains. "If you want to make a Navajo rug, you need to make it on the same kind of loom they used in the 1860s, not in a modern carpet factory. How he created sounds like that [transcended] the technology. It wasn't until we got to eight tracks that the modern idea of recording came about, using isolation to achieve sounds instead of ambience. The ability to cut a basic track and then fix it became a reality with 8-track recording. Brian came from a 3-track world; he created by using great musicians and vocalists and giving them great arrangements to play and sing. When he was working in Western Recorders or Goldstar [Studios], if he turned up a bass drum microphone and got more of six other instruments as a result, that was not a concern. A lot of bleed contributed to the dynamics of the musicians' performance. Once you started isolating them, the whole interaction between musicians and sound changed dramatically. So I think you can see why it wasn't

a leap to record *SMiLE* the same way he did 37 years ago — all live in small studios."

Linett says leakage is a key to the sound of many classic recordings, including the Beach Boys'. So he cautions against overuse of condenser microphones in general on large tracking sessions. "The problem is that they pick up too much [sound]," he says. "We prefer to use dynamic and ribbon microphones. I'll use condensers on a few specific applications, such as the grand piano, or a lone U 47 in the room for the harmonica." Favorite dynamic mics include the redoubtable Shure SM57, the ElectroVoice RE-12 and RE-20, and AKG D112.

The band had been well-rehearsed and seasoned with the material from the London concert performances — in fact, they were able to cut all the basic tracks in just four days. Any Brian Wilson production is defined by its vocals, and the fact that to some listeners *SMiLE* sounds vocally indistinguishable from a Beach Boys record — even *SMiLE* songs that were to become hits on other albums, such as "Good Vibrations," "Heroes and Villains," and "Vege-Tables," retain a distinct Beach Boys timbre on the new album, this despite no Beach Boy except Brian Wilson signing on the tracks. (Carl Wilson died in 1998 of lung cancer; brother Dennis Wilson died in a boating accident over 20 years ago; surviving bandmates

## Brian Wilson – In His Own Words

Brian Wilson's notoriety for dark humor, terse responses, and lack of irony is nowhere more evident than in a recent exchange with a *New York Times* reporter, who, when she asked why Wilson had decided to complete *SMiLE* now, was told, "I wanted to get it out before I died." She then asked, "Are you dying?" Wilson replies, simply, "No."

Wilson is deaf in one ear, the result, he says of beatings by his father, Murray, who also managed the Beach Boys early in their career. He continues to suffer from mental illness, including auditory hallucinations. As he told the *Times* in the same interview, "A year ago, I was writing music and I heard

voices at the piano. I just jammed on my head and said, Stop, stop, stop. I take Klonopin and Luvix. They help me relax and keep me from being scared."

For someone who professes to be fearful of surfing, and who has not been to the beach in over a decade, Wilson can still describe the endless summer as enshrined by the Beach Boys as happy times and good sunshine... going to the beach, going to Disneyland, having fun."

A conversation with him is usually quick and to the point, and he never hesitated when asked why he suddenly stopped work on *SMiLE* 37 years ago: "We were on some bad drugs, but we were also way ahead of

our time." But Wilson can also be light and cheerful. When I asked him how he enjoyed reviving *SMiLE* via digital recording, he was enthusiastic. "I much prefer [working digitally]," he exclaims. "We can go slower and keep all the subtleties of the music hearable. It's all more clear now, more descriptive."

*SMiLE*'s original recordings, which Wilson and Linett referred to prior to the rerecording, suffered compared to digital's sharpness, Wilson acknowledges. "They weren't up to par," he says, but adds that the inspiration was in them that enabled he and collaborator Van Dyke Parks to create the record's third movement. "That didn't

exist back then, so it was very exciting to be able to get that inspiration from the [original] recordings." As was going back to Sunset Sound, which Wilson says brought back many good memories. "It's where we had to go to make *SMiLE*," he says. "It's where all that stuff came from."

When I asked about a personal favorite, "Our Prayer," the gothic opening track of *SMiLE*, Wilson credited J.S. Bach as its inspiration. Wilson, the record producer, has two heroes: Phil Spector and George Martin. For someone who had already established himself as a multi-platinum producer by age 24, Wilson's choices are understandable. —Dan Daley

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# SMiLE!



The API console at Your Place Or Mine Recording

Mike Love and Al Jardine remain personally and professionally estranged from Wilson.) Wilson sings with the vocal group the Wonderments and other members of his touring band on *SMiLE*, and it's apparent that perhaps as much of the Beach Boys' sound lay in Wilson's arrangements as in the individual voices. "You can tell the difference between Brian's falsetto and Carl's on the [original] recordings and [vocalist] Jeff Foskett's on the new album," says Linett. "But that's beside the point. The arrangements are the key. Brian can hear every part of a multi-part harmony in his head, then he would 'deal' them to the various singers. And he can remember what those parts were, which is all the more amazing since some of the original recording of *SMiLE* never had vocals." ➤



Brian Wilson and Nick Walusko tracking background vocals.

## SMiLing Tools

### BASIC TRACKS

Sunset Sound Studio One — April 13–16, 2004

CONSOLE: custom; 64 inputs plus 12-channel sidecar

RECORDER: Digidesign Pro Tools HD-2 with 40x48 with Apogee Rosetta, AD-16, and DA-16 converters with the Apogee Big Ben as the master clock. Recorded at 24 bit/88.2kHz

MONITORS: Tannoy SGM-10 with Mastering Labs crossovers

MICS: AKG D-112, kick; SM-56, snare; Royer stereo, overhead; Beyers 500, toms; AKG C414 and 224, percussion; Sennheiser MD42, marimba; Electro-Voice RE-20, parade drum; AKG C-24 or Telefunken 251 pair, piano; Tubetech direct box and RE-20, electric bass; Altec 639, Neumann U 47, acoustic

bass; Shure SM-57, electric guitars; Electro-Voice RE-11, acoustic guitars; Neumann U 67, violin, viola; Sony C-37, cellos; U 67, woodwind; U 47-trombones, AEA 44c, saxophone; Neumann M 50 pair and U 47, room  
OUTBOARD: a pair of dbx 160s on the electric bass — that's it  
REVERB: Sunset's famed live chamber just off the control room was used extensively on the drums and percussion with the returns printed to separate tracks.

### Vocals and Overdubs

Your Place Or Mine Recording — April–June 2004

CONSOLE: custom API 2488, 36x16x24 with Flying Faders (for monitoring)  
MONITORS: Tannoy SGM-10 with Mastering Labs crossovers

MIC PREAMPS: Universal Audio 610 and 610a (tube) the same exact pres used to record most of Brian's records in the '60s  
MICS: Neumann U-67, lead and some background vocals; U 47, additional backgrounds. Most of the background vocals were recorded with three to five singers at a time, with the bass voice on its own mic.

OUTBOARD: Fairchild 670 for vocals

### Mixdown

Your Place Or Mine Recording — June–July 2004

Linett, Wilson, and keyboardist Darian Sahanaja were able to mix an average of three sections a day. The entire mix with a few recalls took approximately four weeks. It used around 32 outputs from Pro Tools to the API and used

both analog outboard (Fairman TMEQ, Lexicon PCM-42, Universal Audio 175a) as well as plug-ins (Universal Audio Pultec, Waves Renaissance EQ and compressors.)

REVERB: In addition to the reverb we printed at the tracking dates, we used several sampled live chambers as well as some sampled springs using both a separate Altiverb setup and a Sony DRES-777

The sections of each song were individually mixed back to Pro Tools through a DCS 904 A-D converter and monitored with a DCS 954 D-A (all at 88.2/24) Backup mixes were laid down to a separate Nuendo system at 96/24. The mixes were then assembled into songs and sequenced as we went in a separate Pro Tools session.

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David Kahne (Grammy-winning producer; Paul McCartney, Sugar Ray)

"I have to go between analog and digital all the time and the BX5s have become my workhorse."

Terry Howard (Grammy-nominated engineer/producer; Ray Charles)

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Home Recording, April 2003



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## M-AUDIO

# SMiLE!



The band tracking at Sunset Sound



Scott Bennett and Nick Walusko playing celery

[Wilson told me in a subsequent interview — see sidebar — that he prefers to sing sitting down now.]

Linett has a Neumann U 67 that he has used on Wilson for several years, a mic he also used with Paul McCartney and Elton John when they sang on Wilson's current solo album, *Gettin' In Over My Head*. "There's no elaborate method to recording Brian," Linett explains. "I just put up the microphone and a windscreen. Brian is a very natural singer. He knows what to do. For a few songs we used an old Shure 545 on him. That mic is very similar to SM57 and the Beach Boys often used it for lead vocals in the '60s. They have the 545 on for leads and usually a Neumann 47 for harmonies and Brian and Mike Love would often move between the two microphones as the group was singing live, doing both leads and harmonies on the same pass."

"They didn't build background vocals around the lead vocal," he continues, "Actually, the delineation between lead and harmony parts is often vague on *SMiLE*. There are lots of ensemble leads."

Listening back to classic Beach Boys records, the double-tracking of lead vocals was often obvious — the imperfect match between tracks was part of the timbral charm of the vocals. It seemed like an opportunity for technology to intrude, either to perfect doubles or to actually do the doubling electronically. But Linett says Wilson did his own doubled vocal tracks and any application of Autotune was minimal, and not for the purpose of perfecting doubles. "If a track is perfectly in tune, it restricts where a vocalist can go," Linett observes. "When the track is perfectly A-440, any imperfection in the vocals becomes [dissonant] and sounds worse than it is; when the track has natural imperfections, other imperfections become part of the palette."

Vocals were recorded using a circa-1963 Fairchild 670 limiter, which Linett points out would never have been used on vocals at that time. "The Fairchild was regarded as a cutting limiter," he says. "Instead they used to use a Universal Audio 177, usually in-line in the buss with a bypass switch." Referring to a catalog from the era, Linett notes that a 670 retailed for \$1,500 — the cost of certain new cars at the time. "And Ampex 3-track cost \$5,100; if you wanted four tracks, it ran you \$6,000. Things have changed a bit, wouldn't you say?"

*SMiLE* was recorded to a Digidesign Pro Tools | HD system running at 88.2 kHz/24-bit. Linett used

Apogee AD-16 and Rosetta converters and an Apogee Big Ben clock. He is a fervent believer in using quality external clock devices. "That should be the first thing you buy after you get your first DAW," he admonishes. "When I was remixing *Pet Sounds* I was using a Nuendo rig running at 96/24, and I had Digi bring over a Pro Tools system so I could do a shoot out." Regardless of the combination of systems and converters, the biggest difference he found was in the use of onboard versus external clocks. "That's what really opened the soundfield up," he says.

Sunset Sound has a custom 64-input console that uses several API components. That nicely complements the customized 36 X 48 API 2488 console, fitted with Flying Fader automation. Linett has at his home studio, Your Place Or Mine, in Glendale, CA, where he and Wilson tracked the vocals, did a few other overdubs, and mixed *SMiLE*. (Brian Wilson had a home studio in a house in St. Charles, Illinois, where he recorded his *Imagination* LP. He and his family will move to a new home later this year which will have a studio in the basement.) His console is augmented by a vintage Universal Audio sidecar mixer, similar to the one in Western's Studio 3, where Wilson and the Beach Boys cut the majority of their records, including "God Only Knows."

Linett, Wilson, and arranger/bandmember Darian Sahanaja spent nearly a month mixing *SMiLE*. The biggest challenge was getting the vocal balances correct, Linett says, as well as the editing challenge of getting all the segues in each of the three movements just right. Simultaneously, the trio was auditioning mastering engineers, ultimately choosing Bob Ludwig at Gateway Mastering facility in Maine, with updates on the mixes and the mastering output being exchanged via FTP transfers.

That combination of modern and classic technologies and methods characterized the entire making of *SMiLE*. In a very real sense, the record utilizes all of the major techno-paradigm shifts of the nearly 40 years it spans from conception to realization, from 3-track to the Internet. The ultimate goal of finishing what Brian Wilson started in 1967 was achieved, but only in retrospect, after the last mix was done, could Linett confirm that. "It wasn't until we completely finished that we knew we had done it," he says. "When I could see that Brian seemed lighter, as if a very heavy load had been lifted from him. That 600-pound albatross was finally gone." EQ



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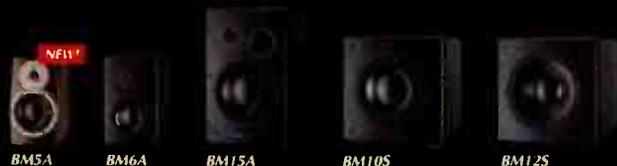
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# The Making of ... Discrete Drums *Heavy Mental*

## Modern rock beats in multitrack format

by John Krogh

Project studio owners and singer-songwriters have it made. All manner of outboard gear has migrated to the computer, instrument manufacturers continue to pack more features and sounds in smaller packages, and quality microphones and preamps can be had for what you'd expect to pay for a few hours in a commercial studio. Whether you're into tracking guitar, overdubbing vocals, or cranking out complete recordings for commercial release, there are plenty of tools to help you get the job done right. Yet, the great dividing line between most of our rooms and what the major league facilities can handle usually comes down to multitracking a drum kit.

Many factors go into a killer-sounding drum track, not the least of which is a room large enough to allow the drums to breath and ring. Of course, you'll need a choice selection of mics, the engineering know-how to capture the right balance of ambience and close-mic tones, a session-savvy drummer, and the list goes on. In short, you need what most of us don't have.

It was this reality that inspired producer, guitarist, and composer Rick DiFonzo to create the very first Discrete Drums library. Originally released in 2001, Discrete Drums presents close, overhead, and room-miked drum performances recorded with premium mics and outboard at Nashville's famed Sound Kitchen studios. The tracks are divided into song sections, which makes it easy to assemble intros, verses, choruses, and so on. This approach offers the kind of mixing flexibility that stereo drum loops just can't afford. It's a simple-yet-brilliant concept that has caught on.

To date, Discrete Drums has released three libraries, each specializing in certain styles (R&B, country, funk, pop, etc.). Over the past two years they've been ported over to a variety of platforms, including Reason, Live, Roland VS, and Pro Tools. Recently we learned

Rick was in the process of creating the third installment in the Discrete series entitled *Heavy Mental*. Tantalized by the title, we caught up with Rick, engineer Steve Marcantonio, and drummer Tony Morra to learn how this hard-hitting library came together.

### THE CONCEPT

**EQ: What were your main goals for *Heavy Mental*?**

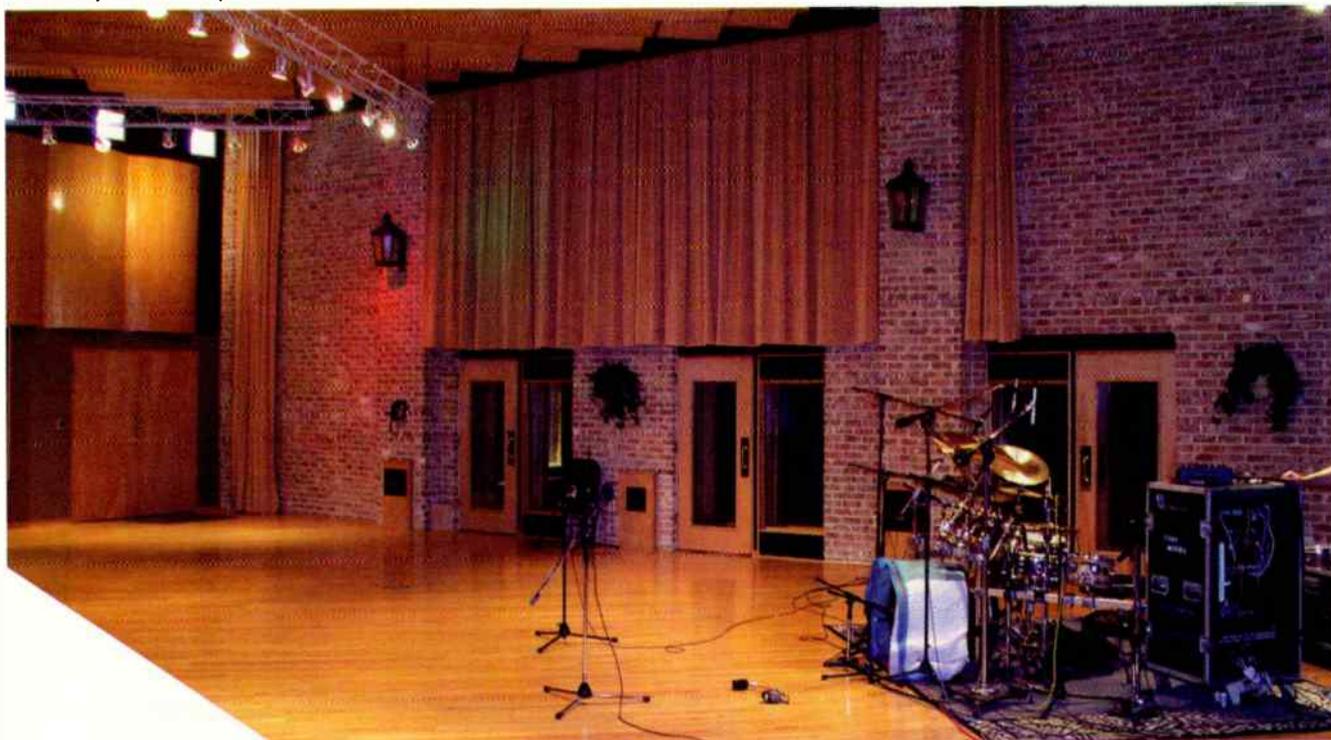
**RICK DIFONZO:** The main goal with this collection was to cover some bases we hadn't yet gotten to. Eventually we want to have a ton of content in every style that makes sense for us — basically, any style that really benefits from a live drum performance. Obviously some styles are better left to machines, and others don't absolutely require a great drum performance. But I feel that metal and hard rock simply *cannot* be done properly with a machine or sampler, so it was time to get rockin'.

**With so many drum loop libraries on the market, what was your plan to distinguish this collection from the pack?**

**RD:** Originally the blueprint that set us apart from the pack was the multitrack nature of our products. No one had done it quite that way before. I recorded some stereo drum stuff for my own use eight or nine years ago, and considered releasing it. But at the time, although there were no real rocking drum collections out there, I didn't feel I could compete with the 800-pound gorillas in the sample library business. Once home studios began to make the switch to powerful computers, however, I realized a multitrack drum library would be the thing that would identify us, and give us an edge, allowing us to enter the market with no competition (at least for a while).

With *Heavy Mental* in particular, I feel the thing that sets it apart is the fact that we went into a world-class studio and set Tony loose. He's a great drummer, his drums sound killer, the playing is phenomenal,

Here's Tony's kit miked up for the session. Note the distance of the Coles mics from the kit — these were used for one of two different sets of room tracks.



and he wasn't afraid to get heavy. This is not a generic collection of performances, although we do get simple in places, as well as cover the balls-to-the-wall flailing. [laughs]

## THE SESSION

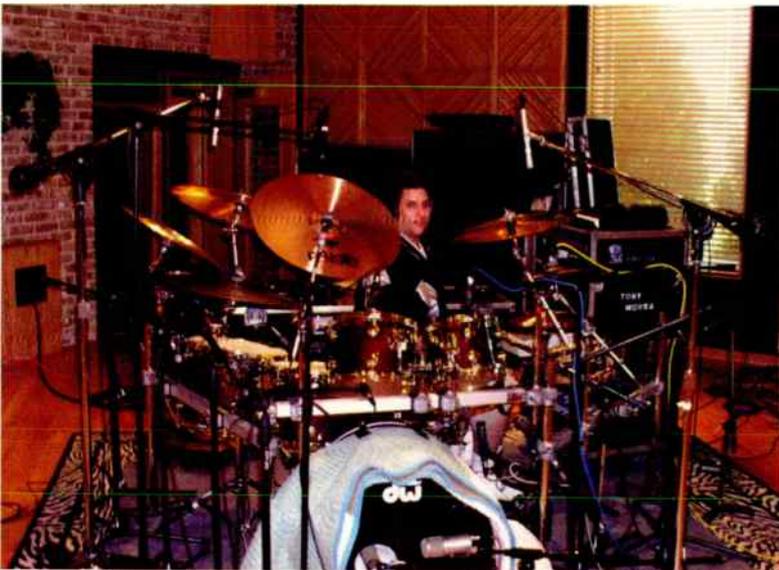
**With the concept being heavy metal, were you looking to capture current metal styles or did you take a more "best of metal" approach incorporating today's sound as well as sounds from the '80s and '90s?**

**RD:** Sonically I wanted this collection to be very modern. A lot of early metal sounds are too processed, EQ'd, and a bit tame compared with the newer sounds. They also often feature some pretty crappy reverbs. We took advantage of a great room by miking it two different ways. We put a pair of Coles around 10' from the kit and took that in stereo, and also took the ceiling mics that were *much* farther away — also in stereo.

Stylistically, we referenced quite a few approaches from the last 20 years, from flailing speed metal to flat-out hard rock.

**TONY MORRA:** Rick came in with snippets of songs that served as guides to what he was looking for. I think there were about 40 of them! I would listen to a clip and interpret the drum part, the style of the song. Then I'd go to the kit and give Rick a couple intro fills, and then an intro groove (bigger or light). From there I'd build into a verse, then a chorus thing, a bridge. I'd do grooves with crashes and without crashes. I also did some crazy fills — some simple, some quite complex. I did go with some very "common" metal fills like you'd hear on many CDs. This became the process. We weren't sure exactly how we were going to approach it.

Tony Morra set up in the corner of Sound Kitchen's "Big Boy" room.



## PRODUCT PROFILE

**Expected drop date:** Mid to late November for the first installment. (The sessions are being divided into two products, volumes 1 and 2.)

**Price:** Approximately \$199

**Formats:** "We're toying with the idea of Pro Tools sessions, and there will definitely be a Roland-specific version for use in V-Studios. We'll be releasing 16-bit stereo versions that are compatible with just about anything, Acid included. We also are adding files laid out as "Live Sets" for Ableton's Live software. A demo version of Live is now included with all of our products — it really shows off the capabilities of our content. Users can simply open the Live Set, and all of the tracks for all of the song sections appear, ready to arrange." —Rick DiFonzo.

**Contact:** [www.discretedrums.com](http://www.discretedrums.com)

## POST PRODUCTION SECRETS

**What does it take to turn raw multitrack sessions into the polished final tracks you'll hear on *Heavy Metal*? Here's the process, as told to us by Discrete Drums founder and producer, Rick DiFonzo:**

"What I do after the sessions is chop things into segments that the user can arrange later. I make sure that an 8-bar section is *exactly* eight bars, right down to the sample. I found that no time-stretching software could really do this on an entire section without adding some artifacts.

The solution I found is not easy, but it works perfectly and doesn't affect the groove at all. In Pro Tools, I will determine how many samples are in eight bars (for example). Let's say there are 569,209 samples in an 8-bar phrase, but eight bars of the drums (from downbeat to downbeat) comes in 396 samples short. I listen with the click and determine the best place to do the surgery, and then I select a small slice, across all of the tracks. In Serato's Pitch and Time, I can see how many samples I have selected, and then tell it how many samples I would like that slice to actually be. I add 396 samples to the source file and process it.

As long as the slice is between big transients, such as a snare hit, you can't hear the processing at all. It's a real pain, but I've tried everything else, and this is the only way to keep the groove intact, and make sections line up properly without compromising the sound."

**RD:** We also referenced actual songs here and there for "sweet" tempos and general "power" factors, but they were only places to start. Tony took everything to his own place and came up with tons of variations on each "project" or "song." Once in a while I put my two cents in, but mostly, I just let him go. Some of the bits I played for him were things I had done, and things I wanted to have for my own use.

**What drums — snares and cymbals in particular — were used and why?**

**TM:** I used my main Drum Workshop [DW] kit that I use here in town for sessions. Steve [Marcantonio] and I have worked quite often together and he loves the way they sound. (Although, Steve can make a tin can sound amazing.) These drums are special for me. This is the first kit I got from DW as an endorser. So there's sentimental value, but damn,

Steve at the helm of Sound Kitchen's Custom API Legacy Plus console during the *Heavy Metal* sessions.



# The Making of . . . Discrete Drums *Heavy Mental*

A look at the close-mic positions on the snares, hi-hats, and toms.



these things sound awesome! They're very versatile. We didn't retune the toms at all. If I needed the fills to be big and fat, I'd use my larger toms in the setup. I have four toms, 8"x10", 9"x12", 11"x14", and 13"x16". I used a 16"x 24" kick from the kit I have in my home studio (the Downtown Batterie). It's very big and punchy. As for snares, well, I'm a snare junkie. I think I have 38 right now. [laughs] So, we had a lot to choose from. I did use a lot of metal drums, you know, brass shells. Plus an incredible Ochiltree snare I have. On

a few tracks I used DW's Edge snare. Let's see, what else? My grandfather's Slingerland from 1929, and an old '40s Radio King that belonged to my dad.

For cymbals I used Paiste 2002's Dimensions. They're bright and cutting, with this incredible "sheen." I went with these thinking that we needed something to blast through a lot of guitar. I know Steve is very particular with overheads, and I knew if I went with the Paistes, he wouldn't have to brighten up the

I approached these sessions differently from any other date because first of all, I only had to worry about the drums.

overheads to get the cymbals to speak, which could really alter the overall kit sound. I wanted to give Steve a clean, bright, yet punchy sound.

But I did change up the ride cymbal, come to think of it. We went with an old washy ride on some of the tracks — an old '60s 22" A Zildjian. I might have also used a 22" Sabian from the '80s. It's all bell and weighs as much as me! It's heavy and has no wash at all. For hi-hats I kept things pretty much the same: Paiste 15" "heavy hats."

**STEVE MARCANONIO:** We changed up snares a lot and sometimes cymbals. Tony was always on top of the tuning, which is essential if you want your drums to sound good.

I approached these sessions differently from any other date because first of all,

I only had to worry about the drums. A lot of times when I'm tracking a band there may be other instruments in the room and I would be concerned with leakage. In this case I had the opportunity to worry only about the drums.

**Describe the microphone setup and signal paths for the session.**

**SM:** We recorded the drums using a Custom API Legacy Plus console. If you visit [www.soundkitchen.com](http://www.soundkitchen.com) you can get a view of

Fully-programmable drum machine: \$349\*.  
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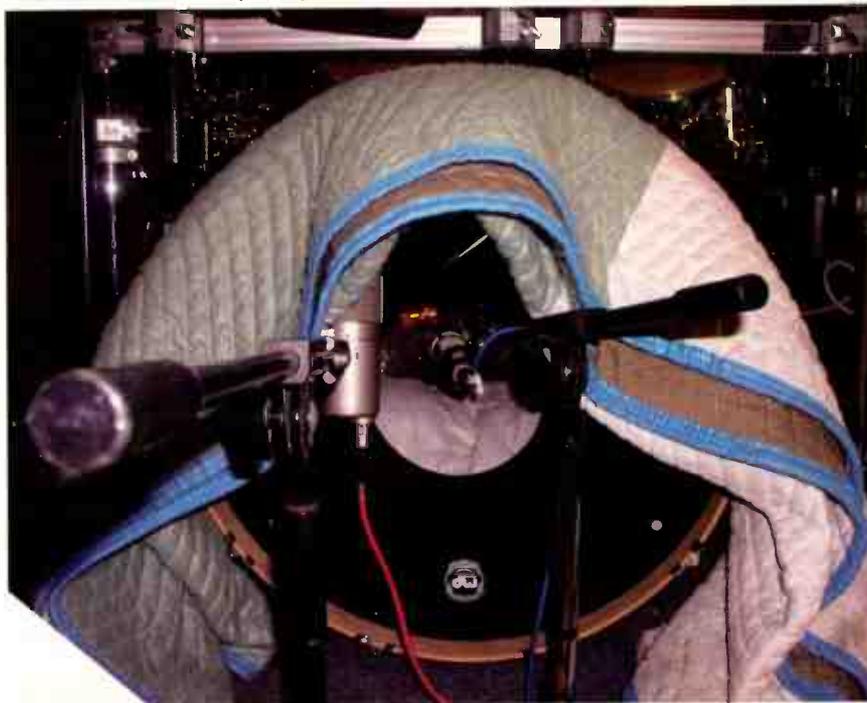
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## The Making of . . . Discrete Drums *Heavy Mental*

Engineer Steve Marcantonio chose to mic the kick with a Neumann FET 47 on the outside and an AKG D12 on the inside. A packing blanket was used to keep leakage to a minimum.



the room. It's a nice big room with wood floors and brick walls. There are theater curtains on the wall that can be opened and closed from a remote in the control room. For this session I opened the curtains up all the way. The drums were in the far corner of the room looking in to the control room. There are four Audio-Technica 4051s in the ceiling that live there and I use them all of the time. I find that they really capture the sound of that room. I bused all four mics to two room tracks and compressed them with a UREI 1178. I also used two Coles mics in front of the kit, placed low. These captured a different kind of ambience that punched the drums up without adding too much of the actual room. On the kick I had a [AKG] D12 inside and a Neuman FET 47 outside. I like the click of the D12, and with the '47 I put it up against the front head, which gave me a lot of bottom from it. These two mics were bused to one track. The snare had [Shure] '57s on top and bottom, and the hat had a [Neumann] KM84. For the toms I used Audio-Technica ATM 23s — my favorite tom mics. On overheads I went with Shure SM81s, using EQ to roll off some of the lows, of course. I only compressed the room



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**Strongroom Studios**

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**Geoff Dugmore**

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**Sidh Solanki**

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**Steve Levine**

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**Paul Borg**

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# The Making of . . . Discrete Drums *Heavy Mental*

mics and just a little on the snare's top mic with a [Empirical Labs] Distressor.

**Was "the sound" of these tracks any different from previous Discrete titles — did you go for a different kind of room sound, or use extra processing, for example? Or was your aim to keep it in the style, sonically speaking, of your other libraries?**

**SM:** We definitely went for a different sound on this series, for sure. For one thing, we were in a much bigger room, so it had a much bigger sound.

**RD:** Right, and we had no desire to recreate anything we had done before either stylistically or sonically. It was about getting it

right for the idiom, so this one is really punchy. If you mute the rooms, the drums have a lot of impact and tone. When you add one or both of the room tracks, it becomes much more cavernous than any of our previous collections. It's the sound of Sound Kitchen's "Big Boy" — it reminds me a lot of the old Studio "B" at the Record Plant [NY], even though it was twice as large.

**Was there any "creative" processing done to the tracks?**

**RD:** Not really, but we did record a stereo track of a cheesy old Radio Shack stereo mic that Tony hung from his rack. He travels with a fairly extensive rack of outboard, and he would process the crappy sounding mic in different ways for different "songs." He'd add delays, filter the hell out of it, compress it, whatever made it ugliest. He calls that the "Gak Track," and I loved it!

**Tony, from a technique perspective, did you approach these sessions any differently than a regular date? In other**

We wanted these tracks to feel awesome — raw power and energy.

**words, were you more focused on playing "extra clean" and precise?**

**TM:** I was certainly more focused on playing clean 'cause the only thing you heard back was me! [laughs] I couldn't hide behind the bass player or blame any one else for rushing or slowing down — it was a click and me. Did I accomplish that? Well I'm sure a thing or two were nudged to be tight. You'd have to ask the Rick — he's the edit guy.

We wanted these tracks to feel awesome — raw power and energy. You know, guys are going to be putting this stuff to use in their studios in their 500 square-foot apartments. We want their tracks to jump off the computer screen or whatever format these tracks are going to be in and hit you in the freakin' puss so hard! Like you took your tracks to one of the best rooms in town and got *the* drum tracks of your life. Because it was just me in the room meant I could really hone in on something and get it tight. Sometimes I played really tight and other times just went Keith Moon on you guys! **EQ**

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Sound On Sound review July 2004

  
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World Radio History

# Destination:

**WHAT KIND OF STUDIO WOULD YOU BUILD IF MONEY WERE NO OBJECT?**

# In

the back of our minds, we all harbor an image of our ideal studio — a dream location where we could relax, be creative, and work with the high-end clients we know we deserve to be recording. We imagine what gear we'd buy, how the rooms would be decorated, what amenities would be offered, and most of all, we can picture how it would sit in the lush pastoral hillsides.

Recently *EQ* came across two studio owners who have had the opportunity to build their dream studios, creating rural retreats — “destination studios” — where artists can bring their projects and work in isolation surrounded by nature's beauty.

BiCoastal Music, located an hour north of New York City, was built for its

owner's musical needs as well as to provide services for local engineers such as Mick Guzauski (Mariah Carey, Neil Diamond) and Neil Dorfsman (Bob Dylan, Dire Straits).

Studio.Metronome, in the wilds of New Hampshire, provides complete escape and security for engineers, artists, and producers who wish to concentrate on their art in a remote setting.

Both studios are great examples of a recent trend toward decidedly non-urban full-service studios offering clients seclusion in an inspiring setting, as well as world-class equipment, high-end acoustic design, and luxurious perks and amenities.

So what's your dream studio look like? What kind of gear does it have? How is it

laid out? What kind of services does it provide? It doesn't hurt to dream — you never know when your dream studio might become a reality!

**BICOASTAL MUSIC**  
[www.bicoastalmusic.com](http://www.bicoastalmusic.com)

When Hal Winer decided to build his 1,700 square foot BiCoastal Music studio in Ossining, New York, he turned to veteran studio designer Russ Berger of Russ Berger Design Group ([www.rbdg.com](http://www.rbdg.com)). According to Berger, “This is a really great example of a significant trend, where people are building more high-quality studios in rural settings. BiCoastal was designed to service a local group of producers,

# Studio



Three isolation booths provide BiCoastal Music with flexible recording possibilities. The iso booths, live room, and control room are separated by floor-to-ceiling laminated glass windows, allowing for easy visual communication.

engineers and artists who live outside of New York City and are tired of the commute. It's so cozy and has so much charm; if I was going to build another studio for myself, this would be it."

Built into the side of a hill in a wooded area, the studio is in Winer's home, a former inn built in the 1800s. The studio was designed to complement the home; a major challenge was to isolate the room from external noise; the



The control room at BiCoastal Music is centered around an SSL C200 console; the studio operates mainly in the digital domain, although a nice selection of outboard gear provides plenty of processing options.

entire room was built on floating floors, so there is no contact between the studio floor, walls, or ceiling and the surrounding building.

The live room features a 22' vaulted ceiling, and has been treated to have a diffuse, homogenous sound. Existing structural elements were included where possible. Lighting and visual communication is important at BiCoastal. Outside windows allow natural light to stream in, and a large laminated-glass window, extending all the way to the floor, permits sight lines and eye-contact between the control room and live room. Similar windows

separate the isolation booths and the entry vestibule.

Russ Berger was also involved with the gear at BiCoastal Music, fabricating the custom 5.1-channel monitoring system. "Hal has quite a nice equipment configuration. We've maintained a digital path from console, through the crossover and all the way up to the amps. As far as I know, this is the first time that's been done successfully."

Studio amenities include hiking trails, therapeutic massage, and a studio kitchen. A private patio, fire pit, and seating area provide a relaxing retreat for clients. ▶

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## Destination: Studio



BiCoastal Music's massive live room has a 22' ceiling. The upper portion (above the soffit) is designed to be live, giving the room a natural reverb tail where desired.

### **BICOASTAL MUSIC GEAR**

**CONSOLE/MIXERS:** SSL C200

**RECORDERS/PLAYERS:** TASCAM DA-series [3], TASCAM DA 30, HHB 830+

**MONITORS:** RBDG/Hyperion Projects 5.1 monitor system, Mackie HR824, Audix N5, Tannoy PBM8, Yamaha NS-10m; Sony MDRV6 [8], AKG K240M [6]. Aviom A16 system; amps by ATI, Bryston, Hafler, Audire

**OUTBOARD:** Manley ELOP, Massive Passive; Daking FET Compressor [2], Empirical Labs EL8 Distressor [4], EL7 Fatso; Universal Audio LA-2A, Dual 1176; dbx 160 [2]

**EFFECTS:** TC Electronic System 6000, 2290; Eventide Eclipse, Lexicon PCM 70, Prime Time II; Yamaha Rev 7, Roland SRV330 [2], SDE 2500

**MICROPHONES/DI:** Neuman U67, DPA 3552 [2], 3521 [2]; Langevin CR3A [2], Audio-Technica AT4050cm5, AKG 460 [2], Shure SM81 [2], Beta 52, Beta 57 [2], SM58 [2], SM55 SH, SM57; Crown PZM30D [2], Avlex C135, Electro-Voice RE20 [2], Audix D1, D4, D2 [5]; Royer R121 [2], Beyers 260 [2], 160 [2]

**MICROPHONE PREAMPS:** Manley Dual Mono, Langevin DVC, Daking 52270 [4], Millennia Media HV-3D [2], Chandler LTD-1 [2], Vintech X81 [2]

**DAW:** Digidesign Pro Tools HD3, 192 I/O [4], 96 I/O [3], SNS Fibre Drive

**SYNCHRONIZATION:** Rosendahl Nanosync, Apogee Big Ben

**KEYBOARDS/MIDI:** Steinway Model "A" grand piano, Alesis QS-8, Roland D-70

**INSTRUMENTS/AMPS:** Drum Workshop 7-piece drum set, Zildjian and Istanbul cymbals Mesa Boogie mkIIIC, Rivera Knucklehead 55, Music Man 112RD, Buzz Feiten 2/12, Hartke Tilt Back, Fender Twin Reverb

### **STUDIO.METRONOME**

[www.studio.metronome.com](http://www.studio.metronome.com)

Looking for an idyllic location for your next studio? You'd be hard pressed to beat the spot that Bennett Chandler picked for his Studio.Metronome: amidst 100 acres of hardwood forests in the rolling hills of New Hampshire. According to Chandler, "My family has owned this beautiful property for many years. I built the house up here in 1995 and included a small Pro Tools studio for my own work. I found the secluded atmosphere extremely conducive

to creativity, as did visiting artists."

John Storyk of Walters-Storyk Design Group ([www.wsdg.com](http://www.wsdg.com)) was selected as the architect/studio designer for the project. "Metronome is a completely-realized dream studio," Storyk says. "Bennett has had an extremely interesting career both in pro audio and in the business world, and he's done everything right with this studio. My partner and senior designer Scott Yates and I were immediately impressed by the location, and its acoustic potential. Ben's idea to create a fully equipped analog/digital mixing room within this stunning rural

## S6DXBXL

The S6DXBXL pictured features:

- ◆ One 6-space rack bay sloping up on the right side of the DXB, with a large writing surface between it and the wrist pad.
- ◆ The left side has a small writing surface next to the wristpad, followed by 2 rackspaces, with 6 more rackspaces angling up. These rack spaces have a usable depth varying from a little over 6" in the front section to 14" in the back.
- ◆ Padded wrist rest across the front of each writing surface. The DXB has it's own built-in wrist rest.
- ◆ Mounted on heavy duty powder-coated black steel legs.



*pictured with optional 3D laminate "cheeks" in brushed aluminum finish*



## Synergy MC



*pictured with optional solid mahogany "cheeks"*

The Synergy MC for the Mackie Control is available in various configurations depending on your specific needs.

The one pictured has rack bays above the Mackie Controls. We also can make it with the rack bays and writing surfaces to the sides as usual.

## Synergy XL Series *professional console furniture*

The Synergy XL series is designed to provide beautiful and functional console housings for all the popular mixers, providing you with optimum flexibility to accommodate these mixers and associated peripherals. Synergy's surprising affordability gives you the opportunity to add "WOW FACTOR!" to your studio right now.

The S6C24XL pictured features:

- ◆ Two 12-space rack bays, one on each side of the Control 24.
- ◆ The writing surface is next to the wristpad, followed by 4 rackspaces, with 8 more rackspaces angling up. These rack spaces have a usable depth which varies from a little over 6" to no limit.
- ◆ One-piece padded wrist rest across the front.
- ◆ Top shelf can hold numerous monitors and speakers.
- ◆ Removable cover panel along upper back conceals cabling, providing easy access when needed.
- ◆ Mounted on heavy duty powder-coated black steel legs.

Other mixer housings will vary based on their dimensions and profiles.

## Synergy S6C24XL



*Synergy S6C24XL for Digidesign Control 24*

*pictured with optional solid mahogany "cheeks"*



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## Destination: Studio



The live room at Studio Metronome contains a Yamaha C7 grand piano. Other instruments, including a 7-piece DW drumkit are available for clients.

Studio Metronome offers a large selection of microphone preamps and an array of analog and digital processing tools. Windows to the outside allow for natural light and expansive views.

Studio Metronome features an SSL 4048 G+ console, monitored through Boxer T5s. Dynaudio, KRK, Genelec, and Yamaha speakers provide other monitoring options.



setting was brilliant. The combination of location, equipment, and overall room acoustic quality make this a very special place for recording and mixing music."

A prime feature of the studio is its full-time in-house maintenance staff, headed by Technical Director Leo Monea. In fact, the maintenance/tech support staff proved so effective that their services are also being offered to other studios and professional users in the area, under the business name "MetroTech."

Personal amenities for visiting artists and engineers include a large art collection,

dramatic views, hiking and cross-country skiing trails, a hot tub, and gourmet meals prepared by an in-house chef. There's also an outdoor performance pavilion on the site. According to Chandler, "We've tried to think of every possible contingency, and are prepared to meet virtually any need. We know of no other mixing rooms in New England that meet this level of perfection. Artists, engineers, and producers seeking the best technology, acoustic environment, and vibe need look no further."

**Studio.Metronome gear next page.....**

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## Destination: Studio

### STUDIO.

#### METRONOME GEAR

**CONSOLE:** SSL 4048 G+

**RECORDERS/PLAYERS:** Studer A827 2" 24-track with Dolby SR, Ampex ATR 102 1/2" 2-track with Dolby A/SR, Otari MTR121IC 1/4" 2-track with Dolby A/SR, Alesis ML9600 CD recorder [2], ADAT LX20; TASCAM D-45, 112 mkIII

**MONITORS:** Boxer T5 with Boxer amps and XTA DP226 crossover, Dynaudio M2 with Chord 1032 amp, Genelec 1032APM, KRK Expose 8, Yamaha NS10m, Furman HDS-6, HRM-6 [5], AKG K240 [12]

**OUTBOARD:** Apogee PSX100 digital converter, Teletronix LA2A, UREI 1176LN (Black "D") [2], LA3 [2], Universal Audio 1/5, Manly Vari Mu, Massive Passive; Chandler EMITG-1, Gates Sta-Level, Empirical Labs EL8 Distressor [2], DBX 105a [2], TC Electronic Triple C, API 550B [2], 660 [2] Aengus graphic EQ [2], Pultec EQP 1a, EQH-2, MEQ-5 EQ [2]; Focusrite Red 2, Neve 2257 [2], Drawmer DS201 [2]

**EFFECTS:** Lexicon 480L, PCM 70, PCM 42 [2]; AMS RMX16, Ecoplate, AKG BX20, Yamaha Rev 7, SPX90; TC Electronic 2290, 1210; SansAmp Tech 21, Eventide H3000D/SX, H949; BBE 862

**MICROPHONES/DI:** Neumann M49, U48, U67, U87, U87Ai [3], SM69fet, U64i, KM54, M582 [4], KM184 [2], KMS105 [2]; AKG C12, C12A [2], C12VR, C426B, C414EB [2], C451EB [2], D25, D14, D12, D112 [2], Schoeps M221b, CM124, CMT44; Royer R121, Coles 4038 [2], B&K 4131 [2], Sony 37p [2], Electro-Voice RE20 [2], RCA 77DX, Sennheiser ME0 [2], MD421-III [4], MD441, 604E; Shure Beta 87A, SM81 [2], SM57 [4], SM58 [5], SM84 [4], 55; Rode: NT2 [2], Crown PZM 30D [2], Octava: MC012 [2], Manly Tube DI, Countryman: FET 85 [5]

**MICROPHONE PREAMPS:** Neve 1073 [2], 1066 [4]; API 512C [4], Focusrite Red 1, Telefunken rack, V72 [2], U73, V78 [4]; Universal Audio M610, Altec 438c, Avalon VT-737SP

**DAW:** Digidesign Pro Tools HD3, 192 I/O [3], MIDI I/O; Glyph swappable SCSI and Firewire drive arrays

**SYNCHRONIZATION:** Desk Doctor ZX for SSL, Lynx Time Code modules [2], Lucid SGG 192, Digidesign Sync I/O

**CABLING:** Mogami cable, Neutrik gold-plated connectors

**KEYBOARDS/MIDI:** Yamaha C7 grand piano, Kurzweil PC88, Korg Triton

**INSTRUMENTS/AMPS:** Drum Workshop 5-piece maple drum set, Epiphone ES 335, Fender Precision bass, Stratocaster, Twin Reverb; Line 6 FlexTone II, Ampeg B-115

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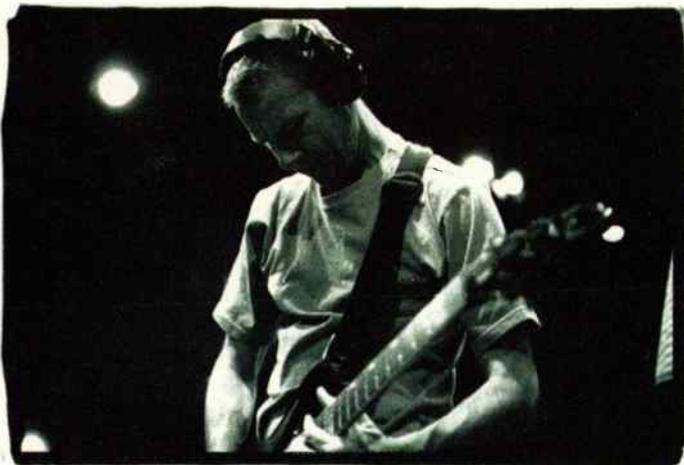
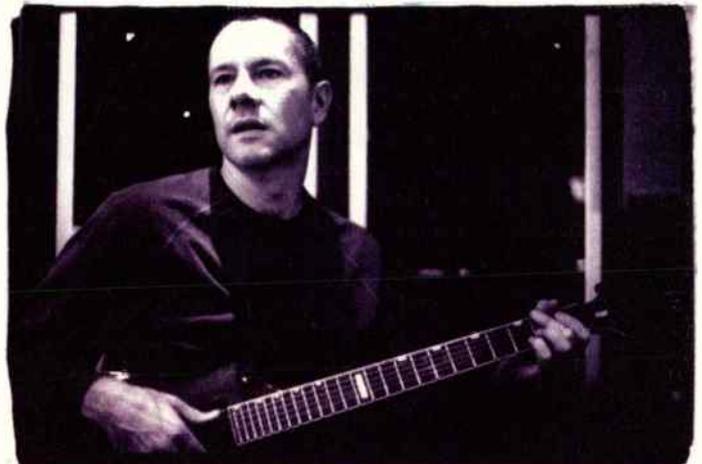
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# Helmet Law



## PAGE HAMILTON RETURNS ON HELMET'S SIZE MATTERS

by Eugene Robinson

**For** any of this to make sense to you, you'd have to remember that there once roamed the earth bands for whom flashpots were a necessary part of the stage plot, and drummers on twirling kits with haircuts that consumed a significant portion of the performer's attention, both on and off the stage . . . well, that these things even existed.

Then you'd have to remember what happened when first Nirvana and then Helmet muscled their way in: what it looked like and more importantly what it *sounded* like. Sartorially and sonically

stripped way down, Helmet was Apollo to Nirvana's Dionysus and the die was cast that would spell the end for the music of fashion excess.

After Helmet, Page Hamilton put in six years of film scoring for Eliot Goldenthal and sideman work for David Bowie and Bono. But more was lurking under the surface.

"Underneath it all I just really loved rock music. Music was happening in my head that just didn't seem to make sense in any other place than a Helmet record," Hamilton says. Eventually various meetings and a working association with Nine Inch Nails' Charlie Clouser gave birth to the

possibility of a new Helmet record. So it was done, despite no other returning original members. And because of the additions of power player replacements — John Tempesta from Rob Zombie and Testament (drums), Frank Bello from Anthrax (bass), and Chris Traynor from Orange 9mm (guitar) — it was done.

Which is easier said than, well, done.

Because having the players is still a world away from having the songs. And having the songs is a universe away from having them sound like something.

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extremities of sound well documented, the pairing ended up being a natural fit. So from the swampified flats of Reznor's New Orleans digs back to Los Angeles, Clouser and Hamilton had three songs finished together, and eight that Hamilton had already written. Add in the players and all that remained: the angle and attack of the recording.

"I've always been a big believer in the sound and the vibe that you get from a band just playing," says Hamilton. "When you listen to Miles. Or Coltrane. I mean those are fundamentally just recordings of guys standing around microphones *playing* together and recording it on a 4-track or something. That's what I like to hear." Which is why Clouser is such an interesting choice. Not an analog acolyte but a digerati . . . a man steeped in the sample.

Why this departure?

"Well, as a guy who made records on tape from day one," Hamilton says, "I got turned on to the digital world as a way to write and work, but I wasn't convinced that a record would have the same warmth. But the whole no tape thing and Pro Tools, well, it's really great and flexible and ultimately we can get closer to whatever it is that we really want."

"And," Clouser adds, "the labels don't have to support the budgetary needs of analog by having to spend like 12 grand on tape, among other things."

So taking the live room ethos as a marching order, Clouser turned Cello Studios into a "sound spout."

"We put John's drums on a riser with three 12-foot-tall gobos behind him," Clouser adds. "The rest were 5-foot gobos, about two or three of them, laid around the sides to force the sound straight out to the front. To cut down on the cymbal fog — John has a lot of cymbals — we only used three mics for between five and seven cymbals. They were all Neumann KM84s. We used two [Neumann] tube U 47s on the kick drum, one under a blanket. Some Sennheiser 421s on the toms, another Neumann KM84 on the hi-hat, and two SM57s on the snare. And to round it out for a nice stereo picture we used some AKG C12s." Clouser pulled all of this through a Neve console onto a Digidesign Pro Tools HD system set up to run off of Emagic Logic on a dual 1-GHz G5.

"Me and Page and the engineers, first Ryan Boesch, then Chris Holmes, with Jim Coffman along for the Pro Tools stuff, wanted to expand Helmet's sonic palette," Clouser says, warming into the description. "Early Helmet was sort of the sonic equivalent of a black-and-white photo. A very high contrast black-and-white photo, but a black-and-white photo nonetheless. Since we were at Cello where they virtually invented the 1176 [Cello Studios was at one time Bill Putnam's Universal Audio], we used them for compression along with a ton of vintage dynamic processors because with both the songs and the production we wanted to work in some colors. It's



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## Helmet Law

still more *Back in Black* than Robert Fripp, but we wanted some depth and color added to it. Even with that I think it's still straight thuggery."

Which in Clouser's world means maybe 15 takes if needed, only two or three edits a song and at the end of the day a "pretty live record."

"We worked like you'd routinely expect to work on a 2-inch multitrack," he says. And two months later, after roughing it up at Clouser's home studio, production moved on to NRG Recording Services in North Hollywood, where predictably, everything changed.

Because while the original intent was just to record the bass, the solos, and the vocals at Clouser's, the whole drum thing, in life-of-its-own fashion, had gotten away from them. Probably right around the time drum triggers were clipped to the drums to trigger Clouser's samples and everybody started thinking about MIDI.

"Nothing against the NIN drum sound," Hamilton says. "But in the end that's what it sounded like and it ended up not being the drum sound we wanted. We wanted a more natural sounding drum sound so we got rid of all the drum sampling and just went for the live drum sound. We're a rock band, you know, and that's what we want to sound like."

So off with the samples and on with a drum sound that sounded like Helmet. "We used Schoeps 222s for the overheads," engineer Jay Baumgardner continues. "[Audio-Technica] ATM 25s on the toms, [AKG] D112s on the kick, and Shure SM 57s on the snare." All into a Pro Tools HD system through a Neve console. With first engineer Dan Certa, they crafted from top to bottom "See You Dead," "Throwing Punches," and "Unwound," redid the drums on everything else, and then did guitars, overdubs, and mixing, per the original plan.

The results?

An unforgiving and solidly tuneful slab of metal that thankfully avoids both the taint of nu metal and indie preciousness: it is, in the tradition of *Strap It On* and *Meantime*, a Helmet record. **ED**

Eugene Robinson is a freelance journalist whose work has appeared in *GQ*, *The Wire*, *Raygun*, and, inexplicably, *Grappling*, magazines.

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# Myths Revealed

## Ribbon Rumors Rebuffed

Separating ribbon mic fact from fiction

by Lynn Fuston

*I spent many years relatively ignorant of ribbon mics. I tried them occasionally, but used them as if they were dynamics or condensers. Since I've been using and experimenting with them, my world has changed. Now I regret not familiarizing myself with ribbons long ago.*

*I suspect many people have a similar relationship with ribbon mics. They see them in pictures from the '30s and '40s, and read about them in magazines, but they don't really understand them. Plus there are rumors, some based in truth and others that are just plain false. Let's learn the facts of the matter with two of today's leading ribbon mic manufacturers.*

**MYTH #1: Ribbon mics are enjoying renewed popularity due to today's mics being better than the old designs.**

**Wes Dooley:** True and not true. The old ribbon designs, like any design that's still in use after 50 years, are pretty good ones. Over a long period of time, people notice what works and those who notice keep the flame burning.

I think the newer designs are very good. But consider the 1936 RCA 44. When you ask engineers, "What's the oldest piece of audio equipment in your studio that is still in use with no apologies?" frequently the answer is the RCA 44B. If you keep a good ribbon in it, do routine maintenance, it's as good now as pretty much anything.

Neodymium magnets really do help, over the original alnico magnets. At AEA, we've been using neodymium magnets from the start. We never went back to the alnico because there are some advantages to the neodymium: The neodymium magnets have higher output than the alnicos. The neodymiums stay magnetized better. The bottom line is that alnicos don't sound any different than neodymium, but neodymium gives you more options and better choices in design geometry. The R84 and R88 would be impossible to make without neodymium magnets. There are more high-performance ribbon mics available today, due to the resources we have now.

**John Jennings:** "Better" is subjective, so there will always be different opinions. AEA does wonderful

recreations of great ribbons from the past, Coles makes a mic that was designed five decades ago but that is an excellent ribbon, and there are companies making cheaper models now that are loosely based on "classic" ribbon technology. Royer's approach is to make thoroughly "modern" ribbon microphones, mics that couldn't have been produced until recently because the materials simply weren't available.

Sonically, Royer mics tend to have a more open high-frequency response than classic ribbon designs, a more up-front and realistic midrange response, and a tighter, less boomy low end (ribbons can be a bit bottom heavy). These differences are due to a number of design features, including the use of high-grade neodymium magnets and custom-designed transformers that have higher output and faster transient response.

### Myth-busters and Truth-seekers

Our cast of experts for this installment of "Myths Revealed" includes:

Wes Dooley  
Audio Engineering Associates  
[www.wesdooley.com](http://www.wesdooley.com)

John Jennings  
Director of Sales/Marketing  
Royer Labs  
[www.royerlabs.com](http://www.royerlabs.com)



Royer Labs R-22

AEA 44C

### THE FACTS:

1. Some old ribbon mics are classics for good reason — they sound great!
2. Modern designs have better performance and are more compatible with today's studios.

**MYTH #2: Current ribbon mics are sturdier than older designs.**

**JJ:** This is true with some designs. Royers were designed to be much more durable than classic ribbons, and it's to the point where

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# Myths Revealed

they've become regular live mics for big name acts miking electric guitars, drums, brass, etc. There are ribbons showing up now with SPL handling specs of 150dB SPL at 1kHz. While 150dB SPL sounds

like a lot of sound pressure, it's really not that much force at 1k. Royers are rated to handle 135dB SPL, but at 30kHz.

## Ribbon Mic Dos and Don'ts

1. Don't lay ribbon mics on the floor (or anywhere). The magnets are very powerful and will pick up "tramp iron" from around them, necessitating premature cleaning.
2. Don't blow into a ribbon mic as a "check." Doing so can damage or break the ribbon.
3. Keep ribbon mics covered when not in use. Blasts of air are your ribbon's worst enemy. A plastic bag over the mic is good insurance.
4. Feel the air movement with your hand before positioning a ribbon. If you can feel movement, use a pop filter in front of the mic.
5. Don't store your ribbon mics lying on their sides. Ribbons will stretch over time as gravity pulls the ribbon down. Keep your ribbons stored vertically.

40 times thinner than a human hair.

We've gotten better at figuring out how to protect them. We've

been shipping the R84 for about 20 months now and we haven't had one come back. But that was designed specifically for modern studio applications and has a lot of protection around it. In the R88 stereo mic, we put as little as we could between the ribbon and the outside world.

## THE FACTS:

1. Ribbon elements are as fragile as ever, but manufacturers have figured out how to protect them better in newer designs.

## MYTH #3: Phantom power blows up ribbons.

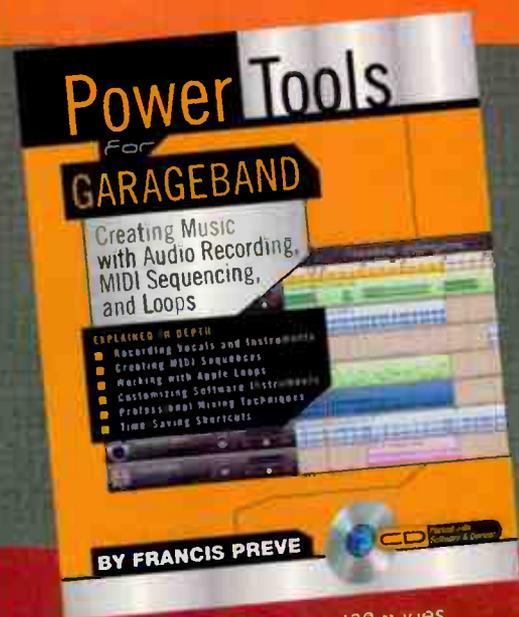
**WD:** No, as long as you have a good phantom-power supply and good cables, it makes no difference whatsoever. I've plugged my mics into phantom power a number of times. *But*, should you have a bad cable or a bad power supply, they will blow in a millisecond. It will apply 48 volts to the ribbon, which will leap out of the gap and snap in two.

Proper phantom power doesn't do anything because pins 2 and 3 have the same voltage on them. Now, should you turn the phantom power off and one side comes down faster than the other, then you'll blow the mic up. Should you have a bad cable with one side shorted so pin 2 is at 48v and pin 3 is at ground, bang, you've blown up the microphone.

**JJ:** Phantom power is only a problem if it sneaks up the wrong lead at which point the ribbon acts like a fuse and either stretches out or pops altogether.

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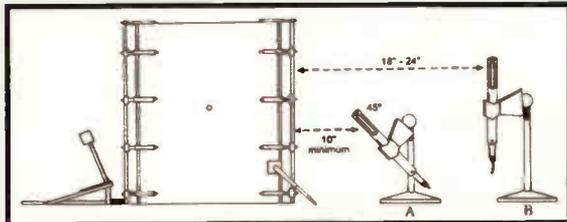
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# Myths Revealed



RDA 44BX, courtesy of Prof. S. A. Coutant, Pasadena City College.



Royer Labs says their R-121 can even be used on a kick drum.

One often overlooked issue is the use of balanced TT patch bays. Each time you insert a TRS connector into a patch point, you are briefly joining "tip" to "sleeve" then "tip" to "ring," before "tip" finally meets with "tip" inside the insert jack. If a ribbon mic is patched to a preamp with phantom power activated, voltage travels up the leads of the mic cable for a brief moment and can discharge directly across the ribbon element. These jolts stretch a ribbon element more quickly than even very strenuous high SPL use.

Royer's Active Series mics actually need phantom power to operate. The active circuitry isolates phantom power from ever reaching the ribbon element, so phantom can never hurt the microphone.

### THE FACTS:

1. As long as everything is wired and working properly, phantom power will not harm a ribbon mic.
2. Despite Fact #1, it still makes sense to avoid phantom power when using a ribbon mic!

### Audio Urban Legends

If you've encountered audio myths you'd like to see addressed, email them to Lynn Fuston at [go3daudio@aol.com](mailto:go3daudio@aol.com).

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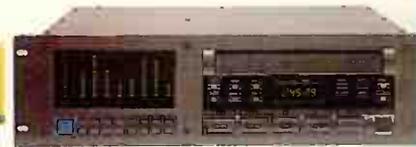
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# The Art of Recording:

## Miking Brass

Getting down to brass tracks

**There are probably as many methods for miking brass instruments as there are recording engineers — everyone has their own favorite techniques and gear for the task. Over the years I've had the privilege of working with some very fine brass and horn players on literally hundreds of brass sessions. I've learned a lot, both from the players and through experimentation. Here are some of my favorite methods and mics for capturing brass: trumpets, trombones, and saxophones.**

### RECORDING TRUMPETS

Let's start with trumpets, since they are at the top of the musical scale and also are the most challenging (the instrument, not the players). The trumpet has a bright tone that's so focused that it can project for hundreds of yards. So how do you record it in a studio that's measured in feet instead of yards and still capture that tone and brilliance?

Most people position the mic directly in front of the bell at a distance between 6" to 24". This works well for many recordings. You pick up the full throat of the instrument and it has presence that makes it stand out. The only downside is that you can also pick up the "spit" and edgy part of the instrument, which can

sometimes be distracting. Also, at 12" from the bell, you are hearing a sound that few people have ever experienced in real life.

I prefer to get away from the trumpet and frequently will position the instrument off-center from the mic. Often a distance of 2.5' to 4' works better for me. If I have two players, I have them split a single mic with each about 15 degrees off-axis. When I started recording trumpets, I used large diaphragm condensers. But these didn't capture what I was truly seeking. They sounded like trumpets with something missing.

Then I tried large diaphragm tube condensers and found that I was much happier. They were less covered, had a

brilliance and presence that I loved — and they really cut through a mix. There was only one problem with them: At lower dynamic levels they sounded great, but when the dynamic level got loud, the sound would singe your eyebrows. No matter how far I turned them down in the mix, that strident edge always came through.

In the past few years, I've discovered ribbon mics on trumpets and I'm in love. I have auditioned the Coles 4038, Royer R-121 and R-122, and AEA 44 and 84. Each sounds different but the thing they have in common is ease about translating the trumpet sound. They pick up the tone as well as presence, as opposed to some condensers that seem to just pick up the edgy part of the sound. The other nice thing about ribbons is that you can adjust the tone by moving closer to or farther from the mic. The closer you get, the warmer the sound.

Ribbon mics have a figure-8 pattern, so some engineers (including me) worry about leakage into the back of the mic. If



World-renowned trumpet player Arturo Sandoval playing his leads into a Royer R-122. Photo: Royer Labs.



The trumpet section around two AEA R84s for the recording of the Steve Huffstater Big Band album, *Gathered Around*. Photo: [www.aixrecords.com](http://www.aixrecords.com)

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# The Art of Recording:

## Miking Brass

you want, you can baffle behind the mic, but usually I find that leakage isn't a problem unless you have other players equidistant from a given mic.

### MIKING TROMBONES

For miking trombones, there are several different techniques that I've used. My preferred placement is under the music stand, angled up toward the player so that the mic is directly in front of and about 2' away from the bell. This yields a great sense of the power of the horn with a bright, distinct sound. If you want less definition, you can bring the mic upward alongside the music stand or even above the stand looking down. The farther away you get from looking down the throat of the trombone, the less "bite" you'll get. I typically use one mic per player, to have control of the blend during mixdown.

For more orchestral-oriented recording, you can put the mic above eye level and 6' in front of the trombone(s). This yields a more realistic, less hyped sound and



A forest of R-121s and R-122s set up for four trumpets and four trombones. Photo: Royer Labs.



Four Royer mics in front of trombone players, a wonderful match. This session was for the late Ray Charles. Photo: Royer Labs.

works well if you don't need lots of attack or presence.

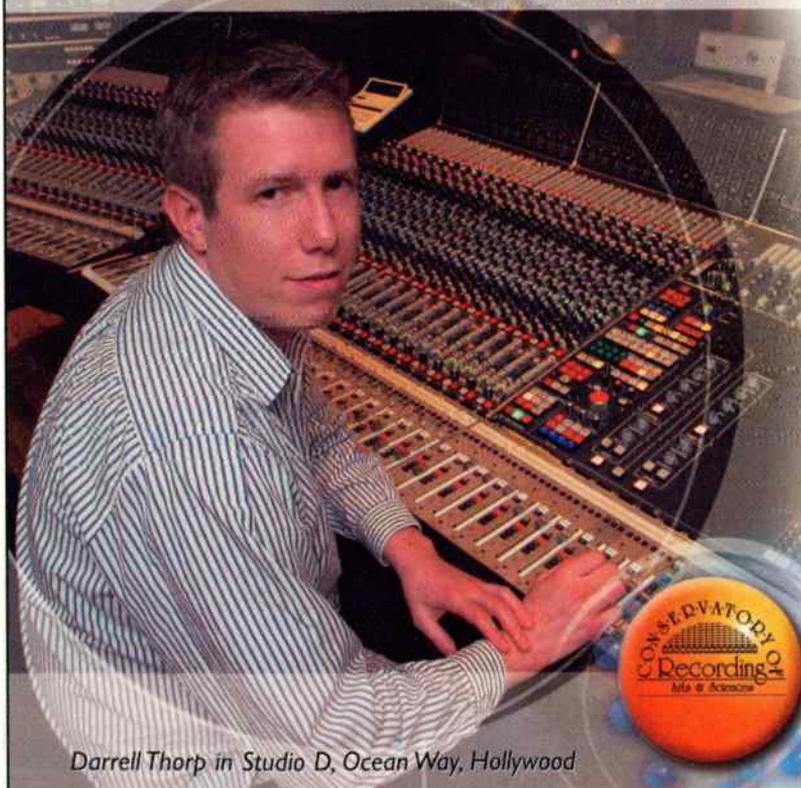
For mic selection, I have a wider range of options that I like than with trumpets. The Neumann U 87, U 67 and especially U 47 or FET U 47 work well. Audio-Technica 4047s are particularly wonderful. The Sennheiser 421 works fine, and I know people who prefer the Electro-Voice

RE20. My current favorite is the Royer R-122 about 18" directly in front of the bell. This gives a wonderful presence but with a big tone and more authority.

### MIKING SAXOPHONES

Of the three instruments mentioned here, the saxophone offers the most options for miking because the sound literally comes

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# The Art of Recording:

## Miking Brass

out *everywhere*. Most people assume the sax's sound comes from the bell, like a trumpet or trombone, but those instruments aren't filled with holes like a sax!

[A quick sidenote: I should point out (so I don't get letters) the saxophone is a reed instrument that is included in brass sections. And don't use the word "horns" to refer to a brass section, because a horn is all twisted up and shoots the sound out backwards. "Horns" are in F and are more commonly referred to as "French horns."]

Have you ever walked around listening while someone played an alto, tenor, or bari sax? It's a fascinating example of frequency dispersion. Different notes sound like they emanate from different parts of the horn, uh, sax. For the most present sound, a mic placed in front of the bell works well, but if you get too close, the notes can become very uneven.

Put a little distance between the mic and the sax and you'll find that it sounds better and the notes begin to balance better. Adjust the placement of

the mic in front of the bell by moving it in 1/2" increments up, down, or sideways and you'll be surprised at the changes. (Depending on the player, you may find it easier for them to move slightly than trying to move the mic.)

If you want more low end, you can come around the outside of the sax. This not only decreases the bite captured in front of the instrument, but picks up the lower frequencies that come from the body. On a baritone sax, it's easy to get the "honk" but much harder to get the "growl." I have used ribbon mics off-center on the bari and it works quite well.

When it comes to mic choices, there are a multitude that will work well, but again I have an affinity for ribbons. With one mic per sax, the ribbons are delightful on either tenor or bari sax as they tend to blend amazingly well in a section. They also have a fullness that keeps high notes from blasting out and getting thin.

For solos, where I may want a bit brighter, more cutting sound, I frequently

use condensers such as the Neumann U 87 and U 67, both great sax mics, or sometimes even an AKG C12VR, though it can be really bright. (I recently used the C12VR into a Manley SLAM preamp with a healthy dose of Manley ELOP compression and it sounded amazing — the top end smoothed right out.)

### THE KEY

The key to capturing great brass tracks is having an idea in your head of what you want to hear before you start, then not being afraid to try things to capture it. I am always experimenting and trying new mics. Sometimes I'm surprised and find a new favorite.

And don't be afraid to try something a little unorthodox. You may discover something wonderful. Once I was recording a big band and the best way to get the right balance on the sax section (seven players) was to have them blend live in the room sitting in an oval facing toward two mics. It sounded wonderful. . . . EQ



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# The Art of Recording: Frequency Space Editing

Turn your editing machete into a frequency-selective scalpel

**Adobe Audition, and its predecessor Cool Edit Pro, have always had stellar noise reduction tools. But Frequency Space Editing (FSE), a new editing option in Audition v1.5, is impressive not just for its ability to eliminate noise problems with pinpoint precision, but to allow selective editing on very specific parts of a sound.**

Do you have a drum loop that you really like except for a wimpy kick drum? Isolate just the kick, and run it through a bit of distortion to beef it up . . . or eliminate a single triangle hit in the middle of a song. And about the guy who coughed in the middle of your sensitive acoustic guitar moment on that live recording: Now you can nuke the cough and leave the guitar intact

Although other programs have been able to isolate a band of frequencies over a specific time range and manipulate them, Audition's tools are the most cost-effective implementation yet. But be aware that while the results can seem miraculous, they can't solve every problem.

For example, with one drum loop I wanted to get rid of an annoying clave hit, but it had been put through a ton of reverb.

Although it was possible to eliminate the main clave sound, removing the reverb meant taking out a lot of frequencies that needed to be kept. On the other hand, I played on a record many years ago where the drummer hit the hi-hat late coming out of a solo, and it always bugged me. With FSE, I was finally able to cut just the hi-hat from the stereo mix, and place it where it belonged. Now that's pretty amazing.

## HERE'S LOOKING AT YOU

Using FSE requires a different look at audio. Instead of the usual waveform display that shows *amplitude over time*, FSE uses a spectral display that shows distribution of energy in specific *frequencies over time*. You can access Audition's Spectral view from the View menu.

by Craig Anderton

My one complaint about this view is that the vertical axis (frequency) uses a linear scale rather than a logarithmic one, so all the lower frequencies (where most of the interesting musical sounds lie) are squeezed into the display's lowest part. The workaround is to right-click on the vertical calibration, then select Zoom In so you can focus in on a specific frequency range. For example, if you want to remove a low-frequency sound, zoom in to frequencies below 400–500Hz. However, remember that you'll also need to zoom out to see a wider range of frequencies if you want to remove a sound's transient components, which are generally higher in frequency.

## KILLING A KICK

Here's a real-world example of how to remove the kick drum from a funk-type drum loop (I wanted to substitute a tougher, more electronic sound). Figure 1 shows the steps you would take to do this; following are descriptions of each step.

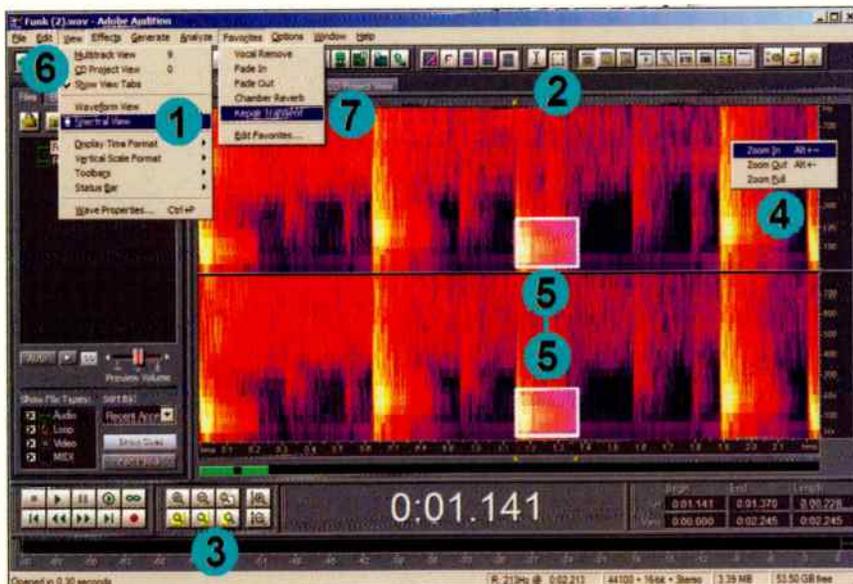
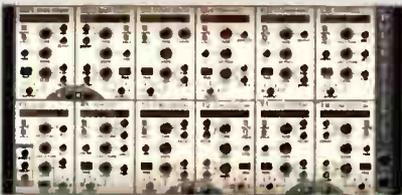
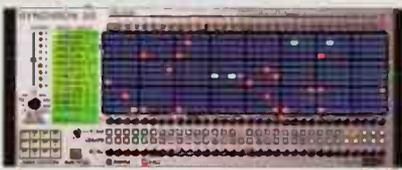


Figure 1. Here are the main places on the screen to do Frequency Space Editing.

1. Go View > Spectral View. The Spectral view replaces the default Waveform view. Increased energy in a specific range is brighter, while decreased energy is darker.
2. Select the Marquee tool (the square with the dotted border).
3. You'll probably need to use the Zoom tools, both on the vertical and horizontal axis, to make it easier to identify the area you want to process. Be patient; it takes practice to learn to recognize the various "sonic signatures" of different sounds.
4. There are a few zoom shortcuts for the vertical axis. One is to right-click on the vertical calibrations, then choose Zoom In or Zoom Out. You can also do this with keyboard equivalents ("Alt+=" and "Alt+-" respectively). Or, right-click on the calibrations, and drag over the area to which you want to zoom. ▶

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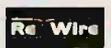
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# The Art of Recording: Frequency Space Editing

5. Here, the marquee (bordered in white for clarity) has selected the kick drum. Note that when you select in one channel, the other channel defaults to selecting the same area as well. The clue that this is the kick is the high-amplitude burst of energy in the bass range (the higher-frequency bursts to the left and right are the snare). While you're learning to recognize which frequencies are essential to a sound, you can always isolate, cut, then audition (and if it doesn't work, undo) to make sure you've found the right area to edit.
6. Now that you've isolated the area you want to cut, go *Edit > Cut*. This removes the area defined by the marquee.
7. For the smoothest possible removal, go *Favorites > Repair Transient*. Providing the area you selected is relatively small, this will "morph" audio over the cut, which is the audio equivalent of putting a flesh-colored band-aid over a cut so you don't see it. ▶

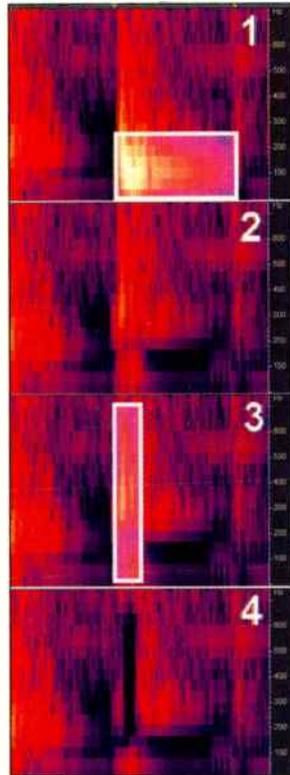


Figure 2. How to kill a kick.

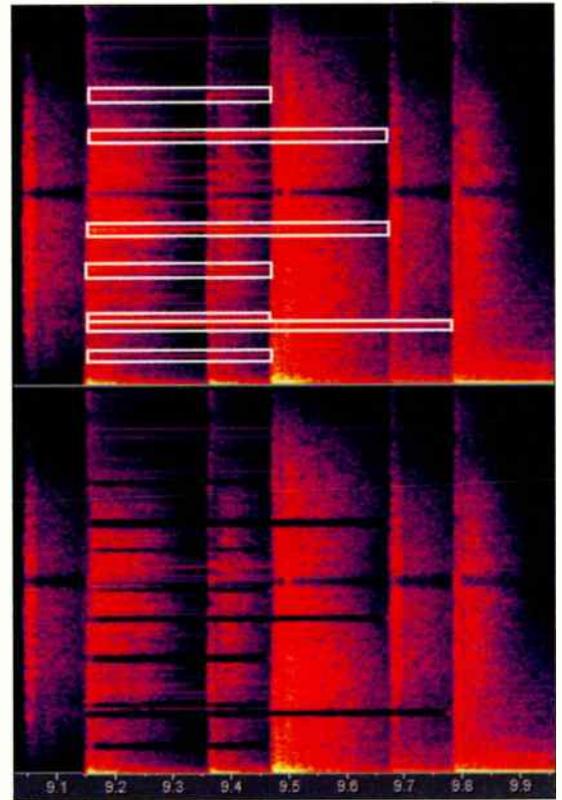


Figure 3. FSE can remove a single triangle hit.



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## SO YOU THINK YOU'RE DONE . . .

Well, not quite; in this case, there's a transient at the beginning of the kick that also requires removal. Figure 2, with four "frames," shows the process for removing the *entire* kick. In the top frame (1), a marquee (surrounded with a white border for clarity) selects the main kick drum hit. Deleting that produces the spectral view in frame 2. However, note that the kick's attack transient remains.

Frame 3 shows a marquee drawn around the kick's attack transient (again bordered in white for clarity). Deleting that produces the final result, as shown in Frame 4. Note how the kick drum is completely gone — it's as if it had never existed.

Dealing with signals that include a lot of harmonics is correspondingly more complex. Fortunately, though, these harmonics tend to be fairly thin "slices," which can be removed without altering the rest of the signal.

For example, the top half of Figure 3 shows the harmonics of a triangle hit (each one is bordered in white). The bottom half shows what happens after they've been deleted (note the black spaces) and gone through the transient repair process. On playback, you hear no triangle at all.

## SO WHAT'S THE CATCH?

This technique's "jaw drop factor" depends on what you're trying to process. With a dry, fairly simple drum loop, you can remove individual drums and never even know they were there. On the other hand, as alluded to earlier, if there's reverb it's almost impossible to remove a specific sound because the reverb extends the sound's duration *and* the amount of bandwidth it takes up.

Also, if you're trying to delete a sound with lots of harmonics, remember that the more of the spectrum you remove, the more likely this will affect the sound of other instruments. In the example given above of removing a triangle hit, I had to be *very* careful to remove the minimum amount of signal possible. Otherwise, other sounds with high frequencies (hi-hats, cymbals) were affected. This is why it's important to zoom in and remove no more than is absolutely necessary.

So much for cautions, here's something very cool you also need to remember: You

can apply *any* editing operation to a frequency space, not just cut or delete. In one particularly tedious example, I had a song where only the open hi-hat was too loud all the way through the song. I isolated each open hi-hat hit, and reduced the level for each one by 4dB. Miraculously, the open hi-hat fell right into the mix, and because it was being attenuated

rather than completely eliminated, there were no ill effects on the rest of the tune. Another one of my favorites is adding a bit of PSP Vintage Warmer to kick drums and toms . . . yum.

Frequency Space Editing is pretty amazing. If you have Audition 1.5 and haven't checked out this feature, you're missing out on a tool of exceptional potential. **EQ**



# KEYBOARD

January 2005 marks the beginning of the 30th anniversary year for *Keyboard* magazine. To recognize this landmark, the editors of *Keyboard* will take their readers on a journey from the earliest days of synths and MIDI to the future of music technology, all in a special music-packed special issue!

# 30<sup>th</sup> Anniversary

## THIRTY...

To mark this legendary issue, *Keyboard's* editors — past and present — have contributed their favorite "30 Best . . ." articles, full of insider information, rock 'n' roll history, gut-splitting anecdotes, and skull-numbing details, taken from *Keyboard's* archives and from their own volatile memories!

## The Next Thirty

In an exclusive report spanning three continents, *Keyboard* brings you a look at the future of keyboards, pianos, synthesizers, computers, software, and music technology. What do the next 30 years hold for you as a musician? Find out in this special issue of *Keyboard*!

## Additional Features!

- 30 Hottest Licks and How to Play Them!
- 30 Most Amazing Keyboard Concert Photos
- 30 Groundbreaking Instruments
- 30 Tales of Touring...

## Plus!

### The Illustrated Vintage Keyboard Survival Guide

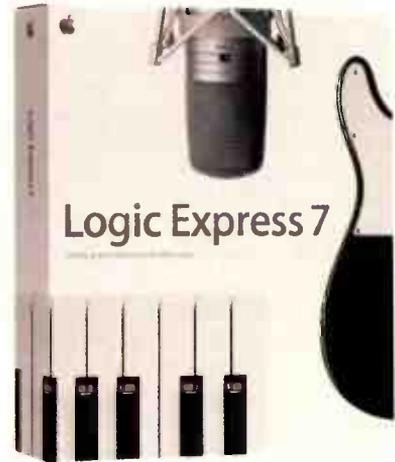
Tips on how to maintain and care for classic keyboards such as the Fender Rhodes, Wurlitzer electric piano, Hammond organ, and Hohner Clavinet.

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Logic Pro 7 combines the consummate collection of creative tools for musicians. Featuring the new Sculpture Component Modeling Synthesizer and Ultrabeat Virtual Drum Machine, Logic Pro 7 includes nine new effects plug-ins, Apple Loop support, full GarageBand™ project compatibility, and over 100 productivity enhancements. As if that weren't enough, Logic's new Distributed Audio Processing feature can harness the power of a virtually limitless number of Mac computers to dramatically increase the processing power available to the system, resulting in a native audio application unlike any other.

### ...Or the Aspiring Artist

Logic Express 7 is the ideal fit for aspiring musicians and audio engineers. It offers the same core functionality as Logic Pro 7 without some of the features that appeal specifically to audio professionals, making it the perfect choice to get started in music production. With Apple Loop support, GarageBand project compatibility, 37 high-quality effects and 18 amazing virtual instruments, Logic Express is the next step for the GarageBand user who wants more power and creative control.

### Ultimate Audio Processing Powerhouse

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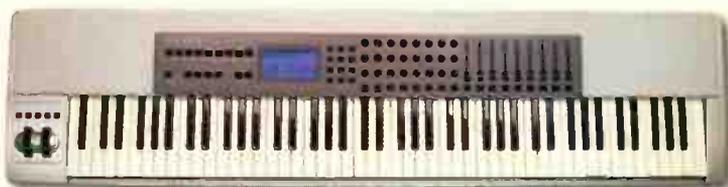
## FireWire, 96kHz with Multiple Sync Options

MOTU FireWire audio interfaces are the #1 choice for Logic users. The 828mkII provides 24-bit/96kHz audio with eight 1/4" analog ins/outs, 8-channel ADAT I/O and stereo S/PDIF I/O. Word Clock, ADAT sync, and SMPTE time code ports deliver all the sync options you need.



## High-Definition FireWire Audio

MOTU's 896HD is the ultimate FireWire audio interface for Logic Pro: pristine 8-channel 192kHz analog recording via 8 ultra-clean mic preamps with XLR/TRS combo connectors, 8-channel ADAT I/O and stereo AES/EBU.



## 88 Keys, 55 MIDI Controllers

For ultimate MIDI control plus a true 88-key hammer-action keyboard, M-Audio's Keystation Pro 88 sports 9 faders, 24 rotary controllers and 22 buttons – all fully assignable! Plus, the Keystation Pro 88 is USB bus powered; just plug it into your Mac's USB port and start making music.



## Mobile MIDI Command

The Oxygen 8 from M-Audio is the perfect controller for your portable Logic studio! Its 25 keys can send any type of MIDI message, and 8 programmable rotary knobs provide mouse-free control of your DAW's commonly used parameters.

## Rock-Solid FireWire Storage Solutions

Serious recording practitioners know that reliable storage and backup capabilities are musts! Glyph has long been the source of reliable storage solutions, and they offer FireWire combinations to meet any studio's needs. Using Glyph's exclusive Integrity technology with bridging electronics right in the cartridge, the GT 308 holds up to 6 FireWire Hot-swap drives, plus any two DVD/CD, tape, or SCSI Hot-swap drives, all in a 3-spacerack! The GT 103 1U rack holds any combination of 3 FireWire Hot-swap drives. Count on Glyph for rock-solid reliability!



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by Lee Flier

# Yamaha SPX2000

The next generation of Yamaha's reliable favorite

**Type:** Multieffects processor

**Price:** \$1,249

**Contact:** Yamaha,

[www.yamaha.com/proaudio](http://www.yamaha.com/proaudio)

## CONNECTIONS

**Analog:** stereo 1/4" TRS and XLR balanced inputs and outputs (selectable +4 dBu or -10dBu)

**Digital:** AES/EBU (XLR)

**Other:** USB, MIDI in, MIDI out/thru, word clock in (BNC), footswitch in

**Sample rates:** 44.1, 48, 88.2, 96kHz

**Bit depth:** 24-bit

**Dynamic range (analog):** 106dB

**Presets:** 97 factory, 25 "Classic," 99 user

**Display:** 5-color, 2x16 LCD

The Yamaha SPX series has long been a workhorse in professional studio and stage applications. The latest in the series, the SPX2000 represents a very well thought out and substantial upgrade, accomplished in a way that shouldn't alienate previous SPX users. It features an improved DSP engine, a new set of reverb algorithms, and a few other nifty additions such as color-coded backlighting on the LCD, which could really be handy for those using the unit in live stage applications. In general, Yamaha is well known for steadily improving and upgrading its products while continuing to support their existing user bases, and with the SPX2000, they have once again accomplished just that.

## THE INTERFACE

The SPX2000 comes with most of the connections you'd ever need, including switchable +4/-10 level on the analog input and output connections (both XLR and TRS), AES/EBU digital

connections with selectable sample rate from 44.1 to 96kHz, word clock, and MIDI. Unfortunately, no S/PDIF connection is included, which was a disappointment to me, as my Yamaha AW4416 DAW doesn't have AES/EBU I/O. Fortunately, the SPX2000's converters are quite good, and I was satisfied with the quality through the analog connections.

True to SPX form, the front panel interface is wonderfully easy to use and very well laid out. One set of buttons selects, recalls, and stores presets while another set adjusts the parameters of each effect. Although the unit can be controlled via MIDI, using it the "old-fashioned way" is a breeze. The buttons are solid and sturdy, and Yamaha has done well by making the most used buttons the largest, while those not used as often (such as the bank selector) are smaller and out of the way. The 2-line, 16-character-per-line LCD is easy to read and uncluttered as well. Setting the tempo for

delays and other tempo-based effects is simple using the front panel Tap button or an optional foot switch, as well as the usual method of entering numeric delay lengths. There's a "compare" button that allows you to switch back and forth between the original preset and your edited one.

Effects parameters are easy to access, especially considering the number of parameters available for many of the presets. Rather than forcing you to scroll through a long list of parameters to get at a particular one, only the most commonly used parameters are listed by default. The more esoteric parameters are accessed by selecting the Fine button. Storing your tweaked sounds in the user preset bank, which will hold up to 99 custom presets, is simple as well. In general, I found the front panel well organized and intuitive to use, and users of previous SPX units will find it improved yet still familiar.

## THE SOUND

There are 97 effects in the SPX2000's preset bank, including 17 new reverb programs based on Yamaha's new "Rev-X" algorithms, which the company says have been redesigned from the ground up. Also included is a "classic" bank



THE LCD CHANGES COLOR TO INDICATE THE TYPE OF EFFECT BEING USED.



THE SPX2000'S FRONT PANEL FEATURES A VERY EASY TO USE, UNCLUTTERED INTERFACE.



THE SPX2000 OFFERS A WIDE SELECTION OF I/O AND CONTROL CONNECTIONS

featuring 25 sounds based on early SPX units.

Having used Yamaha's processors since the '80s, the biggest surprise to me was the quality of the reverbs. Even those based on the older algorithms sounded much improved over the previous units, possibly because of the improved DSP engine and converters. Many of them sounded surprisingly natural, rich, and open. As someone who favors organic and vintage sounds, I'm hard to please when it comes to digital reverbs, but I found many of the 'verbs on this unit made me happy. The "Presence Reverb" gave a nice *Abbey Road* quality to ensemble vocal tracks — probably the best plate sound I've heard from a Yamaha box. Many of the room emulating 'verbs sounded natural and unobtrusive in a good way — *i.e.*, like a room, not like an effect. Of course, there are also plenty of decidedly "unnatural" 'verbs such as gated reverb, reverse, and so on. These are the sounds that made Yamaha reverb processors famous, so if it's wild and wacky effects you're looking for, you won't be disappointed there either.

The delays are of very high quality, and I was surprised at

the naturalness of some of the presets, such as vocal doubling. There's a variety of both stereo and mono delays, all of which are highly configurable to your tastes. There's also a large number of pitch-shifting effects which are loads of fun. Presets such as "Grumpy Flutter," "Halo Comb," and "Roger on the 12" are great for producing heavily effected sounds such as harmonizing, octave dividing, and space alien noises. Great if you're doing post production, psychedelic or electronica tunes, or just looking to add spice and interest to a track. I enjoyed using these in a very un-subtle way on vocals, guitars, and keyboards, and the unit allowed me to do this without degrading the overall sound — something other inexpensive processors won't do.

The classic effects such as chorus, flange, phase shift, and rotary are clean and quiet. Depending on your tastes and application, you may or may not find them to your liking. As a guitarist looking for fat vintage sounds, these effects didn't do it for me — they were too clean and brittle. Those looking for cleaner and more modern sounds will love these effects, and keyboardists may find them more

useful than guitarists or vocalists. It's also possible to tweak these presets, producing infinite varieties of sound. Likewise, I didn't find the SPX2000's distortion or amp simulator presets useful — they just weren't "grungy" enough for my taste. I found them a little too "slick" for dirtying up a snare track.

My biggest gripe with the unit was the Bypass switch. Unlike some competing processors, which have multiple bypass switch modes, selecting the one on the SPX2000 simply turns off the effect, without the ability to mute the input signal. Therefore, what you'll hear is the original signal combined with the signal that was sent to the effect. If you're using analog connections, the latency introduced by the conversions to and from the unit means that the combined signals have a very noticeable "phasiness." In some situations, this renders the bypass mode essentially useless, as you can't do an actual comparison between the dry and effected sounds. Of course, there's a work-around: compare by simply muting the SPX's effect return channels on your mixer.

Yamaha also offers a software interface for this unit,

the SPX2000 Editor, for Windows or Macintosh computers. By connecting the unit to your computer via USB, you can edit effects parameters and also back up and restore your custom presets in libraries. This is a very useful feature, as it allows you to save different effects libraries for different projects, transfer your sounds to other SPX2000s in other facilities, and of course back up your work in case your unit's memory is damaged.

### THE VERDICT

Overall, the Yamaha SPX2000 multieffects processor delivers an astonishing variety of high-quality effects in a single rackspace, at a reasonable price. It represents a big step up from many plug-in effects and cheaper outboard boxes. While it may not be your first choice for every single specific effect, the SPX2000 is a reliable "Swiss Army knife" that can serve as the "go to" box in a wide array of applications. 

### Strengths:

- Excellent price-to-performance ratio
- Elegant, easy to use interface
- Wide variety of high-quality, highly configurable effects

### Limitations:

- No S/PDIF connection
- Single-mode bypass switch can't mute input signal



# Digidesign ReVibe

by Mitch Gallagher

## The next step in room-modeling reverb

**Type:** Modeling reverb plug-in

**Price:** \$995

**Contact:** Digidesign,  
www.digidesign.com

**Platform:** Mac OS X, Windows XP

**Format:** TDM

**Minimum system requirements:** Pro Tools HD Accel, Pro Tools TDM 6.2 or higher

**Copy protection:** iLok

**Version reviewed:** 1.0

**Sample rates:** up to 96kHz

**Channels:** mono, stereo, LCR, LCRS, Quad, 5.0, 5.1

**Instances/chip:** 2 (44.1/48kHz) or 1 (88.2/96kHz)

**Room types:** 200+, in 14 categories: Studios, Rooms, Halls, Theaters, Churches, Cathedrals, Plates, Springs, Chambers, Ambiences, Film and Post, Large Spaces, Vintage Digital, Effects

**Tested with:** Macintosh dual-2GHz/G5, OS X 10.2.8, Pro Tools HD2 Accel, Pro Tools v6.2

For many years, plug-in reverbs sounded good, but many users felt that the software 'verbs couldn't quite keep up with their hardware counterparts — the quality just wasn't there. But recently, a new generation of convolution and modeling reverb plug-ins have hit the market. And we've finally got the computer/DSP horsepower available to run those plug-ins without sacrificing the performance of our DAW systems.

Among the new offerings is ReVibe from Digidesign. ReVibe is a TDM-format plug-in that runs exclusively on Digi's Accel hardware. The plug-in offers a broad range of sonic ambiances: 200+ different modeled rooms divided into 14 categories such as Studios, Halls, Plates, Churches, and so on.

This type of plug-in requires a lot of juice to run, so it's no surprise that even on the state-of-the-art Accel chips, you can only run two regular (44.1/48kHz) or one high (88.2/96kHz) sample rate instance. Of interest, though: the same DSP is

required whether you are running a mono, stereo, or multi-channel version of ReVibe (more on this below).

### TWEAKABILITY

You're given great control over the reverbs produced by ReVibe. You can set the level, spread, and predelay for early reflections. You have much more control over the reverb tail. First, you can set the "Coloration" of the tail; which applies a complex filter to the tail, modeling the response of various rooms and effects.

A graphic display gives you access to a 2-band EQ, and "Color" parameters which determine the decay time of high and low frequencies. The Contour display shows the current "shape" of the reverb, both early reflections and tail.

More "traditional" reverb parameters are also accessible, such as decay time, diffusion, and so on. A stereo chorus can be applied to the reverb tail, and a stereo width control uses phase inversion to create everything from narrow stereo to extremely wide stereo 'verbs.

No matter how many channels of reverb you ask for (mono, stereo, etc.) all five inputs and outputs on ReVibe are always active. In stereo, for example, you can mix the center channel in as a phantom center image, and you can add in some of the rear channel signal for additional depth to the ambience.

### LIKE BEING THERE?

What matters most, of course, is the sound of the plug-in's reverb. Fortunately, ReVibe delivers. You can create everything from dripping, luscious washes to thin metallic ringing to short, tight ambience. The sound is quite realistic (unless you choose to make it artificial).

ReVibe is far from a 1-trick pony. It excels at creating different kinds of sounds, each of equally high quality. Because of this, it's a good value despite its relatively high price — you're not just buying a few presets you can only use in certain situations.

Everyone's impression of what an ideal reverb should be is different, and is context-sensitive — it changes depending on what you're processing and on the song the 'verb is sitting in. But with its tremendous versatility, ReVibe can cover a lot of ground. In every case I was able to find a ReVibe reverb that worked — and that's the whole point.

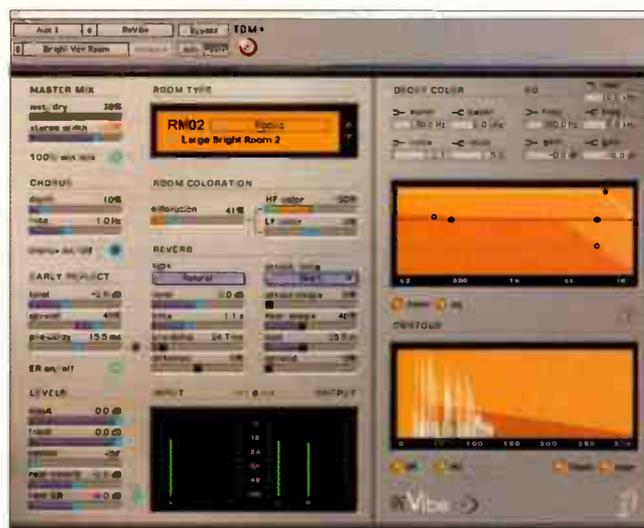
### Strengths:

- Broad range of included rooms
- Powerful sound-shaping options
- Easy user interface
- mono-5.1 channels
- Excellent sound quality

### Limitations:

- Only runs on Accel hardware
- No support above 96kHz sample rate

REVIBE'S USER INTERFACE IS CLEAN AND SIMPLE, BUT OFFERS A LOT OF AMBIENCE-TWEAKING POWER. THERE'S A GREAT DEAL OF CONTROL FOR SHAPING AND COLORING THE REVERB TAIL.



# Blown Minds...

“During the last eight years or so I've reviewed over 60 different soundcards for SOS, and it is not often that they surprise or impress me any more... Many companies have tried to produce a soundcard with versatile I/O and DSP effects, but few have succeeded. In my opinion E-MU are the first company to have got it right, and have done so at prices that will result in some dropped jaws from their competitors.”

— Martin Walker, *Sound On Sound*, June 2004 Edition

“In terms of audio fidelity, the 1820M really does stand out – it sounds superb! E-MU have come up trumps with this one; it's going to be big, mark our words...”

— *Computer Music*, May 2004 Edition

“The real power of the system is revealed when you realize that you have not only an audio interface with flexible routing, but a powerful onboard DSP effects engine and a virtual patch bay”...“E-MU has a winner with this package. Sorry, guys, but you're not getting this one back, it's a keeper!”

— Ray Legnini, *Recording Magazine*, July 2004 Edition



E-MU's Digital Audio Systems have been blowing minds around the world by offering musicians complete audio solutions at incredible prices with the highest quality converters and powerful hardware-accelerated effects, mixing and monitoring. From analog and digital I/O and sync to compatibility with your favorite audio/MIDI applications, E-MU's Digital Audio Systems deliver all the tools you need to produce professional audio and multimedia on your PC.



by John Krogh

# CM Labs SixtyFour

## Get a handle on your studio's signal routing

**Type:** Automated analog audio switcher/router

**Price:** \$2,499.99

**Contact:** CM Labs, [www.cmlabs.net](http://www.cmlabs.net)

**Audio I/O:** 32 balanced inputs and outputs divided into banks of eight channels on DB25 connectors

**Memory locations:** 90

**Other interfacing:** RS-232 and MIDI I/O for remote control of routing functions

**Dynamic Range:** 119dB

**Noise Floor:** -92dBv

I've used patchbays on and off through various incarnations of my studio since I purchased my first digital multitrack recorder (an Alesis ADAT) twelve years ago. Though I had no regrets about selling the old blackface, I just can't part with certain pieces of gear. And while I do most of my mixing "inside the box," I still prefer incorporating outboard dynamics, EQ, and effects. Sometimes there's a certain inspiration factor I get from working with a hardware tube compressor or Neve EQ, for example. In other situations, I may find myself reaching for that favorite flanger algorithm from my trusty Roland RSP-550 because I haven't found a plug-in equivalent.

It may be considered "old school" to some, but I like using my outboard. However, recently it's become an increasingly "messy" process compared to the ease of working

entirely inside a software recorder. (Maybe I've finally been spoiled by instant recall.) Since I've added CM Labs' SixtyFour 32x32 audio router, it's all changed. Simple in its purpose, this admittedly unglamorous (yet convenient) piece of gear has transformed the way I work in my studio. The SixtyFour has replaced my patchbays and has made interfacing with all of my outboard an uncluttered, uncomplicated process.

### OVERVIEW

Housed in a 2U case, the SixtyFour is essentially a point-to-point audio switching "hub" for interfacing line-level gear without having to physically patch and repatch. Routing a source (input signal) to an output destination is easy: Press the input signal's source switch, then press the destination switch for whatever out you want it sent to. Sources and destinations can

be grouped in stereo pairs, with control for left/right balance — convenient if you work with 2-channel devices and synths.

The rear panel sports four female and four male 8-channel DB25 connectors (all balanced), for a total of 32 inputs and outputs.

Any input can be routed to any number of outputs — great for mulching snares and kicks — but the SixtyFour won't sum input signals. (If you're looking for external summing, you'll have to look elsewhere.) There are 90 memory locations for storing patch routings, and each routing assignment can include gain settings (+10/-96dB) for each input and output — handy for optimal level matching among your gear.

The SixtyFour can't switch an unbalanced signal to balanced (or vice versa), but by using the gain control for an input and its associated

SIXTYFOUR'S FRONT PANEL CAN BE "LOCKED" TO PREVENT CHANGING PATCH SETUP BY INADVERTENTLY BUMPING THE CONTROLS. THE LED METERING BELOW THE FOUR MODE BUTTONS CAN SHOW INPUT OR OUTPUT LEVELS (SWITCHABLE FROM METER MODE).



MULTIPLE UNITS CAN BE DAISY-CHAINED FOR PATCH CONTROL VIA MIDI OR THE RS-232 CONNECTOR.



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Despite all that brain and brawn, the H8000 is remarkably friendly and easy-to-use, optimized for flexibility and control. Virtual racks have been crafted, which give you up to five effects processors in one preset-algorithm. Search engine functionality helps you sort presets for easy retrieval.

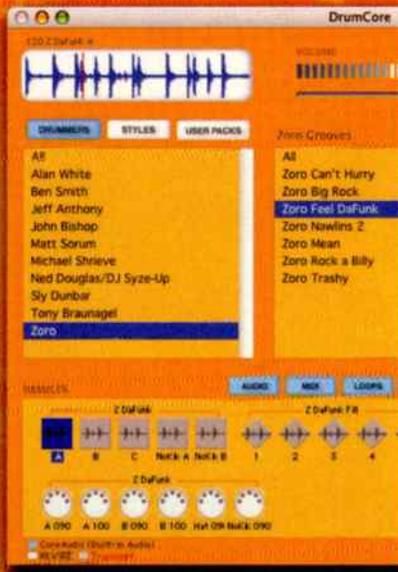
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## CM Labs SixtyFour

output, you could effectively raise a -10 signal to +4. This is important to note if you have consumer gear, such as a CD or DVD player, that you want to incorporate into your pro-level monitoring setup.

Up to four SixtyFours can be daisy-chained via the RS-232 port or via MIDI I/O for patch control over a whopping 128 ins and outs. (Note: Audio can't be sent across multiple SixtyFours via MIDI or RS-232, but you could always reserve some inputs and outputs on each machine in a network so you can patch a signal from one SixtyFour to another.) "Slave" units can be controlled from the "master" SixtyFour. For remote operation, you can use CM Labs' MotorMate Console, or you can send hexadecimal MIDI data to switch presets, change levels, etc. I didn't have a

four square black buttons are for accessing Save, Route, Level, and Meter modes, respectively. A single continuous rotary encoder (i.e., knob) is used for dialing in levels and selecting presets.

Metering can be engaged for both sources and destinations. I found the resolution of the 12-segment LEDs enough to get an idea where my levels were at, but ultimately I relied on my DAW's metering for more accuracy when recording.

### IN USE

I was first turned on to the SixtyFour when I was preparing to go on tour. I needed an audio switcher that I could use to switch between my two computer playback systems, which were running in tandem. We were traveling to Germany,

# The CM Labs SixtyFour has given a new lease on life to my hardware processors.

MotorMate for the review, nor did I have the patience to program and send hex data.

It's a little unrealistic to expect users to stop in the middle of recording or mixing to create a hex program change — I'd love to see a software utility for handling SixtyFour's hex programming behind the scenes. Of course, if you simply *must* have remote control, one less obtuse option would be to set a hardware MIDI controller to send hex patch changes (assuming your controller is capable of this). In any case, I found it easy enough to work from the front panel. (According to CM Labs, a free Windows-only utility for programming the SixtyFour remotely should be available by the time you read this.)

Speaking of which, creating routings, setting levels, and saving presets from SixtyFour's Spartan front is simple and straightforward. From left to right, the

Thailand, and China, which meant my gear was going to get a real-life road-style workout. I'm happy to report the SixtyFour functioned flawlessly and made it home safely without malfunction. Suffice to say, I was impressed by its build quality.

When I returned home it was time to wire up my three racks of gear. Not having a supply of DB25 snakes on hand, I toyed with the idea of making my own — a pinout diagram is provided in the documentation, and CM Labs offers DB25 connectors from their website. In the interest of getting up and running quickly, I opted to go with prebuilt snakes from Pro Co. With my snakes in hand (no jokes, please) I began patching the many gozintas and gozoutas. I noticed the connectors on SixtyFour's rear panel moving within the chassis as I connected the snakes, which

caused me some initial concern over whether the cables or connectors might work loose. My fears were not borne out, however. I've gone behind my racks a number of times in the last couple of months, jiggling and tugging on cables, and I haven't had any problems with the SixtyFour's interfacing.

Once I had my racks wired into the SixtyFour, I decided to print custom labels for the four I/O "scribble strips" on the front panel. CM Labs has an Excel spreadsheet template for the labels on their website, but I wasn't able to open it on any of my four Macs. So instead, I measured the strips and made my own template in less than ten minutes.

With everything in place, I started creating basic recording and mixdown presets. I made one that took the line output from a tube mic preamp into a compressor, and from there into one of the inputs on my computer's audio interface. I made a similar preset that split the output from the preamp to a reverb unit and the compressor — that way I could send vocals through reverb and monitor this in headphones while tracking the signal dry through the compressor. I then turned my attention toward mixdown presets.

I have a Folcrom 16 channel summing mixer that also uses DB25 connectors, so one bank of SixtyFour's outputs were fed into the first eight channels on the Folcrom. This way I was able to process four stereo subgroups from my computer using various hardware effects and return them to the Folcrom via the SixtyFour.

I worked on several projects, recording and mixing using nearly all of my outboard — a first in probably two years! As I write this it's been over two months since adding the SixtyFour, and I couldn't be happier. It's given a new lease on life to my hardware processors. If you're anything like me, and you prefer working with outboard but hate the hassle of patch cords and conventional patchbays, CM Labs' SixtyFour could be the answer. EQ

**Strengths:**

- Easy to use
- Multiple units can be daisy-chained
- Lots of gain
- Input sources can have multiple output destinations

**Limitations:**

- Inconvenient MIDI remote control programming


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# DISCRETE DRUMS

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Drums - Greg Murray - Percussion - Eric Darken



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WWW.DISCRETEDRUMS.COM

by Mitch Gallagher

# Blue Sky MediaDesk

## Full-range monitoring from a compact system

**Type:** active 2.1 or 5.1 monitor system

**Price:** MediaDesk 2.1, \$599;  
MediaDesk 5.1, \$1,198; upgrade  
from 2.1 to 5.1, \$599

**Contact:** Blue Sky International,  
[www.abluesky.com](http://www.abluesky.com)

**Format:** 2-way, sealed satellites,  
sealed subwoofer

**Subwoofer driver:** 8" non-resonant  
paper cone

**Satellite low-frequency driver:** 4"  
neodymium

**High-frequency driver:** 1" fabric  
dome neodymium

**Subwoofer amplifier:** 60 watts

**Satellite amplifiers:** 60 watts each

**Sub/satellite crossover frequency:**  
110Hz

**Tweeter crossover frequency:** 2kHz

**System frequency response:** 35Hz –  
20kHz, ±3dB

**Inputs:** XLR and RCA

### CONTROLS

**2.1 Gain:** off (mute), 0 to –21dB

**Mode Select:** 2.1 or 5.1

**Input Attenuator:** +14 or +24dBu

**Subwoofer Gain:** off (mute), 0 to  
–21dB

**Magnetic shielding:** yes

**Subwoofer dimensions:** 16" H x 14" W  
x 15" D

**Satellite dimensions:** 9-1/2" H x 6-1/4"  
W x 6-1/4" D

**Subwoofer weight:** 45 lbs.

**Satellite weight:** 5 lbs.

**EQ** was given a preview of Blue Sky's MediaDesk at last January's NAMM show, and I've been waiting anxiously to put the system to the test. There's a thorough description of the MediaDesk in our May issue preview, so let's dispense with re-hashing the nuts and bolts other than to say the MediaDesk is a 2.1 system, comprising a subwoofer and two satellites. The sub isn't an add-on, it's integral to the system providing full-range sound.

The sub contains all the controls, bass-management, and amplification. This means the satellites are very light and can be placed most anywhere: on stands, on wall mounts, on mic stands (with optional adapter), or even sitting on your desk next to your computer monitor. An adjustable "foot" lets you set the satellite angle so the speakers aim at your ears.

### CALIBRATION

The MediaDesk owner's manual provides instructions for calibrating the subwoofer to the satellites, and Blue Sky offers downloadable test tones. All you need is something to play the WAV files and an SPL meter. (I use the cheap one from Radio Shack.) The process is easy and you'll have the system dialed in quickly. The Blue Sky website is also an excellent support resource.

### SURROUNDED

The MediaDesk system provided for this review was stereo — 2.1. But it's a piece of cake to upgrade to 5.1. The upgrade kit includes a second 3-channel amp module that mounts in the sub, three satellites, and a remote control that provides master volume and individual speaker trim controls.

### PERFORMANCE

I'll cut right to the chase: The MediaDesk lives up to

its claims, and then some. I set the system on my desk, flanking my computer monitor. The MediaDesk works great for this application. There's plenty of power, and having the speakers right there makes keeping your focus on the screen easy for extended mixing/editing sessions.

Placed on stands, the system performs even better: the midrange and the highs open up. When placed on a desk, the speakers become boxier sounding, due to reflections off the surface. This isn't a Blue Sky problem, it's an acoustics issue. Still, a "desk" switch that compensated for this phenomenon might be a nice addition.

Even on stands you'll want the satellites placed close in. The system gets loud, but isn't designed to blast out large rooms. I found placing the speakers around 3–4 feet away to be ideal. The sound is natural, open, and sweet. I monitored for hours without ear-fatigue.

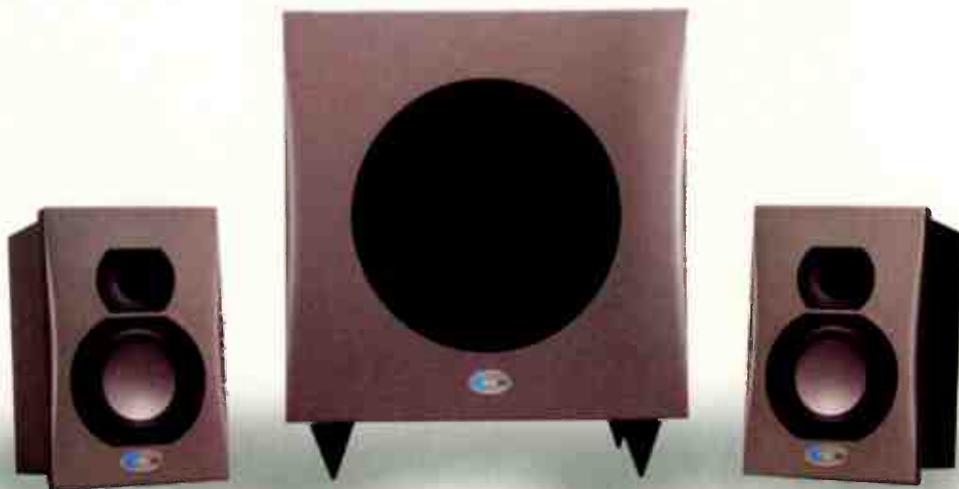
At \$599, you'll be hard-pressed to find a true full-range system that performs as well as the MediaDesk. For small rooms and close-up monitoring applications, this one is a winner. **EQ**

### Strengths:

- Amazing performance for size/price
- Seamless transition from sub to satellite
- Easy upgrade to 5.1
- Solid, full low end
- Detailed mids and highs
- Un-hyped highs
- Flexible satellite mounting/placement options

### Limitations:

- None to speak of



THE BLUE SKY INTERNATIONAL MEDIADESK IS DESIGNED FROM THE GROUND UP TO BE A 2.1 SYSTEM — TWO SATELLITES AND A SUBWOOFER. IT CAN BE EXPANDED TO A 5.1 SYSTEM FOR SURROUND MONITORING.

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by Phil O'Keefe

# Audix i-5 Microphone

## Does the performance match the claims?

**Type:** General-purpose dynamic microphone

**Price:** \$179

**Contact:** [www.audixusa.com](http://www.audixusa.com)

**Transducer:** Dynamic

**Polar pattern:** Cardioid

**Frequency response:** 40Hz–15kHz

**Impedance:** 150 ohms

**Maximum SPL:** 140dB

**Sensitivity:** 1.9mV (ref. 1K @ 1 Pascal)

I have to admit to a bit of a bias here. Part of me really wanted to dislike this microphone because of the current Audix ad campaign where they boldly proclaim the i-5 as "the best all-purpose instrument mic on the market." I don't know about you, but I think it's safe to say that if you asked a bunch of engineers what mic comes to mind when you say those words, the majority would mention a mic with "57" in the model number. Audix set a high goal for themselves, so let's see how well they did.

### MEET THE CHALLENGER

The i-5 is a fairly traditional-looking cardioid dynamic

microphone. It's an inch or so shorter than a '57, and a little larger in diameter. One thing I noticed right away as I pulled it out of the included padded and zippered storage pouch was the sturdy construction and metal head and grille — it is a solid-feeling mic. While I didn't feel like getting into "abusive testing mode," I think it would hold up to the occasional accidental stick hit quite well (the manufacturer claims it will hold up to accidental stick hits all day long). The package also includes a good mic clip, a thread adapter, and a short but informative single-sheet "manual."

### DRIVING THE I-5

So how does it sound? In a word, impressive. In the spirit of properly testing the Audix ad claim, I threw the i-5 at every sound source I could think of. Overall, there's a clarity and openness to this mic that you don't hear from a lot of dynamics, and when it "works" on a particular sound source, it really doesn't require much EQ to get the sound happening. The transient response is very "quick" for a dynamic. The cardioid pick-up pattern is nice and tight, and off-axis coloration wasn't unreasonable. Proximity effect, while definitely there, is easily controllable.

I slammed the i-5 in front of loud sound sources, and it never caved from the high SPLs. I tried it on live vocals in a rehearsal situation. One singer didn't like the sound on his particular voice, while the other two loved the way the i-5 worked with their voices. I tried a shootout with a Shure '57, a Sennheiser e609, the i-5, and an Audix D2 on my THD Univalve guitar amp. All four

gave me a good sound, but the i-5 lost out by the slightest of margins on that particular amp to the D2, which delivered the exact sound I wanted to hear for the track.

Still, the i-5 is definitely a very respectable mic for guitar amps, and on snare drum, it rocked *hard*. It had great attack and good body, and it quickly became one of my favorite mics for that application. It worked well for smaller diameter toms too. Hand percussion, hi-hats, acoustic guitar, sax — while it might not be my first choice for many applications, it did acceptably well with everything I tried it on, and surprisingly well on more than a few occasions.

### HYPERBOLE ASIDE . . .

So is it the "best all-purpose instrument mic on the market"? I don't know that I'd be willing to go quite that far with my praise, but it is certainly one of the better multi-purpose dynamic mics that I've ever had the pleasure to use, and it offers a useful and sonically attractive "flavor option" to some of the old favorites. I'm definitely going to purchase at least a few of these mics, and I would encourage anyone who is in the market for a great multi-purpose dynamic mic to give the i-5 a serious look. In its class, it's a definite contender for the title. **EQ**

### Strengths:

- Good clarity and transient response
- Rugged construction
- Works great on a variety of sound sources

### Limitations:

- None to speak of



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by Phil O'Keefe

# Trident Loudspeaker Company LS-101

## 2-way passive monitor gets the job done

**Type:** Passive 2-way nearfield monitors

**Price:** \$1,431 per pair, currently available direct from the manufacturer for \$855 per pair

**Contact:** Trident Loudspeaker Company, [www.tridentaudio.co.uk](http://www.tridentaudio.co.uk)

**Cabinet design:** Rear port

**Drivers:** Dual 4" woofers, 1" metal dome tweeter.

**Impedance:** 4 Ohms.

**Recommended power handling:** 50 watts RMS.

**Connections:** Standard binding posts. Dual post pairs for "bi-wiring"

**Dimensions:** 17" x 7" x 12"

**Weight:** 20 lbs per speaker.

Probably the most popular studio monitor of all time is the Yamaha NS-10. While they weren't the best sounding speakers ever built, nor particularly easy on the ears during long sessions, the fact was that if you could get a mix sounding good on them, it would probably "translate" well to other playback systems.

Since the NS-10 was discontinued, several companies have tried to cater to engineers who found it perfect for their monitoring needs. Trident Loudspeaker Company (TLC) seems to be shooting for that market with their LS-101 monitors.

The LS-101 has three drivers — dual 4" woofers (a typo in the docs says 5") and a 1" dome tweeter. The bass port is located on the back panel. Also on the back you'll find dual sets of gold-plated binding posts for connecting the speakers to your power amp. You can connect to a single pair of posts or run two sets of speaker wires from your amp for "bi-wiring." I couldn't hear a difference

with bi-wiring. Trident says the benefits are more noticeable with long cable runs.

When using standard speaker wires, the two sets of posts must be connected together with the included gold-plated metal strips, which tend to want to fall off as you're trying to connect the wires. Fortunately you only have to deal with this issue when you connect the monitors to your system. On the plus side, the LS-101 is magnetically shielded and the tweeter is covered with a metal mesh to prevent it from being damaged.

### IN USE

I hooked the LS-101s to three different power amps: a Crest FA901, an Alesis RA100, and a Hafler P3000. Trident rates the power handling of the LS-101 at 50W RMS at 4 ohms, but they performed better with a little extra power available. While the LS-101 can be oriented horizontally or vertically, I preferred the horizontal placement.

So how do they sound? The overall character is similar to NS-10s, but they lack the "ice pick to the eardrums" effect of the Yamahas. Not that they lack highs — they're just not as piercing as the Yamahas. Still, high-end detail and "sparkle" seemed a little subdued to me.

While frequency response is rated as 30Hz to 22KHz, I found the low end really doesn't start to fully kick in until around 50Hz. They definitely reproduce a 30Hz sine wave, but I measured it about 15dB

down compared to their response at 50Hz; the bass seemed fairly flat from there on up. If you're looking for "kick you in the gut" low-end, you may want to look into a subwoofer.

Although they're not the most earth-shaking speakers down low, they do surprisingly well for a compact box. I had no difficulty differentiating kick drum and bass guitar tones.

Stereo imaging is solid, and subtle panning moves were easily audible. While the midrange is a bit boxy, the mids were more prominent and smoother than NS-10s.

### VERDICT

The Trident LS-101 speakers reminded me of the NS-10. But I would much prefer using the LS-101 due to its extended frequency response and less annoying highs. For orphaned NS-10 lovers, Trident has provided an attractive alternative that improves on the weaknesses of the old workhorses. And users of other monitors, with a little time to acclimate, can certainly get the job done with the LS-101. **EQ**

### Strengths:

- Familiar sound
- Less ear fatigue and more extended bass response than Yamaha NS-10
- Attractive cabinet finish
- Good stereo imaging
- Magnetically shielded

### Limitations:

- Somewhat "boxy" sounding
- Bass response and high-end sparkle a bit subdued



A woman with long dark hair is singing into a Samson CL7 condenser microphone. The microphone is silver and black, mounted on a silver shock mount with a black pop filter. The background is a solid purple color.

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A U D I O

by Craig Anderton

# Phonic T8100 Tube Vocalmax

## Go for the glow

**Type:** Tube mic preamp/EQ**Price:** \$269.99**Contact:** [www.phonic.com](http://www.phonic.com)**Mic ins:** Transformer, DC-decoupled XLR with phantom power**Mic input impedance:** 3k ohms**Line ins:** Transformer, DC-decoupled 1/4" TRS jacks**Line input impedance:** 50k ohms balanced, 25k ohms unbalanced**Maximum input level:** +10dBu mic, +26dBu line**Gain:** +10 to +60dB**Outs:** Balanced XLR and 1/4" TRS, with -10/+4 switch**Maximum output level:** +22dBu**System bandwidth:** 18Hz-30kHz, ±2dB

**P**honic's T8100 has an understated look and feel; it falls under the preamp category of "here's gain, a tube, and some EQ." As a result, the price is remarkably low for a stereo device with transformer-coupled balanced inputs and a pair of 12AX7s.

The front panel duplicates controls for both channels. Switches cover highpass filter (80Hz), phase invert, and phantom power on/off. Knobs adjust gain, tube timbre (from "cool" to "warm"), output level, low-frequency (80Hz) boost/cut, high frequency (12kHz) boost/cut, and midrange boost/cut. The boost/cut controls are all detented, and have a range of ±15dB.

The midrange frequency is variable from 400Hz to 8kHz, but there's no bandwidth control. Also, the high and low controls are peak controls, not shelving. As a result, the EQ is not for surgical adjustments, but more for general tone-shaping with a tube vibe.

### SOUND JUDGEMENT

When I first plugged a dynamic mic into the T8100 and turned on power, I was concerned that I had the wrong voltage — the tubes looked like the filaments were about to explode. But it was just the old "lamp behind the tube" trick to add some visual appeal (I guess real tubes don't

glow enough for consumers who want their preamps to scream "Hey! There's a tube in here!").

Once I got that sorted out, it was time to experiment with the sound. And I must say, the T8100 sounded very good with my voice. The timbre control's "warm" setting doesn't do over-the-top distortion, but adds a subtle crunch that actually sounds more like you're adding compression than distortion. The "cold" setting didn't get a lot of use with my voice, but did well with guitar amps and percussion where I just wanted to capture the sound, not add "character."

However, the noise level isn't negligible. Even with the input and output levels turned down, there's a small amount of residual hiss. But it's when you start making the sound more interesting through use of the timbre control and some upper-mid EQ that the hiss becomes more prominent. I found the high-frequency boost was also touchy about noise — if you turned it up a tad, there was a nice high-frequency lift. Turn it up more, though, and it made any noise obvious.

Despite the lack of a bandwidth control, the midrange EQ was more effective and useful than I thought it would be. The resonance is gentle, which I prefer — narrow bandwidths work with a more limited

range of sounds. The highpass filter is fairly effective, but doesn't seem too steep. Engaging the filter doesn't change the sound's "natural" vibe, but if you need a steep cutoff to deal with "p"-popping, you're probably better off doing it elsewhere. Most of the time, the midrange EQ handled my needs, with the high and low controls reserved more or less for touch-ups.

My only real reservation concerns hiss. Being careful with the control settings (e.g., don't add too many highs) goes a long way toward keeping it under control, and I also found Adobe Audition's noise reduction tools excellent for post-processing. If you're willing to tweak the controls, you can usually find the sweet spot that gives the sound you want *and* sufficiently low noise.

The bottom line is that the T8100 added some depth and color to my voice, while also doing double-duty as a straight-ahead stereo preamp for other sound sources; and the EQ, while not spectacular, worked well. And certainly, the price is right. The T8100's performance belies its price. **EQ**

### Strengths:

- Well-controlled tube sound with "character"
- Cost-effective
- Includes highpass filter and 3-band EQ with sweepable mid
- Timbre control is very useful

### Limitations:

- No bandwidth control on mid EQ band
- No variable input impedance for matching mics
- Hissy with certain control settings

THE T8100 HAS A TOUCH OF "OLD-SCHOOL" LOOK, THANKS TO ITS ANALOG VU METERS AND GLOWING TUBES.



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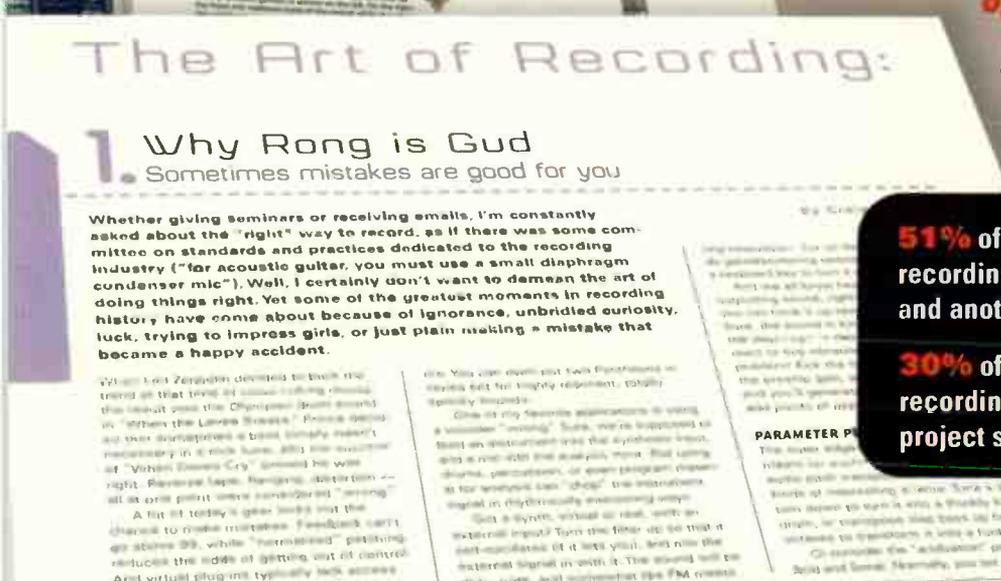
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It says it's a reverb, but here Pantheon is set up as a resonator.

- UNINTENDED FUNCTION:**  
The Lexicon Pantheon reverb included in Sonic, Lexicon Original, and other products can provide barely noticeable reverb effects as well as control. Try these settings:
- Reverb type: custom
  - Pre-delay, Room Size, RT60, Damping: minimum setting
  - Mix: 100% (wet only)
  - Level: as desired
  - Density Reg'n: +90%
  - Density Delay: between 0 and 20ms
  - Echo Level (Left and Right): off
  - Spread, Diffusion: 0
  - Bass boost: 1.0X
- Vary the Regen and Delay controls, and feel free to experiment with the other

# Steinberg HALion 3

by Craig Anderton

**Price:** \$399.99  
**Contact:** Steinberg,  
[www.steinberg.net](http://www.steinberg.net)

**Strengths:**

- RAMSave function saves RAM
- Improved browser and database functions
- Integral effects with good routing
- Outstanding bundled content
- New file format saves presets with all samples

**Limitations:**

- Stereo out only for AU
- Dongle license transfer a hassle if your computer isn't connected to the internet

**H**ALion was one of the original soft samplers, and Steinberg has been good about keeping it current. HALion 3 (H3 for short) comes on a DVD distribution disc, and uses the Syncrosoft dongle copy protection scheme.

H3 supports VST, DXi, and AU. HALion 2's main feature was surround sound; H3 features big-time workflow improvements, 27 integral effects (that can work with individual samples, groups of samples, or entire programs), more import formats (Kontakt and Kurzweil), and a far more

flexible browser that includes database and "favorites" functions. And in the "my sample rate can beat your sample rate" sweepstakes, H3 offers 384kHz support. Does that matter in the real world? Not to me, but it looks nice on a spec sheet.

More significantly, H3 includes Steinberg's RAMSave technology. This looks through a sequence and deletes samples for notes that aren't played. This not only saves RAM, but improves load times.

H3's effects sends can go either to the internal effects or the host mixer. And given that there are up to 64 mono outs, 64 stereo outs, and twelve 5.1 surround outs, I think the multiple output thang is covered too. H3 initially had a tentative feel, but as I was

wrapping up this review, update 3.0.1.538 appeared. The overall feel is now solid, and a few "mystery problems" have disappeared.

For existing HALion 1 or 2 users, the upgrade is well worth the \$99.99. If you're buying your first soft sampler, there are a lot of choices; where H3 shines are the great-sounding filters, obvious interface, routing options, improved file browser, and *outstanding* bundled sounds. Granted, all the top soft samplers can load just about anything that matters, do multi-timbral operation, stream from disk, add processing, and work with a variety of hosts. But H3 does much more than just keep the HALion line competitive — this is a sampling powerhouse. **EQ**



# Mindprint Envoice mkII

by John Krogh

**Price:** \$799 (\$449 optional DI Mod)  
**Contact:** Mindprint,  
[www.mindprint.com](http://www.mindprint.com)

**Strengths:**

- Flexible design
- Clean, clear mic preamp
- Each band of EQ can be engaged separately
- Optional DI-Mod allows for computer integration and stereo monitoring

**Limitations:**

- Front-panel knobs feel crowded
- Preamp section doesn't employ the tube

**M**indprint first rolled out their single-channel Envoice in 1998. With the mkII update, they've taken a flexible preamp/EQ/tube compressor design and improved on it in several ways, not the least of which is an optional digital interface called the DI-Mod USB.

The DI-Mod USB interface sports a S/PDIF coaxial output, a stereo TRS out, and a USB port, which can function as an input or output, depending on how you set it up with the included utility program or from within your host recording app. The S/PDIF connection can carry the Envoice's output or the output

from your computer; additionally, the analog out can be used for stereo monitoring. Essentially, all you'd need for single-channel recording and stereo playback is a laptop and the mkII.

The mkII's input and processing sections remain much the same from the original. Analog line ins and outs are on balanced XLR and balanced/unbalanced 1/4" jacks. In addition, insert and send jacks are provided, allowing you to process the input signal with external gear. The insert comes before the compressor and EQ sections.

The EQ isn't the typical low and high shelving paired with a sweepable mid.

Instead, all three bands are "bell-shaped" parametric, and have different behavior for boost and cut. When

boosting, the bandwidth is wider for a "broad stroke" result, whereas when cutting frequencies, the bandwidth is narrower for more surgical control. I found the EQ behavior to work well. In cases where I wanted to warm up a sound, boosting by 1–2dB did the trick (a little went along way, especially when engaging the tube saturation in the compressor section).

As a tonal shaping device, the mkII is impressive. Its preamp sounds clean and focused, the EQ is smooth, and the compressor is capable of going from nearly transparent to rude, depending on how hard you drive the tube. If you're in the market for a sub-\$1,000 recording channel, the Envoice mkII is worth serious consideration. **EQ**





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# Sounds



## SONIC IMPLANTS

Atsiã — West African Dancing Drums

Contact: Sonic Implants, [www.sonicimplants.com](http://www.sonicimplants.com)

Format: 1 CD-ROM; GigaStudio, Kontakt, or SoundFont

Price: \$179.95



Seasoned sample developer Sonic Implants has a rich catalog of high-quality multisampled instruments

ranging from vintage keyboards to orchestral strings and brass. Their West African drumming collection, *Atsiã*, is a welcome and worthy addition to an already impressive lineup.

Sonically, the recordings are punchy and warm, with just a hint of room ambience, but not so much as to limit the use of additional processing. *Atsiã* was recorded at Blue Jay Studios ([www.bluejaystudio.com](http://www.bluejaystudio.com)), using traditional African and Brazilian instruments performed by Joe Galeota (associate professor, Berklee College percussion department). There's not much they didn't sample — you'll find all manner of floor drums, bells, shakers, bass drums, talking drums, and more.



## SONIC IMPLANTS

Atsiã — West African Dancing Drums

Atsiã wins an EQ Award for its high-quality, versatile palette of authentic Afro-Brazilian percussion.

Roughly half of the library consists of multisamples, many of which provide up to four velocity-switched levels. The drums were played in a variety of ways — muted, open, smacked, tapped, rubbed, etc. I found the instrument patches expressive and instantly playable. Samples are cleverly mapped for easy finger drumming. For example, similar sounding attacks are laid out next to each other, so it's easy to roll or repeat a note without the typical "machine gun" effect.

The remaining material consists of traditional and "pop" loops performed in 4/4 and 6/8 time signatures. These loops were performed at the same tempo, so it's possible to layer low-, mid-, and high-frequency

percussion parts simply by holding down a few notes on the keyboard. This proved effective for building up tribal patterns that would be perfect underneath a *Survivor* challenge or dramatic chase scene. In other words, this is the stuff composers should be able to mine for years.

Shortly before we went to press, Sonic Implants began offering smaller subsets of these sounds for download at a fraction of the cost (prices range from \$19.95 to \$29.95). Whether you need an isolated instrument or a full palette of authentic Afro-Brazilian percussion for your next production, *Atsiã* has the goods. An undeniable EQ Award winner. —JOHN KROGH

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Rackmounts

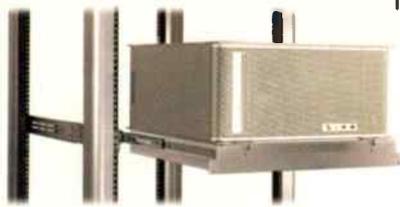
G5 Rackmount Vertical



Rackmount for one (or two) Power Mac G5

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G5 Rackmount Horizontal



Sliding Rackmount for Power Mac G5

## Thanks for the compliments, Eric Clapton & John Mayer

"I've kind of mucked around with that AdrenaLinn — the Roger Linn piece. I think that's a fabulous piece of equipment...it's got some great sounds."

— Eric Clapton from *Vintage Guitar* magazine, June 2004

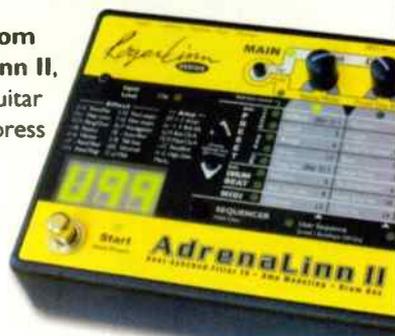
"I started messing around with the AdrenaLinn and very soon found this combination of the beat and the arpeggiator. I've never heard a guitar do that before. I just stayed there in that room for like two or three hours...I remember thinking to myself, this is really strong, this really makes me feel good."

— John Mayer from UK's *Guitarist* magazine, November 2003, on using AdrenaLinn to record his hit "Bigger Than My Body"

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**SONIC REALITY**  
Acoustic Folk

**Contact:** Sonic Reality, U.S.  
dist. by M-Audio,  
[www.m-audio.com](http://www.m-audio.com)  
**Format:** 1 CD (Reason refill,  
WAV)  
**Price:** \$49.95

For rootsy, "unplugged," and slightly countrified flavors, *Acoustic Folk* could be all the instrumental horsepower you'll ever need. This Reason refill is chock full of highly playable NN-XT sampler patches that run the gamut from dobro, banjo, and mandolin to pump organ, harmonica, a tasty selection of vibe-appropriate drum kits — and of course, acoustic guitar. The closest you'll come to anything



resembling a "loop" is a patch of banjo licks mapped across the keyboard.

Far more satisfying (and certainly less gimmicky) are the multisampled guitars and other plectrum offerings, which are presented with finger- and flat-picked variations. These are detailed and musical representations that ooze with character — I found it way too easy to get inspired from playing the

This Reason refill is chock full of highly playable NN-XT sampler patches.

shimmering Taylors and Martins. There's a level of realism in the patches that makes them stand above other libraries costing twice as much. In some cases you'll hear finger squeaks at certain velocities, for example. Heck, the programmers even managed to make a pedal-steel patch in which individual notes within a chord can be bent — clever. Kudos to Sonic Reality for taking what is obviously well-recorded source material and skillfully creating patches

that can hold their own against hardware synths.

For those who don't use or own Reason, all of the multisample waveforms (over 280MB) are duplicated in WAV format, so you can build your own patches with whatever sampler you choose. Nice.

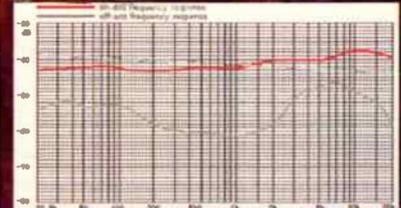
If you're a songwriter or composer looking for a set of instruments that conjures the sound of an Indigo Girls or East Mountain South record, *Acoustic Folk* won't disappoint. —JOHN KROGH



**CASCADE MICROPHONES**

**V55 (VALVE 55)**

Cascade's V55 features a classic tube design... It's an excellent choice for vocals as well as acoustic guitar and drums. The circuit design utilizes a specially selected Mullard 12AT7WA/CV4024 tube. The Cascade V55 has a 1.38" (35mm) gold-sputtered diaphragm & offers transformer balanced output. The transformer design ensures higher immunity to noise and longer cable drive capability. The Cascade V55 delivers a smooth, fast transient response with extremely low noise and low distortion. A vintage style switchable power supply, quality shock-mount & aluminum case are included.



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- \* Type: Vacuum tube condenser
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  - \* Sensitivity: 20mV/Pa (0dB=1V/Pa 1000Hz)
  - \* Tube Type: Mullard 12AT7WA/CV4024
  - \* Output impedance: <200 ohms
  - \* Output Noise: < 16dB typical, (A weighted)
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  - \* Power Supply: Dedicated, switchable 115v to 220v

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## A Mighty Wind: Vocals

I'm

Christopher knows how to hire the right people and let them do what they do best. I did some research because I knew we had to capture a specific vocal sound. I bought a bunch of records from that era. I put one on and thought, 'wait a

minute, I grew up listening to this stuff in my house.' It was the same for Ed. We had that sound ingrained into our heads."

EQ caught up with the pair to find out how they captured performances that received Grammy and Oscar nominations, and won a Critic's Choice Award. Says Vanston, "Ed got the fine line between reality and comedy. We tried to err more on the side of reality and let the jokes take care of themselves."

### SIGNAL PATH

"The guys wanted to be recorded playing their instruments and singing at the same time. Those takes ended up being the performances we kept," says Cherney. "We didn't use gobos between them; they wanted to be able to interact with each other. So we needed vocal microphones that would sound good but also were very directional and not sensitive to outside sources.

We wanted it to be late-'50s, early-'60s

and really just capture the texture and the tone of how they made records then.

vocals came up through the Neve 88R console. I recorded to the Studer A827 using Quantegy GP9 tape, then transferred to Pro Tools for editing and mixing."

### MIC POSITION

"Harry, Christopher, and Michael were sitting around in a semi-circle because they were playing their instruments too," Cherney confides. "Michael who was on guitar, and Christopher who was playing guitar and banjo, were about 10' apart and Harry was 12' away because he was playing an upright bass.

"It was critical to make sure that the position of the microphones were off-axis to the adjacent musicians. This can be a trial and error process but it kind of worked the first time we positioned them with the mics."

"Mitch and Mickey was a different approach because they're not necessarily seasoned musicians. Their harmonies were so tight and well rehearsed. Eugene Levy [Mitch] learned how to play guitar for this. He was playing guitar and singing, and Catherine O'Hara [Mickey] was playing autoharp and singing. I used an AKG C-12 on Catherine and a Neumann U67 on Eugene and then had them face each other and miked their instruments. They performed their songs live. On "Kiss At The End Of The Rainbow" their vocal blend is phenomenal. It was a live performance done in the studio.

### PROCESSING

"Processing was straight ahead," states Cherney. "I wanted the natural dynamics of their performances without using heavy compression, so I used dbx 160s only to protect the tape from unexpected peaks."

### TRACK NOTES

Cherney concludes, "Bottom line, these guys are great musicians, they're super-intelligent and great performers. They're the real deal. They've been playing together for a

long time [in Spinal Tap] so they know what they sound like, they're very savvy in the studio, they know when it's right.

"Working on *A Mighty Wind* with CJ

and everyone was one of the few times that I just looked forward to going to work everyday and seeing everyone. It was fun and natural. Very little stress. These guys have a total understanding of what goes on in the studio and CJ is the consummate professional producer and musician. I would love to do it again!" EQ

**DATE:** February 2003

**STUDIO:** The Village Recorders, Studio D

**LOCATION:** Santa Monica, CA

**ARTIST:** The Folksman, Mitch and Mickey

**PROJECT:** *A Mighty Wind*

**TRACK:** Vocals with Harry

Shearer, Christopher

Guest, Michael McKean

(The Folksman); and with

Eugene Levy and

Catherine O'Hara (Mitch

and Mickey)

**PRODUCER:** CJ Vanston

**ENGINEER:** Ed Cherney

**ASSISTANT ENGINEER:**

Okee Kim

The Folksmen (L-R: Christopher Guest, Michael McKean, and Harry Shearer) and Mitch and Mickey (Catherine O'Hara and Eugene Levy), here flanked by Ed Cherney (L) and CJ Vanston (R).



"Harry has a very strong voice so we used a Shure SM7 with a Neve 1073. For Christopher we used an [Electro-Voice] RE-20 with a 1073. And on Michael, because his voice was a bit more delicate, I ended up using a Neumann U67, running it through a 1073. All



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World Radio History



# Success Story

**COMPANY:** Niedt Records

**CONTACT:** [www.douglasniedt.com](http://www.douglasniedt.com)

**LOCATION:** Kansas City, MO

**KEY CREW:** Douglas Niedt, Alex Niedt

by Mitch Gallagher

Having recorded three LPs for commercial labels, classical guitarist Douglas Niedt knew there had to be a better — more profitable — way to go. So when it came time to record his *Pure Magic* CD (2002), he built his own recording space, "Studio B," in his house, and started his own label. His latest CD, *In Heavenly Peace*, a collection of Christmas music, refined the process. Niedt markets his CDs, video, and sheet music at performances, through his website, at Amazon.com, and in a few "brick and mortar" stores, as well as to his database of previous customers.

The guitarist explains, "By doing this ourselves instead of with a commercial label, if we sell even a few thousand CDs, I personally make far more money than if a label sells tens of thousands of discs (which is unlikely for a classical guitar CD). A 10% royalty from a label sounds good until the hefty packaging deduction, the 90% sale provision, the new technology rate reduction, and free goods deduction. Then there's the 'R' word: recoupable expenses. Whatever is left of that original 10% royalty won't enter your bank account until the company has paid its recording costs, artwork costs, and promotional expenses."

Studio B is optimized for Niedt's solo guitar recordings. His gear consists of two Neumann TLM170R mics, a PreSonus MP20 preamp, an Aardvark Aark 24 interface, a custom-built PC, and JBL LSR6328P monitors. Cakewalk Sonar handles the recording. The Neumanns were set to hypercardioid, and placed 8" from the bridge of the guitar.

"The computer is on the other side of the wall that the monitors are on. When the previous owner finished off the basement, he left a 4' corridor to get to the furnace/water heater. The wall is simply 2x4 framing with plywood. The computer noise isolation was pretty good with just that, but we added Auralex Sheetblok over the studs to cut the noise even more. The room is extremely quiet."

Choosing the ideal microphones was a challenging task. "I had Sweetwater send me a dozen different Neumanns (with the right to return the ones I didn't want). I recorded the exact same musical passages with each mic in the same physical placements — about 12 per mic. If the mic had multiple pickup patterns, I tested each pattern with all the placements. I ended up with more than 200 test tracks, but it was pretty fast whittling it down to the best."

Processing was used only when necessary. "We used the BBE Sonic Maximizer [plug-in] on minimal settings, Sonitus parametric EQ (to knock out boominess at 220 and 110Hz), and Waves IR1 convolution reverb. Except for the reverb, the use of processing was minimal — and no compression, which I insist on."

Niedt concludes, "When we look at the bottom line, with middle of the road equipment (except for the Neumanns), we turn out superb products and make a profit. We're having a ball!"



Douglas Niedt's studio and gear is optimized for recording his solo classical guitar music.

## Are You a Success Story?

Listen up EQ readers: Have you found a unique way to turn your home or project studio into a profitable business? If so, we want to feature you as a Success Story. Send an email letting us know why you should appear to [mgallagher@musicplayer.com](mailto:mgallagher@musicplayer.com).

World Radio History

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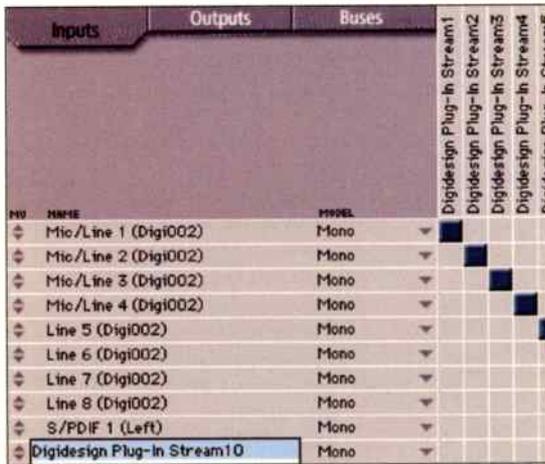
## I/O Confusion

It's

not unusual to use DAW software from "Brand A" and an audio interface from "Brand B." But it's confusing when the audio inputs and outputs aren't labeled the same in software as they are on the hardware.

An example: Using MOTU Digital Performer 4 and the Digidesign 002. In this case, all the 002 ins and outs appear in DP with a generic label: "Digidesign Plug-in Stream..." It can be hard to tell whether you're using analog or digital inputs.

In DP, you can customize the input and output names for the 002 by visiting "Audio Bundles" in the Studio menu.



Here, you can view all the current input and output bundles. (Tip, if you don't see all the 002 inputs or outputs listed on the left/vertical column, you can click "Add" or "Add Multiple" at the bottom of this window).

Rename each bundle by double-clicking its name. The bundle will highlight, and you can type in whatever name you like. In this example, we know that the first "Digidesign Plug-in Stream" will correspond to Mic/Line 1,

It's not unusual to use DAW software from "Brand A" and an audio interface from "Brand B."

so that's a good name to use. I usually name the in or out to match the label on the hardware to avoid confusion.

To re-use this labeling scheme with another DP project, you can go *File > Save as Template*. When you create a new project, use the template you created.

Another example: the MOTU 828mkII with Emagic Logic. In this case, the ins and outs are given generic labels as well; "input 1," "input 2," and so on.

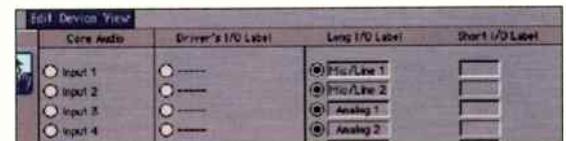


With the 828mkII, the first two ins are Mic/Guitar inputs 1 and 2. Logic labels them Input 1 and 2. That leaves Logic to label the 828mkII's Analog 1-8 as "Input 3-10." Confusing!

To customize these labels, choose Audio Configuration from Logic's Audio menu.



Within the audio configuration choose I/O labels from the View menu. Here you can select the "Long I/O Label" button for each input and type in a clearer name: "Mic/Guitar 1."



When you return to the mix environment, you'll find your track input and output labels are clearer. Logic saves this information as a global preference, so each file you create or open should have the same I/O labels available automatically.

Most DAWs allow this kind of I/O labeling. The trick is to find out the order in which your hardware ins and outs will appear — the manual should have the answer. EQ

Todd G. Tatnall is the Senior Tech in Sweetwater's Technical Support department.

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## Apple iTunes

### Rip audio CDs in WAV and AIFF formats

**Objective:** Use iTunes' built-in audio import features to convert audio tracks into formats that can be imported into music programs.

**Background:** Some music apps such as Emagic Logic and Native Instruments Kontakt don't support direct importing of CD audio tracks. Fortunately, Apple's own iTunes can be used to save and convert audio tracks into files that music apps that support AIFF and WAV formats can use. Here how to do it.

1



2



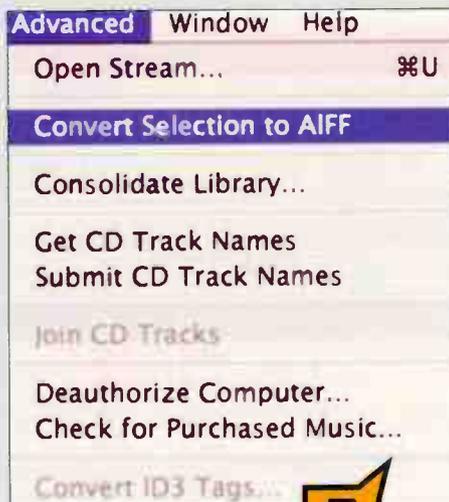
- 1 With an audio CD mounted on the desktop, launch iTunes and open its preferences.
- 2 From the window that appears, click on Import. From the Import Using menu, choose AIFF Encoder or WAV Encoder depending on what format you'd like to work with.
- 3 Optional: If you want to specify word length and sample rate, choose Custom from the Settings menu. You'll be presented with a dialog box from which to make these settings. When you're finished, click OK.



3

- 4 Now, go to the main jukebox display and select the track(s) you'd like to convert.
- 5 Choose Convert Selection to AIFF/WAV from the Advanced menu.
- 6 The audio track(s) will be converted and placed in your Music/iTunes folder.

4



5



## Native Instruments Kontakt

Slice and extract timing data from sampled loops

**Objective:** Use Kontakt's new Beat Machine sampling mode to divide a loop into individual hits and generate a MIDI file of the groove, which can be used to create a MIDI groove template.

**Background:** Kontakt version 1.5.3 includes a new beat sampling mode that offers loop slicing features similar to Propellerhead ReCycle, where a loop can be automatically divided into separate hits (commonly called "slices") and mapped across the keyboard. Additionally, a MIDI file can be generated that recreates the exact timing of each hit. You can trigger the loop by playing the MIDI file from your sequencer, giving you control over the tempo and timing. Or, you can use the MIDI file to create a groove template for use with other MIDI parts.



1 Load a loop into Kontakt — the quickest method is to drag and drop a loop from the browser into Kontakt's rack.



2 Optional: If you want to combine several loops in one instrument, create a new instrument, then drag and drop samples into the Mapping Editor.



3 For now, let's just work with a single loop. Click Edit, then choose Beat Machine from the Source module. The loop waveform will automatically be displayed in the Loop Editor.



4 To divide the sample based on transients, increase the transient detection sensitivity with the Slicer Sens. slider. Kontakt might not find all the hit points. In that case, you'll need to place them manually by clicking the Add button, then positioning the cursor where you want the marker(s) to be.



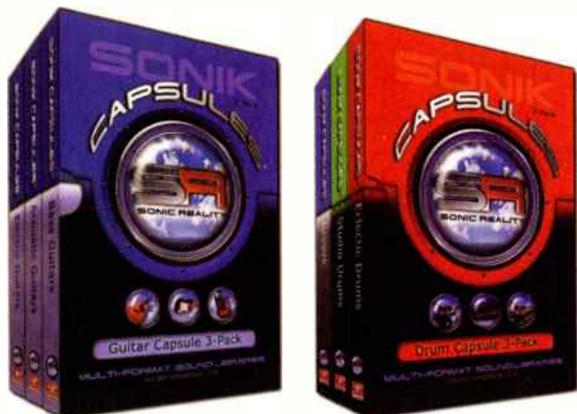
5 Once you've fine-tuned the marker locations, click Close from the Loop Editor, then choose Expand Slices to Groups from the Commands menu. The Slice Expand window will appear.



6 From the Slice Expand window, enable Save MIDI Timing Template and set the time signature information for your MIDI file, then click Expand. You'll be asked to save your MIDI file to the hard drive. When you've finished, the slices will be mapped across the keyboard, and you'll have a MIDI file that can be loaded into your DAW of choice.

### tips

- Kontakt supports REX2 files as well — the Loop Editor will recognize slice markers from ReCycle. I've found that because of Kontakt's relatively small waveform display, it's often easier and quicker to load a loop in ReCycle, chop it up, and then blow it into Kontakt.
- If the feel isn't exactly what you'd like, you can always quantize the MIDI file to add more swing or make it more metronomic.



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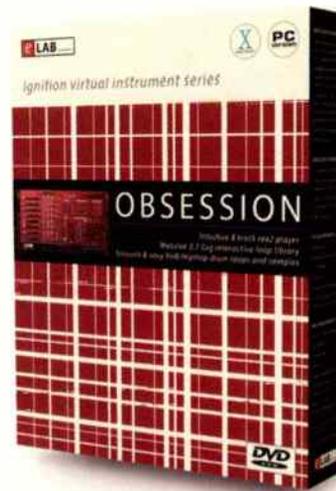
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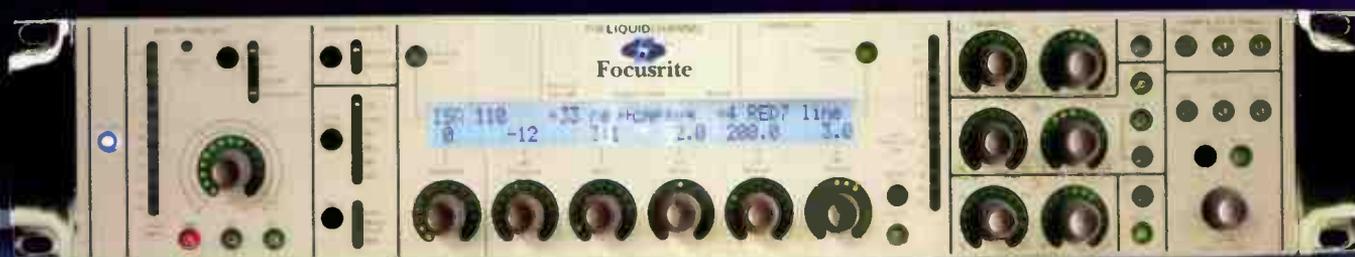
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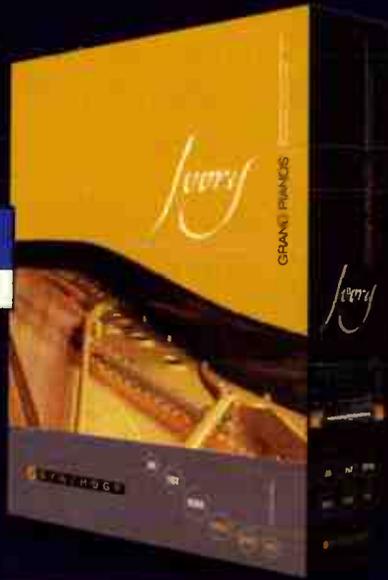
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# Call the DP4 and MOTU experts.

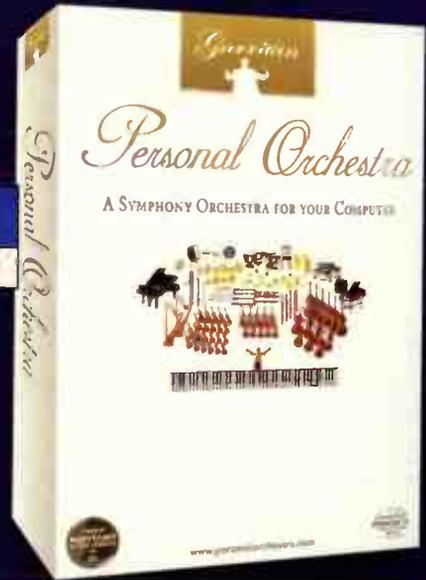
## Synthogy Ivory Grand Pianos

This groundbreaking sample-based virtual instrument was conceived and crafted to bring out the resonance, response and character of the world's finest Concert Grands. These 3 superbly sampled pianos, totalling 28 GB, are paired with a custom DSP engine with string resonance, real release samples, and unprecedented user control. A first of its kind!



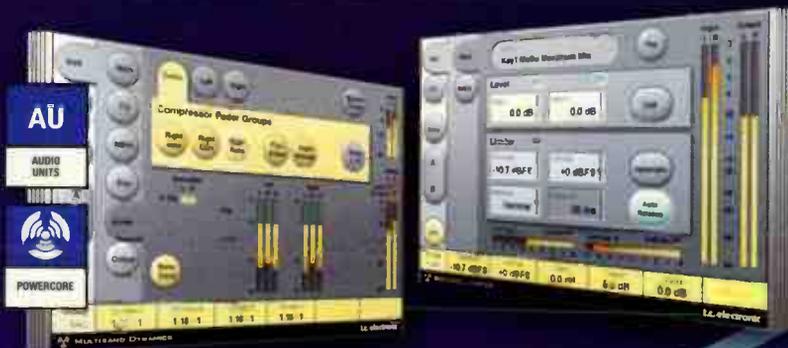
## Garrigan Personal Orchestra

Garrigan Personal Orchestra is an affordable and easy-to-use orchestra for Digital Performer. It includes all the major instruments of the orchestra — strings, brass, woodwinds, percussion and keyboards plus the Sample Player to play them in Digital Performer. Create realistic sounding orchestral music quickly and easily. No confusion. No steep learning curve. Just load instruments and play.



## Native Instruments Guitar Rig

The Be All, End All guitar tone and effects rack for Digital Performer. This monster package (look at that effects rack to the left!) even comes with its own foot controller, which doubles as a Direct Input box for feeding your guitar signal into your MOTU audio interface — too cool! Guitar Rig is your one-stop solution for guitar effects, amp and cabinet emulations, and mic modeling.



## TC Electronic MD3 Stereo Mastering Package for PowerCore

From the legendary System 6000, TC's most advanced flagship audio processor ever, comes the new mastering plug-ins for PowerCore (PCI and FireWire). This is your chance to own TC's most advanced multiband dynamics and brickwall limiter algorithms at an incredible price, applied directly to your Digital Performer master fader. And thanks to PowerCore's dedicated DSP, you'll have plenty of CPU power left over. Also available as a Windows VST plug-in for PowerCore PC hosts.

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# Want the ultimate personal studio?

## M-Audio **KeyStation Pro 88**

Digital Performer captures every nuance of your MIDI performance. And this new 88-key hammer-action USB powered MIDI controller delivers fine-tuned response to satisfy even the most demanding players. Add four zones, a stunning set of MIDI-assignable controllers all in a compact 40 pound package, and you have the most comprehensive product of its kind!



## BIAS **Peak 4.1 Mastering & Restoration Edition**

Peak 4.1 plus SoundSoap Pro and SuperFreq. Imagine the world's most popular stereo audio editing, processing, and CD mastering program for the Mac, combined with unparalleled noise reduction and restoration technology — all at a jaw dropping low price. You get Peak 4.1 (including ImpulseVerb, Squeeze, VBox SE, Jam 6, SFX Machine LT, and more), SoundSoap Pro (combines four state of the art restoration and noise reduction tools in a single plug-in), and the SuperFreq suite of mastering EQs all in one great package. Launch Peak directly from DP4 for more editing and processing power. Run SoundSoap Pro within DP4 or in Peak as an AU plug-in. For the very best in sample editing, batch processing, file conversions, loop creation, sound design, restoration, and Redbook CD mastering on OS X, pick up the Peak 4.1 Mastering and Restoration Edition today — the perfect mastering and restoration companion for DP4!



## Monster **Power Pro AVS 2000**

Often overlooked, voltage stabilization is an absolute must for the well-tuned MOTU studio experience. Dips in voltage caused by power-hungry appliances can seriously compromise your sound: loss of tone and clarity, spurious changes in gain structure, loss of peak power, and worse. The Monster AVS 2000 PRO delivers the stability needed for peak power and performance.



## Monster **PowerCenter Pro 7000**

Equally important, power conditioning is another must. The current that comes from most AC outlets is inherently unbalanced, causing high-frequency oscillations that get picked up by your gear in the form of performance-robbing hum, buzz and static. Only a power center with perfectly balanced power can fully remove this type of interference. The Pro 7000 is the answer, with 12 AC outlets and Tri-Mode™ 3145 joule rated surge protection. It's the perfect compliment to the AVS 2000 Pro.

Get both units to deliver the world class power that the gear in your MOTU studio deserves.



## Yamaha **01x Digital Mixer**

For mixing "inside the box" or "outside the box" with Digital Performer, the Yamaha 01x gives you the best of both worlds. In fact, the 01x can serve triple duty in a MOTU-based studio as a mixer, control surface and audio interface. First and foremost, the 01x is a world-class 24-channel, motor-fader digital mixer with 8 mix busses, 24/96 A/D converters and total recall. Built on world-renowned 96kHz DSP technologies found in Yamaha's flagship DM2000, 02R96 and 01V96 professional digital mixers, the 01x has massive power under the hood, at an amazingly affordable price. If you choose to mix in Digital Performer instead, the 01x serves as a comprehensive control surface for Digital Performer's mixing environment, complete with motorized faders. And Finally, the 01x can serve as a multi-channel audio interface and multi-port MIDI interface via mLAN FireWire.



# Call the DP4 and MOTU experts.

## Mackie Control Universal and Extender

Imagine the feeling of touch-sensitive, automated Penny & Giles faders under your hands, and the fine-tuned twist of a V-Pot™ between your fingers. You adjust plug-in settings, automate filter sweeps in real-time, and trim individual track levels. Your hands fly over responsive controls, perfecting your mix — free from the solitary confinement of your mouse. Mackie Control delivers all this in an expandable, compact,

desktop-style design forged by the combined talents of Mackie manufacturing and the MOTU Digital Performer engineering team. Mackie Control brings large-console, Studio A prowess to your Digital Performer desktop studio, with a wide range of customized control features that go well beyond mixing. It's like putting your hands on Digital Performer itself.



## PreSonus Central Station

The PreSonus Central Station is the missing link between your MOTU recording interface, studio monitors, input sources and the artist. Featuring 5 sets of stereo inputs (3 analog and 2 digital with 192kHz D/A conversion), the Central Station allows you to switch between 3 different sets of studio monitor outputs while maintaining a purely passive signal path. The main audio path uses no amplifier stages including op amps, active IC's or chips. This eliminates coloration, noise and distortion, enabling you to hear your mixes more clearly and minimize ear fatigue. In addition, the Central Station features a complete studio communication

solution with built-in condenser talkback microphone, MUTE, DIM, two separate headphone outputs plus a cue output to enhance the creative process. A fast-acting 30 segment LED is also supplied for flawless visual metering of levels both in dBu and dBfs mode. Communicate with the artist via talkback. Send a headphone mix to the artist while listening to the main mix in the control room and more. The Central Station brings all of your inputs and outputs together to work in harmony to deliver a powerful and affordable solution for Digital Performer that will enhance the creative process and ease mixing and music production.



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World Radio History



by Mitch Gallagher

# Room with a VU

**STUDIO NAME:** Jungle Room Studios  
**CONTACT:** [www.asphaltjungle.net](http://www.asphaltjungle.net)  
**LOCATION:** New York, NY  
**KEY CREW:** Brian "Jungleboy" Tarquin (producer/programmer/guitar guru); Chris "Beatmaster" Ingram (programmer/keyboards/Lava)  
**CONSOLE/MIXERS:** Soundcraft Spirit Studio, Argosy 70 Series console, Mackie 32•8  
**RECORDERS/PLAYERS:** Tascam DA-38, CD-RW5000; Panasonic SV-3800 DAT, Sony DTC-A7 DAT, TC-WR545 cassette  
**MONITORS:** Tannoy PBM5II, Yamaha NS-10M, Auratone Cubes, Samson Servo-150 amplifier, Mackie HR-8  
**OUTBOARD:** TC Electronic Finalizer Plus/96 [2], Alesis 3630, DBX 566, Summit Audio TPA-200B, Empirical Labs Distressor  
**EFFECTS:** Eventide GTR 4000, Alesis Quadraverb, Lexicon MPX 100, Digitech Smart Shift IPS33, Electrix Filter Factory, Mo-FX  
**MICROPHONES:** Sennheiser MD-421, AKG C 1000S [2], Shure SM57 [2], AKG C 414 B-ULS [2], Audio Technica AT-4050  
**MICROPHONE PREAMPS:** Universal Audio Model 2-610, Joemeek VC3Q, Summit Audio TPA-2008  
**COMPUTERS/DAW:** Apple PowerMac G5/1.6GHz, PowerMac G4/dual 500MHz  
**DAW:** Digidesign 002  
**SOFTWARE:** Digidesign Pro Tools, MOTU Digital Performer, Propellerhead Reason, Ableton Live, Arturia Minimooq V, Spectrasonics Atmosphere, Stylus; Plugsound World of Synths, Hip-hop, World of Drums  
**KEYBOARDS/MIDI:** AKAI MPC2000XL Studio Plus, MPC4000, MFC42, S20; Roland MC 909, V Synth [2], Super JV-1080, GR-09, R-70, R-5, Fantom, KD-8; E-mu Proteus 2000, Drum Kat, E4

Platinum; Access Virus [2], Korg MS2000R, Novation Bass Station, Nord Lead 2 [2], Rhodes Suitcase 73

**STUDIO NOTES:** Jungle Room Studios is the home of rock/electronic recording artists Asphalt Jungle. The Emmy Award-winning duo comprises Brian "Jungleboy" Tarquin and Chris "Beatmaster" Ingram. According to Tarquin, "We needed a place to create break beats for both commercial releases and TV composing projects. The studio was designed to combine the best of both analog and digital recording gear. We achieve our 'phunk' sound using Pro Tools for editing along with old-school recording techniques with live instruments.

"Being a longtime MPC user, I recently upgraded to the MPC 4000, which lets any sample be radically manipulated through the filters — ideal for creating our style of music.

"Chris likes to cut his grooves on an E-mu sampler and uses Digital Performer to create his tracks. He has a great intuitive sense about programming, using the right gear and samples mixed with live performances, creating the perfect blend of instruments for a track.

"Both of us love the Roland V-Synth. It's the ultimate programming tool, allowing us to record live instruments directly into the sampling memory of the synth. Then the possibilities are endless as far as manipulating the sound. For instance, we recorded live guitar through a Marshall stack, miking it with a Shure SM57 and an AKG C 414 through a Universal Audio preamp and dbx tube compressor for a new drum n' bass remix track for our upcoming album on Cleopatra Records. Once the parts were in the V-Synth, Chris was able to manipulate them into indescribable sonic thunder, which brought the track alive with an aggressive edge."

**HEY, EQ READERS. WANT US TO FEATURE YOUR STUDIO? SEND PICS AND INFO TO [mgallagher@musicplayer.com](mailto:mgallagher@musicplayer.com).**

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The Motif ES is the most powerful keyboard workstation on the planet. So what could possibly make it better? Imagine that you could transform your ES from being just a synth into the most important part of your computer studio!

What if you could connect guitars and mics to the audio inputs on your ES, add any of the ES insert effects and then record directly into your computer's software? What if you composed on the Motif's built-in sequencer and then simultaneously recorded all 16 ES tracks into Sonar, Logic, Cubase or Digital Performer? What if you could turn the ES into a complete DAW control surface and use its faders, knobs and buttons to open windows, move faders, set panning and EQ—even control and view VST/AU plug-ins directly from your ES? Well, if you could do all that, why not take 4 stereo audio buses from your computer, send them to the Motif's superior reverbs and mastering effects before sending the fully mixed computer tracks via the Motif's audio outs to your monitor speakers?

Imagine a Motif ES and a computer could make up this completely integrated professional computer studio. And for good measure, demand to do it with just one FireWire cable connected between your ES and your computer.

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