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**AKG C 414B-XLS
& C 414B-XL II**

**McDSP Chrome Tone
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TURBO-CHARGED PLUG-INS

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In the USA: Genelec Inc., 7 Tech Circle, Natick, MA 01760 USA
T 508-652-0900, F 508-652-0909 Email: genelec.usa@genelec.com

In China: Genelec China Rep. Office, SOHO New Town
88 Jianguo Road, D-1504, Chaoyang District, Beijing 100022, China
T + 86 10 8580 2180, F + 86 10 8580 2181 Email: genelec.china@genelec.com



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CONTENTS

AUGUST 2004



FEATURES

- 22 Hardened Software**
Software gets a hardware turbocharge
- 26 Roland VS8F-3**
Plug-in expansion card for V-Studio
- 30 The Practical Guide to ReWire**
This powerful protocol promotes playability
- 40 How to Tune Your Control Room**
Tuning: It's not just for instruments anymore
- 48 Steve Winwood's Indie Renaissance**
He's back . . . and it's about time

THE ART OF RECORDING

- 60 Rong is Gud**
Breaking the rules leads to good sounds
- 64 Rendering**
It's not enough to just back up your data

DEPARTMENTS

- 4 Talk Box**
- 6 Punch-in**
- 14 Tool Box**
- 90 Coming Attractions**
Sony ProData
- 112 Room with a VU**
Heavy Melody Studios,
New York, NY

14



EQ REVIEWS

- 66 Yamaha 01X**
Control surface/mixer/audio and MIDI interface
- 72 AKG C 414B-XLS and C 414B-XL II**
New versions of classic mics
- 78 McDSP Chrome Tone**
Shiny new guitar amp and effects modeler
- 84 East West Morphology**
Software instrument with evolving synth patches
- 84 Radial Engineering Xamp**
Recorder to guitar amp interface

Sounds

- 86 Gary Garritan Garritan Personal Orchestra**
- 87 Sony Sonic Excursions for Acoustic Guitar**
- 88 Discovery Firm Okinawan Tradition**



78

COLUMNS

- 92 Tech Bench**
Authorization required
- 94 Session File**
Drums: Tommy Lee
- Power App Alley**
- 98 Cakewalk SONAR**
Instant drum parts
- 100 Steinberg Cubase**
Creating periodic effects
- 104 IK Multimedia SampleTank 2**
Make your own instruments
- 97 Advertiser Index**
- 102 Product Spotlight**
- 105 Classified Ads**



72



48

NEW! US-2400

The award-winning DAW controller with 2.5 motorized faders per finger.

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Talk Box



TOO MUCH GEAR?

We're fortunate to live in a time when recording gear is plentiful. And with prices lower than ever and quality at an all-time high, we're sitting pretty.

So it's interesting to hear the occasional rumble about there being "too much gear available" — online forums have discussed this very topic, and we recently received letters about it from readers, as well.

Some maintain that better music was made when there were more gear limitations at work — the improved, more flexible tools we have available haven't resulted in equally improved music or production quality.

One thought is that the gear limitations forced the user to be more creative and to achieve better results through "talent" and hard work — maybe things are just too easy now.

Others hold that having too much gear is actually a burden. More time is spent learning about and fooling with computers and audio toys than is actually put into making music.

A common problem is an overload of options leading to inability to make any kind of decision. And that can be a real issue, since with many of the tools we have today, we can put off making mixing and editing choices until the end of the process — and with so many choices, we never get to the end of the process.

On the other side of the coin, manufacturers are coming out with more new products than ever. Prices are down, quality is up, and we have more power in our studios than we could dream of just a few short years ago. We should take advantage of these tools, and strive for the best quality possible.

I have to admit, I was falling into the "frozen by the options" mode. One of the perques of my gig is that an incredible array of new gear comes through my door — and I'm not complaining! For a gear junkie like me, it's pretty darn close to heaven. But it does lead to a problem: I spend as much time learning gear as I do actually using.

I solved the problem, and you can do the same. Here's how: **Know when to say when.** At some point, you have to stop and get to work. I do it by setting time limits — for an hour, I'll read the manual and work the tutorials. After that, I'm getting to work on some music.

Lose the excess baggage. I've been seriously down-sizing my rig over the past few months. What I don't use, I'm selling. It's taking up space here, and someone else can put it to good use.

Keep your eye on the ball. It's so easy to get distracted by the possibilities. Keep your focus on what you want and need to accomplish.

Don't rely on the gear for inspiration. A new synth or effect can inspire ideas, so many times we rely on the gear to make us creative. Instead, look for your inner source of inspiration.

Buy the right gear. With all the choices out there, this is a tough one. And I've made my share of mistakes. Usually it's because I'm thinking something like, "wow, if I buy this, I could produce the ultimate dance music tracks" when I don't really work much on dance music, or thinking "wouldn't it be cool if . . ." rather than focusing on what I truly need.

So to answer the question in the title of this editorial, no, we don't have too much gear. There's always room for more and better equipment that we can use to realize our musical visions. The key is to not fall into the "too many options" trap. Hopefully I've given you a few tips that will help avoid that trap. Good luck!

—Mitch Gallagher

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Editor in Chief: Mitch Gallagher, mgallagher@musicplayer.com
Managing Editor: Debbie Greenberg, dgreenberg@musicplayer.com
Editor at Large: Craig Anderton, canderton@musicplayer.com
Technical Editor: John Krogh, jkrogh@musicplayer.com
Group Copy Chief: Kevin Owens, kowens@musicplayer.com
Contributings: Phil O'Keefe, Lisa Roy, Todd G. Tatnall, Ethan Winer

Art Director: Doug Gordon, dgordon@musicplayer.com
Staff Photographer: Paul Haggard, phaggard@musicplayer.com

Publisher: Valerie Pippin, vpippin@musicplayer.com
Associate Publisher/Northwest Advertising Sales:
Dan Hernandez, Tel: 650-513-4253, Fax: 650-513-4646;
dhernandez@musicplayer.com
East Coast Advertising Sales: Joe McDonough
Tel: 212-378-0492, Fax: 212-378-2158; jmcDonough@musicplayer.com
Southwest Advertising Sales: Pete Sembler
Tel: 650-513-4544, Fax: 650-513-4646; psembler@musicplayer.com
Northeast/Europe Advertising Sales: Gary Ciocci
Tel: 603-924-9141, Fax: 603-924-9209; gciocci@musicplayer.com
Manager of Specialty Sales: Joanne McGowan
Tel: 650-513-4376, Fax: 650-513-4646; jmcgowan@musicplayer.com
Specialty Sales Asst.: Darlene Labrecque
Production Manager: Amy Santana
Imaging Technicians: Joe Ging, Martin Ruiz

MUSIC PLAYER NETWORK

Vice President: Louise Rogers
Editorial Director: Michael Molenda
Financial Analyst: Matthew Zanger
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Assistant Circulation Managers: Rosario Perez, Maribel Aleman
Reprint Coordinator: Cindy Zauss, Tel: 909-698-1780



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CMP Information, Inc.
President: Tony Keefe
Controller: Doug Krainman

Please direct all advertising and editorial inquiries to:
EQ, 2800 Campus Drive, San Mateo, CA 94403
(650) 513-4400; Fax (650) 513-4661; eq@musicplayer.com

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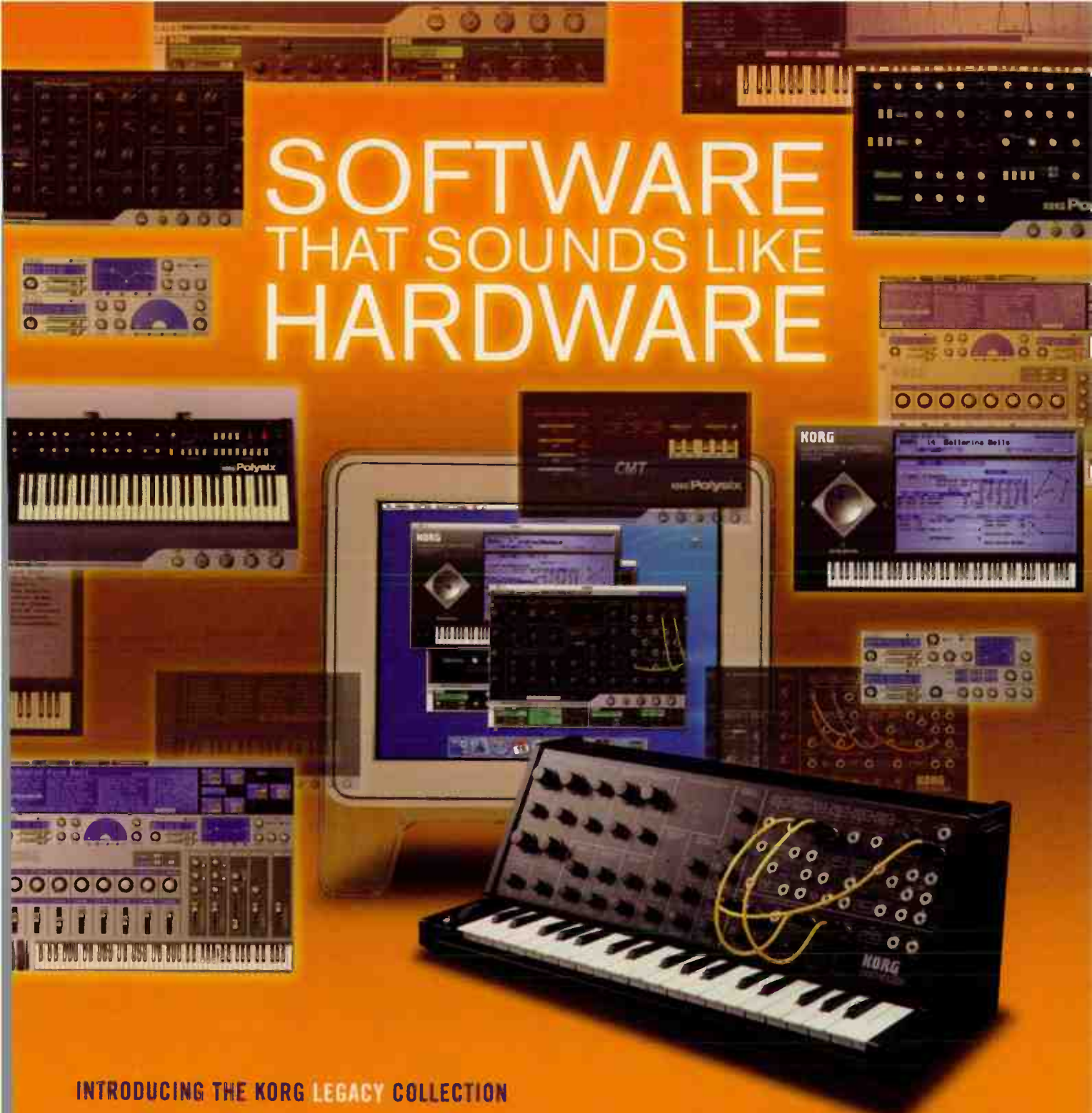
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> You also get our new Legacy Cell which allows you to blend the voice architectures of the MS-20 and Polystix while adding Insert and Master effects to create sounds and combinations that have never been heard before. And because we priced the retro technology with state-of-the-art polyphony and editing capabilities, the new versions of these yester-synths run rings around the original hardware.

> We've even included a commemorative MS-20 controller: USB equipped and 84% of the original size. To complete this killer collection, we've brought back the coveted Wavestation packed with every sound from the entire series. It's also compatible with over patch data. In one surprisingly affordable package the Korg Legacy Collection gives you four amazing synths, twenty high-quality effects and a cool hardware controller that will help you create a powerful new Legacy of your own.

Some of these items require a copy of Korg's KAT or Korg's Korg Legacy Collection software. Windows XP or Mac OS X. For more complete system requirements, visit our

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Punch-In

Tips & News You Can Use
BY CRAIG ANDERTON

So What's Next, Retinal Scans?

Most of us are against software theft and in favor of intellectual property rights. But at some point, you have to wonder how far to take content protection. VeriTouch has assigned Swedish company Thinking Materials (www.thinkingmaterials.com) to create a portable audio/video player, iVue, that can "biometrically encrypt and decrypt digital media content" — that's right, it checks your fingerprint before letting you listen to music, watch videos, or hook up to wireless content delivery. The "unique security architecture" supposedly eliminates piracy and makes it impossible to create illegal copies of content delivered to iVue, because it won't play on other systems without your fingerprint. Okay, so it's not all *that* intrusive . . . still, at least to me there's something creepy about being fingerprinted in order to press "play."

Steinie Goes to Hollywood

Martin Stahl, part of Steinberg's Nuendo team from version one, will be providing expert support for the Los Angeles post production community in his new role as Project Manager Post Production. He will also act as a direct link between post-production professionals and the Nuendo development team, as well as work closely with Euphonix to make sure that the EuCon high-speed connectivity between Nuendo and the System 5 console range offers a truly integrated solution.

Notes industry veteran John Ross, who recently used Nuendo on post-production for MGM's upcoming major release *De-Lovely: The Life Of Cole Porter* (starring Kevin Kline and Ashley Judd), "As a heavy user of both Nuendo and System 5, I'm very excited by the prospect of even closer integration."



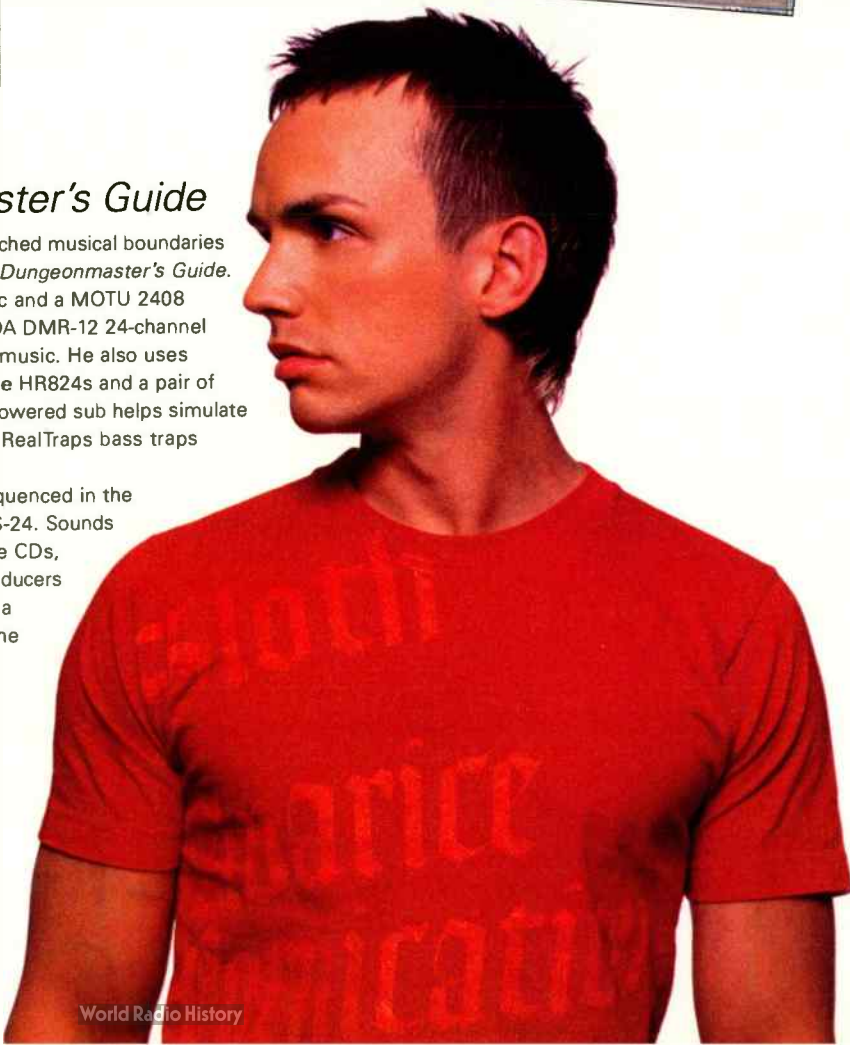
INDIE WORLD:

Dieselboy, *The Dungeonmaster's Guide*

Dieselboy, a top drum 'n' bass DJ/producer, has stretched musical boundaries beyond traditional d'n'b with his latest release, *The Dungeonmaster's Guide*. His studio centers around an Apple G4 running Logic and a MOTU 2408 with Apogee DA-16 converters, all feeding into a DDA DMR-12 24-channel mixer because he likes the character it gives to the music. He also uses Manley EQ and an API 2500 bus compressor. Mackie HR824s and a pair of Yamaha NS-10s do the monitoring, while a Mackie powered sub helps simulate club environments. He controls his acoustics with RealTraps bass traps ("they *really* help").

He comments that "Just about everything is sequenced in the computer; we use the Logic synths and a lot of EXS-24. Sounds come from everywhere — movies, old songs, sample CDs, whatever. I also do a lot of sample-swapping with producers online" — not surprising, as he built his fan base via sending mix tapes over the internet rather than in the clubs. "The most important thing is sound shaping: We work on getting the EQ just right, and the right amount of dynamics control . . . we spend a lot of time tweaking." The LP was mastered by d'n'b specialist Simon Davey at The Exchange in London, while the CD was mastered by Rick Essig at The Master Cutting Room in New York.

For more information, visit
www.djdieselboy.com.





CD of the Month

Ray Charles

The 50th Anniversary Collection,
Rhino Records

Ray Charles was an icon of the American music scene, and if you don't know why, this five-CD boxed set (originally released in 1997) provides the answer in no uncertain terms. His death at age 73 last June left a major hole in the world of music, but fortunately, his legacy lives on in a voice that could turn on a dime between gravel and velvet. This boxed set is essential listening for those who loved music from "The Genius," as well as for the few who haven't discovered him yet.

The booklet included with the CD is as lovingly put together, and enlightening, as the rest of the collection. Furthermore the music isn't restricted to a particular period, but spans his career from 1949 to 1993.

Ray Charles certainly got the recognition he deserved: Strings of gold records, 12 Grammys, the NARAS Lifetime Achievement award in 1987, and their President's Merit Award in 2004. As NARAS President Neil Portnow commented, "With a mix of blues, gospel, jazz, and soul, Mr. Charles was the preeminent American musician — with a heart as grand as his talents. The Academy has lost a dear friend, and the world has lost a musical legend."

Trusonic Goes to the Garage

GarageBand.com and Trusonic (formerly a division of MP3.com) have joined forces to offer Trusonic artists the opportunity to join GarageBand.com's music storage and other services. By following the directions at <http://garageband.com/go/ts4>, the approximately 250,000 Trusonic artists who currently participate in the Trusonic Music Program can automatically transfer their music and other content to GarageBand.com. New web pages will be generated for them, including band descriptions and free mp3 downloads.



Trusonic provides background music and other music services as a business; the collaboration with GarageBand.com creates an online economic model for artists that offers free exposure to consumers, while business users pay royalties. www.garageband.com, www.trusonic.com

Disc Makers Goes Plextor

Disc Makers has gone all-Plextor, all the time, integrating the company's drives into their CD/RW and DVD duplication products *and* using them for all in-house duplication as well. Tony van Veen, Vice President of Sales & Marketing for Disc Makers, notes that "[with Plextor drives] our top-of-the-line systems will be capable of reproducing up to 400,000 discs over their lifetime. Plextor . . . consistently introduces drives with faster recording speeds, a critical factor in our business where every second of recording time counts."

For Plextor, the partnership means increased exposure in the demanding audio market. Disc Makers' made-in-the-USA duplicators start at \$299 and are available directly from the manufacturer. www.discmakers.com, www.plextor.com.



Music Library and Composer Settle



615 Music and composer Geoff Koch have settled a legal case that brought into question the ability of composers and other artists to use samples of their works to promote themselves. This has been a long-standing practice, even if the composer did not own the copyright to the samples or have the copyright owner's express permission to use the samples for promotional purposes.

The case involved a copyright infringement lawsuit that had been filed in U.S. Federal court by 615 Music, which accused composer Geoff Koch of using music on his web site for promotional purposes that was substantially similar to music he'd written for 615 Music. The music Koch wrote for 615 Music was copyrighted by 615 Music. In addition, 615 Music claimed that its President, Randy Wachtler, had co-authored other music named by 615 Music in the lawsuit, a claim strongly disputed by Koch in his counterclaim. According to Koch, both parties have agreed to put the incident behind them.

After *Film Music Magazine* (www.filmmusicmag.com) published a story about the case, settlement talks accelerated. Publisher Mark Northam, founder of the Film Music Network, has been a vocal supporter of film and television composer's rights in the industry. (Adapted with permission from *Film Music Magazine*; © 2004 Film Music Media Group, Inc.)

Tip

THE CASE OF THE MISSING PLUG-IN

I was loading a project into Vegas 4.0 from CD-ROM, just to verify that the files were all okay before erasing the original project from my hard drive. I'd already loaded several projects that evening, but as soon as I clicked on Play the cursor would freeze, and eventually the program would crash and bring down the computer with it.

Vegas problem? Windows problem? No, plug-in problem. Luckily, I had a hunch to check what plug-ins were being used. As it turned out, one of the tracks used the Steinberg Mastering Edition Maximizer, which requires period insertion of the installation CD to verify ownership. Until that CD was inserted and the plug-in reloaded, the program wasn't going anywhere.

I grabbed the CD, reloaded the plug-in, and all was well. But this just reinforces the value of rendering everything with effects (or soft synths) to a hard disk track — just in case.

MusicPlayer.com Forum Watch

And now, for the "why be normal?" portion of our show — there are lots of ways to do unconventional miking.

Original question posed by Bobro: Got any unusual mic techniques to share?

Ken/Eleven Shadows: Place a mic at the bottom of your washing machine. Mic an amp or singer playing/singing into the washing machine. Another one: Put cardboard tubes around the mics.

Bpark: My favorite is tying a PZM around the drummer's neck, with perhaps a kick mic. You get to hear, more or less, what the drummer hears.

Philip O'Keefe: I sometimes use a Blumlein or XY pair just above and behind the drummer's head, aimed towards the kit, to get the same general effect.

Offramp: I'm currently in the process of developing a "string warmer." I found a discarded child's acoustic guitar and installed a small speaker in it. I patch solo string sounds from my XP-80 into it, and mic the soundhole, blended in with the direct sound.

Offramp: I did a one-mic setup for drums because there was one track on a piece of 2" tape to do a new drum track as a demo; I couldn't erase the existing drum tracks for reasons of posterity. I used a 414 — one of the early ones, just shy of 3,000 — about 18" behind and just above the top of the throne. My torso acted as a pad on the snare volume, the rest of the kit got in the mic nice and even, and there was an amazing amount of kick information — enough to cut without affecting the rest of the kit. On mixdown, I was able to beef up the overall presence of the kit enough that you didn't notice it was mono.

Bobro: Very groovy — must be very room-dependent; where's the kit in relation to the walls?

Offramp: The kit was in the middle of a medium-large room, with no parallel walls and a high ceiling (probably 15 ft. or so).

Bobro: 421s have great rejection from behind, so putting them right up against glass or ceramic tiles with the source back a ways gets a cool midrange sound that's somehow "compressed" and very colorful, unlike the usual "broadcast charcoal" kind of 421 color.

Philip O'Keefe: Another useful technique is the second kick drum mic, usually placed a couple of feet in front of the drum, aimed towards the drummer/center of the kick drum. You can use a second kick drum (without any heads) as a "tunnel" to help keep some of the rest of the kit out of it if you want. Or make a tent with a couple of chairs and a moving blanket. I almost always run two kick mics: One just inside of the hole, with the second as described above. I print each to their own track and blend to taste at mixdown (watch your phase, though).

Ken/Eleven Shadows: When making this tunnel for the kick drum, is there any sonic advantage to it other than creating more isolation from the rest of the kit?


Ted Nightshade: You get a more distantly miked kick drum without getting a lot more bleed. The bass wavelengths are really long, and you get a deeper sound from further away.

Dasher: Miking something resonant works very well with an old autoharp or zither. There are enough strings to tune chromatically; you get a wonderful reverb surrogate.

Ted Nightshade: Or of course a piano with the sustain pedal down . . . actually complex-sounding cymbals and gongs can work this way too. I record trumpet with a few nearby. You can't really hear them on the recording, but when they're not there I really miss the ambience.

Junkshop: The strangest thing I ever recorded was an electric guitar plugged into a homebrew talk box (a speaker in an oil change funnel with a hose attached). Then the hose from the talk box was "plugged" into the vent on a snare drum. We miked the snares and recorded one of the weirdest sounding guitar solos I've ever heard.





One of music's most prolific producers, CMA- and Grammy®-Award-winner **Tony Brown** (right) has produced more than 100 albums, and lists among the beneficiaries of his talents such names as Lyle Lovett, Trisha Yearwood, Reba McEntire, Vince Gill, George Strait, Jimmy Buffett, and Steve Earle. Now, as senior partner of Universal South Records, he helms the careers of up-and-coming artists like Joe Nichols, Amanda Wilkinson, and Bering Strait.

Producer/engineer and digital pioneer **Chuck Ainlay** has worked steadily as one of Nashville's top pro audio leaders for artists as diverse as George Strait, Willie Nelson, Mark Knopfler, Emmylou Harris, Vince Gill, Reba McEntire, Trisha Yearwood, Steve Earle, Lyle Lovett, Peter Frampton, and Everclear. In the process, he's collected numerous awards and accolades, including several Grammy nominations.

For decades, these two professionals have lent their signatures to top artists across the musical spectrum, and Audio-Technica 40 Series mics are part of that signature. According to Chuck, "I've been using 40 Series mics ever since the 4050 was first introduced. I immediately discovered its flexibility and suitability for whenever I needed a crisp, detailed sound. The 40 Series range has continued in this direction. I wouldn't go into the studio without them."

Take the advice of a couple of Nashville legends and make a 40 Series microphone part of your unique signature. Who knows? You may just be making musical history—like they have.

Special thanks to Sound Stage Studios, Nashville, TN



(40) S E R I E S

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World Radio History



The Portable Brain

While drumming with Primus and now Guns n' Roses, Brain (Bryan Mantia) has been pursuing a parallel career in computer music and beat programming. "I do a lot of programming for albums," Brain notes. "I just did a load of stuff for the new Vanessa Carlton album. I also just did an album with [Guns n' Roses' guitarist] Buckethead."

Using two portable Metric Halo audio interface setups based on a pair of Apple G4 Titanium laptops, Brain comments that "The system is basically in a backpack, so I'm totally portable. I show up with my backpack with a MIDI interface, a little keyboard, and the MIO." The system can easily handle multitrack sessions: "Vanessa Carlton wrote the theme song to the Spyhunter 2 video game and I programmed that beat and the music. We were bouncing tracks off my laptop; I was running 24 tracks with Logic plug-ins and multiple Waves plug-ins, from a little 5200RPM Firelight drive."

tip

WHAT'S A REFILL, ANYWAY?

Designed for use with Propellerhead Software's Reason soft studio, ReFills combine instrument patches, samples, audio files and REX material in a single, compact file. Due to the use of a non-lossy compression scheme, sizes are reduced by up to 50% compared to the same material without compression. ReFills are particularly handy for musical collaboration, as users can exchange all the elements that make up a Reason studio.



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.jensenvintage.com/replacement.html>

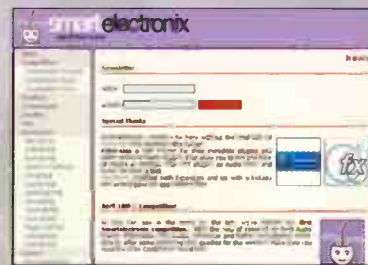
That cool vintage amp that sits in a corner of your studio has been giving faithful service for years. Then it happened: a speaker blowout. Who you gonna call? Why, the Jensen vintage web site, of course. Not only is there a



listing of what speakers were in the original amps, but also a guide to suitable replacements using currently available models. There are even more goodies (like details on reconing speakers) if you click on Jensen's Vintage home page. Rock on!

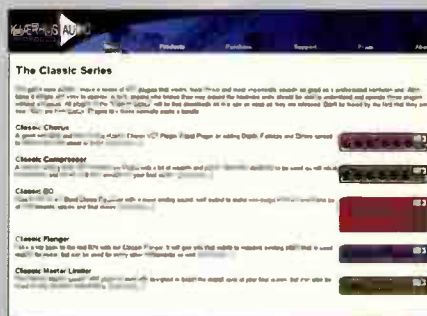
■ <http://www.smartelectronix.com>

Here's a source for free downloads that works on the honor system: If you use them, donate something to the people who made them possible. SupaPhaser is a good place to start, because really good phaser plug-ins aren't that easy to find at any price. But there's plenty more, and it's worth investigating some of the nooks and crannies on this site as well.



■ <http://www.kjaerhusaudio.com>

Everybody likes free plug-ins. But everybody likes them more if they're good, which these are. The "Classic Series" series of VST plug-ins currently includes



chorus, compressor, 7-band stereo EQ, flanger, limiter, phaser, and reverb; while you're at the site, download demo versions of their GEQ-7 equalizer and GMO-1 modulation plug-ins. They're not free, but listen to them and you'll figure out why.

A ReFill packer program for creating ReFills is available to registered users on the Propellerhead web site. If you're interested only in using ReFills, check the site for the "ElectroMechanical" ReFill, which offers various multi-sampled keyboard instruments (Rhodes mk1 & mkII, Wurliitzer ep100 and ep200, Hammond Model A organ, Hohner Clavinet D6 and Hohner Pianet). The content, available only to registered Reason users, can be downloaded free online but is also available on CD for a nominal shipping fee. www.propellerhead.se

IT TOTALLY LEVELED THE PLAYING FIELD

:: Paul Wertico ▶ Seven-time Grammy Award Winner

Seven time Grammy Award winner, Paul Wertico is a world-class drummer who has worked for years with such luminaries as Pat Metheny, Larry Coryell, Kurt Elling, Jerry Goodman, Paul Winter, and many others. When it came time for him to record his solo album, *StereoNucleosis* (A440 Records), he and his engineer Brian Peters decided to push the envelope and switch to a PC and SONAR 3 Producer Edition.

"SONAR 3 Producer Edition totally leveled the playing field and gave me the opportunity to capture my music as I intended, with great fidelity and freedom – the fantastic universal bus architecture and console view, as well as the great included effects, made my engineering and mixing job so much easier and enjoyable. I couldn't have done it without SONAR!"



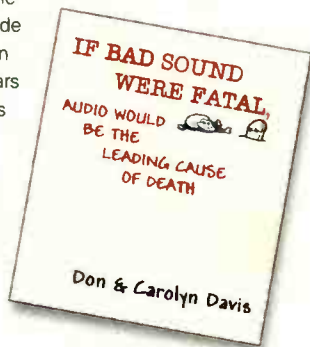
SONAR3
PRODUCER EDITION

Visit www.SONAR3.com/Wertico to read the full interview with Paul, and pick up his new album *StereoNucleosis* available in record stores now.

cakewalk

BookRack: *When Good Audio Goes Bad*

The book *If Bad Sound Were Fatal, Audio Would be the Leading Cause of Death* (Don and Carolyn Davis) takes readers on an interesting and often humorous ride through the lives of the Davises, creators of the Synergetic Audio Concepts (Syn-Aud-Con) audio educational program. Much of the book covers the non-technical side of what's shared by Syn-Aud-Con grads, featuring the best of 20 years of the organization's newsletter, as well as anecdotes, projects, theories, and communication from numerous members. 6" x 9" softcover, 364 pages; \$20.75 plus \$5.75 shipping from Author House. www.authorhouse.com



A Fond Farewell . . .

To guitarist/inventor **Dan Armstrong**, the man behind the Ampeg plexiglass guitars and basses, creator of a line of guitar effects including the famous Orange Squeezer compressor, and guitar rewiring expert to the stars. He may have shuffled off this mortal coil at a too-early 69, but knowing Dan, he probably added a coil tap and phase switch to that coil in his spare time . . . To **Elvin Jones**, one of the premiere jazz drummers of all time, and the driving force behind John Coltrane's best work. Jones' complex, polyrhythmic style didn't bash the skins, but danced on them in a way that combined a light touch with absolute authority and intensity. Even when in frail health, he kept playing until his death at age 76 — and by all reports, had lost little, if any, of the famous independence that earned him the nickname "octopus."

The Les Paul Archives

Few individuals have had more of an impact on the world of music and audio than Les Paul. Far from only being the man whose namesake is emblazoned on the well-known guitar model, Les Paul is credited as one of the inventors of multitrack recording. Recently, Les turned his attention toward archiving the thousands of recordings he's had a hand in creating since 1929.

"We have recordings in every format you can imagine," states the 89-year-old music legend. "We have analog tapes that are so old, we only have one pass left on them before they disintegrate. From 1929 to 1947, though, most of the recordings exist only on very old acetate, mostly 78s. We have all different formats...1 mil, 7 mil. We needed all the best stuff to play these old records for the first time in decades."

Stanton Magnetics provided Mr. Paul with a selection of cartridges and styli designed for the old 78s and other acetate/vinyl formats with which he's working. The archives, which are being captured in several formats including digital hard disk, will be used for a variety of purposes. These include a compilation of recordings to be released commercially, as well as an upcoming special for PBS public television.

Les Paul remains active in the audio community. He continues to perform as a musician, holding down a regular Monday night gig at Iridium in New York, and still offers his input to various manufacturers. After all, this is the man that, at the 1954 Audio Engineering Society (AES) conference, suggested that both vinyl and tape were poor long-term solutions for music storage, and proposed the idea of "light-based" digital recording decades before it became viable.

"All we're looking to do is get this music across to listeners in the way it was intended to be heard. We made the decision to give it to them raw. We could have gone in and cleaned up everything, made it perfect, so to speak. But it would be like coloring a Laurel & Hardy picture. We prefer to give it to people exactly as it was," said Mr. Paul.

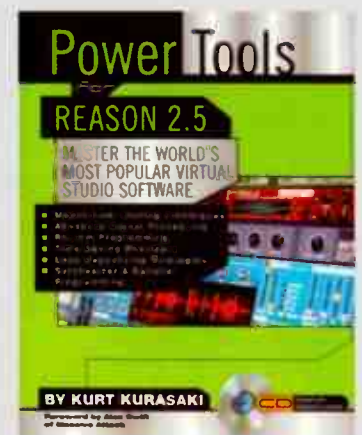


If you can't find a copy of the superb boxed set Les Paul — The Legend and Legacy (pictured), it's not hard to find The Best of the Capitol Masters: Selections From 'The Legend and the Legacy' Box Set from amazon.com and other retailers.

BookRack: *Power Tools for Reason 2.5*

Sure, you use Reason. But do you really *use* Reason? Kurt Kurasaki's *Power Tools for Reason 2.5* (Backbeat Books) is not a "quick start" book for novices, but a collection of techniques for how to work more efficiently and creatively with this popular program. A lot of material covers routing and patching — invaluable for those not raised on modular synthesizers — and exploiting the signal processors. The sections on synthesis concentrate heavily on using example patches, for a "learn by doing" approach that benefits those who want to dig deeper into the patch creation process.

MIDI gets short shrift; there's not much about external control, or some of the MIDI issues that arise in ReWire situations. But that's not so much a criticism as an indication of where the author chose to draw the line on what to cover. If you're an intermediate user who wants to upgrade your Reason chops, this book will do just that. Softcover, 234 pages, \$24.95; with accompanying CD-ROM (ReFills, demo files, samples, etc). www.backbeatbooks.com



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- Small Rooms
- Medium Halls
- Clubs
- Stadiums
- Outdoors
- Car Interiors
- Mics

CD2: Virtual Acoustics

- Synthetic
- LX 48L- Plates
- LX 48L- Ambience
- LX 48L- Halls
- LX 48L- Concert Halls
- LX 48L- Random Halls
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IR-1 comes with an extensive library of over 60 carefully sampled impulse response files that recreate both the acoustics of real spaces and the sounds created by classic electronic devices. Waves worked with leading acoustician professor Angelo Farina to develop new and innovative techniques to create a library that establishes new benchmarks for clarity and accuracy in sampling reverbs.

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Tool Box

BY KEVIN OWENS



Monster 1400 mkII SACD SACD/DVD-Audio cables

Designed to accommodate the high-resolution signals required by SACD and DVD-Audio formats, Monster Cable's individually labeled **SACD/DVD-Audio cables** (**\$149.95 for a set of six 2-meter cables**) feature Bandwidth Balanced dual solid-core center conductors to deliver tighter bass and smoother midrange, two multiple gauge Time Correct wire networks, 24k gold contact split-tip center-pin connectors, and PEX (cross-linked polyethylene) dielectric insulation for faster, more accurate signal transfer.

Monster Cable, www.monstercable.com

Cycling '74 Unnatural Rhythm Sound library

Unnatural Rhythm (\$99) is the second volume in Cycling '74's Cycles series of inspirational sonic collections. Produced and edited by Ron MacLeod, *Unnatural Rhythm* consists of "alternative groove loops" of mechanical, electronic, found sound, and algorithmic origins. The 24-bit WAV files — provided in 48kHz and 44.1kHz versions — are prepared for direct import into any DAW program, loop sequencer, or sampler. The 2-disc set (one DVD-ROM and one audio CD) also includes 24-bit REX-formatted versions of all loops for use in any REX-compatible sequencer.

Cycling '74, www.cycling74.com



Ultimate Sound Bank X-Treme FX Sound design tool

X Treme FX (\$399) is a virtual instrument that allows users to create and trigger complex sound effects, Foleys, and atmospheric sounds for film, video games, and music projects. Each sound file in the collection is divided into categories such as Science Fiction, Drones & Sub-Natural Sounds, Urban Sounds, Foleys, and Musical Effects. Also included are a number of preset sound scenes, which automatically load groups of related sounds to facilitate the creative process. The Windows-, Mac OS 9-, and OS X-compatible library claims to have the fastest loading times in its category, features a host of built-in sound-shaping tools, and is available for VST, RTAS, MAS, DXi, and MachFive.

Ultimate Sound Bank, U.S. dist. by Ilio, www.ilio.com



Digital Audio Labs CDX-D8 AES/EBU interface

The **CDX-D8 (\$659)** is a 3/4-length PCI card (breakout cable included) that provides eight discrete channels of AES/EBU format audio on four XLR stereo pairs. Also included are word clock I/O (RCA) and two analog outputs (1/4" TRS) for convenient monitoring. The Windows-compatible (2000, XP) CDX-D8 also features high-quality AES/EBU transformers, a custom low-jitter PLL for clock stability, and supports sample rates from 32-96kHz at 16- and 24-bit resolution.

Digital Audio Labs,
www.digitalaudio.com



Samson CL7 Condenser microphone

Engineered to faithfully reproduce vocals, acoustic instruments, and live performances, the **CL7 studio condenser mic (\$474.99)** features a large 1.1"-thick, ultra-thin gold-splattered diaphragm capsule, a switchable highpass filter, and a 10dB pad for handling signals with high SPLs. Other features include a frequency response of 20Hz-20kHz, an internal shock mount, and solid die-cast construction. For added isolation Samson's SP01 Spider shock mount (\$59.98) is available separately.

Samson, www.samsontech.com

M-Audio Studiophile DX4 Desktop monitors

Delivering 18 watts per channel, M-Audio's fully shielded **DX4 (\$199.95 pair)** reference monitors utilize 4" low-frequency drivers and 1" Mylar tweeters with OptImage waveguide technology to bring professional-quality sound to the desktop environment. Each speaker's rear panel features RCA and 1/4" inputs as well as a mid-cut switch, and the front panel has a rotary volume control and a 1/8" headphone jack.

M-Audio, www.m-audio.com



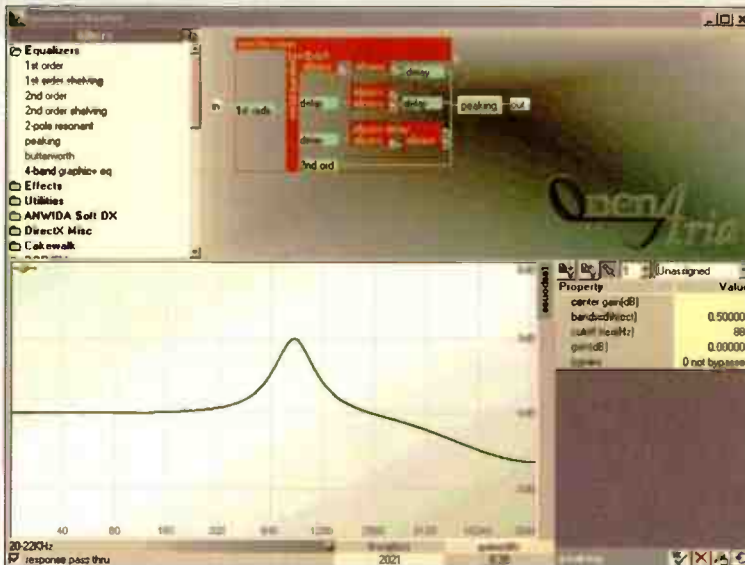


OpenAria FilterNet

Filter construction plug-in

FilterNet (\$85) is a DirectX plug-in that lets you build your own filter networks out of simple elements. Using a drag-and-drop interface, you can run filters in series or parallel, split channels for independent processing, create feedback filters of arbitrary complexity, etc. Built-in elements include first- and second-order high- and lowpass filters, shelving high-, low-, bandpass, and bandstop filters, 2-pole resonant filters, reverb and delay effects, and more. In addition to the built-in elements, FilterNet itself is a DirectX host, which means you can use your existing DirectX plug-ins to create your own effects. A demo version is available at the company's website.

OpenAria, www.openaria.com



Guyatone Flip Series TD-X Tube Echo

Digital/analog effects box

The hybrid digital/analog **TD-X Tube Echo (\$299)** employs a real 12AX7A vacuum tube, Guyatone's MD-3 Micro Delay circuit, and a custom-designed filter array to emulate a variety of vintage and modern delay sounds including BBD, tape, and digital. The true-bypass pedal features Delay Level, Delay Time, and Feedback controls with switchable short, medium, and long delay ranges; blendable Analog Simulation and Tape Simulation controls; and dual outputs (wet and dry).

Guyatone, dist. by Godlyke, www.godlyke.com



Kenton Midistream

Wireless MIDI system

Designed for use with any portable MIDI instrument such as the Roland AX-7, the **MidStream (\$625 at current exchange rate)** consists of a cigarette pack-sized transmitter and a freestanding receiver unit that let you leave your MIDI cable behind. Simply plug your instrument into the MIDI In jack on the transmitter and connect the receiver's MIDI Out socket to your laptop or rack. MidStream handles all MIDI data on all channels including clock, sys ex, etc.; whatever you put into the MIDI In appears at the MIDI Out. The system boasts an outdoor range of 260 feet, an indoor range of 100 feet, and a latency of two milliseconds.

Kenton, www.kentonuk.com



Die-cast metal construction means that Spike is ready for the rigors of non-stop recording on the road. (*Cause how far can you really take your music when your gear is cheap plastic?*)

Onboard DSP Processing takes the load off your computer with built-in EQ, dynamics and low-latency monitoring—all controllable from your Mac or PC.

Real Mackie Mic Preamps give you higher head room, lower noise, and cleaner overall sound vs. the competition.



Meet Spike.

Easy-to-use Traktion audio and MIDI production software puts unlimited track count, ReWire and VST plug-in support, drag-and-drop editing and CD ripping at your fingertips.



Making music on your computer doesn't have to be such a pain in the butt. It could be as simple as Spike™, a compact 24-bit/96kHz recording and production system from Mackie. Spike starts with the straightforward XD-2 USB audio interface, featuring clean, high-headroom Mackie preamps and onboard DSP for low-latency monitoring and dynamics processing. And things stay simple with Traktion, the most intuitive recording and MIDI production software in the world. Finally, Spike gives you a full version of Ableton Live Mackie software—just the thing for inspiring your sampling, loop-building and live-performance side.

Wanna learn more? Visit www.mackie.com. Then visit your Mackie dealer... and meet Spike.



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Crack the Code Music, www.crackthecodemusic.com



Ableton Live 4

Realtime music production software

Developed with Live users' functionality requests in mind, **Live 4 (\$499; \$119 upgrade download; \$149 upgrade boxed)** offers a complete approach to audio manipulation, MIDI sequencing, pattern recording, drag-and-drop sampling, virtual instruments, and MIDI hardware support. New features include enhanced MIDI sequencing; the "Simpler" sampling instrument, which allows for instant sampling, polyphonic playback, and the "creative exploration" of any sound dragged into its display; more flexible routing; Swing and Groove parameters for audio and MIDI clips; an Automatic Jamming feature; sample reverse, which lets users reverse any audio clip in real time; and optimized audio performance for Macintosh computers.

Ableton, www.ableton.com



Steinberg Nuendo and Cubase SX/SL 2.2 DAW updates

Steinberg announced the release of 2.2 versions of its Nuendo, Cubase SX, and Cubase SL digital audio workstations. In addition to a number of enhancements and improved support for hardware controllers (including the Mackie Control Universal Extender), the 2.2 versions of Cubase SX and Nuendo include three new VST plug-ins (shown here): Monologue, a monophonic analog synth; Embracer, a polyphonic surround-capable synth; and Trio, an analog modeling filter effect based on the filter design of the Monologue monophonic synth. The update for all three programs is available as a free download to registered users.

Steinberg, www.steinberg.de



The right tools for the job

FireWire 1814
project studio

FireWire 410
personal recording

FireWire Audiophile
digital DJ and performance



The M-Audio family of award-winning FireWire audio/MIDI interfaces lets you choose the creative tool designed for the way you make music. All offer easy, high-bandwidth connectivity, MIDI, powerful headphone monitoring, and bus-powered operation* so that you can create anywhere, anytime. Flexible software-controlled mixing includes aux sends on all channels and assignable aux outputs, providing for dedicated headphone mixes and sends to external effects. Simply choose the model that matches the way you work. *8-pin FireWire port or adapter required

FireWire Audiophile

4-in/6-out—ideal for use with DJ/mixing software. Features A/B source headphone switching.



FireWire 410

4-in/10-out—great for software-based mixing, routing discrete outputs to mixers, and directly driving surround sound.



FireWire 1814

18-in/14-out with ADAT/Lightpipe—optimal for group tracking and connecting with other digital multitrack gear.

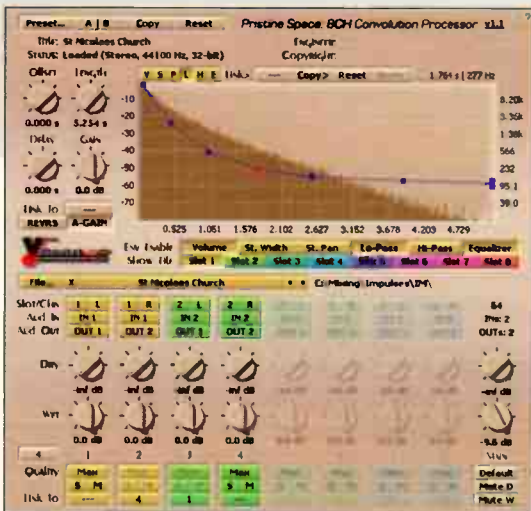


M-AUDIO



Voxengo Pristine Space 1.1 VST reverb plug-in

Voxengo released version 1.1 of its **Pristine Space (\$139) VST plug-in** for Windows 98 and higher. Pristine Space is an 8-channel convolution processor with each channel being independent of the others, making it possible to utilize various surround configurations. Highlights include non-destructive impulse editing, a linear-phase impulse EQ, several latency options, comprehensive routing, serial convolution processing, and a low-quality mode to help ease CPU strain. **Voxengo, www.voxengo.com**



TC Electronic Mastering 6000 Mastering processor

Designed for producers of audio for CD, DVD, SACD, and film, the license-based (i.e., expandable) **Mastering 6000 (\$7,995 base price)** is a four-engine mastering processor based on TC's System 6000 multi-channel platform. Limiting and compression algorithms in Mastering 6000 include MD4, which features a 5-band stereo processor with linear phase split filter topology; an updated Brickwall Limiter; custom A/D and D/A converters; a 5.1 multi-band compressor/expander; and more. Optional licenses include reverbs and delays from Reverb 6000, Massenburg Design Works Hi-Res EQ, BackDrop noise reduction, and UnWrap stereo-to-5.1 conversion. Multiple System 6000 processors can be linked, and units can be controlled with the TC Icon remote or by its software equivalents.

TC Electronic, www.tcelectronic.com



AKG K 206 AFC Wireless headphone system

AKG's **K 206 AFC** wireless headphone system (**\$130**) transmits a signal to the headphones via 916MHz UHF frequencies, and can cover distances of up to 330 feet — sans cable. The unit's transmitter also acts as a storage cradle/charger for its NiMH rechargeable batteries, which provide approximately 15 hours of use time between charges. The system also features an auto-tuning system that minimizes the potential for interference and an automatic gain control that continuously adjusts the gain of the system for compatibility with all sources.

AKG, www.ake.com



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lot. Processors include the MIOEQ-6, MIOEQ-12, MIOComp, MIOLimit, MIO M/S Mid-Side Processor, MIOSummer, MIODifferencer, MIODelay, and MIOStrip.

The heart of the DSP system is the +DSP Graph, an environment that accesses the available signal processing plug-ins and processors, and also handles configuration and routing. Signals may be routed between processing chains, fed back, and connected in other ways that recall analog patching rather than "normalized" digital systems. All signals within the graph are automatically delay-compensated to retain phase alignment. www.mhllabs.com



The +DSP option lets you run plenty of DSP within the Metric Halo audio interface.

TC ELECTRONIC POWERCORE

Over the years, the PowerCore DSP has grown into a product family for Windows XP or Mac OS X (VST or AudioUnits), consisting of PowerCore FireWire, PowerCore PCI, and PowerCore Element (basically the same as the PowerCore PCI, but with nine instead of 10 bundled plug-ins). All come with a bundle of plug-ins out of the box, including a virtual guitar amp, two reverbs, mastering EQ, a virtual Finalizer (not included in PowerCore Element), vintage compression and dynamics, a voice channel strip, and a synthesizer. There are also a bunch of optional plug-ins, with support from third-party developers; the current roster includes the Waldorf D-Coder, Master X5, Sony Oxford Dynamics, Assimilator, Sony Oxford EQ, D-Sound VL2, V-Station/PowerCore, Sony Oxford Inflator, Restoration Suite (descratch, denoise, declick), Voice Modeler, Intonator (pitch correction), Virus synth/PowerCore, Dynamic EQ, Filtroid, and TC Thirty (Vox AC30 guitar amp simulator).

The power comes from a Motorola PowerPC and 4 x 56K DSPs; up to four cards can insert into a system, or two of the FireWire devices on a 400Mbit FireWire bus (you can also mix and match cards and FireWire devices). The FireWire system is also somewhat more powerful,

running 150MHz instead of 100MHz processors, twice as much S-RAM, and a 266MHz PowerPC chip instead of a 200MHz. www.tcelectronic.com

OPEN LABS OPENSYNTH NEKO 64

This is quite the hardware home, because the neKo 64 is basically a computer built into a musical instrument, and almost anything VST you run on a Windows computer can run on the neKo's computer.

The computer is based on an AMD Opteron 64-bit processor, and accesses up to 8GB of RAM to allow loading huge numbers of samples and RAM-hungry programs. It not only hosts VST plug-ins, but is equipped with PCI slots that can accept up to full size cards, including those from Creamware and Digidesign. It also has an included Ethernet port for direct Internet access, making it easier to download upgrades, sounds, and applications. Bundled software includes GigaStudio 32, SonicSynth with Sample Tank LE, Traktion, Orion Pro, Karsyn, and over 40 VST and VSTi plug-ins. www.openlabs.com

MUSE RESEARCH RECEPTOR

Receptor is a 2-rackspace home for plug-ins (both instruments and effects). Based on a mixer-like architecture, Receptor combines up to 16 different audio sources, which can be either internal VSTi instruments or external analog/digital inputs. Sources then route through an inline effects matrix that allows three VST plug-ins to be configured in parallel/series arrangements, then proceed to a dedicated mixer channel, which can send the sound to two dedicated effects buses with another VST effects matrix. Then there's *another* VST effects matrix on the master output for mastering and sweetening effects.

Although Receptor can be run from the front panel, there are also mouse, keyboard, and monitor ports, as well as the option to network it with a Mac or PC, and control it remotely from a window on the computer. www.museresearch.com

MANIFOLD LABS PLUGZILLA

Another "home for plug-ins," the 2-rackspace Plugzilla runs PC-based VST plug-ins, including VST instruments (depending on the copy protection scheme; the web site contains a list of compatible plugs). Its architecture consists of two independent, fully routable machines; I/O consists of dual stereo/4-channel, 96kHz/24-bit balanced XLR analog I/O plus S/PDIF.

Plugzilla runs up to eight plug-ins simultaneously, and has internal hard drive storage for holding plug-ins and plug-in sets, as well as Compact Flash and USB "thumbdrive" for additional plug-in/preset storage.

Thirty-two MIDI channels and four footswitch inputs provide MIDI routing to plug-ins. Eight snapshot memories allow quick comparisons and creative flow, and "hot knobs" are optimized for parameter adjustment and automation. www.plugzilla.com

KORG LEGACY COLLECTION

This hardware/software package, which includes virtual MS-20, Polysix, and Wavestation synthesizers, provides a different twist on hardened software: The software isn't keyed to hardware, but there's a hardware controller for the MS-20 that's keyed to the software. This controller is an 84% to scale replica of the original MS-20, and while it fulfills the expected role of a hardware controller — move the knobs, and the onscreen knobs move as well — it also includes patch points and patching that are reflected on screen as well. As a result, this emulation of a modular synthesizer allows physical patching in the real world that nonetheless affects the software . . . very cool.

www.korg.com EQ



The patch cords toward the right of this screenshot were patched not in software, but by using a physical hardware controller.



PowerCore FireWire fits in a slim, 1U box, but contains a lot of hardware DSP power.

Iconic

The ISA 428 Pre Pack features four classic transformer-based microphone pre-amps with switchable input impedance, and Focusrite's latest eight channel, 192 kHz A/D converter option - the perfect future-proof interface for your DAW or digital console.



Status

The ISA 220 brings ISA performance to the masses. Combining all the core classic circuit designs from the award-winning ISA 430, the ISA 220 Session Pack provides you with the ultimate processing tools required to bless your session with the Focusrite signature sound, at a simply unbelievable price.



Assured

The new ISA 430 MK II Producer Pack is the most comprehensive channel strip in existence. Advances over the original include a multi-format compressor, switchable impedance and mic AIR, enhanced listen capabilities, unmatched routing capabilities and world-leading 192kHz conversion.



The ISA Range from Focusrite



Rich Tozzoli
Senior Editor / Columnist /
Multichannel mix engineer

Carly Simon, Blue Oyster Cult, Marsalis Family, Average White Band, David Bowie

"I use every tool in the 428's shed. But, as with anything else, it all boils down to does it sound great or not. Well, this thing truly sounds great."



Christiano Avignè
Live Sound Engineer / Variable
recording Engineer

PIN, SPARKS, among others

"It's important to have a channel strip you can rely on, but the more versatile the unit, the smaller the rack you have to drag along with every tour. With the 430 MK II, I'm now a huge step closer to the 'one box does everything' dream."



Simon Osborne
Mixer / Engineer / 5.1 Mixer

Sting, Texe, Level 42, Dominic Miller, Julia Fordham, Chieftains, Ian Dury

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Will Davidge
Producer/Composer

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ROLAND VS8F-3 PLUG-IN EXPANSION CARD

The power of third-party plug-ins comes to the Roland V-Studio series

by Mitch Gallagher

"Studio-in-a-box" products like Roland's V-Studio series Digital Studio Workstations offer a number of benefits: self-contained operation (just add mics and headphones or speakers), portability, dedicated OS/user interface, cost-effectiveness, and so on. They're ideal for many of those who, for whatever reason, don't want to jump on the computer-recording bandwagon — or to augment a computer rig for location and other recording purposes.

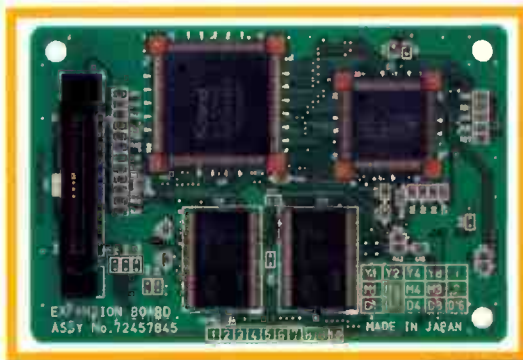
But one area where these products have always lagged behind was plug-ins. While computer users are drowning in a sea of cool software widgets, studio-in-a-box users have only had what the manufacturer of their unit provided or offered as an option — granted, there was nothing wrong with what was there, it was simply a matter of selection and variety.

At the 2004 Winter NAMM show, Roland changed all that with the introduction of the VS8F-3 plug-in expansion card

for V-Studio Digital Studio Workstations. For \$395, you get a DSP-equipped expansion card that plugs into the back of your V-Studio. The card can run up to two stereo or four mono plug-ins simultaneously, or at high sample rates (above 64kHz), you can use up to one stereo or two mono plug-ins. The type of algorithm a given effect is based on also impacts the number of plug-ins you can run simultaneously. Some algorithms require all the processing power on the card; others don't need as much DSP.

Installation is easy; remove a few screws holding on a cover plate, pop in the card, re-install the cover plate. A

CD-ROM included with the unit contains the necessary software, as well as five Roland plug-ins. Third-party plug-ins



THE VS8F-3 CARD PROVIDES ENOUGH HORSEPOWER TO RUN TWO STEREO OR FOUR MONO EFFECTS SIMULTANEOUSLY (HALF THAT AT HIGH SAMPLE RATES), DEPENDING ON WHICH V-STUDIO WORKSTATION YOU HAVE, YOU CAN INSTALL UP TO FOUR VS8F-3 CARDS.

THE NEW ROLAND VS8F-3 PLUG-IN EXPANSION CARD IS COMPATIBLE WITH THE VS-2000CD, VS-2400CD, VS-2480, AND VS-2480CD DIGITAL STUDIO WORKSTATIONS (OTHER V-STUDIO MODELS WILL BE SUPPORTED SOON).



load in from their own CD-ROMs. This means that you need a CD drive in your V-Studio; if your particular one doesn't have one built-in, you'll need to acquire an external SCSI drive.

The VS8F-3 uses a unique copy-protection scheme. When you install your first card (depending on your V-Studio, you can install up to four), it is designated as the "Key Card." The software creates a unique ID that requires the presence of that specific card in order for the plug-ins to work. If you have more than one V-Studio, you can move the VS8F-3 that's been designated the Key Card among them; whichever one has the Key Card installed can run the plug-ins.

In use, the plug-ins are easy to access. They show up under the V-Studio's "Effects" button. Once you choose the plug-in you want, you select a patch, then can edit it, save it under another name to a user bank, and so on.

BUNDLE OF JOY

The VS8F-3 comes bundled with five Roland plug-ins. These include the Mastering Tool Kit, which comprises a 4-band EQ, low-cut filter, enhancer, 3-band compressor, expander, compressor, 3-band level control, limiter, soft clip, and output level. Each section can be turned on and off independently, and plenty of control over

Type: Plug-in expansion card for Roland V-Studio workstations

Price: \$395

Contact: Roland, www.rolandus.com

Supported hosts: VS-2000CD, VS-2400CD, VS-2480, VS-2480CD. Support will be available soon for VS-1680, VS-1880, and VS-1824.

Sample rates: up to 96kHz (depending on host unit)

Internal resolution: 56-bit

Simultaneous plug-ins: up to 2 stereo or 4 mono (48kHz and under), up to 1 stereo or 2 mono (64kHz and above)

Minimum system versions: VS-2000CD, version 1.5 or later. VS-2400CD, version 1.5 or later. VS-2480/VS-2480CD, version 2.5 or later. A disc with the required operating system software upgrades is included with each plug-in package.

Copy protection: The first VS8F-3 card installed is designated as "Key Card"; it serves as a dongle for authorizations written to the host unit's hard drive. The VS8F-3 designated as the Key Card must be present in the V-Studio in order for plug-ins to work.

Included plug-ins: Mastering Tool Kit, Tempo Mapping Effect, Stereo Reverb, Vocal Channel Strip, Preamp Modeling

parameters is provided. I especially liked the 3-band level control, which is a unique approach to EQ. The compressors and limiter work well, and can be set to be transparent. I was able to effectively use the enhancer to bring some life back to a dull steel-string guitar. In all, the Mastering Tool Kit is a handy bag of tricks.

The arcanelly named Tempo Mapping Effect is a clock-syncable 2-stage stereo delay line with 4-band EQ on its output. Cross-feedback can be routed between the channels, and modulation for the second delay stage in each channel is provided. With two delay stages per channel, feedback and cross-feedback, and modulation, you can come up with some amazingly dense effects, or you can create huge spacious echo/chorusing. Lots of power in this one.

The much more descriptively named Stereo Reverb contains a compressor, expander, and stereo 'verb. The compressor can be set to emulate tube characteristics, while the reverb offers a ton of control; not just algorithm type, but low and high damping gain and frequency, diffusion, density, and more.

The Vocal Channel Strip offers a complete signal path: compressor (with tube emulation), expander, enhancer/de-esser, 4-band EQ, pitch shifter, chorus, and delay — hopefully you can

Third-party Options

The big news about the Roland VS8F-3 is that it supports third-party developers. At this writing, eight developers had signed on, which means that Roland Digital Studio Workstation users already have a good selection of software to choose from. Developers include Cakewalk, Massenburg Design Works, Antares, IK Multimedia, Sound Toys, Universal Audio, McDSP, and TC Electronic.

The third-party plug-ins that have been announced so far range in retail price from \$149 to \$299. Here's the list of what's available right now:

Antares Autotune VS (pitch correction): **\$199**

Cakewalk Soundstage (acoustic environment modeler): **\$199**

IK Multimedia T-Racks (mastering processor suite): **\$299**

Massenburg DesignWorks Parametric EQ (high-resolution equalizer): **\$299**

McDSP Chrome Tone (guitar amplifier/effects modeler): **\$199**

Sound Toys SoundBlender VS (pitch shift with filter/delay): **\$199**

TC Electronic TCR3000 and **Pro Class Reverb 3000** (reverb): **\$199**

Universal Audio VS-1176LN (limiting amplifier): **\$149**

Universal Audio VS-LA2A (compressor): **\$149**

Gleaming Chrome

The review VS8F-3 I received included a copy of McDSP's Chrome Tone Amp — a guitar amplifier and effects modeler. (For a full review of the TDM/RTAS version of Chrome Tone, see page 78).

Up to two dual instances of Chrome Tone Amp can run at once on a VS8F-3; this allows you to process four separate mono tracks simultaneously. The Chrome Tone Amp signal chain includes a low-cut filter, gate, compressor/sustainer, distortion, EQ, and "spring" reverb. The output is processed through a cabinet simulator offering a choice of four speaker boxes or no cabinet simulation. A variety of distortion textures are available, from light break-up to over-the-top shred.

As I detail in the full review, Chrome Tone is an outstanding guitar processor. It's capable of convincing clean and semi-clean tones (a weakness of most modelers) in addition to searing shredder leads and thick rhythm crunch. In a mix, you'll be hard-pressed to decide if you're hearing Chrome Tone Amp or the "real thing."

The plug-in comes with 50 presets, of which 41 are aimed at guitar; the remainder are presets for adding grit to keyboards and drums, and effects such as a simulated blown-out AM radio speaker.

The V-Studio version of Chrome Tone doesn't include everything in the TDM/RTAS version — there's no MIDI-syncable LFO, chorus, or wah, and there's one configuration instead of five (although everything is in that one config), but at less than half the price, you won't feel deprived. Chrome Tone Amp is a bargain.

ROLAND VS8F-3

make your vocals sound passable using all that! You can't use the enhancer and de-esser at the same time, but that's about the only limitation.

Likewise, the Pre-amp Modeling plug-in offers a complete signal path for microphones: compressor, expander, enhancer/de-esser, 4-band EQ, and preamp modeler. The models are designed to replicate the tonality of widely respected mic preamps; you're given control over "warm" frequency and gain, "bright" frequency and gain, and at what threshold harmonics are added to the signal, as well as which harmonics are added. Models of things like preamps are very subjective — these sound good to me — but no matter how you slice it, there are a lot of useful sounds and tonal manipulation available here. Definitely a tool worth exploring — and not just for tracking; you can apply the Pre-amp Modeler during mixdown to change the tone of a previously recorded track.

WHAT YOU'VE BEEN WAITING FOR

If you're a V-Studio user who's been envious of all those computer plug-in junkies, then the VS8F-3 is exactly what you've been wanting. Not only can you run Roland plug-ins, but you can run those created for the board by third-party developers — and the third-party offerings that are out there

to date are pretty darn cool. (Massenburg EQ for your V-Studio? Ya gotta love it. . . .)

For \$395, you get the expansion board plus five Roland plug-ins, a nice bundle that will get you rolling and experiencing the joy of DSP-based plug-in processing. One word of caution: Once the bug bites, you'll want all the third-party plugs — fortunately they come in at much lower prices than, say, TDM versions.

The VS8F-3 is a big deal, although it may not seem so at first glance. It wouldn't surprise me to see other studio-in-a-box manufacturers follow suit with a DSP platform open to third-party plug-ins of their own. But Roland got there first, and did a great job with the package. **EQ**

STRENGTHS:

- Support for third-party plug-ins
- Powerful bundled effects
- Up to four cards can be installed simultaneously (depending on host unit)
- Easy installation
- Reasonable price
- Key Card copy protection allows authorizations to be moved among V-Studios

LIMITATIONS:

- Only patch select can be automated

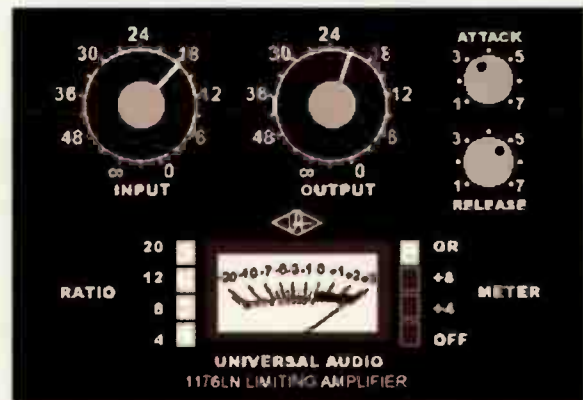
No Limits

Universal Audio has their finger on the pulse of vintage compression and limiting. Not only do they manufacture re-issue hardware versions of the company's original vintage 1176LN limiter and LA-2A compressor, they make modeled plug-in versions as well — two of which, VS-1176LN and VS-LA2A — are being offered for the VS8F-3 plug-in card. Both plug-ins were sent with the review VS8F-3 unit.

Both the LA-2A and 1176LN use identical algorithms as the versions that run on Universal Audio's UAD-1 card and on Pro Tools TDM/RTAS. Functionally all the versions are identical — all the little touches are there, such as the ability to depress all four ratio "pushbuttons" on the 1176LN for the popular "squash" trick. (Hint: In the V-Studio plug-in edit window, hit F4.)

Being plug-ins, you have an advantage over the hardware: both plug-ins will run in stereo. The hardware 1176 was/is mono; to do stereo you need a pair plus special linking hardware. (Although there was a stereo 1178, and Universal Audio now has a 2-channel 1176 version.)

Being able to access a more "vintage" sounding compressor and limiter plug-in in a V-Studio is cool — it greatly expands the available processing palette. And at \$149 each (or \$249 for a bundle of the pair), you can't argue with the price.



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...AND THIS IS HOW IT LOOKS IF YOU HAVE A VGA MONITOR CONNECTED TO YOUR V-STUDIO.

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World Radio History

The Practical Guide to ReWire

This powerful protocol promotes playability

If you haven't explored the ReWire protocol yet, you're missing out on a tremendous way to improve workflow, and capitalize on the strengths of different programs. Basically, ReWire allows two or more software applications to work together like one integrated program. That sounds simple enough, but the implications are far-reaching.

For example, suppose you create a kickin' rhythm track in Propellerhead Reason, but would love to add some vocals, guitars, and piano as overdubs. Of course, Reason doesn't record linear digital audio tracks; so if ReWire didn't exist, you'd need to export the file, import it into a DAW, and try your best to match the program tempo with the Reason file's existing tempo. And if you decided you then wanted to make a change in a Reason instrument, you'd have to make the change, export the file, import, and so on all over again. It's doable, but clumsy.

Instead, you can ReWire Reason as the *client* (also called the *synth application* or *slave*) with a ReWire-compatible *host* program (also called the *mixer application*) such as Pro Tools, Sonar, Digital Performer, etc. Both programs will follow the existing tempo while you lay down your audio tracks.

Reason is a popular program for rewireing because of its superb complement of software synths and MIDI-based pattern sequencing — tools lacking in even some of the most sophisticated DAWs. But

Ableton's Live is another excellent candidate for rewireing, as it can serve as a host or client — ReWire the MIDI synths from something like Project5 into Live, or use Live's unique live performance-oriented looping options with programs that have limited looping capabilities. Other favorite ReWire clients include Arturia's Storm (which can be a host or client) because it's easy to create really cool grooves in seconds, Cakewalk's Kinetic (which also creates grooves fast), and for more advanced groove-oriented work, Cakewalk's Project5. TASCAM's GigaStudio3 can also be a ReWire client, so you can flow multiple outs into your host. Is all this cool, or what?

REWIRE BASICS

Any ReWire-compatible application is either a host, a client, or both (but not simultaneously — you can't ReWire a client into a host, then ReWire that into another host). Although there can only be one host, you can usually rewire multiple clients into that host.

There are four main aspects to ReWire:

- The client's audio outputs stream into the host's mixer.
- The host and client transports are linked, so that starting or stopping either one starts or stops the other, respectively.
- Setting loop points in either application affects both applications.
- Both applications can share the same audio interface.

The original version of ReWire allowed streaming of up to 64 individual channels into the host's mixer; ReWire2 does up to 256. You may have the option when rewireing to choose only the master mixed (stereo) outs, all available outs, or your choice of outs. (With ReWire2, it's also possible to stream 4,080 individual MIDI channels — 255 MIDI buses with 16 channels per bus — from one application to another.)

If you choose all available outs, then instruments or tracks can rewire into channels individually, and be processed individually. For example, Project5's Velocity drum module has five available outs to which you can assign its various drums. If you rewire these individually into a DAW, you can process, mix, and automate channel parameters (e.g., level, panning, and any automatable effects) for each out. The only downside is that enabling *all* available outs may really clutter your mixer, so you'll probably want to delete any unused channels.

Another aspect of ReWire is that programs must be opened in a particular

by Craig Anderton

order: First the host, then any clients. Close programs in the reverse order. You won't break anything if you don't follow this protocol, but if you open the client first, the host will fail to see it; if you close the host first, you won't be allowed to because it will still have an open connection with the client. Note that although many programs try to launch the client for you once you've selected it for rewiring, that doesn't always work, and you may need to launch the client manually.

APPLYING REWIRE

Let's look at how to rewire into various host programs. We don't have to investigate the client end of things, because opening the client is sufficient. Any editing or parameter setting is done at the host.

Incidentally, for information on rewiring with Pro Tools, see Mitch Gallagher's Power App Alley in the January 2004 issue of *EQ*. Also, a big thanks to Mitch for writing the section on using Emagic Logic with ReWire.

STEINBERG CUBASE SX

Go to the *Devices* menu, which lists the various ReWire-compatible applications. Click on the application you want to rewire into Cubase, and a ReWire panel appears that shows all available client channels. Click on the buttons toward the left to enable the channels you want (note that you can rename the channel names in the right column — double-click and enter the new name).



Cubase's Storm 3 device panel (outlined in green) is toward the upper right; three channel pairs are active. The connections window patches the Storm instruments to various ReWire outs. The lower left shows the ReWire channels (outlined in red), and directly below, a MIDI track driving one of the instruments.

The activated channels now show up in the mixer; in the Arrangement window, they appear in a folder track called ReWire Channels. Furthermore, with ReWire2 clients, the MIDI Output pop-up menus for MIDI tracks will display the various ReWire devices. As a result, you can route MIDI data from a track directly into the client application.

Note: If playback is inconsistent or breaks up, go *Devices > Device Setup > VST Multitrack > Setup > Expert*, then turn off Multiprocessing. Hit OK, Apply, then OK.

MOTU DIGITAL PERFORMER

As usual, you need to load the host first. However, DP already "knows" that ReWire applications are present, even before you load the client.

Go *Project > Add Track > Aux Track* to create an Aux track. Next, in the Input field, use the pop-up menu to choose the client output you want to feed into Digital Performer's mixer. (Of course, you also need to choose a valid output.) If you want to add several sets of client outputs, create more Aux tracks and continue with assigning inputs.



Assigning a client output to the Input field in an Aux track (circled in red) feeds the output into Digital Performer's mixer.

Now load the client application, and press Play on either application. You should hear DP play along with the client, and the meters will indicate that the client is feeding audio into DP's mixer.

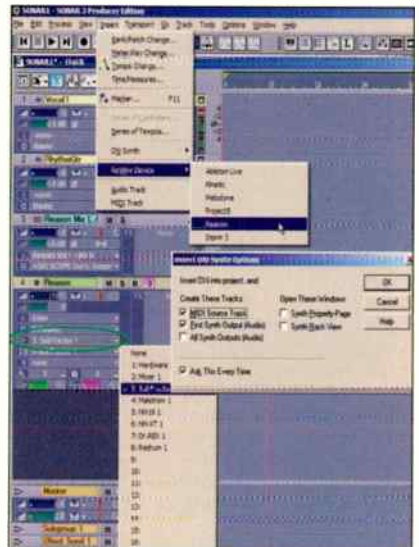
The client will also appear as MIDI output destinations in the MIDI output assignment menus in DP's MIDI tracks, so you can play (for example) Reason's synths from MIDI tracks within DP, or record data in those tracks for driving the synths.

Bonus feature: ReWire MIDI ins and outs are published to all CoreMIDI-compatible software, so the client can receive MIDI data from such software as well as transmit data to it.

CAKEWALK SONAR

Go *Insert > ReWire Device* and choose the device you want to insert. You'll see a list of all registered ReWire devices.

Select one, and a dialog box will pop up with check boxes for "First Synth Output" or "All Synth Outputs." The former chooses mixed stereo outs, while the latter presents all available outs. Be careful if you choose the latter — do this with Reason, and it will add 64 channels to Sonar's mixer. You can always delete the ones you don't use, but still, unless you need individual outs, go for the main stereo outs.



This collage shows that after selecting a ReWire device via the insert menu, the Insert DXI Synth Options screen appears. After the ReWire device is installed, the chosen outputs show up in the mixer; note how the MIDI track driving Reason lists the instrument names in the Channel field (circled in green). SubTractor is being selected to receive MIDI note input.

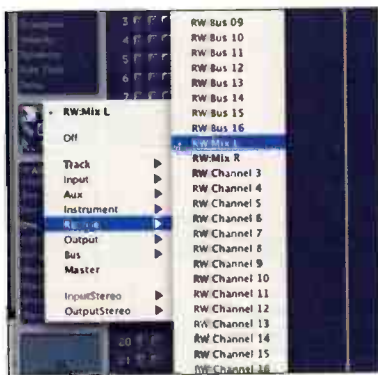
You'll also be asked if you want a MIDI source track. This is necessary should you want to send MIDI data to the client, e.g., control Reason's soft synths via a MIDI keyboard. Of course, you can insert a MIDI track later, but if you do it now it will be named automatically, and be ready to go. You can also check "Open Synth Property Page" if you want to bring the client's window to the fore, and "Open Synth Rack," which shows a Sonar "virtual rack" of whatever synth and ReWire devices you have open. ►

This powerful protocol promotes playability

Bonus feature: With Reason, the instrument names show up as outputs in Sonar's MIDI Source Track.

EMAGIC LOGIC

To simply route outputs from the client into Logic, launch Logic, then launch the ReWire client. All of the available outputs from the client will automatically show up as audio objects in Logic. To use the ReWire outputs in Logic, select an audio object, and assign the desired ReWire output to it using the "Cha" flip menu. The Logic channels with ReWire inputs function like any other channels — you can have plug-ins, sends, etc., — but they have no input button.



The simplest way to use ReWire with Logic is to assign the ReWire outputs to audio objects in Logic. The client audio will be routed into Logic, and transport control, etc., will be shared between the client and host.

For the complete ReWire experience, open the Environment window, then go *New > Internal > Rewire*.



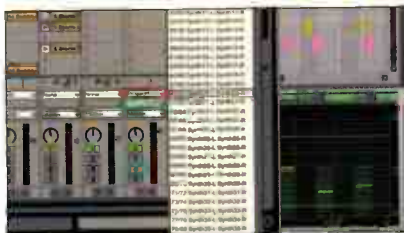
In order to address ReWire clients via MIDI, you'll need to create a ReWire object in the environment and assign it to the client.

In the ReWire object, you have three important parameters: "Dev" sets the ReWire client that's connected to the object — all clients that are installed on your computer will show up as options here. "Bus" lets you choose among the available ReWire buses. With Reason, bus 1 allows you to address the "Live Track." Buses 2-5 route to Reason MIDI buses A-D. To directly address the Reason instruments in the rack via MIDI, set the bus to 6. If you have more than 16 instruments in Reason, the extras can be addressed on bus 7.

"Cha" sets the MIDI channel that will be sent to the client from Logic. If the client gives names to the channels, they'll be shown here, otherwise, you'll see the 16 MIDI channel numbers.

ABLETON LIVE

The client's outputs flow into the Live mixer channels as if they were inputs you were recording. If you have empty tracks available for the client's outs, fine. Otherwise, go *Edit > Insert Track* and insert the required number of tracks (remember, these are stereo tracks).



After selecting the ReWire device as the Input Type, you choose the outputs you want to feed the track, then make sure that the track is monitoring the input.

Once the client is open, click on the Input Type field (circled in red), and you'll see a pop-up menu with all available ReWire clients. Next, click on the Input Channel field (circled in green) to reveal a popup menu with all available client outputs. Typically, the top item will be the client's main stereo outs, followed by whatever individual instrument outputs are available.

Finally, click on the Monitor icon (circled in blue) so you can hear the rewired signal. Note that the channel meters will indicate the client's levels, and also, you can process the client signals through Live's effects, as well as send them to any aux effects via the send controls.

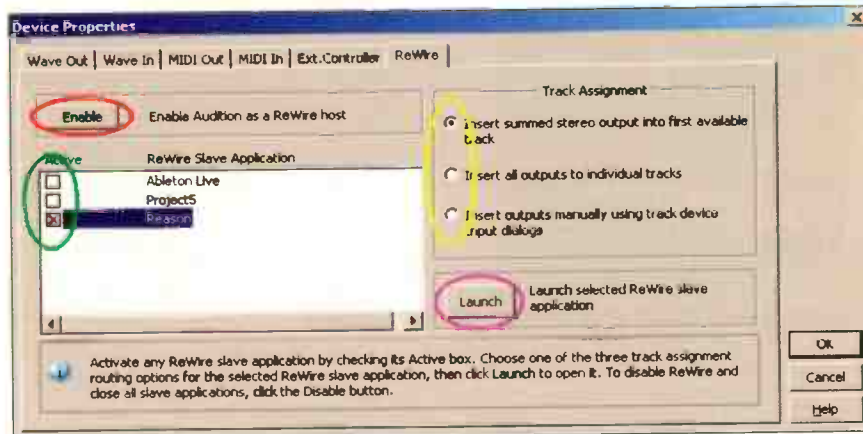
MIDI will generally be available for only one of the two programs at any one time. Disable MIDI for the program you're not controlling; in Live, go *Options > Preferences* and set all MIDI fields to None.

ADOBE AUDITION 1.5

Starting with v1.5, Audition added ReWire. However, it won't pass MIDI data through to the client; for example, if you want to play the soft synths in Reason, you'll need to record your data directly into Reason.

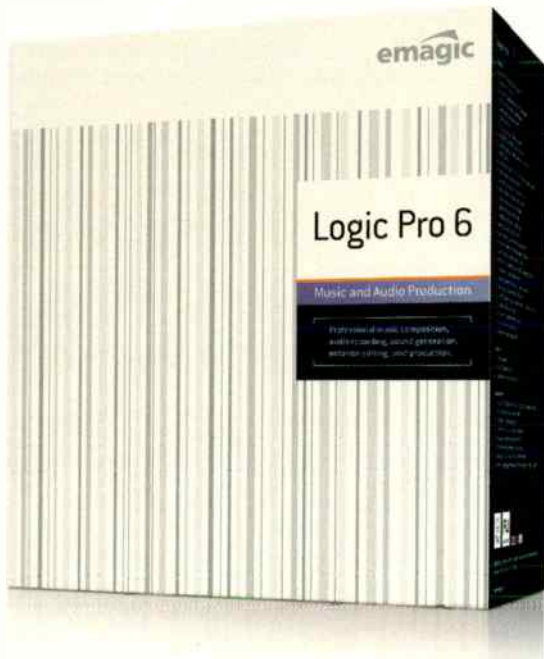
In most cases you won't need to open the client after opening Audition, because Audition will do that for you. In Multitrack view, go *Options > Device Properties > Rewire* tab, then click "Enable Audition as a ReWire Host" (circled in red for clarity). Then, enable the devices that you want to ReWire (circled in green).

You then choose how you want the outputs to show up in Audition; there are three choices (circled in yellow). ▶



This screen is where you set up the ReWire preferences before launching the client.

All in one box.

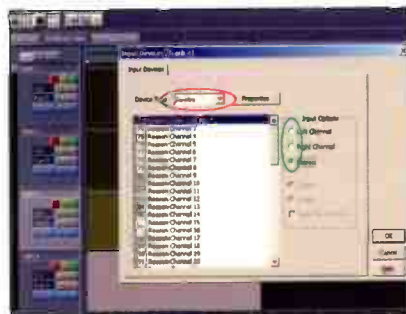


The most widely used program of its kind for professional music creation and audio production is now more attractive than ever before. The new Logic Pro 6 contains all Emagic's superb plug-ins and software instruments, making it not only the best-equipped music production software available, but also the one with the most unbelievable price/performance ratio. Emagic's considerable expertise and experience in music composition, audio recording, sound generation, notation editing and publishing, post production, and film scoring is now all in one box – in Logic Pro 6.

This powerful protocol promotes playability

"Insert summed stereo output into first available track" brings in the summed output, which will take up one track as Audition uses stereo tracks. "Insert all outputs to individual tracks" brings in every one of Reason's tracks, and that's a lot – so if you want to go multitrack, you might instead want to check "Insert outputs manually using track device input dialogs." This way, you can choose which client outputs show up at which Audition inputs. After making your decision, click on Launch (circled in violet) and the highlighted client will launch automatically. (Note: Some programs will need to be launched manually.)

You can enable multiple clients, but only the highlighted one will launch. After it has launched, go back to the ReWire tab, highlight the other client, then launch it.



It's possible to choose some client outputs and not others via a manual selection process.

If you decide to assign inputs manually, you'll need to choose the Device Type (circled in red), which would be ReWire.

Next, you can specify whether the inputs will pick up the left channel, right channel, or stereo (circled in green). Once the assignments are complete, you're good to go.

Incidentally, Audition won't let you exit the program unless you return to the

Devices Properties page and disable Audition as a ReWire host.

Bonus feature: Right-click on a ReWired track, and select "Mixdown to Track (Bounce)" to have the audio show up in the next open track.

ARTURIA STORM 3.0

After opening Storm, click on the ReWire Software tab (circled in blue) to show a list of ReWire clients. (If the tab doesn't appear, go *Settings > General* and check "Activate ReWire mixer on launch of Storm.") Then, drag the desired client into an empty space in the Storm rack (path shown in orange).

Use the drop-down menus (circled in red) on Storm's ReWire "rack unit" to assign particular outputs from the ReWire client to the right and left channels of the Storm mixer, which will have dedicated a track to the ReWire device (outlined in violet).

If you want to assign more outputs to the Storm mixer from the same ReWire client, drag another instance of the

CONGRATULATIONS!



Darrell Thorp in Studio D, Ocean Way, Hollywood

Conservatory graduates Darrell Thorp and Moka Nagatani were recently awarded Grammys for:

- Best Engineered Album, Non-Classical, "Hail to the Thief" Radiohead.
- Album of the Year, "Speakerboxxx/The Love Below" OutKast.

We'd like to congratulate them and all our other graduates who earned Platinum Awards working with the top artists of 2003.

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A woman with long dark hair is singing into a Samson CL7 condenser microphone. The microphone is mounted on a silver shock mount and has a black pop filter in front of it. The woman is wearing headphones and has her eyes closed, appearing to be in the middle of a performance. The background is a dark, solid color.

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Storm is the only program that takes a drag-and-drop approach to ReWire — just drag a ReWire device into the Storm rack, and assign which client outputs you want to feed into the Storm mixer.

client from the ReWire Software tab over to another blank space in the Storm rack. Storm will open up another channel; assign the desired client outs to the new Storm channel as described

previously, using the drop-down menu.

SONY ACID

Go *Insert > Soft Synth*, then click on the ReWire Devices tab. This shows a list of ReWire devices, along with their available outputs. As soon as you select an output, this creates a Soft Synth channel in the Mixer window. Repeat this process to add as many outputs as you like (or your computer can handle).

Acid will pass through MIDI data to compatible applications. For example, if you've chosen a MIDI input in Acid under *Options > Preferences > MIDI*, and are rewiring Project5 into Acid, clicking on the MIDI icon for a Project5 channel lets you play the associated instrument from what's feeding your MIDI interface's input.

If you want to record that MIDI data within Acid, go *Insert > MIDI Track*, name the track and specify where you want to save the data, click on Record, specify MIDI as the Record Type, and set MIDI Thru to the device you want to control.



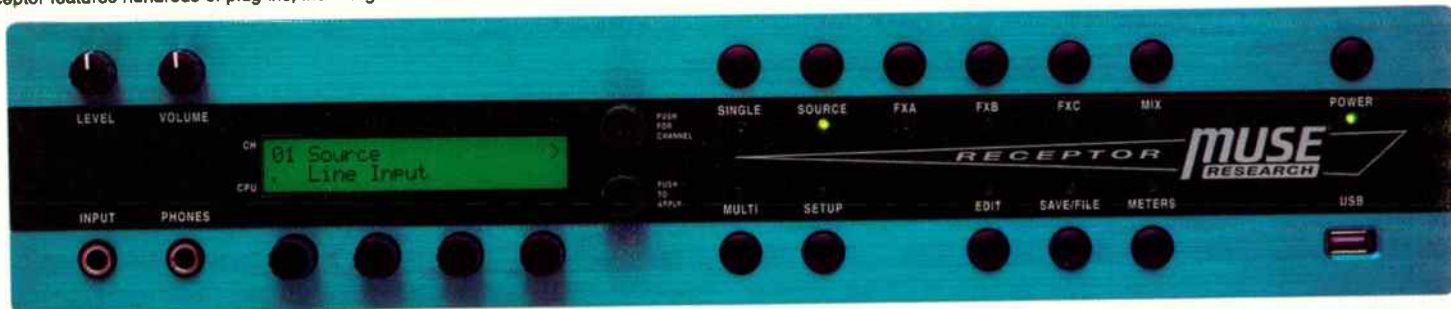
Inserting a ReWire device, and specifying which outs you want to use, creates a mixer channel in Acid. In the lower right, note how there are two soft synth channels — 1 carries Project5's main outs, while 2 carries individual outs from Project5's nPulse drum sound generator.

Click on Start, and begin recording.

Bonus feature: Acid doesn't care whether you close it or the client application first. EQ



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How to Tune Your Control Room

It's not just for instruments anymore

by Ethan Winer

Few project studio owners enjoy the luxury of a purpose-built control room. So, it's common to see people mixing in bedrooms, basements, or whatever space is available. While you can certainly get good results in almost any room if it has enough acoustic treatment, you'll get even better results if you can optimize the room's size and shape. In this article I'll explain how the dimensions of a control room affect its accuracy, then show how to get the best results from whatever room you have available.

MODES DEFINE THE ROOM

At the most basic level, a room is simply a bandpass filter. Or more accurately, three bandpass filters, with one filter

There's nothing we can do about room modes — they're a fact of life — but it's definitely possible to minimize the inevitable coloration they add by choosing optimum dimensions. One way to reduce the effect of room modes is to space them as evenly as possible. If a room is a perfect cube, say, 8' in all dimensions, there will be a huge resonance at 72Hz, with other lesser resonances at every multiple of 72Hz. Therefore, a room where all three dimensions are different is better than a cube, because there will be in-between resonant frequencies instead of one enormous peak. Even better is to design the room to have more resonances that are closer together. This is done simply by making the room larger while keeping the proportions the same.

“Contrary to conventional wisdom, tuning a control room does **not** necessarily mean adding an equalizer to the monitor chain”

corresponding to each of the three dimensions — length, width, and height. Not unlike music played through a graphic equalizer with three of the bands boosted all the way, a room imparts its unique sonic signature on all sound produced within it.

The filter frequencies are determined by the room dimensions. So for a room that's 12' x 10' x 8' high, the three filters are tuned to approximately 47Hz, 57Hz, and 71Hz, respectively. Additional level boosts occur at harmonically related multiples: 94Hz, 141Hz, 188Hz, and so forth for the 12' length, and likewise for the two other dimensions. These boosts are the result of natural resonance — or *modes* in acoustic lingo — which is short for *modes of vibration*. Besides increasing the level of those frequencies, room modes also increase their decay time, so notes at those pitches linger after the musician stops playing.

Compared to large rooms of the same proportions, small rooms have fewer modes that are spaced farther apart. This is because the first mode in a small room is at a higher frequency. For example, when the longest dimension in a room is only 8', the modes for that dimension start at 72Hz and are 72Hz apart. In larger rooms the first mode is at a lower frequency so the subsequent modes are closer together too. Therefore, a large room has a flatter low frequency response because it has more total modes, and they're spaced more closely. Since the modes begin at a lower frequency, the additional boosts also give more overall output at those lower frequencies.

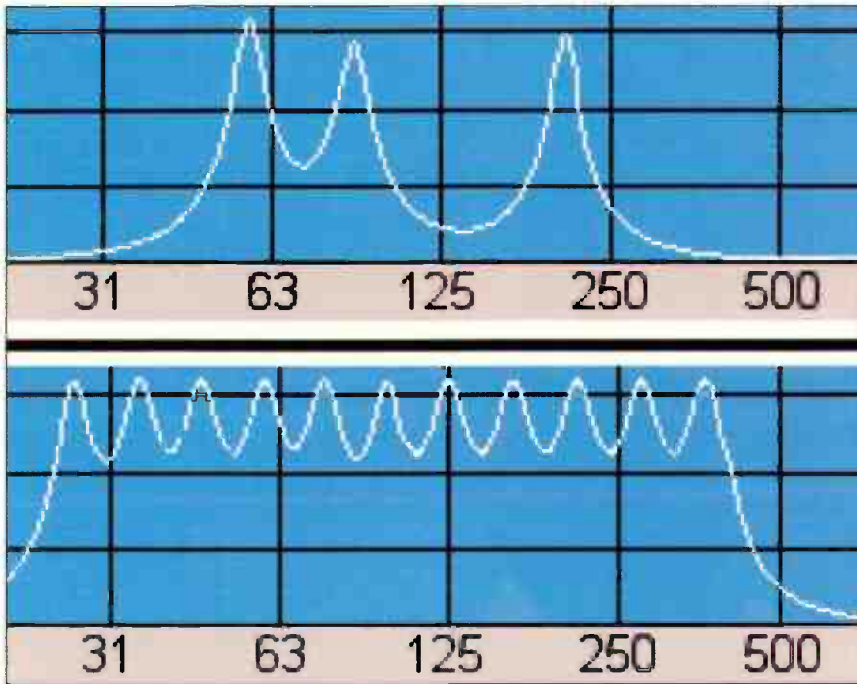


Figure 1: When comparing small room resonances (upper graph) to larger room resonances (lower graph), it's clear the larger room has a more even frequency response. The natural response in a small room has resonant peaks that start higher in frequency and are sparser than for a larger room.

Playing music in a room with poor mode distribution is like listening through a 5-band graphic equalizer with two or three bands turned up all the way. A room with good mode spacing is more like having a 31-band equalizer with all the bands turned up. The frequency response still isn't perfect, but all those peaks combine to yield an overall response that's reasonably flat.

The upper graph in Figure 1 shows the low frequency response created by the first few modes in a poorly shaped small room; the lower plot reflects a larger room having better dimensions and thus more modes, more evenly spaced, and with less distance between them. Since the larger room's modes start at a lower frequency, and occur at more closely spaced intervals, the result is an overall flatter and more extended low frequency response.

If you're designing a room and want to see the acoustic effect of varying the dimensions, or you need to choose which of several existing rooms would be the best to mix in, you can download my free Graphical Mode Calculator program (see Figure 2): www.ethanwiner.com/modecalc.exe. This program runs on any DOS or Windows computer, and displays the modes as

numbers and also graphically so you can easily see how evenly they're spaced.

ROOM TUNING

Contrary to conventional wisdom, tuning a control room does *not* necessarily mean adding an equalizer to the monitor chain. Although control room monitor EQ was common years ago, these days most

acousticians reject equalization as a way to achieve a flat low frequency response. The main reason EQ is not useful for correcting a room's low end is because the response can change a lot depending on where you sit. I've measured changes as large as 15dB across a physical span of only four inches at 100Hz. So any EQ correction you apply is valid for a very small area only.

As every location in the room is different, no single EQ curve can give a flat response everywhere. Even if you hope to correct the response only at the mix position, there's a bigger problem — it's impossible to counter very large cancellations. For example, if acoustic interference causes a 25dB null at 50Hz, adding that much boost with an equalizer will cause your power amplifier to clip on loud passages, or will damage your speakers or at least increase their distortion. And at other locations where 50Hz is already too loud, applying EQ boost will make the problem even worse.

EQ cannot always help at higher frequencies either. If a room has ringing tones that continue after the sound stops, EQ can make the ringing a little softer but it will still be present. The same is true for low frequency reverb and ringing, which

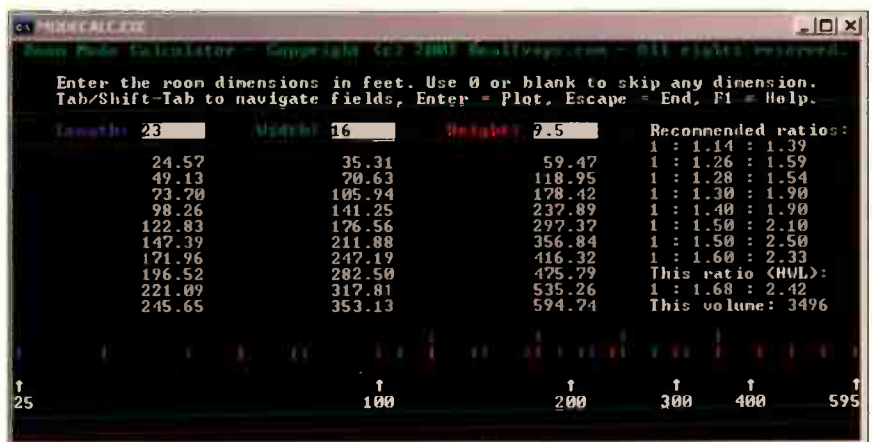


Figure 2: You can download the ModeCalc program from the author's web site to assess the mode frequencies and spacing for any rectangular room. The online Help explains how to use the program and interpret its results.

How to Tune Your Control Room

obscure clarity as bass notes ring out and overlap into subsequent notes. EQ can help to reduce the most blatant modal peaks, though not peaks created by acoustic interference from a nearby boundary. To reduce modal peaks properly, you need a parametric EQ and also a way to measure the room to a resolution of 1Hz or finer. Even then, EQ

helps only a little because the amount of boost varies around the room. So the best you can hope for is to lower the average level a little at that frequency.

A much better way to tune a room is with absorption that reduces the response-skewing reflections that are the root of all these problems. Besides improving the frequency response of the

room, absorption also helps by making the reverb time more uniform at different frequencies. Previous articles in this series introduced the use of absorber panels and bass traps, which is the correct way to tune a room because it attacks the problem itself, rather than the symptoms created by that underlying problem. I distinguish absorbers based on the range of frequencies over which they operate, using a "crossover frequency" of about 300Hz. This dictates both the type of absorbers you'll use, and also where you place them.

"As every location in the room is different, no single EQ curve can give a flat response everywhere."

Mid and high frequencies are easy to tame using thin panels made of foam or rigid fiberglass mounted in various places on the walls and ceiling. Low frequencies are a different matter entirely — for effective bass trapping, acoustic panels need to be very thick, and placed in the room corners including the wall-ceiling junctions. Other types of bass traps can be used, including membrane traps, wood panel traps, slat resonators, and thick blocks of foam shaped for corner installation. A Google search on "bass traps" will yield a month's worth of further reading, plus links to commercial acoustic treatment vendors, and plans to build your own panels and traps.

Adding bass traps to a room improves its low end response and makes it more like a larger room for two reasons: The modal peaks are reduced, and reflections that skew the response up or down are also reduced. Because substantial low frequency absorption is needed in all rooms, it's important to use a mix of bass traps and mid/high frequency absorbers, not just thin materials that absorb mainly mid and high frequencies. Rooms treated using only thin panels made

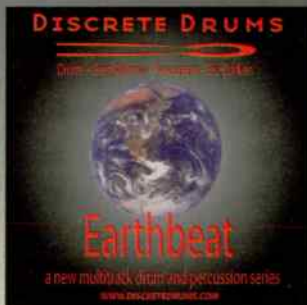
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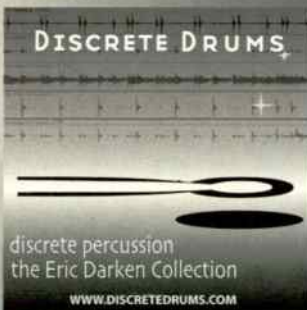
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World Radio History



The Modern Marketplace for Musicians, Engineers, and Producers

By Les James

When the millennium flipped a few years back, experts predicted that the Internet would bring about a sea change in the way we live. As it turns out, they were right! Companies like eBay have fundamentally changed the way people buy and sell — especially when it comes to musical equipment. Now all the gear you need is as close as your computer mouse.

Looking to upgrade your sound with different gear? eBay offers the ideal place to sell your old equipment. You can get top dollar for your microphones, monitors and multi-track recorders. By successfully selling your gear within the eBay community, you'll have more resources to invest in the next stage of your musical ascent.

Of course, if you're looking to purchase gear on eBay, you'll discover a great selection of new, used and vintage equipment — right at your fingertips! The main trick is determining what you need.

Set up Your Studio

The days when setting up a recording studio cost an arm and a leg (or two legs) are long gone. Today you can put together a home- or project-studio recording rig that can rival the quality of many top-of-the-line commercial facilities, and you can do it on a surprisingly modest budget. Today's digital recorders offer amazing quality at even more amazing prices; all you need to supply is the musical talent!

You can get a "studio-in-a-box" recorder that contains almost an entire studio's worth of gear right inside one unit: the mixer, recorder, effects processor — even a CD burner for creating discs of your music. You'll find them in the Multi-Track Recorders category in the Pro Audio section of eBay. All you need to add are speakers or headphones, a mic or two, and your instruments (of course, those are available on eBay as well).

Or you can go the computer route. Add an audio interface, easily found by searching the Interfaces & Hardware category in the Computer Recording section on eBay, to your Macintosh or Windows PC, and you'll be able to record your tunes straight to hard disk. Once the sound is on your disc, you can manipulate it in much the same way you would use a word processor to manipulate text. Vocals flat? Tune them up! Drums out of time? A few edits, and you're in the groove!

If you're a vintage buff, you can even put together an old-school analog recording rig, and set down your tracks onto analog tape, just like the masters did in years gone by.



Every studio needs a couple of killer mics, and eBay's got the best deals on a super selection.

Lay Down Your Music

Whether you're recording to computer, studio-in-a-box, or analog tape, the first matter of business is laying down the tracks. For this you're going to need microphones. There are many choices out there, each of which sounds different. Here are several types to consider:

1. *Large-diaphragm condenser.* These are the studio-standard mics for vocals, as well as for many other tasks, such as miking guitars and instruments.
2. *Small-diaphragm condensers.* Also a staple in any studio's mic locker, a small diaphragm condenser is great for acoustic instruments such as 6- or 12-string guitar, for hi-hat or drum overhead, hand percussion, and other applications.
3. *Dynamic.* Although they're more common on live stages, dynamic mics are used in the studio for guitar and bass amps, drums (especially snare) and other loud, punchy sources.

Edit, Process, and Mix

Once your tracks are recorded to hard disk or tape, you can begin editing and processing them. Usually the editing will be done on your computer or studio-in-a-box (although if you're a dyed-in-the-wool analog recording fanatic, razor blades are the way to go!). Processing can be done in software, or using hardware boxes.

Hardware effects come in several varieties: dynamics processors, such as compressors and limiters, control the volume of your signals to make them more consistent. Gates and expanders are used to control background noise and hiss. Effects such as echo and reverb add "space" to the sound, while pitch shifters can either retune parts or create crazy, out-of-this-world sounds. Find them all in the Rack Gear category of eBay's Pro Audio section.



eBay has an array of rack effects hardware that's absolutely off the hook!

To make the final stereo product, you'll need to mix the tracks you've recorded. This can be done with software, or using an analog or digital mixer. The mixer combines all the tracks, effects, and other sound sources and blends them together into stereo form. Make sure your mixer has enough channels to handle all the tracks you want to record.

Master

The last stage in recording is mastering. Mastering is the process of polishing the recording — adding the last touches of dynamics processing and tone tweaks — to make the recording sound "finished" and professional — like what you hear on the radio. It's also where you decide on the order of the songs on your album, determine the space between them, and either burn your CDs or send them off to a duplication house.



A great set of monitors goes a long way in making your mixes the best they can be.

Start Making Tracks

Being a musician, engineer, and producer is all about sharing — it's not really music until someone else hears it. Recording is how most of us get our music into the public. Whether you're recording a Christmas song for your family or working on the next Top-10 smash hit, the process and the tools are the same.

All it takes is an interest in laying down your music, a few simple tools, and some basic techniques — okay, a bit of musical talent will help as well! Why not get started? You don't need much room: a small corner where you can set up your recording rig is all you need! And if you're reading this, it's a pretty good bet that you already have a computer you can use to record, edit, and mix your songs.

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Whichever path you choose to pursue, using eBay makes the journey more efficient, effective, and safe. The Backstage Lounge on eBay offers great content to help with your decisions, such as buyer guides, lessons, gear setups of the stars, and more (see following page). eBay also offers multiple search options, including the "completed items" function, which allows you to see recent closing prices for items similar to the one you are interested in, and the "regional" feature (under "refine search"), which allows you to keep to your home turf and perhaps even contact the seller to try out the gear you are considering before you make an offer. eBay's unique Feedback system, which allows buyers and sellers to rate their satisfaction with each transaction, lets you buy with confidence from reputable sellers. And don't forget to sign up as a seller so you can unload some of the gear you've outgrown while raking in the dollars needed to trade up to the gear you want!



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How to Tune Your Control Room

of foam or rigid fiberglass are often too dead sounding, yet boomy at the same time. This is why blankets, carpet, egg cartons, and other such "room treatment" usually make a room sound worse than if it had no treatment at all.

THIS MUST BE THE PLACE

Now that you know what types of absorbers you need, let's look at where to place them. As I already explained, bass traps should be mounted in the room corners. This is the best place for bass traps because this is where low frequencies tend to collect in a room. However, mid- and high frequency absorption should be placed more evenly around the room, as well as at the points of first reflection.


"Improve Your Monitoring" (May 2004 issue) explained the importance of using absorption or diffusion to avoid early reflections and thus ensure good stereo imaging, so I won't belabor that here. In many rooms, once you've installed enough bass traps and placed absorption at the early reflection points, little additional treatment is needed. However, if your room has large areas of bare wall, or a reflective floor and also a bare ceiling, additional mid/high frequency absorption is needed. Since the goal is for sound to be balanced evenly around the room, I prefer some mid/high frequency absorbers on each surface, rather than covering one entire wall only. You can do this by placing 2'x2' or 2'x4' acoustic panels in a striped or checkerboard pattern. If you have a reflective floor, you'll need additional absorption on the ceiling.

SO NOW WHAT?

Okay, now you know what you need and where to put it, but how can you tell when a room has enough absorption? The "free" way is to simply clap your hands while standing in different parts of the room and listen for excess ambience and obvious echoes. If you can hear any specific tones ring out right after clapping, that means more absorption is needed. In particular, look for parallel opposing surfaces that are both bare. Again, don't treat just one surface; rather, put less absorption on *both* surfaces.

Even better than hand claps is to actually measure the room's decay time at 1/3-octave intervals. This requires a dedicated audio analyzer — either hardware or software — that can display the reverb

time separately for each 1/3-octave band. I use the ETF program from www.acoustisoft.com because it's affordable and performs all of the important tests needed to analyze a room. However, other packages are available to do the same sorts of measurements, including Smaart (www.siasoft.com), SpectraFoo (www.spectrafoo.com), TEF

(www.gold-line.com), and Terrasonde (www.terrasonde.com), among others. 

Besides heading up RealTraps (www.realtraps.com) where he designs acoustic treatment, Ethan Winer also moderates the Acoustics forum at www.musicplayer.com. Stop by any time with your acoustic questions, or just to say hello.

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STEVE WINWOOD



He's back . . . and it's about time

by Craig Anderton

You know how sad it is when an aging rock star trades on past glories, trying to keep a career alive that is no longer vital? Well, flip the phase switch 180 degrees, and you have Steve Winwood. Many listeners feel his latest album, *About Time*, is not only as good as any of his past work, but is possibly some of his best work. His soaring, expressive voice has retained both its power and delicacy, while the

trademark Hammond playing remains a paragon of economy and taste — yet can burn it up when needed.

But what's also of interest to *EQ* readers is that Winwood has cut the major label cord, recording everything in his own studio, serving as his own producer, and releasing on an independent label. Buoyed by extensive touring, *About Time* is getting attention from

existing Winwood fans, while drawing converts as well.

He's also diving headlong into the changes occurring in the record industry rather than fighting them. And it works, if how this interview evolved is any indication. I first heard about the new album from Bob Lefsetz's online record industry newsletter, which not only raved about Winwood's latest work, but also secured

WOOD'S INDIE RENAISSANCE

permission to send out an MP3 of a live cut to his subscribers. I downloaded it, thought it was hot, and got in touch with Winwood's PR people. A few phone calls later, and the interview was good to go . . . all because I read something on the Net, and downloaded a tune. No record company intervention required.

I caught up with Steve right after he'd returned to the UK from playing at the Bonnaroo Festival. He talks as he plays: deliberately, articulately, and with an understated yet obvious passion about what he does and what he believes in.

EQ: *The first thing I noticed about the CD was the feel — it has a great groove, a real "live" sound that you don't hear a lot these days.*

STEVE WINWOOD: I had a definite idea of where to go with the album, and wanted to be as minimal as possible. We didn't record to a click at all, and kept overdubs to a minimum. It was indeed a very live approach.

Even with percussion?

Especially percussion — if you need a shaker or tambourine, it's most important to record it with everything else so it becomes a part of the overall feel. If you record everything to a click and try

"When the performance is more inspired, the recording medium becomes less important."

to add all your overdubs to that click, that will give a certain type of feel, but that's the kind of feel I was trying to get away from. We wanted something much more organic.

I'd worked with clicks and loops before — I recorded *Arc of a Diver* completely alone, which necessitated some kind of guide. I actually used some loops; of course that was in 1980, so I was using a piece of 1/4" tape and joined the ends for a 12' loop — the tape went past the tape machine's heads, around a mic stand, and the leg of a chair. [Laughs]

I had started using a click in 1977 while working with drummer Andy Newmark and bassist Willie Weeks. I didn't say the first thing we needed was a click; they came in and said that's how they wanted to work as musicians. Of course, the thing about using a click is that you're effectively playing to someone who's not listening. And anything

overdubbing musicians do, like tambourine or shaker, is playing with a band they're not listening to.

Did you sing your vocals along with the instruments too, or as overdubs?

I attempted to do singing at the time, but it ended up being more of a scratch track. We did in fact try to use part of the original vocals, but there was so much leakage it didn't quite match up with any overdubs I did.

Are you a "first take" vocalist, or does it take you a while to warm up?

I usually find that early takes have something very special with vocals, although of course sometimes you have to do more takes. But generally the first take is the best, then they start to go downhill. Obviously there are times when you have to change something, and unfortunately sometimes you change something technically on the recording side, which makes it impossible to use

STEVE WINWOOD

"I felt if I did this on my own label . . . I'd be free of the executive forces that can very often change what a musician does."

the earlier version. Then again, sometimes we just decided not to care if, for example, there was too much room sound in the kick mic, or leakage from the Leslie in the conga mics. If the take was good, we used it regardless.

I didn't really notice much in terms of vocal effects, except in "Take It to the Final Hour."

We put a little bit of a delay on the main vocal, using one of the vintage echo plug-ins.

When I was listening to the album, it sounded almost like it was done on a high-quality analog system. . . .

It was all recorded into Pro Tools. Of course I've been reading lots of raves against it in some of the more non-technical publications, where people say Pro Tools is a terrible thing and makes people sing in tune who can't. I think that's completely wrong — Pro Tools is a great recording medium. We used it in the same way as a multitrack recording system; we started

recording in October 2002, so at the time we recorded 48kHz, with 24-bit resolution. Now we have an HD system and are doing 96kHz. We didn't mix to a tape either, we mixed straight out of Pro Tools.

Can you hear a difference between 48 and 96kHz?

Definitely. But at the end of the day, the recording quality becomes more important when the performance is more clinically correct. When the performance is more inspired, the recording medium becomes less important. I don't believe there is something so wonderful about tape that Pro Tools can't match, particularly with the HD systems.

Was it difficult to produce yourself, be a performer, and retain objectivity? I've always thought that presents a bit of a conflict. ►



Steve Winwood with guitarist Jose Piresde Almeida Neto and drummer Walfredo Reyes, Jr.

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STEVE WINWOOD

Associate producer Johnson Somerset was very much a part of the production, keeping track of the takes and providing the overall "fly on the wall" view of it. Engineers listen to sound quality, musicians listen to the music and intonation, and it sometimes takes somebody to look at the overview;

Does all this mean you prefer working with a band as opposed to doing solo work?

I've done recording both ways, and they're both valid approaches, but I had a concept for doing this record in a particular way — like doing it live and using organ pedals for the bass. I made the previous record with Narada Michael Walden,

"I don't believe there is something so wonderful about tape that Pro Tools can't match, particularly with the HD systems."

he was brilliant at that. Very often there were some very heated discussions in the studio — that's how the best music is made — about whether this take is right, or the drums are quite right, and so on. Johnson would come in and say something like "I suggest we have a listen to the day before yesterday, the take that was done at 2:15, just before lunch" . . . no one could really remember what take that was, but he was taking notes. He played a very important part with regard to performance, which sometimes can be overlooked by people looking at their own individual roles.

who's a really great drummer, but he wanted the drums to be programmed. That's not a criticism, it just leads to a different kind of result . . . a different kind of music. I had the idea I wanted to use this style of working with everybody playing, and that made a big difference because everyone then has to listen to everyone else. They can't say, "the click is right," they have to recognize the *musicians* are right. It's a different way of recording.

Do you write in the studio, or had you been working on the songs live before you went into the studio? >



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This Pro Tools screenshot shows Take 2 for "Different Light," the CD's opening cut.

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STEVE WINWOOD

Prior to recording, the basic trio had never played together. I'd played with [guitarist] Neto before, and he'd played with [drummer] Walfredo Reyes, Jr., but we'd never all three played. So when we hooked up, we sat down and gave ourselves a certain amount of time [to get acquainted]. The concept of using the organ bass was slightly different, so while we had planned to rehearse the songs before we actually recorded them, I was adamant that we record the rehearsals

because we stood a good chance of getting an inspired performance. In fact, many of the songs were very early takes, "Take it to the Final Hour" and "Silvia" were perhaps the first time we played them.

It's been six years since your last album. Why the wait?

I'm kind of inconsistent with projects, because I wait until I have a burning desire to do it rather than to fulfill some kind of contractual commitment. Fulfilling obligations is not always the way to get

JAMES TOWLER: "SOMETIMES IMPERFECTION IS THE PERFECTION"

Mixing and assistant recording engineer James Towler was clearly an important part of the equation. He also oriented everything around the performance; when asked about the leakage involved in using a live approach, he didn't seem too concerned. "It was kind of a problem, but we had some panels with glass and moved them around so everyone could see each other, and still had enough separation between drums and percussion."

He used two Pro Tools setups, one each in the A and B rooms, because "They were constantly churning out takes. We would do quick mixes on one while the other was recording." Mic pres for the B room were Presonus Digimax units with optical outs, which he also used live. He used Focusrite Red pres for the drums and percussion, and an old Focusrite ISA in the A room setup, as well as a Summit tube preamp on a few things.

Vocals were handled by an Audio-Technica ATM 89R, but he's since moved on to the A3300. The main reason: With such a high potential for leakage, he finds the hypercardioid response essential.

The guitar amp was a Fender Cyberwin, "We just took a DI off the back and put a Shure SM57 on the front. And live, I've even dropped the '57. We tried putting Sennheisers on there, but with these new digital amps you can pretty much take just the DI. We've also used the Radial DI box."

Drums were a fairly minimalist setup: Neumann M149 distant mic on the kick, and a Electro-Voice RE-20 for close up. Neumann U87s provided the overheads, and an SM57 covered the snare. He also likes to put a few condensers around the room, and Sennheiser MD421s on the toms. And percussion mics? "What I had left in the mic box was Shure SM57s, so I used those." Towler is also a big fan of the SPL Transient Designer, which he used while recording the percussion to add a punch that worked well.

James miked the Leslie cabinets with a 421 on the top and an AKG D12 on the bass, but he also maintains the Bomb Factory Fairchild compressor plug-in is an essential part of the recorded organ sound. Live he takes a direct out from the Hammond amp because of the need for a solid sub line, and has started using Audio-Technica AT 4050s on the top and bottom because "they give a much richer sound."

Although Towler started building his studio (a converted barn) about five years ago, *About Time* was the first entire album done there. How about acoustic treatment? "Oh, some rugs from Morocco . . . it's a lovely old barn, a few sound panels nicely deadened the sound. In the actual control room I used an outside consultant who installed some panels for me, but it's a natural stone wall with a natural sound, and the ceilings are pretty high."

James also does the live recording and front-of-house mixing on tour. He currently favors Mackie SDR recorders at 96kHz, with Focusrite Octapres that go into a Soundcraft 324 desk for recording; FOH is mixed on a Yamaha DM2000. All the musicians use wireless monitoring. As he says, "Basically I just have to connect three cables and we're ready to go. There's no need for a monitor engineer; I just hit play and record, do a few scene changes, and then I can sit down and have a beer." [Laughs]

As to the project itself, James notes, "This was something Steve wanted to do; we were in a record shop in Rotterdam and he bought an album with those old organ grooves, and got back into the whole organ bass thing. He definitely wanted to go for a live sound, because sometimes imperfection is the perfection."



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STEVE WINWOOD



Mixing engineer James Towler was a vital part of the process who, like Winwood, was more concerned with the performance than with things like small amounts of leakage.

the best results. I was also working on a [Traffic] DVD we have coming out in the fall, and some other projects as well.

Interestingly enough I'm slightly surprised about people's reactions, they thought it was more in line with earlier Traffic . . . it does have a Brazilian, Latin approach that gives it a slightly different slant. I think it's a departure in that it sounds a bit like it's from a bygone era, more of a vintage sound.

like anything else he was working on. So maybe you have a point. I would tend to think it's more in line with the old stuff, but it's a big departure from what I did in the '80s.

Bonnaroo is another interesting twist on the music business that's against the corporate nature of the music industry. Things are cyclical I think, and they work in waves of cycles. I have an 11-year-old who plays, and he

"The music industry's changing. The old guard and old forms are changing, in many ways for the better."

I tend to think it's more likely the sound of next year . . . people are trying to get back to a more live, "humanized" feel.

Well that's interesting because when we took the record to be mastered . . . the great thing about a mastering engineer is that he listens to three or four albums a day, and tries to make your album sound like other albums so it sounds like it will sound on the radio. When I asked the mastering engineer [Tony Cousins] what he thought, he said it didn't sound

has a group of kids that are all 11, and my wife was playing my record. They liked the tracks like "Voodoo Chile" — the bonus tracks [included on an expanded version of the CD] that are more rock-oriented.

What are you working on now?

I'm still touring, in two weeks I'm playing in Europe. Because of this record I'm adopting a bit of a different thing, I've shaken off my pop side in Europe and I seem to have adopted more of a world

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STEVE WINWOOD

music/jazz-rock approach that has almost given me a new lease on life in many countries. So we're getting very good responses. I'm not working on any new recordings until the touring is done; I'm collecting some ideas but have nothing concrete yet.

Why did you forego working with a major label and elect to go independent?

The music industry's changing. The old guard and old forms are changing, in many ways for the better. There are new ways of listening and buying music with computers, which is overall a good thing. But there's also the element of control. I felt if I did this on my own label, although I might not reach a wider audience as with a big label, I knew I'd have control on what was on the record and be free of the executive forces that can very often change what a musician does.

Has that been a problem before?

[Pause] I'm afraid I may have fallen prey to that in the past. Here I had a very

CURRENT CD

Title: *About Time*

Label: Wincraft Music, #WM0001

Personnel: Steve Winwood (vocals, Hammond), Jose Piresde Almeida Neto (guitar), Walfredo Reyes, Jr. (drums, percussion). Also Karl Vanden Bossche and Richard Bailey (percussion), Karl Denson (sax, flute)

Producer: Steve Winwood

Associate Producer: John Somerset

Engineering: James Towler, George Shilling

Recorded and mixed: Wincraft Studios, UK


Mastered: Metropolis Mastering, London, UK

Key Tracks: "Different Light" (see screen shot) blends percussion, groovacious guitar, and Hammond stabs for a light, danceable



Brazilian feel; "Phoenix Rising" takes a slightly heavier, more rock vibe, with ultra-soulful vocals, burning Hammond, driven percussion, and flute out of the Traffic playbook.

specific idea, it was a concept album in terms of style and the way it was done. I wanted to combine that wonderful vintage organ bass sound with certain world music elements, and rock, and some jazz

elements too. This is also the first record I've ever made where I didn't play guitar! I may continue with this concept for while . . . at least until I come up with another one. 

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The Art of Recording:

1. Why Rong is Gud Sometimes mistakes are good for you

Whether giving seminars or receiving emails, I'm constantly asked about the "right" way to record, as if there was some committee on standards and practices dedicated to the recording industry ("for acoustic guitar, you must use a small-diaphragm condenser mic"). Well, I certainly don't want to demean the art of doing things right. Yet some of the greatest moments in recording history have come about because of ignorance, unbridled curiosity, luck, trying to impress girls, or just plain making a mistake that became a happy accident.

When Led Zeppelin decided to buck the trend at that time of close-miking drums, the result was the Olympian drum sound in "When the Levee Breaks." Prince decided that sometimes a bass simply wasn't necessary in a rock tune, and the success of "When Doves Cry" proved he was right. Reverse tape, flanging, distortion — all at one point were considered "wrong."

A lot of today's gear locks out the chance to make mistakes. Feedback can't go above 99, while "normalized" patching reduces the odds of getting out of control. And virtual plug-ins typically lack access points, like insert and loop jacks, that provide a "back door" for creative weirdness. It's time to reclaim some of our heritage as sonic explorers, and screw up some of the recording process. Here are a few suggestions to get you started.

UNINTENDED FUNCTIONS

The Lexicon Pantheon reverb (included in Sonar, Lexicon Omega, and other products) can provide some really cool resonator effects, as well as reverb. Try these settings:

- Reverb type: custom
- Pre-delay, Room Size, RT60, Damping: minimum settings
- Mix: 100% (wet only)
- Level: as desired
- Density Regen: +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 others.

You can even put two Pantheons in series set for highly resonant, totally spooky sounds.

One of my favorite applications is using a vocoder "wrong." Sure, we're supposed to feed an instrument into the synthesis input, and a mic into the analysis input. But using drums, percussion, or even program material for analysis can "chop" the instrument signal in rhythmically interesting ways.

Got a synth, virtual or real, with an external input? Turn the filter up so that it self-oscillates (if it lets you), and mix the external signal in with it. The sound will be dirty, rude, and somewhat like FM meets

ring modulation. Set up the VCA so you can do gated/stuttering techniques by pressing a keyboard key to turn it on and off.

And we all know headphones are for outputting sound, right? Well, DJs know you can hook it up reverse, like a mic. Sure, the sound is kinda bassy because the diaphragm is designed to push air, not react to tiny vibrational changes. But no problem! Kick the living daylights out of the preamp gain, add a ton o' distortion, and you'll generate enough harmonics to add plenty of high frequencies.

PARAMETER PUSHING

The outer edges of parameter values are meant for exploration. For example, digital audio pitch transposition can provide all kinds of interesting effects. Tune a low tom down to turn it into a thuddy kick drum, or transpose slap bass up two octaves to transform it into a funky clav.

Or consider the "acidization" process in Acid and Sonar. Normally, you set slice points



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

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"The faders and the data wheel are as smooth as a Vaseline-coated eel in a WD40 factory, while the large illuminated buttons mean that you won't be squinting at the control surfaces."

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"The motorized faders were fast, responsive and not nearly as noisy as those on my Mackie. I also found that the jog wheel would jog/shuttle around a Nuendo session far better than my Mackie."

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The Art of Recording: Why Rong is Gud

at every significant transient. But if you set slice points at 32nd- or 64th-notes, and transpose pitch up an octave or two, you'll hear an entirely different type of sound.

I also like to use ReCycle as a "tremolo of the gods." Load in a sustained sound, set slice points and decay time to chop it into a cool rhythm, then send it back to the project from which it came.

GUITAR WEIRDNESS

For a different type of distortion, plug your guitar directly into your mixer (no preamp or DI box), crank the mic pre, then use EQ to cut the highs and boost the mids to taste. Is this the best distortion sound in the world? No. Will it sound different enough to grab someone's attention? Yes.

As you play compressed or highly distorted guitar through an amp (or even studio monitors, if you like to live dangerously), press the headstock up against the speaker cabinet and you'll get feedback if the levels are high enough. Now work that whammy bar. . . .

Miking guitar amps is also a fertile field for weirdness. Try a "mechanical bandpass filter" with small amps — set up the mic next to the speaker, then surround both with a cardboard box. One of the weirdest guitar sounds I ever found was when I re-amped the guitar through a small amp pointed at a hard wall, set up two mics between the amp and the wall, then let them swing back and forth between the amp and wall. It created a weird stereo phasey effect that sounded marvelous (or at least strange) on headphones.

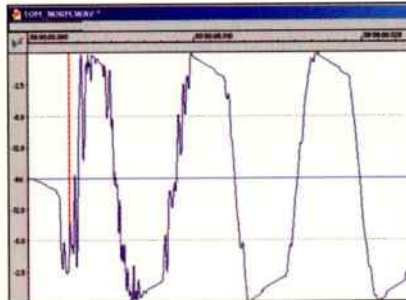
DISTORT-O-DRUM

Distortion on drums is one of those weird techniques that can actually sound not weird. You can put a lot of distortion on a kick and not have it sound "wrong" — it just gains massive amounts of punch and presence. One of my favorite techniques is copying a drum track, putting it in parallel with the original drum track, then running the copy through a guitar amp plug-in set for a boxy-sounding cabinet. It gives the feeling of being in a really funky room.

Replacing drum sounds can also yield audio dividends. My musical compatriot Dr. Walker, a true connoisseur of radical production techniques, once replaced the hi-hat in his drum machine with sampled vinyl noise. That was a hi-hat with character, to say the least.

If you want a sampled drum sound to have an attack that cuts through a track like a machete, load the sample into a digital audio editor that has a pencil tool. Then, within the first 2 or 3ms of the signal, add a spike (shown in red in the diagram for clarity).

When you play back the sound, the attack will now be larger than life, loaded with harmonics, and ready to jump out the



Messing up a drum sample's initial attack adds a whole new kind of flavor.

speakers. However, it all happens so fast you don't really perceive it as distortion. (You can even add more spikes if you dare.)

Another drum trick that produces a ton of harmonics at the attack is to normalize a drum sample, then increase gain by a few dB — just enough to clip the first few milliseconds of the signal. Again, the drum sound will slam out of the speakers.

FUN WITH FEEDBACK

A small mixer is a valuable tool in the quest for feedback-based craziness. If you have a hardware graphic equalizer, mix the output back into the input, monitor the output, and feed in a signal (or not — you can get this to self-oscillate). With the EQ's sliders at 0, set the mixer to just below unity. As you

increase the sliders, you'll start creating tones. This requires some fairly precise fader motion, so turn down your monitors if the distortion runs away — or add a limiter to clamp the output.

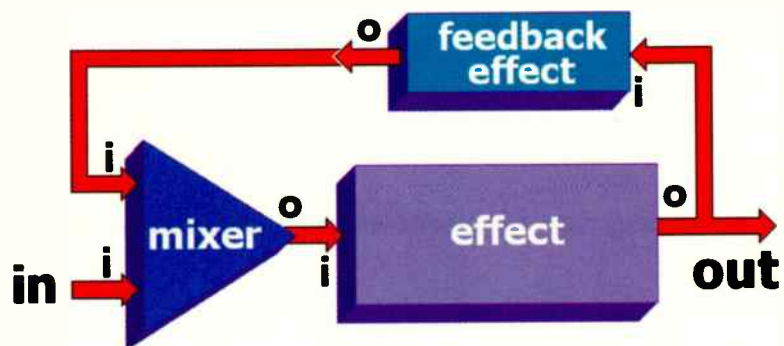
If you have a hardware pitch shifter, then feed some of the output back to the input (again, a mixer will come in handy) through a delay line at close to unity gain. Each echo will shift further downward or upward, depending on your pitch transposer's setting. With some sounds, this can produce beautiful, almost bell tree-like effects.

Feedback can also add unusual effects with reverb, as the resonant peaks tend to shift. At some settings, the reverb crosses over into a sort of tonality. You may need to tweak controls in real time and ride everything very carefully, but experiment. Hey, that's the whole message of this article anyway!

PREFAB NASTINESS?

Lately there's been a trend to "formalize" weird sounds, such as bit reducers, vinyl emulators, and magnetic tape modelers. While these are well-intentioned attempts to screw things up, there's a big difference between a plug-in that reduces your audio to 8 bits, and playing back a sample on a Mirage sampler, which is also 8 bits. The Mirage added all kinds of other oddities — noises, aliasing, artifacts — that the plug-in can't match. Playing a tune through a filter, or broadcasting it to a transistor radio in front of a mic (try it sometime!) produce very different results.

Bottom line: Try to go to the source for weirdness, or create your own. Once weirdness is turned into a plug-in with 24/96 resolution, I'm not sure it's really weirdness anymore. EQ



Here's a generalized setup for adding feedback to a main effect. The feedback effect isn't essential, but changing the feedback loop signal can create more radical results.

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Solo Gagliano Violin
9 Violins for Ensembles
12 first Violin Section
10 second Violin Section
Solo Viola
3 Violas for Ensembles
10 Viola Section
Solo Cello 1, 2 & 3
3 Celli for Ensembles
8 Celli Section
Solo Double Bass
3 Basses for Sections
7 Double Bass Section
Harp 1 (Venus)
Harp 2 (Wurlitzer)

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6 Trumpets for Ensembles
Horn Trumpet Overlay
Piccolo Trumpet
French Horns (Two Soloists)
6 Horns for Ensembles
Horn (2 Overlays)
Solo Tenor Trombone
3 Trombones for Ensembles
Horn Trombone Overlay
Bass Trombones (Two Soloists)
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The Art of Recording:

2. Rendering

Archiving is more than just saving the last version of your project

by Mitch Gallagher

In this day of fast-and-furious software and operating system updates, it's disturbingly common to not be able to open a project you created as recently as a year ago — a scary proposition! With each new version, some features are added, but others go away, and support for older technologies and plug-ins is dropped. You're in trouble if you need to go back to an archived project, only to find that the software synths or plug-in processors you used are no longer supported — or that you've sold a piece of hardware that you need to make the mix work.

Fortunately, modern computer-based DAWs support tons of tracks — way more than most of us use for our projects. So put those empty tracks to work: Your best defense against the problem described above is to render all tracks with edits and processing — whether software or hardware — to new audio tracks. Render each track for the entire length of the song, not just the part where there's audio playing. That way, even if you can't open an older project in your current DAW, you'll still probably be able to import the rendered audio files, line them up, and make them play.

But don't delete the source tracks when you're finished rendering — make them inactive and hide them from your project window, but keep them handy in case you need to refer back to them at some point.

Here are some tips for what to include for complete project archives that will (hopefully) stand the test of time.

■ **Keep all original raw tracks.** At some point you may want to go back and change or re-do an edit. Good luck if you've trashed the original straight-from-the-source tracks.

■ **Keep edited tracks.** For quick fixes to tracks with edits, it helps to have the original tracks with the edits and fades/crossfades on them. Otherwise, you'll have to re-create all the edits you made along the way in order to make any changes you want.

■ **Bounce to consolidate any edited tracks.** Once you've finished editing a track, bounce it to a new audio track and file. This way you'll have the track preserved in its final mixdown form.

■ **Render any tracks with plug-ins or external processing.** As DAW software and operating systems are updated, some plug-ins inevitably get left behind — the company that made them goes out of business, there isn't enough demand for an updated version, or whatever. If you need to go back and make changes, it may be impossible if the plug-ins you need are long-gone.

For this reason, bounce all tracks with plug-ins such as compressors, gates, limiters, EQs, etc., to new audio tracks and files, including the plug-in processing. It's a good idea to take this a step further and bounce any tracks that are running through external hardware processors to a new track and audio file as well. Who knows when a piece of hardware might develop problems, or you might be moved to sell it? This way you'll have a processed version of the track available should you need to re-mix at a later date, even if the plug-ins or hardware processors are gone.

■ **Record any reverb or delay processing.** Just as dynamics processors and EQs that get inserted on tracks may become unavailable, so may other processors such as reverbs and delays. Reverbs, in particular, tend to have a "sound" — and you're out of luck if that specific reverb isn't around and you need to re-mix.

■ **Record any external instruments to tracks.** If you're using external MIDI-driven synths or samplers, record those instruments to audio tracks. Even if the hardware stays alive, memory gets corrupted, disks go bad . . . any number of things might prevent you from using that hardware in the distant (or not so distant) future. You're safest if you've recorded all external instruments to tracks.

At the same time, be sure to keep the MIDI tracks that drive those synths around as part of the archive. You may need them later if you decide to update the synth or sampler sounds used.

■ **Render any soft synths or samplers as audio tracks.** As with processing plug-ins and other types of software, any software synths and samplers you are using may or may not be around when it comes time to re-mix a song or create a new updated version. Render the tracks those instruments are on to new audio tracks. But don't delete the MIDI tracks that drive the soft synths or the original soft synth tracks; you may need to get back to them later.

Future-proofing your projects (as much as possible, anyway) sometimes requires a lot of effort. But it's all worth it the first time you need to go back and make changes or re-mix a song long after you've completed it and erased it from your hard drive. Go the extra mile, and bounce or render everything to audio tracks — and don't erase or delete any of the original source tracks or intermediate edit tracks. Archiving means keeping everything — and keeping it in a format you'll be able to access in the future.

While we can't plan for what we can't foresee, we can make our best stab at keeping our files accessible long into the future. Making rendered audio files is your number one defense — don't skip this vital step when archiving your projects. Future generations will thank you. . . . EQ

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cakewalk



by Phil O'Keefe

Yamaha 01X

This do-it-all box brings mLAN to the fore

Type: Audio/MIDI interface, control surface, digital mixer

Platforms: Windows XP, Mac OS 9/X

Price: \$1,699

Contact: www.yamaha.com/proaudio

Inputs: 8 mic/line ins (2 with XLR connectors and switchable phantom power, 6 balanced 1/4" jacks; input 8 has a second "hi-Z" input for guitar and bass)

Digital I/O: Dual mLAN connectors, coax S/PDIF

Outputs: 1/4" stereo (unbalanced) -10dBV monitor outs, 2 assignable 1/4" -10dBV aux outs, stereo headphone jack

Number of mixing channels: 28

Expandability: Up to 16 additional analog channels via mLAN

Computer interface: IEEE-1394 (FireWire)

Internal sample rate: 96kHz

Driver resolution: 24-bit, 96kHz

Plug-in format: VST

Faders: 60mm motorized faders (8 channel faders, 1 stereo master fader)

MIDI: 2-port MIDI interface (32 channels)

DSP: Dynamics control and 4-band parametric EQ on all 28 digital mixing channels, dual 32-bit effects processors

Footswitch jacks: Transport, punch in/out

Supported programs: Cubase SX, Nuendo, Sonar, Logic, Digital Performer, more.

Bundled software: Studio Manager, SQ01 Sequencer, 01X Channel Module, Vocal Rack, Final Master multiband dynamics, Pitch Fix formant-accurate pitch correction, demos of Native Instruments Pro53 and B4 soft synths

Tested with: Athlon 64 3400 DAW computer, Sonar 3, Cubase SX 2

When I first saw Yamaha's 01X, I thought it was just another DAW control surface with audio/MIDI interface. Turns out I was only partially correct: While the 01X is certainly those things, there's a *lot* more under the surface.

The 01X connects to your computer via a single FireWire cable — install, configure the software, and you're good to go. The main controls (aside from the motorized faders) include a scrub wheel, transport controls, and various selection switches. All of the switches are generously sized and have a solid feel; many also have an LED that indicates the currently active mode.

Eight continuously variable, detented rotary controls (they click slightly when

turned) also have built-in push switches that control several functions. For example, there are no "yes/no" type

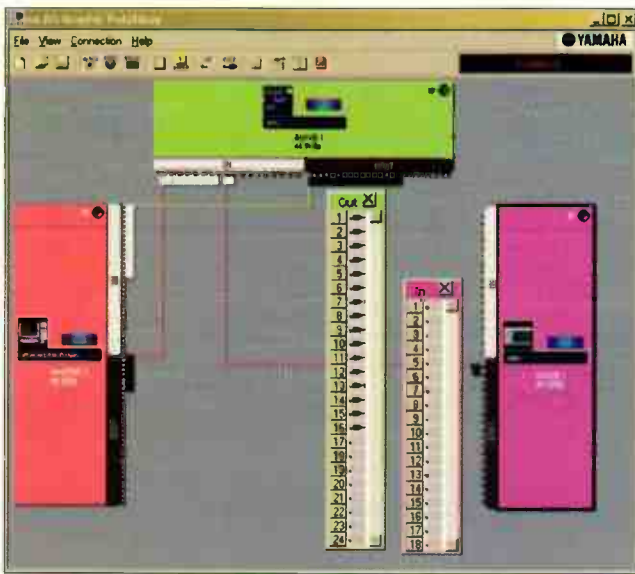
buttons; instead, the LCD lists those options, and the rotary knob switches act as select buttons — pretty neat. I was a



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bit concerned about pressing down on knobs, because the knobs themselves wiggle slightly. But in practice, they worked without any problems.

In general, I liked the mic pres; for general duty with dynamic and condenser mics, they have plenty of gain and sound fine. I'd place them somewhere between those on the Yamaha AW series standalone DAWs and the 01V96 mixer. They're fairly neutral, which is exactly what I prefer. As something of a torture test, I plugged in a Beyer M160 ribbon mic, which has a fairly low output, and recorded my Taylor 510 acoustic at a distance of around 8" from the 14th fret. While the Taylor isn't a particularly loud guitar, there was enough gain available for a useful recording, but just barely. I'd recommend an outboard preamp for low output ribbon mics, as the 01X preamps can get a little hissy at extreme gain settings.

The monitor and headphone outs share a common volume control. I would have preferred separate controls, but as most

01X users likely won't have separate control and tracking rooms, it won't be much of an issue.

CONTROL SURFACE OR MIXER?

The 01X is also a digital mixer with dynamics control and 4-band EQ. I could route unprocessed tracks directly out of Sonar into the 01X for processing; this meant fewer plug-ins needed with Sonar, reducing the load on the computer's CPU.

The S/PDIF I/O is flexible: You can assign it to any of the eight main input channels, or even to aux sends for use with hardware processors. There are also four aux sends (pre- or post-fader), and two onboard effects processors with dedicated stereo returns. These stereo return channels also have 4-band EQ, but no dynamics processors.

Overall the effects are usable, sound better than many plug in effects, and their inclusion allows taking even more of the "load" off your DAW's computer. Standouts are the early



CLEAN UP PITCH PROBLEMS AND WRONG NOTES WITH PITCH FIX.

reflection and room reverb presets. The dual pitch effect is also great for adding detuning to, say, background vocals. With libraries for EQ, dynamics, effects, and scenes included, you can use the 01X *sans* computer as a digital mixer for small group live gigs.

mLAN

You can expand I/O via mLAN, a powerful open source interface standard that uses standard FireWire cables to carry audio, MIDI, and word clock data among devices in the system (see the "mLAN Primer" article in the 5/04 *EQ*). You can even "cascade" two 01X units together via FireWire for more faders and I/O. The 01X mixer accepts up to 16 channels of mLAN audio ins (8 at the 88.2/96kHz sample rates), and each channel has the same EQ and dynamics processing as the analog ins. Speaking of sample rates, apparently the 88.2kHz option only works with Macs, although a PC runs at the 96kHz sample rate just fine.

i88X

As this was my first in-depth mLAN experience, I was glad Yamaha also sent an i88X audio/MIDI interface. It

has eight analog ins (two with mic pres and inserts), eight analog outs, Toslink stereo/ADAT lightpipe, coax S/PDIF digital I/O, and MIDI I/O connectors. The lightpipe connector handles high sample rates, and worked fine with my 01V96 mixer. However, at about 14" deep, the i88X might not fit easily in some racks.

With the exception of the first two mic/line ins (on combo Neutrik connectors), all connectors are on the rear panel, while all switches and controls are on the front. It's great that you don't have to reach around the back to, for example, turn the phantom power on or off.

Connecting the i88X to the 01X was simple — a single FireWire cable. You configure the setup with Yamaha's mLAN Manager applet, which makes it easy to adjust the settings for the audio, MIDI, and word clock routing with a graphic patchbay. Click on the source, click on the destination — done.

That's a big reason why mLAN so cool: by simply connecting two FireWire cables between three devices — computer, 01X and i88X — all three could talk to each other in any direction. There's no plugging

Yamaha 01X

and unplugging dozens of cables behind your rack, and a major reduction in the overall amount and types of cables needed.

Regarding the mLAN computer drivers, the latency was an amazingly low 1.1ms in Sonar with a 44.1kHz/24-bit song. I have a fast computer, but that's still remarkable. In Sonar (and Cubase SX 2.0, which I also

tested), all of the I/O appeared as normal ASIO drivers. I had 16 channels of audio routed out of the 01X into the computer, an additional eight routed out of the computer back into the 01X, and the i88X feeding another eight channels of audio into the 01X's mixer. That's a lot of audio for just two cables — that it all worked with no pops or clicks at such a low

latency setting blew me away. Routing more channels would place greater demands on your system, but with a fairly fast computer you should be able to meet any reasonable real-world demand.

The other really big i88X news is the mic pre quality. Using the Taylor and the Beyer, and then a Soundelux ELUX 251 on a male vocalist, produced some very clean and detailed recordings. These aren't "flavored" pres, but they rank with some of the best I've heard for transparency and clarity. The unit is worth the price for the mic pres alone; toss in the extra I/O, nice-sounding converters, and mLAN connectivity, and it's a really good deal.

FADER FINESSE?

The 60mm faders were smooth enough (and moving faders are always welcome anyway), but I've been spoiled by 100mm faders — especially those with 0.1dB resolution. The resolution on the 01X's faders is coarser, and I felt the shorter faders made precise moves more difficult. I also had to adjust the fader timeout settings in Sonar. The first time I tried to do some moves, I pulled the faders down and after a few moments they "jumped" back up to their original values. As you can adjust the time before that occurs in software, it's not a big issue. On the other hand, Cubase SX's "touch tracks" feature works fine with the 01X, and Yamaha is about to release a patch to improve remote capabilities with Sonar.

However, while longer faders would be nice, they would also add to the unit's cost. So would more analog I/O on the 01X, or more mic pres on the i88X. At these price points, I feel Yamaha made the right design decisions.

SOFTWARE AND DOCUMENTATION

The indexed manuals are generally clear, and a DVD offers over two hours of instructional material. Some of the material was out of date, but Yamaha's 01X support site www.01Xray.com has updated setup information for various DAWs, as well as a user forum.

Bundled software includes SQ01, a basic multitrack recording program (it will get you up and running, although most users will want a more full-featured DAW), Yamaha Motif synth editor (edit Motif programs on the 01X control surface), demos of Native Instruments Pro 53 and B4 soft

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Yamaha 01X

synths, and Yamaha's handy Studio Manager application. This is available for all of Yamaha's current digital mixers, and provides a graphic representation ("virtual onscreen mixer") of all 01X parameters. Control the 01X via the onscreen controls — move a fader in Studio Manager, and the physical fader on the 01X responds — and vice-versa.

Even though the whole point of a hardware control surface is "hands on" control, the software simplifies setting up channel assignments and routing, and displays compression and EQ curves — the 01X's LCD doesn't. Studio Manager is a cool program, and a fine addition.

Of the Yamaha VST plug-ins, my favorite is the 01X Channel Module — a native VST plug-in version of a 01X channel, including compression and EQ. This allows you to set up a mix "in the box" that replicates the mix you have with the 01X. Unlike Antares' Autotune, the Pitch Fix plug-in has no graphic mode, but pitch can be controlled with MIDI data.

However, Pitch Fix preserves formants while shifting, which is important for getting natural sounds. Vocal Rack is a 3-band EQ, highpass filter, and compressor designed for vocal tracks, although I used it on other sources with good results. Final Master is a multiband dynamics processor with soft clipping.

THE VERDICT

After using the 01X for a few months, the coolest aspect is that it blurs the lines between a traditional digital mixer, control surface, and audio/MIDI interface — it's all three. In conjunction with a DAW and mLAN synth, this becomes a system that allows for much flexibility in how you choose to work. Adding the VST plugs and Studio Manager blurs the software/hardware line even more. Yamaha calls it "total integration," and that's not an overstatement. Couple that with the benefits of mLAN connectivity and expansion options, and you have one very powerful package. **EQ**

Phil O'Keefe is a Southern California-based producer, engineer, and studio owner. In his spare time, he's recently launched his own microlabel (www.lurkermusic.com), and moderates EQ's online project studio forum. Contact him at www.philokeefe.com.

Strengths:

- mLAN connectivity
- Integrates digital mixer/DAW control surface/audio+MIDI interface
- Very useful software plug-in bundle
- Studio Manager control software
- DVD "getting started" guide
- 01X's onboard DSP lightens the load on your computer
- Extremely low latency with fast computers
- Excellent mic preamps in i88X

Limitations:

- Short (60mm) faders
- Manual short on current application setup information
- 01X mic preamps hiss at high gain settings

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by Mitch Gallagher

AKG C 414B-XLS and C 414B-XL II

AKG's classic mics move into the new millennium

Type: Large-diaphragm condenser microphones
Price: C 414B-XLS, \$999; C 414B-XL II, \$1,099
Contact: AKG, www.akgusa.com

Polar pattern: Omni, wide cardioid, cardioid, hypercardioid, figure 8
Capsule: 1-inch dual diaphragm
Type: Pressure gradient
Frequency range: 20 – 20,000Hz
Bass cut filter: 0, 40, 80, 160Hz (40 and 80Hz have 12dB/octave slope, 160Hz has 6dB/octave slope)
Pad: 0, -6, -12, -18dB
Sensitivity: 23mV/Pa
Self noise: 6dB, A-weighted
Signal to Noise: 88dB
Maximum SPL: 140dB @ < 0.5% THD (up to 158dB with pad engaged)
Dynamic range: 134dB

The AKG C 414 has been a studio-standard microphone for more than 30 years. In the course of those years, AKG has released five incarnations of the mic (see sidebar), all of which have been enormously successful. Now the company has created new

versions of the last generation C 414: the C 414B-XLS and the C 414B-XL II. According to AKG, the goal was to leave the mics' well-respected sonics the same, while upgrading the performance to a higher level.

The new models look much like their predecessors, but with

smooth rounded edges, which are said to reduce bothersome reflections. They're also slightly larger than older models, and feel very solid without being so heavy that they unbalance a mic stand.

The XLS has a silver grille, while the XL II has a gold grille. Both models are transformerless and utilize surface-mount electronics. The XL II is said to be identical to the XLS except for a "slight high-frequency peak above 3kHz." AKG recommends it for solo vocals or instruments, as well as for distant miking.

Taking a look at the frequency response graphs for the cardioid polar pattern, both mics have a slight dip in response (about 2dB) centered around 1,500Hz. The XLS is fairly flat until around 9,000Hz, where there's a 2–3dB peak between 10,000 and 15,000Hz. The XL II has a



THE NEW C 414B-XLS INCORPORATES 15 NEW FEATURES. THE MOST OBVIOUS ARE THE NEW PUSHBUTTON SWITCHES WITH LED INDICATORS, AND THE ADDITION OF A FIFTH POLAR PATTERN — BUT THERE'S LOTS MORE COOL STUFF UNDER THE HOOD.

THE NEW C 414B-XLS AND C 414B-XL II BOTH FEATURE THE NEW "WIDE CARDIOID" POLAR PATTERN, WHICH EXTENDS THE NORMAL CARDIOID PATTERN TO THE REAR AND TO THE SIDES.

THE C 414B-XL II IS IDENTICAL TO THE C 414B-XLS EXCEPT FOR A MID-/HIGH-FREQUENCY BOOST.

2dB rise in the mids and highs starting around 2kHz, with an extra 2dB peak between 5,000 and 6,000Hz.

Both versions can be purchased in matched stereo pairs.

CONTROLS

The new XLS and XL II offer more sonic control than their predecessors. Each mic has a bass-cut filter with four settings; 0, 40, 80, and 160Hz. The 40 and 80Hz settings have a 12dB/octave slope, while the 160Hz setting has a 6dB/octave slope. The old models had three filter settings: 0, 75, and 150Hz, all with a 12dB/octave slope.

There are four pad settings: 0, -6, -12, -18dB. On the previous models, there were three settings: 0, -10, and -20dB.

On the old C 414s, there were four polar patterns: omnidirectional, cardioid, hypercardioid, and figure 8. The new C414s have five polar patterns: omnidirectional, wide cardioid, cardioid, hypercardioid, and figure 8. Wide cardioid is like a cross between cardioid and omni, with more pickup from the rear and the slightly more from the sides.

Rather than small slider switches, the XLS and XL II have new pushbutton switches for stepping through settings. LEDs indicate which position each switch is in. When the phantom power is turned off, the last settings are remembered. If you grab the mic carelessly, it's easy to inadvertently press one of these switches and change a setting.

The LEDs serve multiple purposes: The center polar pattern LED, for example, turns red to indicate overload in the microphone's output stage. The polar pattern selector

switch indicator LEDs also help the user to visually maintain on-axis orientation when distance miking.

All switching — filter, pad, and polar pattern — is in low-impedance circuits — this is said to reduce the mics' sensitivity to humidity, whether from the environment or from moisture from a singer's mouth.

SO WHAT ELSE IS NEW?

Besides the look of the new models and the control/sound tailoring capabilities, what else has changed? AKG lists a total of 15 differences between the old and the new versions; here are a few improved specs that will be immediately appreciated.

- 6dB increase in sensitivity.
- 8dB lower self-noise.
- The 1" dual diaphragm is suspended in an elastic shockmount, which reduces handling and stand-borne noise.
- Ready for remote operation with the soon-to-be-released R 414 remote control, which operates over regular XLR mic cables.
- The list prices have come down from previous models.

THE PACKAGE

The XLS and XL II come with the PF-80 pop filter, H 85 shockmount, and a foam windscreen. The compact metal mic case has room for the pop filter, which is mounted on a gooseneck with an integrated stand clamp, the shockmount, the windscreen, and the microphone. Everything is held securely in fitted foam except the pop filter, which sits in the lid of the case.

The new H 85 shockmount is smaller than the older H 100 mount. The C 414 solidly locks in place, so you can

Through the Years

The new "X" generation C 414B microphones represent the first changes to the model since 1993 — but the lineage runs long.



■ The C 414 COMB was introduced in 1971. The first solid-state AKG large-diaphragm recording microphone; it had a hard-wired cable.



■ The 414 was reduced in size in 1976, and renamed the C 414EB. The first C 414 with XLR connectors, which were becoming the industry standard.



■ 1980 saw the introduction of the C 414EB-P48. The electronics were redesigned to accommodate 48-volt phantom power.

■ The longest running version of the mic, the C 414B-ULS, was unveiled in 1986. It was a constant in AKG's catalog until the introduction of the "X" series earlier this year. The "ULS" electronics optimized noise, distortion, and transient response.

■ In 1993, AKG brought out the C 414B-TL II, a transformerless version of the 414 that harkened back to the original C 12 in its sound.

■ 2004: The X-generation C 414s make their debut.

orient the mic at any angle or upside down. The shockmount is easy to position, and is lightweight enough that it doesn't overbalance boom stands.

The manual is quite good, with a list of recommended applications for each mic, as well as brief guides to mic placement with common sound sources and instruments.

In broad strokes, AKG recommends the XLS for acoustic instruments and

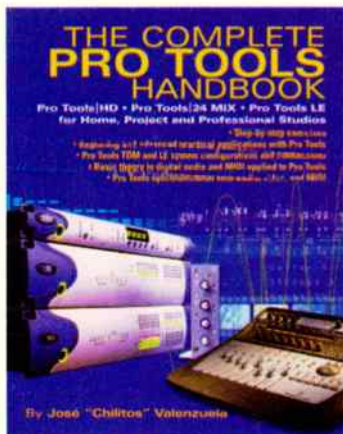
the XL II for vocals. (See the sidebar for more on the recommended applications for each mic.) Of course either mic can be used on whatever source you want to put it in front of. It's got plenty of SPL-handling capability for even the loudest sound (up to 158dB with the pad at its highest setting).

IN USE

The XLS has the familiar C414 sound — if you've

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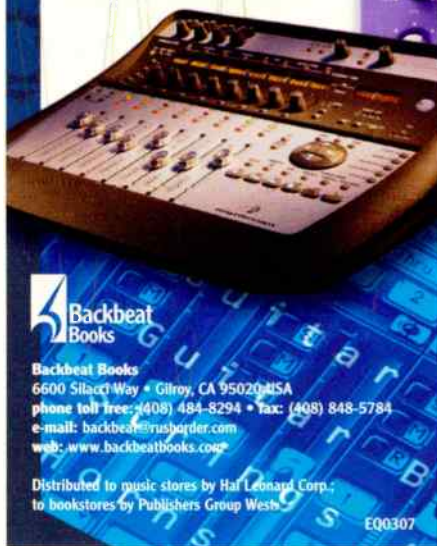


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AKG C 414B-XLS and C 414B-XL II

used a C 414B before, you'll feel right at home. There's full bottom end, present midrange, smooth top end, and controlled proximity effect. The XL II has a nice high-end boost that gives the sound a little lift; but it's not overdone or hyped; just a bit of a rise.

Both mics work well in most applications, but when you compare them side-by-side, you'll start to appreciate the differences and strengths in the two models. As recommended by AKG, the C 414B-XL II is the first choice for vocals. The slight high-end boost brings vocals forward nicely, helping them sit in the mix without making them strident or sibilant. For nylon-string classical guitar, I preferred the C 414B-XLS, which has smoother top end. The guitar sounded real and dynamic, without excess top end noise. On fingerstyle steel-string guitar, however, I liked the C 414B-XL II, for the added top-end detail and openness. I liked both mics on electric guitar, although the XLS was more true to the original, and the XL II could be slightly "fizzy" on heavy distortion tones.

On percussion, both mics work well; if you need more top end to bring out sizzle or impact, the XL II is the way to go. For smoother, natural top, go with the XLS.

The wide cardioid polar pattern is a useful addition. In some cases, a full omnidirectional pattern is too open, but a cardioid pattern doesn't get enough room. The wide cardioid offers a compromise, with solid pickup from the rear, and slightly more pickup from the sides. If you have a nice-sounding room, you'll find yourself using this pattern.

The improved self-noise allows you to cleanly capture very quiet sound sources without worry of too much hiss — you'll probably hear preamp noise before you hear mic noise. On the other end of the scale, you'll have trouble finding a source loud enough to top out the C 414s; at 158dB with the pad fully on, they can handle pretty much anything you throw at them.

The bass-cut filter is flexible. The 40 and 80Hz settings work well for vocals, etc., and provide tight bottom end. Generally I'm not a fan of low-cut filters that operate over 100Hz. But with its gentle 6dB/octave

Recommended Applications

While you can put any mic in front of any source you want (or dare) to, microphone manufacturers usually have an application or two in mind for each mic model. In very general terms, for example, AKG aims the C 414B-XLS toward instrument applications, and the C 414B-XL II toward solo vocals and vocal-like solo instruments.

Not sure whether the C 414B-XLS and C 414B-XL II is the right mic for you? Here are AKG's recommended applications for the two mics. There's overlap, but in most cases, the manufacturer recommends one mic over the other. This is, of course, just a guide. If you want to deviate from it, feel free!

(Legend: "*" indicates that AKG recommends the model for this application, "**" indicates that AKG highly recommends it.)

SOUND SOURCE	C 414B-XLS	C 414B-XL II
Solo vocal	*	**
Backing vocal/choir	**	
Speech	*	**
Acoustic guitar	**	**
Electric guitar		**
Electric bass	*	
Upright bass	**	
Violin	**	*
Cello	**	*
Zither	*	**
Grand piano (classical)	**	
Piano (rock/jazz)	**	**
Organ	**	*
Trumpet	**	**
Trombone	**	*
French horn	**	**
Tuba	**	*
Saxophone	**	**
Flute	**	**
Clarinet	**	**
Harmonica	*	**
Kick drum	**	
Toms	*	*
Cymbals	*	
Bongos/congas	*	

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



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AKG C 414B-XLS
and C 414B-XL II

roll-off, the 160Hz setting on the XLS and XL II is usable on many sources.

NEW AND IMPROVED

The C 414B-XLS and C 414B-XL II represent a nice step forward for the venerable C 414 family. The improved specs will be appreciated in this 24-bit age, as will the new features, such as the more-flexible filter and pad, LED indicators, output stage overload indication, and more. The new wide cardioid polar pattern provides a nice option for when omni is too much and cardioid is too tight. The package is complete, including a shockmount, pop filter, and foam windscreen in a fitted metal case.

But the bottom line is the sound, and the new models deliver the well known C 414 timbre — the XL II adds a nice presence in the mid and high frequencies, which makes it even better for solo voices and instruments.

If you already own a C 414B-ULS or a C 414B-TL II, you'll want to carefully consider whether the improved performance and new features make it worthwhile to move up. But if you're buying your first C 414, the new models are the way to go.

Which one should you choose? The XLS, with its smooth, flat response is ideal for general purpose and instrument applications. The XL II, with its high-frequency boost, is great for vocals, solo instruments — anyplace you want a bit more high end flavor without resorting to EQ.

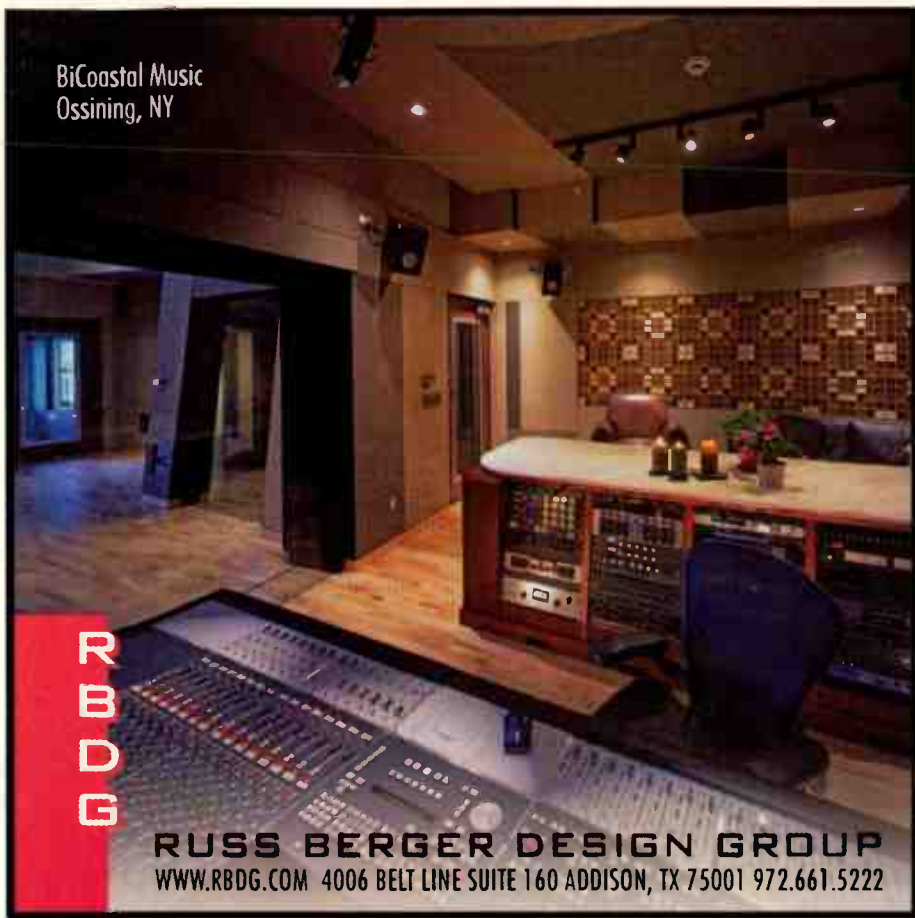
Whichever version you choose, you can't go too far wrong. You'll be getting a time-tested mic that performs well in almost any situation, with a complete selection of accessories. And maybe best of all, the price is down from the last generation. A new C 414 with improved features and specs for less money? We're talking a good deal, folks! **EQ**

Strengths:

- Same great 414 sound quality
- 4-position bass cut and 4-position pad
- Five polar patterns
- Very low self- and handling-noise
- Comes with pop filter and shockmount
- Lower prices than predecessors

Limitations:

- Pushbutton switches make it easy to accidentally change settings (the switches can be locked to prevent this)



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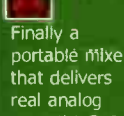
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by Mitch Gallagher

McDSP Chrome Tone

This chrome-plated guitar amp modeler shines

Type: Guitar amplifier and effects modeler

Price: \$495

Contact: McDSP, www.mcdsp.com

Platform: Mac OS X

Formats: TDM, RTAS

Minimum system requirements: Pro Tools Mix, HD, or Accel system

Copy protection: iLok

Version reviewed: 1.1

Sample rates: up to 96kHz, depending on host hardware

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

Effects modules: compression, gating, EQ, wah/phaser, tremolo, chorus/flange/delay, spring reverb

Amp types: 5 distortion types

Cabinet types: direct plus 4 cabinet types, each with close- and room-miked versions

Many guitar amp modelers have a weakness:

They generate good clean and distorted tones, but they come up short for crunchy, semi-distorted sounds. Now McDSP make their stab at the challenge. The result is Chrome Tone, a modeled guitar amp, cabinet, and effects simulator plug-in for Pro Tools Mix, HD, and Accel. (A version is also available for Roland's VS8F-3 DSP card; see page 26.)

AMP

The amp offers five types of distortion and four cabinets (each

with close- and distant-miked versions). The distortion can be tailored using a Drive control, which boosts selected frequencies going in. The amp effects include a noise gate, compressor, lowcut filter, 3-band sweepable EQ, and spring reverb. You're given full control over the compressor and gate, which are set up well for guitar applications.

The sweepable low-cut filter works for tightening up the bottom; it's a big help in controlling bass and simulating amp tones. Unfortunately, you can't bypass the filter. This is a problem with non-guitar sounds, such as bass, or with a detuned guitar. But even on regular-tuned guitar, you lose a bit of the very bottom end.

EFFECTS

Chrome Tone's effects sound great on guitar. The wah/phaser has 14 variations, including phaser alone and with the wah. The chorus/flanger/delay can be mono or stereo, and sounds lush and rich. The tremolo sounds like the real thing; it can be mono, or pulse between the channels in stereo. Each effect can be driven by a Dynamic (an envelope follower) or Auto (LFO) generator. Dynamic can operate in stereo split mode, where one side goes up while the other goes down. Both Dynamic and Auto are very deep; there's a ton of modulation control here.

You can use a number of sources for triggering the



THE STACK CONFIGURATION OF CHROME TONE COMPRISES THE AMP, WAH, TREMOLO, AND CHORUS. YOU CAN SWITCH TO VIEW EACH SECTION'S WINDOW AND ACCESS ALL OF ITS PARAMETERS.



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THE WAH CAN BE CONTROLLED MANUALLY, USING THE LFO, OR WITH THE DYNAMIC CONTROLLED BY THE INPUT SIGNAL, A SIDECHAIN, OR MIDI NOTE, VELOCITY, OR CONTROLLER. THE WAH CAN ALSO FUNCTION AS A PHASER.



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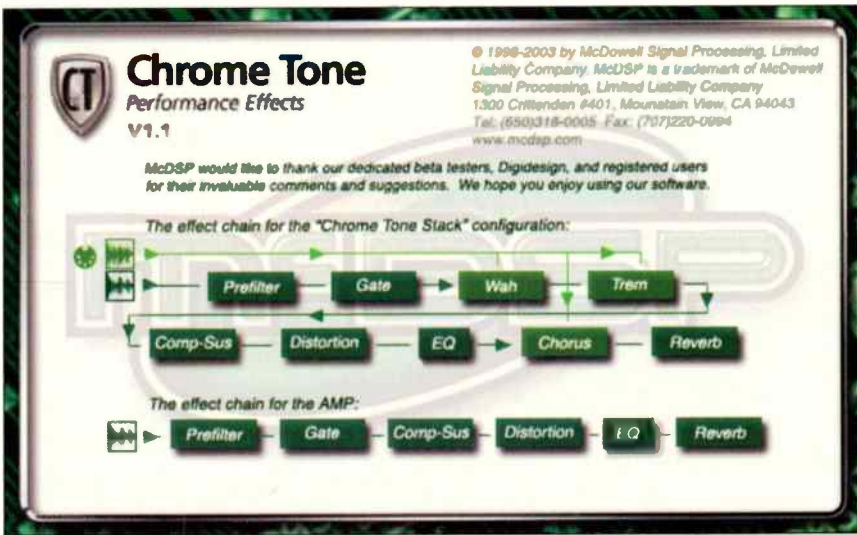
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Dynamic and Auto sections: the track's input signal, a sidechain (from a hardware input or another track), or MIDI note, velocity, or controller information. You can also sync Auto to MIDI clock. When you switch to using MIDI controllers, two additional displays appear; one lets you set the controller you want, the other displays the currently received controller number. Unfortunately, these displays are hard to see, and aren't described in the manual.

When you're using the Chrome Stack configuration, the Wah, Chorus, and Tremolo effects each have independent envelope followers and LFOs, although the selected sidechain source is shared among them.

Each effect — wah, tremolo, chorus — has its own input and output level control as well as a peak LED at their output. This allows you to easily track down where overload is occurring.

CONFIGURATIONS

You have the option to just load the effects you want; there are five configurations. This lets you use the Wah to process a signal without the amp, or to just apply chorus. You can also use the amp by itself, without the Wah, Chorus, or Tremolo. The five configurations are:

- Chrome Amp — noise gate, distortion, compression, lowcut filter, EQ, and reverb.

- Chrome Wah — wah (with envelope follower and LFO).
- Chrome Chorus — chorus/flanger/delay (with envelope follower, and LFO).
- Chrome Tremolo — tremolo (with envelope follower, and LFO).
- Chrome Stack — combines all four of the above configurations into one plug-in. The order of the effects is fixed.

EFFICIENCY

The amount of DSP that Chrome Tone uses depends on the configuration you load. On an Accel chip, these range from a low 4% for a mono Chrome Tremolo to 28% for a mono Chrome Stack. The percentages get higher in stereo, and double on an HD chip. At 96kHz sample rate, DSP usage is doubled; only an Accel system can run the Chrome Stack at high sample rates.

Amazingly, McDSP says Chrome Tone TDM has no latency; TDM incurs a 2-sample delay, which is the minimum that any plug-in (on TDM systems) can have.

CRANK IT UP

Put as simply as possible, Chrome Tone rocks. Not only can it provide great clean and distorted sounds, it manages to capture that elusive "semi-distorted," crunchy tone that some many modelers can't convincingly create. But not only do you get a powerful amp modeler, in the same package you get cool modeled guitar-style effects: tremolo, chorus/flange/delay,



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World Radio History

McDSP Chrome Tone

wah/phaser, and spring reverb, which can be used along with the amp modeler or as stand-alone processors. There's tons of control available: All parameters can be automated, and there are separate envelope followers and LFO for each effect stage.

My biggest complaint is that the lowcut filter on the amp input can't be bypassed, and this is mainly an issue with non-guitar sources, although if you're

No matter what guitar or style I was going for, I could get a sound in Chrome Tone.

into low-tuned death-metal guitar, you'll miss some bottom end, too. Hopefully this can be addressed in an update.

Chrome Tone not only sounds good, it feels right to play through. And even more important, the personality of the guitar comes through. A Tele sounds like a Tele, and a Les Paul sounds like a Les Paul. No matter what guitar or style I was going for, I could get a sound in Chrome Tone. The manufacturer presets are good demos and starting points, but you'll want to craft your own sounds — and there's plenty of power here for doing it.

If you're a Pro Tools user into recording electric guitar, Chrome Tone is one plug-in you're going to want to check out. It's fast, easy, flexible, and it sounds great. Now please excuse me, my guitar is calling. . . . EQ

Strengths:

- No latency
- Convincing semi-distorted tones
- Authentic-sounding effects can be used with amp or as stand-alone processors
- Tons of control and flexibility

Limitations:

- Can't bypass lowcut filter

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Zero-G Morphology

by Craig Anderton

Price: \$219.95

Contact: East West,

www.soundsonline.com

Strengths:

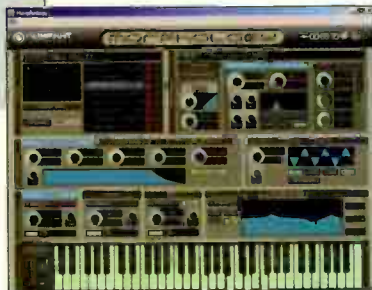
- Wonderful, evolving synth patches
- 3GB library of 24-bit sounds
- Kompakt playback engine offers extensive tweaking options
- ASIO/DirectSound/MME/SoundManager/CoreAudio, VST/DXi2/RTAS compatible
- Excellent VST automation

Limitations:

- Can control only four Kompakt controllers via MIDI (volume, pan, bend, wheel)
- No Sonar automation except recording controllers as MIDI data

This plug-in sound library uses Native Instruments'

Kompakt sample player engine (OS 9, OS X, Windows 98/ME/2000/XP) to play back superb atmospheric sounds, as well as add useful processing (filtering, envelopes, effects including reverb, and more). Kompakt loads up to eight instruments at a time, which for even more possibilities can be treated multitimbrally, layered, transposed, split, or sent to separate outs. A free, downloadable extension



allows streaming samples from hard disk.

Kompakt has some limitations (however, an update is due): virtually no external MIDI control, fixed mod wheel assignment per patch, and occasional stability issues. However, the library can also be accessed by NI's more powerful Kontakt sampler (v1.5 or above), which opens up many more options.

The 24-bit sounds are an outstanding collection of atmospheres, drones, FX, harmonic loops, industrial noises, pads, synths, a virtual synth, and voices. Many of these are rich, high-calorie sounds that can be background soundscapes or dessert toppings for your tracks, but some rude and scary noises round out the collection. And remember, these aren't static samples because Kompakt can do significant editing.

It appears that Ian Boddy, the library's creator, put a lot of thought into the categories and titles because I found them genuinely useful for finding appropriate sounds. The vocal patch called "Approaching Heaven" is, well, downright heavenly, while "Edge of Chaos" does indeed sound like you're standing at a cliff and looking down into a place where strange things happen. "Delicate C Dorian" could probably be used for crowd control — pump this over a PA, and wait for everyone to enter a state of bliss.

Especially given the price, if you're doing soundtracks, ambient, chillout, game sounds, need some cool transitions, or just want some truly inspirational soundscapes, this is a great collection — you could record a very credible "Hearts of Space"-type CD with this library alone. **ED**

by Mitch Gallagher

Radial Engineering X-Amp

Price: \$199

Contact: Radial Engineering,

www.radialeng.com

Strengths:

- Two amp outputs, one transformer-isolated
- Output level control with overload LED
- Input and output ground lifts
- Indestructible
- Can be used with a preamp as a "line driver" for long cable runs

Limitations:

- None to speak of



The quest to capture the ultimate guitar tone can be a long and arduous one. It's especially difficult if you're trying to dial in the tone in the "heat of the moment" — as the guitar player is laying down the track. If you want the most control over the tone you're recording, then the best solution is to re-amplify: record the direct guitar to a track, then play the track back through guitar amp(s) so you can dial in the sound and mic selection/placement to perfection. The problem is interfacing your recorder/DAW to the guitar amp. The solution is Radial Engineering's X-Amp.

X-Amp is descended from the JD7 (reviewed July '02); it employs the same Class A

design and active balanced input. There's an output level control and an overload LED. The unit has two guitar-level outs for feeding two amps at once. The polarity of the second, which is transformer-isolated, can be flipped.

Putting X-Amp to work is easy: hook up the wallwart power supply, run a balanced (XLR) line from your recorder to the input. Hook the 1/4" outs to your amp or stomp boxes. I connected X-Amp to my Pro Tools rig and to my Mesa-Boogie amp. Initially it appeared I would have noise problems — there was fairly high amount of hash in the amp. A flick of the input ground lift solved the problem. The amp was dead silent, even at high gain. I connected my

Marshall to Output 2 for a layered tone. Again, a blissful lack of background hum or hiss.

The best thing you can say about X-Amp is that it sounds like you're plugged straight into your amp. The second best thing is that it's so simple to use, but has cool features, such as multiple ground lifts and an output level control. The third is that it's clearly built to last a lifetime.

"Re-amping" is a way of life for me — as a back-up, I track all guitars direct so if necessary I can go back and re-record with a different tone. With the X-Amp, Radial has provided an outstanding tool for re-amping — and the price is right. Chalk up another winning creative tool for the Radial crew. **ED**

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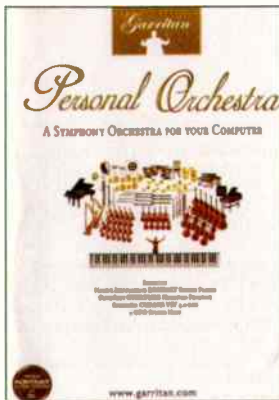
Sounds



GARY GARRITAN

Garritan Personal Orchestra

This is "the orchestral library for the rest of us": inexpensive, great sounds, awesome usability, and plenty of support to help neophyte orchestrators.



GARY GARRITAN

Garritan Personal Orchestra



Contact: Gary Garritan,
www.garritan.com

Format: 4 CD-ROMs with Kontakt instrument player

Price: \$249

Everyone's downsizing these days. After starting the trend toward supersize orchestral libraries that need storage roughly equal to the Library of Congress, Garritan's latest product — a 1.84GB sound library — fits on a svelte three CD-ROMs. A fourth CD-ROM includes accessory programs such as Cubasis VST 4, Overture SE for notation, and GPO Studio (a VST host application that

manages up to eight instances of GPO through 64 virtual MIDI ports, and allows notation programs such as Finale, Sibelius, and Overture to play GPO orchestral sounds).

The samples play back via Native Instruments' Kontakt sample player engine, which is compatible with ASIO, DirectSound, MME, SoundManager, and CoreAudio. It functions as a plug-in with VST, AU, DXi2, and RTAS hosts, as well as stand-alone.

The interface is user-friendly and takes up little screen space; it offers Tune, Pan, Volume, and up to five other parameters including pitch and timbre variation controls. There are eight

slots for loading instruments, which can be layered, assigned multitimbrally, and routed to multiple outputs. GPO can't stream from hard disk, but the library is efficient enough to fit in RAM for most applications. Besides, a streaming update is promised.

Instruments include brass, harps, keyboards (celeste, harpsichord, piano), percussion (love the glass harmonical), pipe organ, section strings, solo strings, and woodwinds. Within these are multiple categories, such as instruments programmed to make up ensembles of the user's choosing (duos, trios, etc.), and solo instruments. Instruments are available in wet and dry versions; the latter are the wet versions with reverb disabled — handy if you want to use the bundled Ambience plug-in, which is very effective. I do miss the ability to control vibrato,

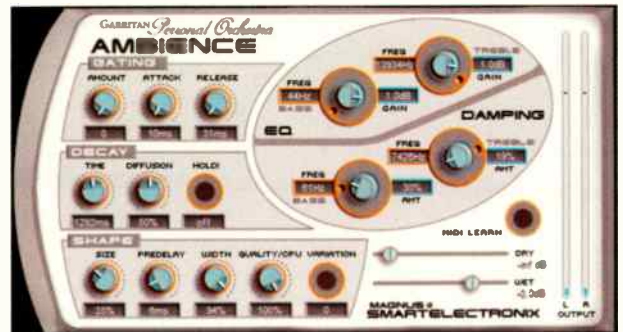
but it's embedded into the samples anyway and sounds natural.

The single most important GPO element is the manual. If you're not going to read it, don't buy GPO. Velocity doesn't relate to volume, but attack characteristics; the mod wheel is your volume and expression control. GPO is an *instrument* that's meant to be understood and played. In fact, the only automation is to record volume, pan, bend, and mod wheel as MIDI data.

Support materials are plentiful, with online resource pages for Cubase, Sonar, Digital Performer, Sibelius, Finale, Overture, Pro Tools, Logic, and Cubasis. For example, the Sonar page contains a tutorial on using GPO within Sonar, but also tips, song files, and accessory programs such as MIDI FX, percussion Instrument Definitions, an

Contest: Have You Got What It Takes To Orchestrate?

Registered owners of the Garritan Personal Orchestra can enter an orchestral work (between two and eight minutes long) in the 1st Annual GPO Orchestration Competition. The Grand Prize Winner's work will be performed by a full symphony orchestra, and broadcast live worldwide on the net; there are also a ton of runner-up prizes. The deadline for entries is December 1st, 2004. Winners will be announced at Winter NAMM 2005, and the performance will take place just prior to the Frankfurt Musik Messe. For more info, surf to www.garritan.com/competition.html.



SMF to GPO converter (remapping velocity to CC#1), etc.

A review like this can just skim the surface; we haven't even touched on integration with notation programs. You can get the specs from Garritan's web site, but here's the bottom line: With GPO, Garritan has chosen not to compete with *ne plus ultra* orchestral sets from companies like VSL, East West, Sonic Implants, and even his own (although GPO does a few tricks that even the "big boys" don't). Rather, he has produced the orchestral library equivalent of a compact car — but one with leather bucket seats, a hi-fi sound system, and surprising acceleration.

—CRAIG ANDERTON



SONY
Sonic Excursions for Acoustic Guitar

Contact: Sony,
www.sony.com/mediasoftware
Format: 2 CD-ROMs (Acidized WAV)
Price: \$59.95

Welcome to cinema world: 702MB of loops that would slide neatly into dramatic (not melodramatic) movies, with a bit of an evocative, yearning edge.

Combining loops can lead to some wonderfully complex, ethereal journeys.

J. Arif Verner's main axe is acoustic guitar, but there are also processed sounds, Ebow, prepared guitar, and chords/note elements that sound almost synthetic. Feel-wise, CD1's folder

names — Introspective, Landscape, Spacious, Texture, the Desert Dwellers, and Ebow Vibrations — clue you in to what's happening.

The main attraction is the collection of melodic figures (many fingerpicked), whose general feel leans toward new age and folk — think of the guitar work on Simon & Garfunkel's "Scarborough Fair." While this sort of thing has the potential to get annoying after too many repeats, combining loops (they're acidized very well) can lead to some wonderfully complex, ethereal journeys. Note that there's a good balance of major and minor figures.

Some loops are just plain beautiful, while others have

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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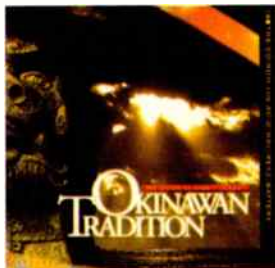
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a bit more weight to keep them from floating away. You wouldn't construct a tune with them, but you could add these loops as transitional elements in music, or even as surprising chill-out moments in dance-oriented material. To my ears, though, it seems like imagery is what this sample CD was born to support — check out the demos on the Sony web site. —CRAIG ANDERTON



Looking to add a bit of the exotic to a song? Need to create authentic atmosphere for a project? Discovery Firm's *Okinawan Traditions* has what you need. The disc contains ethnic sounds from the island of Okinawa. There are 301 Acid/WAV and 233 REX2 files, as well as a single "kit" in Native Instruments' Battery format. The kit includes nine *sanba* (also known as

"Ryukyu castanet") hits, and five *taiko* drum hits. Three brief MIDI files are included for demoing the Battery sounds.

The Acid WAV and REX 2 files feature *sanba* (phrases and samples) and *taiko* (high- and low-pitched), as well as *sanshin*, a plucked stringed instrument, *fue* and *yubi fue* (flute), and male and female voices. These are arranged into categories: Percussion, Sound Effects (just one, ocean waves), Stringed Instruments, Vox, and Wind Instruments.

You're also given construction kits in Acid WAV format. These consist of long (several minutes) one-shots and various loops. You can layer these

together to create longer songs. Various tempos are included. Documentation is minimal.

As you'd expect, it's easy to assemble the loops into authentic sounding tunes. I especially liked the percussion; the *taiko* hits and loops will find good use in my studio.

A touch of the exotic is always useful, and at \$55 (including free shipping), this library provides it at a very reasonable price.

—MITCH GALLAGHER



DISCOVERY FIRM

Okinawan Traditions

Contact: Discovery Firm, www.discoveryfirm.com
Format: 1 CD-ROM (Acidized WAV, REX2, Battery)
Price: \$55

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"Coming Attractions" are previews of new products that haven't arrived in the marketplace. These aren't product reviews, but are designed to bring you up-to-the-minute information on the next generation of cool recording tools.

COMING ATTRACTIONS

Sony ProDATA

23GB of archiving and backup on a single disc

by Mitch Gallagher

What is it? High-capacity blue laser-based optical disc storage/backup system

Who needs it? Anyone who needs to store, backup, or archive large amounts of data.

Why is it a big deal? Blue laser technology allows 23GB of data storage on a single-sided optical disc, with projected archival life of up to 50 years.

Shipping: July, 2004

Retail Price: Internal SCSI, \$2,995. External SCSI or USB 2.0, \$3,299. Write-once or rewritable discs, \$45 each.

Contact: www.sony.com/prodata

Check the online discussion forums and message boards; one of the biggest concerns facing those of us who work with digital data is backup and archiving. What do you do with all that data your computer has churned out in the process of making a CD or some other audio project?

The move toward higher resolutions and sample rates, and the need to keep alternate takes and mixes, material for different edits and versions, as well as rendered versions of tracks featuring soft synths and plug-ins only make the backup and archiving situation worse.

Yes, you could back up to CD-R — but be prepared to burn through (pun intended) a lot of discs to store even a moderately sized project. DVD-R is also a possibility, although some audio projects are getting too large even for that media. Tape drives are an option for high-capacity storage, but they can be slow, and the mechanical

nature of tapes doesn't sit well with some as an archival medium.

To address this problem, Sony has launched the ProDATA drives, which can record up to 23 gigabytes on a single-sided optical disc. (Nearly five times the capacity of a 4.7GB DVD-R and almost 32 times the capacity of a 700MB CD-R.) The discs are designed for pro storage and archiving applications.

The drives utilize blue laser technology, which can write data much more densely on a disc than previous optical storage technologies. Read speeds can reach 11MB/second, while write speeds top out at 9MB/second. The ProDATA drives have a 16MB cache — much larger than on other optical drives — which eases the load on the host computer, and reduces errors. A dual-shutter mechanism creates an airtight drive, even when media is in the drive. This resistance to dust and

other contaminants is said to increase data integrity as well as hardware durability. The disc itself, which is the size of a standard DVD, is encased in a resin cartridge to protect it from fingerprints and other contaminants. Sony's projected life for the disc media is 50 years.

Three models will be on the market by the time you read this. An internal model (BW-F101A) will interface with the host computer using SCSI-3 LVD 160, while two external models, BW-RS101 and BW-RU101, will interface to the computer using SCSI-3 LVD 160 and USB 2.0, respectively. Drivers are available for both Windows and Macintosh computers.

Two versions of the data storage media will be offered, a write-once version and a rewritable version. The ProDATA drives will ship with disc formatting and backup software packages for Mac and PC, as well as one disc.



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Authorization Required

Software authorization can be a confusing and frustrating, albeit necessary task. Here are a few tips for making the process go more smoothly.

How does it work?

Generally, the software looks for an indication that it's licensed to work on your computer. Authorization can come in various forms. Various authorization schemes are used. Two popular methods are challenge/response and hardware keys.

With the challenge/response method, you're presented with a request for the serial number or key code provided with the package. When you've entered this information, a "challenge" is given to you. The challenge is a unique string of letters or numbers the software generates by looking at your computer: the motherboard, hard drive, IP address, etc.

The next step in the process is to retrieve an authorization code or "response." In most cases, you'll visit the software developer's website to register

and enter the challenge you've been given. The system generates a unique response code specific to your system and returns it to you either at the same site or by email. (You can sometimes perform this process by phone, fax, or mail; however, online registration is typically fastest.) Once the response is entered, a license file is created and placed on your hard drive.

The challenge/response method limits the software to use on a specific computer. In some cases, more than one

challenge/response can be created for one package, and some developers allow a license to be moved from one computer to another.

Warning

Because defragmenting and optimization utilities move data around, license files can sometimes get "lost." When this happens, the software may not locate the file and may believe it's no longer authorized. Before defragmenting/optimizing your drive, check to make sure there are no issues.

The Key

Other authorizations work by storing the license on hardware keys, a.k.a. "dongles." These keys typically attach to USB ports on the computer. (In the past, keys also used serial, parallel, and ADB ports.) Because the license is stored on the key instead of the computer, it can be used on different computers (but only one computer at a time can use it). Another plus to hardware keys: If you decide to upgrade your computer, you can simply move the hardware key to the new machine (as long as the key and software are compatible with it).

Some software packages come with a hardware key with the authorization already on it. Except for perhaps installing a simple driver package, the key's presence in the system is all that's required.

But many companies are using the iLok, created by Pace Anti-Piracy. This dongle makes it possible to store many software licenses on the same key. While some packages include iLoks, others require that you purchase one separately.

Double Duty

iLoks can be authorized in two ways. Some products come with a license card that is inserted into the iLok. By following a few instructions, you transfer the license from the card to the iLok. Usually this transfer removes the license from the card so that it only exists on the key.

The second method for licensing the iLok is Internet-based activation. This requires you to log on to the software developer's site and download a license to the attached iLok.

Some developers allow you to transfer licenses from one iLok to another. This can be handy if you have several iLoks, and wish to consolidate their licenses onto one key. Each software developer has their own policy on moving licenses from iLok to iLok.

It goes without saying that an iLok loaded with software licenses is a valuable thing. Be careful with it! It's pretty durable, but it's not indestructible. Don't forget that it's connected to your computer. Don't move a computer with an iLok still plugged in. One good knock into a wall or doorjamb, and you're in trouble.

A benefit to an iLok is that by creating an account at www.iLok.com you can register all of your licenses so if your iLok fails or is broken, Pace can help you retrieve the authorizations. Pace also offers a "Zero Downtime" service to help speed the recovery of iLok authorizations.

Getting It Done

The key to successful authorization is following the instructions. Sounds simple enough, but in our rush to try a new piece of software, we often skip over steps. Don't click that "OK" button in a dialog box until you really understand the prompts. If at first you don't succeed, try again. It's not uncommon to miss a step, or to enter one wrong character in a key code. If you have a problem even after you're sure you've done your part correctly, go straight to the software developer for help. Because developers typically generate authorizations with proprietary systems, retailers and computer manufacturers won't be able to do much for you.

One last tip: Always keep a printed copy of registration codes, serial numbers, challenges/responses, and authorization codes in a safe place. **EQ**

The key to successful authorization is following the instructions.

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



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Mail your entry to: **John Lennon Songwriting Contest**
620 Frelinghuysen Avenue Suite #131
Newark, NJ 07114

Each entry must consist of:

- Completed and signed entry form (or photocopy). All signatures must be original.
- CD(s) or audio cassette(s) containing one song only, five (5) minutes or less in length.
- Lyric sheet typed or printed legibly (please include English translation if applicable). Sheets not required for instrumental compositions.
- Check or money order for \$30.00 per song (U.S. currency only) payable to John Lennon Songwriting Contest. If paying by credit card, \$30.00 per song will be charged to your account.

Entries must be postmarked no later than September 28, 2004.

Please read all rules carefully, and then sign your name in the space provided. If entrant is under 18 years old, the signature of a parent or guardian is required.

1. Each song submitted must be contestant's original work. Songs may not exceed five (5) minutes in length. Songs may have multiple co-writers, but please designate one name only on the application. Contestant may submit as many songs in as many categories as he/she wishes, but each entry requires a separate cassette, CD, or MP3 file, entry form, lyric sheet, and entrance fee. One check or money order for multiple entries/categories is permitted. (Entrance fee is non-refundable. JLSC is not responsible for late, lost, damaged, misdirected, postage due, stolen, or misappropriated entries. The JLSC is not responsible for faulty file uploads accompanying online entries.)
2. Twelve (12) Grand Prize winning songs (words with music or instrumentals) will receive \$5,000 in Yamaha project studio equipment, a \$5,000 advance from EMI Music Publishing, and 1,000 CDs in full color, premium 4-panel

Digipaks, worth \$1,990 courtesy of Discmakers. One (1) Grand Prize winning song (words with music or instrumentals) will receive \$20,000 for the "Song of the Year" courtesy of Maxell. Thirty-six (36) Finalists will receive \$200 gift certificates from MusiciansFriend.com.

3. One (1) Grand Prize winner of the Lyrics category will have their words set to music and recorded on board the John Lennon Educational Tour Bus, and will receive 1,000 CDs of their winning song courtesy of Discmakers.
 4. Contest is open to amateur and professional songwriters. Employees of JLSC, their families, subsidiaries, and affiliates are not eligible.
 5. Winners will be chosen by a select panel of judges comprised of noted songwriters, producers, and music industry professionals. Songs will be judged based on melody, composition and lyrics (when applicable). The quality of performance and production will not be considered. Prizes will be awarded jointly to all authors of any song; division of prizes is responsibility of winners. Void where prohibited. All federal, state, and local laws and regulations apply.
 6. One (1) winning songwriter's band will be selected by WARPED TOUR '05 organizers to tour and perform for one week on WARPED TOUR '05. Performance will be considered.
 7. Winners will be notified by mail and must sign and return an affidavit of eligibility/recording rights/publicity release within 14 days of notification date. The affidavit will state that winner's song is original work and he/she holds all rights to song. Failure to sign and return such affidavit within 14 days or provision of false/inaccurate information therein will result in immediate disqualification and an alternate winner will be selected. Affidavits of winners under 18 years of age at time of award must be countersigned by parent or legal guardian. Affidavits subject to verification by JLSC and its agents. Entry constitutes permission to use winners names, likenesses, and voices for future advertising and publicity purposes without additional compensation.
 8. CDs, cassettes, and lyrics will not be returned. Winners will be announced on January 18, 2005 on the contest's website www.jlsc.com.
- I have read and understand the rules of the John Lennon Songwriting Contest and I accept the terms and conditions of participation. (If entrant is under 18 years old, the signature of a parent or guardian is required.)

www.jlsc.com

SIGNATURE _____ DATE _____

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Tommy Lee: Drums

In

producer Scott Humphrey's mega-home studio, the Chop Shop, Tommy Lee is letting rip on his massive kit. "Tommy typically says, 'It sounds too normal, make it sound different' and that's as far as the instructions go," says Humphrey. "I've tried so many different things with him . . .

real dry, real ambient, always trying to find something different. This last experiment was, how big could we get the drums?"

Relying on vintage equipment, unorthodox methods, and his sonic wizard Chris Baseford, Humphrey achieved what may be the biggest, baddest drum sound around.

DATE: May 2000 – present
STUDIO: The Chop Shop
LOCATION: Los Angeles, CA
ARTIST: Tommy Lee
PROJECT: Tracking drums for a collaboration
PRODUCER: Scott Humphrey
ENGINEER: Chris Baseford

SIGNAL PATH

"On the kick drum we use a [Neumann] FET U47 through a Universal Audio 610 mic pre into a Lang PEQ2 EQ," Baseford explains. "We also had a Sennheiser 421 on the kick going to a 610 mic pre into a Mercury EQP and then to our secret box, which will remain nameless. We also used a Shure 520 ('The Green Bullet') into an

old Ampex 350, which is what we reach for when we're going for something trashy. The kick drumhead we used was Ambassador coated. We left the front with no holes, just a regular head.

"On the toms we used an Audio-Technica AE3000 going into a 610. A few inches back we had an Audio-Technica AT4047 and that was going into a Neve 1073. We put a Pultec EQP1 or 1A3 across the tom as well. We were using the AE3000 to trigger the AT4047 through a Drawmer gate — the AT4047 is gated.



Two mics were positioned above the snare drum, and a third was positioned below. The mic below was gated to cut down on leakage.

"For the snare we used the Audio-Technica AE5100 and that was going through a Neve 1081 and into an 1176 and also a Pultec MEQ5. We had an AKG D19 going into a 1081 and a Shure SM57 on the bottom snare. We also had a 57 that fed an Ampex 350 . . . the 57 was gated and EQ'd through a Focusrite ISA430 before it hit the 350. That was just to get some 'gank' on the snare. The hi-hat was a [AKG] 451 into a 610.

"About four inches above Tommy's head we had a Coles 4038 feeding an Ampex 351 going to an 1176. Right next to that there's a RFT bottle mic; the one with interchangeable capsules. It has an M7 capsule on it. The RFT was going into a Manley Vox Box.

"Our room mics were two RFT's going through 610s as well. They were spread really wide, almost at the side of the kit. The cymbals were B&K 4011s going through the dbx 786. All of this is going through the SSL 4000 G+. We recorded everything to an Ampex MM1200 2-inch." ▶



Scott Humphrey and Tommy Lee at the Chop Shop's SSL 4000 G+ console. External mic preamps were used for tracking Lee's drums to an Ampex 2-inch analog recorder.



The Chop Shop features an elevated stage that's used for recording drums. Great care is taken to orient the kit so it sounds best in the room.

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Session File

MIC POSITION

"It use to be a squash court," laughs Humphrey of the Chop Shop's drum room. "I built this room exclusively to record drums in. The drums sit on a round stage that's elevated about 12 inches and about 10-12 feet in diameter. The room is a combination of cement, brick, and wood.

"Before Tommy came in, we tried placing the drums facing different spots in the room, and did some pretty intense listening. We usually start with walking the low tom around to see where the best bottom end is and from that point try to figure the angle where the bass drum and low tom are the biggest and use that as a starting point.

"Mic position really comes down to how it sounds at the source. If it doesn't sound good, it doesn't matter what you do, it'll never sound good. If it does sound good at the source, it's pretty hard to f*ck it up. But all it takes is two of those mics not completely in-phase and the whole thing falls apart.

"On the kick we're 3-6 inches off with the U47, and the 421 is about the same distance from the front head, but about six inches to the side, off-axis," reveals Baseford. "The Green Bullet was 12 inches back, up a little higher, facing the center of the front head.

"The AE3000 is 2-3 inches off the top tom head pointing where the stick hits the skin. The AT4047 is about 8-10 inches above the AE3000 pointing at the same spot. You have to spend a lot of time to get the right height so everything is in-phase.

"We had the AE5100 and the D19 on the snare on an X/Y mic bracket so we could get two mics off the same stand. I had the 57 taped to the D19, about 1-2 inches off the top head pointing where the stick hits the skin. We were close-miking the cymbals."

PROCESSING

"Other than some vintage tube EQ's and compressors, we're not really doing

processing," muses Humphrey. "We spend so long getting the mic placement just right, not much processing is needed."

"Very minimal EQ — just a little bit here and there for the most part," agrees Baseford. "There was no EQ on the toms for example. On the snare I think I might have added a little high-mid, 1 or 2dB."

TRACK NOTES

"When I first started working with Tommy it was a typical miked drum kit like anyone would do," reflects Humphrey on how his technique has evolved over 14 years of working together. "It would just be 421s on the toms, although back then I was just doing close mic stuff, I didn't have a second tom mic. I prefer the sound of a microphone 6-8 inches off the tom rather than the tight mic way of doing it, which is the most drastic difference from the way I record Tommy's drums now. I think everything else is pretty much the same." EQ

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Alesis	401-658-5760	www.alesis.com	51
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Auralex Acoustics	317-842-2600	www.auralex.com	54
B&H Pro Audio	800-947-5518	www.bhproaudio.com	89, 99
Backbeat Books	408-848-8294	www.backbeatbooks.com	74
Backstage Lounge		www.musicplayer.com/lounge	46
Blue Microphones	818-879-5200	www.bluemic.com	69
Boynton Pro Audio	800-645-7098	www.boyntonproaudio.com	29
Broadcast Supply Worldwide (BSW)	800-426-5780	www.bswusa.com	101
Cakewalk	888-CAKEWALK	www.project5.com	65
Cakewalk	888-CAKEWALK	www.sonar3.com/wertico	11
Conservatory Of Recording Arts & Sciences	800-562-6383	www.cras.org/eq.html	34
Digidesign	650-731-6300	www.digidesign.com	C2
DigiTech	801-566-8800	www.guitarworkstation.com	38-39
Disc Makers	800-468-9353	www.discmakers.com/eq	68
Discrete Drums	800-387-5720	www.discretedrums.com	42
eBay		http://instruments.ebay.com	44-45
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E-MU	877-742-6084	www.emu.com	75
Entertainment Media Expo / Surround 2004		www.entertainmentmediaexpo.com	81
Focusrite	866-FOCUSRITE	www.focusrite.com	25
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Genelec	508-652-0900	www.genelecusa.com	1
Illbruck / Sonex	800-662-0032	www.illbruck-sonex.com/eq	87
International Songwriting Contest		www.SongwritingCompetition.com	70
John Lennon Songwriting Contest		www.jlsc.com	93
Korg	516-333-8737	www.korg.com	5
M-Audio	626-633-9050	www.m-audio.com	19
Mackie	800-898-3211	www.mackie.com	17
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Sweetwater Sound	800-222-4700	www.sweetwater.com	108-109, 110-111
TASCAM/TEAC America	323-726-0303	www.tascam.com	3, 61
Unison International Song Contest 2004	213-673-4067	www.unison.com	96
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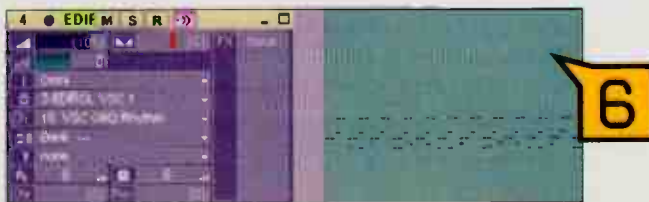
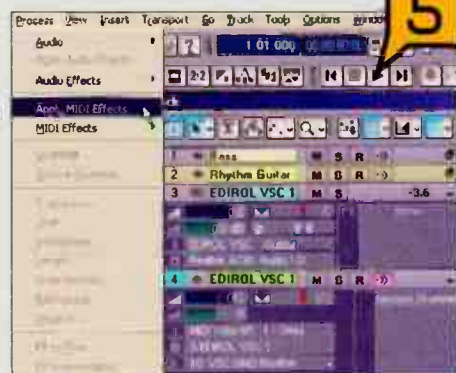
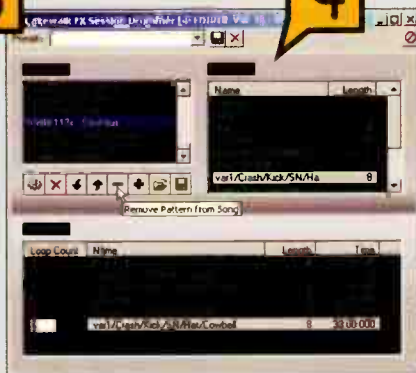
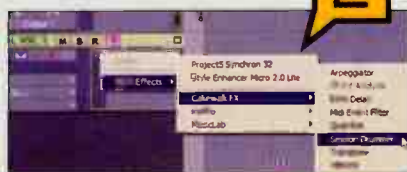
Cakewalk Sonar

Instant drum parts: just add MIDI effects

Objective: Create a scratch drum part — fast!

Background: Sonar's Session Drummer MIDI FX lets you string together patterns into a song, just like a drum machine. You can then render this to a track as MIDI data suitable for driving a drum sound generator.

Step by Step: There's no bouncing among steps; this is a continuous progression from start to finish.



1 First, you need a drum instrument for the session drummer to play. The Edirol VSC included with Sonar has a General MIDI drum kit that works well for scratch parts, so go *Insert > DXi Synth > Edirol VSC*.

2 Right-click in the Edirol VSC MIDI track's effects field, and go *MIDI Effects > Cakewalk FX > Session Drummer*.

3 Choose a Style, then click on a Pattern. To audition the Pattern, press Play on Sonar's Transport bar. To add a Pattern to the song, double-click on the Pattern name.

4 Keep auditioning and double-clicking on Patterns until you've created a song. To hear the song from start to finish, select any song Pattern, then press Play in the Transport bar. Note that you can edit the Loop Count (the number of times the Pattern repeats); a Toolbar allows deleting steps or moving them in the hierarchy.

5 When the song is as you like it, close the session drummer box and with the MIDI track containing Session Drummer still selected, go *Process > Apply MIDI Effects*.

6 The part renders as MIDI data on the selected track. Done!

tips

- When you apply the MIDI effects, you have the option to delete the track effect upon rendering, or leave it inserted. It's probably best not to delete it in case you want to make changes but if all is well, then go ahead and delete it manually (right-click on the effect, then select Delete).
- The Toolbar's left-most icon (Plugin Settings) allows editing of the drum map being used for the song.
- Songs can be loaded or saved using the two rightmost Toolbar icons.

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Steinberg Cubase SX

Create periodic effects like tremolo and autopan the easy way

Objective: Generate periodic automation curves automatically, using any one of several available waveforms.

Background: Cubase's line drawing tool allows you to draw curves other than straight lines, including Parabola, Sine, Triangle, and Square. These can draw MIDI notes or change MIDI controller values, but they also work for audio automation.

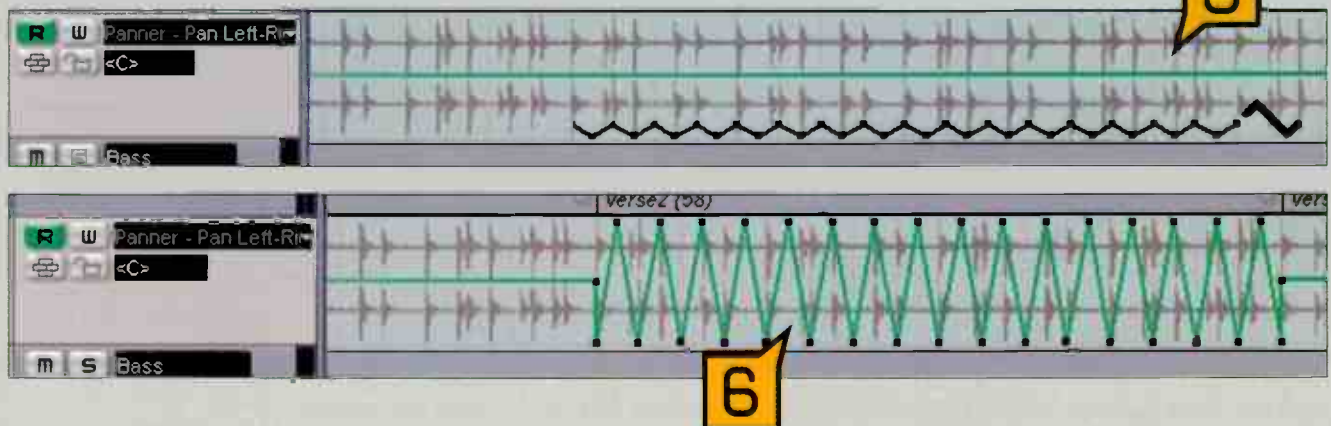
Step by Step: Here's how to use automation to generate periodic effects.



- 1 Unfold a track's automation subtracks and choose the parameter you want to control (in this case, Panner is selected).
- 2 To set the rhythmic value for the periodic waveform, select Grid mode, set Grid Type to Use Quantize, and mouse down the Quantization field for the desired rhythmic value.
- 3 Enable Snap to Grid by clicking on the Snap button, which turns it from gray to blue.
- 4 Click on the Line tool's downward triangle, and select the desired curve (in this case, Triangle is about to be selected).
- 5 Click the left side of the cursor where the automation curve should begin (or the right side where the curve should end), then drag horizontally to select the range where you want the periodic waveform.
- 6 While still holding down the mouse, drag up to increase the curve's amplitude, or down to decrease. When you release the mouse button, the completed curve will turn green.

tips

- After drawing the curve, Cubase helpfully enables the Automation Read (R) button in order to play back the automation data.
- To automate a second parameter with the same characteristics, repeat steps 1, 5, 6, and 7.
- Cubase automatically generates nodes that define the curve. Use the standard Object Selection (Arrow) cursor to manipulate these.
- While you're dragging to create a region, press Ctrl (Mac: Cmd) to change the automation's start point's "phase" with respect to the curve; Alt+Ctrl (Mac: Opt-Cmd) moves the entire curve.



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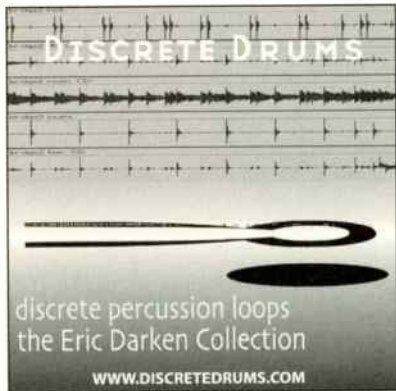
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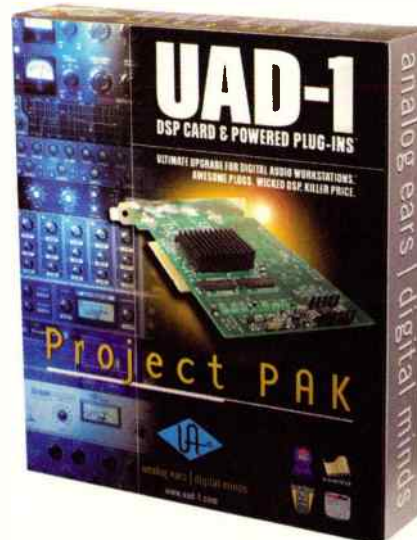
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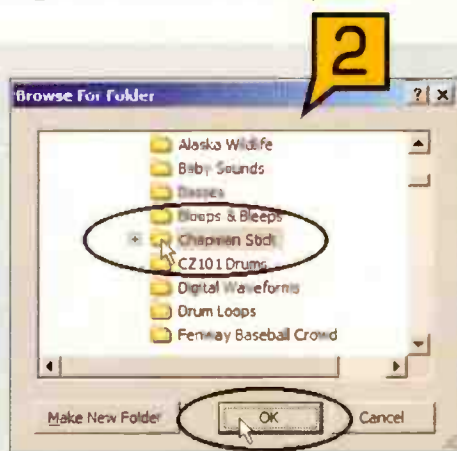
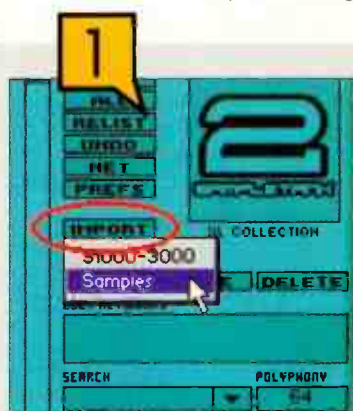
IK Multimedia SampleTank 2

Make your own instruments for SampleTank 2

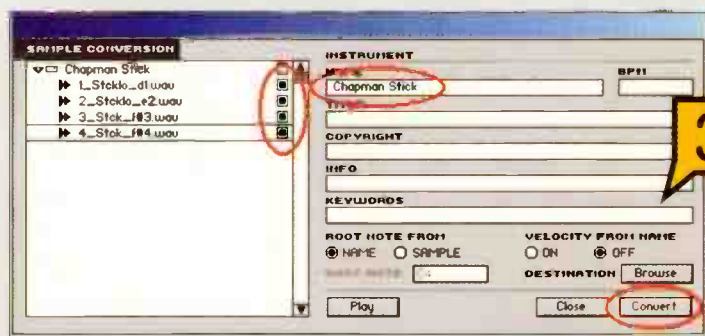
Objective: Use your own samples to create instruments for SampleTank 2's sound library.

Background: In addition to sample playback, SampleTank 2 can also import samples, map them, and add a preset with those samples to the instrument list in the Browser.

Step by Step: Before doing any steps, make sure the sample's root note name appears within the sample name (e.g., BASS_D#1), and collect all the samples for the instrument in one folder.

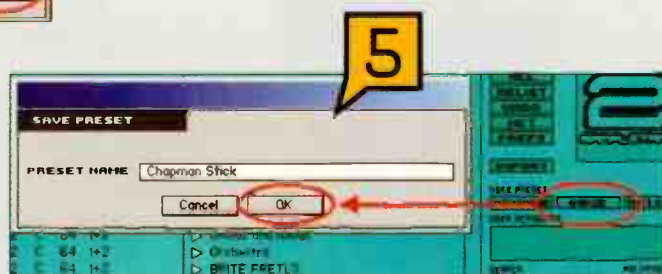
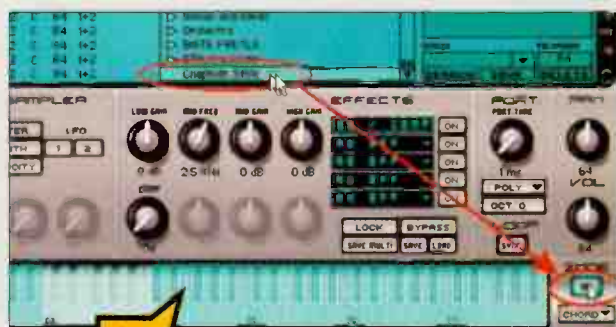


- 1 After opening up SampleTank 2 in your host, click on "Import" and select "Samples."
- 2 Navigate to the folder containing the samples you want to use, click on it, then click on "OK."
- 3 The Sample Conversion window appears. Click in the square icon to the right of the samples you want to import (each turns black to indicate the sample's selected), enter at least a name for the instrument, then click on "Convert." This maps all samples automatically to different Zones, based on the note information.



- 4 The new instrument will appear at the bottom of the Browser window. Double click on its name, then turn on the button under "Zone." When you click a note on the virtual keyboard, you'll see its related Zone.

- 5 Don't forget to save!



tips

- In step 3, although only the instrument name is required, filling in the other fields will take better advantage of SampleTank 2's search engine.
- Also in step 3, you can click on "Sample" instead of "Name" and enter the sample's root note manually.
- You can save additional presets based on these samples using different effects, envelopes, etc.

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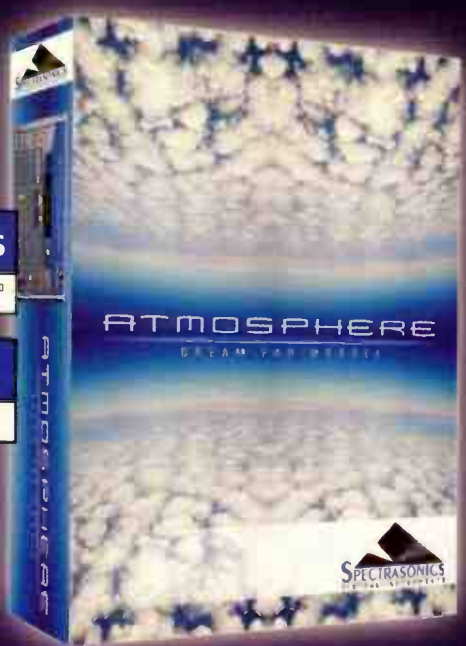
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OTHER: Numerous guitars, basses, and amplifiers; extensive video equipment

[Note: Most gear is duplicated in the two control rooms]

STUDIO NOTES: According to Chris Peterson, "Heavy Melody composes original music and does sound design for television, film, and video games. We moved into this space in September of 2003 and picked this building because it's two blocks from Penn Station and is near most major subway lines.

"We designed the space to best suit the way we work, which is always on tight deadlines. A notable feature is our shared live room — one window faces Neil's studio and the other faces Dave's. We've literally had singers and musicians perform for one of us then turn right around and perform for the other.

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"When recording vocals and guitars, we use a pair of Neve 33122s going into a Universal Audio 2-1176. Then the signal hits an Apogee PSX-100SE into Digital Performer — from that point the signal remains digital. We've even moved away from hardware synths and samplers and into soft synths. We still use the old gear, but the soft synths sound great and give us the ability to recall each session instantly, exactly as it was saved.

"While our space is functional, it has a warm and comfortable vibe. We have a big lounge with a couch, TV, DVD player, Xbox, Playstation, bar, and kitchen. It's a good place to be creative and get a lot done, but it's also a good place to just enjoy music. And that's the whole reason we got into this in the first place."

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