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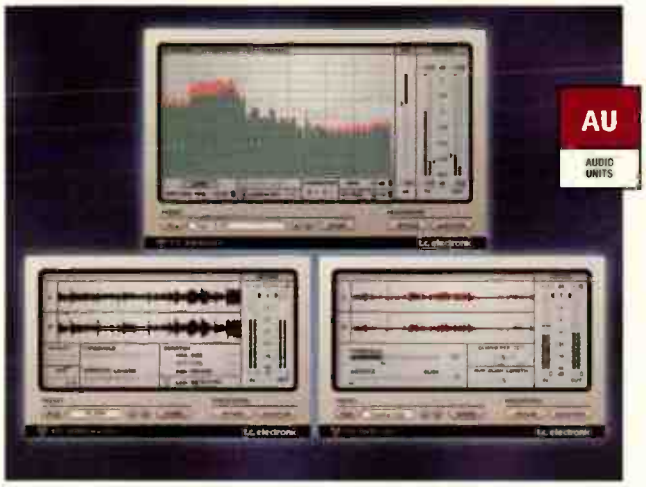
TC Electronic Restoration Suite

Ground-breaking audio restoration plug-ins for DP4

TC Electronic revolutionizes audio restoration with the new Restoration Suite for the PowerCore platform. Powerful, fast and easy to use, this bundle of hi-end restoration plug-ins provides descratching, denoising and declicking for the most critical applications in audio restoration. The descratching algorithm, based on a collaboration between TC Electronic and Noveltech from Finland, employs a breakthrough first-to-market technology and delivers incredible results. Both the Denoiser and Declicker plug-ins are based on TC's many years of experience in the field of restoration, now with extended functionality. Restoration Suite is one of the first hybrid plug-ins, utilizing CPU and PowerCore DSP processing at the same time to combine the best of both worlds for optimal sound quality and best real-time results.



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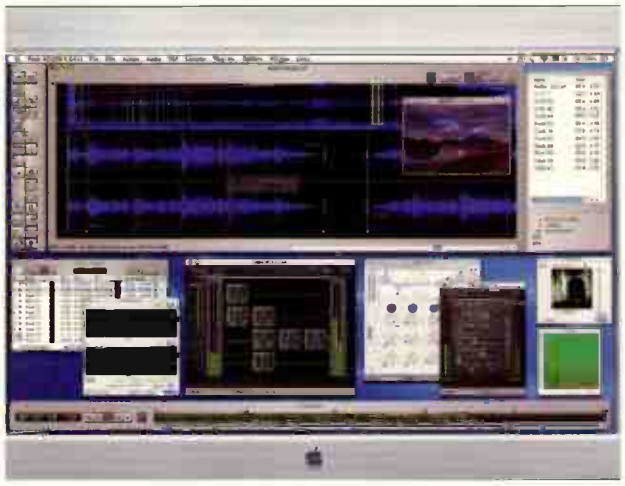
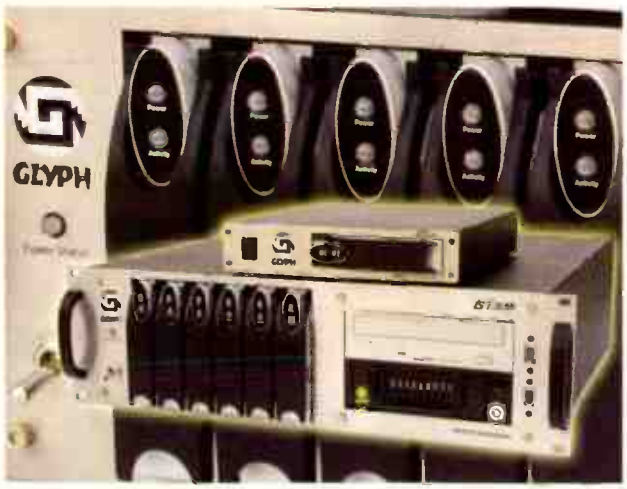


Glyph Technologies GT 308

Ultimate backup and storage for your MOTU desktop system

The Glyph Technologies GT 308 is the perfect all-in-one storage and backup solution for the MOTU desktop studio. A 3U rack-mount eight-bay enclosure, the GT 308 comes with up to six hot-swappable GT Key FireWire drives, perfect as target drives for multitrack audio recording, storing your MachFive soundbank folder or temporary archiving of your DP4 projects. The right-hand expansion bays offer options of AIT backup, SCSI hot-swap receivers, DVD-R/RW and/or CD-R/RW. Like other GT Series solutions, the GT 308 features QuietMetal™ for ultra-quiet performance and Glyph's Integrity™ FireWire hot-swap technology to ensure the best reliability and performance. Included with the GT 308 is the GT 051, a tabletop hot-swap enclosure that makes content more portable and expansion easy.



ADAM Audio P11A Studio Monitors

Two-way shielded active monitors for your MOTU studio

With groundbreaking innovation in electro/acoustic transducers, no-compromise design, superior materials and the same A.R.T. (Accelerated Ribbon Technology) folded ribbon tweeter found in all ADAM monitors, ADAM's P11A two-way shielded active monitors deliver your mix with astonishing clarity. Connect a pair to the main outs of your MOTU 828mkII FireWire audio interface — or any MOTU I/O — to hear your mixes with unique imaging and outstanding transient response at a very attractive price point. Europe's "Keyboards" magazine held a studio monitor shootout between no less than 25 professional monitor systems, and the ADAM P11A's came out at the top of the heap. One listen, and you'll be hooked, too!

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World Radio History

Room with a VU

by Mitch Gallagher

STUDIO NAME: Mojo Vegas Recording Co.
LOCATION: Ringwood, NJ
CONTACT: www.mojovegas.com
KEY CREW: Steve Brown, owner, producer, engineer; Jim DeSalvo, engineer, mastering; PJ Farley, producer
CONSOLE: Mackie 24/8
RECORDERS: TASCAM DA-88 [3], CDR-700 [2], DA-30
MONITORS: Mackie HR-824, Yamaha NS-10, Auratone, Sony MDR7506 headphones
OUTBOARD: FMR Audio RNC, Behringer Multicom, AutoQuad; ART Levelar [2], dbx 163x, Korg DT1 Pro tuner, Peavey Q215
EFFECTS: Antares Auto-Tune, TC Electronic M300 [2], Digitech Vocalist, SansAmp GT-2, SansAmp Bass DI, assorted Maxon, Guyatone, and Boss pedals
MICROPHONE PREAMPS: Focusrite VoiceBox, Behringer Ultragain Pro, Behringer Ultra DI
MICROPHONES: Neumann TLM103, Audix OM5 [4], Audio-Technica ATM25 [4], AT4051 [2]; Shure SM57 [4], Radio Shack megaphone
SAMPLERS/KEYBOARDS: Akai S1000, Korg Triton, Roland Super JV, Peavey DPM-V2
COMPUTERS: Apple Mac G4, Carrillon PC
DAW: Digidesign Digi 001
SOFTWARE: Digidesign Pro Tools LE, Sonic Foundry Acid, Steinberg Nuendo, Emagic Logic
GUITARS: Peavey Wolfgang, one-of-a-kind Hamer V, Les Paul; Fender Custom Shop Telecaster, Stratocaster; Guild steel-string, Taylor steel-string, Schoepher Les Paul 12-string, Kramer bass, Takamine nylon-string
AMPLIFIERS: Peavey 5150
CABLES: George L, Monster
POWER CONDITIONING: Furman PL-8
STUDIO NOTES: "I've had the studio in my house here in Ringwood, New Jersey, for 10 years," says Mojo Vegas owner Steve Brown. "After the success of Trixter [Brown played guitar in the platinum-selling metal band, and wrote many of their hits], the dream was to have my own version of Eddie Van Halen's 5150 studio . . . so we built Mojo Vegas, a.k.a. 6160.

"Maz, the guitarist in my new band 40 ft. Ringo, and I constructed the studio in the unfinished basement of my house. No big-deal acoustic treatment — just a great room to make records. I'm very much into simple recording: I put the mics up, add a little compression and EQ when I mix, and boom . . . *rock*!

"The studio has been the creative underground lair for me and my partner-in-crime, PJ Farley [bassist in Trixter and 40 ft. Ringo] — we've played together for 15 years.

"We've made a bunch of records here and now we're producing and writing for other artists. I do a lot of work with Creative License Company in New York, where I've placed music with Pfizer, Intel, and Fox TV. I'm also a member of Taxi, where I submit a lot of music.

"Currently, we've just finished mixing a great band from Oklahoma called The Stellas, live at CBGB, we're starting to record the second 40 ft. Ringo CD, and we're shopping a deal for Tommy Lee's guitar player, J3. As we've learned in this crazy music biz, you have to have a bunch of things going at all times to keep the money rolling in."

HEY, *EQ* READERS. WANT US TO FEATURE YOUR STUDIO? SEND PICS AND INFO TO mgallagher@musicplayer.com.

World Radio History

Todd Thibaud Band ©Thomas Merkirch www.t-online.de

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Photos shown with optional AIB-8 analog input board.

D16XD

World Radio History

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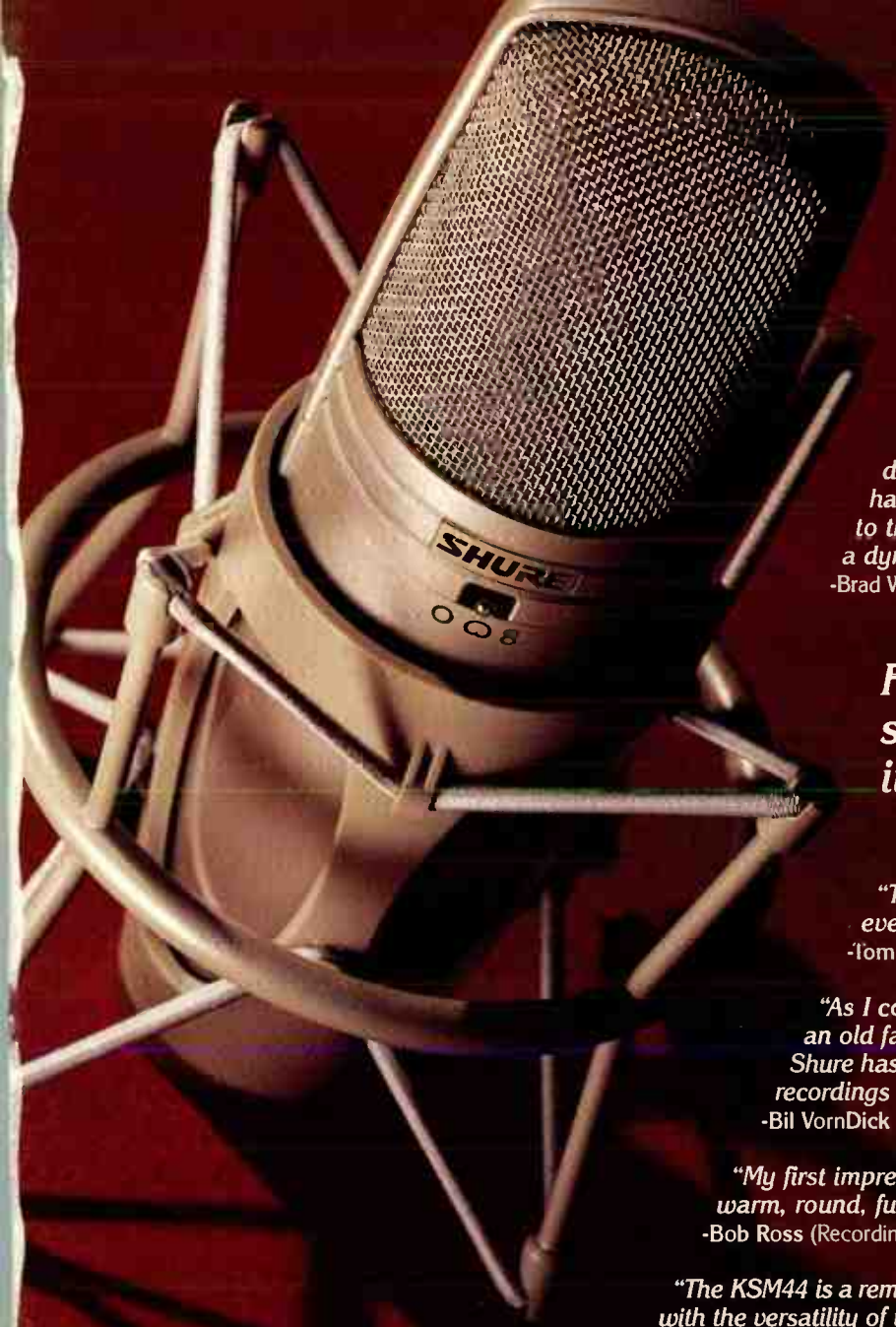

"The KSM44 has amazing presence on vocals. It's a great all-around condenser mic."
-Eddie Kramer (Jimi Hendrix, Led Zeppelin, Kiss, the Beatles, ...)

"I found the KSM44 to have an excellent natural quality with good presence and a nice open top end. This mic is so smooth in the midrange, even a banjo sounded good!"
-Joe Chiccarelli (Beck, U2, Elton John, ...)

"I tested the KSM44 on vocals, bass, guitar, and drums, and haven't stopped using it since. It's hard to describe, but there is an immediacy to the KSM44 that is very appealing – sort of like a dynamic mic, but more elegant."
-Brad Wood (Smashing Pumpkins, Liz Phair, Better Than Ezra, ...)

For a mic with such low self-noise, it sure creates a lot of buzz.

"The KSM44 is the quietest microphone I have ever used, and one of the best sounding too."
-Tom Jung (Pro Audio Review, DMP Records, ...)

"As I compared the KSM44 to a mic I consider to be an old favorite, my ear immediately chose the KSM44. Shure has a fantastic studio mic that I can use for critical recordings – it's going to become a standard, very fast."
-Bil VornDick (Alison Krauss, Bela Fleck, Mark O'Connor, ...)

"My first impressions of the KSM44 were warm, round, full – dare I say it? Fat!"
-Bob Ross (Recording Magazine)

"The KSM44 is a remarkable achievement. I am especially impressed with the versatility of this microphone and have yet to find its limits."
-Steve Albini (Nirvana, Page and Plant, PJ Harvey, ...)

"I was given the KSM44 prototype early-on, not knowing its intended purpose - so I tried it on everything. Guess what, it worked on everything!"
-Chuck Ainlay (Trisha Yearwood, Mark Knopfler, George Strait, ...)

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The KSM44 multi-pattern studio condenser microphone has become quite the conversation piece in studios around the world. Maybe that's because its incredibly low self-noise (7 dB) lets you record only what you want to hear. Or maybe it's the three polar patterns and the design of the externally biased dual-diaphragm cartridge. Once you experience it for yourself, you'll be talking, too. To discover what makes the KSM44 so buzzworthy, call 1-800-25-SHURE or visit www.shure.com.

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World Radio History

Talk Box

Vol. 14, No. 12
December 2003

THE YEAR IN REVIEW

For those of us who live the nose-to-grindstone studio life, months tend to fly by — and 2003 has been no exception. With 2004 just around the corner, we can all zoom out a bit, close the chapter on the previous 12 months, and consider what we've done with that time. Were we more or less prolific than in years past? Did the quality of our work improve? Did our studios and methodology evolve? Did our music find a global audience, or was it kept closer to home?

On a practical note, December represents a great opportunity to make an archive of all the sessions from the past year. I've been doing this for over a decade, and have a Brinks safe stuffed with CDs, DATs, and ADAT and DA-88 tapes as a result, with each carefully labeled and date-stamped. I also keep a duplicate set squirreled away in another location for safekeeping. Even though I faithfully make backups during and after each project, putting together a tidy year-end compilation (or "box set") has proven beneficial. On several occasions I've revisited some demos that never saw the light of day, and turned them into something new and viable. Other times I've taken little riffs or sounds from a previous session and put them to good use in a new project — especially useful during those breakneck deadline situations when you know exactly what you need, and that drum fill from Project #156 will work perfectly. Perhaps this will be the year that you start an archive, if you haven't already.

Speaking of yearly recaps, 2003 has been a noteworthy year for *EQ* magazine. In June we debuted our redesign, as well as the newly expanded editorial team. As we go to print, we've learned that *EQ* has been selected as a finalist for "Best Redesign" award at the upcoming Ozzies (an annual event hosted by *Folio* magazine). We hope you've been enjoying the new *EQ* as much as we have, and we look forward to celebrating many more Decembers with you in the future.

—Greg Rule

The BAND STAND

Name a recording, editing, or mixing tip that has served you well.

Greg Rule, Executive Editor
If you're using stereo drum loops, split them apart at the transients (*á la* ReCycle) and move the kicks to their own track, the snares to their own, and so on. This gives you way more control of the loop components when it comes time to mix.

Mitch Gallagher, Editor
In my last studio I was forced to place my computer's monitor off to the side, rather than in front of me between the speakers. Now I prefer working that way, as I must listen and mix with my ears, rather than with my eyes.

Craig Anderton, Editor at Large
From Michael Stewart, I learned that it's usually best to shut off your conscious mind when playing. And from German musician Dr. Walker, I learned that a mixing console is an instrument, not just something for setting levels and EQ.

John Krogh, Technical Editor
Don't spend too much time polishing turds. I used to waste time working on a loop, live track, or whatever, trying to make it into something it wasn't. Now, if I don't like something or it doesn't work, I find something else that does.

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Fourteen DAW short-cut buttons including Save, Revert, All Safe, CLR Solo, Marker, Loop, Cut, Delete Copy, Paste, ALT/CMD, Undo, Shift and CTRL. Your mouse and keyboard will feel very neglected.

Eight channel inserts.

Channel strip rotary encoders can be assigned to 8 Auxes or Pan via keypad.

Eight channel strips with 100mm, touch-sensitive motorized faders, Mute, Solo and Select buttons, Pan, trim and access to 4-band parametric EQ.

Add banks of eight channel strips with FE-8 expanders.

Separate Phones, Monitor and Solo (AFL/PFL) controls.

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Eight channels of ADAT® lightpipe I/O and stereo S/PDIF inputs & outputs.

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Word Clock in and out for accurate sync with computer systems.

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Eight balanced ¼"/ XLR analog Mic/Line inputs with studio-grade, high-headroom, low-noise mic preamps and switchable phantom power. XLR Input 8 is even switchable from Mic/Line to Guitar level.

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Co-developed with Frontier Design Group, the new three-in-one FW-1884 has everything you need to maximize workstation productivty in a single intuitive tool. For far less than the cost of a piecemeal approach.

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DJ AND PRODUCER

PERSONAL CREATIVITY

Punch-In

Tips & News You Can Use

BY GREG & CRAIG

techwatch

Infrasound Puts the Low in Lowdown

Think 20 Hz is rock bottom? Think again, according to recently infrasound studies. . . . "People who experience a sense of spirituality in church may be reacting to the extreme bass sound produced by some organ pipes," reports Jonathan Amos, BBC News Online science staff. "Many churches and cathedrals have organ pipes that are so long they emit infrasound [10–20 Hz], which is largely inaudible to the human ear. But in a controlled experiment in which infrasound was pumped into a concert hall, UK scientists found they could instill strange feelings in the audience at will. These included an extreme sense of sorrow, coldness, anxiety, and even shivers down the spine. Sound 'gun' infrasound has become the subject of intense study in recent years. Researchers have found that some animals, such as elephants, can communicate with low-frequency calls. Infrasound can be detected at volcanoes and may provide a way to predict eruptions. And recent work by some of the scientists involved in this latest study found that hauntings — the feeling that something or someone else unseen is in a room or building — may also be explained by the presence of infrasound." For more, browse to http://news.bbc.co.uk/1/hi/sci/tech/3087674.stm.

News

EQ Recognition

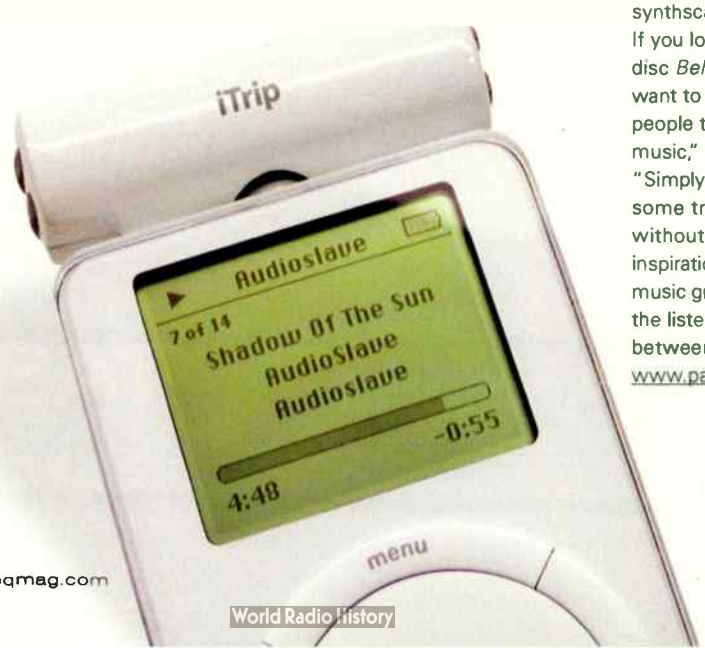
At presstime *EQ* was notified that it had been chosen as a finalist for "Best Redesign" at the upcoming 2003 Ozzie Awards. An extra loud shout out to *EQ* art director Doug Gordon for creating the sleek, clean new look that's turning heads around the world.

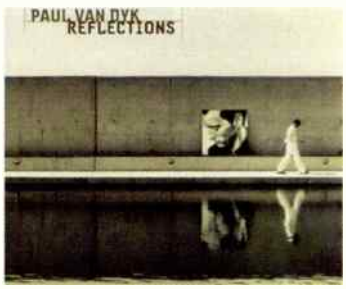
ozzie

Gadgetphile

Griffin iTrip

Owners of iPods can listen to their mixes through car stereos with Griffin's wireless iTrip FM Transmitter. At presstime, Griffin announced that the new iTrip for third generation iPods has begun shipping. The new model is similar to the original iTrip units and retains its most popular features, such as unlimited station frequencies and battery-free iPod mating design. The new model improves upon its predecessor with a sleeker body style, new power saving features, and a red LED to match the new iPod's red backlight. The new iTrip is costs $35 dollars and is available directly from Griffin Technology at www.griffintechnology.com.





CD of the Month

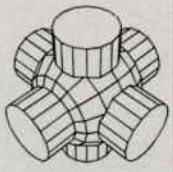
Paul Van Dyk

Reflections

In some studio circles, DJs don't get much respect. After all, they just stand up there and spin other peoples' music, attract lots of groupies, and get paid insane amounts of money for it . . . right? This might be the case with a few overrated, under-talented examples, but it surely is not with folks such as East Berlin export Paul Van Dyk. A top international DJ for years, and also an accomplished producer, he's out to raise respect with *Reflections*, his new electronic dance album as a producer/artist *á la* BT. While decidedly more synthetic and trance oriented than BT's latest eclectic offering, *Reflections* is a gorgeous disc packed with hypnotic rhythm programming, lush synthscapes, and haunting vocals. If you loved Chicane's landmark disc *Behind the Sun*, you won't want to miss *Reflections*. "I want people to lose themselves in my music," says Van Dyk in his bio. "Simply spinning or producing some tracks without feelings, without communication, without inspiration . . . this isn't enough. My music grows with the reactions of the listeners, there's communication between us." Learn more at www.paulvandyk.com.

World Radio History

BONUS Gadgetphile



HANDGEEK STUDIO CALENDAR

Palm owners will want to wrap their hands around StudioCalender+, a recording studio management program for Palm OS handhelds that features a session scheduler with fields for client, producer, recording engineer, and second engineer. At just $9.95, it's a sinfully affordable system for keeping track of clients, recording setups, and billing. It also has an alarm, plus note taking and client invoicing features. A free 30-day demo version of the software is available at the company's website: www.handgeek.com.

News

Fletcher Saved

PMI Audio Group announced that acquired all of the rights from the now defunct company, **Fletcher ElectroAcoustics**. PMI Audio has purchased all of the intellectual property rights, and all of the goodwill from The Richard J. Smith Company in the UK, who acted as the liquidators after Fletcher ElectroAcoustics filed for bankruptcy last year. According to PMI Audio President Alan Hyatt, "This acquisition solidifies our position with **Joemeek**. Retaining the ownership of all the trademarks and IP rights allows us to protect ourselves from outside companies trying to imitate or market goods by associating them to Joemeek."

The next generation of Meeks will hit the street in the next few months. The new Joemeek units have been totally re-designed to bring the units to a level of quality that would make Joe Meek proud.

PMI Audio Group is a distributor and manufacturer of high-quality recording equipment and accessories. Their lines include: Studio Projects, Toft Audio Designs, Stephen Paul Audio, Joemeek, Groove-Doctors, and Sony Professional Audio. More information can be found at www.pmiaudio.com.

News

Gibson Audio

Gibson — not just for guitarists any more. "Gibson is expanding beyond its core instrument business into the exciting and rapidly evolving world of consumer electronics," says a company spokesperson. "With the founding of Gibson Audio, the company brings its long tradition of quality, prestige, and innovation to a new and innovative line of consumer audio products."

Building on Gibson's legacy, Gibson Audio will "design and develop audio products at the point of convergence between cutting edge digital technology and traditional consumer electronics." The new company motto is "pure and simple."

"As digital audio technology brings more and more power to consumers," says Kris Carter, President of Gibson Audio, "there is a great need for simplifying the user experience so that normal Joe and Jane Consumer, who don't have engineering degrees, can enjoy all of the amazing bonefits that these technologies bring."

While Gibson Audio has yet to announce specific product offerings, it has said that the first rollout is slated for the upcoming Consumer Electronics Show.

Gibson AUDIO

update

DigiTech RPx400

When we reviewed the DigiTech RPx400 back in July, drivers for Windows 98/ME were said to be forthcoming. However, this related only to the MIDI drivers; the USB audio drivers that ship with Windows 98SE/ME support the RPx400 like any other audio I/O box. The MIDI driver that allows the RPx400 to be used as a foot controller for the ProTracks software is slated for release in late 2003/early 2004. Until then, RPx400 users can lay down tracks and record, but will need to manually start and stop recording on their PC as opposed to using the foot pedal.

To use the RPx400 currently under 98/ME, it's necessary to disable the MIDI portion of the pedal so Windows doesn't try to load a MIDI driver, which can affect ProTracks. To do this, hold down the RPx400 Store button on power-up. The display will show MIDI Off, meaning that the MIDI portion of the pedal has been disabled. From there, plug the USB cable into the PC and the USB audio drivers should load under 98SE/ME.

The RPx400 will stay in MIDI Off mode until it's reset, so when the new drivers appear, after installing them in the computer, hold down the RPx400 Store button during power-up again to switch MIDI On.

Those who purchased the RPx400 for use with Windows 98/ME can either upgrade to Windows 2000/XP, wait for the drivers, or apply to become beta testers for the new drivers by contacting DigiTech customer support.

In other news, Sonar 3.0 offers control surface support for the RPx400 footswitch.

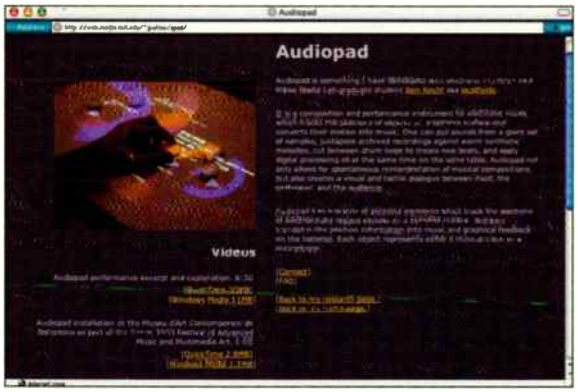
World Radio History

techwatch

AudioPad

Mad science? Not according to MIT grad students James Patten and Ben Recht (*a.k.a.* Localfields). Their Audiopad is a unique composition and performance instrument for electronic music that tracks the positions of objects on a tabletop surface and converts the motion into music. "One can pull sounds from a giant set of samples, juxtapose archived recordings against warm synthetic melodies, cut between drum loops to create new beats, and apply digital processing all at the same time on the same table," says James. "Audiopad not only allows for spontaneous reinterpretation of musical compositions, but also creates a visual and tactile dialogue between itself, the performer, and the audience.

"Audiopad has a matrix of antenna elements which track the positions of electronically tagged objects on a tabletop surface. Software translates the position information into music and graphical feedback on the tabletop. Each object represents either a musical track or a microphone." Get the facts — and see mini movies of the device in action — at http://web.media.mit.edu/~jpatten/apad/ or email James at jpatten@media.mit.edu.



update

Roland V-Synth

The Roland V-Synth (reviewed in the August issue) update to V1.50 offers a sub-oscillator for analog modeled oscillators, analog-modeling waveforms taken from the D-50 synthesizer, patch category search function, and a COSM filter model of the TB-303 Bass Line. Go to www.v-synth.com to update; a computer with USB interface is required.

News

Industry Blotter

■ **Mackie Designs** announced a change the company's corporate designation from Mackie Designs Inc. to **Loud Technologies Inc.** The change is intended to eliminate confusion between "Mackie" the company, and "Mackie" the brand. The change is also aimed at clarifying the positioning for each of the individual brands under the new Loud Technologies umbrella. Currently there are seven brands in the Loud portfolio: **Mackie**, the primary music industry retail brand; **TAPCO**, the entry-level retail brand; **EAW**, the high-end sound reinforcement and pro touring brand; **RCF**, the commercial/industrial sound brand; **RCF Precision**, the **OEM** loudspeaker components brand; **SIA Software**, the sound system measurement software brand; and **Acuma Labs**, the brand of embedded software solutions for pro audio. More info at www.mackie.com and, coming soon, www.loud-technologies.com.

■ After almost four years, **Universal Audio** is moving from its current location one block from the Pacific Ocean to a larger, plusher home in leafy Harvey West Park, Santa Cruz, CA. Although this means the engineers will have to travel further to surf, the new premises offer almost 10,000 square feet with room to grow. Universal Audio's phone and fax numbers will remain the same, as will all email addresses. The new mailing address will be: 330 Encinal Street, Santa Cruz, CA 95060.

■ Brad Lunde, president of **Transamerica Audio Group**, has announced a new U.S. sales and marketing agreement with New York-based **Metric Halo**, provider of high-resolution digital audio solutions for computer recording, mixing, signal processing, and analysis. Transamerica has quickly become a premier U.S. importer/distributor for high-end audio. Its current product lineup includes **AEA** ribbon microphones, **Apex**, **ATC Loudspeakers**, **Brauner**, **Drawmer**, **Geoffrey Daking & Co.**, **George Massenburg Labs**, **Mission Audio**, **Phoenix Audio**, **Soundelux**, **SoundField**, and **Z-Systems**.

■ **Harman Pro North America** (HPNA), the US distributor for **AMEK**, **BSS Audio**, and **Soundcraft**, today announced that it has relocated all of its operations from Nashville, Tennessee to Northridge, California. According to HPNA Vice President & General Manager Kim Templeman-Holmes, the move will enhance service by providing customers with support until 6:00 PM Pacific time. "From our new location in Northridge, we can support customers in all time zones until the very end of their business day. At the same time, because we are integrated within the larger Harman campus, we will be able to facilitate communications from the field to all levels of Harman management and maximize synergies with the other Harman brands."

World Radio History

YAMAHA

www.yamaha.com/proaudio
www.yamaha-mg.com

Show Your TRUE COLORS

Yamaha has been crafting some of the finest creative tools in the music field for a very long time: musical instruments for over 100 years, PM mixing consoles for 30, and digital mixers for 15. Discerning artists worldwide have preferred these tools, because of their ability to paint a musical picture with unparalleled brilliance. Reveal the depth of your musical vision with every sonic shade and hue under your total control.

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Digital Consoles since 1998

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World Radio History

News

BCI Workshops

Just launched: Business Chops for the Independent (BCI) training workshops. BCI workshops provide practical business tools for music industry professionals to increase their business savvy and career opportunities in the industry. The first BCI workshop was held September 15 at Sportsmen's Lodge, in Studio City, California, and was attended by nearly 100 top record producers, engineers, and music business owners, including Andre Fisher (producer, Natalie Cole, Lalah Hathaway, Tony Bennett), John McEwen, Rafa Sardina (engineer/producer, Angie Stone, Luis Miguel), Jimmy Haskell, Bill Dooley (Record Plant), Francis Buckley, Peter Byrne (musician, Naked Eye), Robert Shahnazarian (Sony Music), Matt Forger (engineer, Michael Jackson), Leanne Ungar (producer/engineer, Leonard Cohen, Laurie Anderson), and many more. For info on the next meeting, browse to www.business-chops.com.

Left to right: John Stiernberg (Stiernberg Consulting, and author of *Succeeding In Music*), Ron McCarrell (President and Chief Marketing Officer of DH1 Studios, Inc.), David Schwartz (COO of Mpowered Ideas Media), Al Schmitt, (DH1's Music Director and 11-time Grammy-winning engineer/producer), Claris Sayadian-Dodge (founder and principal of studioexpresso), and Tom Menrath (Director of Business Development, GC Pro/Guitar Center).

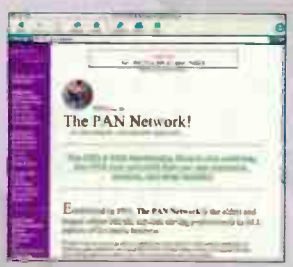
photo: Candace Kentopian

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:

■ **www.dolby.com/tech/Multichannel_Music_Mixing.pdf**

Three years after the launch of the new multichannel music delivery formats, many artists, engineers, and producers are still looking for fundamental information on how to best mix and manage music in the multichannel environment. Now Dolby Laboratories has authored a primer for the professional music production community on best practices for this rapidly developing market. Available as a free PDF download, Dolby 5.1-Channel Music Production Guidelines is the first such document to clearly present a technical blueprint for creating music in 5.1 channels. The publication covers a range of topics such as proper equipment and speaker placement, calibration for proper monitoring, metadata planning and implementation, program interchange guidelines, and contains an explanation of the many new terms spawned by 5.1-channel production. It also provides accurate information that dispels myths concerning both center and LFE channel usage. Mix and mastering data sheet templates for 5.1-channel projects are also included.

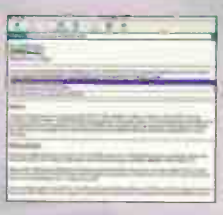


■ **http://onesource.pan.com**

The PAN Network, birthplace of online digital audio, has announced that its OneSource e-CD Distribution System has raised the pay-out percentage on retail sales of digital downloads to as much as 95%. The base pay-out on all digital downloads is now 80%, which itself is the amongst the highest in the industry. When sales are generated directly from the artist or label's website, the artist or label also captures the affiliated retailer pay-out, making the total pay-out as much as 95% of the sale. This means that if an e-CD sells for $10, the artist or label gets paid as much as $9.50 on every sale. PAN also announced that all titles sold through its OneSource e-CD Distribution System now carry a Lifetime Music Guarantee, which insures that if someone buys and downloads an e-CD through OneSource and subsequently suffers a computer disk crash, a virus attack, or otherwise loses their music files, they can re-download whatever they had previously purchased at no additional charge. Because every e-CD delivered by OneSource is personalized with the name of the buyer, the Lifetime Music Guarantee is a natural extension of the technology underlying the OneSource distribution platform.

■ **Apple iTunes Music Store/Russ Landau**

Fans of the smash TV series *Survivor* won't want to miss this one. Russ Landau, the show's composer, has had many requests for his sweeping, world-pop *Survivor* themes. Now he's making them available to the public via Apple's iTunes Music Store with *Russ Landau — Ancient Voices, the Survivor Themes*. "I'm thrilled that proceeds from this release will be going directly to The Whaleman Foundation," says Landau, "a group that fosters education and preservation of whale habitat. You'll see why when you hear the theme! I'm also very excited to be releasing this in cooperation with Apple, a company that I feel operates with ethics and humanism." Just one caveat: If you're a PC user, you'll need to enlist a friend with a Mac for download — although Apple promises PC compatibility in the near future



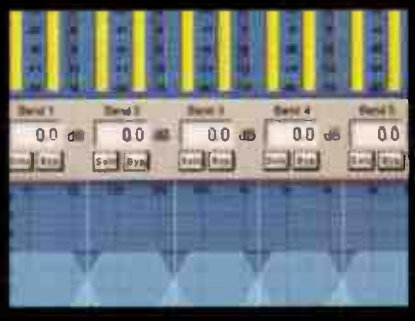
■ **www.musicxp.net**

Out of the box, Windows XP is an excellent system for digital audio applications. However, a few tweaks can help improve performance, and optimize your machine for audio rather than, say, networking applications. MusicXP.net includes important tuning tips, as well as tips on installing XP, how to remove XP components, and the lowdown on XP services. If you want a lean, mean audio machine for Windows, check in here.

World Radio History

SONAR 3

PRODUCER EDITION



Inspiration > Speed > Precision

In today's fast-paced production world, it's not enough to have all the features at your fingertips. SONAR 3 offers a complete software-based production environment that expands your creativity with fast, intuitive controls that capture and excite your inspiration; and powerful, precision tools for true real-time editing. And SONAR 3 provides unparalleled customization, allowing you to fine-tune your studio to match your workflow. Take your music to new heights with SONAR 3 today.

- Completely redesigned UI
- Cutting edge mixing environment
- Advanced MIDI routing & synth layering
- Integrated per-channel EQ and assignable FX controls
- Universal Bus Architecture
- Smoother audio engine with gapless effects patching
- ACID™ loop & MIDI Groove Clip support
- DX, DXi, ReWire, VST, VSTi support
- Integrate MIDI-compatible control surfaces
- Import/export OMFI & Broadcast WAV
- VSampler 3.0 DXi multi-format digital sampler
- Ultrafunk Sonitus:fx audio effects suite
- Lexicon Pantheon Reverb
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- Multi-port MTC transmission
- Confidence recording
- Full plug-in delay compensation

$719 MSRP

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For more information: visit your local SONAR retailer
www.cakewalk.com | 888.CAKEWALK | 617.423.9004 (outside the U.S.)

World Radio History

Music News

FILE-SHARING DOWN?

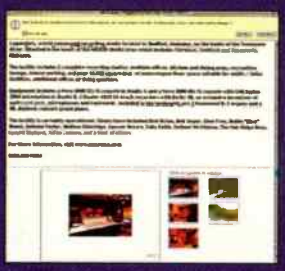
The RIAA's weapon of choice in the war on file-sharing, lawsuits (on September 8, 261 suits were initiated against heavy music downloaders), appears to be having a chilling effect on the downloading community. According to Neilsen/NetRatings, Kazaa (the leading file-sharing service for music) has had a 41% drop in unique users (6.5 million to 3.9 million) from late June to late September. Morpheus's unique visitor count fell to 261,000 unique visitors by the end of September.

Additional clues about the mindset behind downloading come from a VH-1 poll that found only 8% of respondees felt that a CD price in the $14–17 range was fair. 46% felt $10–13 was more realistic, while 43% felt $6–9 was a reasonable price. Although those who have downloaded music are generally aware of the RIAA lawsuits, 58% of downloaders said that price breaks such as those proposed by Universal, not the fear of being sued, were more likely to get them to buy CDs. With impending price cuts, and releases from more big-name artists (like OutKast and Dave Matthews) flooding into the stores this fall, record companies are hoping for a reversal in the devastating sales slide.

But while the RIAA may be winning some battles, the war is far from over: According to information released by Gallup, a poll of 517 young adults between the ages of 13 and 17 revealed that 83% felt that downloading free music was morally acceptable. Clearly, the roots of downloading go so deep that lawsuits will be a limited solution; there has been a devaluation of the worth of recorded music, and by implication intellectual property, in the minds of the next generation. The real task for the RIAA, and the music industry in general, is to convince people that music has value that requires compensation.

Forum Exchange

EQmag.com Posts of the Month



■ ***"I'm looking at upgrading to XP, but every XP machine I've played with is very slow. So what's up? Are these computers running too much garbage and have no resources left, or is XP just a dog that has everyone fooled?"***

Navigation in XP is a little sluggish, but the apps run way better. My PC box ran 98SE for quite some time, then I installed XP Pro. One of the apps I used went from nine hours to render to 42 minutes to render the same file. It boots in about 15 seconds, far faster than any of my Macs. Also, once I got my RAM replaced, XP has only crashed a few times, and it can almost always recover. I am pretty happy with XP, and I am most definitely a Mac guy. In fact, I find OS X is the same way — a fast, nice OS, but the navigation sometimes takes a second to respond. —Coaster

■ ***"I've been recording with an Audio-Technica ATM31A for R&B/rap demos. My brother, a pro singer, says my mic isn't up to scratch; he's used to high-end Neumanns and AKGs. But those cost bucks. Any suggestions on what the pros use as a mic/preamp combination?"***

Ask ten different people, you will get about 26 different answers. There is no one correct solution because different mic/pre combos sound different with different voices. An okay mic/pre combo in the hands of a good engineer will sound great, because they know what to do. Anyway, there are a lot of good, reasonably-priced mics. For hip-hop and R&B, I like using the ADK A51s or a Neumann TLM103 with an Avalon VT737. I have also had good luck with the Rode NT series, lower-end AKGs, and Earthworks, to name a few. When considering a mic pre, consider bang for the buck and get a channel strip so you will have the pre, compressor, and EQ in one unit. —MusicWorkz

Manhattan Producers Alliance

You read about a new LA-based composers workshop this month, now check out what's going on out on the opposite coast. Award-winning composer Joe Carroll has launched The Manhattan Producers Alliance, a virtual hub for composers, producers, and sound designers. It's a new business model for musicians and composers — a cooperative. Members and their clients can access the shared studio facilities as needed via 24-hour video and audio access, from anywhere in the world that offers a connection to the web.

"The Alliance is a collective of high-end TV and film composers and producers," Carroll explains, "employing a business model that's part Park Avenue co-op and part Amazon.com. Using a system of Webcams, networking equipment, and FTP sites, we share the entire resources of our facility both onsite and remotely with state-of-the-art, 24/7 remote access. Recent changes in audio and video technologies have made it possible for us to use the studios as a base station for each of our businesses, from wherever we may be. We're all principals in our own production companies as well as members of the Alliance. We share and maintain the space together, and we book time as needed."

In describing the origins of the idea for the Alliance, Carroll said, "While working on the score for *Kermit's Swamp Years*, the director and I began fooling around with Webcams and messaging software. I set up my room so the console was constantly feeding the audiocard on a PC with this software running. The director could see and hear the scene I was working on all the time, as well as the studio and control room activity via the Webcam. It was pretty close to having him sitting there. We later refined it a bit and found we could provide passwords to other production staff and clients who could then 'peak in the door' remotely as needed, from 3000 miles away. We also began to do sessions where the band was at the New York studio but I directed the session remotely via the Web. It worked both ways."

Carroll is a composer and songwriter who formed Manic Moose Music in 1988, and specializes in projects for children's film and TV. He recently composed songs and scoring for the aforementioned *Kermit's Swamp Years* (Columbia Tristar), a 2003 Primetime Emmy nominee for Outstanding Children's Program. He also serves as Music Director for the PBS hit *Zoom* (WGBH/PBS), now entering its sixth season. He's currently composing for the upcoming *Share a Story* on PBS, and *Sesame Stories* for Sesame Workshop. Joe can be reached at jcarroll@manicmoose.com.

World Radio History

HORIZON SERIES

Expand Your Performance Horizon

The new Horizon Series from Vienna. Broaden your scope of performance possibilites by combining Vienna's superior Silent Stage recordings with the authenticity of our revolutionary Performance Tool. We've applied all of the knowledge and experience acquired from the creation of our award winning Vienna Symphonic Library to this new collection of instrumental libraries.

VIENNA CONCERT GUITAR The complete nylon guitar for fantastic performances with an extreme variety of chords, single notes, hammer-ons, pull-offs, effects and more. Includes Vienna's unique Performance Tool for real slides, bends, legatos and repetitions.

10 GB, $265

OPUS 1, ORCHESTRA Strings, brass, woodwinds, percussion ... An introduction to the world of professional orchestral sounds. This comprehensive collection, handpicked from Vienna's Pro Edition, includes our exclusive Legato Performances!

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OVERDRIVE The seven-string, total distortion guitar. A breakthrough in authentic guitar performance thanks to Vienna's unique Legato and Repetition Performance modes. Real slides, repetitions, runs, chords, bends, hammer-ons, pull-offs, scratches, harmonics, feedback and more. It really rocks!

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SOLO STRINGS Violin, viola, cello, double bass – 4 solo instruments with a complete and in-depth range of articulations, making full use of Vienna's unique Performance Tool for real legatos, spiccato, détaché, repetitions and more.

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GLASS & STONES Glass harmonica, verrophone, musical glasses, and a one-of a kind 5-octave lithophone. Rare instruments that have never been sampled before. Unique, organic soundscapes and mystic tones, a sound designer's dream!

4.5 GB, $245

MALLETS Celesta, vibraphone, marimba, glockenspiel, xylophone, temple blocks, wood blocks – the complete instruments from Vienna's Pro Edition. The finishing touch for your orchestral and jazz arrangements.

10.6 GB, $295

SAXOPHONES I Soprano and tenor saxophone, elevated to a whole new level by Vienna's exclusive Performance Tool. No more squawking, robotic sampled sax! Includes playing techniques and articulations for symphonic and jazz applications.

10 GB, $265

PERFORMANCE TOOL Legato, slides, repetitions and much more – simply play these absolutely realistic combinations of notes with the aid of this unique utility, developed exclusively by the Vienna Symphonic Library. Select a mode and play. You'll hear musically perfect passages, without the need for tweaking or fumbling. A real sampling breakthrough!

VIENNA SYMPHONIC LIBRARY

www.vsl.co.at

Click on www.vsl.co.at/horizon for inspiring demos and a complete overview of all the instruments and articulations.

LIVE AT THE NAMM WINTER SHOW 2004!

World Radio History

ILIO

www.ilio.com

AES 2003!

WHAT: The Audio Engineering Society 115th Convention
WHERE: New York City, New York
WHEN: October 10–13, 2003
WHO: A *Who's Who* of the audio industry
WHY: To show new products, present technical papers, debate the merits of various technologies, hang with friends, and get a sneak preview into the future of professional audio

Chalk up two Manhattan miracles in a row.

The first: The 2001 AES show. With the WTC ruins still smoldering, a nation on hold, and the show delayed because the Javits center was being used as a triage center/morgue, some hardy companies made the trek to the Big Apple — and were rewarded with one of the most poignant AES shows in recent history.

The second: The 2003 AES show. The negative talk before the show was heavy — the tentative economy, a hurting audio business, record industry layoffs, the RIAA playing bad cop/bad cop, high employment rates, and an uneasy feeling about the next move in the war on terror. "Don't expect much," insiders advised us.

But the halls were packed, the manufacturers in fine form, and the audio industry's affair with technology waxed highly passionate. With positive reports on DVD-A and SA-CD ("it's fun just listening to music again"), maturity in the computer OS world, a renaissance of traditional recording methods ("Hey, using faders really does beat mixing with a mouse"), and what may be the first signs of a decline in software piracy ("I downloaded a crack and it hosed my system . . . screw this"), it's no wonder there were smiles in the aisles.

It's too soon to tell if this is all about the eternal resilience of a fascinating industry, or a true harbinger of good times ahead. Certainly, we at *EQ* are watching with guarded optimism. Regardless, there's a certain technological stability that places the spotlight more on making music than how you're recording it. The Earthworks demo room, which featured some great players, made the point in a very dramatic way: It's all about the music.

Of course, "stability" doesn't mean "lack of innovation," and there were plenty of ways to make better music, capture better sounds, and distribute the results more broadly — in fact, way too many new items were introduced at the show for us to cover them all in this report. So on the following pages you'll find our picks for the hottest items at the show, the latest trends in the industry, the coolest of the cool new gear. Think it was easy choosing which ones to include? No way . . . several rounds of brutal fist fighting were required to narrow down the list.

But despite bruises and contusions, we didn't stop there. We know *EQ* readers want to know *everything*. So we've scoured the known AES universe to bring you a huge Excel spreadsheet filled with as much info as we could gather on everything that was new at the show. Simply point your browser to www.eqmag.com, and download the sheet — and check back often. As we discover items we missed the first time around (and with this much new stuff, you can bet there were a lot of them), we'll be filling in the blanks and updating the list.

If you were at the show, enjoy the following recap of the highlights. But if you couldn't make the show, welcome to the virtual version. Share a virtual cab with some pals, tell the cabbie to go to the Javits Center, put on your virtual badge, wear out your virtual shoes pounding the virtual halls, and enjoy a sizzling hot dose of the Audio Engineering Society's 115th Convention. —*Craig Anderton and Mitch Gallagher*

web link

World Radio History

THE AES HOT LIST

Hot Connectivity Protocol: FireWire. From hands-on controllers (TASCAM FW-1884, Steinberg ID, etc.) to high-resolution sound cards and plug-ins (MOTU 896HD [pictured above], TC PowerCore, etc.) to direct interfacing solutions (Apogee X-series card for Rosetta 800, Prism FireWire card for ADA-8), FireWire rules. Where are you, USB 2.0?

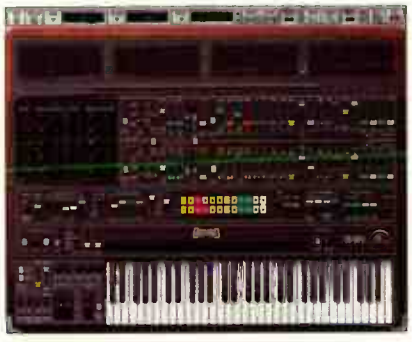
Hot Digital Mixer: The Mackie dXb has dual touch screens, more channels than satellite TV, UAD-1-based signal processing, the ability to host "approved" VST plug-ins, and 96/192 kHz operation. At $20k, it hits the "upper middle class" sweet spot. www.mackie.com

Hot Synth Plug-In: MOTU MX4 (MAS/RTAS/AU). Its multiple synthesis engines, sophisticated modulation, and ability to span the sonic spectrum from vintage analog to cutting-edge digital raised this above the "new product noise floor." www.motu.com

Hot Packaging Concept: The boxed set. Native Instruments' Komplete and Waves Diamond set is a bundle of pretty much *everything* they make. www.native-instruments.com, www.waves.com

Hot File Interchange Format: AAF (Advanced Authoring Format) is Digi's choice for media interchange — and they're not planning to expand OMFI's capabilities any further. What about AES31? Still percolating, but losing ground.

Hot Audio OS: Mac OS X 10.3. With Longhorn pushed back and Linux still not clicking for audio, Apple has a nice — uh — "window" to consolidate its gains. But if the rumors are right, Longhorn will incorporate some tasty audio surprises. www.apple.com, www.microsoft.com



Hot Virtualization: Arturia CS-80V. The company that brought you the "Moog Modular Emulation of the Gods" is at it again, bringing the Yamaha CS-80 back to life in virtual form. www.arturia.com

Hot Lawsuit: Apple Corps Ltd. suing Apple Computer Inc. If trademarks are about potential confusion in the marketplace, I seriously doubt anyone buying a PowerBook thought they were actually buying a Beatles CD.

Hot Software Technology: Convolution reverb. It's been around a while (Sonic Foundry Acoustic Mirror, Samplitude, etc.) but now it's reached critical mass. TASCAM's GigaPulse is the latest and greatest to bring convolution to the masses. www.tascam.com

Hot Sample Playback Plug-In: IK Multimedia's SampleTank 2. This has some of the best, most artifact-free time/pitch/formant preservation algorithms we've heard — and a stellar sample library. www.ikmultimedia.com

Hot Data Compression Format: Windows Media, the subject of several seminars at AES. It does surround, beats MP3's sound for a given bit rate, has flexible digital rights

World Radio History

management, and there's a player for the Mac. Microsoft got this one way right, but it won't work with iTunes. www.microsoft.com

Hot Audio Topic: Acoustical treatment. We've got the gear, we've got the ears . . . now all we need is a room that doesn't suck (frequencies, that is). Established companies like Auralex and Primacoustic, along with newcomers like StudioPanels and RealTraps, are aiming at the project studio pack. www.auralex.com, www.primacoustic.com, www.studiopanels.com, www.realtraps.com

Hot Copy Protection Device: iLok. It's portable, non-intrusive, convenient, and doesn't put garbage in your OS. Just don't lose your dongle, or you're hosed. www.paceap.com

Hot Extreme Makeover: Sonar 3. Remember the weird-looking girl with the glasses who sat behind you in school and got all As? Remember how shocked you were when you saw her on the cover of *Vogue?* Same basic deal. www.cakewalk.com

Hot Spic 'n' Span Solution: BIAS SoundSoap Pro. An easy user interface combined with powerful de-noising capabilities adds up to clean tracks. www.bias-inc.com

Hot Volume Control for the Mixerless: Grace Designs m904 and m906. High-end studio monitoring controller with tons of ins and outs, remote control, and surround support. www.gracedesigns.com

Hot Manufacturer on a Roll: Manley Labs. Ten new products introduced at the show; comprising everything from converters to mastering EQs to monitor controllers to mic switchers to preamps. www.manleylabs.com

Hot Anniversary Celebrations: BSS Audio, Genelec, Microtech Gefell, Neumann, Soundcraft. Congratulations to all!

Hot Ribbons: AEA and Royer Labs. Stereo ribbon mics: one vintage-style (AEA R88), one active modern approach (Royer SF12A). www.wesdooley.com, www.royerlabs.com

Hot Channel Strip: GML 2032. Uber-engineer George Massenburg delivers his classic 8300 mic preamp combined with the 8200 parametric EQ in single rackspace . . . and the power supply is built-in. www.transaudiogroup.com, www.gmlinc.com

Hot EQ: URS (Unique Recording Software) Classic EQs. Two TDM plug-ins that model the coolest EQs of yesteryear — one a 5-band

Are We Surrounded Yet?

The infrastructure for surround continues to firm up: surround-aware software applications, surround-oriented plug-in suites, surround encoders, matched mics for surround recording, and even ATR's surround-oriented head block for the Studer A827 analog tape recorder.

But the bigger issue is when (pessimists might say "if") surround will take off with the consumer. Trying economic times aren't exactly ideal for launching a new world of consumer electronics, but with DVD+surround speaker systems gaining a toehold among households, there's reason to think that music may follow movies as the next step in surround entertainment.

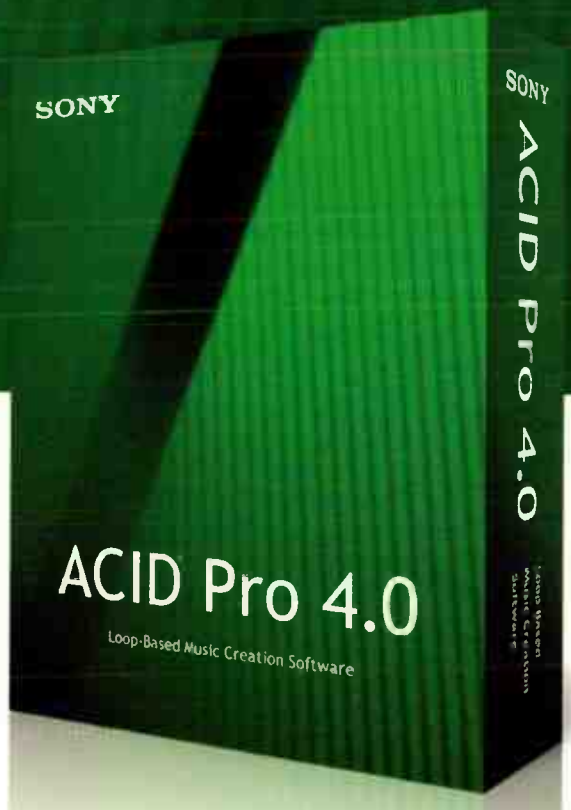
In fact, in what may be seen several years hence as a pivotal moment in surround's acceptance, Acura is now including a Panasonic ELS 5.1 DVD-Audio surround system (designed with input from Eliot Scheiner) in the Acura TL. A lot of people have said that surround would reach critical mass when it started being built into cars; now we'll see if that's true. —*CA*

World Radio History

Unmistakably Original.

ACID® Pro software forever changed the way music is made. Its daring technology blew open new doors to composition and creation. Its innovative interface simplified music production, and provided powerful, professional tools to musicians and producers worldwide. It started a musical revolution. Exciting. Compelling. Original. All words used to describe ACID Pro software. And the artists that use it.

ACID Pro software is the original loop-based music creation tool for the PC. Nothing else lets you create and produce your own music for audio production, multimedia projects, broadcast music beds, Websites and DV scoring as fast and effectively. Anywhere you need original music, ACID Pro software delivers.



ACID software makes all this possible through:

- A streamlined, efficient workspace
- Real-time pitch shifting and tempo matching
- Unlimited tracks of audio and MIDI
- Extensive audio effects
- 5.1 surround mixing
- Beatmapper™ remixing tools
- MIDI piano roll and event list editing
- A video scoring track
- Hundreds of music loops, included with the application.

ACID Pro software, the perfect melding of cutting-edge technology and musical genius, of science and art. A truly original tool, for creating truly original music.

Our ever-expanding collection of sample libraries are optimized for use in ACID software, but are also completely functional in any loop-based music editor, on any platform. Use them to broaden your musical universe. Learn and hear more at: mediasoftware.sonypictures.com/loop_libraries.

To maximize your ACID experience, visit ACIDplanet.com.

Available worldwide, or on the Web at: www.sony.com/mediasoftware

B&H Musician's Friend Guitar Center Sam Ash

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"N" model and the other a 4-band "A" model. Definitely hot. www.ursplug-ins.com

Hot Two-for-One Deal: Universal Audio 2-1176. Two 1176LN compressor/limiters in a single chassis. The two channels can be used dual mono or linked for stereo. www.uaudio.com

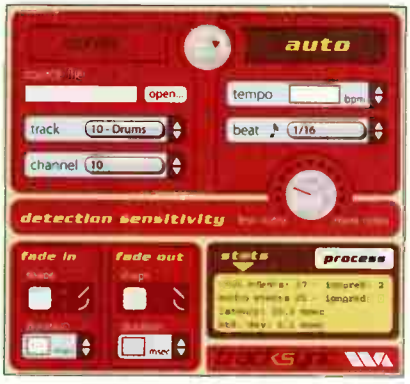
Hot Encoding Software: SRS Circle Surround VST Pro. Circle Surround VST Pro delivers up to 6.1 channels of audio via any standard stereo medium. The encoded stream is compatible with any surround decoder as well as stereo and mono playback. www.srslabs.com

Hot Plug-In Host: Hardware. Along with the Muse Research Receptor, Manifold Labs' Plugzilla (announced at last year's AES but still not shipping) announced a surround version, and plug-in support from PSP Audioware. www.plugzilla.com

Hot Upgrade: Version II (V2) software (Mac OS X/W2K/XP) for the Yamaha DM2000 and 02R96 digital mixing consoles adds almost 50 new features. Five new plug-ins include reverb, channel strip with EQ and dynamics, tape emulator, etc. www.yamaha.com

Hot Plug-Ins: There was a *lot* happening in plug-ins. TC Electronics' Filtroid (for PowerCore)

Dual Filter Bank has extensive modulation capabilities, various filter configurations, a sidechain input, and tempo sync. And Sony has brought their Oxford line of plug-ins (including EQ, Dynamic, Inflator level maximizer, and Transient Modulator) to the ProTools LE and TDM platforms. www.tcelectronic.com, www.sony.com/professional



Hot Problem-Fixer: Wave Arts Tracksync. You send a MIDI track out to a keyboard, and record it as a digital audio track. But latency problems screw up the timing. So grab Tracksync, a standalone Mac/Windows program that compares the audio signal to the MIDI data, and offsets the audio as necessary (even if there's jittery timing) to obtain perfect sync. www.wavesarts.com

Hot Groove Box: Akai MPC1000. Been arguing with your bank account about whether you could afford an MPC? This puppy cooks up the phat for under a grand. www.akaipro.com

Hot Fish and Chips: Analog Devices ADSP-21262 SHARC chip. The original SHARC DSP provided processing power for a ton of audio products. The latest, 3rd generation SHARC chip does 1,200 MFLOPS, offers IEEE-compatible 32/40-bit floating point and 32-bit fixed data types, and provides 22 zero-overhead DMA channels. www.analog.com/sharc

Coming Attraction:

Mackie dXb Digital Mixer

Mackie's dXb is a 192 kHz-capable, 72 x 72 I/O matrix (36 x 36 at 192k) digital production console. It includes 24 channel strips with 100-mm Penny+Giles optical touch-sensitive faders, and two integrated 15-inch touch screens (one for each bank of 12 faders). These screens access crucial functions such as send levels, inserts, routing, dynamics processing, surround panning, metering, effects, etc.

The rear panel features a customizable card cage that accepts a variety of I/O cards including analog, AES/EBU, FireWire (IEEE-1394a), TDIF, and ADAT optical. A Sync Card (supporting Word-Clock and LTC) and Control Room Card are part of the package. Fixed rear panel I/O consists of Sony 9-pin, MIDI In/Out (MTC/MMC), FireWire (for external data storage), Ethernet, and two USB host ports for connecting a mouse and/or keyboard. ➤

Mac vs. Windows: The Battle Is Over

And the winner is . . . us. The Mac OS has forced Windows to get its software act together, and Windows has put pressure on the Mac to lower hardware prices. As a result, we're living in a unique "best of both worlds" situation, where it costs as much to buy a screamin' state of the art Mac *and* PC for *less* than what it cost to buy a Mac Plus back in 1984. But you may not need to buy both: Software manufacturers, from giants such as Digi to up-and-coming brain trusts such as Ableton, now make programs that are equally facile — if not virtually identical — on both platforms.

Apple's once-bold move to scrap SCSI and minimize slots is also reflected in the PC world, so lots of FireWire and USB peripherals are platform-agnostic. Granted, Apple's AudioUnits and CoreAudio sort of undermined that period where VST ruled on both platforms, but VST hasn't gone away, and products like FXpansion's VST-AU Adapter will keep it alive for considerably longer.

Of course, some programs aren't cross-platform, and likely never will be (Sonar, Logic Audio, Digital Performer, Final Cut Pro, Vegas, etc.). But the sophistication of *all* programs has reached the point where no matter which platform you use, you'll find what you need.

As the years roll on, each OS, and the hardware on which it runs, may offer some temporary advantages . . . but technology has a way of catching up. So should you go Mac or PC? At the end of the day, either one delivers. At this point, the choice boils down to personal preference. —*CA*

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Millennia
Music & Media Systems

TD-1

Feeling Adventurous?

Twin Direct

Designed with "take me anywhere" versatility, TD-1 is geared for adventure. Finally, a no-compromise analog recording channel priced within reach of small studios and home recordists ($1,395). The new TD-1 ***Twin Direct*** is all about pristine musical performance, extensive signal path routing, and adventurous behaviour. Employing *REAMP®*, *Speaker Soak®*, *Twin Topology®*, Millennia's acclaimed HV-3 mic preamp, pliant DI, multi-impedance bridging, fully parametric NSEQ, three audio transformers, nine outputs, and military build quality...TD-1 is packed to explore uncharted sonic territory.

Hand-made in Northern California with features too numerous to list (and audio integrity too gorgeous to ignore), TD-1 is the ultimate traveling companion. We encourage you to call your travel agent — and Millennia dealer — for a demo soon.

REAMP is a registered U.S. trademark
used under license U.S. Pat no. 6,005,950

www.mil-media.com

530-647-0750

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MACKIE DXB

Other features include an onboard UAD-1 Powered Plug-Ins card, the ability to operate as a Mackie Control Universal to provide tactile control for DAWs (*e.g.*, Pro Tools, Logic, Digital Performer, Nuendo, Cubase, Sonar, etc.), a tape-style transport with memory location recall and weighted jog/shuttle wheel, padded armrest with built-in mouse pad, and a control room section that provides A/B monitoring, dual headphone mixes, and talkback. It's also possible to run select VST plug-ins internally without a separate computer, and/or operate plug-ins in a desktop or laptop computer system and interface with the dXb via FireWire.

Price is slated for under $20,000, depending on configuration. **www.mackie.com** —*CA*

Coming Attraction:

Core Sound PDAudio

Yes, you *can* take it with you . . . a field-ready recording device, that is. Core Sound's PDAudio is a PDA-based recording system based on the PDAudio-CF ($199), a Type I Compact Flash S/PDIF interface with optical and coax ins. It mounts in PDA hosts that run Windows CE/PocketPC 2002/PocketPC 2003 or Linux (such as HP/Compaq's iPAQ), but also works with laptop and desktop computers running Linux, Windows 2000, or Windows XP.

PDAudio-CF operates on rechargeable batteries, and can transfer audio data to a laptop/desktop computer (PC or Mac) via removable solid-state memory cards, removable PC Card hard drives, CF Card hard disk drives, high capacity external 2.5" hard drives using the PC Card interface, SD cards, or via wired and wireless local area networks. The PDA, PDAudio-CF interface, and CF storage cards fit together in a single package, using a dual CF (or PC Card) expansion pack (PDAs with both an on-board CF card slot and SD card slot require no expansion packs). Core also makes the Mic2496 ($499), a two-channel mic pre with 24/96 A/D converter, phantom power, and optical and coaxial digital outs.

The system needs software for metering, storage management, transport control, etc. So far there's Core Sound's own PDAudio Recorder (Linux) and several third-party applications, such as Gidluck Mastering's Live2496 ($50). This captures 16- or 24-bit files in WAV format at up to 96 kHz sampling rates. Files can be managed using Windows CE Explorer. **www.core-sound.com**, **www.gidluckmastering.com** —*CA*

Coming Attraction:

FXpansion Software Adapters

You know the deal: Your VST plug-in won't work with your shiny new Mac software that likes AudioUnits (or your DirectX-only host, or your Pro Tools RTAS system). And you sure would like to use that cool VST sampler or synthesizer as a ReWire device. But there's nothing you can do, right?

Wrong. FXpansion made its mark with VST-DX Adapter (since sold to Cakewalk, which continues to develop and support it), which tricks DirectX hosts into thinking that VST plug-ins are actually DirectX plugs. Now the company has applied its magic to a new set of adapters. Note that the process really does work — plugs that just plain refuse to adapt are few and far between. In fact, with VST-DX adapter, some plug-ins actually perform *better* when translated from VST than in their native DirectX versions.

VST-RTAS ($99), for Mac OS X and Windows XP, opens up VST plugs to Pro Tools

The Sports Page

DVD-A VS. SA-CD

It's another Beta versus VHS slugfest, with the winner being the CD's likely successor. Round 1: DVD-A, for being easier to master and having greater market penetration. Round 2: SA-CD, thanks to a huge marketing push by Sony. Round 3: DVD-A gets into cars, SA-CD gets into stores big-time. Tie. Round 4: Stay tuned.

FRAUNHOFER FILESHARERS VS. THE MICROSOFT MEDIAS

In the top of the first, the Filesharers' MP3 format drove in 13 runs, then added a run in the 3rd and two runs in the 4th. But in the bottom of the 5th, the Medias countered with Windows Media Format licensing deals for portable players, better compression algorithms, and massive publicity to narrow the score to 16-10. In the bottom of the 9th, the Medias put in their newly signed player, Windows Media 9. With surround, flexible digital rights management, and faster encoding, the Medias evened the score at 16-all. The game has now gone into extra innings; the winner will meet AAC at the finals. —*CA*

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6.X systems (including LE and TDM-based systems). VST-ReWire ($99) allows using VST plugs as true ReWire devices, capable of working with any ReWire host.

VST-AudioUnit ($75) for Mac OS X is a welcome addition to Logic Audio 6.x, Digital Performer 4.1, Final Cut Pro, Soundtrack, and other AudioUnit-compatible applications. As with the other adapters, the translation process occurs with minimal impact on system performance or stability.
www.fxpansion.com —*CA*

Coming Attraction:

Lexicon Pro Omega Desktop Recording Studio

Omega Studio is an integrated computer recording system that includes the Omega 8x4x2 USB I/O mixer (pictured right), ProTracks Plus 32-track recording software, and Lexicon's Pantheon reverb plug-in. It's intended to be a turnkey package that converts your computer into a 24-bit recording studio.

The mixer is a true mixer, not just a patch bay, with input, output, and monitoring controls, along with two dbx mic preamps (with 48v phantom power) and TRS insert points. The eight inputs (with 24-bit A/D converters) are assignable in pairs to any of four simultaneous record channels. Four TRS active balanced line inputs accept up to +22 dBu unbalanced or balanced signals; there's also a front-panel 1/4" high-impedance instrument input. A S/PDIF input with additional DAC provides zero-latency, direct monitoring of the S/PDIF source to allow simultaneous tracking of analog and digital sources.

ProTracks Plus is an easy-to-use, 32-track recording program that includes all the

elements needed to track, edit, process, sequence, and mix. In addition to non-linear audio editing, plug-in support, and the ability to read and stretch "acidized" loops, its full-featured MIDI capabilities offer event editing, automation, and soft synth compatibility.

The Pantheon reverb plug-in offers 35 factory presets featuring six reverb types (hall, chamber, plate, room, ambience, and custom) and 16 editable parameters. Despite being a surprisingly efficient plug-in, it retains the characteristic "Lexicon sound" found in their hardware units.

The system's estimated street price is around $350; list price is TBA.
www.lexiconpro.com —*CA*

Coming Attraction:

Focusrite Liquid Channel

Digidesign and Focusrite were making a striking claim at the AES show: Their new product, the Liquid Channel, provides "Every Preamp and Every Compressor in History — Accurately Emulated." Bold, to say the least. But from the looks of things, the Liquid Channel is positioned to deliver on this statement. The Liquid channel applies digital SHARC-driven dynamic convolution technology to the front-end of the recording process. This allows the Liquid Channel to emulate or re-create the sound of classic mic preamps and compressors. Not only is the "tone" of the hardware recreated, but the manner in which the original preamp interacts with a given microphone is also duplicated. This is accomplished using extensive analog circuitry that can change its impedance and vary the signal path to reflect transformer or other electronic characteristics.

With entirely digital front-panel controls, all parameters can be stored into any of 99 user memories, allowing instant recall of entire session setups. A new digital EQ based on the Focusrite ISA110 is also included for further tone shaping. To account for varying amounts of 2nd-order harmonic distortion among vintage units, control is provided over this parameter (usually perceived as "warmth") as well.

A USB port on the rear panel allows connection to a computer/software app for archiving of both hardware replicas and user memory, as well as for remote operation of the unit. Forty classic mic preamp presets and 40 classic compressor emulations are included, but more can be downloaded from a dedicated web site.
www.digidesign.com, **www.focusrite.com**, **www.ffliquid.com** —*MG*

Coming Attraction:

SSL XLogic Series

For all of us who have lusted after the sound

Loop-Based Music Retreats

But then again, loop-based music is bigger than ever. Say what? The answer is simple: Loops are now just another component of the music-making process. It's like when MIDI first came out; there were quite a few recordings made entirely using MIDI recording processes. And there have been a lot of recordings made only with loops (albeit with some clever chopping, pasting, and tweaking to remove the repetitiveness).

Now we see loops being added where appropriate, with traditional linear recording, MIDI, and other processes flowing into a unified music creation platform. Consider Sonar, which integrated loops into a hard disk/MIDI environment, or Acid Pro, which integrated MIDI into a hard disk/looping environment. Even programs that don't offer Acidized loop support have alternatives, such as REX file support, or easy-to-use time/pitch stretching that simplifies matching any digital audio loop to tempo or key.

And frankly, it's about time for loops to take their proper place in the musical pantheon, because a lot of loop-based music was getting pretty b-o-r-i-n-g. But throw on a great vocalist, some hot guitar or piano licks, real percussion, and other human elements, and the end result becomes far greater than the sum of its parts. —*CA*

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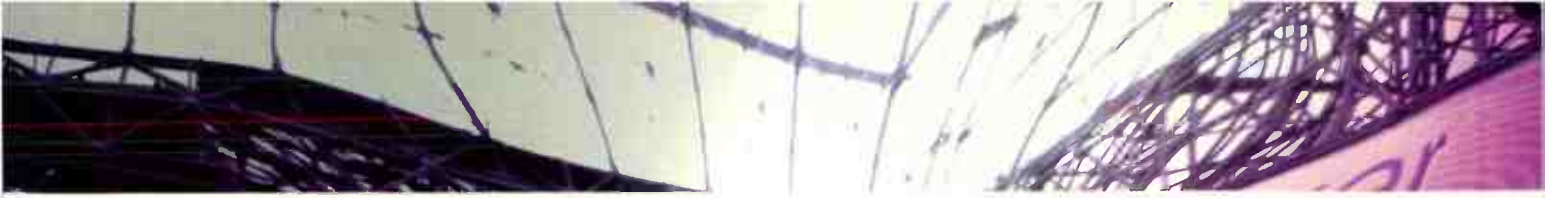
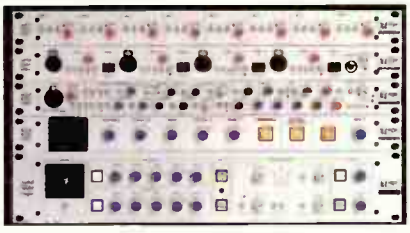


of an SSL console, but don't have the mega-bucks to drop in this month's budget, relief is on the way. At the AES show, SSL introduced the new XLogic product line, which brings the audio quality of the XL 9000 K series console to rackmount units. There are four units in the new series. First is the XLogic Channel, which condenses a full XL 9000 K SuperAnalogue channel into a single rackspace. Included is the SuperAnalogue preamp, with mic, line, and instrument in, and switched gain. Also included are Twin-Curve



Dynamics processing, high- and lowpass filters, G series and E series Twin-Curve EQ (4-band with parametric mids and shelving/bell high and low bands), switchable metering, and optional digital output card.

Next up is the XLogic SuperAnalogue Mic Amp, which provides four XL 9000 K mic preamps in a 1U unit. The unit offers a 20 dB pad, phantom power, and high/low impedance operation. Also featured are motorized gain pots, which when combined with a XL console or optional XLogic Remote, can be remote-controlled. In addition, monitoring capability is provided, allowing any preamp channel to be monitored from a single headphone jack.

The XLogic G Series Stereo Compressor comprises the classic SSL G Series center compressor design. External sidechain signals can be used to control compression, and an Autofade feature allows for automatic fade out over a period of time set by the rate control. When the Autofade switch is released, the signal will fade back in.

Wrapping up the series is the XLogic Multichannel Compressor, a 2U rackmount 6-channel compressor. The unit utilizes the SSL center compressor design elements,

MultiMAX EX Multiformat Monitor Controller | **ForMAX** Surround Monitoring Formatter | **PanMAX** Automated Surround Panner | **MonitorMAX** Stereo Monitor Controller | **RecordistMAX** Recorder Monitor System | **VuMAX** Surround VU Meters

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but combines them in a unique fashion to address the needs of 5.1 mixing. There are separate 5-channel and LFE compression controls, a special circular "Max" display indicating which channel is driving the sidechain the hardest, separate trim controls for setting the threshold for each channel, and a Dual Stereo mode that allows different compression to be applied to the surrounds or splits the unit into independent 4-channel and stereo compressors.
www.solid-state-logic.com/xlogic —*MG*

Coming Attraction:

Muse Research Receptor

Want to run VST plug-in effects and instruments but you don't have a computer? Or want to use plugs live without dragging a computer along? Or your computer doesn't have enough juice to run as many VST instruments as you want? Or you want to use VST plugs as stand-alone effects? Or you'd like a hardware box that plays VST instruments without all the computer hassle?

If any of these sounds like your situation, the folks at Muse Research have something for you to check out. Their Receptor is a 2-rackspace VST plug-in player that provides a dedicated hardware solution to using VST effects and synths. The box is set up like a mixer with 16 channels, each of which can take its input from an external audio source (1/4" guitar-level input and 1/4" +4/–10 line and stereo S/PDIF I/O are provided; a USB I/O expander will be available as an option) or load a VST soft synth/sampler. Each channel can load three VST insert effects (which can be arranged in any series/parallel routing), and there are two effects busses and a master bus with three insert effects each.

The unit has its own VGA monitor out and keyboard/mouse input; virtually every parameter can also be controlled via MIDI. In addition, one or more Receptors can be networked and controlled with a Mac or PC using ethernet.

Receptor is compatible with almost any Windows VST plug-in. The unit has an internal hard drive that comes loaded with a variety of freeware and demo plugs. Demo plugs can be purchased and "unlocked" into full versions at Muse's web store, www.plugorama.com.

The Muse Receptor is expected to ship Q1 of 2004; its final price will be announced soon. **www.museresearch.com** —*MG*

Updates Lock In Users

Thinking of switching sequencers? Probably not. Updates are now aimed more for keeping an existing customer base satisfied rather than taking away another's market share. And the reason is clear: Today's sequencers are so complex, and so full-featured, that the learning curve required to become familiar with another program is daunting. Besides, the features race is pretty much a non-issue. The big deal these days is the user interface and ability to keep up productivity, and the surest route to productivity is to know your software like the back of your hand.

All major hard disk recording/sequencing companies have announced significant upgrades within the past 12 months: Logic Audio 6, Pro Tools 6, Sonar 3, Digital Performer 4.1, Cubase SX 2, Nuendo 2, Acid Pro 4, Live 3, Sequoia 7, and so on. All upgrades have been reasonably priced, if not free, and are clearly intended to solidify a customer base whose loyalty to their programs of choice has increased over time.

For those new to computer-based recording, there's no time like the present, because it's almost impossible to make a wrong decision. The only snag are those pesky ".1" updates that fix the bugs that got missed first time around, but even then, beta testing procedures are getting far more rigorous. Furthermore, companies are (whenever possible) limiting themselves to Windows 2000/XP on the PC side, and OS X on the Mac — both stable, reliable systems with fewer surprises than their predecessors. Having to support only one or two operating systems allows for far more robust code. —*CA*

Coming Attraction:

Eventide Octavox and Reverb

Eventide has been in the digital processing game since the very beginning, and continues to innovate in the DSP world. Recently the company has turned its attention to the rapidly expanding plug-in arena. The latest plug-ins from the company include two new plugs for Digidesign's TDM platform on the Mac.

First up is Octavox, an 8-voice diatonic pitch shifter. Octavox is based on Eventide's Harmonizer techniques as included in the top-of-the-line Orville hardware processor. In addition to eight voices of pitch shifting and diatonic (scale-based) harmonizing, Octavox includes extensive delay capability for each voice. A new user interface has been designed that allows graphic control over pitch and delay using a unique Notation Grid — sort of "notation meets step sequencer" in concept. The Notation Grid provides a traditional music staff along with a quantized beat grid for aligning notes and

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delay times. A snapshot feature provides a way to capture and recall parameter settings with a single mouse-click, and instrument presets optimize Octavox for the pitch recognition characteristics required for various input signals.

Also introduced was the aptly named Reverb, which provides users with the same reverb sound quality, flexibility, and tone-shaping capabilities found in Eventide's high-end hardware processors. Reverb's user interface is straight-ahead, containing all parameters in a single window. As in Octavox, a snapshot feature allows for easy capture and recall of all parameters with a single mouse click.

Reverb uses the algorithms found in Orville, including halls, chambers, plates, rooms, and lo-fi effects. Three-band stereo parametric EQ before and after the reverb, reverb contour for tone-shaping, a pair of delays with filters, and compressor are included in each reverb type. Octavox $595, Reverb $695. **www.eventide.com** —*MG*

Coming Attraction:

JBL LSR6300 Monitors

Looking for accurate studio monitor speakers?

The AES show was the place to be. Booth after booth was loaded with speaker after speaker — all of them sounding great and offering flat response and accurate reproduction of the audio range of frequencies. But as good as today's monitors are, they still can't perform to their best potential if the room you're listening to them in doesn't have ideal acoustic properties. For years acoustic treatment has been used to successfully defuse room problems. Now JBL has launched a series of active studio monitors that allows you to address your room's acoustic issues right at the speaker. The result is said to be more accurate performance at the mix position, regardless of the size of the control room.

The LSR6300 series comprises three models: the LSR6328P, a bi-amped model with 8" woofer and 1" tweeter, the LSR6332 with 12" woofer, 5" midrange, and 1" tweeter, and the LSR6312SP subwoofer, which includes bass management and support for multi-channel audio production. The current LSR25P can be used in systems with any of the new models.

The LSR6300 series features three technologies to combat room acoustics problems: Linear Spatial Reference, Room Mode Correction, and boundary compensation. Linear Spatial Reference technology ensures that mid- and high-frequency content is accurate at the mix position; this is accomplished using carefully controlled radiated response. Room Mode Correction allows the LSR6300 series to address the problem of low-frequency standing waves caused by the room's geometry. The RMC Calibration Kit (included with the LSR6312SP, also available as an option with the other models) includes everything needed to measure room response and identify room modes. Boundary compensation corrects frequency response and spectral shift when the monitors are placed near a wall, corner, or workstation surface.
www.jblpro.com —*MG*

Old Vs. New Vs. Virtual

Had a look at vintage gear pricing lately? The hottest products of yesteryear have retumed with a vengeance, and they have the price tags to reflect it. If you think today's manufacturers have missed this fact, you've got another think coming . . . not only are "boutique" manufacturers making "new" versions of the old classics — Soundelux, Great River, Vintech, Wunder Audio, and many others are the proof — but the folks who originated some of the old favorites are cranking out new versions of their own legacies. Witness SSL releasing rack modules based on their consoles, AMS/Neve relaunching "vintage" products, to say nothing of mic manufacturers such as AKG and Neumann reissuing old-style models. Plus there's the return of "old" manufacturers who are making vintage-style and new gear: Telefunken and Trident, to list two.

But it doesn't stop there. It's no secret that the virtual world isn't above modeling a plug-in or two in the name of vintage sound quality — Unique Recording Software's new TDM vintage EQs, and Crane Song's Phoenix analog tape modeler are just two of many that come to mind. But virtual models are no longer limited to computer plug-ins . . . with their Liquid Channel, Focusrite has reached back into the past and given users access to a ton of cool vintage tonalities all in one compact hardware box.

So what's old is new again and what was once new is now old . . . er, something like that. The point is that musicmakers are the winners. No matter what system you use to record, you can reach out and grab a piece of hardware or instantiate some software and give your audio vintage vibe, without necessarily paying the vintage price. —*MG*

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Mixing in the Box

By Stan Cotey, Digidesign

AES isn't just products, but technical papers. The material below includes some fascinating excerpts from "Mixing in the Box," presented by Stan Cotey at Digidesign, and addresses some of the myths about mixing through a console vs. mixing solely within Pro Tools.
—Craig Anderton

The quality of recorded audio on a per-track basis is mostly due to the sonic quality of the analog-to-digital converters and word clock. Concerning audio playback, there's more to consider. Although a well-implemented system with a 24-bit audio path from input to final output yields a signal-to-noise ratio >140 dB (significantly better than possibly every converter currently available), as the signal level becomes lower, distortion increases.

However, injecting a small amount of "dither" noise reduces distortion. As even the highest quality converters deliver around 120 dB of dynamic range, many of the noise and distortion artifacts produced in a 24-bit audio system are significantly below the noise floor.

So, 24 bits is probably enough if you're capturing and reproducing one channel of audio that requires less than 140 dB of dynamic range. But what about mixing several channels together, where many will likely be attenuated before they hit the unity gain mix bus?

Consider a 64-channel mixer. 64 non-coherent inputs summed at unity gain would yield 18 dB more output level. In order not to clip the 24-bit mix bus, you would have to pull each fader down from zero by 18 dB to compensate. As a 6.02 dB level increase or decrease equals more or less one bit respectively, this gain change leaves us with a bunch of 21-bit signals.

With a 21-bit non-dithered signal's dynamic range of 127.76 dB, some of the artifacts produced will be below the converter's range. But it's not quite this simple; higher-order distortion products can usually be quite easily heard. We're also doing this to a bunch of summed channels, adding to audibility. So for the highest quality, 24-bit mixing is probably not enough.

DITHER AND DOUBLE PRECISION MATH

A 128-channel mixer could theoretically require seven additional bits above 0 dBFS to preserve all the low-level information and not clip the output, and more bits to accommodate faders that have additional gain above 0. Thus, a 24-bit fixed-point mix bus should be expanded to at least 32 bits to prevent signal loss or clipping. However, preserving signal quality when pulling faders down from unity gain requires adding bits at the bottom of the range. As some faders may be at -30 or lower in a mix, we could add five additional bits to keep the low-level resolution, leaving us with a 37-bit mixer.

Is this enough? Probably, but Pro Tools uses a 48-bit mixing bus, allowing 128

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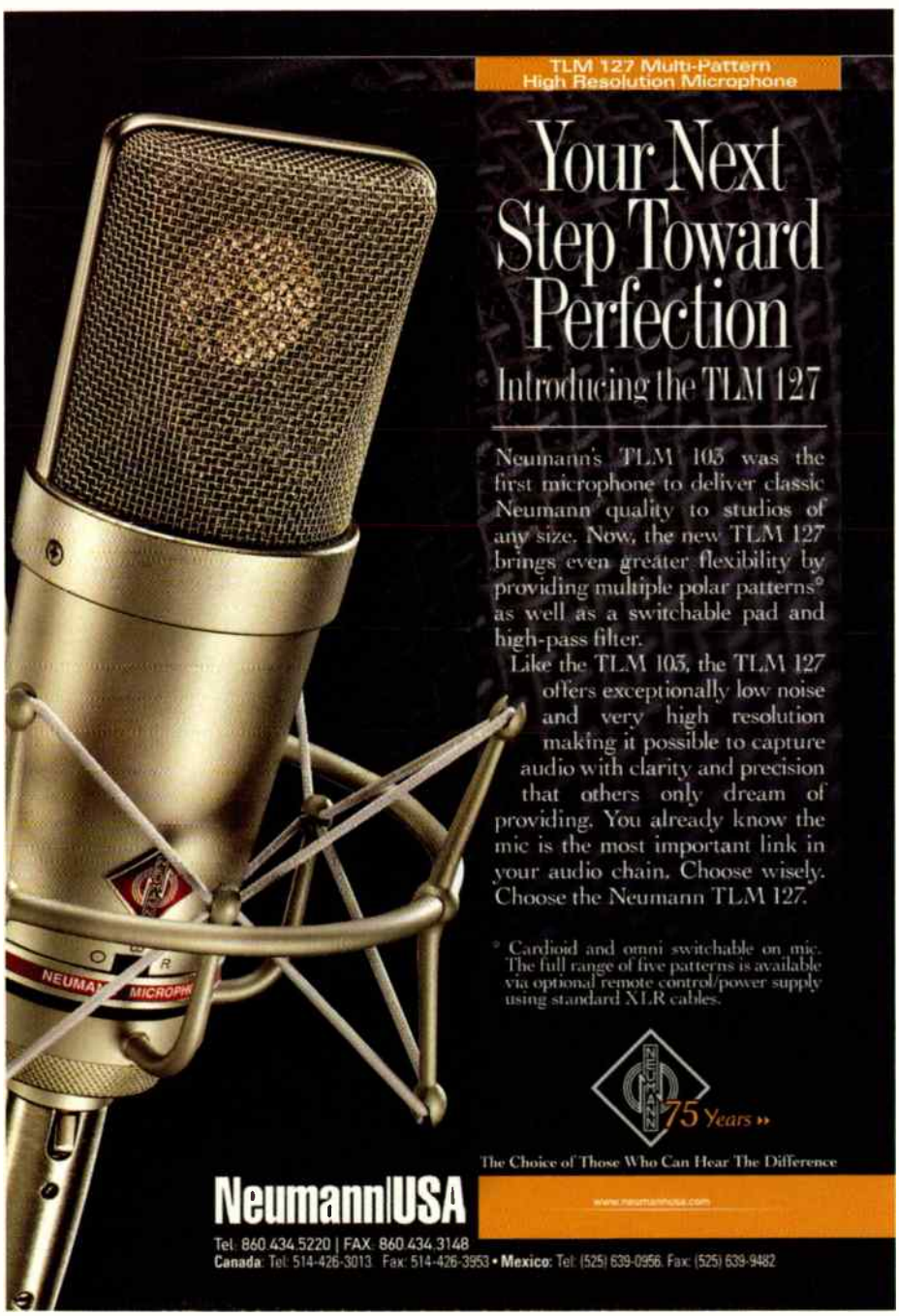
channels to be summed at maximum gain with no clipping at one extreme, and the ability to pull any or all of the channels' faders to lower than -80 dB and still keep the full 24-bit signal in the mix. Out of the 48 available bits (a total of 288 dB of dynamic range), the top 8 are preserved for headroom, bits 16-39 provide nearly 144 dB of dynamic range with a single audio channel when set to 0, and the lower 16 bits preserve audio data when the faders are pulled below 0.

The DSPs used in a Pro Tools TDM system normally have 24-bit inputs, so to operate these with 48-bit signals requires using *double precision* operation. This chops a 48-bit signal into two 24-bit words and operates on them separately. As this DSP has a 56-bit accumulator, keeping a 48-bit result around is not a problem. The hard thing is doing the math, and piping the signals around.

Double-precision math requires more instruction cycles to process, so an entire system built around this could be wasteful and overly expensive. It's probably best to use double-precision math where needed, and otherwise rely on the system's normal 24-bit, 140+ dB dynamic range.



MASTER FADERS

Pro Tools allows the user to create master faders, which can effectively "scale" the 48-bit mix bus's output gain to bring it in range of a 24-bit output device. Once a master fader is in place, there is no audible difference between pulling a channel fader down and *increasing* the master fader, or pushing the channel fader up and *decreasing* the master fader, as long as you don't clip the connected output device. The mixer's headroom can accommodate the combined signals from 128 fully coherent channels, set to maximum fader gain without clipping. While it is impossible to clip the internal mix bus, it *is* possible to clip an output device, so be careful when using master faders.

CONCLUSION

Clearly, it is impossible to clip the internal mix bus in Pro Tools TDM systems (regardless of the number of tracks and fader gain); and the mixer can maintain a single channel's full 24-bit precision, regardless of practical channel fader position (down to very low levels), across a greater than 280 dB dynamic range. And, you can sum the full number of channels available on a system without any increase in noise.

Careful listening tests with high-end analog and digital consoles have shown that the differences between mixing internally and externally are inaudible to everyone we've yet encountered. There is no data, or information, lost while mixing internally in Pro Tools, no signal is lost when you pull a channel fader down below unity, and there is no difference between setting all of the channel faders to -30 with the master at unity, or setting the master to -30 with the channel faders at unity. As long as you're not clipping the output, and are sending the highest possible signal level before clipping, then all is well. EQ

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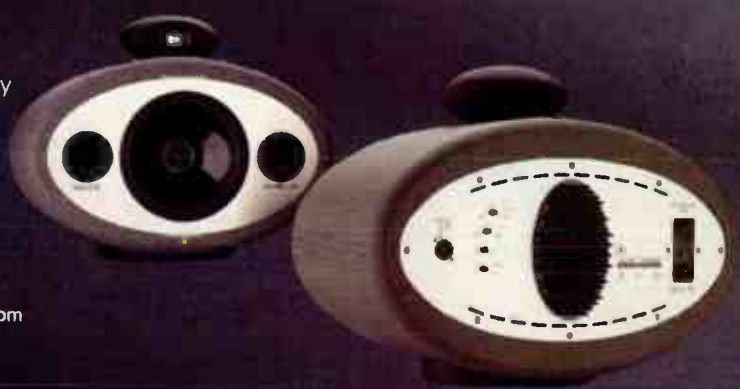

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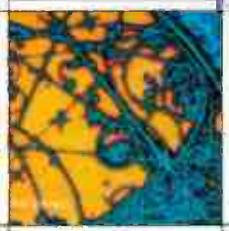
GORDON RAPHAEL

Strokes' Producer Keeps the Spirit of Rock's Golden Era Alive



by Dan Daley

The Limehouse section of London, a few miles east of Tower Bridge, is dreary — a post-industrial Dickensian urban landscape of public housing with wash hanging on the line interspersed with century-old factory buildings and clattering railroad tracks. In this kind of neighborhood, where hope often takes the form of a lottery ticket, the little you have, you defend, because it might be all you ever get.

For Gordon Raphael — producer of the Strokes' pivotal first album *Is This It*, which, along with first outings from bands like the White Stripes and the Hives launched a renaissance in sinewy and energetic rock — his move to Limehouse might seem like a step up after nearly six years running his studio in a dingy basement in New York's downtown Alphabet City neighborhood. But even with his own studio in a somewhat foreboding former factory complex (and with a 2-story walkup instead of one flight down like in Manhattan), Limehouse is a gateway, a new beginning for Raphael.

Just weeks before the scheduled release of *Room On Fire*, the Strokes' eagerly anticipated sophomore release, which Raphael also produced and engineered, he is ecstatically happy (in that muted Slacker-like manner that natives of perpetually sunless Seattle can be) to be here at this point in time, when the Strokes' brand of late-'60s raffish, roughneck rock seems poised to do to the cash register what it did to media mindshare the first time out. (For all the hype, the combined sales of the first efforts by the Strokes, the White Stripes, and the Hives have barely cracked the one-million mark.)

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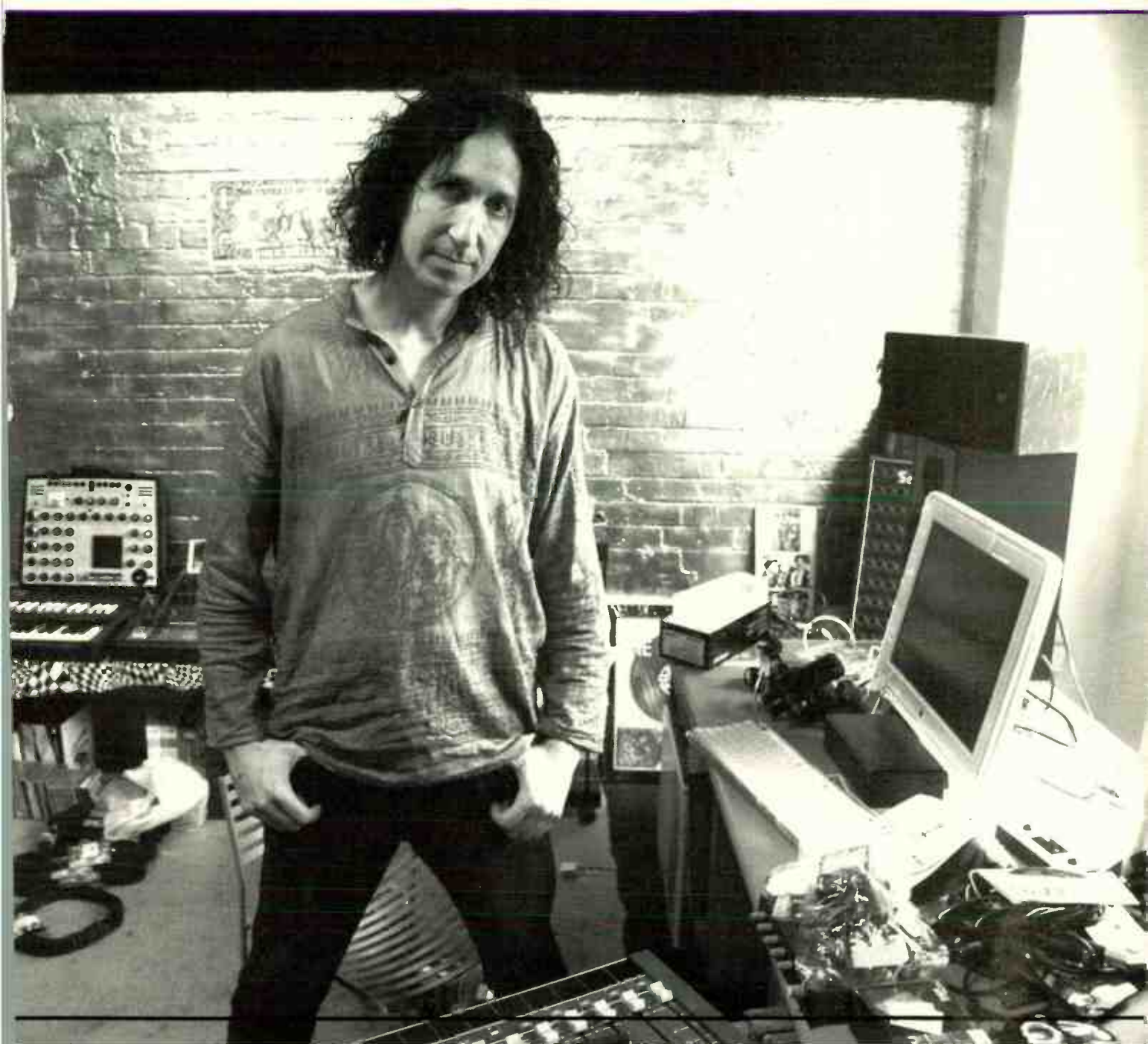

"Maybe it's the weather, the rain, but I do feel kind of at home here," he says, with a quick, hopeful smile.

Gordon Raphael is a throwback to a rougher, more viscerally exciting era of rock music. The interior design esthetic of his studio says it all: a mobile of mirrored glass discs hanging from the ceiling of the cramped but intimate tracking room, its black walls illuminated by lava lamps and candles, pictures of Jimmy Page and other hard rock icons ripped from magazines and scattered like rose petals around the room. Even his outboard rack is a relic of the era, still stenciled with The Who's logo and indicating it was part of the late John Entwhistle's stage rig. Raphael is very aware that another Seattle homeboy, Jimi Hendrix, also came to London to infuse his career with new traction, and after two decades of the engineering equivalent of a guitarist's woodshedding, during which he literally hustled bands into doing down and dirty and cheap demos at his studios while ducking landlords (he was evicted twice), he's ready to leverage his success with the Strokes into a new stage of a career that has been more Horatio Alger than Al Schmidt.

ENVIRONMENT

Raphael's studio, Transporterraum 2 (the first Transporterraum was in Manhattan on East 2nd Street and Avenue A, preceded by his equally scruffy Chateau Relaxo studio a few blocks away) is relatively tiny. The tracking room is about 20' x 25', and the control room is 20' square. It has more interior design than acoustical

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An oldie-but-goodie in use at Transporterraum 2.

design, which was done by Joe Havlock, who co-owns and built Bear Creek Studios in Raphael's hometown of Seattle, and whose daughter, Anna Mercedes, is Raphael's partner in the venture as well as a member of the band Miss Machine, which Raphael produced. Manny Havlock, Mercedes' mother and Joe's wife, is Raphael's business manager, helping him launch his Shoplifter Records label, which is distributed only in the UK thus far. It's a wonder Raphael finds time to work on anything, yet he produced 30 artists in the last year, working at London area studios like The Garden, where he produced Liverpool wunderkinds Without Walls and tracks for his own band, Crystal Radio, which has been playing gigs around London's vibrant club scene in anticipation of their own LP and tour.

It was largely that sense of community that drew Raphael to London's music scene. He contrasts it with what he calls New York's lackluster musical environment, one rendered moot by a combination of greed, Manhattan's inherent competitve and adversarial atmosphere, and an increasingly corporate music industry there that has distanced itself from the music it purports to foster. "The [major] labels are a bunch of accountants making bad decisions," he says, in a rare moment of vitriol. "The A&R guys can't wait for six o'clock so they can go home instead of going out to the clubs and actually seeing music," which was exactly how Raphael found his success: stalking Manhattan's clubs nightly, and offering bands he liked quickie demo deals to keep his studio afloat. That's also how he met the Strokes one night, a few days later churning out the demo that the UK label Rough Trade would release as the *Modern Age* EP in 2000, which set the stage for a bidding war before RCA landed them for *Is This It*.

"I lived in New York for six years and it's still the same six people going out to the same two bars to see music. They — the musicians and the labels — don't support the music community in America like they do in the UK. I was in Seattle when it was happening, when it was a hotbed of freaky intellectuals and great bands playing every night and having a party afterwards, instead of the land of Microsoft and Starbucks that it is now."

No Tale of the Tape

Despite Raphael's passion for the golden era of Brit rock, analog tape is not always among his first line of offense in recording. While his first recorder was a 4-track TASCAM open-reel deck, he moved quickly to a TASCAM DA-88 digital 8-track and from there to Logic and Pro Tools.

However, so many people thought that *Is This It* was recorded to 2" analog, Raphael felt compelled to at least try it out for *Room On Fire*. "After recording so many bands in the UK in the last year, I tried pushing as many as I could toward tape, so that I didn't have to watch the screen all the time and could just concentrate on the energy not the editing," he explains. "At times, I didn't use the computers at all and got great results. So I thought I'd try it with the Strokes. I thought, this will just add to the classic sound."

At TMF Studios in Manhattan, he set up the studio's Otari MTR-90 2" deck, laboriously aligning it and preparing for what he was sure would be a vintage sonic result. One pass later, a matter of ten minutes after the band started playing, Julian Casablancas came in for the playback. "He looked me in the eyes and said, 'We've spent months getting these sounds and the tape has changed it all! Why would we ever want to use it?'"

Raphael realized that, while tape was a crucial component of the classic rock sound, its use was not optional 30 years ago. Today, in a digital environment in which every nuance of sound can be heard and pinned down, analog tape is merely one more effect, and in this case one that the Strokes felt degraded the sound. "Tape doesn't automatically give you Led Zeppelin," he agrees. "What everyone says is that tape gives you this nice warm and fat bottom end. But not everyone tells you that the guitars can get a little too shiny and the hi-hat disappears into the kick drum and causes you to have to realign your entire mix as you go along. Not everything from the '60s is still the same, I guess."

PROCESS

Gordon Raphael makes records the way he made demos for decades. The Strokes' first record derived from the 3-song demo he did after he approached them at a gig. Philosophically, he has more in common with hip-hop than rock; vibe is far more important to him than a 20-foot cruiser console. He bases his technology around a combination of Digidesign Pro Tools and Emagic Logic, fed by a carefully chosen string of outboard pieces, such as his favorite Avalon VT-737 mic-pre/EQ/compressor (sitting at the top of the Entwhistle rack). "I really liked the touch of Logic combined with the power of Pro Tools as a storage media," he explains. "I can move page to page in Logic with one finger, which frees up my other hand. I use that as my edit interface and then all the D/A conversions are done

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by the Pro Tools hardware and software. My favorite plug-ins are [McDSP] Filter Bank, [Line 6] Amp Farm, and Bomb Factory compressors, which I use in Logic. The way I look at it, Logic is the face and Pro Tools is the brains. When I first started out [on hard disk systems], Logic was laid out in beats, bars, and measures, which you could easily cut and paste, so it was a much more musician-oriented approach to recording. Above all else, I am a musician. The problem with working this way is that you can't run them in tandem. They're so touchy together that if I open Pro Tools after I've launched Logic, I'll crash my computer and have to restart."

It's the musician in Raphael that dictates his production style, which has managed to rise above the limited means he had to work with until the Strokes' second record. "The key is to listen both to what the artists play and to what they have to say," he comments. "It always bugged me when I was an artist renting studio time that engineers would tell me 'this is how we do this and there's no other way.' I've learned not to put my agenda on to other people's music."

The Strokes' Julian Casablanca "was obsessed with the idea of singing through a small Peavey amplifier," says Gordon Raphael.

Gordon recounts a moment with Strokes lead singer Julian Casablancas during the recording of the original EP. "He asked me to make the vocal a bit louder in one spot, and I thought I knew that where I had it was exactly where it should be. But he asked me again and I relented and I listened and realized that he was absolutely right. From that moment on, I listened very carefully to what all of them had to say about their parts and their sounds.

MIKING

That first Strokes recording was done using the minimal gear complement that Raphael had long worked with. With only a single Digidesign 888 interface, the record was made with eight inputs into Logic: three on the drums, one for Casablancas' vocals, one each for two guitars and bass, and the remaining one as a room mic input. To further complicate things, Casablancas was obsessed with the idea of singing through a small Peavey amplifier, vocalizing into an Audio-Technica AT4033A while Raphael miked the amp with the Neumann 47 he had tried unsuccessfully to get the singer to use in the first place. The resulting edgy distorted vocals have become a trademark of the Strokes, as well as the ensemble small-room band effect dictated by the limited number of inputs.

When it came time to work on the first LP, Raphael stayed with his minimalist

Six Microphones Or Less

Gordon Raphael outlines his favorite down & dirty drum setups

This one is daring: just six mics!

1. A Shure Beta 58 for the kick drum, placed inside the hole aimed diagonally at the front head.

2. A Shure SM57 for the snare, right above the rim and aimed parallel to the snare head.

3. One mic (whatever!) somewhere up in the air aiming down over the snare and catching cymbal smashing.

4. One Sennheiser 421 black-electric-razor-looking mic on the floor tom, angled down quite close.

5. One condenser mic in front of the kick drum four feet away — low enough to get all the drums, and to avoid as much of the cymbals as you can! Compressed to taste and a bit distorted to mix in and give some lifelike action.

6. A random condenser mic or again — whatever! — compressed to taste and placed anywhere strange in a room (pointing at a window, aimed at the ceiling, wrapped in newspaper and stuffed between the hi-hats?).

At Transporterraum in New York I'd run the kick, snare, tom, and overhead through a Soundcraft Ghost Mixer. (I always avoid most modern small mixers — they rob tone instead of providing it!) I'd run the explosive condenser mic in front of the kick drum through the Avalon 737 valve preamp, EQ, and compressor. The random mic could be through a Neve preamp. (It's fun when using digital recording to buy just the preamp parts of old mixing boards instead of the whole channel strip — it's cheaper and gives a much cooler sound than most modern gear.) Then run the random mic through an Empirical Labs Distressor, one of the best secret weapons for music out there.

Or . . . try this super daring experiment:

1. A single Neuman U-87 or Audio-Technica AT4033A run through a Neve preamp or the Avalon's preamp, then through the Distressor with compression at Nuke setting. This mic was placed 2' from the ground and four feet in front of the drumset in a very small room (our old Chateau Relaxo studio on Ludlow Street) and sounded like the most amazing combination of John Bonham's drums and Massive Attack records.

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methodology. The kick drum was miked with a Shure Beta 58, with 57s on the snare top and bottom, and another AT4033A placed in front of the kit, a placement Raphael describes as "my secret weapon. You place it in front of the kick high enough to get the drum kit but low enough to avoid getting the wash of the cymbals. Then I run it through the Avalon 737 and compress it heavily and add some [overloading] distortion, then blend it into the overall mix. It adds some nice nastiness to the track and it gives the entire track a sense of emotion." The secret weapon's warhead was changed for *Room On Fire* to a Neumann U87 and U47, but the basic concept remained intact. Some of the drum tracks on the first LP were also very obviously gated, achieving what Raphael calls a drum machine effect while they were being played by a live drummer. The method there was to move the hi-hat to the other side of the drum kit, an idea conceived by drummer Farbrizio Moretti. "He decided he could put it about four feet away from the snare mic and play it with his other hand," Raphael explains. "That way, there was no bleed from the hat [to trigger the gate]." Guitars were miked using Sennheiser 421s hanging over the tops of the Fender DeVille amplifiers, one on either side of the room, run directly into an API preamp.

For the *Room On Fire* sessions, the methodology remained strikingly similar, despite the fact that Raphael and the band were now working in a larger, conventional studio, TMF Studios in Manhattan, and with a budget that wouldn't cause hard choices between renting a microphone and ordering pizza. "A lot of the recording techniques on *Room On Fire* were the same ones we used on the EP," Raphael says, noting a few changes, such as the use of an AKG D-112 on the kick drum and the elimination of the Peavey vocal enhancer. The vocals this time were recorded directly through an AT4033A into the Avalon 737 preamp, then through an LA-2A compressor pushed hard to get a grainy sound — "ferocious," as he describes it. In addition, Raphael then processed the lead vocals with a combination of four plug-ins, including the Bomb Factory LA-2A. "Three layers of compression and one of EQ," he says. And with the exception of the plug-ins, the distortion of the 737 was recorded as part of the vocal sound.

"When RCA stopped by the studio they asked if we could alter the vocal sound," Raphael says, a hint of smugness in his voice. "They thought it was strange sounding and they were a little upset. But we told them we couldn't back it off, it was printed with the vocal. That was the end of that." HyperDraw was also used to define the outline of the vocals more clearly. "It's one of the few times I used the computer as a computer instead of just a recording device," he says. "A lot of people have tried to use the techniques we used on the records to imitate the sound. But what they don't realize is that

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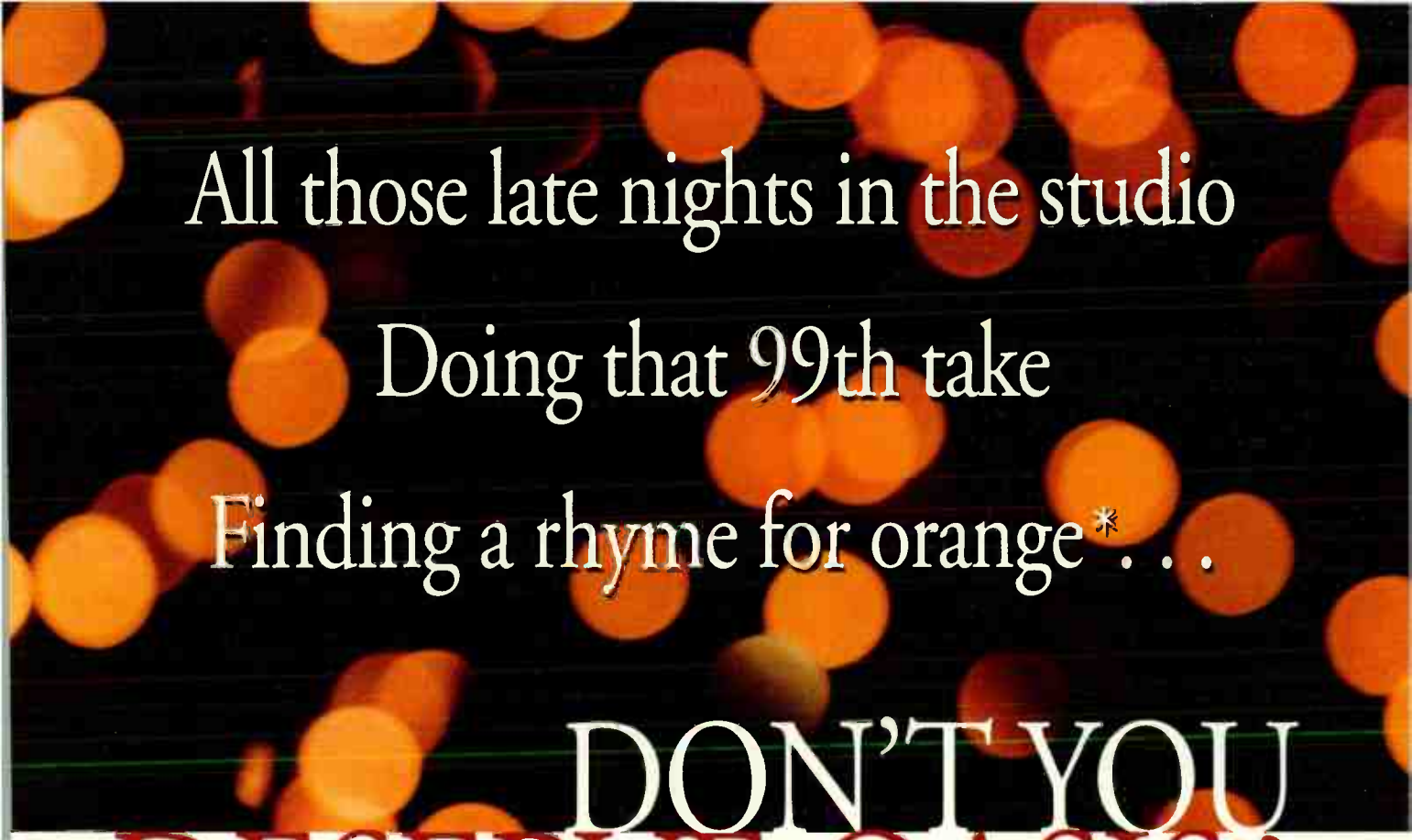

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there's clarity to the instruments and vocals on the records, which is the real key to the sound: It's distorted and grungy, but every word, every guitar lick, is clear as a bell."

ROOM ON FIRE

For the making of *Room On Fire*, the Strokes were out of the basement. "The real difference was that we had the luxury of time — we worked on it three whole months virtually nonstop from 2:00 in the afternoon sometimes until 7:30 the next morning," Raphael recalls. "The hard part really was that the band wanted everything to be better — better songs that Julian had worked on very hard, better playing, better parts — but without changing the vibe or the sound." Which is no simple task, and it brought out an innately selfless characteristic in Raphael: In a well-documented event preceding *Is This It*, Rough Trade directed the Strokes toward a "name" producer — Gil Norton, producer for Counting Crows, The Pixies, and Dashboard Confessional — Raphael demurred when asked by the band if he thought he could compete with a marquee value name. After a short trial, the Strokes called Raphael up and asked him to come back and conjure his gritty magic once more for their debut LP. Like a predictably dysfunctional relationship, the same thing happened prior to *Room On Fire*, with RCA promoting Radiohead producer Nigel Godrich. Three demos at nearby RPM Studios later, the Strokes were back with Raphael, who views these interludes not as slights but rather as understandable experiments in pursuing the elusive "better."

The mix of *Room On Fire* was also an echo of earlier recordings. "The Strokes records are pretty much mixed by the time we get to *the* mix," Raphael says. "That's because they want to hear what the sounds are going to be like as they record them, not wait for them to be processed later on in a mix. The song 'New York City Cops' [which was on the first Strokes album in the UK but wasn't released in the States] was literally mixed when we finishod recording it. I think we added one tiny little vocal part. If the band is comfortable with the sound from the minute they walk in, they'll play in such a way that when the playing's done, the record's virtually done."

HOMECOMING

Gordon Raphael's on a roll at the moment. Even the taste-making *New Music Express*, the UK's *Rolling Stone*, which had extolled the Strokes as a sonic Second Coming but which tended to curtly dismiss Raphael's other productions over the last year, has been positive about his Crystal Radio band project. Shoplifter Records is beginning to hum. With Transporterraum 2 up and running — its first session was literally the day of our interview — he now has a base in London, the city that inspired so much of his youthful musical aspirations. "So much of the music I loved was made here," he says. "It definitely feels like coming home." EQ

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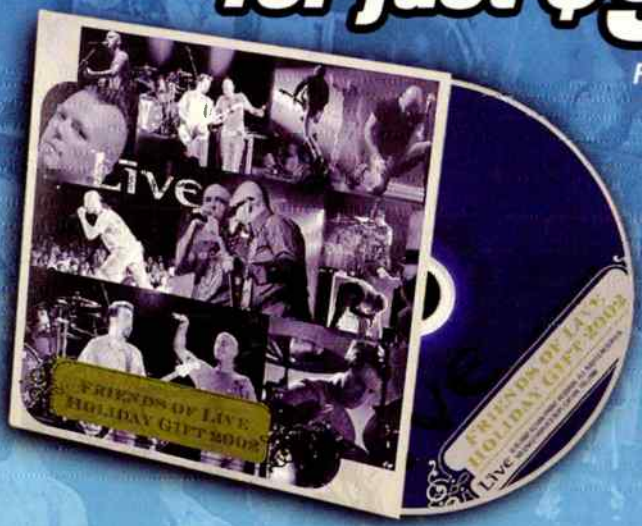
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by Craig Anderton

Say it Loud

. . . but do it without overcompressing

I was driving along one of those Floridian roads that goes between the coasts, and is flatter than the Spice Girls without auto-tune . . . in other words, a perfect place to crank up my car's CD player. As it segued from a recent CD into Simple Minds' "Real Life," which I hadn't heard in a while, I noticed it was somewhat quieter, so I turned up the volume.

And in the process, I got to experience *dynamics*, like they used to have on CDs back in the '80s. Much has been said about the evils of overcompression, but we're so used to it that sometimes you need to hear great music, intelligently mixed without excessive compression, to remember what we're missing.

Dynamics are an essential component of a tune's overall emotional impact. Yet some engineers kill those dynamics, because "everyone else does it," and they don't want their songs to sound "weak" compared to others. So we're stuck in a rut where each song has to be louder than the last one — listener fatigue, anyone? I sometimes wonder if the decline in sales of recorded music has something to do with today's mastering style, which makes music that while loud, is ultimately not that much fun to listen to.

So what's an engineer to do? Compromise — find that sweet spot where you preserve a fair amount of dynamics, but also have a master that's loud enough to be "in the ballpark" of today's music. The following tips are designed to help you do just that. Maybe your tune won't be quite as loud as everyone else's, but I bet it will elicit a more emotional response from those willing to turn up their volume control a bit.

NUKE THE SUBSONICS AND DC OFFSET

Digital audio can record and reproduce energy well below 20 Hz from sources like downward transposition/pitch-shifting, and DSP operations that allow control signals (such as fades) to superimpose their spectra onto the audio. While inaudible, they still take up headroom. You may be able to reclaim a dB or two by simply removing everything below 20 Hz. However, note that if you can find individual tracks that contribute to a subsonics problem and do any needed fixes while mixing, this eliminates the need to add filtering on the entire song.

Another culprit, DC offset, reduces headroom because positive or negative peaks are reduced by the amount of offset. Removing residual DC offset, using the "Remove DC offset" function found in most digital audio editors, "centers" the waveform around the 0V point, thus allowing a greater signal level for a given amount of headroom.

Fig. 1. Waves' MaxxBass isolates the signal's original bass and generates harmonics from it. You can then adjust the blend of the original bass with the bass contributed by the MaxxBass.

DO YOU REALLY NEED MONDO BASS?

As the ear is less responsive to bass frequencies, there's a tendency to crank up the bass, especially among those who lack mixing experience. Reducing bass can open up more headroom for other frequencies.

To compensate for this and create the illusion of more bass:

- Use a multiband compressor on just the bass region. The bass will seem as loud, but take up less bandwidth.
- Try the Waves MaxxBass plug-in (Fig. 1; a hardware version is also available), or the Aphex Big Bottom processor. MaxxBass isolates the signal's original bass and generates harmonics from it; psycho-acoustically, upon hearing the upper harmonics, your brain "fills in" the bass's fundamental. The Big Bottom process uses a different, but also highly effective, psychoacoustic principle to emphasize bass.

FIND/SQUASH PEAKS THAT ROB HEADROOM

Another issue involves peak vs. average levels. To understand the difference, consider a drum hit. There's an initial huge burst of energy (the peak) followed by a quick decay and reduction in amplitude. You will need to set the recording level fairly low to make sure the peak doesn't cause an overload. As a result, there's a relatively low average energy.

On the other hand, a sustained organ chord has a high average energy. There's not much of a peak, so you can set the record level such that the sustain uses up the maximum available headroom.

Entire songs also have moments of high peaks, and moments of high average energy. Suppose you're using a hard disk recorder, and playing back a bunch of tracks. Of course, the stereo output meters will fluctuate, but you may notice that at some points, the meters briefly register much higher than for the rest of the tune. This can happen if, for example, several instruments with loud peaks hit at the same time, or if you're using lots of filter resonance on a synth, and a note falls within that resonant peak. If you set levels to accommodate those peaks, then that reduces the song's average level.

You can compensate for this while mastering by using limiting or compression,

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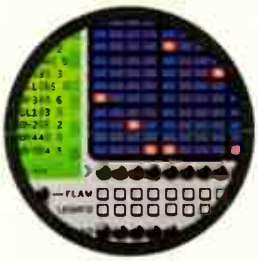

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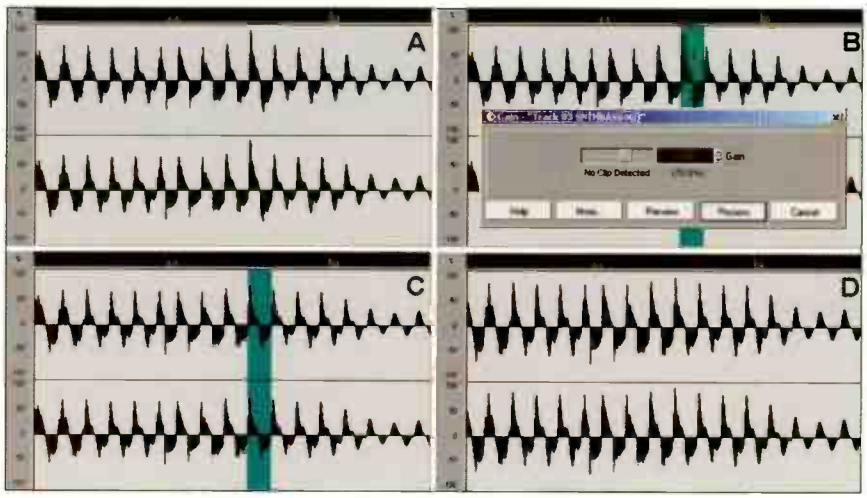

Fig. 2. (A) shows the original signal. In (B), the highest peak has been located and is about to be attenuated by –3 dB. (C) shows what happens after attenuation — it's now only a little higher than the other peaks. In (D), the overall signal has been normalized up to 0.00 dB. Note how the signal has a higher average level than in (A) — all the other peaks are higher than they were before — but there was no need to use traditional dynamics processing.

which brings the peaks down and raises the softer parts. However, if you instead reduce these peaks during the mixing process, you'll end up with a more natural sound because you won't need to use as much dynamics processing while mastering.

The easiest way to do this is as you mix, play through the song until you find a place where the meters peak at a significantly higher level than the rest of the tune. Loop the area around that peak, then one by one, mute individual tracks until you find the one that contributes the most amount of signal. For example, suppose a section peaks at 0 dB. You mute one track, and the peak goes to –2. You mute another track, and the section peaks at –1. You now mute a track and the peak hits –7. Found it! That's the track that's putting out the most amount of energy.

Referring to Fig. 2, zoom in on the track, and use automation or audio processing to insert a small dip that brings the peak down by a few dB. Now play that section again, make sure it still sounds okay, and check the meters. In our example above, that 0 dB peak may now hit at, say, –3 dB. Proceed with this technique through the rest of the track to bring down the biggest peaks. If peaks that were previously pushing the track to 0 are brought down to –3 dB, you can now raise the track's overall level by 3 dB and still not go over 0. This creates a track with an average level that's 3 dB hotter, without having to use any kind of compression or limiting.

Fig. 3. Some equalizers let you adjust the graph's vertical resolution, making it easier to see tiny amounts of EQ. Here, a very broad 0.5 dB boost has been added at 3.2 kHz.

CHEAT!

The ear is most sensitive in the 3–4 kHz range, so use EQ to boost that range by a *tiny* amount (Fig. 3), especially in quiet parts. The song will have more presence and sound louder. But be *extremely* careful, as it's easy to go from teeny boost to annoying stridency. *Even 1 dB of boost may be too much.*

SQUASH IF YOU MUST

If you still need something slightly hotter, bring on a level maximizer or high-quality multiband compressor. However, by implementing the level maximizing tricks mentioned above, you won't need to add much dynamics processing . . . if you've been adding, for example, four to six dB of maximization, you may be able to get equally satisfying results with only one or two dB of maximization, thus squashing only the highest peaks while leaving everything else pretty much intact.

A final consideration involves mastering for the web. While some engineers add massive amounts of compression to audio that will be streamed, in practice data compression allows for a reasonable amount of dynamics. If you're streaming audio, then the sound quality is already taking quite a hit, so preserving dynamics can help make the music sound at least a little bit more natural. If you work with streaming audio, try the techniques mentioned above instead of heavy squashing, so you can judge whether the resulting sound quality is more satisfying overall. EQ

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THE COMPLETE GUIDE TO RE-AMPING

HOW TO SEPARATE SOUND FROM PERFORMANCE

by Craig Anderton

It used to be that recording a guitar part set its sound in stone. Sure, you could add EQ, reverb, or other processors while mixing, but they provided variations on a theme, not an entirely different theme.

But now, if you wish you'd recorded through a Fender Twin amp instead of an AC30 – no problem. There are two main options for changing your sound after the fact: traditional re-amping, and virtual re-amping with software plug-ins. Although re-amping has been around for awhile, the quest for increased sound quality has spawned new re-amping solutions.

Furthermore, re-amping isn't just for guitar any more. Playing back drums, vocals, synthesizers, and other instruments through guitar amps yields entirely new tonalities.

Before proceeding, I'd like to thank Peter Janis of Radial Engineering (who make boxes for re-amping, among other things) for his research on the history of re-amping, and for contributing several useful tips.

Ready to re-amp? Let's rock.

PART I: Techniques

HARDWARE RE-AMPING

"Classic" re-amping was done originally with mixers, recorders, and amps, and applied mostly to guitars. This remains a common technique, and even virtual re-amping may incorporate a bit of hardware-based re-amping.

The basic idea is to record the dry guitar sound while monitoring through an amp so the guitarist can get the right "feel" (and if feedback is a component of the sound, suitable sustain characteristics). Typically, you record the amp as well because it might end up being the sound you want.

If not, the next re-amping step is to send the dry guitar track out from the recorder and into an amp, set the amp sound as desired, then record the "re-amped" sound. As the recorder's signal will likely be line level, applying it to a standard guitar amp will *really* overload the sucker and create some major distortion. If that's not what you want, you'll need to pad down the signal feeding the amp to something approximating standard guitar levels.

Also note that re-amping makes sense for any instrument (especially synthesizer) that's recorded direct. Running the track through an amp, and miking the amp and/or room ambience, can impart a new sense of "space."

GET A LOAD OF THIS

To capture a characteristic guitar sound, you need to record the same thing you would hear if the guitar connected directly to an amp. Although many people like the "high-fidelity" sound of a guitar feeding an ultra-high impedance input, others prefer the slight dulling that occurs with a low-impedance load (*e.g.*, around 5–100 kohms) as found with some effects boxes, older solid-state amps, etc. This is especially useful when the guitar precedes distortion, as distorting high frequencies can give a grating, brittle effect that resembles Sponge Bob on helium.

There are several ways to get your guitar loaded:

- Find a box that loads down your guitar by the desired amount, then split the guitar to both the box and the mixer or soundcard's "guitar" input.
- If your recorder, mixer, or soundcard has a guitar input, try using one of the regular line level inputs instead.
- Use a box with variable input impedance (*e.g.*, the "drag control" on Radial products).
- Create a special patch cord with the desired amount of loading by soldering a resistor between the hot and ground of either one of the plugs. A typical value would be 10 kohms.
- If you're going through host software with plug-ins, insert an EQ and roll off the desired amount of highs before feeding whatever produces distortion (*e.g.*, an outboard amp that feeds back into the host, or an amp simulator plug-in). However, this doesn't sound quite as authentic as actually loading down the pickup, which creates more complex tonal changes.

Note that you need to add this load while recording, as it's the interaction between the pickup's inductance and load that produces the desired effect. Once the dry track is recorded, the pickup is out of the picture.

But just because we have a signal doesn't mean we can go home and collect our royalties, because this signal now goes through a signal path that may include pedals and other devices. As guitarists are very sensitive to the tone of their rigs, even the slightest variation

The Multi Z PIP is only one of several products from Little Labs that does re-amping.

The first commercially available box for re-amping has been tweaked and revised over the years.

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The JD7 not only does re-amping, but it can distribute the signal to multiple amps or effects systems.

from what's expected may be a problem. For example, the transformers in some direct boxes or preamps (*e.g.*, the Reamp box and Radial JDI "run backwards") color the sound slightly, so the guitarist might want to send the signal through the transformer, even though transformer isolation is usually not necessary with a signal coming from a recorder.

VIRTUAL RE-AMPING

Plug-ins and low-latency soundcards have opened up "virtual re-amping" options. Guitar-oriented plug-ins include the IK Multimedia AmpliTube, Line 6 Amp Farm, Steinberg Quadrafuzz and Warp, iZotope Trash, Mackie/UAD Nigel, Alien Connections ReValver, Cakewalk Amp Sim, MDA Bandisto, and others.

The concept is similar to re-amping: Record the direct signal to a track, and monitor through an amp. But here, the amp is virtual — and when mixing, you can use different plug-ins for different amp sounds, and/or do traditional hardware re-amping by sending the recorded track through an output, and into a miked hardware amp.

Using plug-ins has limitations. If feedback is part of your sound, there's no easy way to create a feedback loop with a direct-recorded track. This is one reason for monitoring through a real amp, as any effect the amp has on your strings will be recorded in the direct track. Still, this isn't as interactive as feeding back with the amp that creates your final sound. And plug-ins themselves have limitations; although digital technology does a remarkable job of modeling amp sounds, picky purists may pout that some subtleties don't translate well.

Furthermore, monitoring through a host program demands low-latency drivers (*i.e.*, Steinberg ASIO, Apple Core Audio, or Microsoft WDM). Otherwise, you'll hear a delay as you play. Although there will always be some delay due to the A/D and D/A conversion process, with modern systems this is typically under 5 ms. For some perspective, 3 ms of latency is about the same delay that would occur if you moved your head one meter (3 feet) further from a speaker — not really enough to affect the "feel" of your playing.

If latency is an issue, there are other ways to monitor, like ASIO Direct Monitoring (this requires an ASIO2-compatible audio interface). Input signal monitoring is essentially instantaneous; you can also feed the output to a guitar amp for monitoring, while recording the straight signal on tape. However, the signal appearing at the audio interface in is simply directed to the audio interface out, without passing through any plug-ins.

In any event, regardless of whether you use hardware re-amping, virtual re-amping, or a combination, the fact that the process lets you go back and change a track's fundamental sound without having to re-record it is significant. If you haven't tried re-amping yet, give it a shot — it will add a useful new tool to your bag of tricks.

PART II:
A History of Re-Amping

As with so many aspects of audio, it's hard to pin down exactly when a technique was first used, and that goes for re-amping. While Reamp made the first commercial box designed expressly for this purpose, engineers had already been creating re-amping setups for years.

Recording historian Doug Mitchell, Associate Professor at Middle Tennessee State University, comments that "The process of 're-amping' has actually been utilized since the early days of recording in a variety of methods. However, the actual process may not have been referred to as re-amping until perhaps the late '60s or '70s. From the early possibilities of recording sound, various composers and experimenters utilized what might be termed 're-amping' to take advantage of the recording process and to expand upon its possibilities.

"In 1913 Italian Futurist Luigi Russolo proposed something he termed the 'Art of Noises.' Recordings of any sound (anything was legitimate) were made on Berliner discs and played back via 'noise machines' in live scenarios and re-recorded on 'master' disc cutters. This concept was furthered by Pierre Schaeffer and his 'Musique Concrète' electronic music concept in the '30s and '40s. Schaeffer would utilize sounds such as trains in highly manipulated processes to compose new music ideas. These processes often involved the replaying and acoustic re-recording of material in a manipulated fashion. Other experimenters in this area included Karlheinz Stockhausen and Edgard Varese.

"With the possibilities presented by magnetic recording, the process of what might be termed re-amping was utilized in other 'pop' music areas. Perhaps the first person to take advantage of this was Les Paul. His recordings with Mary Ford often utilized multiple harmonies all performed by Mary. Initially these harmonies were performed via the re-amping process. Later, Les convinced Ampex to make the first 8-track recorder so that he might utilize track comping to perform a similar function. Les is also credited with the utilization of the re-amping process for the creation of reverberant soundfields, by placing a loudspeaker at one end of a long tunnel area under his home and a microphone at the other end. Reverberation time could be

Re-Amping in the Real World

Producer/engineer Dave Bottrill (who uses a Radial JD7 for re-amping) says that "It's now my standard practice to record a DI along with the rest of the cabinets or combos I record. Invariably one of the songs I am working on for a record needs some kind of re-amping, and on the Godsmack CD, it proved invaluable when we discovered some faults with the signal path when we recorded some of the guitars. There were analog distortions along the line, and we just took the DI and sent it back through the same path (luckily we hadn't torn down the setup) and were able to recreate the sound exactly without the line crackle.

"Creatively, a re-amping box allows me to send all kinds of signals through my stomp box collection with the correct impedance. For example, I love the sound of drums through my old Electro-Harmonix Micro Synth pedal."

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altered with the placement of the microphone with respect to the loudspeaker playing back previously recorded material.

"Wall of sound pioneer Phil Spector is perhaps the most widely accredited for the use of the re-amping process, and because of his association with the Beatles, is potentially regarded today as the developer of the process. However, Phil was actually refining a process and exploring its possibility for use in rock music.

"'Re-amping' is often used in film sound design as well. In order for sounds recorded in a post-production environment to match the scene, it is common to re-record them utilizing a re-amping procedure. In film sound this process is also termed 'worldizing.'

Bob Ohlsson of Motown fame, who has worked with Stevie Wonder, Marvin Gaye, the Kinks, and many others had another perspective: "I began doing it in 1968, shortly after we got 16-track machines, because for the first time we could separately record direct guitars, clavinets, and electric pianos. I had never heard of it being done and am pretty sure I was the first to try it at Motown, but I can't imagine lots of others weren't doing the same thing. It seemed

Virtual Re-Amping in Cakewalk Sonar

The May '03 issue of *EQ* covered how to play through plug-ins for a variety of hosts, including Sonar. However, the latest Sonar update changes the procedure a bit; here's the procedure (see screenshot).

1. **Check that there is no feedback loop from the host output back to the input. To be safe, turn down your monitor speakers.**
2. **Feed the instrument to be virtually re-amped into the desired audio track by choosing the appropriate hardware input.**
3. **Enable the driver for the desired input (under *Audio Options > Drivers*).**
4. **Turn on the Input Echo function (in the Track view, click on the button to the right of the Record button). It will glow green.**
5. **Enable the track's Record button. You should hear your input source.**
6. **Insert the plug-in(s) of your choice into the FX field.**
7. **Your input source will play through the plug-in . . . start recording!**

The key to "virtual re-amping" is that Sonar (and other hosts) records the straight guitar signal to the track. So, any processing that occurs depends entirely on the plug-in(s) you've selected; you can process the guitar as desired while mixing, including changing "virtual amps."

This shot shows IK Multimedia's AmpliTube inserted as a realtime effect into Sonar 3.

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The experts speak

"I choose the tools that best help me convert my ideas and Imagination into music. That's why I'm using M-Audio's new Studiophile BX8 reference monitors. They sound absolutely brilliant—even after an exhausting 18-hour writing day. And what I hear in my studio comes across exactly as I intended, wherever my mixes go."
Jeff Rona (film composer; "Traffic," "Black Hawk Down")

"I'm surprised and excited by the tonality of the BX8s. Unlike most speakers I've checked out, they have a nice open middle quality to them—along with the bonus of a smooth low end and not-too-shiny top. I added M-Audio's subwoofer and was really impressed with what it contributed to the mix."
(Grammy-winning producer; Paul McCartney, Sugar Ray)

"I have to go between analog and digital all the time and the BX5s have become my workhorse."
Terry Howard (Grammy-nominated engineer/

"Little package, big presentation. I wouldn't work a session without them."
Steven Barkan (Grammy-nominated engineer/producer; BT, Mariah Carey, George Benson)

"Music broadcasts differently on different networks. So this week, the final test of the music created and mixed on M-Audio monitors was listening to it on air. "Will & Grace" (NBC), "Good Morning Miami" (NBC), "Reba" (WB) and "Less Than Perfect" (ABC) all sounded great."
Jonathan Wolff (TV composer; "Seinfeld," "Will & Grace")

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like a very obvious thing to do in a world where electric instruments were taken direct primarily to cut down on bleed rather than for tonal quality."

And Roger Nichols, who needs no introduction to *EQ* readers, was another early adopter. "I started using the process in 1972, when I built the re-amper we used on the first Steely Dan album, and almost every one after that. We used it to play direct guitar tracks back through an amp. We were going through a lot of amps; the speakers would get tired or the tubes would melt or something during a night of guitar overdubs.

"We would go through one amp to make sure we got the sound we wanted, and then when the right guitar and settings were locked in, we recorded the direct signal and let the amp rest. After the part was completed, we ran the signal back through the guitar amp and it only had to last long enough to print the results to tape. I still have the box around here somewhere." (According to Jonathan Little of Little Labs, Jeff Harris at the Arizona Conservatory has one of Roger's early boxes.)

In 1980 Jensen Transformers introduced the JT-DBE transformer, and in the application note, a paragraph discusses using this transformer to convert low impedance balanced lines to guitar levels. In the 1980s, Whirlwind also produced a device that could accommodate low-to-hi conversion using a transformer.

In 1994, Reamp commercialized the process by producing a box (reviewed Nov. '98 *EQ*) that incorporated a transformer and a volume control. This was a follow-up to the original box that Reamp founder John Cuniberti used on sessions with Steve Vai, and allowed the user to adjust the volume at the amplifier instead of at the mix position. In 1996, the first generation Radial JDI was introduced, and was designed with re-amping, among other applications, in mind; the Radial JD7 Injector, released in 2001, offered a balanced output and input to allow re-amping and subsequent re-distribution of signals to multiple amplifiers. Furthermore, the IBP from Little Labs (reviewed Aug. '03), while intended mainly to provide phase compensation for signals, also provides re-amping functions, as does their Multi Z PIP. EQ

Acknowledgment: Thanks to Frank Wells at Pro Sound News *and Mitch Gallagher at* EQ *magazine for helping us track down these folks. — Peter Janis*

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by John Krogh & Greg Rule

MOTU DP4

Bye, bye OS 9 . . . hello Brave New World

weblink

Type: MIDI+audio recorder with built-in effects
Platform: Mac OS X
Price: $795; $395 competitive upgrade; $295 upgrade from previous versions of Performer; $149 upgrade from previous versions of Digital Performer
Contact: MOTU, www.motu.com

Minimum requirements: Power Mac G3 or higher, OS X version 10.2 or higher, 256 MB of RAM; G4 or faster with 1 GB RAM or more recommended
Copy protection: serial number on installation
Audio resolution: up to 24-bit/192 kHz
Audio driver compatibility: CoreAudio, Pro Tools/OAE
MIDI support: CoreMIDI
Plug-in and soft synth support: MAS for OS X, Audio Units, ReWire 2
Audio file compatibility: AIFF, WAV, Acidized WAV, SDII, REX, Broadcast Wav, MP3

For Mac users in the audio community, the grand debut of OS X in 2000 brought the promise of an advanced generation of power applications. When the smoke cleared, however, not much was standing in the wake of the announcement. But then, at long last, came an update called Jaguar, and soon after came the cake beneath the icing — MOTU's DP4, for example.

DP (*a.k.a.* Digital Performer) has a celebrated history that dates back to 1984. Originally called Performer, the popular Mac-only MIDI sequencer evolved slowly but steadily into the digital audio powerhouse it is today. DP provides a full-featured MIDI production environment (including event-list editing, piano-roll editing, drum-grid editing, and notation), plus an integrated high-resolution multitrack audio recorder and automated mixing engine.

While DP's feature set has constantly expanded and improved, one item has remained the same from day one: a stylish, inviting user interface. This is one gorgeous app. But eye candy alone does not a complete production environment make, so let's home in on the new features of version 4.

NEW IN 4.0

One of DP4's most notable new features is also its least glamorous: OS X compatibility. After years of doing things their own way — proprietary plug-in format, MIDI system, and so on — MOTU surprised many by being among the first to adopt and implement OS X's audio and MIDI features. Specifically. . . .

■ *Core Audio support.* DP4 now takes advantage of OS X's audio services, providing universal compatibility and interoperability with any Core Audio-compatible software and hardware. There's no need for special drivers or wrappers — just install your software, plug in your audio hardware, and go.

Part of DP's Core Audio features includes the ability to access multiple audio hardware interfaces simultaneously. (This is actually a function of the operating system.) In one instance, we were able to use a MOTU 828 FireWire interface together with an Emagic EMI 2|6 USB interface within a single session. Very cool.

There are some issues to consider, though. As of this writing, Core Audio doesn't provide a way to synchronize audio interfaces to a common reference (word clock), which means audio being output from two or more interfaces may drift apart over time. This isn't the same as digital sources not referencing a common digital clock: You won't experience any digital "ugliness" as you would if one interface was connected to the other digitally without being synced. Track drift shouldn't be a problem, however, unless your sessions are extremely long (*much* longer than the average pop song), or if you spread multiple tracks (overheads, room, and close-miked drum tracks, for example) across two interfaces. The tracks won't stay phase-locked; we honestly can't think of a reason to work this way, so there shouldn't be anything to worry about.

■ *Core MIDI support.* It's time to leave OMS and FreeMIDI behind. OS X's Core MIDI works very much like these "legacy" MIDI operating systems; hardware devices are assigned to MIDI interface ports, and these assignments show up in any Core MIDI-compatible host. Rebuilding your FreeMIDI or OMS setup under OS X requires you to use the Audio MIDI Setup utility.

■ *XML patch lists.* No, this isn't the last remains of the failed XFL football league. MOTU's own FreeMIDI allowed for patch names to be listed within DP under OS 9, so you could choose patches by name rather than by num-

THE CONVENIENT NEW STUDIO MENU CONTAINS COMMANDS FOR A VARIETY OF HARDWARE SETTINGS

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ber. Apple has apparently taken a tip; their Core MIDI XML Patch List feature works along the same lines. Currently it doesn't support expansion cards, nor does it allow you to edit the names, which you'd want to do so the patch lists accurately reflect the names in your synth(s). Fortunately there's a shareware utility, Cherry Picker, which addresses these shortcomings. It can even import patch list names from FreeMIDI into the XML format. Download it at www.savagetranscendental.com/cherrypicker.

According to MOTU, they've been lobbying Apple to further develop support for patch lists to bring it up to par with what DP users are used to. Thanks to MOTU, all of FreeMIDI's hundreds of patch lists have been ported to Mac OS X, where they can be used by any Core MIDI-compatible software.

■ *Drum note names.* Just as patch names are available with OS X's MIDI tools so too are drum note names, provided you're using a supported MIDI drum or tone module. Basically, this means you can view sounds in your hardware synths by name, allowing you to build drum kits with instrument names such as "808 kick" and "sizzling hat" rather than *C*#1 and *D*-0.

■ *Interapplication MIDI and ReWire 2 support.* These two items both involve publishing virtual MIDI inputs and/or outputs, which is why we've lumped them together. DP can publish an unlimited number of MIDI ins and outs, allowing the program to transmit and receive MIDI data streams to and from other Core MIDI-compatible software. This would allow you to send MIDI from one source, such as a standalone soft synths LFO, to DP for controlling a plug-in parameter, or whatever.

ReWire works in a similar way; ReWire devices (such as any of Reason's synths or samplers) are published to DP, allowing you to select them as if they were hardware devices represented within the Audio MIDI setup.

No problems to report working with DP and Reason using Reason's synths as virtual tone modules, even with low sample buffer settings. We were able to sequence multiple MIDI tracks with very low sample buffer settings (128 samples) and render the results as audio without a single hiccup. Nice.

■ *Core MIDI time stamping.* MOTU's own MIDI Time Stamping technology, which is available in their USB MIDI interfaces and is taken advantage of by DP 2.x and 3.x under OS 9, has been around for a couple of years. Again, it seems Apple has recognized a good idea because they've built their own version of time stamping into Core MIDI, allowing hosts that support this aspect of Core MIDI to achieve a 12th of a millisecond timing accuracy on input and a 3rd of a millisecond on output.

On the hardware side, the interface must also be able to work with Core MIDI's time stamping. Not all interfaces do (the Emagic Unitor 8 does not, for example). MOTU's USB interfaces do, however.

■ *Freeze Tracks.* When this feature was first announced it raised cheers across several online forums because, at the time, Logic Audio was the only Mac program that offered "freezing." Simply put, with freeze you can render (freeze) any number of audio and/or virtual instrument tracks, along with any insert and bus effects, as a single mono, stereo, or surround file, thereby freeing up CPU resources. Tracks can be unfrozen to allow for changes, then refrozen — or not. In the case of Logic, Freeze actually disables plug-ins and audio track voices to free up the CPU.

It was thought (and rightfully so) that DP 4's Freeze function would work the same way. This isn't exactly the case, though. DP's Freeze *does* allow you render audio and instrument tracks — we were able to test this with Reason and MachFive sampler tracks — but really all it does is simplify the setup process you'd normally go through for a track bounce. DP's Freeze is a real-time function with aux tracks, so you have to wait while these tracks play, and when the process is complete, the tracks and plug-ins are still active. It's up to you to go back and disable any effects and audio voices. (With regular disk tracks, Freeze is also realtime-only, but plug-ins and audio voices are disabled automatically).

■ *Reorganized menus.* The look and feel of DP hasn't changed dramatically in version 4, but there are a few nips and tucks that make using the program even cleaner. There's a new Project menu, for example, where all project-related commands, such as adding tracks, are now consolidated. This is also where you'll select windows (Tracks, Mixing Board, etc.). Previously these windows were in the Windows menu. We're not sure moving them to the Project menu makes more sense. In any case, what makes more sense (to us, anyway) is the Studio menu — here's where you get at a number of functions (click and count-off options, step record, etc.) previously located in the Basics menu. The new Setup menu contains many of the hardware-related settings, such as control surface setup, MIDI device configuration, audio system options, and so on. None of these changes should cause too much confusion.

A final OS note before moving on. While DP4 embraces OS X, it's not OS 9 compatible. Some folks might be disappointed that MOTU isn't continuing their "legacy OS support," but this decision is understandable as the momentum is clearly shifting to OS X for Mac users. Having said that, MOTU has equipped DP4 with a healthy set of file compatibility options, including OMF support and backward compatibility stretching as far back as Performer version 2.41. This means you can share your files with any DP user and vice versa.

4.1 ENHANCEMENTS

The debut of DP4 was a milestone for MOTU, but in Sept. 2003 the company turned up the heat with the release of DP 4.1, which added the following key features:

■ *Audio Units support.* Hooray! Now DP users can run AU plug-in effects and instruments along with any OS X MAS plug-ins.

■ *Pro Tools HD and TDM support.* This lets DP users incorporate Pro Tools hardware in their setups using Digidesign Audio Engine (DAE). DP 4.1 supports Digidesign's new Pro Tools HD Accel card as well.

■ *Virtual instrument tracks.* Audio streams from software instruments are accessible from dedicated virtual instrument tracks. You'll still need to use MIDI tracks to play plug-in synths, however. Ideally we'd like to

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see this consolidated into one type of track in which you can load a synth plug-in and record MIDI data.

SESSION NOTES

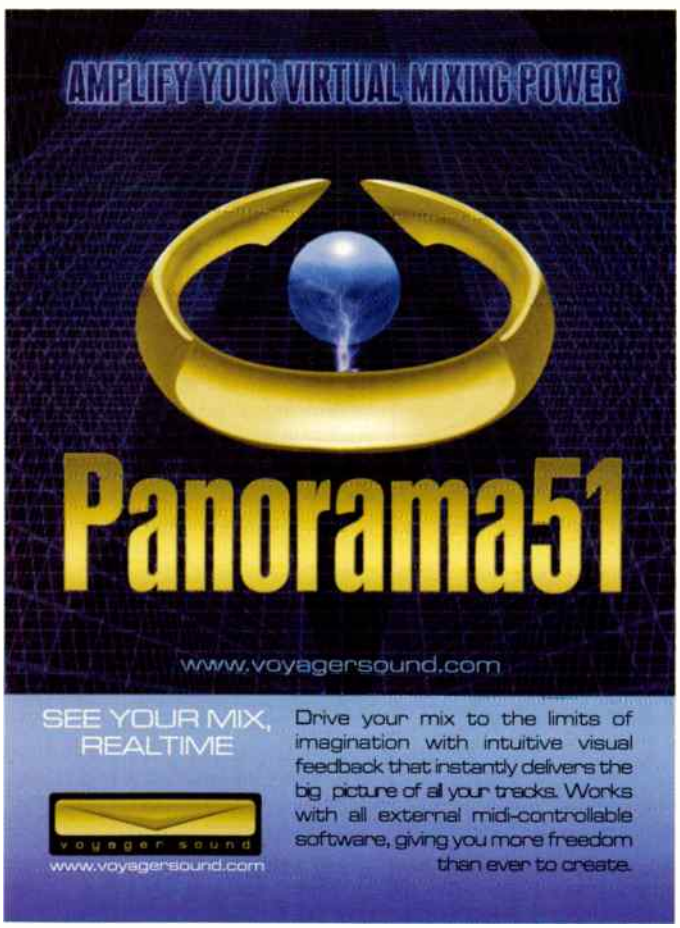
Switching to OS X was a good chance to clean the hard drives, install the current crop of compatible power apps, and compare the experiences. We're happy to say that getting into DP4 was as smooth as silk. It's a gorgeous app that's loaded with features. And we mean *loaded* — the manual is a mere 926 pages thick! A much leaner Getting Started guide is provided for those who want to dive in quick. The included instructional Quicktime videos from Cool School and MacAudioLab were also helpful.

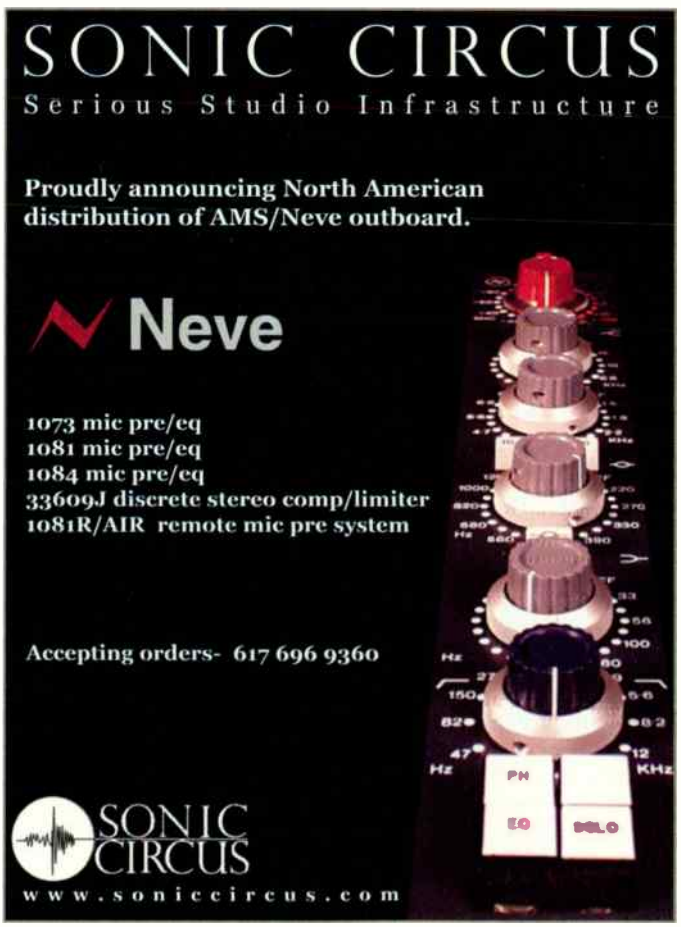
During our sessions, we cranked out loads of tracks with DP4, and were able to put the system through a variety of real-word and clinical tests, including exporting and importing OMF files to and from Logic. This went off without a hitch — encouraging news for anyone wanting to share files with Logic, Nuendo, or Pro Tools users.

We experienced a few oddities along the way, however, including hard crashes when switching between sessions with different sample rates. We also noticed that there seemed to be less onscreen feedback when operations are being executed. For example, there's no indication that the program is doing anything when creating a new sound file from a selection. At the very least we'd expect the "spinning rainbow sphere" to appear. Another item: We wanted to break a long continuous audio file into smaller sections within the Soundbites window, and to speed things along we thought we'd use the assigned key command (Command+Option+N), but this brought up the Nudge Amount window. Turns out, the factory installed commands have this particular command assigned to two different functions. Ideally, the program wouldn't allow you to assign the same command to multiple functions. And here's a real head-scratcher — the disk-track meters in DP4's mix window don't display incoming audio. Aux tracks will, but not disk tracks. If you want to keep an eye on the levels of what you're about to record, open the Audio Monitor window and view from there. Hopefully MOTU will address this soon.

While we were working with DP, MOTU sent us their MachFive software sampler, so we were able to test Freeze with a *bona fide* software synth plug-in, as well as with a variety of Reason 2.5 instruments piped into DP's mixer via ReWire. This worked very well; better than when we used ReWire with Logic 6, in fact. Based on our experience, we'd have to say MOTU's ReWire support is way more solid than it was in the past.

Regarding control surfaces, we had a Mackie Control and Expander unit at our disposal. Configuring DP to work with these was easy, and once we did, the program and control surface hardware worked flawlessly. We were able to mix one project entirely using the Mackie Control, and the result was a mix that we probably wouldn't





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MOTU DP4

have been able to pull off if we were just using a mouse.

Tip: If you're experiencing poor screen-redraw performance, pay heed to the Host Buffer Multiplier setting (from the Configure Hardware Driver dialog). This setting multiplies the sample buffer size by whatever number selected (1–4). With low-latency settings (Host Buffer Multiplier of 1 or 2, sample buffer of 128) menu scrolls and screen redraws were painfully slow. With more CPU-friendly settings, you'll be zipping around the interface without any sluggishness.

As for the competition, there's no shortage of it in the OS X native DAW ranks. Comparing DP4 to Logic, to name one, Logic is speedier at certain tasks, such as calculating fades and crossfades. Logic also has better bouncing options. There's no direct stereo interleaved bouncing in DP; you have to do a 2-step export process, which isn't exactly intuitive. As for Pro Tools, it has far fewer windows than DP, and thus offers a cleaner work environment. But DP4 has plenty of bragging rights (see "Strengths" section below). Visually speaking, it's a beautiful, rich program. This might sound trivial to some, but for those of us who spend intense marathon hours sitting in front of a computer screen, this really isn't so insignificant. DP4 is also the most affordable of the "Big 5" Mac DAWs (although the retail price of Steinberg's Cubase SX is only a mere $4 more).

Strengths:

- Gorgeous user interface
- Great selection of included effects
- Multiple audio drivers available simultaneously
- Runs natively with host CPU or using Digidesign TDM hardware
- Extensive backward compatibility
- Reduced CPU load via Freeze function
- Moderate learning curve
- No dongle

Limitations:

- Freeze is a realtime (not offline) process
- Freeze doesn't disable source aux tracks or effects after creating a frozen audio file
- No input metering in mix window for disk tracks
- Can't bounce stereo interleaved files (can only export interleaved, a 2-step process)
- PC and Mac OS 9 users are out of luck

CONCLUSIONS

MOTU has done a fantastic job updating DP and porting it to OS X. They've even managed to get ahead of their competition by being first to support certain OS X standards such as XML patch lists. No doubt there's room for improvement, but even so, DP 4 is a powerhouse app and proof that MOTU is able to continue raising their game to new levels. All in all, DP4 offers loads of powerful audio and MIDI features, a stunning UI, and a great set of bundled plug-ins. Those who use PCs and Mac OS 9 are out of luck, but Mac OS X users are in for a real treat. EQ

World Radio History

by Mitch Gallagher

RØde K2

The latest in tubes from Down Under — at an *amazing* price

Type: Large-diaphragm tube condenser microphone
Price: $995
Contact: RØde Microphones, www.rodemic.com

Capsule: Gold-sputtered large-diaphragm
Polar pattern: Continuously variable, omni through cardioid to figure-8
Electronics: Class A tube
Frequency response: 20 Hz–20 kHz
Noise: 10 dB, A-weighted
Maximum SPL: 162 dB @ 1% THD
Supplied accessories: 9-pin cable, power supply, SM2 shockmount, RC2 hardshell carry case

Condenser mics have definitely had a renaissance in the past few years. Not only have we seen brilliant new designs, but we've also been graced with the resurrection of the best vintage models. The offerings have covered the entire price range, from the very highest to the lowest. Australian manufacturer RØde has been among the leaders in the charge for microphone value . . . amazing mics for the price, combining true value with true quality.

Now RØde has pushed the envelope even further with the release of the K2 microphone. But we're getting ahead of ourselves. . . .

A BRIEF TOUR

RØde is no stranger to tube microphones. I first encountered the company's work when the Classic tube mic was released a number of years ago. Along with my studio partner, I made countless recordings of guitars, vocals, and other sources with that mic, which combined great presence, fat low end, and excellent high end with great dynamic response.

> "I was as pleased with the sound of these tracks as any I've done."

Through the years, RØde has released a number of other tube models. Now the company has created the K2, which features sound reminiscent of classic vintage mics while being updated with improved capsule and diaphragm technology, extremely low noise, and increased stability and consistency.

The mic comes packaged in a large-ish hardshell case, which also holds the supplied accessories, including the 9-pin cable that connects the mic to the power supply, the external power supply, and the SM2 shockmount. Speaking of which, the SM2 is one of the better shockmounts I've encountered. The K2 screws into it with a heavy threaded collar, eliminating danger of the mic falling loose. The SM2 itself is a solid affair, and features a nice long-handled clamping screw for setting tilt — no more stripping the skin from your thumb and fingers while trying to tighten a tiny set screw. I have only one complaint about the shockmount, which is that when you hang the mic upside down, as when doing vocals, the SM2 doesn't allow quite enough tilt for good placement. (You can work around this by removing the screw and flipping the stand adapter part over.)

The K2 microphone is physically substantial, with good size and weight — it feels solid. There are no switches or controls on the mic itself. The K2 has a continuously variable polar pattern — omni through cardioid to figure 8 — but this is controlled from the power supply. There are no pads or filters on the mic. With a maximum SPL spec of 162 dB, there's little need for a pad. But it would be nice to have a highpass filter in certain situations. Fortunately, the K2's proximity effect is moderate, so thumping isn't a serious problem.

SONICS

Sonically, the K2 sounds like a combination of vintage mics. It has smooth, extended top end, fat, round midrange, and solid, thick low end. The

HIDDEN BEHIND THE K2'S UNASSUMING GRILLE IS A LARGE-DIAPHRAGM CAPSULE WITH A GOLD-SPUTTERED DIAPHRAGM. THE POLAR PATTERN IS CONTINUOUSLY VARIABLE FROM OMNI THROUGH CARDIOID TO FIGURE-8.

THE SM2 SHOCKMOUNT FOR THE K2 MICROPHONE.

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World Radio History

RØde K2

Gearing Up For The Future

Not content to just create great mics at low prices for today's market, RØde is gearing up for the future. The company recently moved into a new factory — and we're not talking simply moving to a new location or a slightly larger facility. Rather the company has invested 10 million dollars in a new building and manufacturing machinery.

The 70,000 square foot facility is located about 20 minutes from downtown Sydney, Australia, and is said to be the only large-scale condenser microphone assembly plant in the southern hemisphere, and one of the largest microphone manufacturing plants in the world. The facility houses a capsule fabrication lab, as well as clean rooms, R&D, sales, and warehousing.

enclosed frequency response chart verifies what your ears will tell you: There is a peak in the upper midrange, centered around 5 kHz. A broad second peak appears centered at 10 kHz, extending to the mic's 3-dB down point at 20 kHz. This peak opens up the top end; not to use a cliché, but it adds "air" to the mic's tonality.

As expected, the sound of the mic varies with polar pattern. In omni mode, the response is flatter, without the upper midrange peak, but with more downward extension to the upper peak. Cardioid and figure 8 modes follow the frequency response curve detailed above. Being able to continuously vary the polar patterns is a great feature. Of course, you can dial in an exact omni, cardioid, or figure 8 pattern if you like. But the "in-between" patterns are equally usable. For example, omni mics are often used for capturing room ambience along with the original source. But sometimes the ambience can be too strong. In this example, dialing the pattern up toward cardioid allows a better balance of ambience to source.

IN USE

For this review, RØde supplied me with a pair of consecutively numbered K2 microphones. I began using one mic for recording vocals. I was immediately impressed with the top end of the mic. It was smooth, without hype, similar to a tube U67. The midrange was fat and round, but with excellent clarity. Thin voices and falsettos were given fullness without sounding harsh, tubby, or EQ'd. Likewise, the bottom end was fat, without sounding muddy or amorphous. Dynamic response was good; the mic felt natural to sing into.

Next I used a single K2 to mic a modified Marshall 1x12 combo amplifier set for crunchy rhythm parts. The mic was placed about 12" in front of the amp, and 12" from the floor. No matter what volume, the mic remained unstrained. The top end was smooth, without fizziness. The midrange captured all of the punch of the amp, while the bottom end thumped in a way that belied the tone's combo amp origins. *Very* nice. This continued as I tried other amps and other guitars. The sound of the amp was captured accurately, but slightly "enhanced" with fuller midrange and fatter low end.

> "Do me a favor: Put the price aside and give this mic a listen."

Moving to acoustic guitar, I began with one mic, placed in the "standard" position, off the 14th fret, where the neck and body meet. Whether miking delicate fingerpicked passages, frenetic rolling patterns, strumming, or single-string lead lines, the K2 sounded great, with fullness and excellent clarity. ➤

World Radio History

THINK YOUR PASSIVE MONITORS STILL PERFORM TO SPEC?

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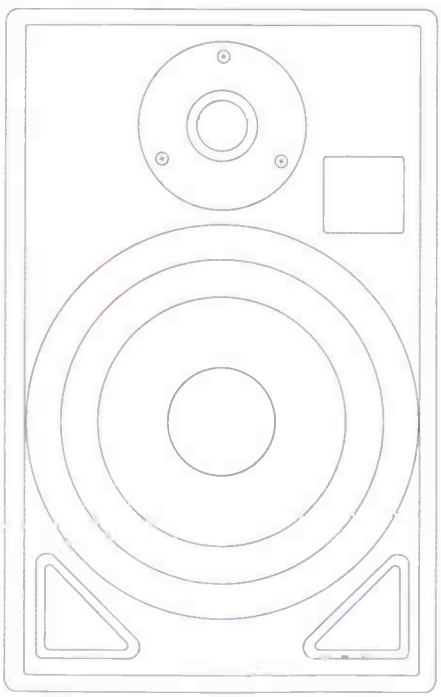

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KRK SYSTEMS

World Radio History

RØde K2

Reasoning that if one K2 sounded good, adding a second would sound better, I began experimenting with stereo miking using the pair on nylon-string classical guitar. Using the cardioid pattern, I centered the mics on the guitar, placing them 18" apart, 14" from the body. This resulted in a stable, well-centered image that didn't sound "stereo" yet had excellent depth and dimension. I also experimented with dialing in a slightly more omni polar pattern, which brought some room ambience into play. Again, *very* nice. The sound was detailed with natural bottom end and good presence. I was as pleased with the sound of these tracks as any I've done of classical guitar.

I had similar results on percussion, bass, and trombone. The sound was always detailed and natural sounding, with excellent presence. Dynamics were always tracked accurately.

CONCLUSIONS

As you can tell, I like this microphone very much. Need further endorsement? I did most of this review before I found out what the price of the K2 would be. I had been told to expect the K2 to be of excellent quality (but you're always told that about a product you're going to be reviewing), but would be value-priced. After using and testing the mic, I guessed this meant somewhere around the $2,000 price point. Imagine my surprise when I heard that the K2 would list at $995 and have a street price of around $699! Amazing value indeed.

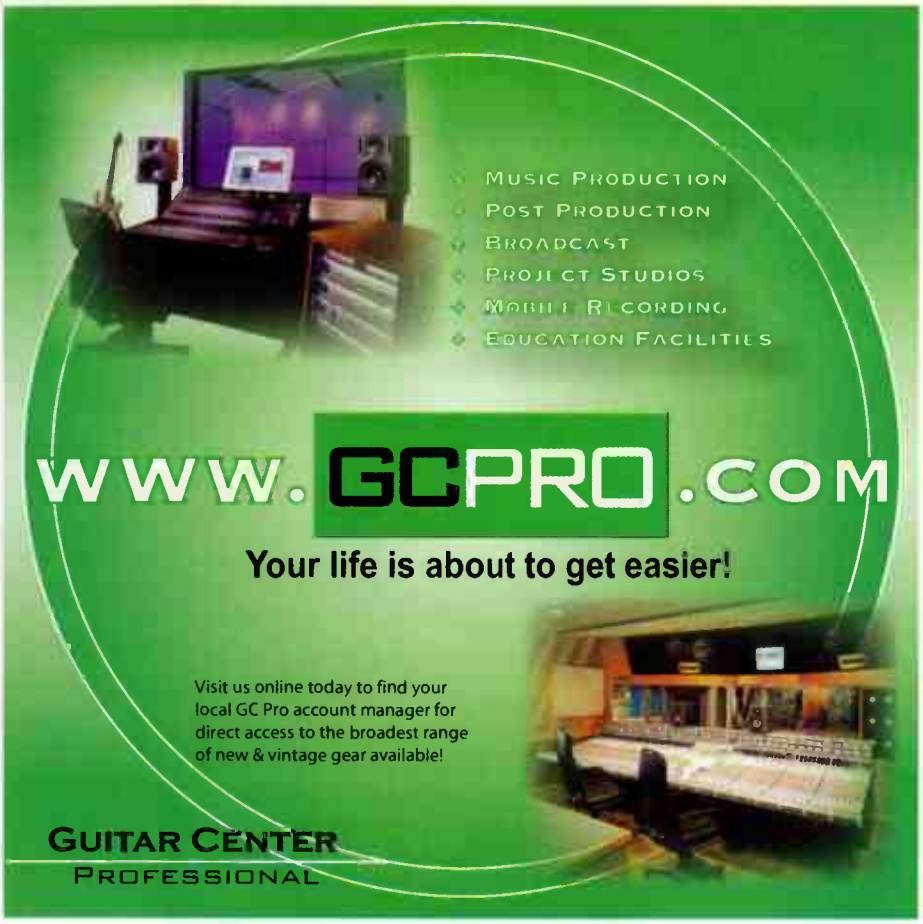
The danger is that you'll read this review, note the price, and assume that the mic can't be *that* good. Do me a favor: Put the price aside and give this mic a listen. I think you'll be extremely impressed. I sure was. . . . EQ

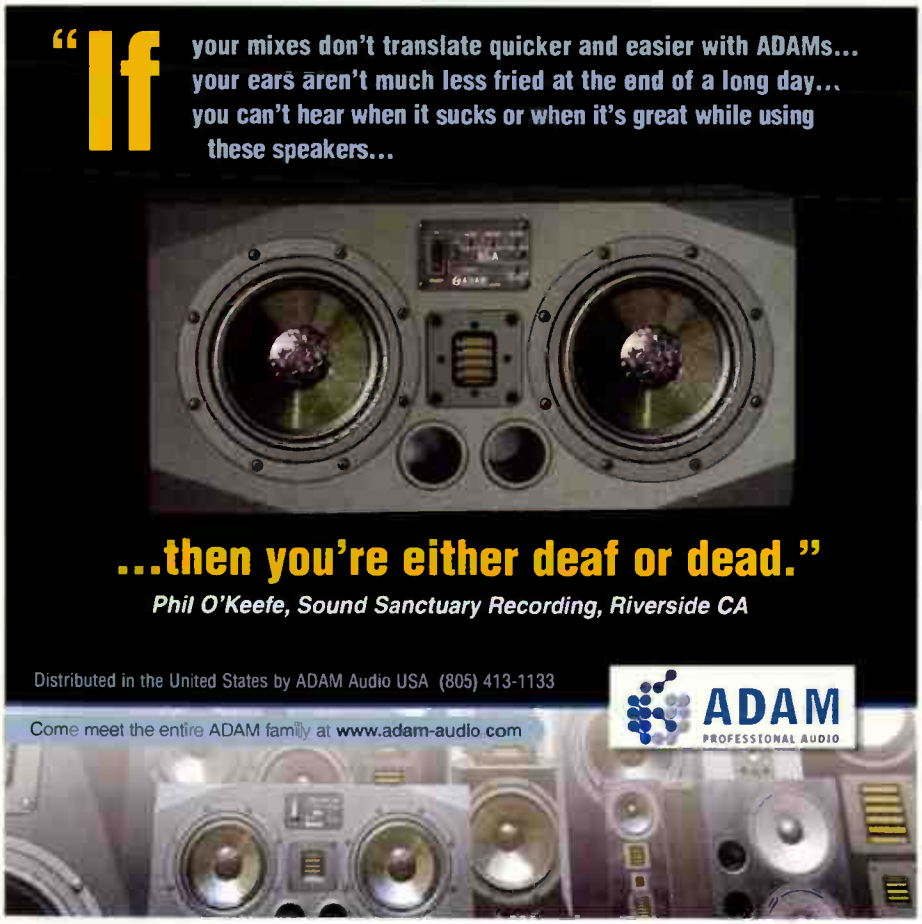
Strengths:

- Sets a new standard for price/performance and value
- Full, round tone
- Excellent dynamics
- Moderate proximity effect
- Continuously variable polar pattern
- Smooth extended top end

Limitations:

- No highpass filter





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World Radio History

Ableton Live 3.0

This unique software continues to amaze

by Craig Anderton

Type: Sequencing, arranging, looping, and live performance software
Platform: Mac, Windows
Price: $399 (upgrade from Live 1.x, $99 download, $129 boxed; Live 2.x, $69 download, $99 boxed; Live 2.x purchased or upgraded after 8/1/03, $30 download. Boxed version includes 400 MB of samples by Big Fish Audio and Power FX. Demo version available.
Contact: www.ableton.com

Minimum system requirements: Mac: G3, 256 MB RAM, Mac OS 9.2 or later, Mac OS X 10.1.5 or later. PC: 400 MHz CPU, 128 MB RAM, Windows 98/2K/XP
Copy protection: Non-PACE challenge/response
Version reviewed: 3.0
Internal resolution: 32-bit, records at 16 or 24 bits.
Internal sample rates: whatever the audio driver specifies
Driver support: SoundManager, CoreAudio, DirectX/MME, ASIO, Direct I/O
ReWire modes: Slave or host
Audio plug-in support: VST
Audio import formats: WAV, AIFF, SD II (Mac)
Audio export formats: WAV, AIFF at 22.05/32/44.1/48/88.2/96/176.4/192 kHz
Sync: Receive MIDI clock, MTC; send MIDI clock

When Live 1.0 appeared at the Winter 2001 NAMM show, there were two basic reactions: "This is incredible!" and "Huh?"

Which is understandable. Live created a new paradigm, that of a loop-based program that was a live performance instrument as well as a studio tool. Was it like Acid? Well, yes, sorta, but whereas Acid was more about assembling loops into a composition, Live was more about manipulating those loops in real time to create a composition. Oh, so it's live performance software? Well, sorta, except you could record all your moves and go to a view where you could edit everything with envelopes, plug-ins, and the like. Okay, so it's a DAW? Well, not really, because there's no MIDI sequencing or VSTi support . . . but you can rewire Live into a program that *does* speak MIDI sequencing, and end up with far more than the sum of the parts.

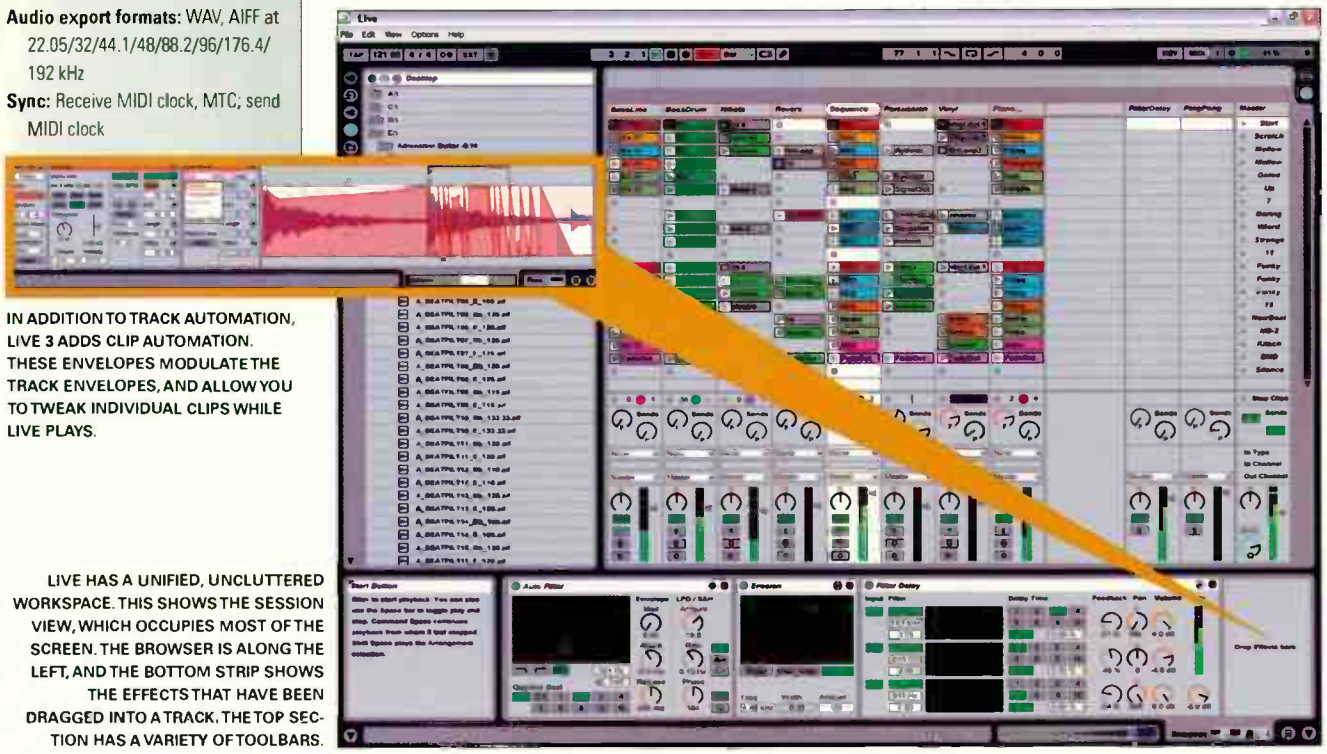
So let's just leave it at this: Live is one of the most original, creative, and exciting pieces of software I've had the pleasure to use. It's not for everybody — for straight-ahead recording of rock bands and such, a traditional DAW may get you where you want to go faster — but if want to combine loops, digital audio, live performance, hardware control, and ReWire, this is the program to beat.

(Full disclosure: When Ableton was sbout to ship Live 2, they needed someone to "Americanize" the manual. I spent a few hours doing so, got paid for it, and recommended that in the future, they bring the process in-house. They did, which ended our business relationship.)

THE STORY SO FAR

The Ableton site has a demo and PDF manual, so it seems silly to talk too much about details here — for a little download time, you can find out for yourself. Instead, I'll give an overview so you can decide whether you're interested in the program, then cover what's new in version 3.

First up: the interface. Live was one of the first programs to put everything in one full-screen window with several views. But the screen is dominated by either the Session View, which is optimized for live playing and on-the-fly arranging, or the Arrangement view (hit Tab to change from one to other), which shows the results of recording your "moves" and allows comprehensive editing options. These include envelope-based automation, copying and splitting of clips, and the like. ➤



IN ADDITION TO TRACK AUTOMATION, LIVE 3 ADDS CLIP AUTOMATION. THESE ENVELOPES MODULATE THE TRACK ENVELOPES, AND ALLOW YOU TO TWEAK INDIVIDUAL CLIPS WHILE LIVE PLAYS.

LIVE HAS A UNIFIED, UNCLUTTERED WORKSPACE. THIS SHOWS THE SESSION VIEW, WHICH OCCUPIES MOST OF THE SCREEN. THE BROWSER IS ALONG THE LEFT, AND THE BOTTOM STRIP SHOWS THE EFFECTS THAT HAVE BEEN DRAGGED INTO A TRACK. THE TOP SECTION HAS A VARIETY OF TOOLBARS.

World Radio History

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MOTU 896 HD

The 896HD audio interface gives you incredible sound quality, lots of input and output options, and FireWire convenience. Monitor up to 8 analog input or output signals, ADAT, and AES/EBU. Each analog input has a mic preamp with switchable 48V phantom power. **Value: $1,295.**

AKG C-3000

The C-3000 has become a standard in studio miking excellence. With a flat response and lots of detail, this is the perfect mic for vocals, acoustic piano, acoustic guitar, and other sources that demand the finest quality. **Value: $536.**

AKG K-271

These professional closed headphones let you know exactly what's going on in your mix while helping to block extraneous noise. The K-271s are an industry standard. **Value: $249.**

Mobile Studio Carrying Case

Custom-made for TC, this case offers space for the MOTU 896 and PowerCore FW, as well as the microphone and headphones from AKG — one case for all, in a cool silver metal finish. **Value: $250.**

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NO PURCHASE NECESSARY

1. To enter: You may enter by printing your name and address on a postcard and mailing it to Music Player/The Ultimate Mobile Studio Giveaway, PO Box 51015, Boulder CO 80322-1015 or online at www.keyboardmag.com beginning October [illegible] December 5, 2003. Entries must be received by January 31, 2004. Enter as often as you wish (as often as once per day online), but each entry must be separately postmarked. Copies, mechanically reproduced, or automated entries and each other [illegible] will not be eligible and are void. The opinion of this game is United Entertainment Media, Inc. ("Sponsor"), and such Sponsor is not responsible for printing or typographical errors in any [illegible] or mechanical mail or transactions that are lost, fail to enter into the processing system or are processed or transmitted late.

2. Sweepstakes Drawing: The winner will be drawn at random on or about February 27, 2004. Odds of winning each prize depend on the number of eligible entries received. Your purchase of a product or service from the Sponsor or the prize manufacturers will not increase your chances of winning a prize.

3. Eligibility: Game is open to all legal residents of the United States and Canada (other than the residents of Puerto Rico and the province of Quebec), except for the employees and immediate family (spouses and parents, siblings, children and each of their spouses) of Sponsor, the prize manufacturers, and each of their affiliates, subsidiaries, advertising agencies, and any other company involved with the design, production, execution or distribution of the [illegible] drawings. In order to win a prize, residents of Canada will be required to answer correctly a time limited mathematical and testing question to be administered via telephone.

4. Release: Winner releases the Sponsor, the prize manufacturers, and each of their parents, subsidiaries, affiliates, officers, directors, agents, and employees from any responsibility or liability in connection with any loss, accident, or death incurred in connection with the use of the prize won in the giveaway. The winner hereby consents to the use of his or her name and/or likeness by the Sponsor for advertising purposes without additional compensation unless prohibited by law. The verified prize winner and/or prize winner's parent or legal guardian will be required to sign an Affidavit of Eligibility and a Publicity/Liability Release (unless prohibited by law). These materials must be returned within ten days of notification. Failure to comply may result in disqualification and the selection of an alternate winner. All prizes for the game are donated by third parties. The game is not meant to convey any endorsement of any product or service. Nor does a third party's donation of any prize have any influence on Sponsor's editorial coverage.

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7. Winner's List: To obtain the name of the prize winners, send a self-addressed, stamped envelope to "Winner", The Ultimate Mobile Studio Giveaway, Music Player Network, 2800 Campus Drive, San Mateo, CA 91403, USA, by August 30, 2004.

World Radio History

Ableton Live 3.0

The other views are identical whether the main view is Session or Arrangement. The left side shows a hideable browser for auditioning files and dragging them into the Session or Arrangement (curiously, though, it won't show files on the desktop). A hideable strip along the bottom has a permanent info screen on the left, which is like a "mouse rollover" hint function on steroids; it almost makes the manual superfluous. The rest of the strip has three tabs that choose among a view of the selected waveform (along with loop, stretch, pitch, envelope, etc. information), track/send/master effects, or bus routing and metering.

Session view looks somewhat like a mixer, with level, pan, and similar buttons along the bottom. But each track consists of a series of slots, arranged as a column, into which you load loops, one-shots, or even complete pieces of program material (more about this later). Only one slot can play at any time within a track, but there are multiple tracks. A "master" channel lets you click on a row of slots (called a "scene"), which plays all the audio loaded into that row, for all the tracks.

For example, suppose you're building a composition with a drum loop, then a bass loop, then a rhythm guitar, then some vocal one-shots, then you want to drop back to only the drums. Each instrument would have its own track, and you would arrange scenes to play back the desired combinations of loops.

When you select a scene, it begins playing on the next selected quantization interval (typically a bar), so the transition is always smooth. In fact, one of Live's outstanding features is that on anything but the most performance-challenged computer, the audio never stops, no matter what you do: drag in loops, add effects, manipulate effects, browse for material, mix, whatever. This is a real-time engine that just keeps purring.

Note that Live is not a synthesizer, so it doesn't have the same kind of instant gratification as something like Reason. A common way of working with Live goes something like this:

- Choose the pieces of audio (clips) that will make up your composition
- Start running Live, experiment with combining different clips, and arrange them on tracks into scenes
- Load in any effects you want for tracks, buses, and the master
- Set up a MIDI control surface to adjust faders, effects parameters, etc. This is optional, but recommended: You can run Live with a mouse, but you can also drive a Porsche no faster than 15 MPH. You really don't want to do either.
- Start recording and creating a song. Live remembers all your fader movements, effects changes, everything.
- Record traditional, linear-style audio tracks if desired.
- When you're done, switch over to the Arrange view, and if needed, edit your work.

But that's just one way of working. . . .

ELASTIC AUDIO

The Arrange view is a great safety net when you're working on a Session. If you do a fantastic piece except for one horrible glitch, just edit it out. When everything is just the way you want it, render to disk as a complete song.

But you can also treat the Arrangement view the same way as you would when building a song in Acid — by dragging over files, looping them, stretching them, and so on. This can be a completely non-realtime activity, but of course, you can also combine performance elements with it.

Live's interface is so drop-dead simple that it's easy to think that there are a limited number of ways to use the program. Not so. Live is extremely versatile, and it encourages coming up with your own way of working. In fact, one of my favorite uses of the Arrangement view is to take advantage of "elastic audio," introduced in Live 2. This warps loop markers into something far more flexible: Placing markers does time compression or expansion on the space *between the markers* to fit a particular rhythm.

For example, for one Live project, I took a dance-oriented song I did in 1982 called "Modern World," which had a dismal (trust me on this) scratch drum track, complete with "four on the floor" kick. I wanted to add drums using the Discrete Drums loop library, so I brought the entire tune into Live as a clip, adjusted the warp markers (it took a couple minutes to warpify the file), and ended up with a loop-compatible song. From here, it was a piece of cake to add the drums.

In the Arrange view I dragged over loops, split them, threw on some effects, and tweaked until the tune was reborn. I used none of Live's performance aspects; this was all handled like a regular hard disk recorder, with envelope automation. You can hear the end result at www.eqmag.com. It's pretty interesting to be able to take a song over two decades old and seamlessly update the rhythm track.

However, using Live in Windows XP (I also tested it on a G3 Mac running 9.2) was not a totally crash-free experience. This seems to have a lot to do with VST effects. Use the minimum number you need, avoid public domain freeware, and make sure no VSTi devices live in the plug-ins folder. As soon as I copied over a select group of plug-ins to the Live VST folder rather than just point to the Steinberg VST folder (which has all kinds of stuff in it), the system became extremely stable.

LIVE 3: INSIDE THE WAVEFORM

Live 3 takes the idea of envelope-based automation (as used on tracks), and applies it to individual loops and clips. These are subsets of the track envelopes. For example, if you create a clip volume envelope, the track envelope acts like a "master volume control" for the clip envelope shape.

You select and edit envelopes in clip view. As with track envelopes, breakpoint

Ableton Live 2 Power

There are a lot of third-party books for programs; unfortunately, some are basically just rewritten manuals. But *Ableton Live 2 Power*, by Dave Hill Jr., is worth a mention because it's everything a third-party book should be.

It fills in background information manuals seldom include (*e.g.*, digital audio basics, how to choose and work with sound cards, copyright issues with samples, driver protocols, etc.), neatly summarizes the program's main functions for those just getting started, offers plenty of power user tips and practical examples, and even includes interesting profiles on the people who use Live, and how they use it (and there are a lot of ways to use it — recall my Power App Alley in the August '03 *EQ*, which talked about how to use Live as a pseudo-sampler).

This book has something to offer people who have a hard time understanding all the implications of the program, but also contributes much to people who already use and love the software. Published by Muska Lipman, ISBN 1-59200-088-6, 319 pages, $29.95.

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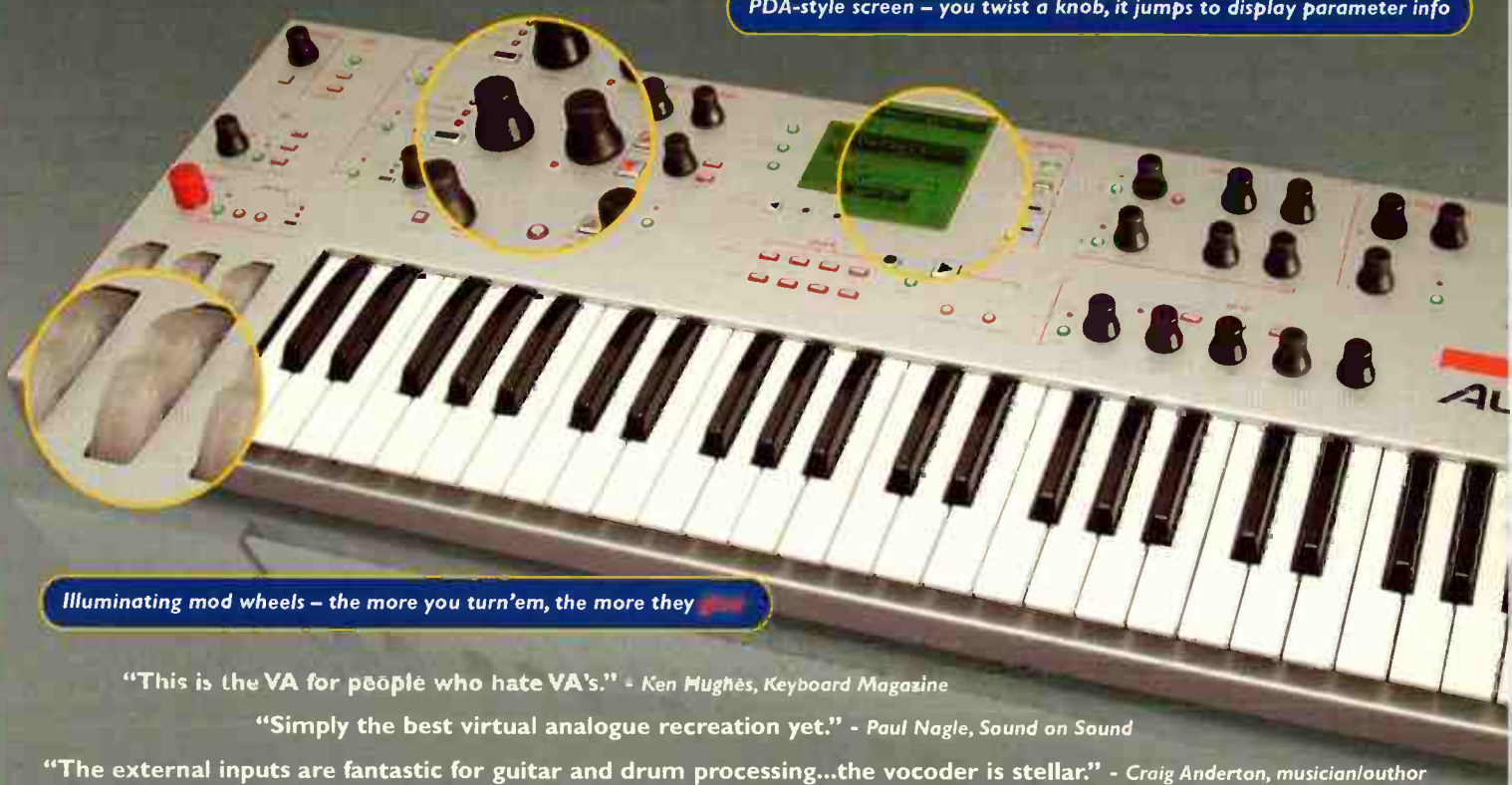

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Ableton Live 3.0

editing or envelope drawing options are available. There are two pop-up menus for selecting envelopes; the top one shows clip, mixer, and each automatable effect loaded into the track.

With clip selected, the lower pop-up shows volume, transposition (yes! real-time pitch-shifting and retuning!), sample offset, etc. With an effect selected, the lower menu shows the various effects parameters. VSTs that support automation (most do) show up here as well. With mixer selected, you can edit volume, pan, and the two send controls.

There are also three shortcut buttons for clip transposition, volume, and track pan. What all this means is you can mute individual beats from a loop, or take a portion and send it to an effect while leaving the rest of the loop unaffected, apply echo only to the first (or whatever) note of a loop . . . it's really amazing to have this degree of micro-control. Just by bringing different sections of a clip in and out, or processing them, you end up with almost a completely different clip. The transposition envelope option is particularly wonderful: Modulate a clip that's in one key to a different one anywhere within the clip.

UNLINKING

To take the clip envelope feature even further, you can unlink the envelope from the clip itself. For example, suppose you have a two-bar loop. Normally, you would draw an envelope that would cover those two bars. But when unlinked, you could change the loop length to, say, eight bars. Those two bars will repeat four times, but you now have eight bars on which you can draw an envelope over those four repeats. So you could, for example, fade out the four repeats over eight bars, or "chop" the amplitude in different ways throughout the extended envelope.

MORE ENHANCEMENTS

The clip envelopes are the big addition to Live 3, but there are also four new effects:

■ **Compressor II.** This uses sidechain EQ to provide frequency-selective compression — just the thing for kicking the bass into the megathrob zone, or doing maximizing if you put it in the master channel.

■ **EQ Three.** A three-band DJ style with 48 dB of filter band separation.

■ **Resonators.** These are five parallel resonant filter structures that add tonality and resonance to sounds. Try them on drums, or white noise for that matter. The effect is similar to putting a bunch of flangers, set for a fixed delay and high resonance, in parallel.

■ **Utility.** It's not glamorous, but if you need stereo width, phase, and gain controls, here you go.

THIRD TIME'S A CHARM

Of course there's more, but you can discover the additional MIDI keyboard modes, DJ-type crossfader, and other goodies when you download the demo version.

Live can no longer be dismissed as just something for loops, DJs, or electronica. The new features have been integrated in a way that is both unobtrusive and seamless; Live 3 has the same unity of feel and operation as Live 1. While it still excels as a live performance instrument, it's increasingly a studio creature as well.

And rather than upset the balance by adding MIDI, Ableton has wisely chosen to go the ReWire route. Reason and Live make a particularly potent combination — a virtual rack of soft synths coupled with loops — but rewiring Live with Sonar, Cubase, etc. gives me MIDI sequencing, the ability to throw backing tracks together quickly in Sonar, and Live's unexcelled improvisational talents on top of the whole thing.

Indeed . . . third time's a charm. Live 3 retains everything that was good about the original version, and adds significant extra capabilities without adding complexity. It truly occupies the sweet spot where ease of use meets sophistication. EQ

Strengths:
- Brilliantly designed software and interface
- At home onstage or in the studio
- Includes 17 built-in, automatable effects
- Accepts VST plug-ins, supports automation
- ReWire support
- Multiple stretching options
- Automation envelopes for tracks and individual clips
- Excellent MIDI control options

Limitations:
- No MIDI sequencing
- Crashes when initializing some VST plug-ins for the first time
- No surround support
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Emagic Space Designer

The ultimate software reverb?

by John Krogh

Type: Convolution reverb plug-in for Logic Platinum
Platform: Mac OS 9/X
Price: $495.95
Contact: www.emagic.de

Channels: mono, mono-to-stereo, stereo,
Impulse response source file support: AIFF, SDII, WAV
Sample rate support: 11.025 – 96 kHz
Demo period: 12 weeks, fully functional with Emagic XSKey demo activation
System requirements: Logic 6.3 or later

A few years ago analog modeling was all the rage, whether it was applied to synthesis or hard-to-come-by outboard processors. Today we take analog modeling for granted, and so apparently it's time for a new fad, which happens to be a relatively new take on reverb processing. The popular way to create fake ambience (*i.e.*, reverb from a box) is to synthesize it based on algorithms. You've got your halls, rooms, stadiums, and such. In most cases, whether we're talking hardware or software devices, we're given algorithms that define characteristics such as room size and shape, number of early reflections, and so on. There's control over these and many other parameters such as high- and/or low-frequency damping, diffusion, and in some cases room surface, so it's possible to tweak a particular algorithm to sound like a bunch of different spaces. That's one of the beauties of this particular approach to signal processing.

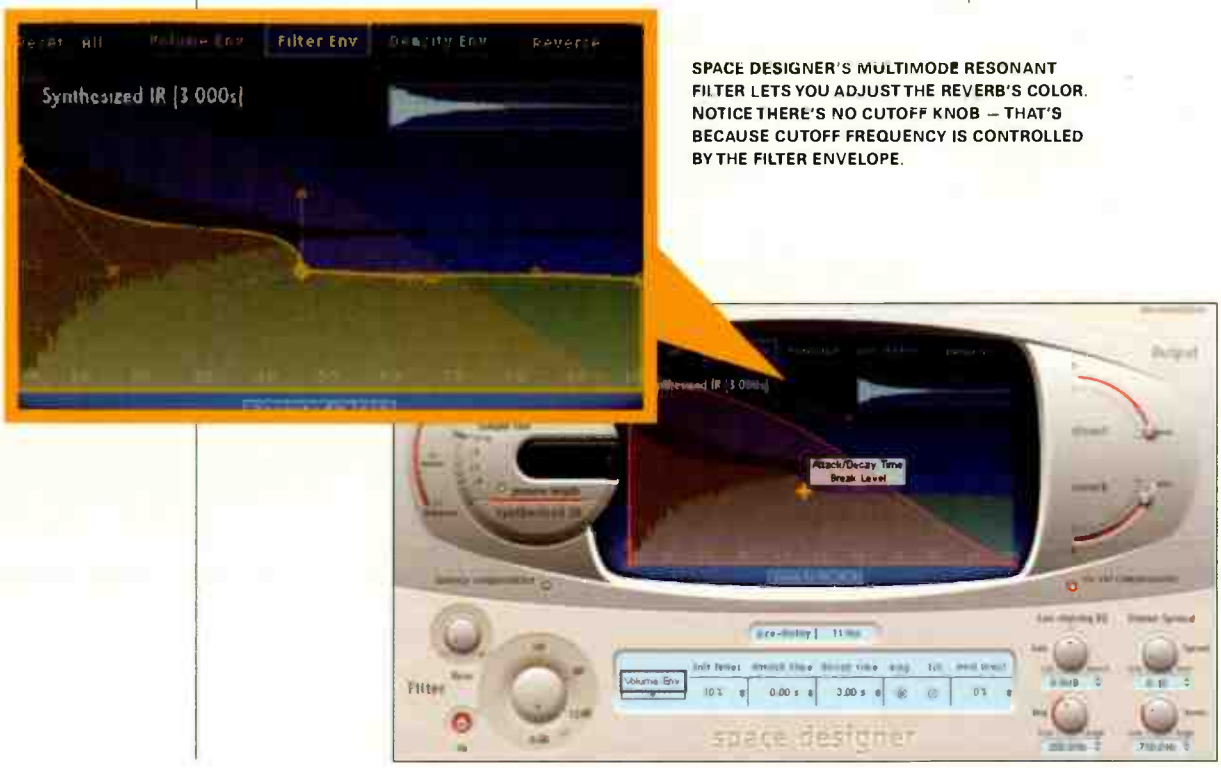
With convolution it's a different story. There are no algorithms to simulate what you'd hear in a real space. Instead, audio samples of a room, closet, cathedral, or whatever are used as the reverb's foundation and the characteristics of these "acoustic snapshots" are applied to an audio signal. In a way, convolution reverb is to conventional reverb devices what samplers are to synthesizers.

Three years ago AudioEase made a big splash when they rolled out Altiverb, a Mac-only convolution reverb that could process audio in real time. It was a hit because it sounded much more natural and realistic than most other 'verbs. This is the beauty of convolution processors.

Fast-forward to October 2003—we now have Space Designer, a Logic-only (and therefore Mac-only) real-time convolution reverb that goes beyond the capabilities of any other reverb of its type. The twist is, Space Designer adds a level of programmability typically only available with algorithm-based reverbs. In a way, it's the best of both worlds.

OVERVIEW

Space Designer's reverb recordings are called impulse responses (IRs), which are convolved, or "grafted," onto an audio signal. Until recently, computers weren't able to do



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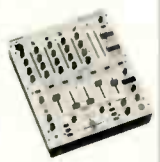

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CMP

World Radio History

Emagic Space Designer

the math for this process fast enough to make it happen in real time. Technology has made giant leaps, though, and now we're seeing more processors of this type.

A total of 770 MB's worth of IRs are included on CD-ROM and range from small rooms, subtle ambience, dark and bright halls, plates, and even springs, to slap-back delays, modulated FX, canyons, and much more. A good selection is aimed at post production (matching and applying the room sound from audio recorded on location to replaced dialog overdubbed in a studio). There's no shortage of weird sci-fi presets either. In fact, I found SD to be better suited for sound design than for sweetening MIDI orchestral mockups or other projects where I'd want hyper-realistic sounds.

It's possible to add your own IRs — you could sample your favorite studio room or hardware effects processor, for example. Additionally, SD can synthesize its own IRs, making this reverb a sort of hybrid. One of the disadvantages to convolution is that you're essentially stuck with whatever the room sample sounds like — you can't change early reflections, for example, but with SD's synthesized IRs you can. Very cool.

Unique to Space Designer is its envelope section, where you can shape the IR's amplitude and change its color over time by way of the filter envelope. By using an amp envelope with a slow attack and a filter curve that opened up toward the tail end of the IR, I was able to turn a basic hall into an intriguing, ear-catching effect. In short, this kind of flexibility is nothing short of inspiring.

To help manage CPU usage (SD requires more processing power than most other native reverbs), the sample rate at which SD does its processing can be reduced to ease the processor burden. The tradeoff is that audio quality takes a hit, but in my experience the difference in sound quality between full bandwidth and rate-reduced processing was not huge.

IN SESSION

I tried SD on a variety of solo and ensemble material. Initially I was expecting the same type of sound I'm used to from Altiverb. In other words, natural and real. I was disappointed, however, by many of the included IRs, some of which are ostensibly taken from rooms at Emagic's own office building. These smaller spaces might work well for post, but for music applications I'd want to look elsewhere.

That said, I was duly impressed by the variety and creativity displayed by the FX and ambient-oriented presets. On nylon guitar, for example, I was able to add depth to a basic close-miked track without making it overly boomy or washed out. By shortening the decay time on longer IRs, solo vocals took on a spacious quality without excessive or annoying tails. I should also point out that shortening the decay time reduces CPU load, since the computer doesn't have to process a longer IR file.

I tried loading in a few of my "first-call" rooms, large church, and Lexicon 480

World Radio History

Emagic Space Designer

ambience impulse responses, which I use regularly with Altiverb. According to SD's documentation WAV, AIFF, and Sound Designer II formats are supported. However, the IRs that I took from Altiverb (both factory-included IRs and ones I made myself) sounded ringy and artificial in SD.

I also enlisted *EQ's* Greg Rule for his feelings on SD. He had this to say: "Using a 24/96 dry female vocal as source material, I started auditioning IR presets. I should add that this vocal had proven itself to be an absolute nightmare for every other native reverb processor I'd tried. There's one full-throated heavy vibrato passage, in particular, that sent every other 'verb straight to the junkyard. With this in mind, I pulled up some vocal plates from the Hamamatsu bank, and immediately got chills down my spine. Ditto for the Large Warm Halls in the Denmark collection. Finally, a reverb that didn't choke and that sounded lush and smooth from start to finish. Absolutely gorgeous. I also applied SD to several bone-dry cello tracks, using a variety of cathedral and chamber settings. I was thoroughly impressed."

CONCLUSIONS

I was initially thinking Space Designer would replace Altiverb for ultra-realistic reverb. However, after working with SD's presets, I quickly realized my comparisons and expectations were off. Fact is, SD is it's own type of processor that shines as a creative tool for sculpting acoustic and synthetic spaces. While I might not be inclined to use it for sequenced orchestral work or for adding room tone to dry drum loops, I wouldn't hesitate to bring it onboard in situations where I needed an expansive soundscape or unique vocal treatment. Along these lines, Greg was completely satisfied with Space Designer's performance on vocals, and perhaps more significant, he had no complaints overall. This just goes to show you how subjective reverb quality is.

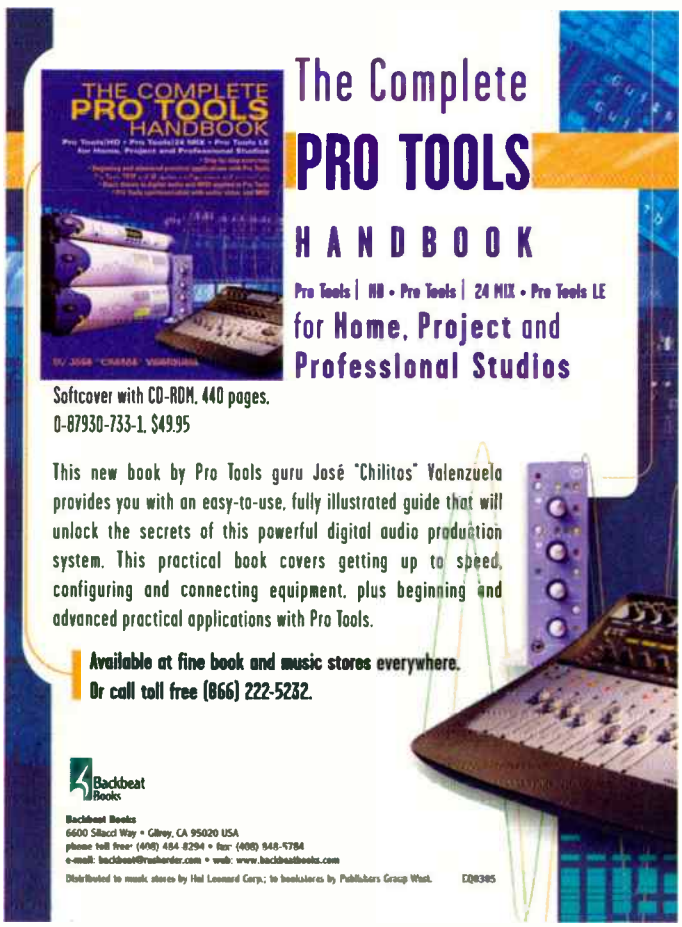
Looking at it another way, I love what's Space Designer can do with impulse responses — I just wasn't blown away by the included presets, and this is an area that I can customize by creating my own IRs. At the end of the day, the tweakability combined with the ability to use real and synthesized acoustic spaces will be hard for any Logic user to resist. EQ

Strengths:

- Can mimic virtually any reverb or delay
- Amp, filter, and density envelopes can be used to tailor existing impulse response files to sound dramatically different from the original source
- Can operate at lower sample rates for reducing CPU load
- Super-smooth tails

Limitations:

- A fair number of the included IRs sound like "filler," not samples of great recording spaces
- Doesn't operate in surround



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World Radio History

TC Electronic

PowerCore FireWire

Native DSP migrates from computer to rack

by Mitch Gallagher

Type: Rackmount DSP engine for native plug-ins
Price: $1,795
Contact: TC Electronic, www.tcelectronic.com

DSP chips: 4x150 MHz
Connections: 3 FireWire
Included Plug-ins: EQsat, ClassicVerb, MegaReverb, MasterX3, Vintage CL, VoiceStrip, 24/7•C limiter, 01 synth, Chorus•Delay
Plug-in Formats: VST (Mac and PC), Audio Units (Mac)
Resolution: 24-bit/96 kHz
Software Version Reviewed: 1.7.6
Minimum System Requirements:
Mac: G3 or G4 with OS 10.2 or higher, 256 MB RAM, VST- or Audio Units-compatible host application, 400 MBit FireWire connection
PC: PIII/500 or faster with Windows XP, VST-compatible host application, 400 MBit FireWire connection

The ever-expanding world of plug-ins needs to be fed lots of CPU cycles to stay happy. For those looking to increase their DSP power, dedicated processing expanders are available; among the latest is the TC Electronic PowerCore FireWire. A previous version of PowerCore is available as a PCI expansion board. The new version connects to your computer via FireWire (as you probably guessed from the name), and is a 1U box. We covered the PowerCore PCI (Jan. '02) and some of the optional plug-ins (May '03) previously, so let's focus on what's different with the new box.

PowerCore FireWire couldn't be simpler: Connect the power supply and hook your computer to one of the three FireWire ports on the back (the extra ports can be used for daisy-chaining other FireWire gear). Install the software, which includes nine plug-ins, and you're good to go.

The new box is more powerful than the card; both have four DSP chips. Those on the card run at 100 MHz, those in the box at 150 MHz. The box also has four times the DSP RAM as the card and a faster central processor. For my tests I used a dual-1 GHz G4 Mac with 1.5 GB of RAM, running OS 10.2.8, and a Digidesign 192 interface for CoreAudio I/O. There were no hardware incompatibilities with Pro Tools.

PowerCore FireWire gives you a healthy amount of DSP juice. In Steinberg Nuendo 2.1.0 I could run twenty-nine 24/7•C limiters; at that point VST overloaded, but there was still plenty of room for more plug-ins on the PowerCore. Twelve MegaReverbs ran with room to spare — I was able to add four 24/7•C limiters or four Vintage CL compressors on top of this. Twelve ClassicVerbs pretty much topped out the DSP capability. (But if you need more than 12 reverbs, something else may be wrong with your mixes!)

For a real-world example, on a 17-track mix, I used two VoiceStrips, five EQsats, four 24/7•Cs, two Vintage CLs, a ClassicVerb, a MegaReverb, and a MasterX3, and still had nearly half of the PowerCore and 60% CPU power left.

I also used PowerCore FireWire with Logic 6.3.1. After optimizing Logic and PowerCore according to TC Electronic's instructions, Logic was slightly less efficient with host CPU power than Nuendo and required slightly more DSP to run AudioUnits plug-ins — for example, I could get 28 instances of 24/7•C while running 12 tracks.

TWICE THE FUN

You can use up to four PowerCores on a single computer in any combination of FireWire and PCI units. For this review, I had one of each on hand. For comparison, on the PCI PowerCore, eight ClassicVerbs was the max — each took 37% of a chip versus 32% on a FireWire PowerCore (12 total could be loaded on the FireWire box).

With both units active in Nuendo, I could load 32 EQsats before VST started having problems keeping up. Or, I could run 27 EQsats on channels, one ClassicVerb on an effects bus, and one MasterX3 on the stereo bus — and I still had a ton of DSP available. For another mix, I ran 18 EQsats, nine 24/7•Cs, a MegaReverb, and a ClassicVerb before VST topped out. Even with this much DSP power, the limitation is your host computer's native CPU power. The defining factor is the number of PowerCore plug-ins you run, not which ones.

POWER ON DEMAND

If you're looking to run a lot of plug-ins, PowerCore FireWire can do it for you easily. The FireWire/rack design is convenient for those on the go with laptops, those whose PCI slots are full, or those phobic about opening their computers. The bundled plug-in collection is powerful and sounds great. And there's a growing family of optional plug-ins from companies such as Sony, Waldorf, DSound, as well as TC and TC-Helicon.

It's not cheap, but if you add up the price of the plug-ins, the DSP power, and the convenience, PowerCore FireWire comes in at a good value. You'll still need a powerful computer to get the most from PowerCore, but if your CPU is up to it, the system works flawlessly and sounds great. EQ

Strengths:
- Doesn't require PCI slot
- Nine plug-ins included
- Tons of on-demand DSP power
- Growing family of optional plug-ins
- Can use up to four units on a computer

Limitations:
- Requires OS X or Windows XP
- Host CPU is limiting factor on number of plug-ins you can run

PHYSICALLY, POWERCORE FIREWIRE COULDN'T BE SIMPLER: THE BACK PANEL HAS CONNECTORS FOR THE POWER SUPPLY AND THREE FIREWIRE JACKS. UP FRONT, THERE'S A POWER SWITCH AND POWER INDICATOR — THAT'S IT!

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Resolv 120a Subwoofer

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World Radio History

Focusrite ISA 428 Pre Pack

A quartet of flexible preamps

by Mitch Gallagher

Type: 4-channel mic/instrument preamp with selectable impedance and optional digital output
Price: $1,995, optional 8-channel A-D converter card, $695
Contact: Focusrite, dist. by Digidesign, www.focusrite.com, www.digidesign.com

Channels: 4
Inputs: 4 instrument (1/4"), 4 mic (XLR), 4 line (1/4"), ADC input 5–8 (XLR)
Outputs: four +4 line level (XLR)
Insert: 1/4" send, 1/4" return per channel
Frequency response: 20 Hz (–0.25 dB) to 140 kHz (–3 dB)
EIN: –128 dB @ 60 dB gain
Signal-to-noise ratio: 119 dB
Gain range: 80 dB
Input impedance: 600, 1,400, 2,400, or 6,800 ohms
Highpass filter: variable cutoff 16–420 Hz, 18 dB/octave

Focusrite has been on a roll, turning out an impressive array of preamps and processors at different price points. On the top end, among the latest releases is the ISA 428, a 4-channel, 2-rackspace model with several interesting features.

The back panel has four sections, one per channel. Each has XLR mic in and line out, as well as 1/4" balanced line inputs and balanced 1/4" insert send and return jacks.

The ISA 428 can optionally be fitted with a user-installable 8-channel analog-to-digital converter card, that provides AES and S/PDIF on 9-pin d-sub connectors at up to 24-bit/192 kHz resolution, and ADAT optical outs at up to 24-bit/96 kHz. The card also has word clock in and out for external sync.

Wait, the ADC card is 8-channel? Correct. In addition to the internal four channels, the back panel of the ISA 428 has four XLR inputs that feed the "extra" four channels. This allows you to use one converter card for two ISA 428s, or, if you're using the 428 as the front-end for a system, to route an additional four line level signals through the 428 converters.

Up front, the 428 has four 1/4" instrument-level inputs on the left. Next are the four channel sections. Each has a lovely mechanical VU meter, a rotary switch for setting overall gain within two ranges: 0–30 dB and 30–60 dB, and a trim control that provides continuously variable gain from 0–20 dB. There are switches for phantom power, phase, and for putting the rear-panel insert connectors into the signal path. Two switches step through multiple selections: One selects mic, line, or instrument inputs, the other changes the preamp input impedance (more on this later). Rounding out each channel is an 18 dB/octave highpass filter with cutoff variable from 16 to 420 Hz and an in/out switch.

On the right side of the front panel are switches (with accompanying LEDs) for turning a pre-converter soft limiter on and off, sample rate selection, bit depth selection, and internal/external clock source; you can also lock to Digidesign 256x Superclock. Finally, there are LED ladders indicating output levels.

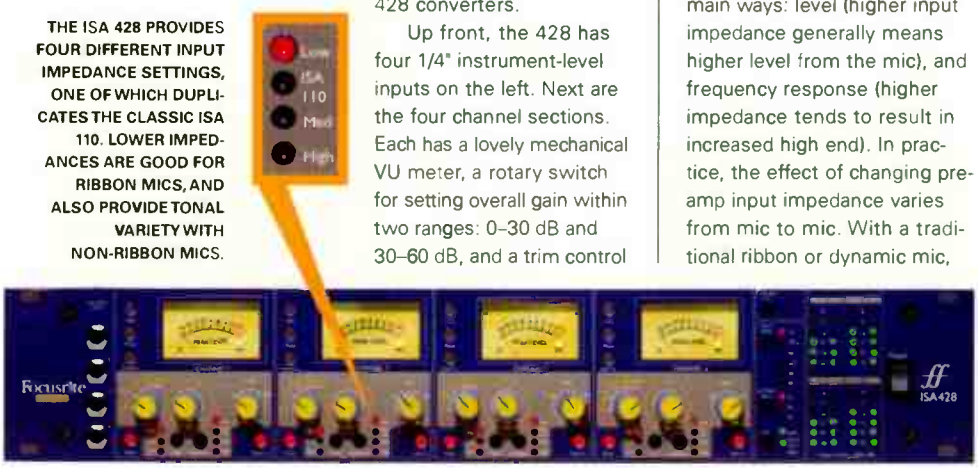
THE LOAD DOWN

One of the prime features of the ISA 428 is variable input impedance. Each channel can be independently switched among low (600 ohms), vintage Focusrite ISA 110 (1,400 ohms), medium (2,400 ohms), and high (6,800 ohms). Input impedance affects microphones in two main ways: level (higher input impedance generally means higher level from the mic), and frequency response (higher impedance tends to result in increased high end). In practice, the effect of changing preamp input impedance varies from mic to mic. With a traditional ribbon or dynamic mic, the effect can be dramatic. With well-isolated models, the effect may be subtle.

Matching impedance to your microphones is a powerful tool, and can definitely enhance the sound, especially with ribbon mics. But even aside from impedance switching, the ISA 428 is one fine-sounding preamp. It has a clear "high-fidelity" sound, with generous body, natural highs, excellent dynamics, and wonderful presence. In the past few months I've had at least a dozen top-notch preamps go through my studio for review. In each case, the 428 has ultimately been my reference; I like the way it sounds that much. I might choose another preamp for a particular sound, but in general the 428 has become the preamp that I reach for first.

Aside from its reference-quality sound (which is really all that matters), I like other 428 features, particularly the optional converter card. Sonically, it sounds as good as more expensive converters. Plus, if you're using a digital input card for your DAW or hard disk recorder, it makes a great 8-channel front-end. It's a real value booster.

Give the ISA 428 a look. It's an excellent sounding preamp with a number of useful features. But you'll have to find your own, I'm keeping this one.



THE ISA 428 PROVIDES FOUR DIFFERENT INPUT IMPEDANCE SETTINGS, ONE OF WHICH DUPLICATES THE CLASSIC ISA 110. LOWER IMPEDANCES ARE GOOD FOR RIBBON MICS, AND ALSO PROVIDE TONAL VARIETY WITH NON-RIBBON MICS.

Strengths:
- Selectable input impedance
- Present, rich sound
- Excellent dynamics
- Variable highpass filter
- Optional 8-channel A-D conversion
- 80 dB of gain

Limitations:
- None to speak of

World Radio History

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Blue's great Free-for-One sale, going on now.

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For a complete directory of authorized Blue dealers, visit us online at www.bluemic.com

World Radio History

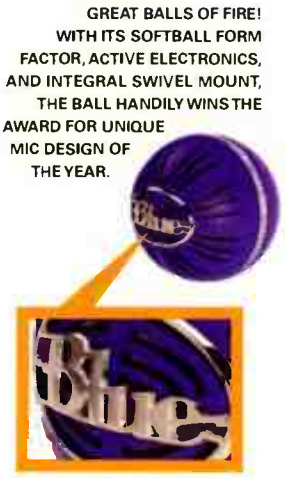
Blue The Ball

Phantom power — on a dynamic mic?

by Mitch Gallagher

Type: Large-diaphragm dynamic mic with active electronics
Price: $279
Contact: Blue Microphones, www.bluemic.com

Capsule: Large-diaphragm
Polar pattern: Cardioid
Electronics: Phantom-powered Class-A
Frequency response: 35 Hz to 16 kHz
Noise: 17 dB, A-weighted
Maximum SPL: 162 dB



GREAT BALLS OF FIRE! WITH ITS SOFTBALL FORM FACTOR, ACTIVE ELECTRONICS, AND INTEGRAL SWIVEL MOUNT, THE BALL HANDILY WINS THE AWARD FOR UNIQUE MIC DESIGN OF THE YEAR.

THERE'S MORE TO THE BALL THAN ITS SPHERICAL SHAPE. INSIDE IT FEATURES PHANTOM-POWERED CLASS-A ELECTRONICS, WHICH ARE USED TO MAINTAIN CONSTANT IMPEDANCE LOAD ON THE CAPSULE.

Lately it seems there's a new must-have condenser mic hitting the market almost daily. Dynamics, on the other hand, haven't seen as much action. With The Ball, Blue Microphones has swung the balance back toward dynamics.

Clearly the most distinctive feature of The Ball is its physical shape — the thing looks like a blue softball. It's sure to elicit comments when clients and studio visitors see it. The only problem is what to do with the thing when you're not using it. No case is provided, and I lived in fear that it would roll off whatever shelf or tabletop I set it on. (Blue says that the Ball's ABS plastic shell is nearly indestructible.)

The shape also hides some function; the XLR connector is on the rear, as you'd expect, but built into the mic body is a mount for attaching The Ball to a mic stand. The mount pivots forward and back for adjusting the angle of The Ball, although I found the range of movement to be too short for some applications. For vocal use, for example, you won't be able to use a boom stand; you'll need a straight mic stand.

Once you're past The Ball's appearance, you can dive into what really sets it apart — phantom-powered electronics. No typos there, you need phantom power to run the Ball.

The Ball's electronics are designed to isolate the mic from the effects of impedance. Blue explains that when you plug a dynamic mic into a fixed-impedance preamp, you create a resistive load that varies with frequency, resulting in sonic changes. The Ball addresses this problem with a Class-A discrete amplifier that maintains a constant 50-ohm load across the frequency spectrum. As a gross test of this, I plugged The Ball, along with several "normal" dynamic mics, into a Focusrite ISA428 preamp (see review on page 78). I recorded the same re-amped guitar passage into each mic at each of the 428's four impedance settings. With the "normal" dynamic mics, there were substantial tonal and level shifts as the impedance was changed. With The Ball, the effects were far less dramatic; level remained constant as impedance changed, and tonal changes were subtle. Under regular circumstances, impedance variances are minute compared to this test, but it does illustrate how well isolated The Ball is from the effects of loading.

IN USE

The Ball can withstand substantial sound pressure without caving — it specs at up to 162 dB SPL. I didn't have a jet engine handy to test this claim, but I will say The Ball remained unstrained on any source I stuck it in front of.

The sound of The Ball can be described as "dynamic mic plus." It has the punchy characteristics I associate with a good dynamic, but it has fatter lower-mids, solid low end, and a smooth top — it made some of the other dynamics sound thin by comparison.

The Ball excelled anywhere you'd use a standard dynamic: electric guitars, bass amp, percussion. I also used The Ball to record male vocals. The sound was full and present, although those accustomed to the fizzy top end of modern condensers won't find it here. The Ball's top end is warmer and less hyped. Proximity effect was controlled, and off-axis rejection of unwanted sound was good.

I was especially fond of The Ball on my 4x12 Marshall cabinet recording distorted rhythm tracks. It provided smoother, less "clinical" top end than a condenser, and had a fat, punchy midrange crunch.

You can also use The Ball on other sources, ones that you wouldn't "traditionally" use a dynamic mic to track. I tried it on steel-string acoustic guitar, for example. While I still prefer a nice condenser on delicate fingerpicked passages, for hard-strummed rhythms, The Ball delivered a punchy, driving sound.

With The Ball, Blue has successfully created a new hybrid: the phantom-powered dynamic mic. For studio or live use, the result is a stable, versatile, fat-sounding mic with a lot of punch and drive that can be used on a wide variety of sources. Best of all, the price is low enough that you can stock up — enough Balls to mic a drum kit won't set you back as much as a single high-end condenser mic. Plus, you can use them to practice juggling between sessions. . . . EQ

Strengths:

- Punchy midrange, chunky lows, clear highs
- Integral swivel/stand mount
- High SPL handling
- Looks too cool
- Isolated from loading effects

Limitations:

- No case
- Limited range of swivel mount movement

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Intelligent Digital Graphic Equalizers

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- PeakStopPlus® Limiting
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World Radio History

Prosoniq morph (Mac/Win, VST)

Transform two sounds into one via morphing

by Michael Anthony

Type: VST plug-in
Platform: Mac, Windows
Price: $179 (RTAS TBA)
Contact: www.prosoniq.com

Minimum requirements: MacOS 9.2/X, W95/98/ME/2K/XP, 600 MHz processor, VST-compatible host (RTAS forthcoming)
Copy protection: Secure download with serial number authorization
Version reviewed: 1.03
Demo: Downloadable Mac/PC demos, several MP3 audio examples

In 1983, Prosoniq's Stephan Bernsee produced the first successful commercial morphing program for the Atari ST. Although it took about 10 hours to process 3 seconds of audio, the results were stunning. In 1993, he ported an optimized version (but still slower than real time) to the SGI and then to the Mac, as part of Prosoniq's respected sonicWORX audio editing software.

The 2003 incarnation, morph, is a VST plug-in that breaks the realtime barrier . . . and it's a gem. (There's also welcome news for Pro Tools and DP users: With the advent of OS X, Prosoniq has added RTAS MacOS 9/X versions of almost every plug-in in their arsenal, including morph, and these should be available soon.)

SMOKE AND MIRRORS

Morph is simple to use. After opening your VST host application, load the plug-in into an available slot, then open up the interface. Most of morph's complexity lies beneath the surface, well away from the user. There are few controls, and the layout is logical.

From left to right, first up are the three main level faders. Clicking on the little button at the top of mix A or B solos the sound relating to that fader, effectively bypassing all other controls. I did find that pulling either mix A or B up too high caused its related signal to saturate the mixer. Within a host, you can route any audio track to the mix faders, but I often just used a stereo pair's right and left channels.

The output volume control balances the various input sounds, but be careful — the plug-in's overall gain is quite healthy. The really fun part is the Morphing Zone, a 2-D control surface. You use the mouse to grab, and then move, a white dot between the four source points (two for the A input, two for the B input), gradually or rapidly morphing the input sounds in ever-evolving patterns. Fun — and maybe even more so when you control the dot movement within the Morphing Zone using MIDI control messages.

Having two A and B points delivers more freedom of expression, but also influences how the sounds work with each other. Moving the dot up and down between the left set of A to B points causes the morph to start with the A sound; moving up and down between the right set causes the B sound to be the starting point. However, moving horizontally in either direction from the left or right set of A and B points mixes those two sets together in various relationships, dependant on the relative vertical positions. In short, vertical movements morph, horizontal ones mix.

There's also a decent quality reverb with wet/dry mix, room size, and width controls. Overall, you can do anything from morph one drum loop into another, to morph a voice with a pad for "vocoder" effects.

THE FINAL TALLY

The end results are consistently musical and totally satisfying; audio morphing has finally come of age. For musicians, sound designers, and even DJs involved in live mixing, morph offers some extremely compelling possibilities. This is one of those rare plug-ins that I can highly recommend to just about anyone involved in creative audio applications. EQ

Musician, A/V producer and software designer Michael Anthony resides on the southwest coast of Ireland. In addition to running his private label, Citadel, he's also a multimedia consultant.

AN OUTSTANDING MORPH FEATURE IS THAT THE 2D MORPHING ZONE CAN BE MIDI-CONTROLLED. HERE, THE X-AXIS IS BEING ASSIGNED TO FOOTPEDAL CONTROL.

Strengths:
- Opens up major creative possibilities
- Unimpeachable sound quality
- Intuitive interface
- MIDI control over morphing

Limitations:
- How about a price break for those wanting VST and RTAS versions?

World Radio History

"Brilliant!"

Tony Romano, Front of House, Diana Krall

"With more microphones emerging than ever before, the cream always rises to the top. Enter the SCX-25. The warmest mic off axis I've ever heard, no proximity effect here! I have recorded acoustic bass, tuba, violin, clarinet, guitar, piano, and vocals—all with unsurpassed clarity."
Larry Cumings,
Grammy Award Winning Engineer,
David Grisman Quintet

"The SCX-25 is my go-to mic for acoustic guitar. It adds a gentle presence boost that makes any acoustic sound better, and its lack of proximity effect makes the bass more natural than other mics I have used."
John Gatski, PRO AUDIO REVIEW

"Two SCX-25s in a Baby Grand and my work is done! There's just nothing else like it."
Pat Lucatorto, Audio Engineer,
The Tonight Show

"My First choice on Grand Piano. Easily one of the finest acoustic guitar mics ever! The size and unique design make them very camera-friendly. I love them for the sound television directors love them for their looks."
Vaughn Skow, Audio Producer,
Live from the Bluebird Café

"What you hear is what you get. Not only is it the best sounding piano mic available, the shape, size and mount allow you to get right on top of the soundboard."
Paul Mitchell, Front of House,
Joe Sample and The Crusaders

"I have miked dozens of bands at recent bluegrass festivals with just one mic—the SCX-25. The band's response is always the same—they can't believe the tremendous sound that comes out of a microphone with such a small footprint."
Paul Knight,
Knight Sound Systems

"I honestly think the SCX-25 is one of the best mics available, and destined to become a classic."
Dennis Leonard, Supervising
Sound Editor, Skywalker Sound

"IN A WORLD SUDDENLY CROWDED WITH CHEAPLY MADE STUDIO CONDENSER MICROPHONES DESPERATELY TRYING TO OUTWARM AND OUTSHEEN EACH OTHER, AUDIX HAS MANAGED TO PUSH FORWARD WITH THE SCX-25. A COOL-LOOKING AND INNOVATIVE MICROPHONE THAT CAPTURES DETAIL VERY ACCURATELY WITHOUT SOUNDING ABRASIVE OR HARSH, THE SCX-25 HAS A GREAT FUTURE IN THE DAY TO DAY WORKINGS OF ANY STUDIO."
ANDREW GILCHRIST, ENGINEER, ANI DIFRANCO

"I put a pair of SCX-25 mics in Diana's piano in July 2001 and they haven't come out since. These are the best piano mics I have ever heard—Brilliant!"
Tony Romano,
Front of House, Diana Krall

"I license piano samples to major keyboard companies like Emu and Ensonic. In what I do, every note is like a mastered CD. It is painstakingly hand crafted and has to be perfect. I have chosen the SCX-25 mics simply because they produce better source material."
William Conkley, Sound Designer,
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"Those in need of an excellent piano mic need look no further. As an overhead drum mic, it provides a transparent and full-sounding presentation that is up there with the best. It's also a great choice for a sizable range of vocal recording duties."
Richard Salz,
ELECTRONIC MUSICIAN

"On Merle's current CD we recorded Willie and Hag with a pair of SCX-25s in the middle of the band to get a "live" feel—and the vocals sounded great."
Lee Bradley, Engineer/Producer,
Merle Haggard

"I essentially just set the mics up, bring up the faders... and just sit back and enjoy the mix!"
Pete Horne, Horne Audio

"It behaves like a mic twice its size, a condenser with solid highs but no excessive top, and with a robust midrange and upper bass range that belie its visual appearance."
Marty Peters,
RECORDING MAGAZINE

"Having played the roles of artist, engineer, and producer, there is a fine balance between the technical and the artistic side of music. I find that the SCX-25 has really helped to bridge that gap as it faithfully reproduces vocals and acoustic guitar regardless of the style or content of the music."
Phil Keaggy, legendary guitarist

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World Radio History

TASCAM US-122

Audio and MIDI I/O to go

by Greg Rule

Type: USB audio and MIDI interface
Price: $279
Contact: TASCAM, www.tascam.com

Analog audio I/O: two 1/4" (switchable guitar/line), two XLR (mic preamps with phantom power), two 1/4" inserts, two RCA outputs, 1/4" stereo headphone out
MIDI I/O: one in, one out
Other connectors: USB (cable included)
Bundled software: TASCAM GigaStudio 24, Steinberg Cubasis VST
Included drivers: ASIO, WDM, GSIF, and Apple Core Audio (OS X)
Misc.: zero-latency direct monitoring

TASCAM, long regarded as an icon of industrial-strength standalone hardware, has been expanding its reach into computer-based recording. The acquisition of Nemesys and their groundbreaking GigaStudio platform made a major statement to that effect. Then came a series of control surfaces and I/O hybrids, some of which were the result of TASCAM's collaboration with Frontier Design Group.

One of their latest tag-team efforts is the US-122, an affordable, 24-bit USB audio/MIDI interface for Mac and PC. It's a sturdy metal box with dedicated knobs for the inputs, headphone output, master outs, and for direct audio loopback, which, when activated, bypasses your host app entirely for latency-free monitoring. Signal present LEDs are provided for both audio and MIDI. Nice.

In my studio tests, installation and setup were simple, and all functions worked perfectly. I applaud the inclusion of inserts, and the dedicated knobs and switches for each function. Big points to TASCAM for bundling GigaStudio 24 and Steinberg's Cubasis VST — and how cool is it that a chromatic tuner mini app is provided as well? TASCAM is quick to tout the fact that the US-122 allows you to monitor two drivers through its outputs. "One audio application can use ASIO," they explain, "and when an email alert plays through WDM, it will pass through the same outputs — so you don't need an extra soundcard for system sounds."

Considering how attractive and well built the unit's casing is, I was a bit disappointed at how wobbly the knobs are. They look tough, but jiggle like Jello. On the other hand, the textured metal surface and finger-friendly blue rubber strip are primo.

The main limitation of note is that the US-122's sample rate tops out at 48 kHz. Admittedly many sessions are just fine at 48 or 44.1, but 24/96 has fast become the new standard for many modern recordists. There's no digital I/O onboard either. And finally, those accustomed to wide-lane FireWire boxes will notice the narrow-band limits, as only two simultaneous input streams are allowed. TASCAM has done a nice job in their manual of suggesting how to maximize the bandwidth for certain scenarios, however.

For its price, the US-122 is a solid contender. With the strong arm of TASCAM behind it, the blue and silver box will surely be seen in a lot of rigs, especially portable ones. EQ

Strengths:
- Direct (latency-free) monitoring
- No external power required
- Phantom power built in
- Bundled software
- Signal present LEDs

Limitations:
- 48 kHz ceiling
- No digital I/O
- Wobbly knobs

US-122 REAR VIEW.

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World Radio History

Sounds

M-AUDIO
ProSessions, Latin Street

Contact: M-Audio, www.m-audio.com
Format: Rex and Wav CD-ROM
Price: $49.95

Latin Street from M-Audio's rapidly expanding ProSessions family of soundware might be the perfect ethnic spice for your next track. "*Latin Street* is packed with pure Latin hip-hop and R&B nastiness," touts M-audio. "It's produced by one of today's best Latin songwriter/composers, James Galvez.

Eighteen instrumental construction kits are provided. Tempos range from 80–103 BPM. In each kit is a full multitrack mix along with the individual tracks, which consist of such instruments as acoustic guitar, bass, keys/synths, and drums/percussion. A few of the mixes lean toward the organic side, but the majority has a more modern hip-hop and R&B electronic flavor. They aren't lengthy, though, as most run for just 2–4 bars, with one J-Lo-soundalike mix (number 16) clocking in at eight bars. Good news on the Acidization front, however — M-Audio did a fine job in this department.

For those unfamiliar with the genre, this disc can serve as a great educational tool. Listen to the way the acoustic guitar tracks weave together within each mix, for example — each playing disparate patterns that create a rich groove when combined. Awesome.

We were fortunate to receive the first 15 ProSessions volumes in one fell swoop for review consideration. Along with the *Elektron MachineDrum* collection reviewed in September, *Latin Street* is a standout.
—GREG RULE

PRIMESOUNDS
A Funky Future

Contact: PrimeSounds, U.S. dist. by Big Fish Audio, www.bigfishaudio.com
Format: Audio/Wav/Rex
Price: $99.95

From the producers of *Methods of Mayhem 2* and *Metriam* comes *A Funky Future*. The library offers beats, bass lines, and guitar grooves: All are groovin', but in a processed, lo-fi, and laid back kind of way.

The bass loops on this disc are dunked in a gritty bath. Very lo-fi and vinylesque. The sound quality is at times flappy and scratchy, and is always brimming with attitude. The only real letdown: No key signature info is listed — only tempo.

As for the drum and percussion loops, these creatively processed beats are scratched, filtered, and mangled in very useful, catchy ways. A group of electro percussion loops are provided as well.

The disc closes with a batch of ambient, sci-fi, guitar textures, which definitely adds the "future" to the funk. We love 'em.

A Funky Future is anything but run-of-the-mill. The material is well played, well programmed, and creatively processed. Another excellent collection from David Österberg and crew. —GREG RULE

UEBERSCHALL
House Musique — Disco & French House

Contact: Ueberschall, U.S. dist. by East West, www.soundsonline.com
Format: Audio CD + WAV/sampler CD-ROM
Price: $99.95

The client called. They want something "fun and clubby" for their latest spot. I'd recommend grabbing Ueberschall's *House Musique* — it nails the kind of upbeat house sound that's heard just about everywhere from country to pop to daytime TV ads. But don't worry, *House Musique* isn't watered down — production-wise it's as current as many of the 12" white labels I've heard lately, so you should be able to come off sounding like the real deal (except maybe to house producers).

The library is presented construction kit-style, with complete arrangements and solo elements, making it possible to concoct several minutes from each kit without being too repetitive. Better still, all the drum and percussion hits are also provided as sample patches in Emagic EXS24, Steinberg HALion, and Native Instruments Kontakt formats, so you can play your own grooves or add accents to the existing loops.

Stylistically, *House* combines disco-influenced bass and skank/scratch electric guitar with modern drums. Many of the bass tracks are live and well played. In some cases the lines have been ReCycled, but they still retain a bit of room sound, which helps give them an organic vibe.

There's no shortage of Clav, wide stereo pads, acoustic and electric pianos, and other sound effects. Rhodes parts don't sound real, more like sample playback renditions from a synth. The attacks don't sound natural, but none of the EPs sound bad. In fact, they have a spacious hi-fi quality that blends well with the lo-fi'd filtery bass lines and drums.

On the whole, the sampled musical hits and loops are cleverly cut and tastefully layered to create club-ready tracks that you'd be hard pressed to discern from commercially released material. Bottom line: For a quick injection of credible-sounding house, or if you're building a collection of dance-oriented kits, *House Musique* delivers the goods.
—JOHN KROGH EQ

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* 2002 *Mix Magazine* Tec Award, 2001 *Pro Audio Review* Excellence Award, 2000 *EQ Magazine* Blue Ribbon Editor's Choice Award.

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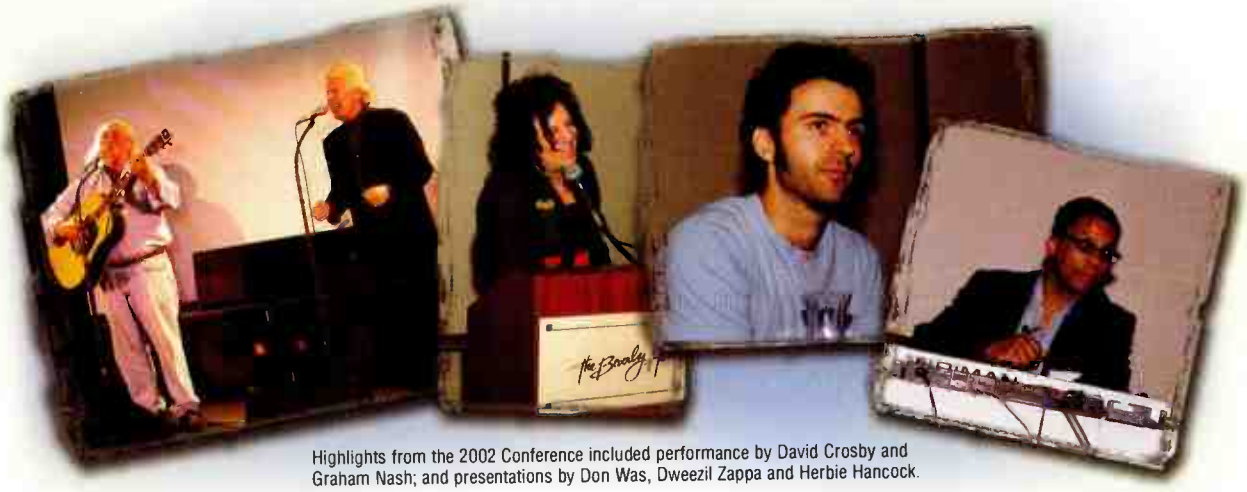

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World Radio History

coming soon!

Introducing the EQ "Exceptional Quality" Awards!

_EQ_ is on the move. Since our redesign in June 2003, we've continued to seek new ways to push our coverage to the next level. One thing we've really wanted to do is give an extra bit of acknowledgement to products that truly raise the bar — so starting next month, we'll launch the new _EQ_ "Exceptional Quality" awards. Here's how it works:

At the end of each issue's production cycle, the *EQ* review team will debate the strengths and limitations of each product on test, and come to a group consensus as to whether it deserves extra recognition — an *EQ* award. If so, you'll see the nifty logo (above) placed next to the product's photo on the review page.

Does this mean that products not chosen for the *EQ* award have failed, or are unworthy of your hard-earned bucks? Not at all. The purpose of the award is to add an extra layer of glimmer to products that go the extra mile. More specifically:

- Is it the best of its kind for its intended market?
- Does it break new technological ground?
- Is it a price/performance breakthrough?
- Is it free of significant bugs, defects, flaws, and other critters?
- Overall, did it deliver shock, awe, and create stirrings of *heavy* gear lust?

If the answer is yes to two or more of the above, then we'll crown the product with an *EQ* "Exceptional Quality" Award. We think this approach is the most timely way to recognize merit, as you won't have to wait until a year-end award roundup to learn what products pegged our meters.

World Radio History

by Lisa Roy

Sting: Bass

"When I met with Richard Frankel [video producer], he let me know what he was looking for," remembers engineer/surround mixer Nathaniel Kunkel. "Studio Without Walls was needed to record three days of rehearsals at Sting's house in Malibu, then two days of performances at the Mayan. This would involve not only my audio crew but video as well. There was of course a deadline, so mixing this surround project in Sting's guesthouse right away was discussed as well." It would be a huge undertaking for a home studio (let alone a home without a studio), and would make Kunkel's portable state-of-the-art "Studio Without Walls" — Sting's main source of documenting all audio for the *Sacred Love* DVD — that much more important.

DATE: June 2002
STUDIO: Studio Without Walls
LOCATION: Malibu (Sting's House) & Los Angeles (Mayan Theater)
PROJECT: Recording bass with Sting for *Sacred Love* DVD-V
PRODUCER: Kipper
ENGINEER: Nathaniel Kunkel
TECHNICAL ENGINEER: John Hurst
ASSISTANT ENGINEERS: Duane Seykora & Noah Lebenzon

"On this project, SWW went from a small remote recording rig to a large remote recording system to a multichannel mixing system with no down time. It was completely scalable for Sting from his home in Malibu to the Mayan," explains Kunkel. With little room for error, capturing Sting's bass, as well as the rest of the band, meant keeping things simple. "I think people are surprised when they find out how simple my setup for Sting's bass really was," Kunkel says. With Sting positioned in his high-ceiling Moroccan-style living room, Kunkel rolled in SWW just off the dining room, carefully placing his equipment amongst Sting's collection of antiquities. At 9:00 AM the recording began.

For processing Sting's bass, Kunkel used a GML 2020 "EQ'd a little and compressed with a straight ratio."

SIGNAL PATH

"Sting played his Fender Bass that he's had for years, plugged into a direct box provided by Clair Bros," shares Kunkel. "His bass was coming in on a tie-line so I plugged into that. I used a GML mic pre and that went straight into some Lavry Engineering Converters (formerly known as dB Technologies Blue) that fed Pro Tools HD. No EQ . . . flat, but when I mixed it, I did EQ a little bit and compress using the GML 2020. During the recording and mixing I monitored with my Dynaudio BM-6p."

PROCESSING

For processing Sting's bass, Kunkel used "the GML 2020, and I EQ'd it a little and compressed it with a straight ratio. I didn't use a soft-knee compression. I used the GML straight up at about a 2:1 or a 3:1 ratio. I basically moved the knobs until it sounded good. And to be honest, not that I read it first, but the manual for the GML limiter really gives you excellent advice on how to set the release constant so it tracks bass well. I set it for the standard type of timing you would imagine, and I varied the ratio until it was harnessed enough. It moved a lot from song to song.

"I mixed the whole thing digitally on my Sony DMX R-100," he continues, "so I used an analog insert in Pro Tools to get back out to the GML 2020. That's how I accessed an analog EQ and limiter in my then digital chain. You know, I don't really EQ and compress anything except vocals to 'tape' when I'm doing a live remote. I'm just trying to capture the line snake with the least amount of interference to the running of the show as possible. I found that once I start introducing things like equalizers and compressors to the signal, I end up creating a lot more problems than I solve. In the case of the vocals, I need to limit the dynamic range of them so I can have the highest resolution recording on my digital medium. But that's only because they're so much more dynamic than most of the instruments coming off of stage. If I have another instrument that's as dynamic as a vocal I'll address it on an individual basis."

TRACK NOTES

"When you have a brilliant bass player like Sting, I'll usually put him through some type of wonderful tube direct box. My personal favorite is the Evil Twin Tube direct box by Eclair Engineering — built by this genius scientist Bruce Seifried, and I'll often use it straight to 'tape'," says Kunkel. "I don't usually compress it or do anything to it during tracking, but for mixing all bets are off, though I find that a really great bass player's signal will usually just stand up by itself.

"The word I would use to describe this recording would be transparent, as in the transparency of the process of recording, where the artist never sees any problems. I think that the technology has improved in such leaps and bounds that reliably recording 40-plus live tracks of audio to hard disk isn't really that impressive of a feat anymore. It's recording that much audio and having none of the problems come to the attention of the artist, especially in a live environment. With video, when you can't go back, the whole band needs to get the performance. They're playing with Sting to get that magical performance. There really isn't a lot of margin for error for them, and even less for me.

"When Kipper first asked me if I was available to record and mix this, I was indescribably happy," Kunkel concludes. "Looking back, I think the surround mix came out better than we could have hoped. Especially when you consider that we rehearsed and recorded/filmed in Sting's home — that doesn't have a studio — did live recording at The Mayan, and mixed in surround in Sting's guesthouse." EQ

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CMP

World Radio History

by John Krogh

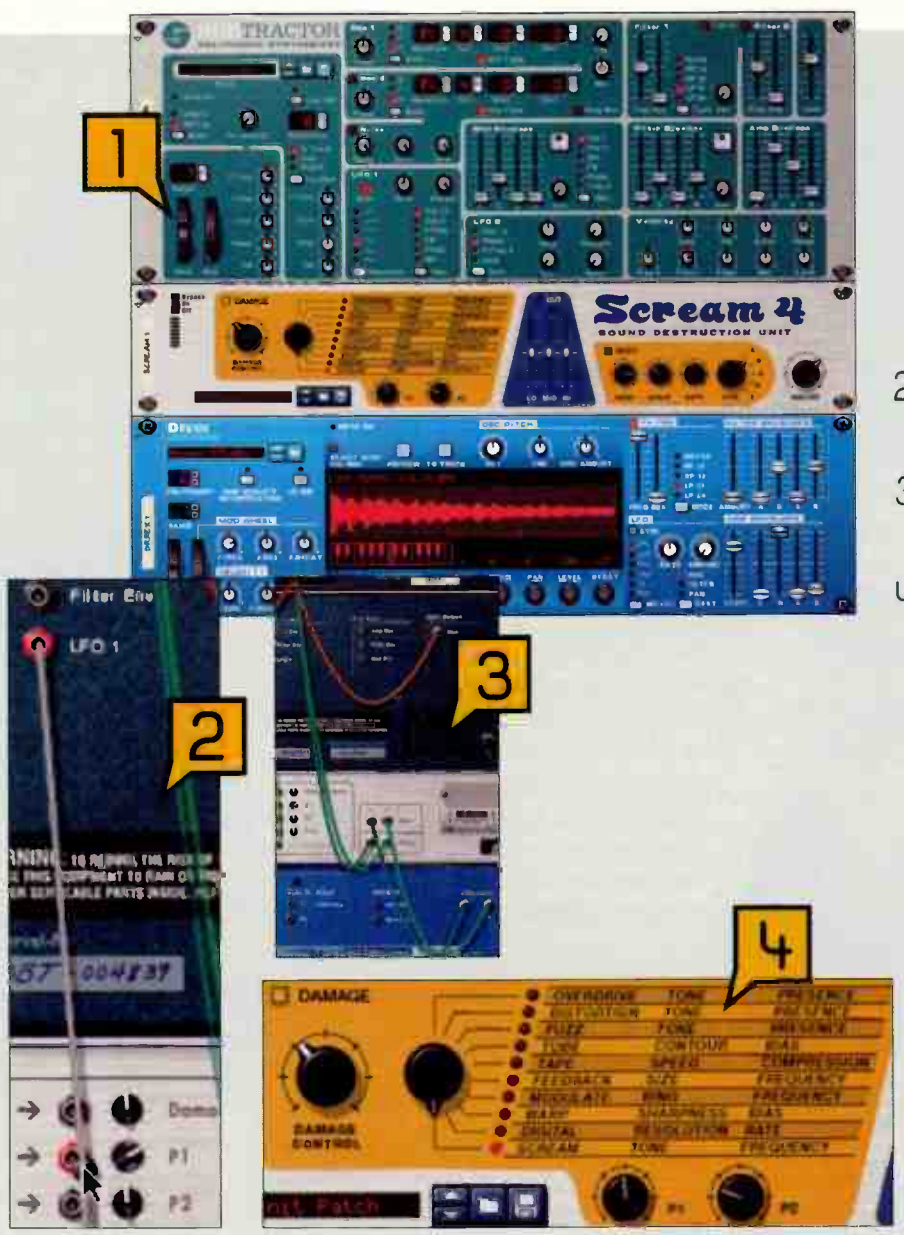
Propellerhead Reason

Automating effects parameters via LFOs

Objective: Use LFOs from Reason synths to automatically sync effects parameters to bpm.

Background: Many of Reason's effects and instruments have parameters that can easily be synced to bpm. However, some controls, such as the amount of overdrive in Scream and Mälstrom's Shaper amount, aren't available for automation/syncing directly within the units themselves. By routing a syncable LFO from, say, Subtractor, to a modulation input source on any of these "non-syncable" devices, it's possible to create effects changes that sync to bpm.

Step by Step: Dynamic effects processing can be set up in four steps.



1 **To control continuous parameters you'll need a module such as Subtractor, which can output LFO or envelope signals. Load the module, then load an effects device and an instrument that you'd like to process (for demonstration purposes I chose Scream and a Dr. REX player, respectively).**

2 **Flip the rack around to the back (Tab key). Patch Subtractor's LFO output to one of Scream's available parameters.**

3 **Patch the audio outs from Dr. REX into Scream's inputs, and patch Scream's output into the mixer.**

4 **Flip the rack back around. Set Subtractor's LFO 1 to whatever rate (synced or free-running) you'd like, then trigger Dr. REX. Depending on which Scream parameter is being modulated and which damage type you've selected, you should hear the effect sweep from less to more extreme overdrive, tape "warble", etc.**

tips

- Modulate the LFO rate of the source via another, slower LFO for more interesting synchronized effects.
- Use an envelope to modulate a parameter, and create a MIDI track to trigger the envelope randomly for ever changing effects sweeps.
- For "multi" effects that stay in sync, split the source signal using Spider CV and route the output to multiple effects parameter destinations.

World Radio History

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World Radio History

by Craig Anderton

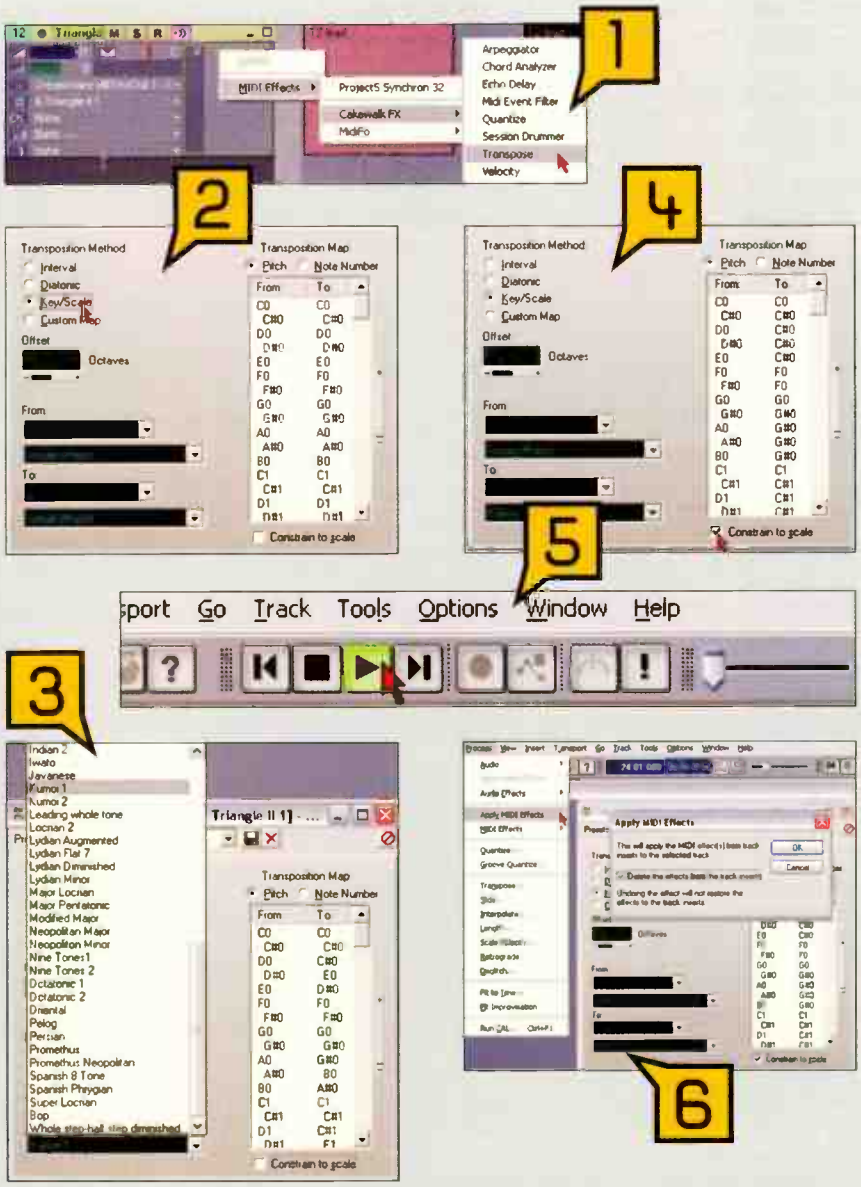
Cakewalk Sonar

Constrain MIDI notes to one of 62 scales

Objective: There's a whole world of possible scale types. This MIDI FX lets you experiment with changing what you've played to other scale types, or constrain notes to a particular scale.

Background: Anyone remember the Hotz Translator? This hardware/software controller could constrain notes to a rich set of scales, which in addition to opening up some creative possibilities, also made it easy to play a quick, error-free lead or bass line. Sonar's Transpose MIDI plug-in provides similar capabilities.

Step by Step: These steps assume you have MIDI data already recorded in a track. Do step 3 repeatedly to audition different scales.



1. **Right click in the MIDI track's FX insert slot and go *MIDI Effects > Cakewalk FX > Transpose*.**

2. **If the Cakewalk FX Transpose window isn't already visible, double-click on the Transpose name in the FX slot. When the window appears, click on Key/Scale.**

3. **Under "To," select the key, then the scale, to which you want to constrain your notes.**

4. **Check the Constrain to Scale box to constrain the MIDI notes to the chosen scale.**

5. **Press play, and you'll hear the new scale. As the Transpose MIDI FX is a plug-in, it is non-destructive and will affect the entire track.**

6. **To permanently alter the data, with the transport stopped, go *Process > Apply MIDI Effects*. A dialog box appears that gives you the option to do so, as well as simultaneously delete the effect from the FX bin. Click on OK. Done!**

tips

- Try playing a solo while concentrating solely on the rhythmic feel. Don't worry if you hit some clams, you can fix them with this feature.
- Note that you can also transpose to a different key while constraining to a different scale, or offset the scale by octaves.
- Just in case the existing 62 scales aren't enough, you can also create a custom transposition map.

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by John Krogh

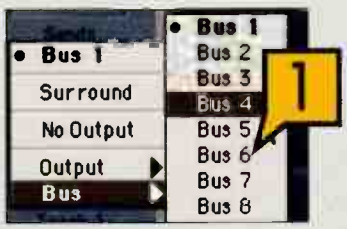
Emagic Logic

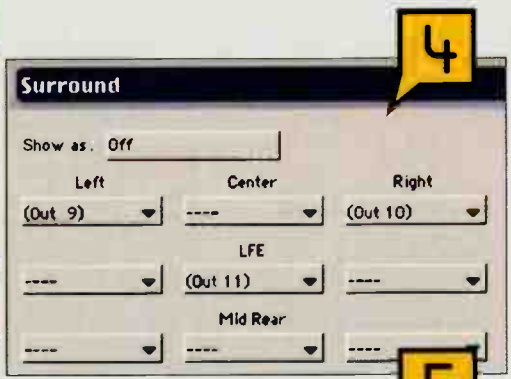
Setting up close-field+subwoofer monitoring

Objective: Use Logic's built-in surround sound features to set up a stereo-plus-sub mixing environment.

Background: Logic currently lacks convenient monitoring features for stereo projects through close-field speakers combined with a sub. The built-in surround channel features, however, can be used to set up a mixer configuration where individual tracks are bussed to a return channel that sends output to your nearfield speakers and a subwoofer simultaneously. The end result is a more streamlined way to work in stereo, with and without a sub, and it can all be done using a multi-channel audio interface — no mixer required.

Step by Step: A customizable "2.1" mix configuration can be set up in just six steps.





1. **Assign all tracks within a session to a free bus.**

2. **By default, busses are routed to return channels. Select the return channel of the bus selected in Step 1. Change this return's output from whatever it is to Surround.**

3. **The pan control should change from an L/R knob to a surround panner. Double-click the return's surround panner — the Pan Bus window will appear. From the Pan Bus window drop-down menu choose Stereo.**

4. **We have to assign an output from the audio interface to feed each monitor and the subwoofer, so choose Surround from the main Audio menu. The Surround Preferences window will appear; assign whatever outputs you'd like to the left and right speakers and the subwoofer (Left, Right, and LFE, respectively). If you haven't already done so, connect each of these outputs to the appropriate speaker.**

5. **At this point, audio tracks should be routed to the monitors and sub — adjust the LFE amount (from the Pan Bus window) to taste.**

6. **Optionally, you can use two Master faders whose outputs are set to the hardware outputs used for the main stereo and LFE/sub channels, respectively.**

tips

- If you try Step 6, mute the stereo or subwoofer Master faders for quick A/B'ing between "full mix" and sub or nearfield speakers only.
- If your monitors and sub don't have high- and lowpass (bass management) filters, you can insert EQ on each master fader for "pseudo" crossover control. It's not perfect, but it can help give you an idea of what's going on down low.
- If you accidentally move the panner position for the stereo mix, you can return it to the default position by option-clicking the white position ball.

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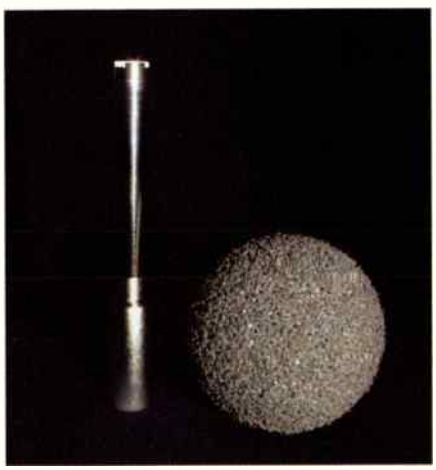

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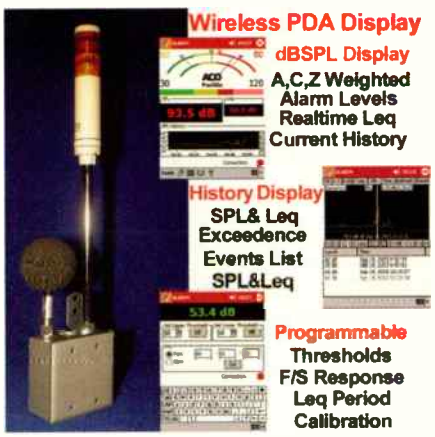

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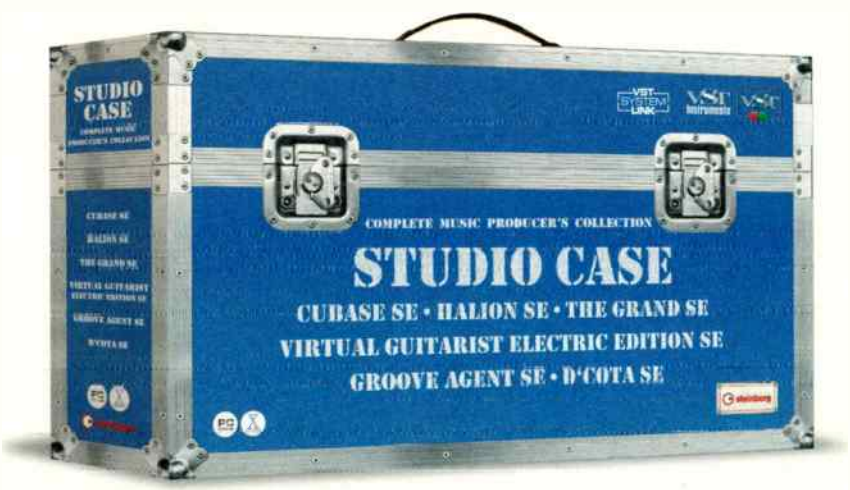

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— Resolution Magazine, March 2003

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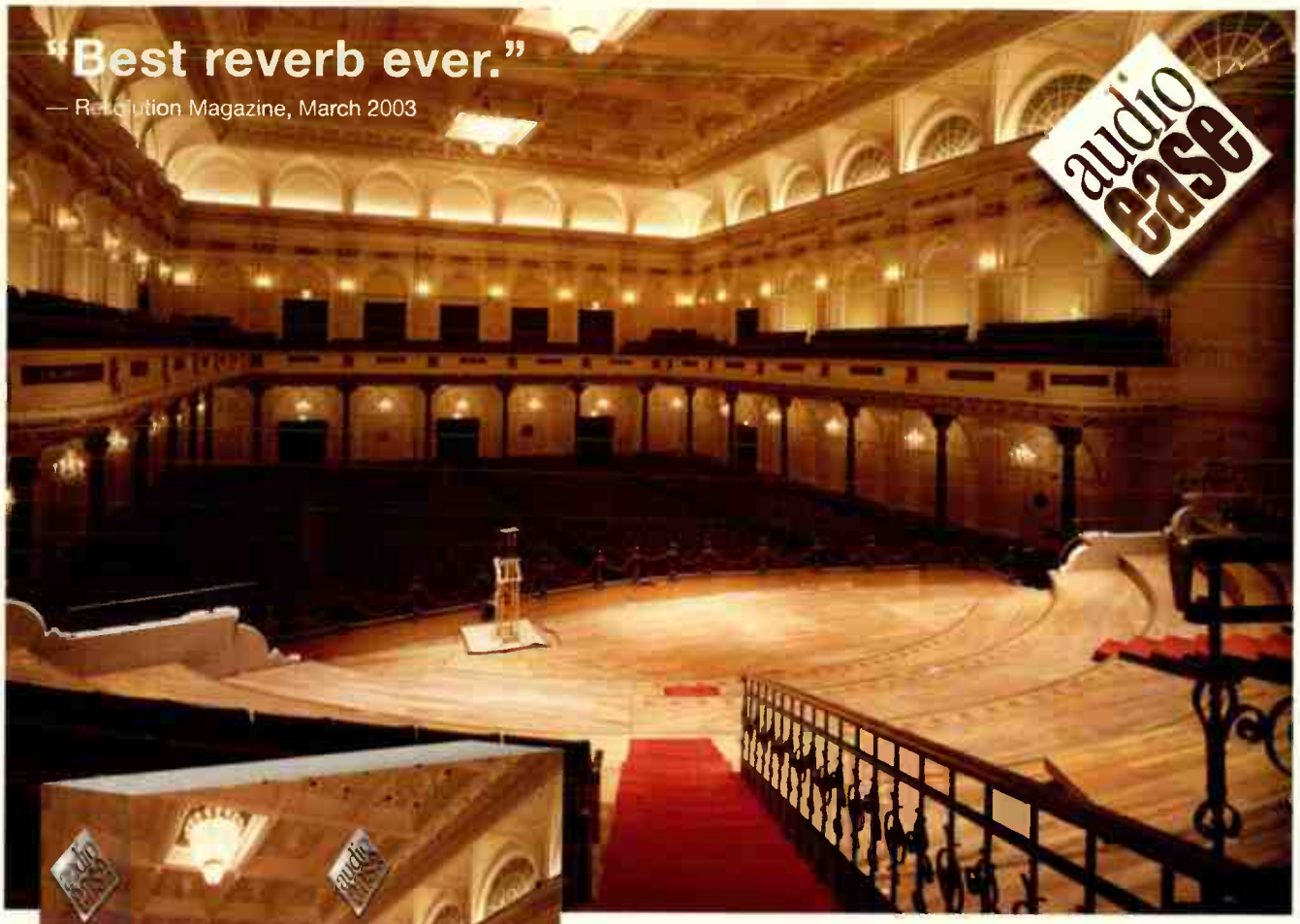

Altiverb™ sampled acoustics processor

The ultimate 'must have' reverb plug-in for DP4 on G4/G5 systems

Showered with acclaim since its debut, this legendary reverb plug-in is now shipping for your DP4 and OS X desktop studio running on a Power Mac G4 or G5. Breath the unsurpassed realism of real acoustic spaces into your mix: halls, cathedrals, studio rooms — in stereo and quad (surround) configurations. Download a constantly growing library of world-class acoustic spaces, at no extra charge, such as LA recording studios, historic French cathedrals, and world-class European concert halls. You can even sample your own spaces. The critics say:

"Altiverb is quite possibly the best-sounding reverb available, bar none."
— Pro Audio Review, Nov. 2002

"Hands down the most natural-sounding reverb plug-in around."
— EQ Magazine, January 2002

"Altiverb Produced results that eclipsed anything I'd heard before."
— Sound on Sound, May 2002

"Altiverb is flat-out the densest and smoothest native reverb I've ever heard. Moreover, it out-performed an assortment of hardware reverbs I had on-hand for comparison." — Electronic Musician, October 2002

GameDeveloper FRONTLINE AWARD '02

MacUser

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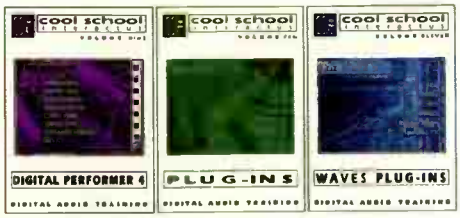
Digital Performer 4 interactive training

Cool School Vol. 6.1 DP Basics, Vol. 9 DP4, Vol. 10&11 Plug-ins

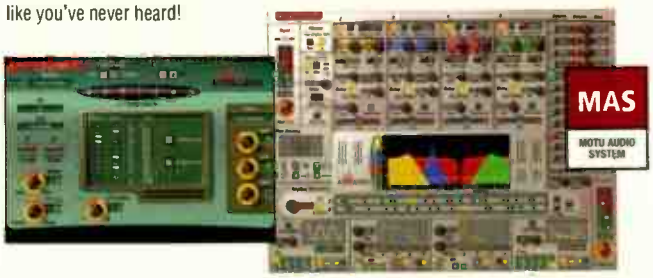
Check out the latest Digital Performer 4 and plug-ins interactive training products from Cool Breeze Systems. If you prefer the "show me" style of learning, then the Cool School Interactus training environment is for you. CSi products include hours of concise, well thought out movie tutorials with "before and after" audio examples, software click-state simulations, a huge DAW-related glossary, and built-in quizzing. Beware: you may dig it.



Antares Auto-Tune™ 3 and Filter™

Two new MAS plug-ins for DP4 — a classic and something new

Antares brings two essential plug-ins to your DP4 mix. The legendary Auto-Tune is the "Holy Grail" of pitch correction. The all-new Filter™ plug-in delivers filter effects like you've never heard!



Native Instruments B4

This virtual instrument classic is now available for DP4 as an AU

The B4 is another classic keyboard from the 20th century which Native Instruments brings into the studio and onto the stage of the 21st century. The B4 is a complete virtual tonewheel organ, capable of reproducing in authentic detail the sound of the legendary B3 organ and rotating speaker cabinet, including tube amplification and distortion. Beneath the attractive, photo-realistic vintage-looking graphics operates an up-to-date audio engine, with perfect sound and lots of options for fine-tuning, all with full MIDI automation. This instrument is a must-have for every DP4 studio. Includes a full set of 91 tonewheels, photo-realistic graphics in the original look, full MIDI automation and many options for easily fine-tuning the sound.

Mackie Control Universal & Extender

Automated hands-on control for the DP4 studio

Imagine the feeling of touch-sensitive, automated Penny & Giles faders under your hands, and the fine-tuned twist of a V-Pot™ between your fingers. You adjust plug-in settings, automate filter sweeps in real-time, and trim individual track levels. Your hands fly over responsive controls, perfecting your mix — free from the solitary confinement of your mouse. Mackie Control delivers all this in an expandable, compact, desktop-style design forged by the combined talents of Mackie manufacturing and the MOTU Digital Performer engineering team. Mackie Control brings large-console, Studio A prowess to your Digital Performer desktop studio, with a wide range of customized control features that go well beyond mixing. It's like putting your hands on Digital Performer itself.

Mackie UAD-1 Powered Plug-ins

Accelerated effects processing for DP4

Install a UAD-1 card in your Mac and then run dozens of sophisticated effects plug-ins inside Digital Performer without bringing your Mac to its knees. What's the secret? UAD-1 is a custom DSP-equipped PCI card. It's like adding an extra $20,000 worth of effects gear to the dozens of native plug-ins included with DP. UAD-1 ships with a growing list of powered plug-ins, including Nigel, a complete palette of guitar tones combined with every effect a guitarist could ever need. Authentic vintage sounds include the Pultec Program EQ, a stunningly realistic recreation, and the1176LN Limiting Amplifier and Teletronix LA-2A Leveling Amplifier, two more analog classics reborn inside Digital Performer. Apply liberally with host CPU cycles to burn.

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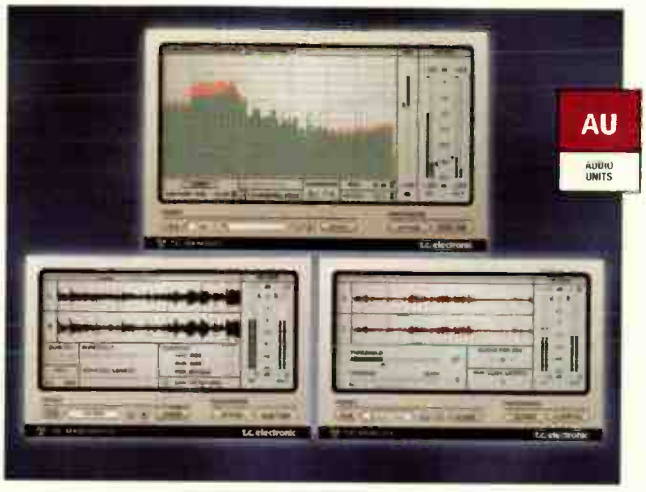
TC Electronic Restoration Suite

Ground-breaking audio restoration plug-ins for DP4

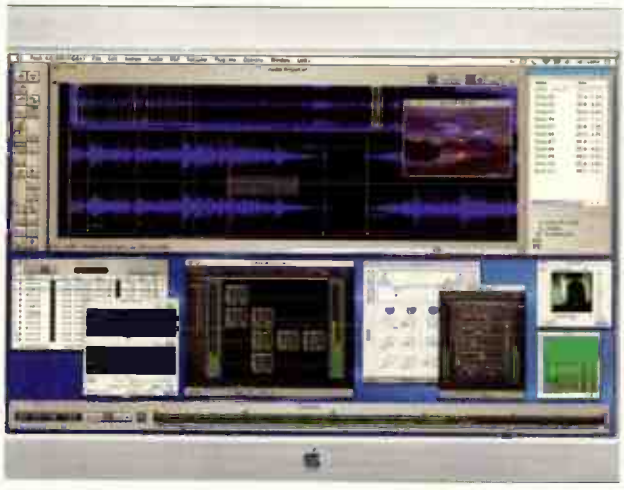
TC Electronic revolutionizes audio restoration with the new Restoration Suite for the PowerCore platform. Powerful, fast and easy to use, this bundle of hi-end restoration plug-ins provides descratching, denoising and declicking for the most critical applications in audio restoration. The descratching algorithm, based on a collaboration between TC Electronic and Noveltech from Finland, employs a breakthrough first-to-market technology and delivers incredible results. Both the Denoiser and Declicker plug-ins are based on TC's many years of experience in the field of restoration, now with extended functionality. Restoration Suite is one of the first hybrid plug-ins, utilizing CPU and PowerCore DSP processing at the same time to combine the best of both worlds for optimal sound quality and best real-time results.



BIAS Peak 4 — 4 Is More

The ultimate waveform editing companion for DP4 and MachFive

Burns redbook CD's directly. Reads/writes MP3, MP4(AAC™), 24 bit WAVE & more. Batch process dozens or even thousands of files. Ultra fast waveform editing now even faster. Launch directly from DP4. Unlimited undo/redo with graphic edit histories. Unique DSP and looping tools like the stunning new sample based ImpulseVerb™, Change Duration envelope, Harmonic Rotate, Bit Usage graph, Grid Markers from Tempo, plus Repair Clicks, Loop Tuner™, Loop Surfer™, Guess Tempo™, Duplicate, and more. Improved Region Cross-fade Editor and new Content Drawer. Hot swap real-time effects using Peak's included Vbox™ SE VST matrix. Supports Audio Units and Core Audio. Optimized for Mac OS X, multi- processors, and the Altivec G4 Velocity Engine. Includes new Squeez™ pro compressor/limiter, Freq™ EQ, and more.



Glyph Technologies GT 308

Ultimate backup and storage for your MOTU desktop system

The Glyph Technologies GT 308 is the perfect all-in-one storage and backup solution for the MOTU desktop studio. A 3U rack-mount eight-bay enclosure, the GT 308 comes with up to six hot-swappable GT Key FireWire drives, perfect as target drives for multitrack audio recording, storing your MachFive soundbank folder or temporary archiving of your DP4 projects. The right-hand expansion bays offer options of AIT backup, SCSI hot-swap receivers, DVD-R/RW and/or CD-R/RW. Like other GT Series solutions, the GT 308 features QuietMetal™ for ultra-quiet performance and Glyph's Integrity™ FireWire hot-swap technology to ensure the best reliability and performance. Included with the GT 308 is the GT 051, a tabletop hot-swap enclosure that makes content more portable and expansion easy.

ADAM Audio P11A Studio Monitors

Two-way shielded active monitors for your MOTU studio

With groundbreaking innovation in electro/acoustic transducers, no-compromise design, superior materials and the same A.R.T. (Accelerated Ribbon Technology) folded ribbon tweeter found in all ADAM monitors, ADAM's P11A two-way shielded active monitors deliver your mix with astonishing clarity. Connect a pair to the main outs of your MOTU 828mkII FireWire audio interface — or any MOTU I/O — to hear your mixes with unique imaging and outstanding transient response at a very attractive price point. Europe's "Keyboards" magazine held a studio monitor shootout between no less than 25 professional monitor systems, and the ADAM P11A's came out at the top of the heap. One listen, and you'll be hooked, too!

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Room with a VU

by Mitch Gallagher

STUDIO NAME: SoundMoves Mastering & Recording
LOCATION: Burbank, CA
CONTACT: www.soundmovesaudio.com
KEY CREW: Michael Woodrum, owner/engineer/producer; Gina Vivona, co-owner; Joann Morgan, studio manager
CONSOLE: Digidesign Pro Control with Fader Pack, Manley custom 16-channel tube console
RECORDERS: Alesis Masterlink, Panasonic SV3800, TASCAM DA45HR, 102mkII
MONITORS: Pelonis Signature Series 215WBA, JBL 4642A dual 18" sub-bass system, Tannoy AMS-10, Event 20/20
AMPLIFIERS: Pelonis Signature Series, Crown
OUTBOARD: Manley Massive Passive, Vari-Mu; Tube Tech CL-2A, Empirical Labs Distressor with British mod [2], TC Electronic Finalizer 96k, Aardvark AardSync II, Digidesign Sync I/O, MIDI I/O
MICROPHONE PREAMPS: Neve 1073 [2], Universal Audio 2-610, Millennia HV-3D 8-channel, Digidesign Pre
MICROPHONES: Audio-Technica AT4060, AT4047 [2], AT4033; Shure SM57 [7], AKG C451CB [matched pair], D112
SAMPLERS/KEYBOARDS: Korg Triton, E-mu Mo Phatt with expansion cards, Audity 2000 with expansion cards; Roland XV-3080 with expansion cards, Akai S-5000 sampler
COMPUTER: Apple dual 1.42 GHz G4 with 1 GB RAM, DVD-RW/CD-RW, 20" Cinema Display, hot swap drives & bays
DAW: Digidesign Pro Tools HD4, 192 I/O [2]
SOFTWARE: Digidesign Pro Tools 6, Spectrasonics Stylus, Propellerhead Recycle 2, "tons of plug-ins"
STUDIO NOTES: "I'm sort of an old school kind of guy with a love for modern technology," confesses owner Michael Woodrum. "I've always wanted to create a studio space that would provide the highest quality recording experience in a creative, inspirational atmosphere with virtually no limitations — all at affordable rates, with no extra charges for our Pro Tools rig, microphones, or coffee. And with the opening of SoundMoves, I've finally done it. We've designed an environment that has a truly home-like feel about it with all the creature comforts."

The lounge portion of the facility was originally a one-story house. The adjoining recording facilities occupy what was formerly a warehouse next door. "Imagine a great little house with all the comforts of home attached to a concrete warehouse just begging to be converted into a killer studio," beams Woodrum.

The studio was acoustically engineered by Chris Pelonis of Pelonis Sound and Acoustics and wired by Charlie Bolois and Vertigo Recording Services using Mogami wiring. Balanced power for a lower noise floor ensures cleaner recordings. The tracking room has modular space that allows for customized configuring for everything from full band recording to vocal or instrumental overdubbing. Private Q Headphone Mixers allow musicians to dial in their own headphone mix solving the "more me" dilemma.

Woodrum's background in vintage analog and the latest digital technology allows him to get the most out of a session and his workspace. "Using a combination of tools allows us to achieve virtually anything."

HEY, *EQ* READERS. WANT US TO FEATURE YOUR STUDIO? SEND PICS AND INFO TO mgallagher@musicplayer.com.

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SATISFACTION

There is an undeniable satisfaction when you're surrounded by those little things in life, like the right refreshment, the right company, the right sound...

Introducing the 1029.LSE™ PowerPak...the one surround system that will convince you that good things can be brewed into small packages.

Starting with the 7060A LSE™ subwoofer, which serves as the cornerstone to the system with its full-featured 6.1 bass manager, the PowerPak also includes five award-winning 1029A compact active monitors. Each system comes with our surround sound Setup Guide and Genelec Acousti/Tape™ making installation quick and precise.

This surprisingly compact system delivers healthy doses [29Hz to 20kHz] of accuracy, dynamics and emotion in stereo or multichannel mode while saving precious control room real estate.

Surround yourself with satisfaction! Discover why GENELEC continues to lead the way in active multi-channel monitoring with the 1029.LSE™ PowerPak and let your satisfaction get the best of you.

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Introducing the 896HD

192kHz FireWire Audio Interface with CueMix DSP™

Turn your computer into a powerful 24-bit, 192kHz digital audio workstation with eight channels of pristine analog recording and playback. The 896HD gives you eight mic inputs, ADAT digital I/O and stereo AES/EBU for a total of 18 inputs and 22 outputs. Connect mics, guitars, synths — even outboard effects — and use CueMix DSP™ on-board mixing to monitor live inputs, create send/return loops to outboard gear or program a separate headphone mix. Control your entire mix with included software, then disconnect your 896HD and use it as a stand-alone mixer. The 896HD delivers plug-and-play high definition audio recording to your computer desktop.

Mac OS | Mac OS X | Windows Me | Windows 2000 | Windows XP

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