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MUSIC PLAYER PUBLICATION

World Radio History

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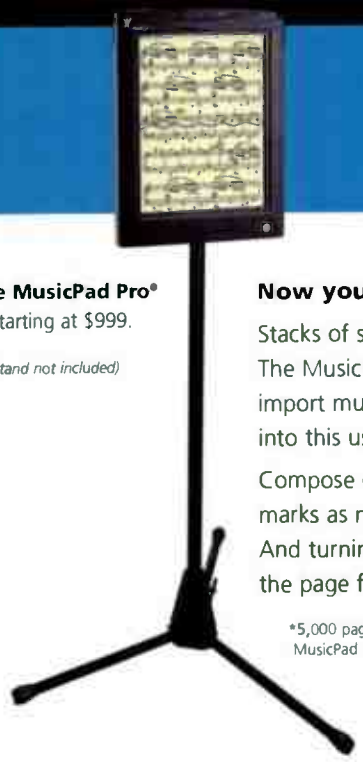

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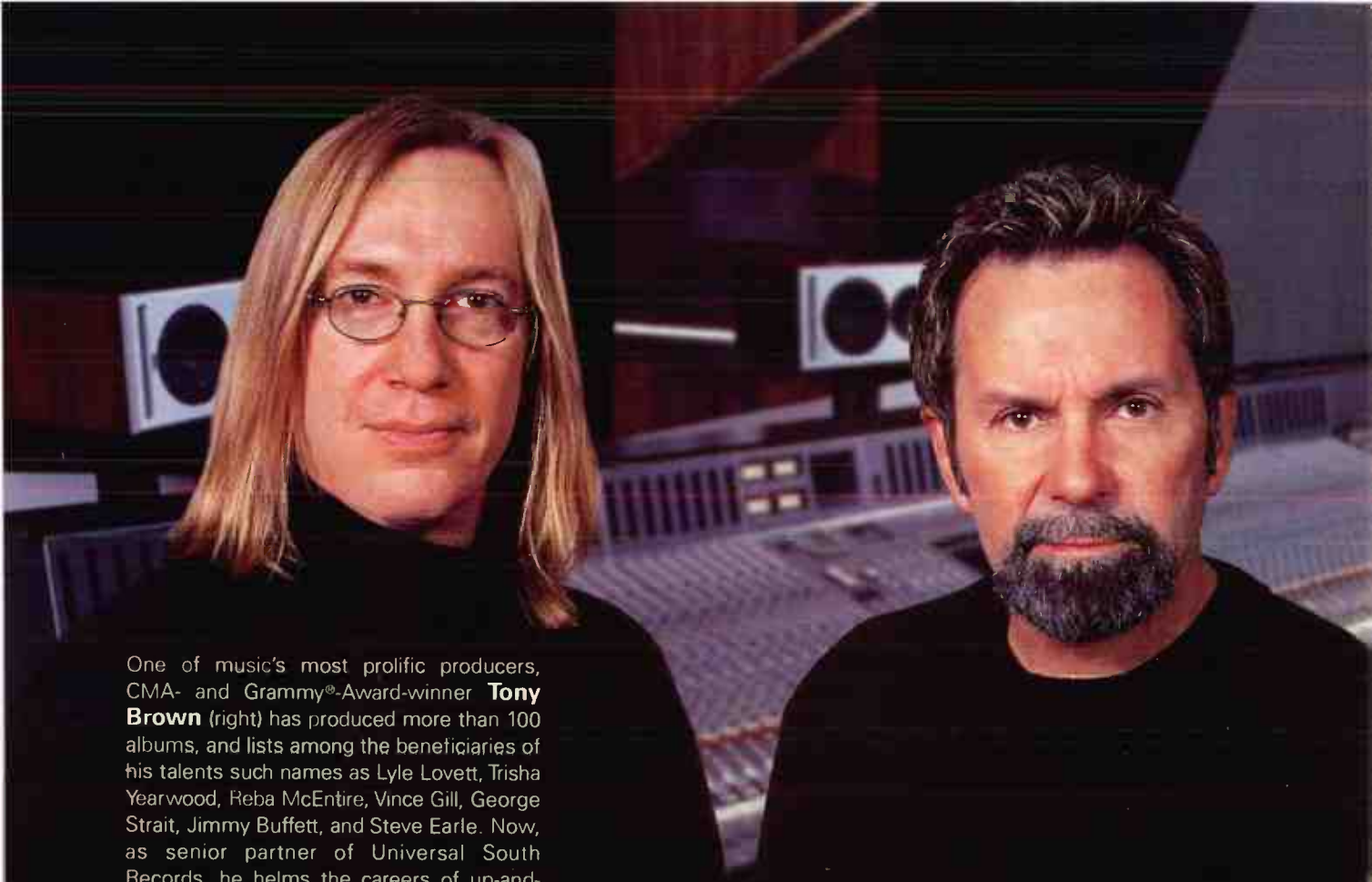

One of music's most prolific producers, CMA- and Grammy®-Award-winner **Tony Brown** (right) has produced more than 100 albums, and lists among the beneficiaries of his talents such names as Lyle Lovett, Trisha Yearwood, Reba McEntire, Vince Gill, George Strait, Jimmy Buffett, and Steve Earle. Now, as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

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

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

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

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World Radio History

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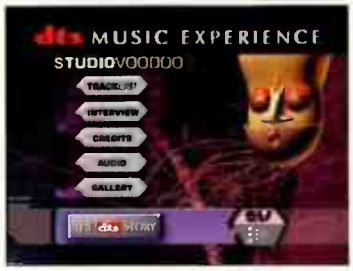

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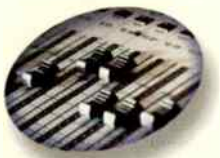

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World Radio History

Talk Box

DVD-A VERSUS SACD

As the state of California finds itself embroiled in a gubernatorial crisis, the online forum dwellers of the recording world have other debates on their minds: Mac-vs-PC, AU-vs-VST, analog-vs-digital, commercial-vs-project studio. The threads are heated and, in some cases, counterproductive. But today, on the verge of the 115th AES convention, we turn our attention to one particularly important topic: Which of the emerging high-definition audio delivery standards will eventually unseat the mighty 16/44.1 CD? Will it be DVD-A, SACD, or neither?

As hot as the topic is today, the roots of the debate actually trace back nearly five years. In 1999, Bobby Owsinski penned a revealing article in *EQ* about the state of the technology, and the ins and outs of each format (see www.surroundassociates.com/newformats.html). Mitch Gallagher revisited the topic in our June 2003 "Future-Proof Studio".

DVD-A and SACD require new-generation hardware for playback, which could be considered a setback to some consumers, but the good news is that an increasing number of new DVD players are equipped to handle both formats. A bigger concern is whether the almighty marketing machine of the recording industry is focused enough to push the topic into mainstream awareness. As one astute MusicPlayer forum member posted: "The RIAA is spending too much time worrying about illegal downloads when it should be establishing the formats of tomorrow. DVD-Audio or SACD in 5.1 should be advertised heavily."

We all witnessed the "morphing" effect in the video world as the balance of retail inventory shifted from VHS to DVD titles. How long before we see the same transition in music? One thing is certain: If 5.1 becomes the *de facto* playback system in cars, look for an explosion in surround titles. And how will the iPod revolution play into this? Will hi-def audio find its way to these portable devices along with surround headphone technology? I say bring it on, and soon!

Much of this month's feature section is devoted to another hot topic — audio-for-video — but don't overlook a smaller but equally important feature on DVD-A written by multimedia masters Studio Voodoo. And there's more to come, as future articles from the team will dive deeper into the new-format waters. —Greg Rule

The BAND STAND

What new piece of gear or technology would you like to see at AES?

Greg Rule, Executive Editor

Is the wireless studio a pipe dream? Imagine one honkin' wireless hub that connects a studio's worth of gear — mics, monitors, DAWs, mixers, processors, peripherals. Goodbye spaghetti!

Mitch Gallagher, Editor

Still waiting for the ultimate control surface . . one that lets you transparently access everything in a program without looking at a screen. Then we can get back to mixing, editing, and processing with our ears instead of our eyes.

Craig Anderton, Editor at Large

I'd like see a "vinyl scanner" — you put a vinyl record on the "scanner," it follows the grooves optically, and generates a corresponding waveform that you can capture to your computer.

John Krogh, Technical Editor

An audio/MIDI interface for connecting multiple computers together, the software driver would handle transmitting data to/from each computer, minimizing latency and duplicated hardware.

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Punch-In

Tips & News You Can Use

BY GREG & CRAIG & JOHN

CD of the Month

Steely Dan

***Everything Must Go,* Warner Bros.**

The opening lyrics of Steely Dan's latest might give listeners the impression that Becker and Fagen are throwing in the towel: "Attention all shoppers, it's cancellation day; yes the big *adios* is just a few hours away." Or on the closing track: "Let's admit the bastards beat us, I move to dissolve the corporation in a pool of margaritas." But this legendary band is anything but finished. The songs on *Everything Must Go* are as clever and witty as ever, and the production and performances are up to the gold standards the band set and has maintained over their illustrious three-decade career. As we've come to expect from Steely Dan, the lineup of Fagen/Becker sidemen is ever evolving. One surprise this time around, however, is the debut of drummer Keith Carlock, who plays on every track. And for good reason: His grooves are deep and absolutely airtight. No room for fudge on this CD; the recording quality is bone dry and pure. *EQ* columnist Roger Nichols returns to the engineering chair for this disc, along with Elliot Scheiner, TJ Doherty, and Dave Russell. A must-have for all Steely Dan fans and newcomers alike. (www.steelydan.com)

News

GRAMMY WORKSHOPS

The San Francisco chapter of the Recording Academy recently hosted an all-star event called "Digital Workstations from Garage to Grammys" at the legendary Skywaker Sound Scoring Stage just north of San Francisco. The gathering gave attendees an intimate look at the tools and the technical processes responsible for putting many of today's artists at the top of the charts. Featured engineers included Phil Tan, Larry Seyer, and Jean-Marie Horvat; the exhibitors were Antares, Apogee, Apple Computer, Cakewalk, C-Tec, Digidesign, Dynaudio, Emagic, Guitar Center Professional, Hear Technologies, KRK Systems, Mackie, Monster, Presonus, Shure, Steinberg, Tannoy, TC Electronic, Universal Audio, and Waves.

This is just one of the many informative functions that the National Academy of Recording Arts & Sciences hosts around the country. If you're interested in becoming a member, visit the NARAS site at www.grammy.com.

Featured engineer Phil Tan mixes an unreleased track by Egyptian pop artist Hakim, with guest vocals by James Brown, at his Pro Tools workstation.

Pictured (L to R): Event moderator Paul Stubblebine, engineer Phil Tan, Executive Director Merl Saunders Jr., engineer Larry Seyer, Skywalker Sound Director of Music Recording and Scoring Leslie Ann Jones, and engineer Jean-Marie Horvat.

tip

STEM SMARTS

At the end of a multitrack mix session, it's a good idea to make submixes (stems) as a means of delivering a condensed version of the session to another facility, or for safety backup purposes. Having audio stems in AIF or WAV format ensures that you'll be able to retrieve the multitrack material years later, no matter what version of software or recording platform you're using at the time.

In creating stems, the choice of how to submix (or not) is up to you. If space is an issue, perhaps you'll want to submix the drums and percussion down to a stereo pair, all of the synths and keyboards to a pair, and so on.

When bouncing each stem, always start from the exact same location at the beginning of the song. That way, all stems can be quickly loaded into your DAW of choice, aligned flush left, and you're good to go. When picking your start point, you might want to allow for a tiny bit of additional space before bar 1, beat 1, as a safety precaution against accidental truncation. Also, you'll probably want to make two versions of each stem, one with effects and one without.

And now for the most important stem-related tip: Bypass all master channel effects when bouncing, otherwise you'll end up with a series of pre-mastered stems that might cause problems when multiplied together later on.

Grammy photography: Lynda Niemeier, Lynda Niemeier Photography; photo courtesy of the Recording Academy

World Radio History

tip

SECRETS OF THE GRILLE CLOTH

Here's a tip from producer/musician/engineer/general all-around good guy Jay Graydon: If you're recording a guitar or bass amp, remember that the speaker's grille cloth, grille cane, or metal grille covers are passive filters that can affect frequency response. If they're metal, they can ring or resonate; if they're cloth or cane, the vibration may produce a buzz that sounds like a blown speaker.

Grille cloth exists to protect the speaker, especially when transporting. If it's easy to remove while recording, do so — the sound will be better. However, be very careful not to let a mic hit the exposed speaker. Use a sand bag to hold the mic stand base in place and, if using a boom mic stand, after positioning, screw it down tight.

Gadgetphile

Neumann KU100 Dummy Head Mic

A decapitated crash-test dummy? No, it's Neumann's KU100 Dummy Head binaural stereo microphone. The head-like housing contains two microphone capsules built into the ears. "When listening through high-quality headphones," says Neumann, "it gives the illusion of being right at the scene of the acoustic events. The binaural stereo experience moves the listener into the scene of the original performance, in contrast to other space-related recording techniques, where the acoustic event is moved to the listener. When played back through loudspeakers, the sound matches to a high degree that of conventional stereo microphones, placed in the same position. However, a superior quality is added, that of a distinct spatial depth perception."

The KU100 uses transformerless circuitry with the advantage of high output capability, fast transient response, and low self noise. The usual output transformers are replaced by electronic circuits. "As with traditional transformers," says Neumann, "this technique ensures good common mode rejection, and prevents RF interference that may influence the balanced audio signals." The KU100 can be operated with 48 V phantom powering from an external power supply unit, or from the built-in battery. At the bottom of the head is a switch for the different power supply modes, as well as connectors for balanced and unbalanced output signals. Inside the head are additional switches for 10 dB attenuation, and the highpass filter. Balanced (XLR) and unbalanced (BNC) outputs are provided.

The KU100 comes in a robust aluminum carrying case, together with an external power supply unit, a 5-pin XLR cable, and an adapter cable that splits the 5-pin XLR output into two 3-pin XLR connectors.

www.neumannusa.com

tip

TESTING ALBUM SONG ORDERS

You've just completed the tracks for your new CD, and are wondering whether the slow, romantic ballad "Snot Puppies from Hell" will transition smoothly into that crowd-pleasing uptempo number, "Let's Disbar Some Lawyers." As we all know, recording your songs is just part of the story: You have to decide which ones to use, and their optimum order, before you can release a finished project.

One of the best tools for doing this is a portable MiniDisc. Record your music onto an MD (if you have too many tunes to fit, you can double the recording time by recording in mono). With MD, you can place markers at the beginnings of songs, and rearrange the song order effortlessly with a few button presses to see what works best. What's more, you can carry the player around with you and see if the order feels good while you're, for example, cruising through the supermarket, hanging out on the beach, or wondering why the connecting flight from Chicago is three hours late.

World Radio History

News

Four Become Two

A pair of key music industry acquisitions to report. . . . **M-Audio**, named the "fastest growing company in MI" for two consecutive years, announced their acquisition of **Evolution Electronics** Ltd., a UK-based manufacturer of USB MIDI keyboards and controllers. M-Audio acquired all Evolution products, software, and intellectual property rights, along with all other assets and liabilities of the company in exchange for an undisclosed sum. Says Tim Ryan, CEO of M-Audio, "We are very excited about bringing M-Audio and Evolution capabilities together. It is clear to us that this joining of forces will make a sum greater than the parts." The transaction makes M-Audio the largest supplier of USB MIDI keyboards and controllers in the world. "We're honored to join the M-Audio family," says Evolution founder Richard Watts, "and are looking forward to extending our reach and vision to a new level." Watts, who built the company over the past 20 years, will continue to be involved within the enlarged group. Niels Larsen is now acting as general manager of Evolution.

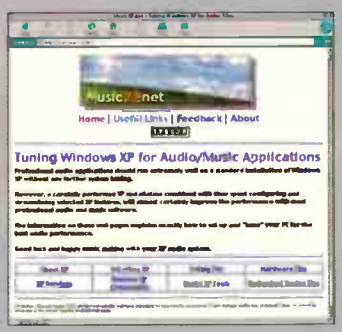
And how about this shocker? **Adobe**, the giant that brought us Photoshop, Illustrator, Acrobat, InDesign, and other landmark software technologies, announced that they've taken ownership of **Syntrillium**. A statement on Syntrillium's site explains: "Adobe Systems announced an agreement to acquire the technology assets of Syntrillium Software, a leader in digital audio tools. Syntrillium's flagship product, Cool Edit Pro (pictured above), will join the company's existing line of professional digital video products. Terms of the agreement were not disclosed. 'Cool Edit Pro has won recognition across the music and video industries, and by teaming up with Adobe we will be able to bring this complete multi-track recording application to an expanded set of customers,' said Bob Ellison, president of Syntrillium. 'Introducing Cool Edit Pro into the Adobe family is great news for our customers, who will benefit from the company's complementary product line and commitment to delivering high quality products.'" During the transition, Syntrillium products can still be purchased from the company's website at www.syntrillium.com.

Surfboard

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

■ **www.rpmdirect.com**

"The ultimate record industry resource" is their mantra. For nearly six years, RPM Direct has served as an online meeting place for record producers, engineers, mixers, and producer management companies. The RPM Direct website is accessed by legions of producers, engineers, A&R execs, music publishers, film and TV musicmakers, managers, and more. "As we continue to grow as a resource for a global community of music professionals," says RPM, "we remain dedicated to our mission of providing a truly valuable service to our industry, while providing an egalitarian environment for companies and individuals, large or small, famous or undiscovered." While you're at the site, be sure to register for the excellent monthly email newsletter — chock full of valuable tips, industry news, and more.



■ **www.musicxp.net**

Need DAW tips? Check out this site, written and maintained by Robin Webb — a self-described "music technology enthusiast for over 26 years, a freelance journalist, a computer programmer (C, C++), a keen musician, and an experienced Windows user (XP Pro, XP Home, NT, 2000, 98SE, 95, 3.1). The tips on my site are things I have discovered myself, or tips that I've picked up from reading books or surfing the 'net. I've tried all of the suggestions on this site myself and they have certainly helped me. I have put a lot of effort and time into these pages, and I hope that you find the information useful and that you improve your audio system performance by following the tips and advice provided."

■ **www.unicornation.com**

Users of anything MOTU will want to bookmark this site immediately, and visit often. Network with a global army of passionate, knowledgable MOTU hardware and software maniacs.

■ **http://home.btconnect.com/christopherg**

Looking for a free VSTi analog synth emulator for your PC (Windows 98 and up)? Check out the Tecnos SUPERWAVE P8. It features 8-voice polyphony, two oscillators, 64 patch memories, dual resonant filters, modulation with routing options, and poly/mono operation. It's only about 1.4 MB, has that coveted "fat" sound, and is worth waaaay more than the download time Get it quick before they decide to start charging for it!

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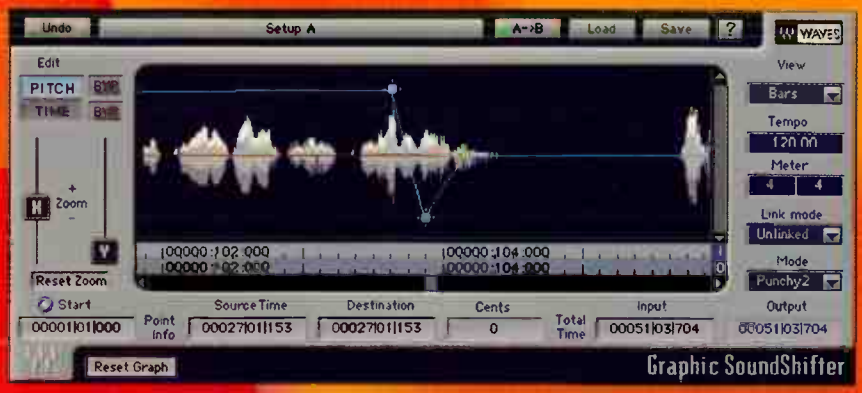
WAVES



Waves SoundShifter is for anyone who wants to shift the pitch or shift the time of audio tracks. SoundShifter is a NEW processor that enables the manipulation of Time and Pitch while preserving the punch, groove and transients. SoundShifter is unmatched for clarity, timing accuracy, and a lack of artifacts and distortion.

TRANSFORM
TIME & PITCH

SoundShifter

TRANSFORM YOUR SOUND.

FEATURING:

UNMATCHED QUALITY Robust, high quality, independent time scaling and pitch shifting for "no hassle" processing and superior audio quality.

PARAMETRIC TOOL for easy off-line time/pitch scaling with a fixed ratio.

GRAPHIC TOOL for time/pitch scaling with variable automated ratios.

REAL TIME TOOL for immediate no-hassle real time pitch shifting.

FOUR ALGORITHM MODES Sync, Smooth, Transient and Punchy for optimizing the processing to your specific audio needs.

INTEGRATION into the Pro Tools TDM "Time-Trimmer Tool" for seamless edit operation directly on your tracks.

CONTROL & DISPLAY OPTIONS Time, Tempo, Bars, Samples, SMPTE, Feet & Frames, Pitch, Interval, Frequency. Express the source and destination time and pitch the way you need to see them.

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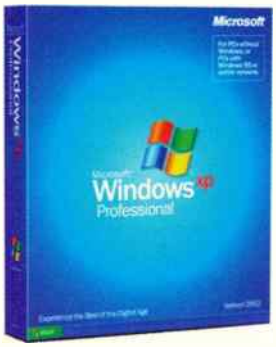
tip



PC SETUP STRATEGY

If the idea of building a music PC from scratch sounds like too much work, but you'd still like to add another PC to your studio for soft synths (see our August 2003 issue), here's a suggestion: Buy a pre-configured consumer computer from the likes of HP or Gateway and trick it out for music. A year ago we wouldn't have recommended it, but these days off-the-shelf computers offer just about everything you'll need for a rockin' music machine. However, you might have to jump through a couple of hoops to make it "studio ready." For starters, most store-bought PCs come with a "crippled" BIOS that won't let you change IRQ settings for PCI devices. This is no good. You might run into IRQ conflicts, which will cause havoc with music applications that need access to whatever audio card you have. Here's how to get around this:

1. Disable the built-in audio features of the motherboard from the BIOS setup. This should free up an IRQ for use with your pro audio card.

2. Boot up the machine with PNP (plug and play) enabled (from within the BIOS). This will "shuffle" IRQs around. When the machine boots into Windows, see which IRQ is assigned to your audio card from within the Device Manager. It should be set to 5 or above. (If not, you may need to remove or uninstall a hardware component that you won't be using, such as a PCI-card modem.)

3. Reboot and go back to the BIOS. Now disable PNP and boot into Windows. The sound card's IRQ will now be "locked in."

Once you've done this you'll want to tweak Windows XP for the best music/audio performance. For details, visit www.musicxp.net, one of our featured Surfboard sites this month.

tip

CONTROL PROTOCOL

To avoid having your controls make crackling sounds, approximately once a month flip all switches, press every pushbutton, rotate any controls, and slide any sliders over their full travel several times. Many of these parts have self-wiping contacts, and using them prevents oxidation. The one exception is membrane switches, which are plastic (they usually look flat, or slightly dimpled, and require very little pressure for activation). Because they're hermetically sealed and use conductive plastic, they are not as subject to oxidation problems.

Jack contacts also need to be "worked," as many jacks use switching contacts that can oxidize. Plug and unplug plugs several times into all jacks not just for the benefit of switching contacts, but also to keep the various pins and contacts free of corrosion. This tip applies to patchbays too.

EQmag.com Forum

EQmag.com Posts of the Month

■ *[Addressed to moderator George Massenburg.]* Is there any chance of you giving us your processors in native format, especially now that Audio Units is coming to be. I'm sure all of us serious non-PT users will appreciate the chance. Just a hope. —The Blue Planet, Belgium

Answered by George Massenburg: Well, sure, we'd do it if enough people ask for it. Now, if you could just let me know how we're going to protect it from hacking, we'll be all set.

■ I'm into trance, techno, industrial, and a few other heavier electronica styles. One thing I want to know is how to get that nice punchy kick that sounds so pure that I hear in a lot of trance? —Ender

Answered by Eric Vincent: You may want to try decreasing the kick's sub-100Hz energy. Let the bassline live down there instead. Try that, and if the kick sounds a little lost, start boosting it a bit at 2.9 kHz, for attack, or just turn up the volume of the kick. Mixing is all about getting the kick and the bass to dominate alternate yet sympathetic regions of the audible frequency spectrum . . . in *any* style of music. Even the big $$$ pro mixers struggle with this issue; it is the Pandora's Box of pro-level mixing, and it requires Kung Fu, lots of it. Every situation, every song requires a unique and custom approach; there are no simple turnkey formulas. There are guides, though. One is: The faster the tempo (and as such the more rapid instances of kick drum), the less low octave energy the kick should have. If you think about that, it makes perfect sense: The bass octave has a lot of energy, and too much of it will distort a mix. Trance is *very* fast in tempo, agreed? So logic would suggest a highpass filter on the kick set to 80 Hz (that means NO signal from the kick below 80 Hz). Instead, put that big phat synth bassline down there below 80Hz. Remember, this is *only* a guide, but it could point you in the general direction of some ass-gyrating noize. Hope this helps.

World Radio History

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[ac·cel·er·ate] v. 1. to cause to move faster; to speed up.]

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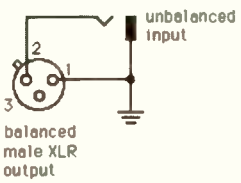
World Radio History

tip

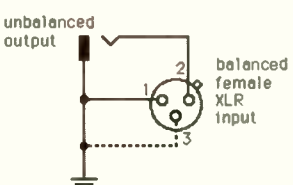
CHEAPO BALANCED/ UNBALANCED LINE CONVERSION

Sure, you can convert between the two by using a balanced-to-unbalanced transformer, or an active balanced-to-unbalanced converter. But in many cases, wiring some special patchcords is all you need.

Balanced output to unbalanced input: Wire balanced pin 1 to unbalanced ground, balanced pin 2 to unbalanced hot, and leave balanced pin 3 unconnected.



Unbalanced output to balanced input: Wire unbalanced hot to balanced pin 2, and unbalanced ground to balanced pin 1. Balanced pin 3 can usually be left floating, but also try grounding it. If the sound is better or louder, leave it grounded.



You may need to adjust levels, but most modern gear has level-setting controls that can compensate for any level differences.

tip

BEAT THE HEAT

Heat is a big factor in shortening component life. Today's gear can get pretty hot, so make sure everything is well-ventilated. Locate your gear's ventilation holes, and make sure they're unobstructed. In particular, check the chassis bottom; if there are vent holes, make sure the unit isn't placed on a soft surface, and that there's enough room underneath it for air to flow. In some extreme cases, you may need to allow a rack space between particularly hot-running units.

News

FOND FAREWELLS

■ **Sam Phillips**, the man who discovered Elvis Presley, who founded the legendary Sun Records, and who helped usher in rock and roll revolution, succumbed to respiratory failure last July at age 80.

In the summer of 1953, Presley went to the Sun studio to record two songs for his mother's birthday. Phillips (far right in photo) noticed him and offered the singer a recording contract. Phillips produced Presley's first record in the 1954 that featured "That's All Right, Mama." "God only knows that we didn't know it would have the response that it would have," Phillips said in 1997. "But I always knew that the rebellion of young people, which is as natural as breathing, would be a part of that breakthrough. What there was a need for was a rhythm that had a very pronounced beat, a joyous sound, and a quality that young people in particular could identify with." By 1956, when Phillips sold Presley's contract to RCA for $35,000, the rock and roll craze had become a cultural phenomenon and a multimillion-dollar industry.

Phillips was elected to the Rock and Roll Hall of Fame in 1986. In 2000, the *A&E* cable network ran a two-hour biography called *Sam Phillips: The Man Who Invented Rock And Roll*. Many other awards and honors were bestowed upon Phillips over the years, including a Grammy Trustees Award from the National Academy of Recording Arts & Sciences in 1992. To date, eight Phillips-produced recordings have been inducted into the Grammy Hall Of Fame.

Phillips began in music as a radio station engineer and later as a disc jockey. He started Sun Records so he could record both R&B singers and country performers. His plan was to let artists who had no formal training play their music as they felt it — raw and full of life. The Sun motto was "We Record Anything, Anywhere, Anytime."

He got out of the recording business in 1962 and sold Sun Records in 1969 to producer Shelby Singleton of Nashville. The Sun studio on Union Avenue in Memphis is now a tourist attraction.

In his later years, Phillips spent much of his time operating radio stations in Memphis and in Alabama. He stayed out of the limelight except for some appearances at Presley-related events after Elvis's death. "I'll never retire. I'm just using up somebody else's oxygen if I retire," he said in an AP interview in 2000. [*Source: Associated Press*]

■ Rock music fans are mourning the loss of **John Purdell**, an accomplished producer, engineer, songwriter, and musician who lost his battle with cancer in July. John's illustrious career was decorated with major world tours and/or hit records for industry icons as such Ozzy Osbourne, Motley Crüe, Alice Cooper, Poison, Foreigner, and others. Tragically, John was just 44 at the time of his passing.

"John was a classically trained pianist, born in San Diego and raised in Los Angeles," according to his bio. "His professional career started in high school when John landed a publishing contract and became a staff writer for well-known producer George Tobin. John eventually made a name for himself as a top session keyboard player. It was then that he auditioned for and landed the keyboard gig for a world tour with Rick Springfield. Rick was at the peak of his career and they played venues ranging from all the top television shows to sold out arenas.

"The mid '80's found John back in the studio where he met and began working with world-renowned engineer Duane Baron and metal producer Tom Werman. John, Duane, and Tom became a formidable industry production team, with a string of multi-platinum records produced for Motley Crüe, Poison, LA Guns, and Kix. John and Duane later began a successful run of hit records produced for Heart, Foreigner, Alice Cooper, Cinderella, and most notably Ozzy Osbourne's best selling *No More Tears* album, on which John co-wrote the title song. He also wrote three songs on Ozzy's *Ozzmosis* CD.

"In the mid '90s John released a solo CD and traveled the US doing radio and television appearances. In the summer of 2000 he played keyboards and sang background vocals with Foreigner on the *Jukebox Hero* tour. Most of 2002 was spent on the road with Cinderella and Poison playing to sold-out venues all over North America and Canada."

"John probably had the biggest heart in Hollywood," said John's brother-in-law and business partner Bill Flowers. "He always found time for everyone." Pay respect online at www.johnpurdell.com/memorial.

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

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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.

TASCAM

TEAC 50th anniversary

*Full 96kHz operation on all analog I/O channels with compatible DAW software.

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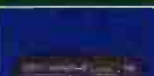


CONTRACTOR

www.tascam.com

DJ AND PRODUCER

PERSONAL CREATIVITY

World Radio History

Tool Box

BY KEVIN OWENS

Waves Transform Bundle

Hi-resolution sound transformation plug-ins

Four 96 kHz compatible plug-ins comprise this powerful new bundle from Waves. Sound Shifter allows shaping of time and pitch with the ability to pitchshift over an octave with a time ratio of 50–200%. Doubler adds dimension and fattens up tracks with double-tracking, exciter-style, and harmonization-type effects. TransX is for shaping attacks and transients, controlling and shaping dynamics for punch without artifacts or that cliché "over-squashed" sound. Morphoder takes the concept of vocoding and expands the possibilities. It will create the classic voice effects of traditional vocoders, generate modern electronic rhythm tracks, and more. The bundle is currently for DAE only, **TDM ($2,400) and Native ($1,200)**, on both Mac and PC platforms. Coming soon in other formats.

Waves, www.waves.com

Hot House Model Six Hundred

High resolution control room amplifier

The Model Four Hundred ($1,999), Six Hundred ($2,499 with line grain front panel; $2,698 with polished front panel), and Eight Hundred ($2,999 line grain; $3,198 polished) control room amps feature drastically lowered output impedance in the mid and high frequencies, resulting in improved clarity, definition, and musicality. The 3-rackspace Six Hundred (pictured) delivers 200 watts RMS at 8 Ohms and 275 watts RMS at 4 Ohms, has a frequency response of 3 Hz–180 KHz, and features Neutrik combo XLR/TRS input jacks, and Cliff 5-way binding post outputs.

Hot House, www.hothousepro.com

PrimeSounds Flum — Trips and Tranceformations

Sample CD

Flum – Trips and Tranceformations ($99.95) is a Rex/WAV/Audio sample CD that the company claims will "trip you out, trance you up," and add new sonic dimensions to whatever type of dance music you're into. The audio/WAV/Rex format CD includes two categories of sounds — Beats and Flum. Beats offers hi-fi techno drum loops with lots of low end, and Flum is a collection of creepy, futuristic, pulsating background rhythms.

PrimeSounds, dist. in the U.S. by Big Fish Audio, www.bigfishaudio.com

World Radio History

Mackie Pro Audio Lab

D8B audio measurement plug-in

Pro Audio Lab ($199; $169 download) is an audio measurement plug-in for Mackie's Digital 8-Bus that provides a series of metering tools and gauging devices, including stereo and mono level metering that displays peak, power, peak RMS, correlation, sum and difference, loudness, and VU meters. The plug-in also features an octave selectable spectrum analyzer, a stereo X/Y phase meter, a phase scope, a variable waveform oscillator, and a built-in tone generator that offers guitar, bass, and piano reference tones.

Mackie, www.mackie.com

Ultimate Sound Bank Soundscan2.com

Online sample library

Ultimate Sound Bank and Ilio announced the launch of www.soundscan2.com. The site/store contains a searchable (and purchasable) catalog of the complete line of Soundscan products, including Soundscan Version 2, which supports Audio, WAV, Acid, AIFF, Akai, EXS24, HALion, MachFive, Reason2, and Rex 2 formats. Soundscan2 currently consists of 11 volumes ranging from drum loops to hip-hop production sets to world libraries. Each product page features descriptions, demos, and pricing information.

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

Raven Labs USIP

Instrument preamp

The all-analog **Universal Stereo Instrument Preamp ($949)** features two independent channels that can be used separately or in stereo. Each channel incorporates a 3-band semi-parametric EQ, sidechain effects loop, phase switch, gain control, and has its own balanced XLR and line out. Other features include phantom power on channel 2, overload indicators, effects blend controls, a mute switch, a ground lift switch, and headphone, footswitch, and tuner jacks.

Raven Labs, www.raven-labs.com

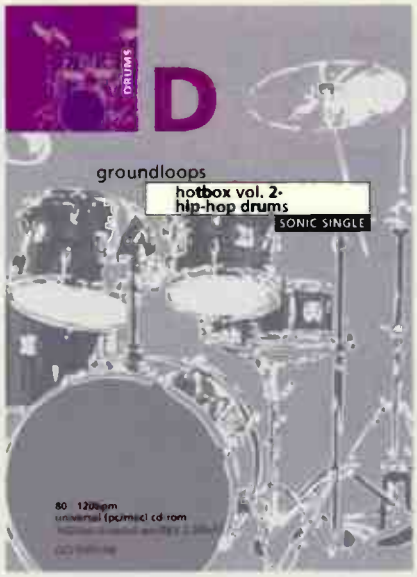
World Radio History

AiRR Support

Pro-grade boom stands

Ideal for overhead recording applications, the new AiRR boom stands feature a tripod base with removable wheels, adjustable telescopic locking legs with sturdy rubber feet, a sandbag to add extra weight to the center of gravity, fast locking and unlocking of the boom angle, and a crank adjustment for height. The **AiRR 100 ($335)** has a 5' base and 7.5' boom arm, measuring 12.5' when extended. The **AiRR 200 ($395)** has a 6' base with an 8' boom arm, and extends to 13.5', while the **AiRR 300 ($449)** has a 6' base with an 8' boom that measures 14' when fully extended.

AiRR, dist. by Network Pro Marketing, www.networkpromktg.com/airr_support.htm



Sonic Stop Hotbox Vol. 2

Drum loop library

Sonic Stop's Hotbox Volume 2, Hip-Hop Drums ($34.95) is a collection of loops and one-shots featuring hats, kicks, snares, percussion, and effects performed on an Akai MPC by Leo Cavallo. Hotbox 2 is available for Mac and PC, and supports Reason Refill, Acidized wav 16/24-bit, and Rex 2 sample formats.

Sonic Stop, www.sonicstop.com

ClearSonic IsoFloor System

Modular isolation platform

IsoFloor is a modular floor de-coupling system designed to reduce drum sound and vibration transfer by approximately 6 dB. By connecting several of the **2' x 2' ($40 ea.) or 1' x 1' ($30 ea.) baffles** using the supplied Velcro connectors, drummers and studio engineers can assemble a custom platform that fits their needs.

ClearSonic, www.clearsonic.com

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Planet Waves Bantam Cables

Patchcords

Planet Waves' patented **Bantam Cables ($26.99–$99.99)** are TT (tiny telegraph) patchcords that feature ultra-fine stranded quad conductors with oxygen-free copper shielding, dual insulation, 24-karat gold-plated plugs, and compression springs for a snug fit. The Bantams are available in two-, three-, and ten-foot lengths with your choice of XLR or 1/4" connectors.

Planet Waves, www.planetwaves.com

CAD Equitek^2 Series

Condenser mics

The **Equitek^2 Series ($TBA)** consists of seven new Servo condenser mics designed for studio and stage use: The e50^2 and e60^2 instrument mics, the e70^2 and e80^2 live performance mics, and the e100^2, e200^2, and e300^2 large condenser mics. The supercardioid electret e100^2 (pictured) features a frequency response of 10–18 kHz, a dynamic range of 132 dB, total harmonic distortion of less than .15%, transformerless balanced output circuits, and an internal power reservoir system. The e200^2 shares the same features but offers three patterns (supercardioid, onmidirectional, and figure-8), while the e300^2 sports a large diameter (1.1") externally biased dual diaphragm capsule, and lets you switch between cardioid, omnidirectional, and figure-8 patterns.

CAD, www.cadmics.com

Sennheiser Evolution 900 Series

Vocal and instrument mics

Sennheiser's new Evolution 900 series — launched at the Summer NAMM show in Nashville — consists of two vocal mics and one instrument mic. The two vocal mics — the **cardioid E935 ($279)** and the **super-cardioid E 945 ($299)** — feature shock-mounted capsules, rugged metal casings, and stylish gunmetal blue grilles. **The E 903 ($289)** cardioid snare drum mic was designed to deliver outstanding frequency response while handling maximum sound pressure levels.

Sennheiser, www.sennheiserusa.com

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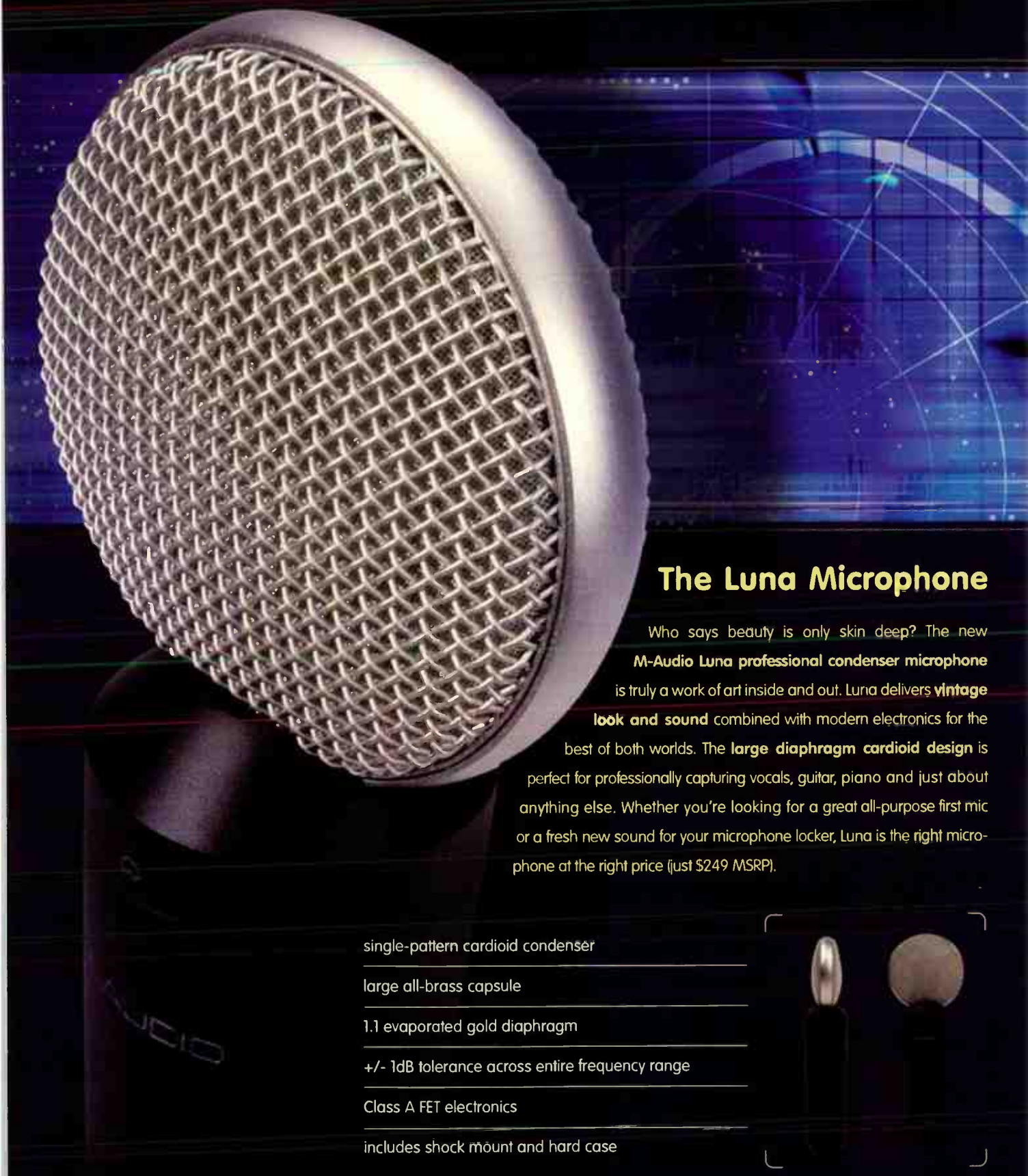
Where do you want to take your music?



The Luna Microphone

Who says beauty is only skin deep? The new **M-Audio Luna professional condenser microphone** is truly a work of art inside and out. Luna delivers **vintage look and sound** combined with modern electronics for the best of both worlds. The **large diaphragm cardioid design** is perfect for professionally capturing vocals, guitar, piano and just about anything else. Whether you're looking for a great all-purpose first mic or a fresh new sound for your microphone locker, Luna is the right microphone at the right price (just $249 MSRP).

- single-pattern cardioid condenser
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- Class A FET electronics
- includes shock mount and hard case

M-AUDIO®

www.m-audio.com

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AKG K 171 & K 271

Studio headphones

The **K 171 ($199) and K 271 ($249)** Studio headphones incorporate AKG's Varimotion LLX transducers, patented gimbal ear cup suspension, and leatherette headbands that conform to the size and shape of the user's head. The closed-back K 171 Studio has a frequency range of 18–26,000 Hz, and weighs 7.1 oz without the included 10-foot detachable cable. The 8.5-oz K 271 Studio (pictured) has a frequency range of 16–28,000 Hz, and features a switch in the headband that mutes the audio as soon as the headphones are taken off.

AKG, www.akgusa.com

Furman Pro Plugs

Surge strips/blocks

Furman's Pro Plugs ($20–$49) line of surge strips, blocks, and extension cords for performing musicians and recording studios consists of four models, each with extended-length cords, and three, four, or six outlets. A fifth model, the Laptop Travel Surge Tap, has three outlets and a retractable phone cable. Each of the devices features EMI/RFI filtering to eliminate distortion and hum, a circuit breaker, and a lighted on/off switch.

Furman, www.furmansound.com

Toft Audio ATC-2

2-channel compressor/EQ/mic pre

Designed by Trident Audio founder Malcom Toft, the 2-rackspace **ATC-2 compressor/EQ/mic pre ($1,299.99)** features two channels with switchable mic/line inputs, a D.I. input, 48 V phantom power, and a phase switch. The AFC-2 also comes with a 4-band (low, low mid, high mid, high) EQ, a 50 Hz lowpass filter, adjustable attack, release, and ratio parameters, F.E.T. compression, two balanced XLR inputs, two balanced 1/4" inputs, two 1/4" instrument inputs, and a choice of balanced XLR or 1/4" outputs.

Toft Audio, www.toftaudiodesigns.com, dist. by PMI Audio Group, www.pmiaudio.com

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World Radio History

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LIGHTS, CAM

How to score with an AV-equipped studio

It's safe to say that if you're reading this magazine, you're into recording and producing *music*. And for most of us this means using a computer-based digital audio workstation. No big shock there. More than just handling the recording, mixing, and processing of audio, though, many DAWs have evolved into full-fledged audio-for-picture production tools that allow you to work with digitized video right alongside your audio tracks. This isn't surprising, considering such developers as Digidesign, Steinberg, Sonic Foundry, and Emagic all have direct ties to companies that make video editing hardware and software. Bottom line: Video production has become just as accessible as digital audio production.

With this trend it has become apparent that there are new opportunities for "music only" engineers and producers to enter the world of audio-for-video. This could mean opening your studio doors to TV commercial work — creating music, recording sound effects and voice-overs, etc. — or maybe you'll go all-out and offer video production services in addition to your audio work. Countless bands and solo artists are no doubt in need of promotional materials — who better to offer a one-stop shopping solution for promo videos and DVDs than you?

Of course, it's not yet time to say "*Adios*, audio." But you don't need Tarot cards to tell you this is a multimedia world, whether we're talking CD-ROMs, kiosks, video games, or you name it. The future belongs to studios that are fluent in multimedia: There's a crying need for industrial videos, tutorial and training videos, streaming demos for the web, commercials, documenting local events, and much more. There's no reason why you can't take advantage of this to increase the flow of your income stream.

In this feature we look at two possible paths you could take into the audio-for-video realm. On one hand, we'll explore working with video for TV commercials, industrial videos, etc. On the other, we'll cover the entire process of creating the video product yourself — everything from recording and digitizing video to rendering and delivery format considerations. We also cover what equipment you'll need to get started and even bring you behind the scenes of two video-related projects to give you an idea of what you're in for.

Don't worry, though — we're still *EQ*. We're not going to tell you *how* to edit your video, but we will tell you how to work it into your audio world for both fun and profit. Lights . . . camera . . . *audio*.

—John Krogh and Craig Anderton

World Radio History

Getting Started With Video

by John Krogh

Equip your studio for broadcast applications

The biggest difference between composing music for TV or films and other forms of musicmaking is the incorporation of video equipment in the studio. For musicians and other "audio types" who are just getting into working with picture, it can be a confusing, frustrating experience. You may already know that you'll need to synchronize your music system to timecode (regardless of whether you use a computer-based or stand-alone multitrack workstation). But there are other issues, such as whether you'll need a video patchbay, which frame rate(s) you'll be working at, and so on.

Unlike with Web and CD-ROM projects, the advertising, TV, and film worlds still rely heavily on video tape. This is certainly changing, as clients become more tech-savvy and more comfortable sharing files with post production, sound design, and music houses via computer servers. Even so, it's likely that you'll have to deal with actual video *tape* at some point, so the first question is, "What kind of video deck do I need?"

In general, for broadcast work there are only three formats you'll need to be concerned with. The type of video deck you choose to go with depends on your budget, how much control you like to have over the video playback, and whether your clients expect or require you to work with a specific tape format:

VIDEO TAPE HARDWARE

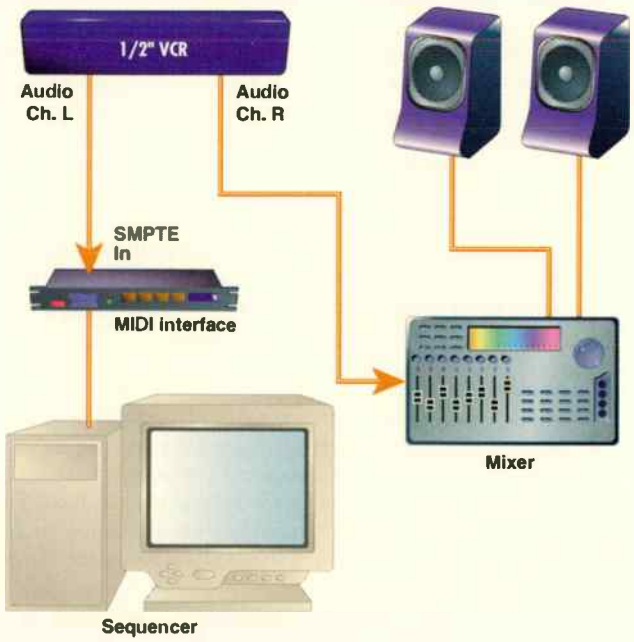
1/2". Known in the consumer world as VHS, 1/2" tape is a common format given to composers. You don't need a special "pro" machine to work with 1/2" — a good-quality VTR from Best Buy or The Good Guys is enough. Unlike the pro video formats mentioned below, 1/2" doesn't allow for timecode to be written into the video or to a separate dedicated TC track.

U-matic. The standard format for 3/4" inch videocassette recorders. 3/4" decks are capable of outputting timecode in addition to the left and right audio channels. Syncing to a 3/4" deck is a simple matter of connecting the deck's timecode output to your MIDI interface's SMPTE timecode input.

Betacam (or simply "Beta"). Beta is an old tape format, but is still highly popular in the film and TV world because of its picture quality, which some consider to be the standard by which other formats are judged. As with 3/4" decks, Betacam decks send timecode from a dedicated TC output.

These are by no means the only video formats out there, but these are the ones you'll need to be aware of and be asked to work with. There's one major advantage to working with Beta and 3/4": Both formats support Longitudinal Time Code (LTC). Most sequencers and higher-end MIDI interfaces support LTC.

You probably won't ever need one of each type of deck. Initially, you can get by with a consumer-level VHS deck. New Beta and 3/4" decks will cost you thousands of dollars, so if you don't plan to use such decks often, I recommend buying a used deck instead, since you won't be putting rigorous demands on the machine the way a video editor would. You can pick up used 3/4" decks in the $500–$1,000 range, and used Beta decks in the $1,000–$1,500 range.



When I want to sync my sequencer to a 1/2" tape, I ask the ad agency to put the voice-over (VO) and any temp music/sound effects on one audio channel of the tape, and record SMPTE timecode on the other channel. That way I can route the timecode into my MIDI interface's SMPTE input and monitor the other audio elements of the commercial as I compose the music.

DIGITAL VIDEO HARDWARE

In addition to these formats (1/2", 3/4", and Beta), many composers and ad agencies have discovered the virtues of working with digital video files. There are several distinct advantages to working with digital video, such as the convenience of not having to deal with analog synchronization. The good news is, adding digital video capabilities to your studio isn't difficult or expensive.

Video Capture Devices. For many years now there have been computer cards with video (and audio) inputs and outputs, which let you *capture*, or record, analog video signals with your computer, and play back the digitized video file via the card's analog video outs. This allows you to view the file on a TV or video monitor.

More recently, with the proliferation of FireWire-equipped computers and digital video cameras, it has become possible to record and play video from a computer without having to use a dedicated capture card, provided the computer is equipped with a

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FireWire (or IEEE-1394, sometimes also known as i.link) connector.

FireWire can only be used to *transfer* data — you still need some sort of device to handle the digital to analog conversion. Just about every digital video camcorder made in the last two years can be used to digitize analog video signals and transfer the digital images to a computer via FireWire. There are also interfaces, such as Miglia's Director's Cut Take 2 (www.miglia.com), that connect to your computer via FireWire and let you capture analog video/audio sources from RCA and S-Video connectors. Going with this type of box is cheaper than buying a DV camcorder, and using a dedicated interface means you don't have to keep your camcorder tied up in the studio. For more on IEEE-1394 video capture, check out Craig Anderton's Start-up Guide on page 26.

Miglia's Director's Cut Take 2 is an IEEE-1394 video capture/output device that works with Macs and PCs. It has analog video and audio connectors for capturing audio/video with programs such as Apple's iMovie.

SOFTWARE

Any pro digital audio workstation can be synced to SMPTE timecode output from a video tape deck, so you shouldn't have to worry about buying a new DAW. You will, however, need a video recording/editing program to capture clips for use with your main host software. So long as the video program lets you export the movie in a file format that can work with your sequencer, you'll be fine. For more about video editing software, check out Craig's guide.

You don't need to develop monster video editing chops; it's enough to be able to trim the movie clip so it starts at the first frame. This makes it easier to ensure that the movie begins exactly on the downbeat of the first bar. If you're off by a few frames, it can cause problems down the line when you send your finished music track off to the post production house, especially if your track is supposed to hit a bunch of specific moments onscreen.

OTHER CONSIDERATIONS

It might seem obvious to most of us, but just to be thorough I should point out that you'll need a MIDI interface with a SMPTE input if you plan on syncing the DAW to a video tape. Now let's turn our attention to digital video.

Digital Video Advantages. Using digital video files has several advantages: (1) Most MIDI/audio sequencers allow you to open and play QuickTime or AVI movie files alongside music tracks. This is a big deal, because it means you don't have to worry about syncing your sequencer to an analog timecode signal; (2) you don't waste time waiting for a tape to rewind — you can instantly jump among locate points and the video will follow; (3) all music and video files for a project are stored in the computer, and can be recalled automatically when you open a project in your sequencer. (Some programs save the movie as part of the session, while others simply reference the movie clip, so you may need to back up the video separately from the audio.)

Managing CPU Resources. It takes a considerable amount of DSP to play a video file along with music tracks, especially if you're using a PCI-based video capture card to play back the movie to a TV monitor. If your music tracks consist mostly of MIDI parts and a few audio tracks, you're less likely to have problems playing back video files along with the music. But if you tend to use a lot of audio tracks and effect plug-ins or software instruments, you can quickly bring a computer to its knees by adding video playback to the mix. *O*ftentimes as I'm scoring to a QuickTime movie I reach a point at which the computer becomes sluggish because of the burden of playing lots of audio tracks along with video.

To avoid this, you can save the video clip to a data-compressed format or a smaller frame size from within whatever video editing software you have, resulting in a smaller, more easily streamed file. Your computer will be less strained, but the video quality will take a hit — a small price to pay for being able to run everything from an overloaded DAW.

Delivery Options. As a creator of music and audio for video projects, you serve as one part in the "machine" responsible for putting out a final product. During the course of a project, you may be asked to present your work-in-progress to the producer, director, editor, copywriter, etc. This means you'll need to record your music onto a videotape (along with the original video) so the client can see and hear it together. Alternatively, you'll need to do the equivalent in software. Programs such as BIAS Peak and TC Works Spark allow you to open a movie file and add new stereo music tracks or replace the existing audio. Surprisingly, some host programs don't offer this functionality.

MOVING AHEAD

It really doesn't take much in the way of hardware or software to equip your studio for composing and producing audio for video applications. What's more, the video-specific tools you'll need are nowhere near as complicated as the average digital audio workstation. If you can handle a pro audio program, you can certainly get what you need out of a video editor without too much head scratching.

There's more to this than the equipment, of course. Setting up your MIDI+audio sequencer and actually creating sound design and music for a video project has its own challenges. To help demystify the process we've detailed two projects: a one-minute commercial for TV broadcast and a three-minute online industrial video. EQ

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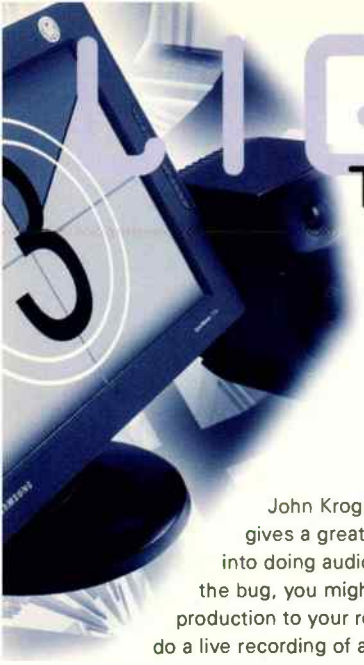


The Budget Video Studio

Add video services to your audio world

by Craig Anderton

John Krogh's article, "Getting Started with Video," gives a great overview about what you'll need to get into doing audio for picture. But once you're bitten by the bug, you might want to go all the way and add video production to your roster of audio services. It's one thing to do a live recording of a band; it's something else to shoot a video too, and put out the live recording on DVD.

There's also a healthy market for industrial videos, videos for the web, and even productions for local events (civic, church, school, etc.) where budgets don't allow a full-fledged video crew. Of course, you can spend upteen zillions of dollars putting together a video facility worthy of Hollywood, but if you just want to see if video's for you, there are "prosumer" options that produce surprisingly good results for under $1,000 — and in some cases, much less.

Capturing video and "rendering" a final result is quite different from working with audio, but the editing process is very similar. You cut, copy, paste, and fade, just as with audio-only productions, and even do processing — adjusting a clip's contrast and brightness isn't much different, at least conceptually, from adjusting EQ. And hopefully, at the very least, you'll have a great audio track.

Intrigued? Here's what you'll need.

1. VIDEO CAPTURE DEVICE

The best input device for a budget video studio is a DV (digital video) camcorder, which typically records on 60 minute tapes that cost under $10 each. Other formats aren't as friendly if you're just getting started..

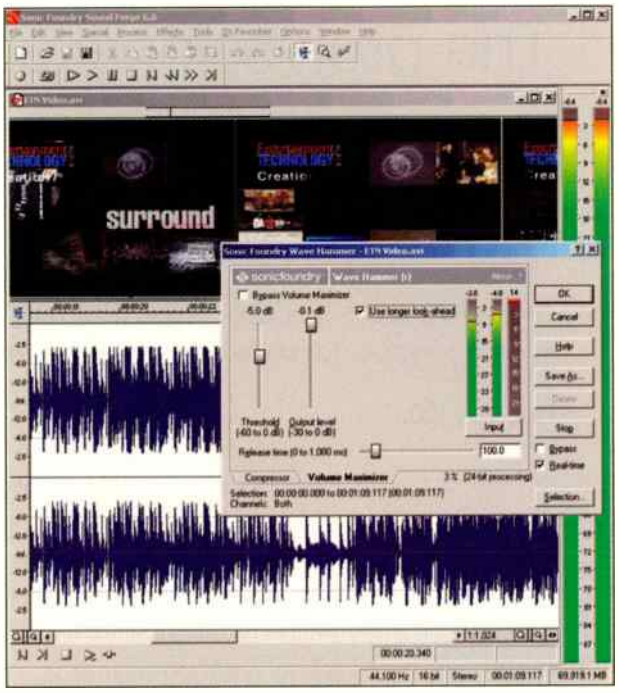
Look for an IEEE-1394 (also called FireWire by Apple or i.link by Sony) interface to transfer the video/audio stream into a computer for editing. Also check that the camcorder supports *receiving* video via IEEE-1394, so you can save edited videos to tape as a cost-effective backup method. Most modern video editing software supports any current DV with an IEEE-1394 port.

IEEE-1394-compatible camcorders can cost well under a grand, and typically include niceties like digital zoom, and some primitive effects (negative, posterize, sepia, etc.). More expensive models have better picture quality, but for creating CD-ROM or web videos, budget camcorders will do the job (FYI, I've had very good luck with Panasonic products).

2. IEEE-1394 (FIREWIRE) COMPUTER INTERFACE

If you have a relatively new Mac, it comes not only with a FireWire port, but also iMovie software — more than good enough to get you started.

Although some Windows computers include IEEE-1394 ports, if not you can add a PCI card with multiple ports for under $50 (more if there's decent bundled video editing software). Make sure you get a card with an OHCI-compliant chip set (almost all are, especially if they use a Texas Instruments chip set); check the packaging. Don't use an OS earlier than Windows 98SE (XP or 2K is *highly* recommended), and follow any card installation instructions to the letter. XP includes primitive editing software, but it's less capable than iMovie.



An industrial "kiosk" video for a convention has been brought into Sound Forge so the soundtrack can be tweaked with level maximization — an important consideration, given the noise levels at most conventions.

Don't by fooled by the low cost of many available board/software bundles — they provide the lion's share of the features needed to create short videos.

3. THE COMPUTER

A good audio computer is probably good enough for video, although video consumes about 200 MB of hard disk space per minute, so you'll need a fast, high-capacity hard drive. I have a removable drive bay, and when working with video, insert a hard drive that's dedicated solely to video projects. For a more portable solution, consider an external FireWire-compatible external drive. For backup, a DVD+RW drive is great, but simply copying data over to a second removable drive can be even more convenient.

Projects often take a long time to turn into a finished video because of a process called *rendering*. Your "mixes" have to be re-written to disk, and writing that much data while processing may take a while. Dual processing computers can help with dual-aware video editing oftware (*e.g.*, Sonic Foundry's Vegas).

4. THE SOFTWARE

While there are some surprisingly useful sub-$100 programs, budget software may have a limited number of audio and video tracks, unlike programs like Premiere, Final Cut Pro, Vegas, etc.

Extra video tracks simplify cutting between scenes — like inserting an audience "reaction" shots, or cutaway shots (*e.g.*,

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a close-up on a single musician's face). More audio tracks make it easier to include narration, sound effects, sonic transitions, etc. However, you can still do a lot with limited track counts, at least with simple projects.

Different programs also vary in terms of feature set. For example, you'll want titling (character generation), but some programs limit you to basic text options, while other allow motion — slow rolls, movement of text from one side of the screen to the other, etc.

3D transitions are fun, like where a scene swings back like a door, or seems to "shatter" before a new scene appears. Crossfades, wipes (where a picture slides in over another), and other types of transitions add spice to videos. Although you want to avoid falling into the same syndrome as early Macintosh desktop publishers ("I have 23,438 fonts, and I'm going to use them all!"), tasteful use of transitions, effects, and proper titling all make a project look more professional.

An important software feature is the ability to export, and to a lesser degree import, multiple file formats. If you're producing files for CD-ROMs, you want to be able to export movies as QuickTime format (Apple's standard, but used with Windows as well) and/or AVI files (pretty much Windows-specific). MPEG is another useful export format. For streaming web work, you'll want Windows Media (which is also being used more for CD-ROMs) and RealVideo capabilities.

THE SOFTWARE BOUNCE

You can often export the audio stream separately from the video, bring it into a digital audio editing program, and tweak the audio with dynamics, equalization, effects, etc. Many of these programs also include a video window (*e.g.*, Spark, Peak, Sound Forge, etc.). You may be able to import the entire video, tweak the sound track while watching the video, then save the whole mess back out again (see screenshot).

AND THAT'S IT!

Yes, it really is that simple. When I first added DV capabilities to my studio (a $600 camera and $100 IEEE-1394 board with editing software), I expected a learning curve and a bunch of problems. Less than a week later, my first finished video was done, and many more have followed. With the ever-decreasing costs of video gear, there's never been a better time to add video capabilities to your audio studio. EQ

PRODUCTION NOTES

Doing the Shoot: In pro work, single-camera shoots are rare. Multiple-camera shoots capture scenes from different angles; the video editor then assembles the best parts. If you're doing a rock video, you can simulate a two-camera shoot by shooting the same song multiple times from different angles. And don't ➤

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forget you can cheat: You can cut in face shots and audience reactions from another song.

REMEMBER THE END RESULT: If you're shooting to stream over the web, techniques like zooms, pans, and moving backgrounds with small details wreak havoc with video data compression algorithms. Edit using lots of relatively static shots rather than relying solely on motion to provide interest.

LIGHTING: CCD cameras (most video cameras) often pick up line-like "streaks" when there are strong, narrow light sources, such as stage lights. Other lighting problems include reflections, low light levels, and moving spotlights or brightly-lit objects that throw off auto-focus — if a light strikes an object that's farther or nearer than your subject, the camera focuses on that. In this case, use manual focus.

RENDERING FOR THE WEB: Data compression usually happens when you "Save As." For the web, common formats are RealVideo (.RM), QuickTime (.MOV), and Windows Media Video (.WMV). Tradeoffs include size (bigger screen sizes require more bandwidth); frame rate (the more frames per second, the greater the required bandwidth); and audio quality. Although video is still viewable with huge amounts of data compression, audio suffers when you remove too much data.

As you get into video, save a file with various options, open each one in your media player, and judge the results of the tradeoffs, including file size and quality. This can take some time, but the results are often worth it.

RENDERING FOR CD-ROM: Whatever codec (coder/decoder) you use for compressing the video must be present on the target computer. There is currently no universal codec, although Intel Indeo, Radius Cinepak, and Apple's various QuickTime codecs (*e.g.*, Sorenson) come close. Saving as a .MOV file using QuickTime is an excellent choice because of the large percentage of Macs in the music industry, QT's significant penetration into the Windows world, and good compression quality. For Windows-only applications, saving as an .AVI file using the Indeo or Cinepak codecs works well, but more people are moving to Windows Media because of the excellent video performance despite high amounts of compression. Saving as an MPEG file combines small size and high quality, but not all computers can read MPEG files, and most budget video programs aren't really designed with MPEG in mind.

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Audio for an Industrial Video

Video looks better when the audio's good

by Craig Anderton

An interesting study noted that test subjects looking at two identical videos felt the one with better audio *looked* better. That's how important audio is to video . . . and what gives us audio types a big advantage when working on video projects.

I originally added video capabilities to my studio to do streaming videos for MusicPlayer.com. But since then, I've scored several video gigs from music industry companies that can't justify the cost of a standard video production house. Furthermore, some "video pros" are not up to speed on music, and aren't sure how to edit video so the audio receives priority.

In this article, we'll look at editing audio for a web-only demo of Korg's Kaoss Entrancer, an audio/video processor with real-time control. We'll concentrate on audio, but let's start out with a bit about the shoot, as it influenced how the audio was handled in post-production.

THE SHOOT

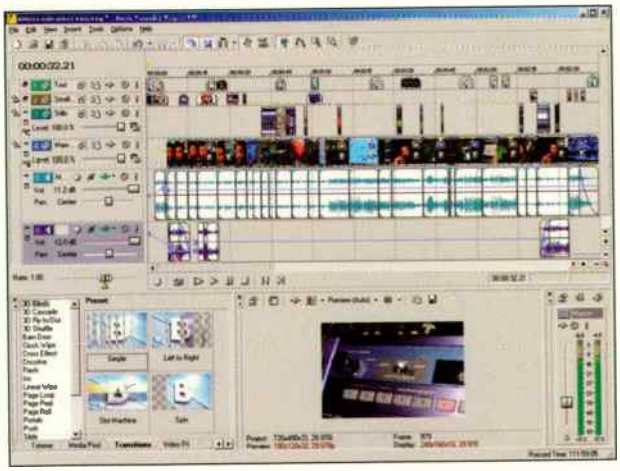
The video was shot (using a Panasonic DV camera) in the Korg booth at the Nashville Summer NAMM, before and after show hours to avoid the crowds. James Bernard's demo involved manipulating the Entrancer's controls to show how that affected the audio and the video, which was projected on a large screen behind him.

A three-camera shoot would have been ideal: one on James, one getting a direct video feed from the screen, and one on his hands working the box. As I was doing a single-camera shoot, I got around this by taking lots of stills of the unit, as well as shots of me moving knobs, flicking switches, etc. (I didn't think anyone would notice they weren't James' hands). During the demo, I kept the camera on James but from time to time moved to the screen behind him. If this caused an awkward transition, the extra shots came in handy to cover those transitions, as well as to cover up splice points where the video was shortened.

After the demo, I shot James doing additional hand motions, and some cool video processing on the screen behind him. The video didn't correlate to hand motions, but I never showed both at the same time. While not a three-camera shoot, I had the same elements as if it had been.

For audio, James' headset mic went into a mixer along with the audio being processed and fed a pair of speakers. A camcorder mic isn't going to do the job, so I patched a MiniDisc into the mixer's tape outputs, set levels, and was good to go.

When doing a shoot, record conservatively; give up a few dB of signal-to-noise to avoid distortion. With mono sources, I often record in stereo but pad one input down by -10 dB. If the primary channel distorts, I can use the secondary channel's signal.



Track 5 is the main narration track; each vertical line represents a place where material was removed to shorten the overall length. Track 4 has the main video. Tracks 1, 2, and 3 contain text, still shots, and small movies to cover over awkward video transitions. Track 6 contains intro and outro music.

MAKING TRACKS

When I got back to my studio, I booted up Vegas 4.0 (see the review in this issue) and loaded all my video clips, with the associated audio from the camcorder mic, into the program.

Next came the MiniDisc audio transfer. By comparing the waveforms of the camcorder audio to the MD audio, I could line them up visually, requiring no SMPTE or other sync. As the DV camcorder and MD are crystal-controlled, drift is not an issue unless you run more than 15–20 minutes or so.

However, you want them to stay locked even as you move bits and pieces of audio and video around, so I grouped the MD audio and video track together, while muting the camcorder audio. Grouping means that if you, say, split the video, the audio splits at the same point, and the two tracks move together. Grouping is essential with lots of edits; you don't want to accidentally move the audio independently of the video, except in specific cases (*e.g.*, you want to use a certain bit of audio, but need a different picture).

EDITING NARRATION

With these types of projects I clean up details first, *then* deal with bigger edits. This is because the company wanted three minutes of video, so at least five minutes of footage had to be cut.

So, I start at the beginning and listen to the audio. If there's a pause (or "uhh," cough, etc.), I split the clip at the beginning and end of the pause, delete it, then slide the clip after the pause to the left so it butts up against where the pause used to begin. This reduced the length to about four minutes.

After finding a few places where some features were repeated, then eliminating the duplicates, the video clocked in at just under three minutes (see screenshot).

DEALING WITH THE MUSIC

During much of the demo, James was talking over music. This led to two major issues:

- His voice would often be low compared to the music.
- Cutting pieces of the voice track meant cutting the music

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Photos shown with optional AIB-8 analog input board.

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too, and splices had to be on the beat (or at least make musical sense).

The first problem was solved later by adding a lot of loudness maximization to reduce level differences between the voice and music, and boosting the EQ a bit in the speech range. The second was trickier, but as James' audio demo was loop-based, I'd find a space where there wasn't any voice, find another space that happened at the same place in the loop, make the cuts, then butt them together.

I also wanted background music for the intro and outro. When shooting I always record a little extra demo music for this purpose, which went at the beginning and end.

THE BIG MOVES

The audio track now had a lot of edits (I've gone as high as 90 in a three-minute video). I wanted to move some phrases around, but it was getting cumbersome to select and move all those tiny little pieces of audio and video. So, I rendered just the audio track to a new file, then just the video, and re-imported them into the project to replace the older tracks.

Now it was fairly simple to change the order in which some of the features were introduced. Once the audio editing was finished, I re-rendered it one more time to make a file suitable for importing into a digital audio editing program.

AUDIO EDITING TWEAKS

Vegas is decent for audio editing, but isn't quite as capable as a dedicated two-track digital audio editor. So, I loaded the file into Wavelab and went to work.

Many of these edits used the techniques discussed in last month's issue on processing vocals: using low-cut filters to reduce popping, noise reduction to remove any overall hiss, cutting out cable or mic noise, and phrase-by-phrase normalization for consistent audio levels.

I also added loudness maximization and EQ for the entire track. Once the processing was done, it was time to save, then go back to Vegas and re-load the finished audio.

THE FINAL TOUCH

With the audio track complete, I covered over the last of the awkward transitions with other shots done earlier, or slides containing text that highlighted specific features. Now all that was left was to render the final product.

As this video was for the web, rendering can make or break the project. In this case the client wanted both Windows Media and Real-compatible files. The toughest part was deciding how to apportion bandwidth between audio and video. In previous projects, audio always had priority over video, but in this case, the demo was of an audio *and* video product, so the balance had to be just right (see sidebar).

After rendering for broadband and dial-up formats, the project was done. Considering all the years I spent doing video with two bulky tape machines going through a switcher to "mix down"

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the video to a third machine (can you say "generation loss"?), computer-based video/audio editing has been a tremendous boon to my project studio.

THE ART OF DATA COMPRESSION

Because audio and video devour bandwidth, data compression is essential for streamed material.

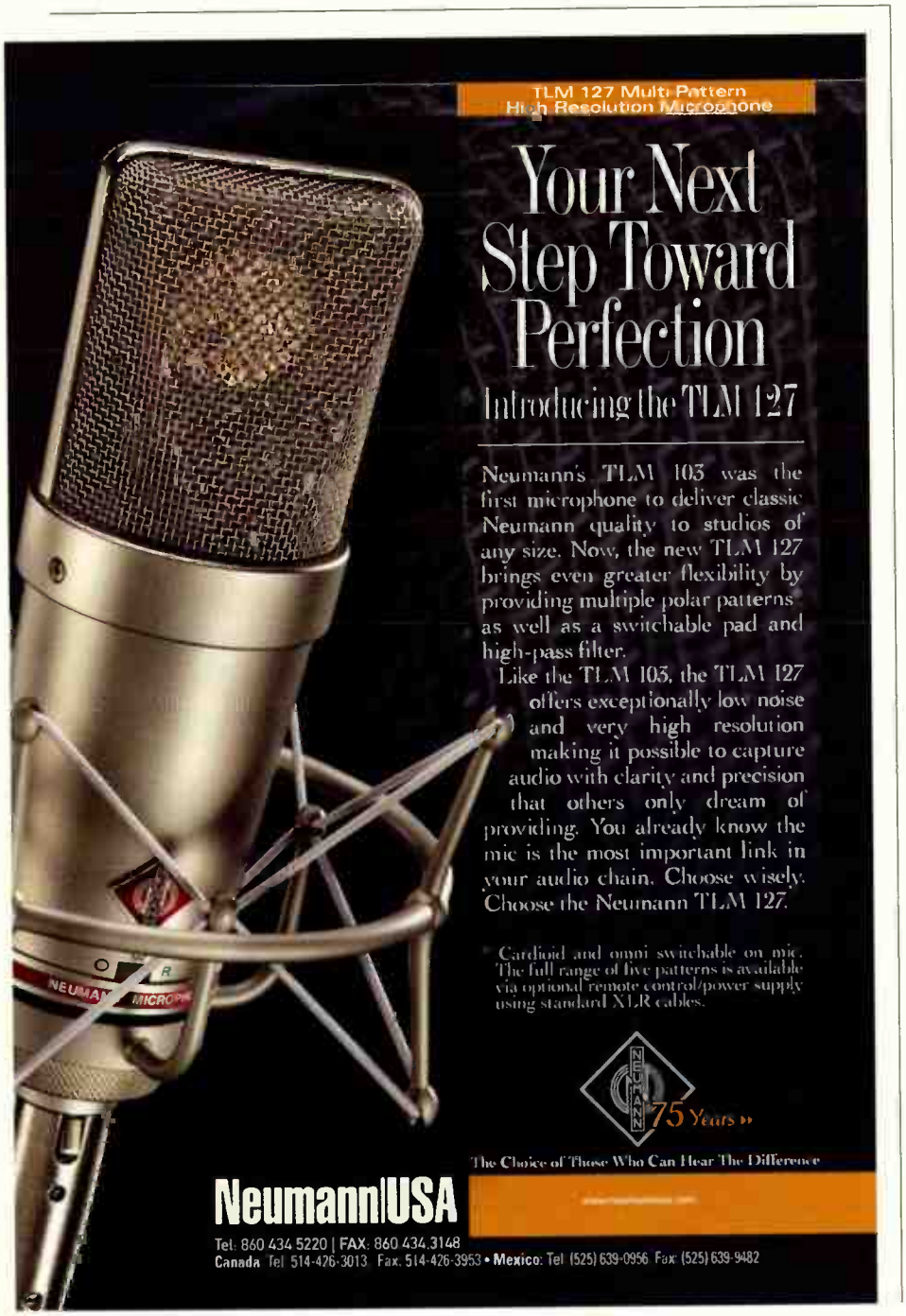
The three main data-compressed formats for the web are Windows Media Video, RealVideo, and QuickTime. Each uses a specific codec to perform the compression, and the target computer must have the same codec with which the file was compressed. Both Windows and the Mac OS include playback codecs as part of the operating system, so programs that compress data typically use these codecs. QuickTime isn't really a codec, but a "container" for files that use a certain codec. Compressing to the Real format guarantees that a Real media player can play back the file.

For Windows, Windows Media 9 does great compression, but WM7 or WM8 are good too. For Windows Media, QuickTime, or Real, if you call up a video while online and the appropriate codec isn't available, the computer will usually connect to the web and download the required one.

Broadband data rates range from 128 to 256 kbps (kilobytes per second), but subtract about 10–20% to account for net congestion, as often happens with DSL. You have to decide what amount of bandwidth to apportion to video and audio. Here are a few tips:

- Mono saves more bandwidth than stereo.
- 32 kHz sampling rate is usually fine. For voice only, even 8 kHz can work.
- Save several variations and compare. For example, 32 kHz/mono requires 20 kbps, with the remainder available for video. But if the video is jerky, try 22 kHz/mono.
- Many programs try to simplify the process by giving "presets" for specific baud rates and qualities. These are excellent points of departure, but you can usually tweak them for your specific application.
- For compressing QuickTime audio, I like the QDesign Music 2 codec.
- If you need more bandwidth for audio, reduce the video frame size and/or frame rate.

Compressing for dial-up requires a data rate of around 35-40 kbps, and involves *serious* tradeoffs. To free up 5 to 8 kbps for the audio, use a tiny frame size (I generally use 180 x 120) and a low frame rate, like 10 frames per second. It won't look great, but it should stream over a 56 kbps modem.



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Audio for TV Commercials

Behind the scenes of a 45-second spot

by John Krogh

Over the past four years I've composed music and created sound design for a commercial music house. When I first started, I had no experience working with video — I knew how to find my sequencer's SMPTE sync functions and that was about it. Since then, I've become quite comfortable working with video in my music studio. Initially there were basic setup and workflow issues that I had to become familiar with, but once I did, I was able to work quickly in my studio, composing music and creating sound design for a number of national and regional commercials, or spots, as they're called in advertising circles.

To give you an idea of how it all fits together — video clips, synchronization, audio tracks, and so on — I'll break down a recent :45 (45 second) spot. The steps I cover here are the same for just about every project I work on, so after reading you should have a solid nuts-and-bolts understanding of what's involved in the audio-for-video world as it relates to TV advertising.

GETTING THE SPOT

I've been working exclusively with digitized video for a year now because of the convenience and "recallabiltiy." Much of the ad world is still holding on to tape formats, though, so when I am sent a tape — be it 3/4" or a 1/2" (VHS) — the first thing I do is capture the spot(s) into my computer via a FireWire DV breakout box (Miglia's Director's Cut, www.miglia.com). Fortunately, more and more producers and video editors are working with digital clips, and in the case of my :45, the edit/post-production house gave me online access to their client server, which contained the digitized commercial.

This file had a "temp" music track — a sort of guide that illustrated the musical direction for the spot. Temp music and placeholder sound effects are used all the time — they can help move the project along more quickly, as it takes some of the guesswork out of the equation. In this case, the director liked the temp track, but the producer didn't feel it had enough drama; it wasn't quite right.

I wanted to have the temp track available for reference in my sequencer, which meant I'd need to extract the audio from the clip. To do this I typically use QuickTime Pro, which lets you export to a variety of formats, including AIFF (see Figure 1).

DAW SETUP

Next I opened a new song session, imported the audio, and set the session's frame rate to 29.97 — the rate used for TV in the States. Then I opened the video clip, which I trimmed so it started at frame one. However, when I played it back from within Logic Audio, the movie was jerky — this was because the edit house had given me a clip saved in MPEG-1 format, which isn't as "friendly" with Logic as other formats.

I went back to QuickTime, opened the clip and exported it as a QuickTime movie with the Sorensen Video codec (see Figure 2). I know from experience that this results in smoother playback, although picture quality might not be as crisp. This didn't matter — I wanted to hit certain cuts and onscreen action, so smooth playback was more important.

I reopened the Logic file, then opened the movie: I was now ready to line up the beginning of the movie with the downbeat in my session. Because I trimmed the movie to start on frame one, it was easy to set this up.

With video files that aren't trimmed, assigning a bar to play at a specific SMPTE time (*e.g.*, the beginning of the clip) often involves the additional step of assigning the movie start time. Why is this necessary? Because it's not uncommon for video clips to start *somewhere* before the beginning of the commercial. Exactly where isn't immediately clear. Maybe the person who prepared the video file arbitrarily trimmed it, or whatever. This is where having timecode burned onto the video can be useful (see Figure 3). ➤

Fig. 1. QuickTime Pro lets you export/extract the audio from a movie clip for use within a DAW.

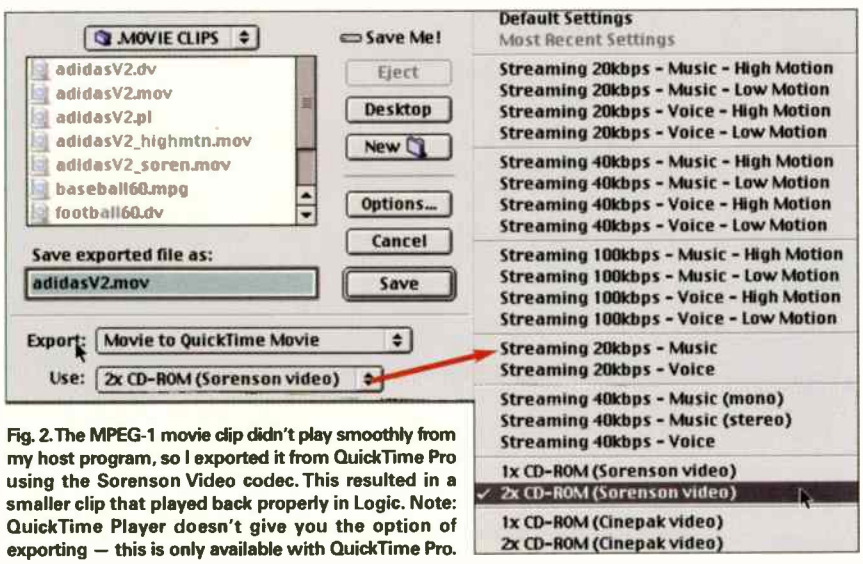

Fig. 2. The MPEG-1 movie clip didn't play smoothly from my host program, so I exported it from QuickTime Pro using the Sorenson Video codec. This resulted in a smaller clip that played back properly in Logic. Note: QuickTime Player doesn't give you the option of exporting — this is only available with QuickTime Pro.

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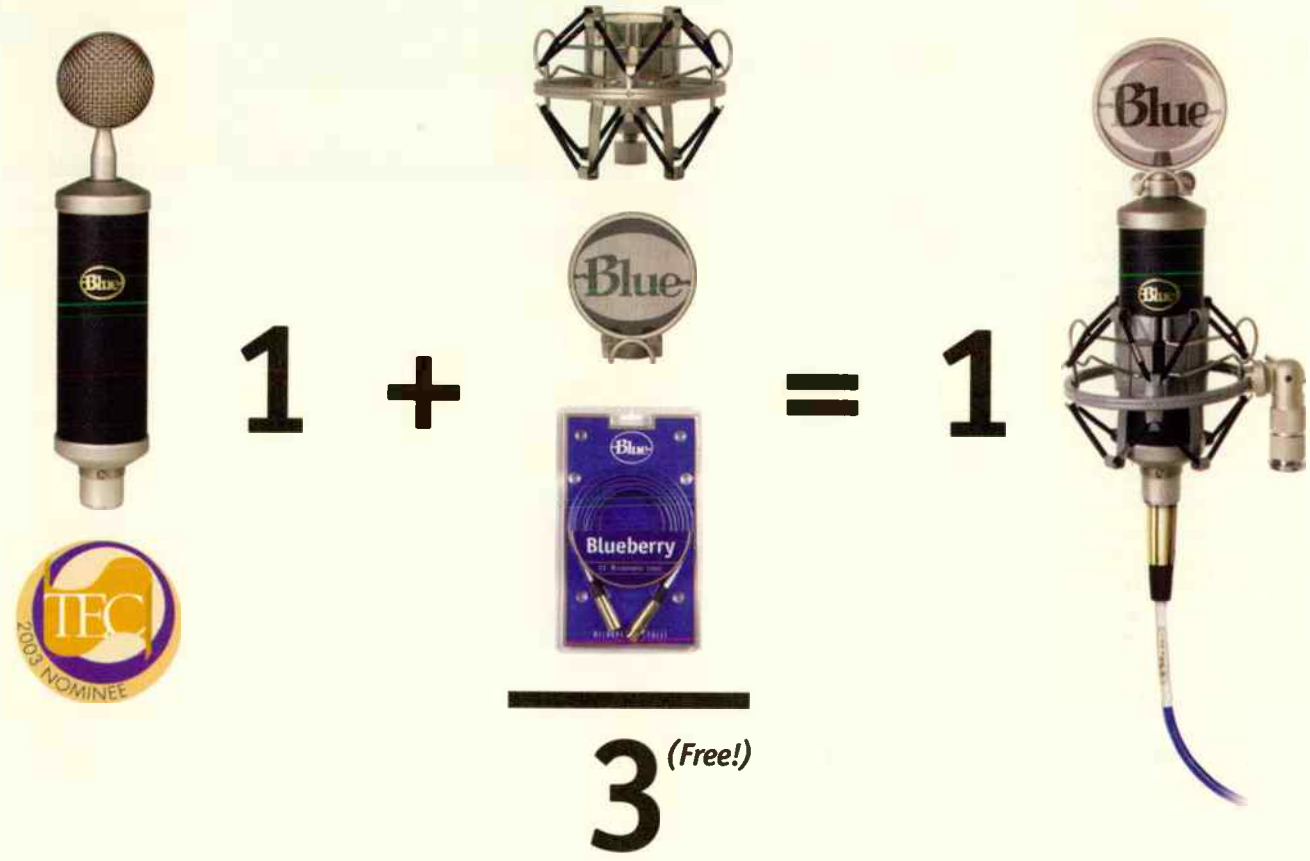
Skew the math.



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From looking at timecode on the video, you can tell where the clip actually starts (in SMPTE frames). Once you set this SMPTE location as the movie start time, your sequencer's counter will match the timecode on the video.

Even though I had bar one of my session starting in sync with the beginning of the commercial, I hadn't yet determined the tempo I'd be working at, so none of the subsequent barlines lined up with any of the action. The solution was simple: Because the spot was cut to a temp track, all I had to do was find the tempo of that track.

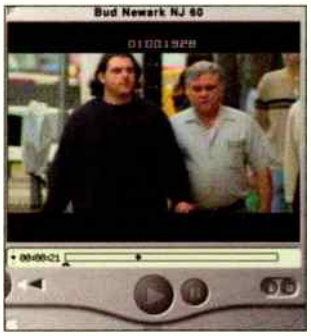

Fig. 3. This movie clip has timecode "burned" onscreen (top center). This is sometimes called "window dub" — having timecode onscreen is helpful for locating hit points and trimming the clip so it starts on frame one of the video.

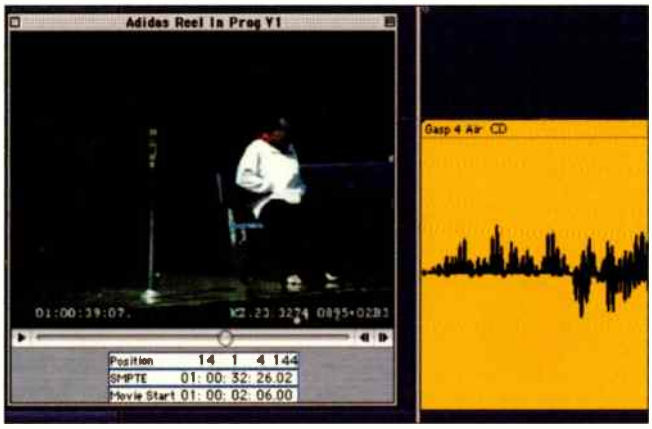

Fig. 4. I've zoomed in on an audio region that I'd like to place at a specific SMPTE time. By scrubbing along Logic's timeline, I can find the exact spot, then move the audio to this location.

Every major DAW has a way to determine tempo from audio; in Logic this involved using the sample editor to create a 2-bar clip of the music. By telling Logic the clip is two bars in length, the sequencer could then calculate tempo. (Other programs may work differently.) At this point, barlines were hitting specific cuts and action, so I was ready to start creating the music and sound design.

Hint: Make a blank song template that has the SMPTE/bar assignment (*e.g.*, "SMPTE time of one hour starts at bar 2") saved into the file. That way you can simply open a copy of the template, load the trimmed movie, and go — you won't have to monkey with the SMPTE/bar assignment.

CREATING AUDIO CONTENT

For me this usually means composing music and sometimes creating sound effects (not Foley or field recorded sounds). Occasionally I'll record voice-overs, but for most of the projects I'm involved with, VOs are usually done somewhere else.

Our focus isn't on composing, so I won't go into detail about how I programmed and recorded my music. But there are some general video issues worth mentioning, such as hit points. There were several places in the :45 spot where I wanted to "hit" certain movements — when the main character starts unzipping his jacket and pulling out his shoes, for example. This wasn't a moment that needed to fall on a beat, but I wanted to add a subtle sound design element to slightly emphasize what was going on. The action wasn't hitting with any beats, so I decided to scrub the timeline to locate precisely when each motion was happening (in SMPTE time). See Figure 4.

This is a technique that you'll use often if you do a lot of sound design. Basically, you scrub along the sequencer's timeline, locating specific SMPTE times, then move the sound effect audio region to that particular location. Logic has a key command function — Pickup Clock (Move Event to SPL Position) — designed for this purpose, which will automatically move an event (MIDI or audio region) to the song position play bar.

The remaining composition work took a couple of days and included live tracking of acoustic guitars, percussion, and Wurlitzer electric piano. With the music finished, it was time to prep it for delivery.

FINALIZING & DELIVERY

What you deliver to your client depends on the scope of the project. For small projects, you may only have to provide a single "TV mastered" audio track. On larger projects you'll likely be required to send a stereo mix, along with individual files of just guitar, bass, drums, synths, etc. (These are commonly referred to as splits.) In some cases you may be asked to deliver the audio on DAT, but more often than not a CD-ROM is preferred.

A note about prepping the files: You can't just bounce your music and hand it off; what if the music doesn't start exactly at the beginning of the commercial? Maybe it's supposed to start 5.27 seconds after the first frame — how will the video editor know where to place your track? To ensure things will line up properly, a short "beep" called a 2-pop is placed precisely two seconds before frame one. When you bounce your tracks, include the 2-pop. That way, the editor can easily put the audio in the right location by placing the beep two seconds prior to the commercial's start time.

When you're finished outputting all the necessary audio clips (or tracks, if you use DAT), they'll be sent to a post production facility where your audio gets added to a master session containing any additional sound design or narration.

In the case of my :45, I was covering all audio duties, and I knew the video editor had online access, so I chose to post the finished music on a secure server rather than send it to him on CD-ROM. He downloaded the clip, lined it up with picture, and that was that.

For the purpose of this article I added my final audio to the low-res video clip I used in Logic. If you'd like to check it out, you can see and hear the spot by going to www.eqmag.com. And if you have any questions, feel free to email me at jkrogh@musicplayer.com. EQ

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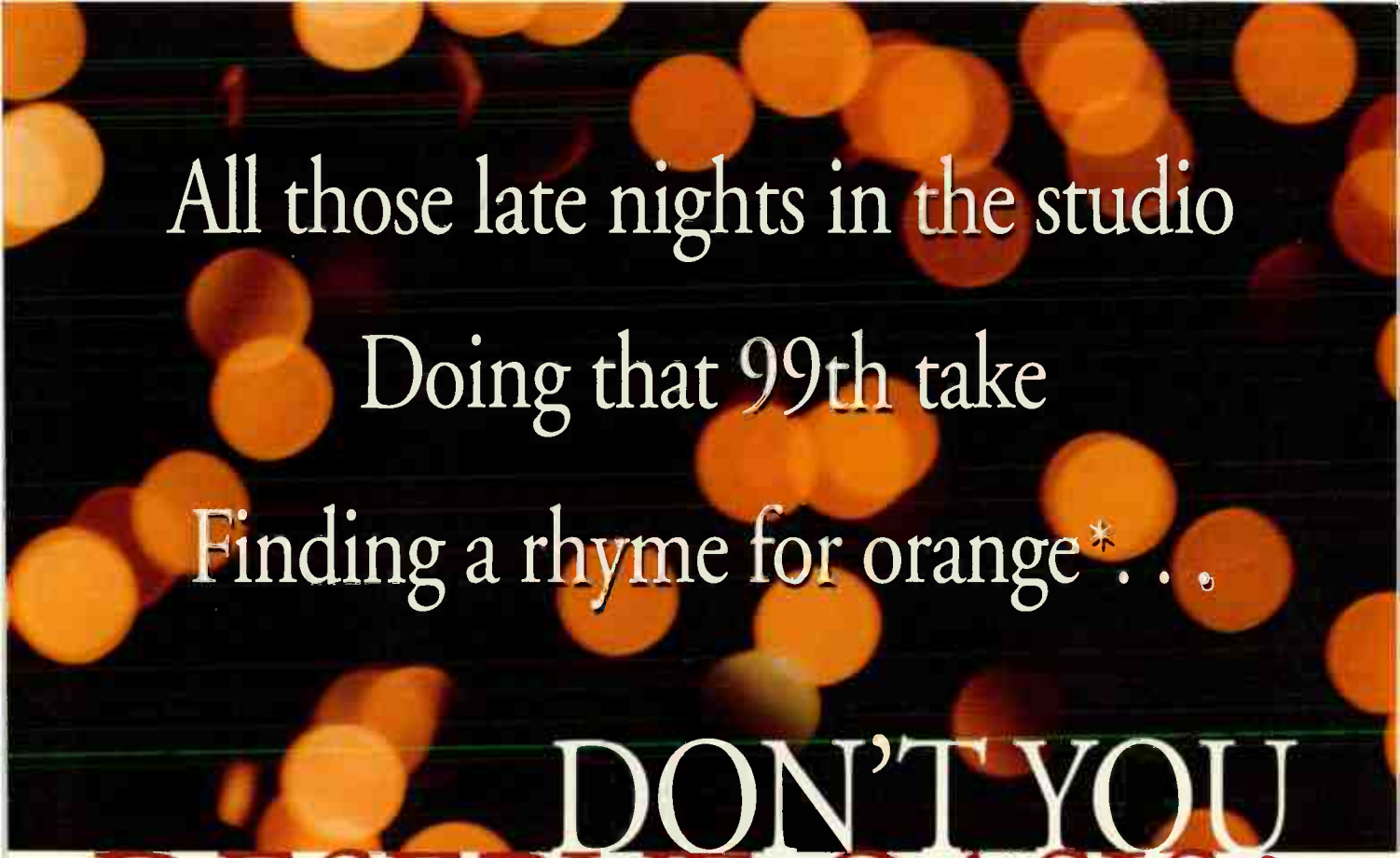

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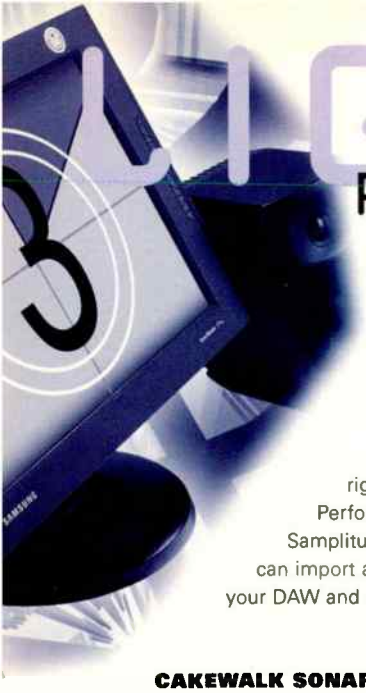


Power App How-To:

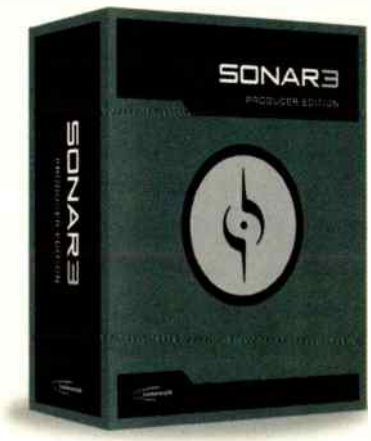
Scoring to picture

compiled by Greg Rule

If all this talk of AV-production has your mouth watering, the following crash courses will get you pointed in the right direction. Whether you use Digital Performer, Logic, Nuendo, Pro Tools, Samplitude, Sequoia, or Sonar, here's how you can import a Quicktime, MPG, and/or AVI movie into your DAW and create a hit-point/marker track to match.

CAKEWALK SONAR

Sonar will load an AVI, MOV, or MPG (MPEG) format video, which then shows up in a video window. As you change the Now time, the video follows along.



Opening a Movie

- Go *File > Import > Video File*. Navigate to the desired video file, select it, then click on *Open*. You can optionally import the audio stream that's part of the video (select a blank track before you do this), split the audio file into two separate tracks instead of a single stereo track, and show the file info.
- If you can't open QuickTime (MOV) files, obtain current QuickTime codecs by going to www.microsoft.com and downloading the latest version of Media Player.
- After Sonar loads the video, it shows up in a separate video window. If this is the active window, you can use the right and left arrow buttons to move forward or backward respectively by single frames. Ctrl-right arrow and Ctrl-left arrow moves the frame increment value by five frames at a time.

Offsetting Audio & Video

- When you right-click on the video window and select *Properties*, with AVI files you can set the video start time. This is referenced to bar/beats/clocks on the assumption that you will want it to start at a specific point in a piece of music. (As you can change the timeline calibrations at any time, you can switch over to SMPTE if you're spotting sound effects at specific times in addition to doing music.)
- You can also set trim-in/trim-out times (the offset into the video at which playback begins and ends, respectively) using SMPTE values. For example, if you're scoring a section that occurs 27 minutes, 12 seconds, and 4 frames into the video, you can set the video to start playback at that point when you start from the beginning of the music.

More Property Page Options

The *Info* tab shows details on the video, including current frame, image size (original and current), etc. The *More* button brings up additional data on quality management info (frames dropped in renderer, jitter, average frame rate achieved, and the like). The *Render Quality* tab lets you enable a Preview Mode that degrades video quality somewhat but gives smoother playback. Here you can also change the frame rate and video size (in pixels).

Optimizing the Display

- Click on the float icon in the upper left corner and check *Enable Floating* if you want to float the video window over to a second display. There are also several ways to optimize the display.
- Stretch Options include *Set Video To Original Size*, *Stretch To the Current Window Size*, or *Full Screen*. It's also possible to preserve the aspect ratio, and stretch by integral multiples of the original frame size.
- Time Display Format can be *Measures/Beats/Ticks*, *SMPTE*, *Frames*, or *None*. This is also where you can also set the font and color for the time readout in the video window.
- Background Color is selectable between white or black.

Using Markers

Markers are useful for creating "hit points" for events (*e.g.*, sound effects) that need to correspond to the video. These are usually locked to SMPTE, so even if you make tempo changes in the music, the markers stay at their assigned positions with respect to the video.

- To access the Markers toolbar, go *View > Toolbars* and check Markers. The toolbar can be floated or docked.
- Although there are several ways to add markers in real time while watching the video, the simplest method is to press F11, or click on the toolbar's *Add Marker* icon (the marker symbol with the + sign). Markers are placed without regard to the Snap grid, but if you move or copy them, they can optionally snap to the selected grid value.
- If you hit F11 or *Add Marker* while the transport is stopped, a dialog box appears where you can name the marker, choose whether to lock it to SMPTE, and adjust its placement. You can call up this dialog box for a previously placed marker by right-clicking on the marker, regardless of whether or not the transport is playing.
- There are several ways to jump to particular markers, but probably the easiest method when adding effects to a video is to hit F5 twice; a Markers View shows up with not just the markers you placed, but default markers for beginning, end, punch in, punch out, loop start, loop end, etc. To jump to one of these markers, double-click on the desired Marker, and click *OK* when the Go box appears.
- The final marker feature is the Markers List. This manages markers, and compiles a list of all the markers you've created. Here you can delete or add markers (the Add Marker dialog box comes up when you click on the *New Marker* icon), or Lock a marker or group of markers by clicking on the *Lock* icon. It's also possible to print this list so you can document where sound effects fall in your video project.
- In addition to navigation, markers serve one other purpose: Clicking between any two markers in the strip just above the timeline causes them to define a time range. This can be

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useful data in deciding what tempo to use that encompasses the maximum number of hit points, but Sonar does not do this automatically.

Saving & Exporting

Note that video data is not saved as part of a bundle file. The project references the video file, which must be backed up separately.

- After finishing your work, you can export the completed audio/video file in AVI format only. Recommended video codecs are Indeo Video 5.04, Intel I.263, Cinepak, Microsoft Video 1, and Microsoft RLE. Recommended audio codecs are CCITT A Law, CCITT U Law, DSP Group TrueSpeech, PCM (uncompressed WAV file), GSM 6.10, and IMA ADPCM.
- Exporting is also where you specify the number of keyframes. If you plan to do a lot of seeking and editing around a video file, more keyframes (*e.g.*, a value under 5) makes the process faster. If you're working on a video that has few keyframes, you can export it with more keyframes, then re-import it into your project to speed up the workflow.

—Craig Anderton

DIGIDESIGN PRO TOOLS 6

The following procedures apply to Pro Tools 6.1 TDM or Pro Tools 6.1 LE (with DV Toolkit option).

Importing a Movie

Before you import a movie or video clip, set the frame rate of your Pro Tools session to match the frame rate of the material you want to import.

Set the frame rate:

- Choose *Windows > Show Session Setup.*
- Choose the frame rate from the Frame Rate pop-up menu.

Import a QuickTime movie or AVI clip:

- Choose *Movie > Import Movie.*
- Select the movie and click *Open.*

The movie is displayed in a new Movie track in the Edit window and in a floating Movie window. The first frame of the movie is automatically placed at the start time of the session.

If there is audio associated with the movie, you can import that audio for editing or for use as a guide track.

Import the audio from the QuickTime movie or AVI clip:

- Choose *Movie > Import Audio From Current Movie.*
- Select the tracks you want to import and click *OK.*
- Choose the destination for the imported audio.

The imported audio is converted to the session's bit resolution and sample rate, and appears as a new region in the Audio Regions List, which you can drag into a track in the Edit window.

Adjusting the Movie Start Time

You can adjust the start time of the entire Pro Tools session to match the start time of the material you imported, or you can spot the movie to any location within the session.

- Choose *Windows > Show Session Setup.*
- Enter a new value in the Session Start field (for example, 01:00:00:00)

Spot a Movie to a Location

- Put Pro Tools in Spot mode.
- Using the Grabber, click the movie in the Movie track.
- Enter the start time for the movie and click *OK.*

Viewing QuickTime DV Movies via FireWire

Using a compatible digital video converter, you can play imported QuickTime DV movies through your computer's FireWire port, and view them on an external video display.

Play Back a QuickTime DV Movie through the FireWire port

- Import a QuickTime DV-format movie into a Pro Tools session.
- Choose *Movie > Play DV Movie Out FireWire Port.*
- Begin playback.

Spotting Audio To a Movie

You can use Grid mode to constrain the movement of audio regions to the grid in the Edit window. You can also manually identify hit points and tempo events in the session and use those to spot audio regions.

Using Grid Mode to Spot Audio

- You can spot audio regions to precise SMPTE or frame locations in the timeline.

Spotting an audio region

- Set the main time scale to Time Code or Feet+Frames by clicking the corresponding name in the Edit window Ruler.
- Put Pro Tools in Grid mode.
- Click an audio region in the timeline, or drag a region from the Audio Regions List.
- Enter the location for the region and click *OK.*
- The beginning of the region (or its sync point, if one is defined) is placed at the specified location.

Identifying Hit Points in a Session

You can use Memory Locations to drop markers in a session while the session is playing back.

To manually drop a marker in a Pro Tools session during playback:

- Display the Edit window.
- Press the spacebar to begin playback.
- When the cursor reaches the desired location, press the *Enter* key on the numeric keypad.
- Under Time Properties, choose Absolute for the Time Reference.
- Enter a name for the marker and click *OK.*

You can later move the markers to any location by dragging them in the Ruler.

Calculating Tempo for a Scene

You can select any part of a session (such as between two hit points) and get Pro Tools to automatically calculate a steady tempo for that selection.

To assign a tempo and meter to a selection:

- In the Edit window, select a portion of the session.
- Choose *Edit > Identify Beat.* ➤

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■ Enter the bar and beat numbers you want to assign to the beginning and end of the selection.

■ Enter the time signature you want to assign to the selection, and click *OK*.

Meter and Tempo markers appear in the Ruler, and the Bar and Beat grid reflects the new tempo and meter for the selection. You can then spot audio regions to the new grid.

Importing a Tempo Map

You can import a tempo map as a Standard MIDI file (from another Pro Tools session or any other sequence) and use it in the current session to conform a music cue.

To Import a MIDI File and use its tempo map in the current session:

■ Choose *File > Import MIDI to Track*.

■ Choose the MIDI file you want to import.

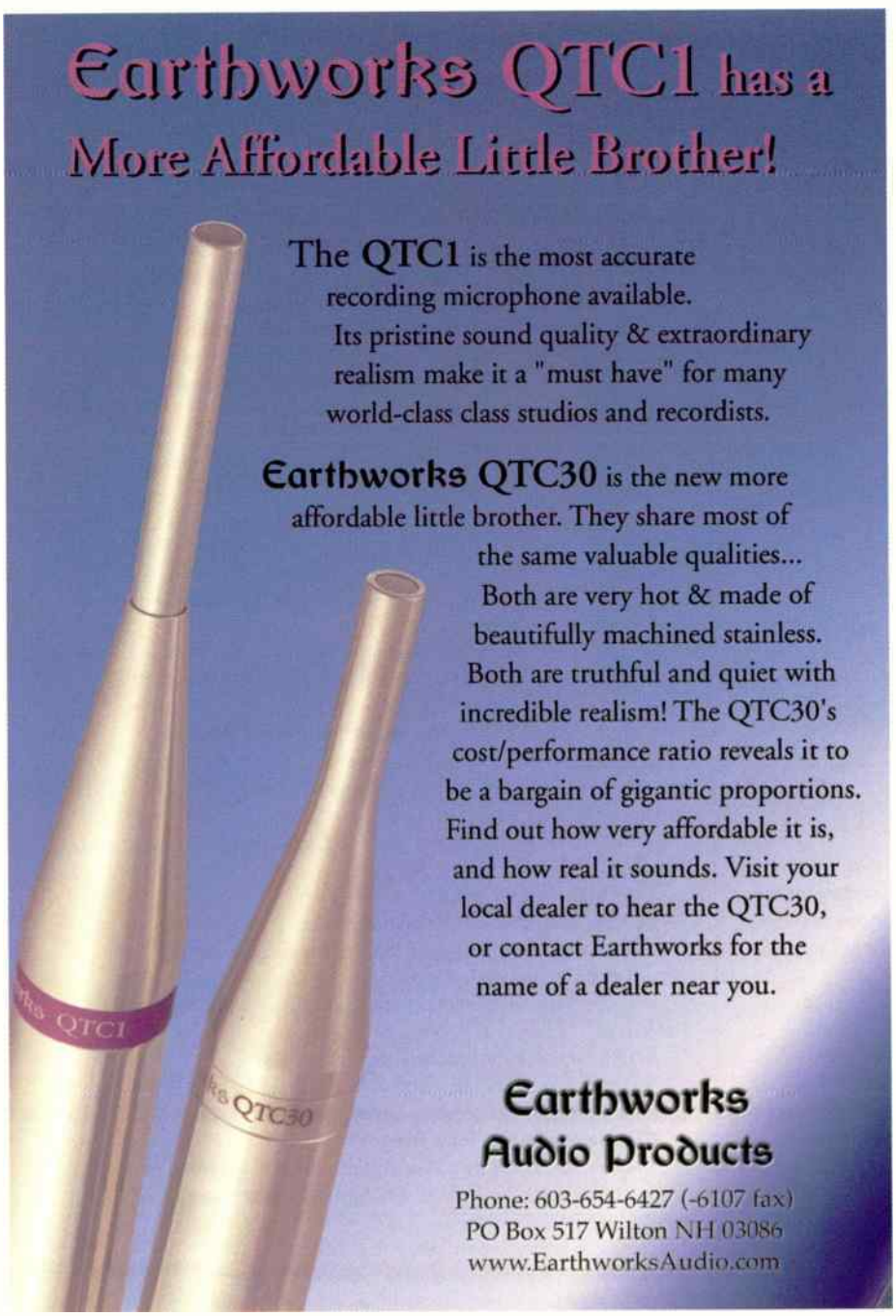
■ Select *Import Tempo From MIDI File*.

■ Click *Open*.

The tempo map from the imported file appears in the session's Ruler.

Conforming Audio to the Grid

The Time Compression/Expansion Trimmer in Pro Tools lets you adjust an audio region (for example, background sounds or a drum loop) to fit a scene or selection. —*Tom Dambly*



EMAGIC LOGIC AUDIO

You can have QuickTime movies run in a Logic window in sync with a song. Wherever you move the song position the film follows, and vice versa.

Opening a Movie

■ Select *Options > Movie* in the Arrange window to open a typical file selection box. You can then select a QuickTime movie from your hard disk.

■ If you select *Options > Movie As Float* you can open a QuickTime movie in a float window. That way the movie will always stay on top.

Reopening a Window

■ The Key Command, *Open Movie Again*, reopens a movie window with the same film. This is particularly useful if you wish to open the film in a different screenset.

Working with Movies

In the QuickTime window, you can enter the SMPTE offset of the film at the bottom (the Movie Start). This is independent of the SMPTE offset for the song. By grabbing and dragging the position slider at the bottom of the picture, or by using the forward/rewind buttons to the right, you can move the film to any position, and Logic will jump to corresponding song position. All the QuickTime transport functions interact with those of Logic.

Optimal Image Size

If you click once on the video image, the QuickTime movie will expand to fill the whole screen in such a way that the entire video image, whatever its shape, will fit your monitor. The window borders will also disappear (best size without borders). Clicking on the image

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restores it to its original format.

Synchronizing Methods

The Contiguous Sync option allows you to switch between the following sync methods:

- When *Contiguous Sync* is turned on, Logic controls the playback speed of the movie, so as to keep music and pictures in sync at all times. If the film has a soundtrack, the audio signal will be transposed slightly, if necessary, by means of sample rate conversion.
- The sync method is possibly more precise, but requires greater processing power. *Movie Drop Sync* (with *Contiguous Sync* switched off) means the QuickTime movie will be shown at its original speed. If any time corrections need to be made, do so by repeating frames or omitting them. If there is a soundtrack, a quiet click will be heard at this point. This method is also usually reasonably accurate.

Video to Song Adjust

- Found under *Option > Settings*, this global setting will fine-tune the starting point of the movie.

DV Playback via FireWire

Quicktime movies in DV format can be output from your Logic song to a FireWire device. For technical reasons, only QuickTime movies in DV format are supported.

You can easily activate this option by selecting FireWire as the DV Output option in the *Song Settings > Video* menu (your FireWire DV device must be connected at the time). You can also access this preference by opening your QuickTime movie as usual and then holding the mouse button down in the movie window, which brings up the QuickTime options pop-up menu.

Video Thumbnail Track

The Video Thumbnail Track is a special track class in Arrange, which displays the loaded Quicktime movie as thumbnails on an Arrange Track. You select this track class from the hierarchical menu of track classes. The number of thumbnails you see depends on the current zoom level. —*Christine Wilhelmy*

MAGIX SAMPLITUDE & SEQUOIA

Both Samplitude and Seqouia use Windows Media Link to play

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TECHNICAL INFORMATION

The plugin comes in three different formats (VST for Mac and PC, Audio Units and RTAS) to fit in most sequencers and editors such as:

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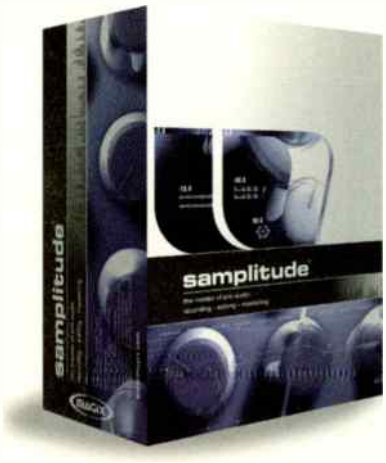
back AVI and MOV videos, as well as any other files (WMV, MXV, MPG, etc.) that have an MCI driver installed in Windows. (Note: This feature can also link MIDI Files with a project.) Videos can play back in a separate video window, and show up as a track with thumbnails. This example will be based on Sequoia; Samplitude operates almost identically.



Opening a Movie

■ Go *Options > Project Options > Media Link*. Browse for the video to bring into the program (click on the folder icon), select it, and click *Open*. If you're not sure whether it is the correct video file, click *Preview;* the video will play in its video window. Click *Preview* again to stop. You can also remove the Media Link by clicking *Remove Link*.

■ *Show Actual Video Frames*, when checked, shows the current frame in the upper left corner of a VIP project. *Show Video Track* places a track of thumbnail images above the timeline. Zoom in far enough, and you'll see individual frames.

■ Alternatively, you can just drag the video file into the timeline. The program will open the windows *Show Actual Video Frames* and *Show Video Track* automatically.

■ As with other Windows programs, if you can't open QuickTime (MOV) files, obtain current QuickTime codecs by going to www.microsoft.com and downloading the latest version of Media Player.

Media Link Options

The *Media Link* window offers several other options, such as:

■ *SMPTE Offset* allows setting a separate start time for the media file. Usually it lines up so the video and audio start at 00:00:00:00; the offset you enter specifies the time in the media file that corresponds to the audio's start point.

■ *Play Files Always* can be unchecked to turn off the video if playing the video affects performance adversely, and be turned back on when you need to check the project against the video.

■ *Load File Always New*, when checked, loads the video into your project. If unchecked, the file plays back from memory, or, if it's too large, is streamed from hard disk.

■ *Synchronization to Audio Playback* syncs the video to the project, rather than doing "free sync" (although free syncing works fine for shorter videos and demands fewer system resources).

■ *Prioritize Video Play* gives more resources to the video than the audio. Check this box when "proofing" the audio against the video; uncheck it while recording and doing processor-intensive audio operations.

■ *Correction Factor for Exact Positioning* will not need to be used with most modern computer systems. With slower systems where the audio runs ahead of or behind the video, you can enter a correction factor here so the two play in sync.

Video Options

A separate section for Video Options controls how video interacts with the program. The options are:

■ *Extract Audio from Video* strips the audio from the video and places it in the current project, where it can be edited. The video still appears.

■ *Replace Audio in Video* bounces your current project to a WAV file, and merges it with the AVI track. After selecting this option, an additional dialog box appears that lets you determine whether this replaces the audio in the original AVI file, or saves the result as a new AVI file. You can also specify the audio format in this box.

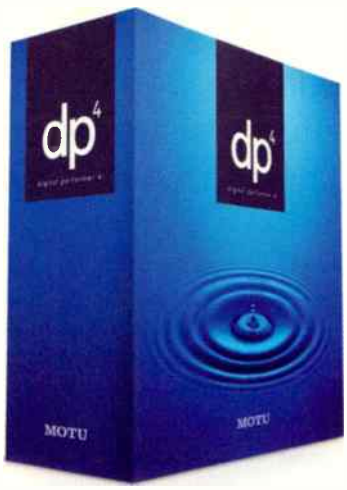
■ *Play Video without Sound* mutes the existing soundtrack for any AVI file loaded into the project.

■ *Video in Sequoia Window* places the video in a window that is always "on top" of the current project.

Optimizing the Display

■ You can resize the video window, but the aspect ratio is not preserved, and there is no way to insure that it is. However, you can right-click on the video window and choose from several sizes: original size, double, half, and one-quarter.

■ Use the right and left arrow buttons to move forward or backward through both the video and the project by single frames. (If you want to calibrate the timeline in frames, right-click on it and select SMPTE.) —*Craig Anderton*



MOTU DIGITAL PERFORMER 4

Importing QuickTime or DV-formatted Video Clips

■ Choose *Movie* from the *Project* menu.

■ Make sure the DP project frame rate matches the imported movie. If the movies were digitized at, say, 30 frames per second (fps), choose *Setup > Frame Rate > 30 fps*. This is a crucial step. It's important to match the clip's frame rate, especially with 29.97 fps drop and non-drop video rates.

■ Set the movie start time and sequence start time. Most often, digitized film cues are supplied with a timecode start frame. Some cues might start at frame zero (0:00:00:00), for example, while others might have irregular start times such as 2:13:37:05. To set the movie start time, choose *Set Movie Start Time* from the *Movie* window mini-menu. This ensures that DP's markers and hit points accurately match the frame times used by the film's sound effects editors and music editors.

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ERA, AUDIO!

■ To set the sequence start time, click the *Start Times* button in the *Tempo Control* section of DP4's control panel. If no pre-roll is necessary, you can make the sequence start time match the movie start time. If pre-roll is needed, set the sequence start time earlier by the desired amount.

■ If the imported movie is a DV-formatted digital video clip, you can view it on a separate full-screen video monitor via FireWire. To do so, connect a FireWire video camera or FireWire-to-video converter to your Mac's FireWire port. Turn it on. If possible, check the connection with iMovie or Final Cut Pro to make sure the FireWire video connection is working properly. Then, back in DP4, go to the movie window mini-menu (in the title bar), choose *Video Output*, and choose your FireWire device from the sub-menu.

If the imported movie is a DV-formatted digital video clip, you can view it on a separate full-screen video monitor via FireWire.

■ If you want to view the movie on a timeline side by side with hit points, meter changes, and tempo map, open *Project > Sequence Editor*, click the *Track List* button in the title bar, and click the movie track to highlight and display it.

Spotting Hits & Building a Tempo Map

The backbone of any musical score are the "hit points" — edits and other notable instants in the picture — along with the tempo and meter changes used to match up the music with the hit points. Hit points serve as a framework for a meter and tempo map, which in turn serves as a framework for the music. DP lets you identify hit points with Markers and then build a tempo and meter map called a Conductor Track. DP4 provides many powerful ways to spot Markers and build a Conductor Track for a movie cue. Here are just a few.

Spotting Hits (Markers)

■ To create a marker (hit) list, open *Project > Markers*.

■ Press the spacebar to begin playback, and while watching the movie, press control-M (this hot key can be customized in the *Commands* window) to add a marker at any notable hit points. No need to be exact — just let the movie roll and crank out the markers.

■ You can edit their precise location later, as follows: Choose *Setup > Time Formats* and choose *Frames* as the global time format. Open the *Conductor Track* graphic editor and set the edit grid to 1 SMPTE frame. As you drag markers left or right, the movie window chases your edit, so you can watch the movie frame by frame to easily drag the marker to the exact hit point. ➤

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Programming a Fixed Tempo Over a Specific Section

If the cue calls for a steady tempo, such as a driving techno mix for a chase scene, you can easily program a constant tempo between any two points in the cue.

To do so, choose *Preferences* from the *Setup* menu and turn off the *Fix Partial Measures Automatically* option. Now open the event list for the conductor track and insert a 4/4 meter change (using the *Insert* menu) where you wish the music to start. Cue the movie to the end of the section (using the arrow keys if necessary to nudge the movie window to the exact frame). Note the SMPTE frame time in the main counter.

Now choose *Project* > *Modify Conductor Track* > *Change Tempo.*

Make sure the start measure matches where the 4/4 meter is.

Click the *Options* button and enter the current main counter frame time in the *Change Tempo End* time field.

Now enter an end measure that approximates the length of the music for the section — say eight bars. As soon as you do, the tempo will be calculated automatically. Add or subtract bars to increase or decrease the tempo.

When you have the tempo you want, click *OK*. Now the sequence plays the specified number of measures at exactly the specified tempo for the entire section, with the final downbeat landing precisely on the hit you indicated.

You can use a similar technique to program gradual tempo changes over short — or even longer — passages using the other tempo curves provided in the *Change Tempo* window.

Searching For a Tempo Based on Multiple Hit Points

DP's *Markers* window has a feature that can automatically find a tempo that matches multiple hit points. In other words, it can find the tempo that lands the most downbeats on markers.

First lock the markers you wish to include in the search, and click a check mark next to their name in the *Find* column in the *Markers* window. Be sure to include one at the very beginning (downbeat) of the section you are searching for. If desired, you can give each marker a level if importance (weight), hit range (if it's more than one frame), and position (skew) within that range.

Choose *Find Tempo For Locked Markers* from the *Markers* window mini-menu.

In the *Find Tempo* window, choose the range of tempos you would like to consider at the top of the window. The list of resulting tempos dynamically updates as you change the settings. You can even make changes to the marker list and it will update on the fly.

To find the tempo with the most hits, click the *Total Hits* column heading. For a more detailed view of exactly which hits a certain tempo successfully makes, click the tempo, and view each marker in the section at the bottom of

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the window. This powerful tool can help you zero in on the perfect tempo in minutes.
—Jim Cooper

STEINBERG NUENDO

Nuendo 2.0 has a wide range of audio-for-video tools. Let's take a look at some quick ways of working with video in Nuendo.

Importing Video

Import the video from the file menu, *File > Import > Video File*. This will import the file to a video track (with thumbnail view) and extract the digital audio to a track directly below the video track. The video can be edited in the thumbnail view using the standard tools. Nuendo supports AVI, Quicktime, Windows Media Video, and MPEG formats.

Pressing F8 will open the video display on the screen. Right-click on PC. Ctrl-click on Mac, and turn the video into full-screen mode. Different video formats and display sizes can be set in *Devices > Device Setup > Video Display*. Mac users can route the video directly out to the FireWire port in the video display settings.

Markers

Markers can be used to drop cues at significant points of the video in the marker track. Add a Marker Track and press the Insert key to drop markers where needed. These markers can be labeled for scene cues and can be navigated from the transport bar, or Shift-N for next marker or Shift-B for previous marker.

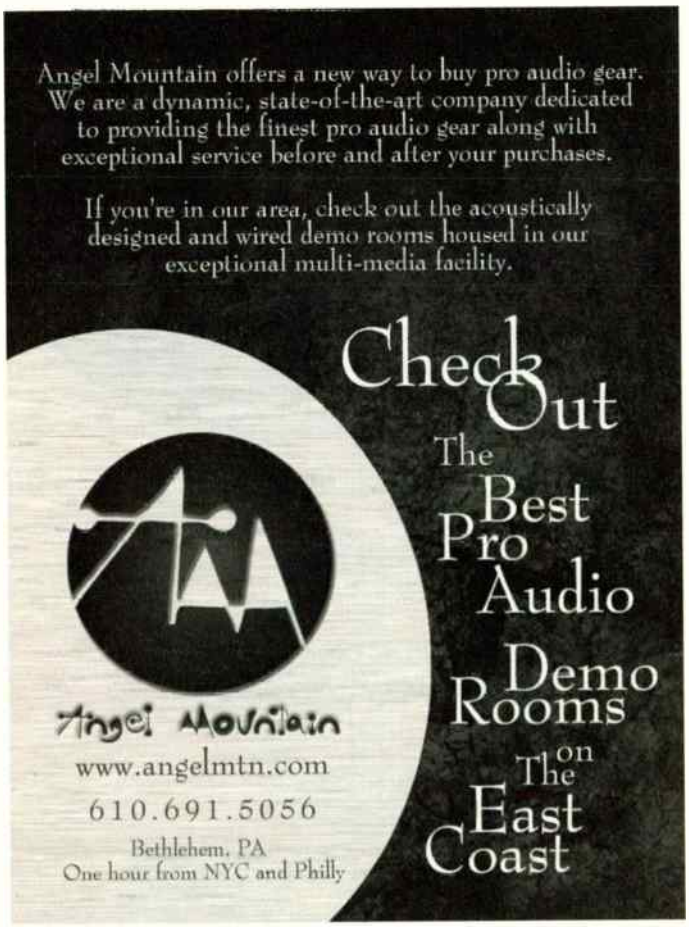
Spotting

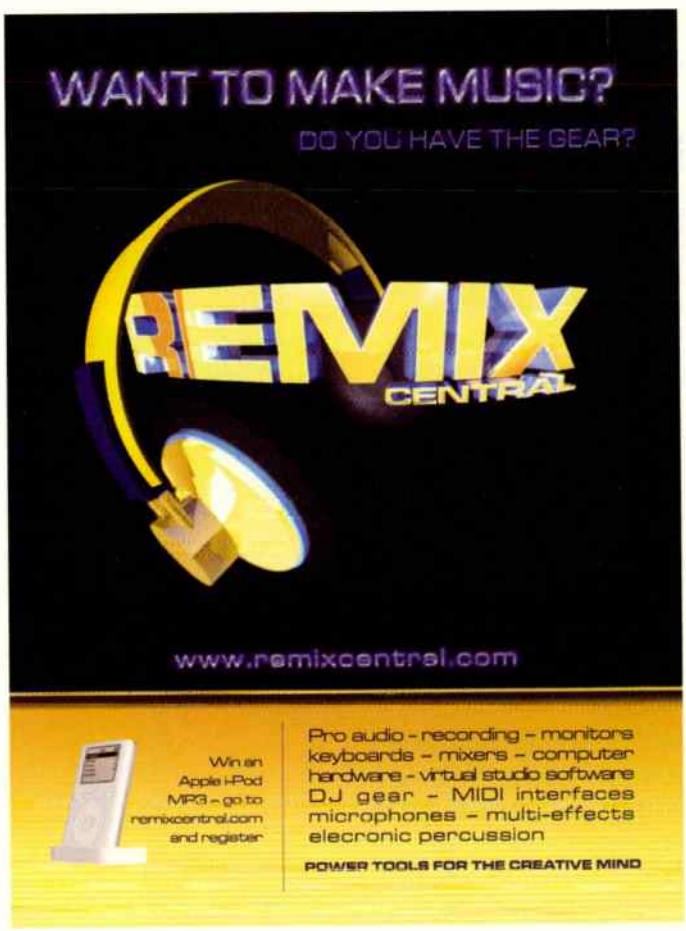
Audio can be easily spotted to the video in several ways. Activate Edit mode from the transport menu. This allows for the video display to be updated as any object is moved on the screen. The video window will update as the cursor is moved in the timeline.

Audio can also be placed at the cursor directly from the Pool. Select *Insert Into Project > Cursor*.

Once Edit mode is activated, the video will respond to transport commands including jog/shuttle. Moving the cursor on top of the video window will also scrub the timeline.

The audio can then be replaced in the timeline by selecting *Replace Audio in Video File* from the *File* menu.
—Greg Ondo EQ





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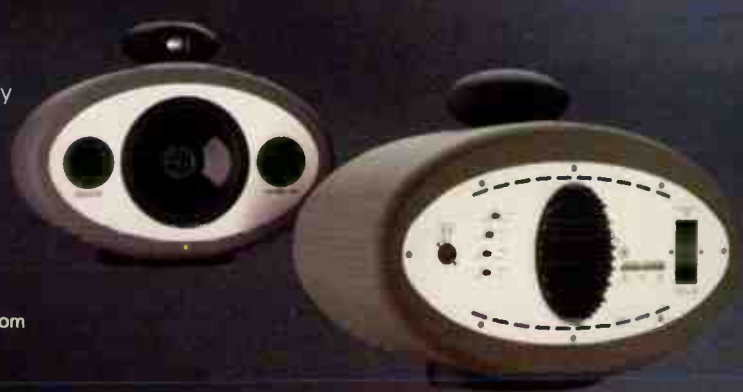

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CASE STUDY: STUDIO VOODOO
Adventures in DVD-A, Pt. 1

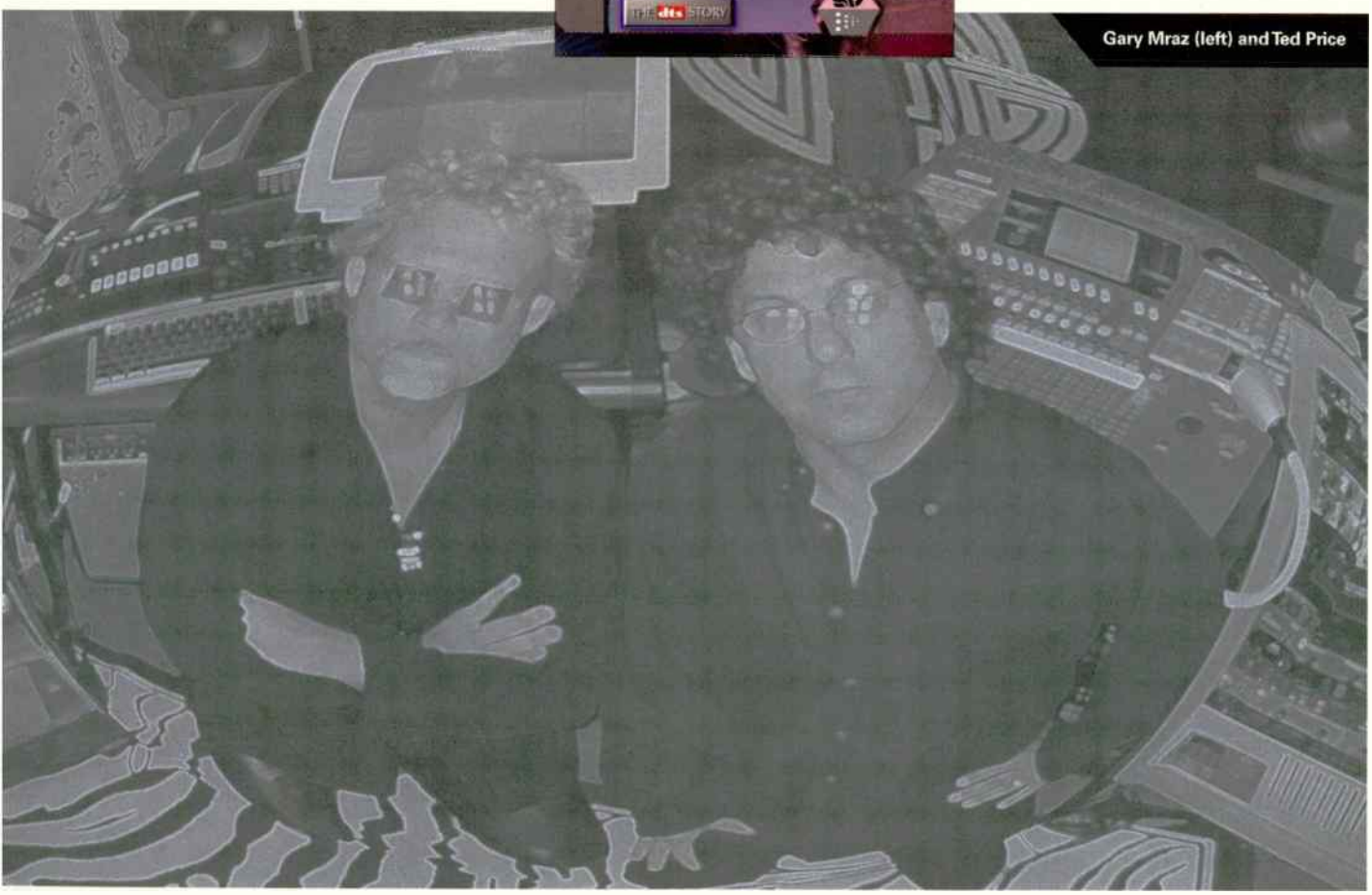
Gary Mraz and Ted Price comprise the award-winning production team known as Studio Voodoo. In this, the first of a multi-part series, they discuss how they've been blazing new trails in DVD-A and surround sound markets. Audio pioneers, saddle up and take notes. —Greg Rule

Over the past few years, we have been fortunate to work closely with DTS Entertainment to release our music on DVD-Audio. We've learned a lot from our experiences that also applies to the more easy-to-create DVD-Video discs. In a series of articles, we'll share what we've learned — creative and promotional ideas that bands and musicians can use to help their music stand out from the crowd.

Our home entertainment and home computing systems are converging rapidly thanks to the record-setting deployment of DVD by manufacturers as the standard for audio, video, and data storage. It's true that the days of the CD are numbered, as DVD technology has become the center of most home entertainment centers, and is starting to invade the car audio market as well. The increasingly common Universal DVD player serves as a playback device for DVDs and CDs in all formats — including high-fidelity DVD-Audio and SACD — as well as all flavors of CD/DVD-Rs, music CDs, MP3s, and VCDs. For the first time since Betamax, consumers do not have to navigate the complexity of owning different types of playback hardware for video and music entertainment.

This is a good thing for all musicians because image is everything in the post-Napster music business, and content is king. We have to stand out in the crowd, and DVDs offer lots of bang for the buck. It gets even better when you consider the fact that, using our creativity and the tools we already have, video novices like you and me can actually create interesting DVDs for a minimal cost in our modest little home studios.

If it sounds like we like DVDs, you're right. We *love* them for both creative and business reasons. Musical artists can use DVDs as promotional tools, or



Gary Mraz (left) and Ted Price

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as full-blown albums with extra features such as surround sound, alternate/club mixes, live video, still pictures, and text. With a little extra effort, DVDs can include interactive games, hidden "Easter egg" features, and links to the internet. And for you left-brained band members, DVD helps to solve many problems bedeviling the "business" side of the music business by reducing piracy, restoring lost profit margins, and adding real value to the music product. Think of them as the 21st-century answer to the cool '60s and '70s album covers that included detailed liner notes and free posters in the album jacket.

DVD-A

The new DVD specification that most of the industry has chosen for music is DVD-Audio. DVD-Audio allows for higher resolution audio (up to 24-bit/192 kHz for stereo and 24/96 multi-channel) than the typical DVD-Video format. The trade-off for this audiophile fidelity is that the DVD-A specification leaves less space for video content. The video portion is relative to program length, sample rate, and disc capacity, which in the end usually equates to about 15 minutes of high quality video content. It also allows for a series of still images — a slideshow of up to 20 pictures — during each song. This allows for some nice additional video features, but the emphasis is clearly on the music.

The authoring tools for creating DVD-A are expensive and complex at the moment, but using inexpensive DVD-Video authoring tools, which are commonly available, any DVD-Video project can look and navigate in a similar fashion to a DVD-A, minus the high-resolution MLP audio portion.

So before you go crazy trying to figure out how to pull together a DVD music project that includes hours of video footage and special features, remember that your DVD doesn't need to be all about video; it can offer a lot of other, more accessible, creative possibilities as well.

Lesson 1: The emphasis should be on the music. The wonderful thing about the DVD is that it can hold so much audio information. Use it! Having multiple versions of an album is one thing that a CD could never do. On our DVD-A album, we included *four* different versions of the master recordings: stereo, 6.1 dts-es surround, 5.1 MLP, and binaural stereo. Other possibilities include different foreign language versions, remix styles, or music-minus tracks. Did anybody say karaoke?

Lesson 2: Still images, or slides, are acceptable and very effective visual compliments to music. Slideshows of still images, or tracking over still images (the Ken Burns effect) can create a dramatic visual effect. Photos and other artwork can be readily captured digitally. Securing the rights for use can be a challenge, depending on the situation. On our DVD-As, we found local graphic artists that we

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liked, and approached them directly to negotiate a limited-use agreement for some of their work in exchange for promotional considerations on the DVD.

Lesson 3: Video production can be dirt-cheap as long as it is interesting. Unless you are living in a cave, you know that current digital video cameras are of sufficient quality to be acceptable to a mass audience. What matters is the concept. From a marketing perspective, the best use of video is to define a clear identity for the artist. Giving the audience a peek behind the scenes provides them with insight into the personality of the artist and, when done properly, establishes a stronger connection with the music. For a good example check out Peter DiStefano's *Venice Underground* DVD. With each song, the viewer has the option of watching creative video content or a computer graphics option.

Performing artists can use video from live shows as source material. Video can be collected from multiple shows and edited together as one song, or as a live set. The best idea is to always have a camera (or two) running. Importing and editing video from mini-DV is extremely simple and flexible using even the cheapest iMac and free iMovie (or equivalent) software.

The easiest solution is to use the least amount of edited, full-motion video and the most amount of still graphics, audio, text and slideshows. Remember Lesson 1: It's about the music. The visuals are provided as extra content that adds value and relevance to the music. Examples of easy-to-acquire non-video visual content include song lyrics and album credits, photos, diaries, art, poetry, audio commentary, and other technical insights and artist information.

Lesson 4: DVDs can be used for other things. The volume of data that the DVD can hold makes it a perfect platform for a multimedia press kit. It has the ability to hold the complete variety of audio and video information commonly requested by booking agents and A&R reps in one easy to mail package.

Also, the low cost of duplication allows bands to include promotional DVDs with their CDs when they are released. Mainstream artists such as Eminem are using promotional DVDs such as *The Eminem Show* to increase sales and combat piracy, while other bands, such as Supreme Beings of Leisure, feature surround sound music videos of their album tracks on a bonus DVD.

DVDs offer musicians a wide variety of creative options for improving what we sell and how we sell it. In the next installment we'll get insights from some well-known artists who are currently using DVDs to promote and sell their music, and we'll take a look behind the scenes of the upcoming *Warped Tour* DVD. EQ

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IK MULTIMEDIA AmpliTube Live

Recreate popular guitar tones in Pro Tools with AmpliTube Live. With amp, cabinet, and effects controls, AmpliTube Live empowers you to easily craft your preferred guitar tone from physically modeled vintage and modern amps — all right within Pro Tools.

IK MULTIMEDIA T-RackS EQ

Pulled from their superb T-RackS mastering plug-in suite, T-RackS EQ is perfect for adding that rich, warm tube sound to your Pro Tools tracks. T-RackS EQ offers six bands of analog-modeled parametric equalization, complete with high- and low-pass filters, all in an easy-to-use interface.

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HOT TIPS

MOTU MachFive Creating Surround Samples

by Matthew Davidson

Most sample libraries on the market are stereo only, but don't let this stop you from exploiting the surround sampling capabilities of MachFive. Sampling in surround places equal emphasis on the room as well as the instrument. Most home studio recording involves removing as much of the room sound as possible, resulting in a dry signal that can be processed later. This is usually because homes aren't designed with flattering acoustics in mind. Unless one has access to a serious recording space, using microphones to capture room acoustics in a home studio will often lead to disappointing results.

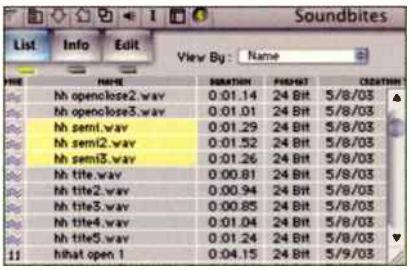
So, what to do? One option is the synthetic route: Process dry samples through a high-end surround effects processor such as a Lexicon 960 or TC Electronics System 6000. While this can be done, a simpler solution may be lurking inside your DAW.

Many plug-ins can transform a mono or stereo signal into a surround space — MOTU's own eVerb or AltiVerb by AudioEase, for example. While these plug-ins are appropriate for many tasks, let me suggest the sound of the MOTU Plate reverb for drums and percussion. However, the Plate reverb is only available in a stereo output version. This is not going to be an issue, as we'll use two Plate reverbs to simulate a quad environment.

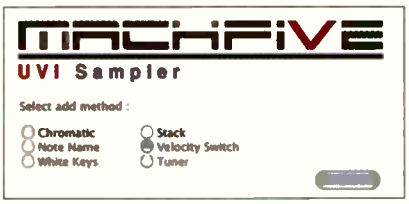
THE DRUM KIT

The first thing to do is create a standard, stereo drum kit for MachFive. Collect stereo samples of kick, snare, and open and closed hi-hats. I culled my source material from the high-quality *Discrete Drums Volume II* single hits disc. This disc provides 24-bit multiple-velocity samples of a drum kit in both dry and room versions. Dry samples work better for processing into surround versions.

MachFive makes it easy to create a multisampled drum kit. Simply drag all the snare multisamples onto a key in the MachFive window.



MachFive will then ask you how to map the samples. Choose the Velocity Switch option.



MachFive automatically sets the root note and creates an equal division velocity switch stack of samples for you. Continue mapping the rest of your drum samples.

After placing the samples, you can "tightened up" the snare and hi-hat samples by transposing them up a whole step.

Select all samples in the MachFive keymap window and adjust the release segment of the amplifier envelope to produce a more natural-sounding decay.

ROUTING

MachFive supports all of DP's surround sample formats, but to conserve resources, quad should be adequate to create a believable sound space. A full 5.1 sample requires six channels of polyphony for every note and the center and LFE

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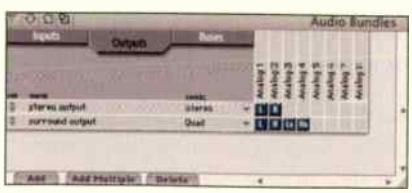
The Plate reverb is only available in a stereo output version. This is not going to be an issue, as we'll use two Plate reverbs to simulate a quad environment.

channels would be wasted. A quad kit reduces resource demand by a third.

Under the Bus tab of the Bundles window, create three stereo bundles and one quad bundle. The first stereo bundle we'll name Source, as it will be the output assignment of the dry, source stereo drum samples. The next two stereo busses will be the output of the two reverbs. Name these Post Reverb Front and Post Reverb Rear. Naming bundles is important, as it will simplify signal flow tracking.

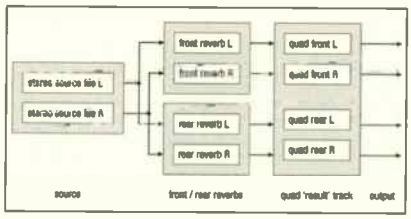
The quad bundle will serve as the input to the surround track. It will need to mirror the outputs of the front and rear reverbs, so the quad bundle should reside directly below the busses of the reverb outputs as seen in the diagram (above). Name this bundle Surround Input.

Finally we need to have an output assignment for the quad track, so under the Outputs tab of the bundles window, create a new quad output and name it Surround Out. You'll need an audio interface with at least four available outputs to make this assignment.



Now that the bundles are created, add some tracks to your project. We will require one stereo audio track for the source samples, two stereo aux tracks for the two reverbs, and one quad audio track to record the output. Name the stereo track Source, the first aux track Front Verb, the second aux Rear Verb, and the quad audio track Result.

The signal flow we're building is simple in concept.

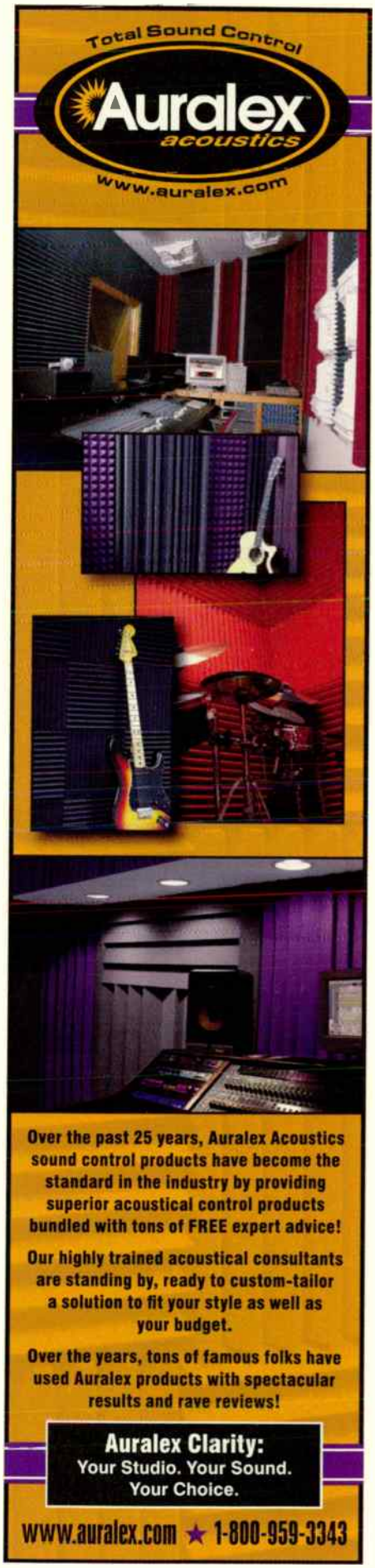


To do this, assign the output of the source audio track to Source. Assign the input of Front Verb aux track to Source and output to Post Verb Front. Assign the input of Rear Reverb aux track to Source and the output to Post Verb Rear.

Finally, we need to make the assignments for the Result quad audio track. The input should be set to Surround Input and the output should be set to the quad Surround Output bundle.

REVERB DESIGN

The goal is not to create a drum sound that wraps around the audience, but to create the illusion of space around the



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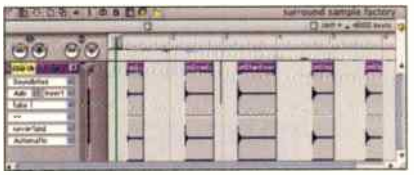
instrument — similar to how you'd use reverb for stereo. Drums work well with a lot of presence up front and a sense of spaciousness in the back. To accomplish this, we need to place a Plate reverb on each of the two aux tracks. The two reverbs, while similar in character, will be programmed differently. In general, the front reverb is shorter and drier, and the rear reverb is wetter and longer with more high frequencies dampened.

Pre-delays can greatly enhance the illusion of where the "back wall" of the room is, but I usually leave pre-delay out for drum samples because I don't want the room to impart a "tempo" onto the samples. However, if your drum kit is project specific, and you know the tempo you'll be working with, go ahead and include a pre-delay for the rear reverb. Plate allows you to specify pre-delay in terms of beats. I find a precise pre-delay of an eighth-note works very well — providing space and not getting in the way of the rhythm.

RECORDING

Arrange the dry samples on a stereo track and allow space for the new reverb tails before the next sample. It's easier to record all samples in one take.



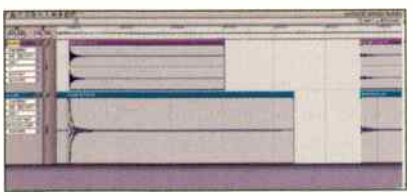
Select the drum and hat samples and transpose them up a whole step using the Transpose command. You want to record the reverb of the re-pitched samples, not transpose the processed samples inside MachFive.

Record-enable the Result track and record the new file.

EDITING

Zooming with the wiper (Control key + vertical wiper drag) allows you to quickly locate the edit point. Splice the resulting track with the scissors tool and zoom back out with the wiper to locate the next edit. Because Digital Performer treats the four individual channels of a quad surround track as a single element, edits go quickly. Trim any excess audio at the end of a soundbite.

Using the dry track as a guide, Option-click the name of the samples to rename them. It helps to rename the new samples to match the old, dry samples.



You could rebuild the drum kit using the new surround samples, but it's easier to export the quad samples from the Soundbites window and remap the existing samples in MachFive to the new versions. To do this, simply double-click on a sample in the keymap are of MachFive. This will allow you to locate the new, exported surround equivalent. A quad soundfile exports as four mono files, but all you need to do to tell MachFive to map to the quad sample is locate one of the four mono files. It knows the other three files belong to it. ➤

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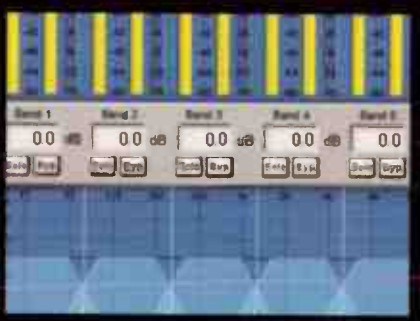

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HOT TIPS MOTU MachFive

Once all the new samples are mapped, remember to pitch-shift the snare and hat samples back down to zero because you don't want to pitch-shift the already shifted samples. Save your kit.

USING THE KIT

When using surround samples with MachFive, be sure to set the input of MachFive's aux track to receive a surround bundle. EQ

GROOVE FUEL

In addition to the excellent *Discrete Drums* library mentioned above, here are a few other *EQ*-approved soundware recommendations for feeding MachFive — or any other sampler. (We're only scratching the surface, so be sure to check out the freshly inked *2004 EQ & Keyboard Music Technology Buyer's Guide*, on newsstands soon and packed with the latest soundware listings.)

eLab
Nu Groove RnB
If you're looking for something less acoustic, *Nu Groove RnB* is not to be missed. Taking its inspiration from Timbaland, the genius future-funk guru, this stellar collection serves up an array of phat, kickin' compressed loops and sounds — it's the sound of the current R&B charts.
www.bigfishaudio.com

Spectrasonics
Burning Grooves
Unrelenting alternative, power funk, progressive soul, rock & roll, and grunge-head loops from Abe Laboriel Jr., in tempos from 56–215. Each groove has a unique mix (edgy, hi-fi, ambient, distorted, lo-fi, etc.). It's one of the few libraries to include different time signatures and those hard to find tom and sidestick grooves.
www.ilio.com

AMG
King Tone Grooves
This award-winning library features drumming great Wayne Proctor performing a range of live loops and fills in a number of styles and sounds. Fat sounding beats, '70s-style funk, classic studio, ambient, and dry rock sections are included along with a selection of fills. You'll find over 1,000 samples offered in both audio and neatly trimmed WAV versions.
www.amguk.co.uk

Q Up Arts
Bun E. in a Box
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www.quparts.com

East West
Aerosmith's Joey Kramer Drum Loops
Joey Kramer, the engine behind the legendary rock group Aerosmith, has put together a monster multi-disc collection of "pump and thump" drum loops and samples. Behold the percussive thunder of a rock & roll icon.
www.soundsonline.com

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BT Breakz From the Nu Skool
Breakz from the Nu Skool is the first of two sample CDs in BT's coveted collection. It features cutting-edge breakbeats hand-mangled through hundreds of plug-ins, stompboxes, pressed to vinyl, and software tools from Kyma to Reason.
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MOTU 828mkII

FireWire–based audio, MIDI, & the kitchen sync

by Greg Rule

Type: FireWire audio and MIDI I/O, sync, standalone mixing
Price: $795
Contact: MOTU, 617-576-2760, www.motu.com

Host connectivity: FireWire IEEE 1394
Audio resolution: 16-, 24-bit; 44.1, 48, 88.2, 96 kHz
Analog inputs: Eight +4/–10 balanced/unbalanced TRS, two front-panel Neutrik XLR/1/4" combo inputs; 24-bit 128x oversampling converters
Analog outputs: Eight +4 balanced/unbalanced TRS, two sends (for the mix/guitar ins), two main outs, headphone out (all 1/4"); 24-bit 128x oversampling converters
Digital I/O: S/PDIF stereo 24/96, ADAT lightpipe (4 channels at 88.2 or 96 kHz; can be toggled to optical S/PDIF); sample-accurate digital transfers between ADAT and computer
MIDI I/O: 1 in, 1 out; MIDI I/O is sample-accurate with any CoreMIDI-compatible host software that supports CoreMIDI's time-stamping.
Sync: Word clock and SMPTE I/O, ADAT sync in
Compatibility: Mac OS 9, OS X (10.2 or later), Windows Me/2000/XP
Included drivers: ASIO, WDM, Wave, GSIF, Core Audio, Core MIDI
Other features: 2 FireWire ports for daisy-chaining without a hub; footswitch input; expandable via cascading additional 828, 828mkII or 896
Bundled software: CueMix Console mix editor for Mac and PC; MOTU SMPTE Control for Mac and PC; AudioDesk workstation software for Mac
System requirements: MOTU-approved Mac or PC; see www.motu.com for details

MOTU made computer-recording history with their original 828. For just $795, 18-channel audio I/O was available in a 1U FireWire box. Mac or PC, no card required — just one convenient FireWire connection to your tower or laptop.

Today, for the same price, MOTU is offering the second-generation 828: the 828mkII. It packs a whopping load of improvements and additions, and is housed in the same tank-tough casing as MOTU's popular new 2408mk3. There are *so* many features jammed into this new 1U rack, it's going to be a challenge covering it all in this space. So let's get right to the highlights. . . .

OVERVIEW

A box of many hats, the 828mkII is an analog/digital audio interface, MIDI interface, multi-format synchronizer, and mixer. One FireWire cable from the unit to your Mac or PC and you're in business.

Ready to go mixerless? The 828mkII is up to the task, thanks to its 20-input/8-bus CueMix DSP mixing and monitoring matrix. Plug a modest-sized studio's worth of gear into this box — from instruments and mics to effects processors and more. Then, when it comes time to record, you can monitor your performances latency-free through the mkII's main outs, headphone out, or any designated output pair. The built-in CueMix DSP engine zaps delay dead, and gives you zero latency for monitoring live signals. Note that this has no bearing on latency within the host program, however. In other words, playing software synths won't benefit. You'll still have to deal with sample buffer settings, and whatever latency this introduces.

For producers on the go, the mkII can be programmed and operated entirely from its front panel — no computer required. Every parameter can be accessed from the front-panel knobs and backlit LCD: input level (+4/–10) and gain, panning, stereo pair grouping, mix output assignment, and more. You can create and save mix setups, with independent submixes for the main outs, headphone out, and designated monitor outs. Route inputs to any output pair, assign inputs as returns — flexibility is the name of the game. There's no channel sharing on the 828mkII; all 20 inputs and 22 outputs are handled as separate pipelines. Nice.

Connected to the host computer, the mkII can also be controlled by the included CueMix Console software for Mac and PC (see screenshot, page 64). This slick mini app gives you full onscreen control over the front-panel hardware parameters. As you move faders onscreen, for example, the mini faders on the mkII's display update in real-time along with your computer moves. Another standalone mini app, MOTU SMPTE Console, provides an onscreen toolkit for striping and regenerating timecode from the 828mkII. MOTU is quick to tout the 828mkII as "the first FireWire audio interface to provide onboard SMPTE timecode sync features." Tout-worthy indeed.

For more 828mkII basics, refer to the Coming Attractions profile in our August 2003 issue (page 80).

SESSION NOTES

First impressions: This is one solidly built box! Rugged, heavy-duty construction. Software installation was quick and painless, and the unit worked beautifully with everything I threw at it: DP4, Logic 6, Reason 2.5, iTunes, Quicktime, and more.

Sound quality: Happy to say that the unit scored high marks in this category. The

828MKII, REAR VIEW. ANALOG, MIDI, AND DIGITAL I/O APLENTY.

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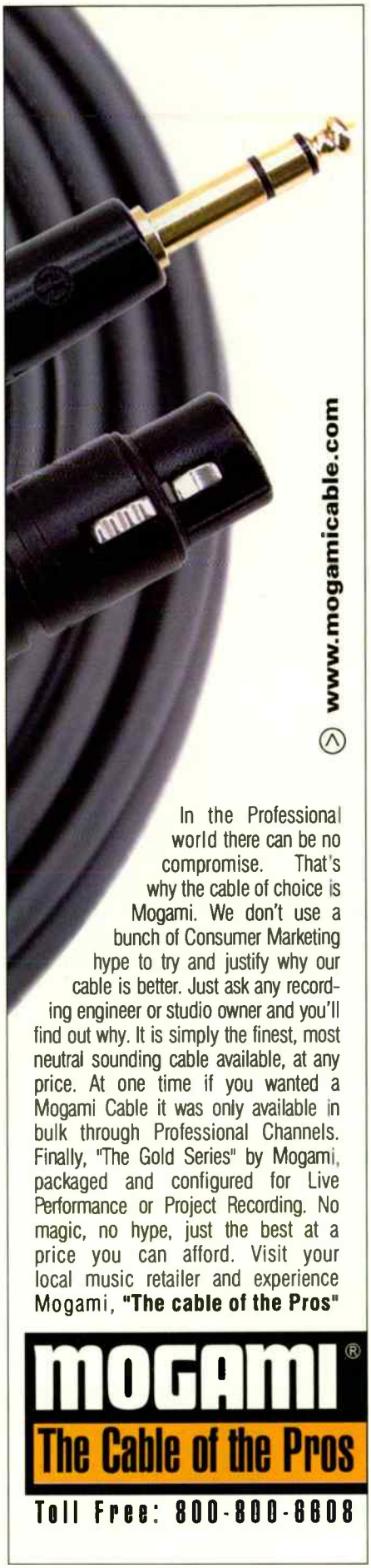

MOTU 828mkII

MOTU packed loads of features into the 828mkII, but those front-panel controls might be a bit too crowded for some folks. CueMix Console to the rescue. The mini app for Mac and PC (included for free) is a quick, efficient way to program and monitor your mixes onscreen.

line inputs delivered clean, clear results, as did the mic preamps. Love those gold-plated 1/4" inputs around back, and the combo Neutrik inputs on front, with dedicated trim controls, and phantom on/off switches. I recorded a variety of vocals, synths, and live percussion through the unit, and was pleased on all counts. With vocals recorded directly though the 828mkII's mic preamps, it captured every nuance accurately and pristinely. But if you're looking for color, you'll want to consider adding a tube warmer or other tone-shaping device (be it hardware or software). As is, the 828mkII can be considered an "invisible partner." Not a bad thing at all — in fact it's ideal. But having combination tube/solid-state mic preamps (*a la* Presonus FireStation) would sure be sweet.

Frequent visits to Unicornation.com (an independent MOTU user's group forum) revealed that the majority of forum posts were also in favor of the sound of the 828mkII's preamps and converters. Some excerpts: "The preamps on the new units sound much better than before." "The preamps have more depth than the original 828." "The mkII sounds great; much better than the old 828."

CueMix: The supplied CueMix software made setting up mixes a breeze, and it was nice to be able to control the components of my studio without a host app running.

MIDI: Using the 828mkII with DP4 was a trouble-free, smooth experience. Well, except for one glitch: I had problems sending sys-ex patch files to my Waldorf MicroQ synth. MOTU is looking into the cause of this. Otherwise, my all-MOTU audio/MIDI sessions were frustration-free.

Complaints/wishes: Not many. There's no RCA analog I/O on the 828mkII as on the Digi 002 Rack, so if you plan to connect RCA-based devices such as CD players, you'll need adapters. A bit more annoying, but still relatively minor, is the location of the 828mkII's headphone jack, which is in a less-convenient position than MOTU's 2408mk3 or Digidesign's Digi 002R, for example. Rather than on the far left or right side of the module, the mkII's headphone jack is closer to the middle, where the cable can obscure other modules in your rack. The most substantial gripe, though, is that MIDI I/O doesn't work under OS 9, which is significant for MIDI users who haven't upgraded to OS X yet. Then again, those still on OS 9 will need to consider upgrading sooner than later, or risk being left in the dust.

JURY

More than just solid performance at a nice price, the 828mkII offers near-atomic bang for the buck. Don't let its slim size fool you — this is one powerhouse product, and with a deceivingly low price that will

World Radio History

likely lure a contingent of budget-conscious buyers who may only use a fraction of its features. But no matter the depth of use — whether for audio, MIDI, digital, sync, or all of the above — the 828mkII is bound to please.

As a FireWire computer companion, the mkII is unsurpassed in its price range. What sweetens the deal even more is its ability to work untethered from a computer. The standalone programmability and performance of this box are fantastic. Navigating menus using the mini knobs in conjunction with an LCD clearly it isn't as elegant as a full-blown mixer, where every parameter is within easy fingers' reach. But once you learn your way around the mkII's functions, and program a few of your own mix templates, you'll be flying solo in no time. The included CueMix Console mini app makes programming all the easier.

There are other multi-faceted FireWire I/O racks on the market worth investigating: Presonus's Firestation ($999) and Digidesign's 002 Rack ($1,295) to name two. The Firestation is a gorgeous unit, with combination tube/solid-state mic preamps, but it's currently priced higher than the 828mkII, has fewer channels, tops out at 48 kHz, and lacks SMPTE I/O. Digi 002R, the highest priced of the three, includes a free version of Pro Tools 6 software and has two more mic preamps than the others, but it lacks sync, front-panel metering, and the standalone mixing abilities of the 828mkII. All factors taken into account, the 828mkII offers the most features and versatility of any FireWire rack unit in its price range and beyond. High marks for MOTU. EQ

Strengths:

- Big bang for the buck
- Standalone programmability and mixing
- SMPTE and Word clock I/O
- No-latency monitoring
- Front-panel mic preamps with phantom power
- Front-panel audio and MIDI metering
- Bundled software and sounds

Limitations:

- No MIDI I/O if used with Mac OS 9
- No RCA I/O
- Awkward headphone jack placement
- No tube mic-pre option

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Yamaha 01V96

Yamaha's small-format digital console gets a big upgrade

by Mitch Gallagher

Type: Digital mixer
Price: $2,499
Contact: Yamaha, www.yamaha.com

Inputs: 12 XLR mic/line level, 16 balanced 1/4" line level, stereo 2-track (RCA), 8-channel ADAT optical, stereo S/PDIF (RCA)
Outputs: Stereo master (XLR), stereo 2-track (RCA), stereo monitor (balanced 1/4"), 8-channel ADAT optical, four Omni out (balanced 1/4"), headphones (1/4")
Other connections: 12 TRS 1/4" inserts, MIDI in/out/thru, word clock in/out (BNC), USB
Faders: Seventeen 100-mm motorized faders
Channels: 32 input, 4 ST IN (internal stereo input)
Buses: 8 bus outs, 8 aux sends
Per-channel Processing: 4-band EQ, dynamics (compressor, expander), gate, delay
Internal Effects: 4 stereo multi-effects processors
Automation: 99 scene memories
Remote control: MIDI, MMC, USB, bundled Studio Manager software
Options: RK1 Rack Mount Kit. Single mini-YGDAI card slot can hold one card. Available cards include: 4- and 8-channel A/D, 4- and 8-channel D/A, 8- and 16-channel AES/EBU I/O, 8- and 16-channel ADAT optical I/O, 8-channel TDIF I/O, and 8-channel mLAN

I purchased my original Yamaha 01V digital mixer years ago . . . I've gotten a ton of use out of it, as a synth submixer, as a front-end and mixdown box for various DAW and computer audio apps, for recording to ADATs and lightpipe recorders, and as a latency-free monitor/headphone mixer during tracking sessions. I've even taken it out and used it for small live sound gigs. To say I've gotten my money's worth would be an understatement.

Now Yamaha has released the 01V96, a substantially upgraded version of the 01V. (The original 01V remains available at this writing.) So what's new, aside from a cool darker finish and 96 kHz support? Tons of stuff — rather than spend valuable space to list it all here, take a gander at the product summary and at the chart (page 68), which summarizes many of the major differences between the 01V and the 01V96.

MIX MASTER

There's so much new stuff going on in the 01V96 that it's a bit difficult to know where to begin. The user interface has been enhanced greatly. There are now more dedicated knobs for specific functions (such as a master solo defeat button and status LED), soft and scroll keys under the much-larger display (less button pushing to get to a particular screen), eight user-definable keys for things such as controlling a hardware recorder through MMC messages, and so on. There's also scene recall buttons, and more.

A big change is the move to full-length100-mm motorized faders. It's so much easier to mix with these longer-throw sliders than with the old 60-mm controls. Each analog input has both a signal present LED and peak/overload LED.

Many of my complaints about the original 01V have been addressed, such as the inclusion of analog insert points on the first 12 analog inputs. (You could always create inserts using an Omni out and a channel input, but this is easier, and also pre-A/D conversion.) The increase to eight buses makes tracking and mixing much easier; you can also now subgroup channels, and there are eight fader and eight mute groups.

The 01V96 includes eight channels of ADAT I/O standard, and the option card slot lets you add up to 16 more channels of digital I/O (or you can add more analog ins or outs). Thus, you can have a total of up to 24 digital inputs to the mixer and eight analog inputs, or you can configure for up to 24 analog and eight digital inputs. There's also eight internal "ST IN" channels that can be used as effects returns for the internal processors or as subgroup masters.

All of this adds up to a small-format mixer that's *much* more capable than its predecessor. The 01V96 should be right at home serving as a mixer with a 24-channel hard disk recorder such as those from Alesis, Mackie, TASCAM, or iZ, and it can also serve as a nice hardware mixer for DAW rigs.

The sound quality has been improved throughout. The 01V certainly sounded fine, but the 01V96 is all-around a bit cleaner, clearer, and more "real" sounding. Having four effects processors expands the possibilities without having to go out to external gear, and the onboard channel processing sounds

LIKE THE ORIGINAL 01V, THE 01V96 HAS BOTH XLR AND 1/4" CONNECTORS FOR ITS BUILT-IN ANALOG INPUT CHANNELS. THE 01V96 ADDS 12 ANALOG INSERT POINTS AS WELL AS SIGNAL PRESENT AND PEAK LEVEL LED METERS.

World Radio History

THE HEMI-HEADS ARE HERE!

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▲ Area 51

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"ADK Commemorative Tube Mics are a Gas! We used them with the Cincinnati Pops Orchestra and our Vocals Really Soared!!"

–Tim Hauser, Vocalist, Manhattan Transfer

"I use ADK LE Matched Pairs for recording my toms, and two ADK Transformerless for overheads. Warm and accurate, the perfect complement to my sound!"

–Joel Rosenblatt, Spyro Gyra Drummer

"The sound is huge and wide open when tracking vocals. The accurate and transparent sound reproduction, especially on the acoustic grand piano, is nothing short of amazing!"

–Dale Sticha
Piano Tech for Sir Elton John

"I've now used the ADK Microphones on almost everything including vocals, guitars, and drums. They remind me of very expensive German mics I have tracked with before."

–Adam Kasper, Producer/Engineer, Cat Power, REM, Pearl Jam, Soundgarden, Foo Fighters

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"We took ADK Microphones on our Christmas tour last year with Jaci Velasquez. The entire band was totally impressed by the sound! From the violins to percussion, ADK covered it all. We will be using these mics again in future tours."

–Jay Lipschutz, FOH Engineer, Jaci Velasquez

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Yamaha 01V96

better too — the new EQ algorithm is nice. Routing has been made even more versatile; you can route just about anything anywhere.

Surround mixing is included, too. While it's functional, it falls short for serious work. The biggest drawback is that while you can route six channels out of the mixer using the stereo monitor outs and the four multi-purpose Omni outs, or using six of the card slot outs, there's no surround level control. And while there's an LFE control in the surround panner, there's no bass management.

On the plus side, the 01V96 has a variety of "trajectory" surround panning paths that let you move the audio source through the surround field in various curves and directions; unfortunately, you have to use the parameter wheel to move through the trajectory. A joystick would be a most welcome addition. A better solution is to use the Studio Manager software to set up surround panning.

The 01V96 can double as a control surface for DAWs and other computer apps. It has predefined maps for Pro Tools and Nuendo, as well as a general "Pro Tools-compatible" map. For other applications, you can create your own map, assigning faders to various MIDI messages. This lets you target any software that can accept MIDI messages.

STUDIO MANAGER

The 01V96 comes bundled with Yamaha's Studio Manager software, which gives you control over the mixer via USB or MIDI. Both Mac (G3/233 MHz or faster, OS 8.6-9.2.2 — no OS X yet) and PC (Pentium/Celeron, 433 MHz or faster, Win 98se, Me, 2000, XP Home/Pro) are supported. The connection is 2-way — if you move a fader on the board, a fader moves on the screen, and vice-versa. The main screen gives you an overview, while various editors show what's going on in more specific areas. To open an editor, you either have to mouse up to the menu bar or use a key command; you can't just double-click in the main screen.

So what's new, aside from a cool darker finish and 96 kHz support? Tons of stuff.

Studio Manager is a remote-control application, not automation. This means that you can change settings with your mouse, select scenes, and monitor what's going on in the mixer from your computer.

Out With the Old, In With the New

THE 01V96 ADDS MANY NEW FEATURES OVER THE ORIGINAL 01V. HERE'S A RUNDOWN OF SOME OF THE CHANGES.

	01V	01V96
Hardware Inputs	24	32
Channels	28	40
Buses/Auxes	4/4	8/8
Motorized Faders	15	17
Fader Length	60-mm	100-mm
Fader/Mute groups	3/3	8/8
Effects Processors	2 stereo multi-effects	4 stereo multi-effects (2 @ 96 kHz)
Sample Rate	44.1, 48 kHz	44.1, 48, 88.2, 96 kHz
Converters	20-bit, 128x oversampling	24-bit, 128x oversampling
Frequency response	20 Hz to 20 kHz	20 Hz to 40 kHz @ 96 kHz
Analog inserts	0	12
8-channel ADAT optical I/O	Mini-YGDAI card option	Built-in
Display	320x80 LCD	320x240 LCD
Computer I/O port	Serial	USB
Bundled remote control software	No	Yes
Surround mixing	No	Yes
Soft keys	0	4
User-defined keys	0	8
Front-panel metering	Stereo LED ladder	Stereo LED ladder, signal present and peak LEDs per channel

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Serious vocoding needed? Waldorf, legendary makers of the Microwave, Q and other amazing synthesizers, have created the D-Coder especially for PowerCore. D-Coder offers up to 100 vocoding bands, extensive modulation possibilities – and a built-in Synthesizer in Waldorf quality.

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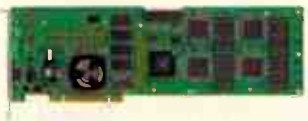
PowerCore is the open platform DSP engine for professional signal processing. Serious processing power that seamlessly integrates with any Audio Units- or VST-compatible host application. Available as PCI-card or external FireWire version.

PowerCore FireWire

PowerCore PCI



Includes Nine Virtual Processors: PowerCore comes with a complete production and mastering set of Plug-Ins: ClassicVerb, MegaReverb, MasterX3 Virtual Finalizer, 247C Limiting Amplifier, Vintage CL, VoiceStrip, Chorus/Delay, EQSat Custom and PowerCore 01 Synthesizer
Add even more: From mastering to restoration, inspiration to innovation. You can expand PowerCore with Plug-Ins by Sony Oxford, Waldorf, TC-Helicon, D-Sound or TC – New optional TC and 3rd party Plug-Ins are constantly being offered. 11 products are already available!

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but you can't automate fade ins/outs, etc.; for that you'll need a sequencer or other MIDI control application.

But even without automation, Studio Manager is a godsend. Seeing all of a channel's parameters at a glance is useful, and being able to manage and create libraries and scenes from a computer feels natural to those of us raised in the computer age.

FINAL MIX

Let's see: more I/O, more channels, more effects, better hands-on control, longer faders, bundled software, control surface capability, bigger display, built-in ADAT I/O, not much more money — oh yeah, and improved audio quality . . . should I give the 01V96 a positive review? All joking aside, the 01V96 is better than the original in literally every way. While the list price is higher than the original by $300, you could argue that just the inclusion of ADAT I/O — a $329 option on the 01V — makes up the difference. And that's before you start adding in all the other hardware and software enhancements included.

While the 01V96 is clearly related to and builds on the legacy of the original 01V, like the 02R96's relationship to the original 02R, we're really talking about an entirely new board here. Pretty much everything has been improved and expanded, except the size of the box. How they managed to fit it all in there is anybody's guess. At this point, I just have one question: Anybody wanna buy a used 01V?

Strengths:

- Great sound quality
- 40 channels, 8 buses, 4 effects processors, 12 analog inserts
- Many new function/soft/definable front-panel switches
- Larger display
- Can serve as a control surface
- Surround mixing support
- Studio Manager software included
- High sample rate support

Limitations:

- Currently no OS X support for Studio Manager
- Can't double-click to open editor windows in Studio Manager
- Plugging into Channel Input B (1/4" connector) disconnects Input A (XLR), no way to switch between inputs
- Surround mixing is functional, but not stellar

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*OK, way, WAY under (MSRP $999)

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Sony Pictures Digital Vegas 4.0

It's still easy to use, but does a lot more

by Craig Anderton

web link

Type: Video/audio capturing and editing software
Platform: Windows
Price: $699.95 ($489 download and $559 boxed version direct from Sony Pictures Digital)
Contact: www.sony.com/mediasoftware

Minimum requirements: Windows 98/ME/2k/XP, Pentium 400, 128 MB RAM, OHCI-compliant IEEE-1394/DV capture card
Copy protection: Product activation through company
Version reviewed: 4.0d
Supported sampling rates: 8–192 kHz in standard increments
Internal resolution: 8-, 16-, 24-bit
Driver support: Microsoft Mapper, Direct Sound, Windows Classic Wave, ASIO
Audio plug-in support: DirectX
Audio import formats: WAV, AIFF, WMA, MP3, OGG, PCA
Video export formats: MOV, WMV, RM, AVI, MPEG-2, Still image sequence

When I started working with computer-based video, I encountered simple programs with frustrating limitations, and sophisticated programs that induced "brain overload." But then I got lucky, met Vegas, and have been working with it ever since. Over the years, with each update Vegas has gotten better, more feature-laden, and let me produce better results. Version 4 is no exception.

This review will concentrate on what it's like to create with Vegas, particularly from an audio person's viewpoint. Ultimately, I suspect I like Vegas not so much because it's a great video program — although people who know video assure me it is — but because it's a great video program for people who come from an audio background.

First, though, let's hit the new features.

SOMETHING OLD, SOMETHING NEW. . . .

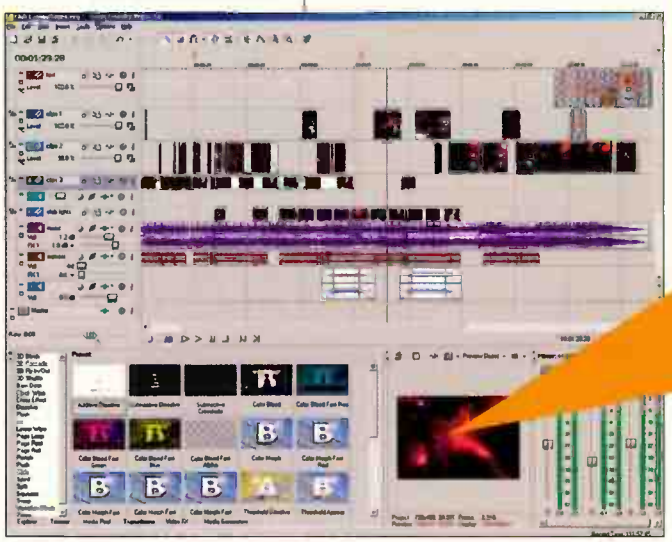
As this isn't a video magazine, I'll just touch on the video improvements. To start, the new color correctors are like three-band EQ for color as you can change hue and saturation for low, mid, and high tones. This goes well beyond the usual brightness, contrast, and color balance types of controls.

There are several new transitions (I particularly like the 3D ones) and effects. The "TV simulator" effect is a riot — remember the effects in "Independence Day" when the aliens messed up the TV transmissions? You can do all those effects in Vegas. I mention this not because this is the World's Most Needed Special Effect, but it indicates the kind of creative thinking that permeates the program.

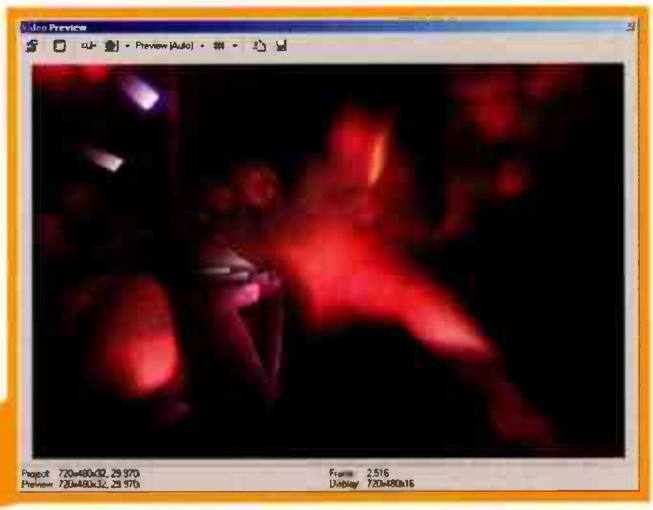
The new Noise Texture generator is more practical, and produces textures that resemble clouds, marble, wood, stripes, and much more. Like almost everything in Vegas, the dialog box has a timeline where you can set the equivalent of "effect keyframes," and the program morphs between them over time. For example, I created a noise texture with clouds, and made them change and eventually dissipate over about 10 seconds. You could create a whole impressionistic video using just this generator.

The video bus feature works like an audio bus — it can process the combination of all video tracks. For example, if you need to bump up the brightness for the entire video, this is the easiest way to do it. Also cool: Supersampling, which calculates intermediate frames to smooth the motion of slow-motion and computer-generated animation.

You can set up a parent/child relationship between video clips where if you apply an effect, the characteristics of one affect the results in the other (think of it as "video vocoding" or "video



THE UNIFIED WORKSPACE SHOWS VIDEO AND AUDIO TRACKS, AS WELL AS OTHER PROGRAM VIEWS. THE SELECTION OF AVAILABLE DISSOLVE TRANSITIONS IS VISIBLE IN THE LOWER LEFT; DRAG ONE INTO THE JUNCTION OF TWO VIDEO CLIPS TO TRANSITION FROM ONE CLIP TO ANOTHER. YOU CAN ALSO DRAG AUDIO OR VIDEO CLIPS INTO THE WORKSPACE. THE LOWER RIGHT SHOWS THE MASTER BUS AND ONE AUX BUS, WHICH HAS REVERB ASSIGNED.



YOU CAN FLOAT SEVERAL VIEWS, WHICH IS GREAT WITH DUAL-MONITOR SETUPS. HERE THE VIDEO PREVIEW WINDOW SHOWS PERFORMER JAY VANNACUT AT COLOGNE'S CLUB CAMOUFLAGE, WHERE HE IS ABOUT TO DISSOLVE INTO LIGHT RAYS COURTESY OF A VEGAS VIDEO FILTER.

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THINK YOUR PASSIVE MONITORS STILL PERFORM TO SPEC?

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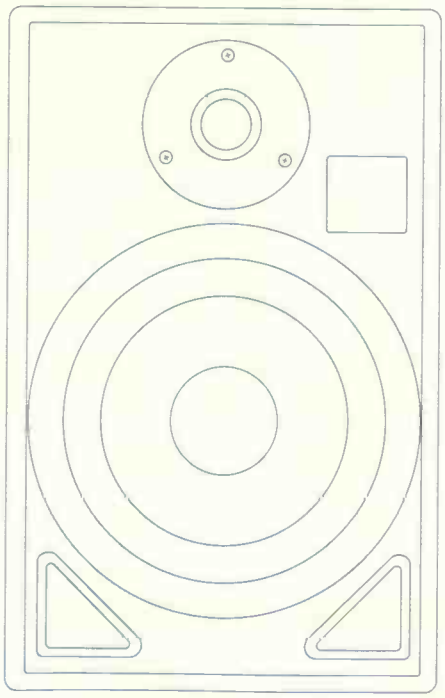

THINK AGAIN.

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Sony Pictures Digital Vegas 4.0

Does Vegas Cut it for Audio Only?

Once upon a time, Vegas was available in audio and video versions. The audio was folded into the video, which is where things stand today. Vegas is a capable audio-only program, but lacks several features that most audio people expect: control surface support, MIDI, soft synth support, and the ability to read Acidized WAV or REX2 files. There's also no "conventional mixer" view, just the linear track view controls. Version 4's buses are a welcome addition, but accessing them is not as convenient as most audio-only programs.

Bottom line: If you're replacing a tape deck, Vegas will seem god-like. But compared to today's advanced audio-only programs, it comes up short. Not by much, though. . . .

ring modulation"). On the convenience front, you can copy and paste event attributes (finally!), and determine whether video effects follow along with pan and zoom.

As to audio, Vegas 4 adds 5.1 surround mixing, automatable surround panners in the tracks, envelope automation for supported DirectX plug-ins (14 are included; I couldn't get any other DirectX effects to automate), ASIO driver support, input monitor while recording, and bus tracks for master, aux, and effects. The bus thing is great — it used to bug me to fade out each individual track to create a fade. Now I just assign them to the bus, and use its volume automation envelope.

Vegas still doesn't do Acid-like time-stretching, but you can stretch length, pitch, or both for audio events. There are also some efficiency-oriented changes, like improved ripple editing (where moving a clip causes related clips to move as well), and cursor preview (hit 0 on your keyboard and Vegas plays a few seconds around the cursor).

Finally, there are cool split-screen options where you can see the in and out points of events, or compare the results of a video effect with the unprocessed clip.

Other improvements relate to managing clips, as well as optional-at-extra-cost goodies (integration with DVD Architect, and AC-3 encoding using the Sonic Foundry 5.1 Surround Plug-In Pack).

THE INTERFACE

Sonic Foundry has the interface recipe down. Vegas has the same unified interface as Acid, where most of the work occurs in a track view that nominally occupies the upper part of the screen. Other editing views, selected by clicking on tabs, appear in the lower part. These editing views can slide over one another to reveal more of a particular view but some can also be "floated," which is great with dual monitor setups. I usually float the video preview window over to the second screen, so it doesn't get in the way of other editing functions.

Audio and video clips are treated as interchangeably as possible. You cut, copy, paste, solo, mute, etc. using the same tools and the same buttons. Just don't expect shadows or other eye candy; the interface, though not unattractive, is designed purely for efficiency.

CREATION

Vegas includes a companion video capture program. Once your DV is hooked into your FireWire card, VidCap can take control over the camera transport, and capture pieces of video, frames, or an entire tape.

Pay attention to where you want video clips to end up — video takes a lot of space, so make sure everything is going to the right folder. Also, when you're saving clips, there's a Rename All function. Take advantage of this to give your clips a more meaningful description than just a generic name.

To use your clips in a project, go to the Explorer tab, and drag them from the Explorer-type window into the desired track. You can create any number of audio and video tracks; cutting, copying, crossfading, and other common features are intuitive and work just like audio.

EFFECTS

Adding effects is simple. For transitions (*e.g.*, a clip dissolves into another clip), you drag a transition (found under the Transitions tab) into the junction of two clips. Holding your mouse over a transition before dragging it activates an animation that shows the transition's effect.

Plug-in effects (video or audio) are handled similarly: Click on a track's plug-in

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Passion for Perfection

Radial - The World's Finest Direct Boxes

"Radial DI's are smooth and clean. My sound is my bass, my amp and my Radial DI!"
~ Chuck Rainey (Miles Davis, Steely Dan, Quincy Jones)

"Radial DI's don't change the colour of my bass. They retain the characteristic of the instrument."
~ Alain Caron (Mike Stern, Gino Vanelli)

"The bass comes through extremely clean, very quiet, and with a smooth transparent low end. I use my Radial DI for everything."
~ Tony Levin (Peter Gabriel, King Crimson, Pink Floyd)

"The JDV was the hands-down winner."
~ MIX

The difference between good musicians and great artists is the passion that they bring to the music. The world's top bass players don't just lay down a track, they inspire the performance and take it to a higher level. This same passion for perfection is the very foundation that sets Radial Direct Boxes apart. Our passion to get things right is evident in every product that we build.

"... completely transparent. An excellent DI box that will keep working even after the bands' van drives over it."
~ EQ magazine

"Radial gives you the natural sound you only get with a very high quality box!"
~ Jimmy Haslip (John Scofield, Robben Ford, Donald Fagan)

"My Radial DI is crystal clear and easily configures to the most elaborate set-ups; I love it and use it every day!"
~ Billy Sheehan (Steve Vai, Mr Big, voted 5 times Guitar Player 'best rock bass player')

"No matter what type of signal I put through them, the Radial DI's sounded round and natural. ... Radial Engineering has done a superb job with these DI's.."
~ Keyboard magazine

"... I can say without hesitation that you won't find anything out there offering better performance or more durability for the money."
~ Electronic Musician

And build them right, we do!
The DI box is 'the connection' between the artist, the instrument and the audience. Some will spend thousands on gear only to have their sound completely ruined by a lousy direct box. Pros know how important a good DI is to great sound. And it's particularly critical on bass.

Think about it... The power is in the bass.
PA systems need as much as ten times more power for bass than high frequencies. And bass is severely affected by phase distortion and dynamics. Radial direct boxes are designed to handle powerful bass signals without choking or introducing distortion. Huge internal rail voltages, massive storage capacitors, the finest components and innovative, ultra-clean circuit designs are the cornerstones of Radial design philosophy. You get the pure, natural sound of your instrument without coloration. Nothing added - Nothing lost.

But don't just take our word for it...
Listen to the pros. Radial direct boxes are so good, they have won every DI shootout by every magazine that has ever been done. The artists using Radial DI's are among the most respected in the business and these great players are as passionate about their sound as we are about making great DI's. And this passion for perfection is the very substance of great sounding bass.

"The Radial DI gave me a special sound that was natural, with a fine presence... The engineer said 'What is that? I've got to get one!' "
~ Will Lee (Letterman, Show, Billy Joel)

"The JDI is a vision of purity, the platonic ideal of DI's."
~ Recording

"... the bottom end was thunderous and tight. The top exhibited an openness I have yet to hear with any other DI. It literally sounded like I put new strings on the bass."
~ Professional Sound

"My bass sounded better than I had ever heard it sound. It came to life, natural, pure and plenty of level."
~ Mark Egan (Pat Methaney, Sting)

"The Radial design team understands the needs of engineers.. and knows how to make a product to meet them."
~ Pro Audio Review

"...dramatically better sound, more defined attack, richer bottom, almost 'holophonic' ...it seemed to step out of the speakers."
~ Khaliq Glover (Markus Miller, Herbie Hancock)

"...DI's should add nothing and take nothing away... The Radial has proven its worth; I bought a couple!"
~ Audio Media magazine

"Top tone, best built, most innovative... The Radial JDI can handle any situation."
~ Bass Player magazine

Radial JDI

Exceptional signal handling, low noise and virtually zero phase deviation, the Radial JDI features a Jensen Transformer for smooth, distortion-free performance. The JDI is the industry standard passive direct box, it is ideal for reducing ground hum and buzz. You can hit the JDI with huge levels and it handles them effortlessly. Plug and play easy, the JDI is the engineer's dream DI. List $200.

Radial J48

Developed specifically for use with the limited current from 48V phantom power, the Radial J48 is capable of exceptional level handling and dynamics without choking. The internal rail voltage is stepped up using an internal switching supply that allows input levels to 9-volts before distortion. Smooth, natural sound, with extra 'reach' the Radial J48 is perfect for live and studio. List $200.

Radial JDV Mark-3

The JDV breaks all the rules by turning the DI box into a signal distribution hub. Dual inputs, direct out for the main amp, dual aux outputs for a stereo rig or effects, and a tuner out. Now, the musician can work inside his own creative zone while the engineer gets pristine, unaffected sound. And sound you will get! The JDV features our proprietary Class-A 'feed-forward' design with huge 30-volt internal rails for unprecedented performance. As engineer Khaliq Glover (Marcus Miller - Herbie Hancock) stated: "Until I plugged in the JDV, I never realized how much impact a DI could have. Compared to other DIs, the Radial JDV is almost holophonic" List $450.

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World Radio History

Sony Pictures Digital Vegas 4.0

icon and add it to a chain. Parallel effects aren't possible, but you can clone a track and each can have its own effect. Incidentally, Cakewalk's VST-DX adapter allows using VST audio effects.

Like transitions, video FX also show up with little animated thumbnails so you can understand what the effect does without actually calling it up and applying it. However, you can't check how it looks by doing a temporary partial rendering (the preview sometimes bogs down with complex effects); you have to render that part to disk, then open it and look at it.

VEGAS, BABY!

One very pleasant "feature" is that under XP, Vegas is beyond rock solid — it hasn't crashed in *months*. That's amazing, considering how much I abuse it.

As an audio guy lost in a video world, Vegas got me up to speed with its totally intuitive operation. The latest version adds a lot of new features, but they don't get in the way; you can learn them at your own pace.

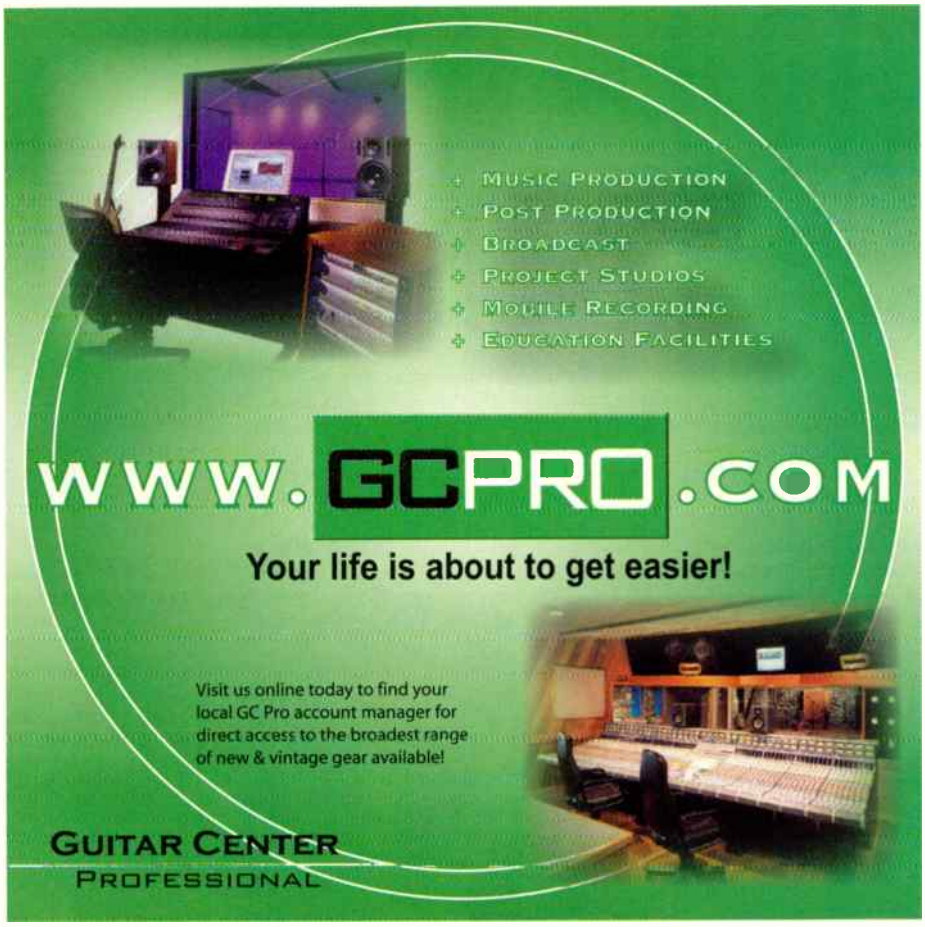
Vegas is a bit deceptive — there are only seven menu bar options, and their menus aren't all that long, so you might think there's not a lot going on. But this is a brilliantly designed and executed program. You can skim the surface and throw together a video in minutes, or dive as deep as you like. Vegas has earned its prominent place in my audio for video setup, and as long as upgrades like this keep coming, I feel no need to look anywhere else. EQ

Strengths:

- Efficient, intuitive interface
- Facile handling of video and audio
- Accepts DirectX plug-ins and provides 14 automatable FX
- 5.1 surround mixing
- Pitch and time stretch
- Buses for video and audio (aux, master)
- Useful transitions and generated media
- Renders to a variety of formats
- Supports hi-resolution audio

Limitations:

- Lacks some features of audio-only programs (MIDI, REX2 or Acidized WAV support, VSTi support)
- No control surface support
- ASIO essential for low-latency audio performance
- No partial rendering when testing edits



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World Radio History

Roland M-1000

Swiss-army knife digital mixer

by Mitch Gallagher

Type: Rackmount digital mixer
Price: $695
Contact: Roland, www.rolandus.com

Channels: 10 (five stereo pairs)
Inputs: 4 coaxial (RCA) digital in, optical digital in, stereo 1/4" unbalanced analog in (switchable –10 or +4)
Outputs: stereo XLR balanced analog out, stereo 1/4" unbalanced analog out, coaxial (RCA) digital out, optical digital out
Other connectors: USB, word clock in and out, 1/4" headphones
Supported USB drivers: Sound Manager (Mac OS 8.6 or higher), ASIO (Mac OS 8.6 or higher), Core Audio (Mac OS X 10.1.5 or higher), generic Windows driver (Me/98), WDM and MME (XP/2000)

With the proliferation of digital audio sources in today's studio, it's become increasingly necessary to have some device that can manage all those digital outputs, allowing you to monitor and in some cases mix them together. Digital patch bays work if all you need is routing ability. A large-format "traditional" digital mixer works, but may be overkill if all you want is to combine signals and monitor them.

If your needs fall into the "combine and monitor" category, the Roland M-1000 may be just what you need. It's a 1U box that can accept 10 channels of input. Those ten channels are arranged as five stereo pairs; inputs can come from a pair of analog ins, or four S/PDIF-format stereo digital ins. The first digital input can accept either optical or coaxial (RCA) input, stereo ins 2 and 3 are coax ins, and input 4 can accept either coax input or — surprise — can connect to a computer via USB. This allows the M-1000 to serve as a 2-channel Mac or PC audio interface.

Resolutions up to 24 bits and sample rates up to 96 kHz are supported. The M-1000 can lock to a variety of clock sources, including digital input 1, external word clock (with switchable 75W termination and "word clock thru"), or the unit's internal clock. It would be nice if digital inputs 2, 3, and 4 could also serve as a clock source. However, incoming digital signals on all inputs are automatically "re-clocked" to the Roland, which sounds fine. Each input also has built-in sample rate conversion, which sounds pretty good.

If you're using the M-1000 with a computer, USB automatically serves as the clock source. Too bad you can't lock to word clock when using USB. Another bummer is that you have to quit your audio software, and power-cycle the M-1000 when changing USB sample rates. On the plus side, an "advanced" USB driver is provided that allows for 96 kHz operation over USB (single direction only).

Another negative is that you must either turn off your computer or physically disconnect the USB cable from the back of the unit in order to use digital input 4. It would be far more convenient if you could change to using digital input 4 using a front-panel switch.

IN USE

I used the M-1000 both as a straight-ahead digital mixer to variously combine and monitor signals from Mac (coax) and PC (optical) audio interfaces as well as a CD player, DAT machine, Alesis MasterLink, and a Yamaha 01V digital mixer. I also put the analog inputs to work on a number of sources. The M-1000 is clean, quiet, and works perfectly in this type of application. I monitored both the analog and digital outputs. The analog outs sound fine: clear and uncolored. The digital outs, both coaxial and optical, interfaced perfectly with my reference Benchmark D/A converter.

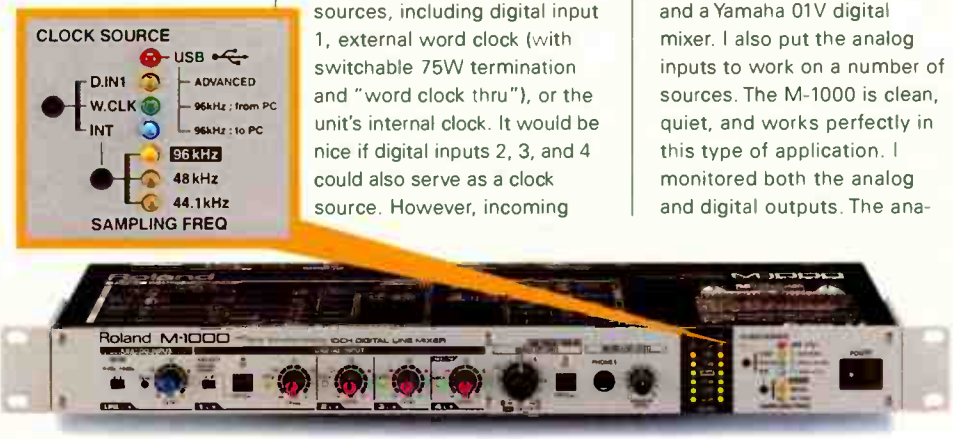
As a USB computer interface, I used the M-1000 with a dual-1 GHz G4 Mac running OS X. Software included everything from iTunes to Reason to Nuendo. Whether for simple stereo playback/monitoring or for tracking/overdubbing, the M-1000 was easy to use and worked great. For certain applications, you may have to futz a bit with buffer settings, and there is, of course, some latency when overdubbing, but overall, it doesn't get much easier than this.

For those struggling with an increasing number of digital signals that need to be mixed and monitored, the M-1000 is a godsend. The fact that it can also serve as a straight-ahead computer interface and can sample rate convert, re-clock signals, and accept stereo analog signals makes the M-1000 even more valuable as a studio Swiss army knife. EQ

Strengths:
- Works as a 2-channel USB interface for Mac or PC
- Will lock to various clock sources.
- Sample rate conversion on all inputs
- Up to 24-bit/96 kHz operation
- Can adjust/blend levels of digital inputs and outputs, including USB

Limitations:
- Must unplug USB or turn off computer to use digital input 4
- Must turn power off/on to change USB settings
- Optical ports are on front panel
- Digital inputs 2, 3, 4 can't serve as clock source
- When used with USB, can only lock to clock from computer

THE M-1000 CAN LOCK TO A VARIETY OF CLOCK SOURCES, INCLUDING USB FROM A MAC OR PC.



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World Radio History

Apogee Big Ben

192 kHz master word clock

by Mitch Gallagher

Type: Master digital clock source/distribution system
Price: $1,495
Contact: Apogee Digital, www.apogeedigital.com

Inputs: 2 AES (XLR), S/PDIF (RCA), S/PDIF/ADAT/SMUX (optical) word clock (BNC)
Outputs: 2 AES (XLR), S/PDIF (RCA), S/PDIF/ADAT/SMUX (optical), 6 word clock (BNC)
Clock frequencies: 44.1, 48, 88.2, 96, 176, 192 kHz, Superclock, DSD
Options: FireWire card

The clocks built into digital gear have certainly improved over the years, but as a rig reaches a certain size and level, it becomes more and more important to have a central clock that can be referenced. As important is a good means to distribute the clock to the system without degrading it.

Apogee's Big Ben is intended to be the last word in digital clock. More than just a stable clock reference, it can process external clocks, convert clock formats, and distribute clock to up to ten different devices. And there's even more lurking under the hood.

VITAL REFERENCE

Big Ben uses Apogee's C777 Clock Technology to generate clock frequencies whose jitter is said to be virtually unmeasurable. In addition to its own internal clock, Big Ben can accept clock signals from external sources and optimize them to reduce jitter. The range of clock rates supported includes 44.1, 48, 88.2, 96, 176, and 192 kHz. 256x Superclock is also supported, as is DSD. All sample rates can be pulled-up/pulled-down or "VSOed" as much as −44/+78% for ±999 cents of pitch change (displayed as frequency, percent change, or cents).

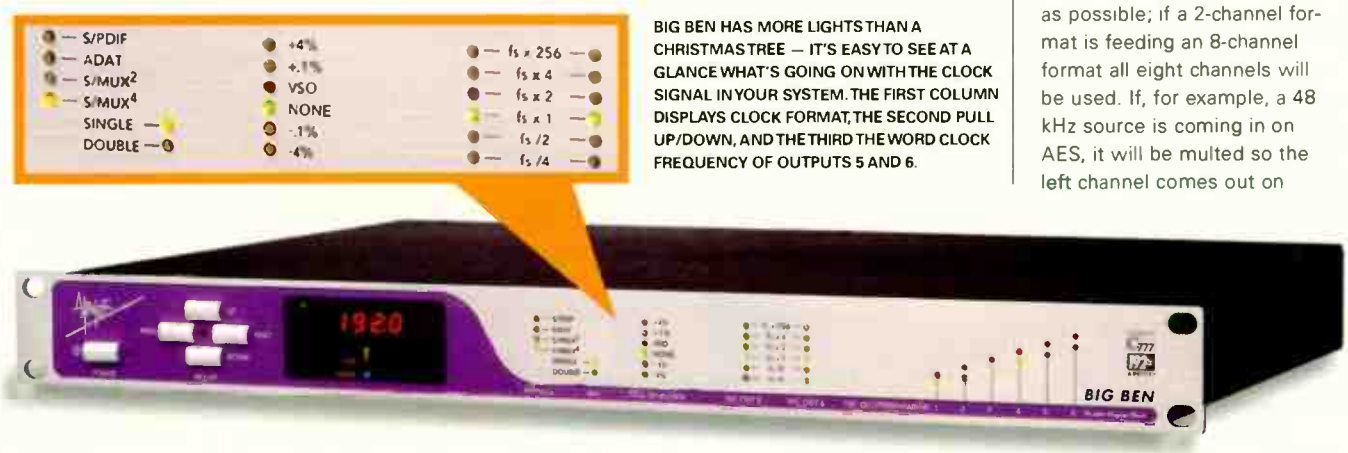
A feature called "SureLock" ensures that should the external clock fail, Big Ben's outputs will remain stable — sort of like AC power conditioning and un-interruptible power backup for digital clock.

Big Ben can accept a variety of digital formats: AES, S/PDIF, word clock, video, ADAT, and with an option card, FireWire. Output can be in any or all of the preceding formats. There's support for high-frequency clocks in multiple formats, including single- and dual-wire AES, S/MUX 2 (four channels of 88.2 or 96 kHz carried over ADAT optical), and S/MUX 4 (two channels of 176.4 or 192 kHz carried over ADAT optical). Four of the word clock outs transmit regular frequency clocks, while the remaining two can also send DSD or multiples of the clock frequency up to 256x (Superclock).

If you're working with video, Big Ben can lock to video up to 192k, and Apogee says that it can even generate DSD clocks synced to video (I was unable to test DSD operation). Big Ben will automatically detect the video format (NTSC, PAL, or B&W). Apogee has designed it to support non-standard combinations of format and pull-up/pull-down (*e.g.*, NTSC ±4%) for those sessions where you might have to deal with someone in the production chain who either made a mistake or didn't know what they were doing.

Clock can be converted from one format to another. In fact, Big Ben can send clock out in any format that supports the incoming sample rate. For example, an incoming coaxial S/PDIF 192 kHz clock could go out on single-wire or double-wire AES, S/PDIF (coax), S/MUX 4, and on the word clock outs. However, it couldn't be sent on optical S/PDIF, for example, since that format doesn't support 192 kHz. There are other exceptions as well; when Big Ben is using AES as a high-frequency clock source, AES can only be sent out in the same format. So at 192 kHz, you can't convert single-wire AES to dual-wire, and vice-versa.

When converting formats, the digital output format always fills as many channels as possible; if a 2-channel format is feeding an 8-channel format all eight channels will be used. If, for example, a 48 kHz source is coming in on AES, it will be multed so the left channel comes out on



BIG BEN HAS MORE LIGHTS THAN A CHRISTMAS TREE — IT'S EASY TO SEE AT A GLANCE WHAT'S GOING ON WITH THE CLOCK SIGNAL IN YOUR SYSTEM. THE FIRST COLUMN DISPLAYS CLOCK FORMAT, THE SECOND PULL UP/DOWN, AND THE THIRD THE WORD CLOCK FREQUENCY OF OUTPUTS 5 AND 6.

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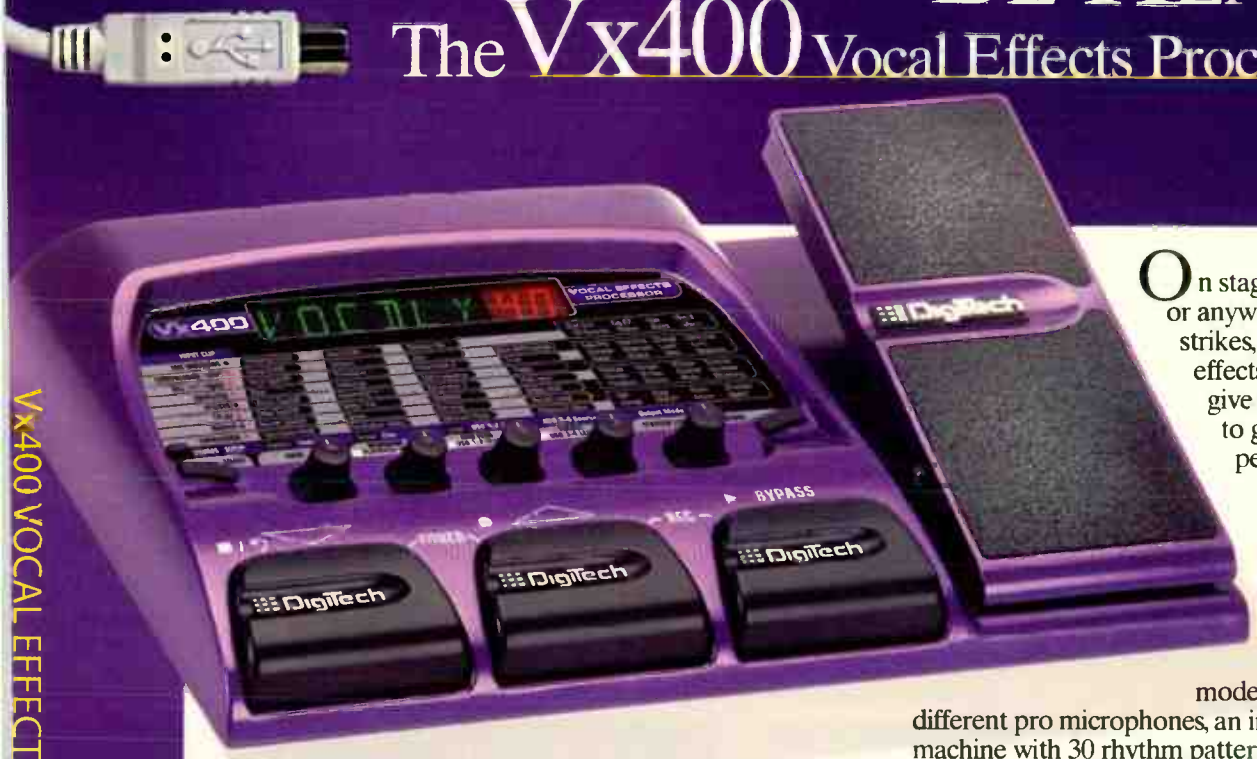
The Vx400 Vocal Effects Processor



On stage, in the studio, or anywhere inspiration strikes, the Vx400 vocal effects processor will give you all you need to get your perfect sound.

The Vx400 offers you the choice of multiple vocal "character" selections, modeling of 16 different pro microphones, an integrated drum machine with 30 rhythm patterns, 19 programmable instrument effects and more.

But you don't have to be an audio engineer to get the most out of the Vx400. Just plug your favorite mic, guitar, keyboard and CD player in, and you're ready to go.

The Vx400 also turns your computer into a professional, hands-free multi-track recording workstation. Whether you're working out the vocals for your first song or recording your next CD, the Vx400 gives you powerful, digital studio tools in a simple-to-use package.

Connect the Vx400 to your computer with the included USB cable, and you're laying down tracks and mixing your best piece to date.

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- Mic Modeling
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- 24-bit A/D/A converters
- 2-way USB Audio Interface
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- Pro Tracks™ Professional Recording Software
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- Stereo 1/4" Line Inputs
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- Balanced Stereo XLR Outputs
- CD/Monitor Input
- Chromatic Tuner
- Rugged Aluminum Chassis
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World Radio History

Apogee Big Ben

ADAT channels 1, 3, 5, and 7, and the right channel appears on 2, 4, 6, and 8. This works with SMUX2 and SMUX4 output as well.

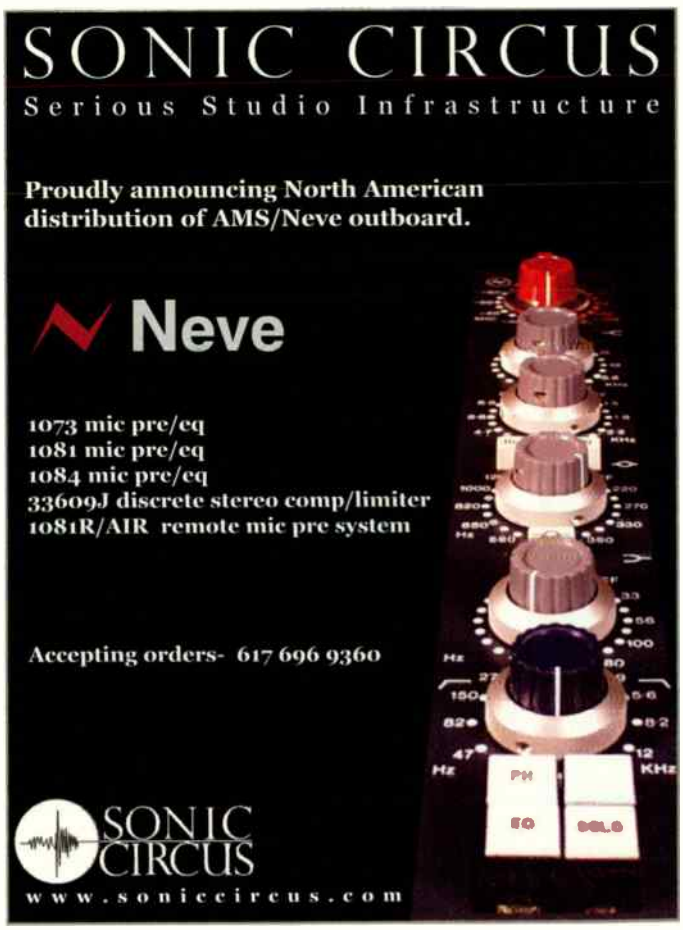
IN USE

Big Ben's user interface is quite simple, but can require a lot of button pushing. There's four buttons on the front panel. Two are used to move through seven parameters, two are used to scroll through the parameter values. For example, push once to select the input source parameter, and push repeatedly to scroll through the various sources. Push again to select sample rate for word clock output 6, push repeatedly to scroll through the available rates, etc.

I set up Big Ben as the heart of my rig, clocking digital recorders, effects, digital mixers, and computer interfaces. Big Ben worked fine for everything, but there are some features I really like, such as being able to stabilize S/PDIF and AES audio signals. I routed the S/PDIF out from my CD player to Big Ben, and selected it as the clock source. I routed the S/PDIF out from Big Ben to my A/D converter. Big Ben stabilizes the clock coming from the CD player, reducing jitter. There were immediate improvements such as increased clarity and depth. And when you multiply the improvement across numerous pieces of gear during tracking and again during mixing, there's no question the value of Big Ben — the difference is audible. Beyond the audio improvements — which are enough in and of themselves — having a system clocked to a central sources is a great thing. There's no need to change clock sources when moving from tracking to mixing or when changing the digital routing and configuration of your studio rig.

> Having a stable clock source is essential for today's digital-based studios.

When you're locking to an external clock source, Big Ben will give you an indication of how stable that incoming clock is with "narrow" and "wide" indicators. Most modern gear has a relatively stable clock built-in, but for those instances where you do find yourself having to lock your rig to something with a less-than-stellar internal clock, Big Ben can definitely up the clock quality, and in doing so, the audio quality. Apogee says that in most cases there's no discernable difference between using Big Ben's internal clock and locking to/optimizing even a poor quality external clock. This will be important to you if you're forced to sync your system to one of the many lower-priced effects boxes and synthesizers/samplers that have a digital out but no word clock or digital input. ➤



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World Radio History

Apogee Big Ben

It's cool to be able to verify the 75-ohm termination status for your word clock connections. Big Ben indicates no termination (no light), good termination (green light), and over-termination (red light).

The SureLock feature works well. If incoming clock fails, Big Ben continues sending out clock at the last received frequency. I ran a S/PDIF clock into Big Ben, and clocked the rest of my system from it. While audio was playing, I yanked (gently, of course) the S/PDIF cable. The result? No loss of lock anywhere in the rest of the rig. Note that if you lose lock and SureLock takes over, there can be hiccups when Big Ben restores lock back to the original incoming clock.

ON TIME

Having a stable clock source is essential for today's digital-based studios. There's the whole issue of reducing jitter for the sake of improving audio quality — this is Job One for any clock. But there are other considerations as well: Using a central clock removes the hassle of having to reset clock sources when tracking, mixing, or changing your gear configuration.

Apogee's Big Ben, along with most dedicated external clock sources, can provide excellent clock and allow for system configuration changes, although many of the others will require a separate clock distribution box, where Big Ben doesn't — and Big Ben's claimed unmeasurable jitter certainly raises the bar on audio quality. But all the extras that Big Ben throws in tip the balance: Being able to optimize external clocks is a *huge* deal — I've been waiting for this feature for a long time. Clock format conversion, ability to deal with high sample rates, video lock, word clock termination sensing, all very cool features. And let's not forget SureLock . . . if constant, glitch-free clock is essential for your studio or live rig, you'll instantly appreciate the value of this feature. Combine it with an un-interruptible AC power supply, and your rig can ride out the worst catastrophes without jeopardizing critical recordings. All in all, Big Ben is an amazing central digital clock system.

The final word? If you're looking to move to an external clock/distribution system, Apogee's Big Ben should be at the top of your must-check-out list. There are few (if any) clock sources/distributors/processors out there that can do as much and can do it as well — and can do it for this price. EQ

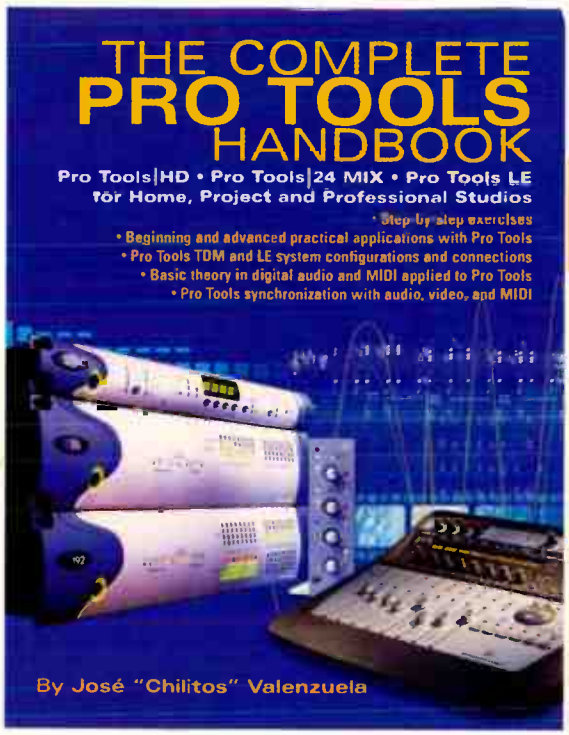
Strengths:

- Support for multiple formats
- Termination verification
- High-frequency clocking
- Multiple clock outs
- Format conversion
- SureLock maintains clock even with loss of input

Limitations:

- After SureLock takes over, there may be glitches when incoming clock is restored
- High sample rate single-wire AES can't be format-changed to dual-wire AES, and vice-versa

World Radio History



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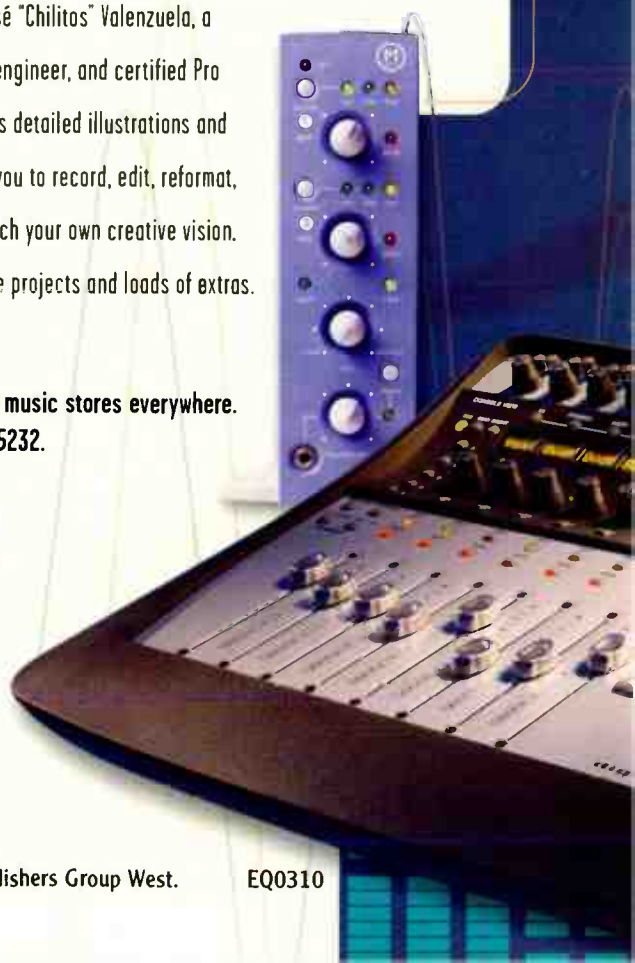

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CMP

World Radio History

Hot House ARM 265

House rockin' active monitors

by Mitch Gallagher

Type: Active 2-way monitors
Price: $6,499 per pair, direct from manufacturer. No extra charge for red or golden oak cabinets.
Contact: Hot House, www.hothousepro.com

Drivers: Two 6.5" woofers, 1" soft dome tweeter
Inputs: Neutrik XLR/1/4" combi jacks
Power: 250 watts RMS x 2
Controls: Level switch, low-frequency compensation, ultra-high frequency compensation
Frequency Response: ±1-3/4 dB, 33 Hz to 19 kHz (–3 dB @ 30 Hz and 21.5 kHz)
Dimensions: 14" x 25" x 12"
Weight: 52 lbs.

$6,500 for a set of monitors? Have they lost their minds? Not at all — think about it, every sound in your studio goes through those speakers at some point. Every mix, EQ, edit, and processing decision is based on what they (and as important, your room) sound like, what coloration they add, what distortions they impose. Of all the gear in your studio, monitors may be the most deserving of significant investment.

Hot House has been in the high-end monitor and amplifier business for years. Let's take a look at their ARM (Active Reference Monitor) 265 model bi-amplified monitors.

HOTTER THAN. . . .

Yes, these speakers are pricey — and bigger and heavier than nearfields. Hot House packaged the review units with Kimber Kable interconnects (Kimber Kable is also used for all internal wiring) and Dvibe isolation pads — which indeed seem to completely isolate the speakers from the room.

I tested the 265s at various distances, finally settling on seven feet from the listening position. The 265 is a virtual point source array, so vertical positioning of the cabinets is essential. The speakers were placed away from walls, so the 3-position Low-Frequency Compensation switch on the 265's back panel was set to "Free Space," which adds 2 dB. The other settings, "Quarter Space" (for corner placement), and "Half Space" (near a wall), provide a 4 dB cut and 0 dB change respectively. There's also an Ultra High Frequency Compensation switch, which boosts highs above 12 kHz. This switch's effect is subtle but noticeable; I found it to increase the "air" and "openness" in the high end. But the 265s have fine high end without the Compensation switch on. They're extended, but smooth, not hypey.

The 265's low end is rich and deep. The best word I can use to describe it is "real." It doesn't sound boomy, woofy, or muddy. Kick drums are punchy and extended. Basses, whether upright or electric, are full, tight, and solid, even on the lowest 5-string notes. I experimented with adding a subwoofer to the 265s; while there was some improvement in the very lowest octave, I found it was unnecessary. One exception: When cranked up and confronted with bass-heavy material, the 265 woofers bottom out in ugly fashion — the price you pay for fast midrange and 30 Hz response from 6.5" drivers. If you're into thumping low-end that smacks you in the chest, you'll want a sub — Hot House makes several models well-matched to the 265.

The 265s have a switch for +4/–10 level operation, but not continuous control for trimming level. This was a problem for me as the output on my Benchmark D/A converter is hot; I was forced to keep the monitor volume knob barely cracked open. (According to the company, a level potentiometer in the circuit would compromise the purity of the audio.) The positive to this is that the 265s have plenty of headroom to allow for great dynamic range.

The 265 mids have tremendous clarity — you'll definitely hear things in mixes that you never noticed before. Likewise, imaging is exemplary, and depth of field is extended. Whether setting reverb levels, listening for flaws in critical edits, or making subtle EQ adjustments, I found the 265s to be revealing and unflattering (in a good way) — don't expect these speakers to make you sound better than you are!

I've had the pleasure to listen to and review monitors of all sizes and at all price points. Without hesitation, I would classify the Hot House ARM 265 among the very finest. I was especially enamored of them for acoustic tracking and mixing, where their clarity and dynamics made them almost unbeatable. But they excel at everything from jazz to country to metal; if a mix sounds good on these speakers, it will sound good anywhere (assuming your room is true). It's gonna hurt to send these back. . . .

Strengths:
- Tremendous clarity in midrange
- Broad, even frequency response
- Tone compensation controls
- Tight, "real" bass
- Excellent dynamics

Limitations:
- No continuously variable level control
- Low-end bottoms out at high volume
- Pricey

THE ARM 265 USES AN ULTRA-LOW DISTORTION RECESSED DOME TWEETER, AND A SIGNAL PATH CAPABLE OF 150 KHZ ELECTRONIC BANDWIDTH. THIS GIVES IT ACOUSTIC FREQUENCY RESPONSE TO 21.5 KHZ

World Radio History

Aurora Audio GTQ2mkII

2-channel mic pre with a touch of Neve class

by Mitch Gallagher

Type: Dual class A mic preamp with 3-band EQ
Price: $2,495
Contact: Aurora Audio International, www.auroraaudio.com

Inputs: 2 balanced XLR (mic/line), 2 unbalanced 1/4" (instrument)
Outputs: 2 balanced XLR, 2 unbalanced 1/4"
Preamp: Class A, transformer-balanced, discrete
EQ: 3-band at 80 Hz, 400 Hz or 3.2 kHz, and 12 kHz
Highpass filter: 80 Hz, 18 dB/octave
Impedance: 1,200 ohms balanced. DI input, 10 megohms.
Total Harmonic Distortion: <0.075% @ 1 kHz
Frequency Response: 20 Hz to 53 kHz, –1.0 dB
EIN: –125 dB at 80 dB gain

Geoff Tanner, the man behind the Aurora Audio, comes to mic preamp/audio electronics design with an enviable resumé: He worked for the Neve company from 1971 through 1985, and was involved in many of the company's stellar products. (If you're looking for information on vintage Neve gear, give the Aurora Audio website a surf; there's information aplenty there, including Q&A forums with Geoff.)

The GTQ2 mkII (the mark II version has only a minor changes over the GTQ2; none of which affect the audio performance) is a dual-channel Class A/transformer-based discrete design, similar to the vintage Neve preamps. The unit looks very retro chic: It's a 1U box with vintage-style knobs. Both XLR line/mic and 1/4" instrument-level inputs are provided. There's also XLR and 1/4" outputs, allowing you to feed a recorder and a monitor/headphone rig at the same time — useful for those trying to beat DAW latency issues.

In addition to mic preamps with instrument level inputs, the GTQ2 incorporates 3-band EQs. The low band is an 80 Hz shelf, the high band is a 12 kHz shelf, and the mids are switchable from 400 Hz to 3.2 kHz. The EQ can be bypassed individually per channel. There's also a 48 v phantom power switch, polarity reverse, and 80 Hz high-pass filter in/out switch for each channel.

IN USE

I plugged in the GTQ2, connected a mic, and set about tracking vocals. I immediately found a great deal to like. The sound is clear and clean, with plenty of presence, and lovely, detailed top end, without a trace of harshness. The bottom is fat and round, with good punch and definition. It was particularly nice on male vocals, using a Soundelux U99 to track a lead part reminiscent of Michael McDonald on "What A Fool Believes." The GTQ2 kept the high falsetto parts full-sounding, without emphasizing nasal twang or adding stridency or sibilance. The fat bottom end helped to smooth the transition from "chest" voice to falsetto better than any other preamp I tried.

On acoustic guitar, the GTQ2 imparted hyper-real top end detail — there was no need to use EQ to bring out the intimate sound of fingers on strings, whether using nylon- or steel-string guitars. The punch and drive of hard strumming was captured well.

On electric guitar, tracking crunchy rhythms was no challenge; nor was recording singing lead tones — all the sustain and distortion was there, without fizz. For chicken-picked Tele tracks, the top end of the GTQ enhanced the "right there listening" aspect, while the clear, present mids dealt well with the Tele's characteristic cluck and twang.

I also liked the GTQ2 on percussion. Transients were fast and accurate, ring off of metal instruments (cymbals, chimes, bells) was smooth. There was plenty of thump for deeper instruments, too.

The GTQ2 had excellent dynamic response, tracking dynamics better than almost any preamp at my disposal.

THAT'S NOT ALL

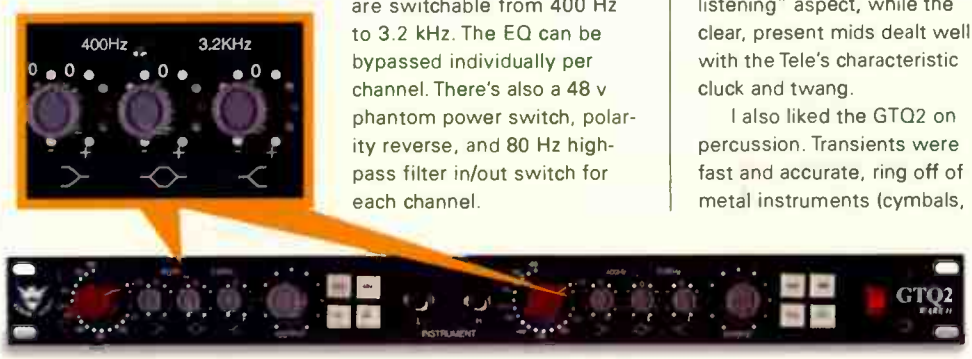
The preamp isn't the whole story here. The GTQ2 EQ is highly useful as well. The EQ response and frequencies are well tailored to sonic shaping — you wouldn't use this box for "surgical" tweaks. Running mixes through the GTQ2 without even engaging the EQ proved to add a useful flavor to the sound — I hate to use the "warmth" thing, but that's what I heard.

I wish the GTQ2 had some sort of level indicator — even an overload LED would be useful. It's, of course, essential to use your ears when setting levels, but an LED would have moved things along faster.

That's about the only complaint I can lodge against the GTQ2. It sounds great, adding a touch of Neve class to every signal that passes through it. It's quiet and dynamic. The EQ is useful during tracking and mixing. The price is in the ballpark of similar offerings from other manufacturers. It all adds up to a winning combination for Aurora Audio. EQ

Strengths:
- Fat, punchy low end
- Smooth, detailed top end
- Clear, warm mids
- Useful as EQ and/or "analog warmer" during mixdown
- Plenty of headroom
- Cool vintage look

Limitations:
- No lovol meters or overload indicator



THE GTQ2 HAS A BUILT-IN 3-BAND EQ. THE LOW BAND IS AN 80 HZ SHELF WHILE HIGHS SHELVE AT 12 KHZ. THE MIDS ARE SWITCHABLE FROM 400 TO 3.2 KHZ. THERE'S ALSO A BYPASSABLE 80 HZ HIGH-PASS FILTER.

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SOURCE CODE: EQCK

World Radio History

Universal Audio Compressor Bundle

Vintage compressor plug-ins for Pro Tools

by Mitch Gallagher

Type: TDM-format compressor plug-ins
Price: $695
Contact: Universal Audio, www.uaudio.com

Plug-ins included: 1176LN, 1176SE, LA-2A
Formats Supported: Pro Tools TDM
Minimum System Requirements: Macintosh running OS 9.2 or OS X. Digidesign Pro Tools 24|Mix, Pro Tools|HD, Pro Tools 5 or higher software, iLok USB dongle
Copy Protection: iLok authorization

The compressors that came out of the "vintage era" — the Teletronix LA-2A and the UREI/Universal Audio 1176LN — were some of the first "modeled" plug-in processors to be released; many companies have their own software version of these venerable units. Now Universal Audio — the company most directly linked to the LA-2A and 1176LN on the hardware side — has released their own plug-in versions of these compressors. Given that UA makes hardware LA-2As and 1176s, expectations for the models are high — after all, who knows the hardware better?

> UA has gone to great pains to ensure that the plug-ins are the most accurate re-creations possible.

The compressors are available as a bundle for Mac-based Pro Tools Mix and HD systems. The bundle is made up of three plug-ins: The 1176LN, 1176SE, and LA-2A.

Universal Audio has gone to great pains to ensure that the plug-ins are the most accurate re-creations possible. This extends from the graphics to the features to the sound quality. On the 1176LN, this attention to detail makes the plug-in quite DSP-hungry — you'll only get one instance of it on either a Mix or HD, and sample rate is limited to 48 kHz max.

For those who want to run lots of 1176s, but don't have a ton of DSP, UA has included the 1176SE, which is far more DSP efficient. You can run six 1176SEs per HD chip, five per chip on a Mix rig (at 44.1/48 kHz; this number drops at higher sample rates). In some cases, I actually preferred the sound of the 1176SE over the 1176LN. It wasn't quite as aggressive in the upper mids, which helped combat harshness with some tracks.

Like the 1176SE, the LA-2A plug-in is more DSP-efficient. You'll get four LA-2A's on a HD chip at 44.1/48; three per Mix DSP chip. Like the hardware original, the LA-2A plug-in has a round, unhyped sound. I preferred it on my vocals, which had a tendency to sound a bit "nasally" through the 1176LN and 1176SE. This same tendency was a great benefit on electric guitar tracks and drums/percussion, where it helped with presence and punch, adding detail and drive to the attack portion of the sounds.

As a final test, I compared the 1176LN plug-in to the 1176LN section of a Universal Audio 6176 hardware preamp/compressor. Splitting the 6176 so that I was only using the 1176 section, duplicating the controls, and matching levels, I listened to a variety of sources. In blind tests, I was unable to reliably distinguish the hardware from the plug-in at all but the most extreme settings (where the plug-in actually sounded better) — impressive, and enough to convince me that Universal Audio has done their job well with the TDM compressor bundle. EQ

THE 1176LN PLUG-IN IS FEATURE-ACCURATE WITH THE HARDWARE VERSION. IT'S DSP-HUNGRY, BUT FAITHFULLY RECREATES THE SOUND AND RESPONSE OF THE ORIGINAL.

THE 1176SE IS A MORE ECONOMICAL VERSION OF THE 1176LN PLUG-IN. IT SOUNDS AND RESPONDS MUCH LIKE ITS BIG BROTHER, BUT USES ONLY A FRACTION OF THE DSP.

THE LA-2A PLUG-IN DOESN'T HAVE THE AGGRESSIVE PRESENCE AND TOP-END OF THE 1176LN. I PREFERRED IT ON MY VOCALS, WHICH TENDED TO HAVE A "NASAL" QUALITY THROUGH THE 1176LN AND 1176SE.

Strengths:

- Feature-for-feature re-creations of vintage compressor/limiters
- 1176SE and LA-2A plug-ins are DSP-efficient
- 1176SE supports up to 192 kHz operation
- 1176SE offers most of the sound of the 1176LN
- Authentic sound quality

Limitations:

- 1176LN is DSP-hungry
- 1176LN doesn't support sample rates higher than 48 kHz
- No Windows support

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Disc Makers MicroElite

by Craig Anderton

Contact: Disc Makers, www.discmakers.com
Price: Starting at $1,390

Strengths:
- Very good value for money
- CD-R, and CD/DVD±R options
- Small footprint
- Solid bundled software

Limitations:
- Bundles need system documentation, not just for individual elements

If you do short runs of CDs/DVDs, it may be both convenient and cost-effective to set up in-house duplication facilities. Disc Makers' budget duplicator, the EliteMicro, connects to Windows 2K/XP machines via a serial connection for control and IEEE-1394 for data transfer (the unit comes with an OHCI-compliant Adaptec PCI card; the duplicator also worked with a generic card I tested). The included duplication software, DiskJuggler, is comprehensive and useful.

Several packages are available. The basic 48X CD-R drive duplicator is $1,390, DVD±R drive $1,790, CD-R and Primera Autograph IV printer bundle $2,390, DVD±R and Autograph IV printer $2,790. You can typically duplicate 15 CD-Rs or four DVD-Rs an hour. Input and output bins hold up to 50 discs.

Getting the duplicator/printer combination to work was not easy. First the ink cartridge carrier wouldn't move into position; because I'd connected the printer to the duplicator, they *both* needed to be turned on. Next came a Windows problem (print spool services were accidentally turned off) — not Disc Makers' fault. As you get lifetime tech support (cool!) I gave it a try. During the 20 minutes it took for a callback — pretty fast — I'd figured out the problem. But then the pre-aligned printer plate needed realignment before the CDs would place properly in the printer CD tray.

The documentation for each element of the bundle is fine, but there's no unified system documentation. As a result, what should have taken about one hour max to set up ended up taking me five. But once everything was happening, the system worked like champ, with its little robot arm picking up CDs, duplicating them, and printing them easily and efficiently. Couple this with a small footprint and relatively quiet operation, and the end result is a winner for project studios that need to make their own CDs and DVDs. EQ

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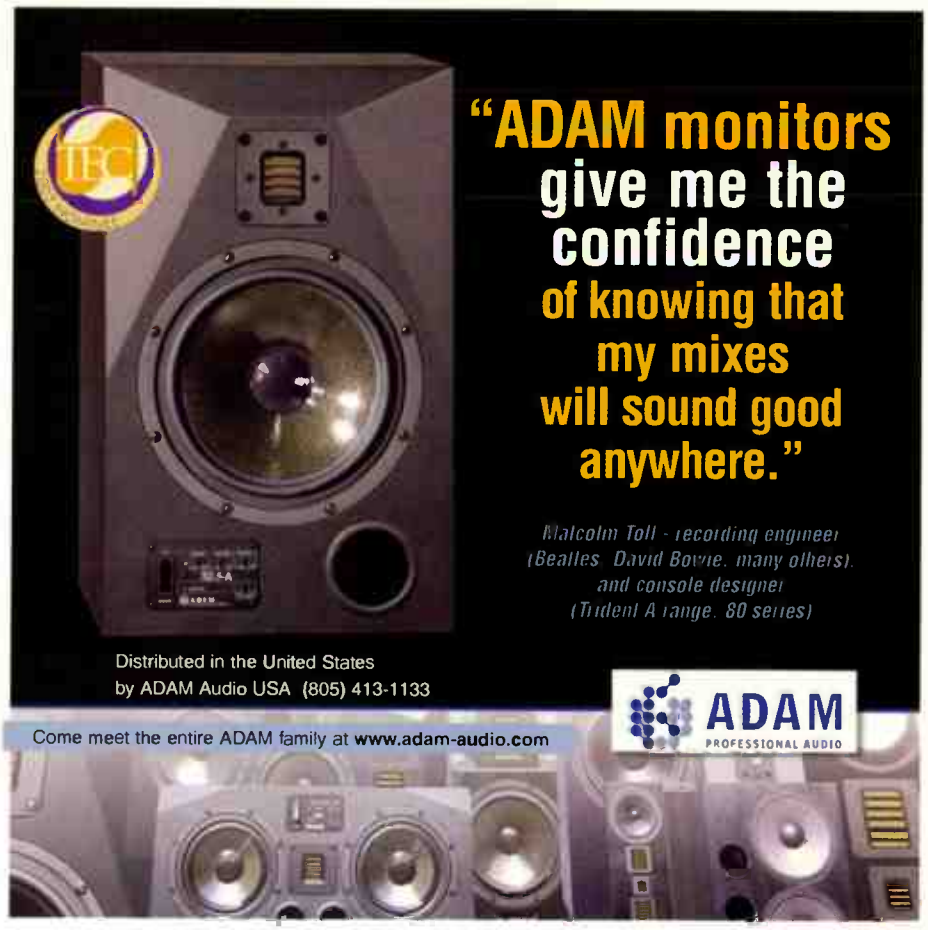

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Sounds

ELAB
Smokers Delight

Contact: Dist. by Big Fish Audio, www.bigfishaudio.com
Format: 3-disc set, REX2/WAV/audio
Price: $99.95

The funky lounge is where most of this material originates. Think laid-back, chilled grooves that combine elements of hip-hop, R&B, funk, and jazz. Deliciously retro Rhodes and Wurly comps, drum loops, dub bass, sexy sax riffs, disco-funk flutes, wah-guitars, dusty effects textures, greazy guitars, processed vocal snippets, and various turntable noises abound on this monster 1-GB set. The tempo range of the source material is 80, 90, and 100 bpm, but you can easily crank things up or down in your DAW of choice.

This collection is absolutely *packed* with material. Between the audio CD and two CD-ROMs, you get 2,000-plus samples and loops in a variety of formats. Songwriters will appreciate the construction-kit-type "Tool Box Packs" that present the material in pre-matched melodic and rhythmic groups. In addition, the "Drum Loop Packs" offer every loop in three versions: an MPC-Programmed Loop, a Full Loop, and a Live Break. Love the down-tempo beats on these discs — a collection of lo-fi breaks that are chopped, squashed, deep-fried, and/or swung deep. These beats ooze soul and groove. For additional groove construction, separate folders are provided for the individual kicks, snares, hats, and so on. Groups of one-shot chords are provided as well. Almost everything you need to craft an album's worth of tracks is here. Another *great* library from eLab. —GREG RULE

PRIMESOUNDS
Dirt Keeps the Funk

Contact: Prime Sounds, www.primesounds.com, US distribution www.bigfishaudio.com
Format: 1 CD WAV/REX2, 1 CD audio
Price: $99.95

Ready for some seriously greasy, sweaty '70s funk? Reach for this CD if they ask you to score the sequel to *Undercover Brother*. The CD has 10 construction kits, but each has three variations, each with about a dozen loops and a few hits, so there's plenty of variety. It's like having 30 construction kits, which all have a demo.

The WAV files aren't sample-accurate but they're close enough; nor are they Acidized — an annoyance to Acid, Sonar, Live, and Project5 fans. But almost all are in REX2 format, and there's an audio CD too. Tempos hit at 80, 90, 100, and 110 BPM.

The drums are recorded in that '70s-style "dead room with carpets on the walls" for a vintage, somewhat muffled sound. While authentic, I usually add a little high end. The guitars (especially the wah parts) sound full and tasty, the bass is thumpy and muscular, the clav oozes funky midrange, and the few synth parts have that coveted analog quality. The sound is clean, but certainly not sterile . . . it's open and luscious.

There's a demo posted at www.eqmag.com made up solely of loops from one construction kit. If you like what you hear, odds are you'll like the rest of the CD. Play that funky music, white boy! —CRAIG ANDERTON

WIZOO
MixTended Multichannel Drumkits

Contact: Big Fish Audio, www.bigfishaudio.com
Format: 2-disc set (enhanced audio CD with MIDI file examples, sample data CD-ROM); EXS24 and Battery formats included
Price: $99.95

Formatted for Emagic EXS24 and Native Instruments Battery, *MixTended* is a multisampled drumkit library with lots of velocity-split patches. The samples were recorded from three different mic placements; close, overhead, and room. Having separate patches for each perspective allows you to process or reinforce individual drums and heavily compress the room or overhead tones, etc.

A mixed-mode audio CD includes audio examples of grooves programmed using the sampled kits; the data partition includes MIDI files for recreating the examples. Even better, there are Logic song sessions configured for use with the EXS24 patches.

The documentation says five kits were recorded, although only four are listed: a Noble & Cooley Horizon, a Yamaha Birch Custom Absolute, and a Yamaha Maple Custom and Custom Absolute. All of these sound more modern than retro, which may be limiting in some cases. Along these lines, I was hoping to find left- and right-hand snare hits, but no such luck. What's here is well recorded, though, and by combining room parts with individual hits from other libraries, I was able to simulate older era-sounding beats.

Sampler patches are presented in "lite" and "XXL" variations; lite patches have fewer velocity splits and take up less RAM, whereas XXL versions give you up to 12 splits. Within the context of a mix, I couldn't tell the difference between the smaller and larger patches. So if you're short on RAM and you're not programming exposed acoustic drum solos you should be fine.

Bottom line: With *MixTended* and a cleverly programmed drum part, it's possible to fool just about anyone into believing you hired a live drummer for your sessions. —JOHN KROGH EQ

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"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 mixed 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 Cooley, Sound Designer,
PERFECT PIANO SERIES

"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."
Lou Bradley, Engineer/Producer,
Merle Haggard

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

COMING ATTRACTIONS

Sonar 3

Cakewalk's flagship program piles on enhancements

by Craig Anderton

What is it? The latest update to Sonar, a pro-level MIDI/audio/looping native-based Windows program (Windows 2K/XP only)

Who needs it? Those who want to bring Sonar up to the latest and greatest version

Why is it a big deal? Sonar has been a very successful program, but the new versions represent a major upgrade with significant additions

Shipping: 4th quarter 2003

Price: Sonar Producer Edition, $499, Sonar Studio Edition, $299, upgrade prices from previous versions TBA

Contact: www.cakewalk.com

For Cakewalk Pro Audio fans, especially those who had used Cakewalk since the MS-DOS days, Sonar was sweet vindication that Cakewalk's programs were right up there with the "big boys." Now Sonar has also undergone a name change: The artist formerly known as Sonar XL is Sonar Producer Edition, while the standard version is Sonar Studio Edition.

The first thing you notice is the interface, which borrows heavily from Project5. It now has the muted grays and glowing buttons of "Euro" programs like Cubase, but with a more rounded, subtle look. It's a little busier than Sonar's original "spreadsheet meets sequencer" vibe, but is a far more pleasing visual experience. Furthermore, in the track view, clicking on a track brings up an Inspector pane which many will find easier to deal with than the small track view strips.

> The interface is a far more pleasing visual experience.

The mixer not only looks fabulous, but is far more flexible; for example, you can show/hide various elements and change channel strip widths. I never used the console view, but I think that's about to change.

Sonar Producer has several goodies not in Studio, the main being the Ultrafunk Sonitus series of automatable plug-ins (compressor, delay, parametric EQ, gate, modulator, multi-band compressor, phase, reverb, surround panner, and wah-wah). The mixer has integrated Sonitus 6-band EQ, thumbnail EQ curves, and assignable channel FX controls (shades of Project5 Syn.Ops). Producer also folds in VSampler version 3, a virtual DXi sampler that handles Akai, HALion, SF2, DLS, and Giga format files. Otherwise, the two programs are very similar.

Busing is completely overhauled — buses can feed buses that feed buses that also feed buses (or main outputs, for that matter), with per-bus mute and solo buttons. This clearly lays the groundwork for a surround environment, although surround mixing is not a part of Sonar 3 (Cakewalk says this will be addressed in some manner in the near future). Other improvements include a rewritten audio engine (no more stuttering when you make edits or move audio); the ability to treat MIDI clips as "groove clips" that can roll out, loop, and follow pitch markers; per-track monitoring switches; more import formats in the Loop Explorer, including MIDI; enhanced MIDI routing with synth layering; "XP look" dialog boxes; and . . . yes . . . VST and VSTi support along with DX and DXi. What's more, Sonar can import Project5 patterns.

And some basic needs have finally been fulfilled. Sonar now generates MTC and MIDI clock over multiple outputs, and offers real-time waveform and data preview during record.

Sonar 3 does what Sonar has always done well: fast, efficient workflow for audio, loops, and MIDI. Clearly the GUI overhaul is a big change, but there's quite a bit of new code underneath all this, especially for the mixer and audio engine. There are no folder tracks, but with the way busing is set up, it's easy to subgroup to buses, then hide tracks and do most of your work with the bus controls for a very clean layout.

If you're already used to Sonar, the changes won't slow you down; they integrate easily into your work flow. Bottom line: If you're a Sonar fan, I think you'll be very pleased. EQ

CLOCKWISE FROM TOP: THE TRACK VIEW, VSAMPLER, CONSOLE VIEW, AND MULTIBAND COMPRESSOR PLUG-IN.

World Radio History

"Two Publishers Fought Over My Music Because I Joined TAXI"

Bill Gordon – TAXI Member

You would think that after thirty-five years of writing, and recording my own music, I would have had some major commercial success. Sadly, that wasn't the case.

Then I joined TAXI.

As a result of my membership, I signed a deal with a boutique publisher that got me my first placements in TV and film.

Soon after that, a large-scale, international publisher contacted me about publishing some of my tunes.

The next thing you know, the two publishers were "fighting" over my music!

While nobody threw any actual punches, it was incredible having two great companies slugging it out over my songs. A musician's dream-come-true.

The end result? I'll tell you in a minute.

First, I want to tell you the ironic part – I almost didn't join TAXI. I thought it sounded too good to be true. Man, was I wrong!

TAXI's comprehensive feedback shows me where I'm strong, and where I'm not – a constant reality check. And getting tons of opportunities to pitch my music has helped me stay focused and very productive.

It's obvious to me that the people at TAXI *really* want me to succeed. And they do so much to make sure that I do. It feels like I've got a team of experts who are on "my side."

I can unequivocally say that the people at TAXI are the most informed, honest, honorable, helpful and loyal folks I have ever known in the music business. They never make a promise they can't deliver on, and they do it all at a reasonable price.

Then there's TAXI's private convention which is FREE to members and their guests. The Road Rally isn't just the icing – it's a whole other "cake." It gives me a deeper understanding of the music business, a bunch of great new contacts, and a jolt of inspiration.

TAXI also connected me with a Grammy™ winning producer who has worked with such legends as Jackson Browne, Michael McDonald, Luther Vandross, Maynard Ferguson, Freddy Hubbard, and Sarah Vaughn.

Two years later, he produced my album. The very same album that started the publisher slug-fest I told you about earlier. And how did it turn out?

I'm happy to tell you that *both* publishers signed some of my songs!

Thirty-five years as a working musician, a degree from Berklee, and all it took was a membership to TAXI to make me an "overnight success."

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COMING ATTRACTIONS

VSL MIR

Multi-Impulse Reverb

New technology puts sound in its rightful place

by Greg Rule

What is it? The next step in reverb technology.
Who needs it? Any producer, engineer, musician who craves ultra-realistic spatial processing.
Why is it a big deal? Allows unprecedented placement and control of spatial sound in a modeled three-dimensional acoustic space.
Shipping: "Phase One" due in 2004.
Price: $TBA
Contact: VSL, www.viennasymphonic library.com; Ilio, U.S. distributor, www.ilio.com

Much hoopla surrounded the release of the Vienna Symphonic Library. With gigabytes of pristinely recorded solo instruments, ensembles, and performance phrases, and an expressive control engine, it redefined the state of the art in orchestral sampling. About the only criticism leveled at the library (other than its high price) was its bone-dry source recording. But behind the scenes, VSL founder Herb Tucmandl had a grand plan that's about to be realized with the release of the Multi-Impulse Reverb.

"MIR puts any signal inside an actual acoustic space, be it a concert hall, film scoring stage, or even a small room," says the company in a statement to the press. "This new component provides independent control over both the instruments and the acoustic environment in which they perform. For example, the user could place a small chamber ensemble inside the intimate parlor of an old European palace, or bring the entire Wagnerian orchestra into an actual Grand Concert Hall. Furthermore, a simple graphic user interface will allow the user to actually click and drag the instruments of the orchestra onto the virtual stage. In addition to stereo, many surround sound formats will be supported."

Tucmandl is quick to point out the differences between dry source material that's spatially enhanced and samples that are pre-recorded in an ambient space. "Their spatial characteristics are frozen and unchangeable," he says of the latter. "The user has little or no flexibility to alter the size or acoustic properties of the room, or to change the space altogether. Each time more than one note is played, the sound of that reverb is duplicated over and over again. VSL's samples were intentionally recorded in a smaller controlled environment, so we could allow our users the ability to choose whatever environment they wish."

The concept seems straightforward on the surface, and not entirely unique — Audio Ease's Altiverb, for example. "The basic idea is simple. Just as it is possible to digitize or sample an instrument with all of its wealth of expression, one can also digitize the characteristics of an enclosure, be it a small room or a concert hall. To do this, the response of a real space to a precisely defined acoustic impulse is recorded, and then 'imprinted' onto an acoustic signal in a mathematical process called convolution. Theoretically, the result is the same as if that signal had actually been recorded in this space. Until now, the immense computational requirements of convolution barely allowed more than two or perhaps four channels of sampling reverb, which was derived mostly from unidirectional mono impulses."

And this is where the plot thickens. "The founding principle of MIR is as simple as it is compelling in its fundamental logic: The 'stage' of a concert hall can be subdivided into a number of sectors, and from each sector a special impulse can be released in up to seven directions. The impulse response can then be recorded using surround techniques from ideal positions in the hall. After the impulses are processed, the user simply places defined instruments and instrument groups of the Vienna Symphonic Library onto this virtual stage with the help of an intuitive graphic interface. Due to the close association between the library and the reverb engine, the typical directional characteristics of each instrument are taken into consideration when formulating the 'correct' sets of impulse responses. For instance, the horns, which are mostly directed to the rear, can be assigned different spatial aspects than the frontally blaring trumpets."

While the results will be heard in real time in preview mode, the final results will be calculated offline. "However," says VSL, "it's merely a matter of time before conventional computer systems are fast enough to enable high-definition real-time convolution."

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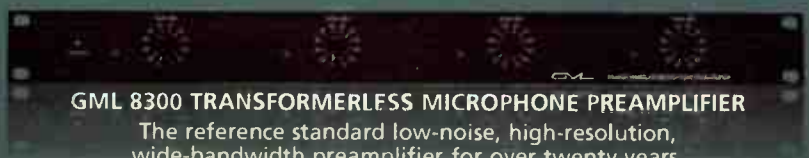

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* 2002 *Mix Magazine* Tec Award, 2001 *Pro Audio Review* Excellence Award, 2000 *EQ Magazine* Blue Ribbon Editor's Choice Award.

World Radio History

by Roger Nichols

AES, DAWs, and Docs

AES 2003: a gear-lust convention if ever there was one. Comments are often overheard as you cruise the aisles, such as: "You only have 96 inputs at 96/24? How can you do anything?" "192 kHz/32-bit is almost where I want to be. It just sounds too much like you're wearing a t-shirt that's one size too small." "No, no. SATA is to FireWire what SCSI is to ATAPI, right?" "Are these hot dogs safe to eat?" "What the hell is 'vintage digital'?" "I think the future arrived yesterday."

There's nothing like walking the aisles of AES bumping into people you haven't seen since the last AES, carrying bags full of brochures they'll never read, drooling over gear that's almost beyond perfection, talking on cell phones trying to convince their spouses that there's enough room on the credit card for a new SSL digital console.

It's also amazing that most of the sales guys pushing higher sample rates are over 50 and can't hear above 10k anyway. But they have new software shown on HD plasma displays . . . sound your failing ears can't hear with graphics your failing eyes can't see. So everything is just fine.

TRAINING

We're now at the point where software is so advanced that the documentation fills thousands of pages of text, and the index alone fills 200 pages. There are whole industries popping up to train users in the finer arts of everything. Pro Tools, Final Cut Pro, Maya, Digital Performer, Logic Audio, Sonic Solutions, Sadie, Avid, and Nuendo, just to name a few. Some of the courses consist of CD-ROM or online training and tutorials, while others are comprehensive training-center-based operations where each student gets a full-blown system to train on, with classes ranging from 1-day refreshers to 12-day comprehensive multi-instructor marathons. Whatever happened to, "This is Stop, this is Play, and push both of these at the same time to record."

In my view it's always beneficial to learn as much as you can about the innermost workings of the systems you use. If it's a hardware console, knowing how sub-systems are connected makes it easier for you to avoid potential problems or work around a disaster. If it's a software-based DAW, it's always good to know how the system deals with your audio files so you can be sure that you've backed up everything before the hard disk is reformatted or you move on to another studio. It used to be that you could pick up your multitrack tape and say, "All of my tracks are right here on this tape." You can't be sure any more.

By learning about digital systems, I found out that digital copies made between 3M digital multitracks were not clones, and what came out of an Akai DD-1000 optical disc recorder was not exactly what you recorded into it. Upgrades were eventually made to both systems that cleared up these anomalies. Learning how your equipment works makes you a more credible authority when you have questions or complaints about how your equipment performs its assigned tasks.

When you recorded using a tape machine and a console, you had to learn to work within the parameters of the hardware — one EQ choice, hardware aux sends, and signal routing through hardware patches to outboard gear. If you wanted to use a UREI 1176 compressor on more than one channel, you had to buy or rent them. When you record using a software-based system, you can change EQ by using a different plug-in, you can route anything to anywhere, and you're not limited to the hardware on hand. If you want to use a UREI 1176 on more than one channel, you just instantiate another copy of the plug-in.

Most of the Digital Audio Workstations (DAWs) have been around for ten years now. The software is better, the resolution is higher, and the features are pretty much endless. There are at least three ways to perform any task within a DAW to allow different users to work in different ways: You can pull down a menu, use keyboard combinations, or press a button on a work surface. Everything is non-destructive and un-doable. It's almost impossible to get into a mess that you can't get out of. I said "almost."

DOCUMENTATION

I get sessions from Pro Tools, Digital Performer, Nuendo, Cubase, and Logic Audio that I have to convert before mixing. There are almost always audio files missing. Sometimes the original studio can't find them when I call because everything is named Audio-1, Audio-2, etc. Often I get sessions where the previous engineer has bounced audio to disk to consolidate tracks. Most of the time there is audio on the bounced track that doesn't belong there, such as background vocals on the guitar bounce track. Most of the time I can deal with it, except when they're both happening at the same time and the artist doesn't want the backgrounds in that section.

Documentation that comes in with outside sessions is mostly non-existent. Maybe I'll get a handwritten note saying that not all of the audio would fit on the CD-R, so the extra audio files are on a disc with another song. The second disc contains one folder named "audio files" and one named "Audio Files" and there's no telling which one went with which song.

These are some of the things we're trying to deal with at the producers and engineers wing of NARAS. If you want to learn more about documenting a DAW session and what to use as a delivery format to the record company after the project is done, then go to www.grammy.com, scroll to the bottom of the page, and click on the P&E Wing link. EQ

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World Radio History

by Lisa Roy

Blink-182: Drums

[Ed Note: Our article on Blink-182 in the August issue told the story of how the band rented a home in San Diego, CA, and trucked in a studio-load of gear to record their new album. Here, Lisa investigates the process of getting drum sounds in the makeshift studio.]

"Setting up a studio in a house was an amazing opportunity to get some really natural sounding drum tracks," states Ryan Hewitt, Blink's engineer and one of the hottest new audio wizards on the scene. "We put everything together specifically to work the way we wanted, and wound up having a surprising amount of flexibility in the end."

"Action," a song off the trio's forthcoming album, is the first Blink track Hewitt recorded in the house-cum-studio along with producer and longtime collaborator Jerry Finn.

DATE: March 2003
TRACK: "Action"
STUDIO: Casa de Blink
LOCATION: San Diego, CA
PRODUCER: Jerry Finn
ENGINEER: Ryan Hewitt
ASSISTANT ENGINEER: Sam Boukas

SIGNAL PATH

"On the kick we used an Audio-Technica ATM-25 on the inside, and a Blue Mouse on the outside, both through Chandler TG-2 preamps," says Hewitt. "Both mics went to a pair of Neve 1073s in a BCM-10 sidecar, and were bussed together before going through a Smart compressor and on to the Studer A-827 multitrack recorder.

"The snare drum was treated to a Shure SM-57 on the top, and another on the bottom, amplified again by a TG-2. These mics also went to the 1073s and dbx 160s compressors before tape. Toms had B&K 4011s through Manley preamps and API 550L equalizers, printed very hot to tape. For the overheads we used Neumann KM-140s with Mastering Labs preamps and a Manley Massive Passive equalizer to back them up. To avoid spitty cymbals, we used a Beyer m-160 ribbon mic on the hi-hat and ride, both through a Phoenix Audio preamp and Avalon 2055 equalizer. To give the sound of the room's true width, I brought a THE Sphere, a binaural microphone encased in a wood ball. This went through another Phoenix Audio preamp, with an NTI EQ and Dave Collins custom compressor. For more room depth, we used a Reslo ribbon far away from the kit, amplified by a Dave Collins low-impedance preamp, and tweaked with an API 550L and an SPL Transient Designer. Everything went to the Studer A-827 and stayed there."

MIC POSITION

"The most difficult thing to achieve when recording drums with this many mics is good phase correlation," Hewitt says. "Each drum has to sound great by itself and the mics have to play well with others when put together in the mix. Using mics that have the appropriate off-axis response in a given situation is very important to this end. Using B&K 4011s on the toms not only allows you to get them in close to the action, it gives a naturally bright sound, requiring less EQ. The off-axis response is relatively tight, and rolls off nicely at the top, helping to keep the cymbal leakage from being too harsh and annoying. When placing the overheads, I get them into an effective area, and then measure from the center of the snare to the mics, making them the same distance to keep a good stereo picture with the snare as the centerpiece. I actually changed to an X/Y positioning later in the record to be even more effective.

"Keeping the hat and ride in line is also a tough task, but using the unique pickup pattern of the Beyer m-160s can help. I pointed the mic from the side of the cymbals toward the spot that Travis hits them, with the dead ends of the ribbon perpendicular to the floor in an attempt to keep the inevitable snare and cymbal leakage from being too overwhelming. The ride got similar treatment, but wasn't actually used on this song. The Sphere wound up about 6' from the kit and about 4' from the floor to get a good balance of the drums and all the room reflections. I experimented a bit with the placement of the Reslo for a far room sound. It wound up about 20' from the drums, slightly obscured by the chimney that divides the living room of the house. We also had a bunch of tube trap diffusers around the kit (pictured), pulled as tall as possible to keep the cymbals out of the room and the room out of the overheads.

"Kick and snare are certainly the center of the kit, and arguably the whole record. Normally I like a Sennheiser 421 on the kick, but Jerry had an ATM-25 that he likes, so we put that up, and it was really punchy right off the bat. The mic ended up about 5" from the head, slightly off center from the beater. We tried a few mics on the outside of the kick, and the Mouse beat them all. The bottom end is real big on this drum, and so was the headroom and output of this mic. I placed it 1/2" from the head, and about 4" from the rim; here the mic can capture a deep but punchy sound. Too far from the rim and it just gets too mushy and vague sounding. Shure SM57s were made for snare drum miking, so we used two! On the top, Sam and I made a "hat shield" around the mic to keep some hat leakage out, and placed it as far into the head as Travis would allow, and as perpendicular as possible to get the most impact. Daniel [Jensen, drum tech] tuned the snares real tight for Travis, so we got the real snare sound from the bottom of the drum with another 57. This one was perpendicular to the drum, about 2" off the head, and right below the snare wires themselves."

For information on the processing aspects of this session, go to www.eqmag.com. EQ

World Radio History

Drum photo: Sam Boukas; Hewitt photo: Sarah Simon

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World Radio History

by Craig Anderton

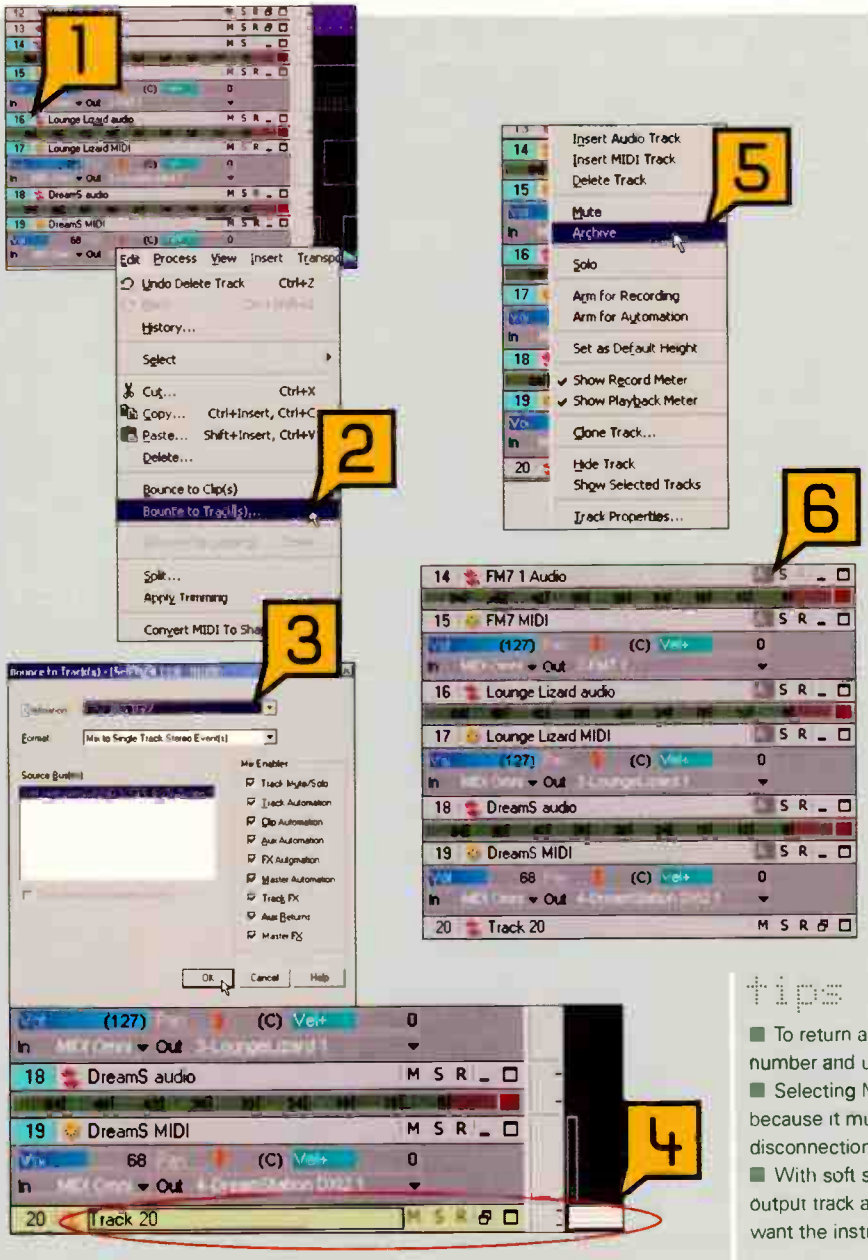
Cakewalk Sonar

Add a "Freeze" Function to Sonar

Objective: To reduce CPU load, "freeze" tracks that use CPU-intensive soft synths or processors, but leave them available for later editing if needed.

Background: Although Sonar does not have an automatic "freeze" function, you can premix CPU-intensive tracks to a stereo hard disk audio track for monitoring, then archive the original tracks to "disconnect" them from the CPU. The track data remains unchanged should you want to edit this later.

Step by Step: Follow the six steps in order.



1. **Ctrl-click on the track number for each track that you want to "freeze" into a temporary premix. Assuming the default color scheme, the track number background turns blue.**

2. **Go *Edit > Bounce to Track*(s).**

3. **Choose the destination for the bounced premix track. If the tracks being bounced go to different buses, all buses will show up under the Source Bus(es) field. Checking "Each Source to Separate Submix" mixes each bus to its own track. For greatest CPU savings, leave this unchecked to mix everything to one track. Leave all *Mix Enables* checked. Click on *OK*.**

4. **As specified in the previous step, the premix appears as Track 20. You can rename this to something like "Soft Synth premix."**

5. **With the tracks you premixed still selected, right-click on any track's number and select "Archive."**

6. **The Mute icons for the selected tracks are replaced with an "A" icon. These tracks are now effectively "disconnected" from the CPU, but you can still hear a mix of them thanks to the premixed track.**

tips

- To return a track to non-archived status, right-click on its track number and uncheck "Archive."
- Selecting Mute does not disconnect a track from the CPU, because it must be ready to play the instant you unmute it. True disconnection requires the Archive function.
- With soft synths, remember that both the instrument's audio output track and the MIDI track driving it must be selected if you want the instrument to appear in the bounced (premix) track.

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by Robert Sermeño

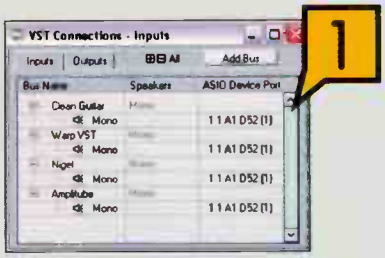
Steinberg Nuendo 2.0

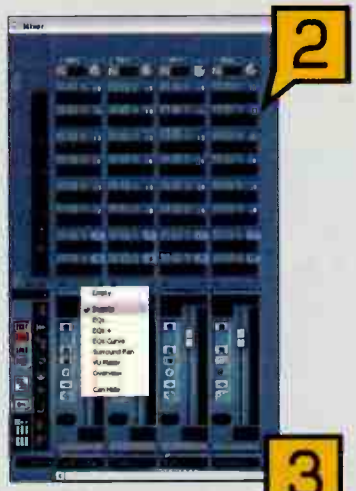
Simultaneous Tracking With & Without Effects

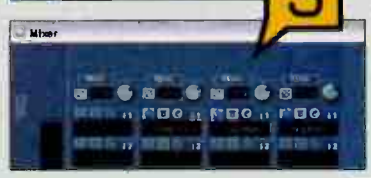
Objective: Record a single channel that results in multiple tracks, each with a different effect.

Background: Most applications allow you to monitor with effects during the recording process. The result is a dry signal that then plays through a real-time effect. Bouncing the track with the effect is an extra step. In some cases, you may want to record directly with effects, but are not allowed the safety of recording a dry signal at the same time. The new input bus structure in Nuendo 2.0 gives the best of both worlds, offering control, flexibility, and, most importantly, time savings.

Step by Step: Record multiple effects-processed tracks from a single dry channel in a single take.







1. **Define an input bus for your dry signal, and an additional input for every channel/track that will be recorded directly with effects. Set each input channel to the same audio input, and label the inputs accordingly.**

2. **Bring up the mixer and display the inserts for the input channels.**

3. **Load an effect in the first insert slot for every input channel, except for one. This input channel will record your dry signal, while the others record with the chosen insert effects.**

4. **Create a complementary set of audio channels in the Project window, and set the input for each to a different input channel. Monitor each input and audio channel to set the levels and check for clipping.**

5. **Once the levels are set and you've made sure you can hear a different effect on each input channel, record-enable the audio channels and set your recording locators in the Project window. You can monitor any (or all) channel(s) during the recording process.**

6. **Engage record, and begin playing your signal. Press stop after you're done with the take.**

7. **The Project window will now display multiple tracks, each containing a different version of the recorded signal. You are now free to audition each track to determine which effect you like best or least. But you also have the flexibility of reverting to a dry track in case you want to try other real-time effects after the recording process. This method of recording empowers you to be more creative, skips unnecessary track bouncing, and most important, maintains a dry, un-effected take for maximum flexibility.**

tips

- Make sure you label all input and audio channels to complement the respective effect plug-in that's used. This makes for easier identification in the Mixer and Project window.
- Deactivate insert plug-ins in the input channels to free up CPU power when not recording.
- Make use of folder tracks in the Project window to manage content recorded in this fashion.

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Audio-Technica

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AES Booth #436

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AES Booth #1045

World Radio History

by John Krogh

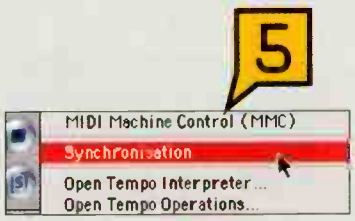
Emagic Logic Audio

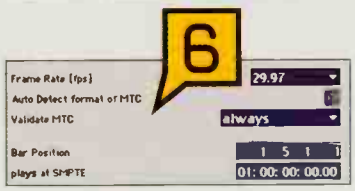
Music for Picture — FireWire Video Setup

Objective: Output video clips via FireWire to a DV camcorder or other similarly equipped device for monitoring on a TV.

Background: Logic Audio now supports FireWire video output, which means it's possible to send QuickTime movies out to an external device for monitoring on a TV. You'll need a FireWire device that can accept and display a DV stream, which can be displayed on any TV equipped with analog video inputs. Most DV camcorders will work, and there are several third-party "black boxes" such as Miglia's Director's Cut (www.miglia.com).

Step by Step: Setting up Logic to output QuickTime movies via FireWire is easy.





1 **Choose Movie As Float from the Options menu. Select a movie clip. At this point the clip shows up onscreen in a small window.**

2 **From the Song Settings submenu, choose Video.**

3 **In the dialog box that appears, choose FireWire from the Video Output drop-down.**

4 **Optionally, you might need to adjust the video's playback — most FireWire devices introduce a bit of latency, making the movie play later than what you'd normally see on the computer screen.**

5 **You should now see a small floating window with the movie start time in the Arrange window. To set the movie's start to a specific bar/beat, click and hold the Sync button and choose Synchronization.**

6 **Set the Bar Position where you'd like the movie to start, then close the window. When you press play, the movie will start playing at the location you just set.**

tips

- If you digitize the movie clips yourself, trim them so they start precisely on frame one. That way you'll be sure the video starts exactly at whatever Bar Position you choose.
- Playing large video clips can bog down CPU performance. If your machine is getting sluggish during video playback, try converting the clip to a lower resolution format using QuickTime. This will ease the burden on your computer, although picture quality will likely be worse. It's a tradeoff.

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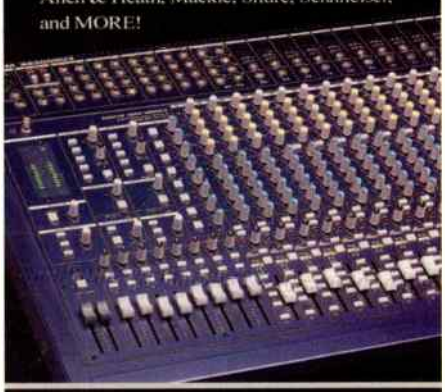

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MOTU Studio Native Power To BURN...

Run DP4, MachFive and a world of third-party plug-ins on the fastest personal computer ever

MOTU
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Power Mac G5

The world's fastest personal computer

Your all-native MOTU desktop recording studio just got bigger. A LOT bigger. The new Power Mac G5 is like doubling your studio's square footage, and then adding several additional floors stocked from top to bottom with virtual gear. Run more virtual instruments, more plug-in effects, more tracks, more busses, more processing, more everything than you ever thought possible. Yes, it's time to bask in the glory of your MOTU native studio. Starting at just $1999, the G5 Tower transforms DP4 into a production powerhouse.

Digital Performer™ 4.1 and MachFive™

Maximize your studio with MachFive and a world of MAS and AU plug-ins

Digital Performer Version 4.1 is now shipping with virtual instrument tracks and support for Audio Unit (AU) plug-ins, the new standard plug-in format for Mac OS X. Dozens of plug-ins are already available, with dozens more appearing on the scene every month. Enjoy unprecedented universal compatibility and interoperability with a G4- or G5-driven Mac OS X experience, thanks to Digital Performer's full adoption of all Mac OS X audio and MIDI standards. Now add MachFive, the new universal sampler plug-in. Consolidate your Sample Cell, Giga, Kurzweil, Akai and other sample libraries and put them at your fingertips in MachFive.

Trilogy™ — Total Bass Module™

The world's first Electric, Acoustic and Synth Bass Instrument

Trilogy is an awesome triple-threat plug-in instrument that integrates a custom three gigabyte core library of hundreds of brand new acoustic, electric, and synth Bass sounds with a powerful user interface. Create your own sounds! Produced by Eric Persing, it overflows with earthshaking, cone-blowing, subsonic sound. "True Staccato" for realistic repeated notes, Minimoog™ style legato triggering, multimode resonant filters for both independent layers. $349 for MAS and Audio Units.

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Authorized Reseller

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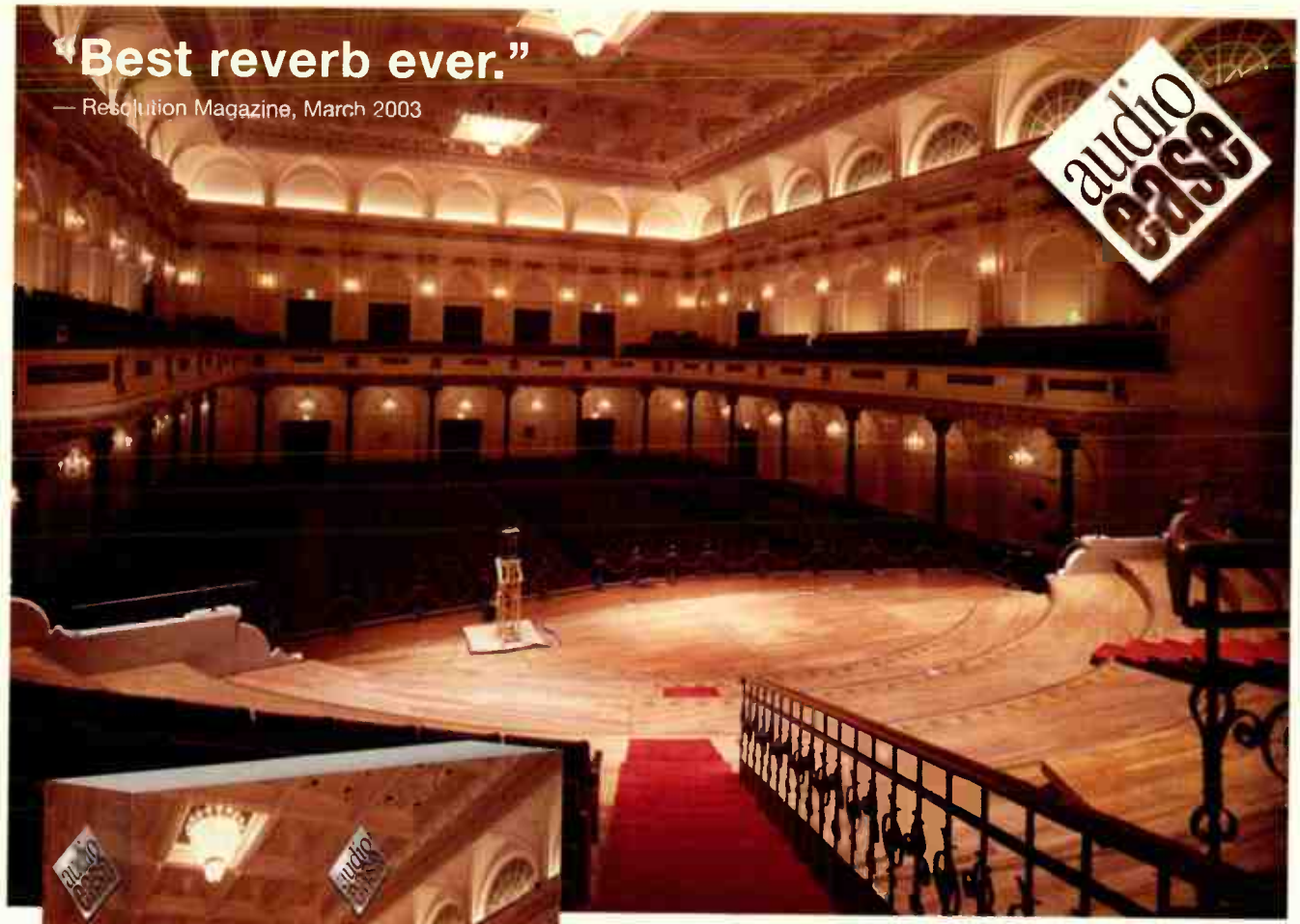
"Best reverb ever."
— Resolution Magazine, March 2003

audio ease



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

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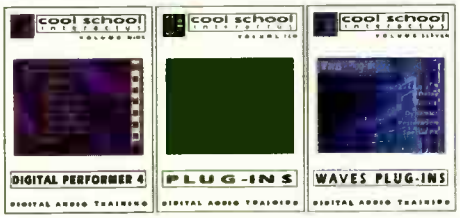
Digital Performer 4 interactive training

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

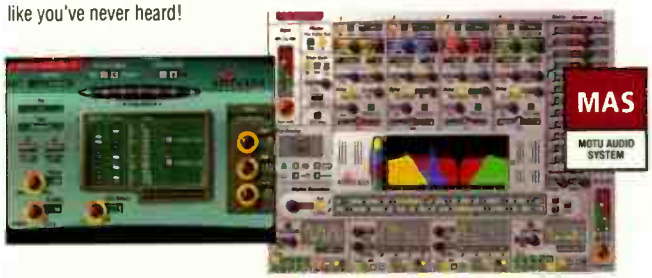
Check out the latest Digital Performer 4 and plug-ins interactive training products from Cool Breeze Systems. If you prefer the "show me" style of learning, then the Cool School Interactus training environment is for you. CSi products include hours of concise, well thought out movie tutorials with "before 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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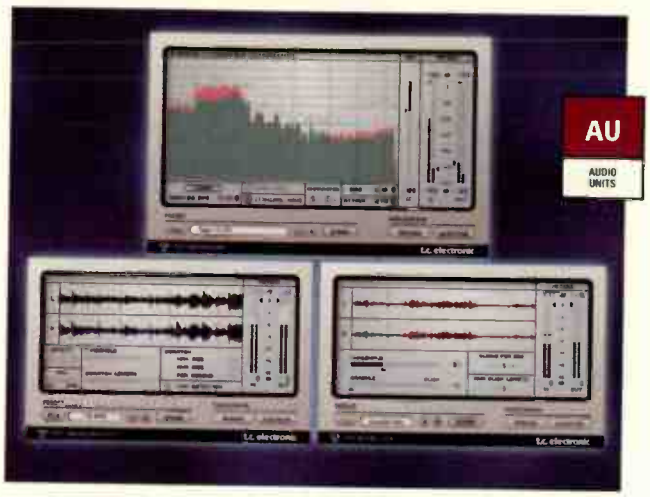
TC Electronic Restoration Suite

Ground-breaking audio restoration plug-ins for DP4

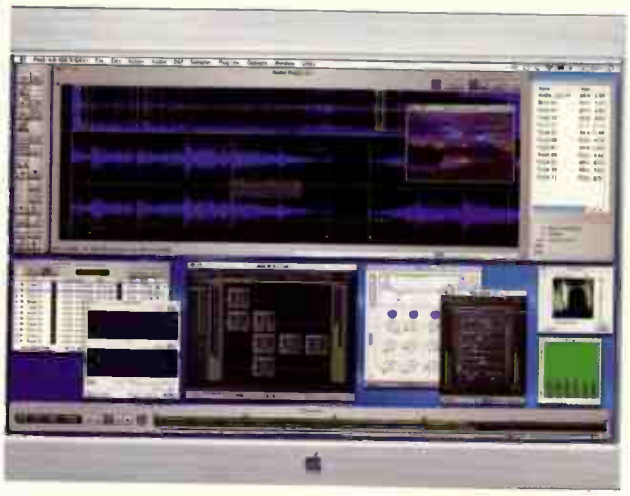
TC Electronic revolutionizes audio restoration with the new Restoration Suite for the PowerCore platform. Powerful, fast and easy to use, this bundle of hi-end restoration plug-ins provides descratching, denoising and declicking for the most critical applications in audio restoration. The descratching 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

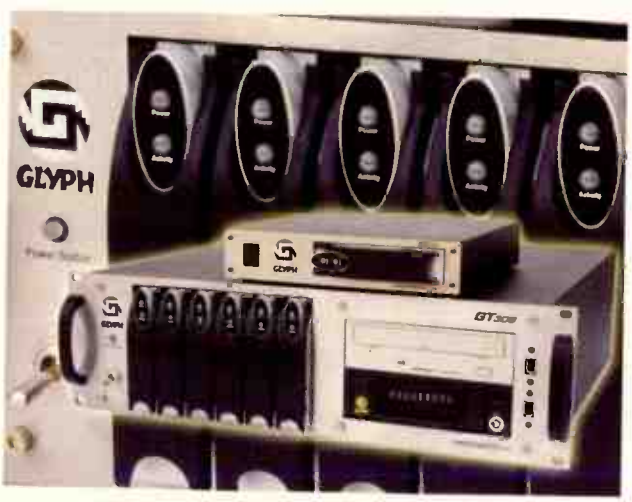
Burns redbook CD's directly. Reads/writes MP3, MP4(AAC™), 24 bit WAVE & more. Batch process dozens or even thousands of files. Ultra fast waveform editing now even faster. Launch directly from DP4. Unlimited undo/redo with graphic edit histories. Unique DSP and looping tools like the stunning new sample 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: Retromedia Sound Studios
LOCATION: Red Bank, NJ
CONTACT: www.retromedia.net
KEY CREW: John Noll
CONSOLE: Amek/TAC Magnum with MegaMix automation
RECORDERS: MCI JH24, Studer B67, Otari Radar II, Alesis ADAT-XT20 (4), Panasonic 3700, 3800; HHB 830 CD recorder
MONITORS: Dynaudio BM10, JBL 4311B, Auratone 5C
AMPLIFIERS: Bryston 2B, Citation Twelve Deluxe, Hafler 220
OUTBOARD: api 550a, 550b (2), 560b, Melcor SME-20 (2), Spectrasonics 500 (2), 610; Siemens w295b, Magnatech 29BR (2), Pultec LCS-2, Neve 33609, TubeTech CL1B, UREI 1176LN (2), LA3a; RCA 86A, Requisite Audio L1, Empirical Labs EL8 Distressor, dbx 160VU, 162VU; Inovonics 201, Magnatech 31B, FMR Audio 1773, Drawmer DS201, US Audio Gatex, Adams-Smith Zeta-Three, MOTU Digital Timepiece
EFFECTS: EMT 140, Lexicon 200, PCM60, PCM41 (2); Yamaha Rev500, D1500, E1010; MasterRoom Super-C, Scully 280 tape slap, live chamber, Roland Dimension-D, Eventide H949, Instant Phaser; MXR Flanger/Doubler, Antares ATR-1a, Sony M7 Sonic Modulator, dbx 120 subsonic synth, Orban 245F, 516 De-esser; Dolby A360, LittleLabs Redeye, WEM Copicat
MIC PREAMPS: Neve 3115, api 512c, Telefunken V72a, Amek 9098 (2), Langevin AM16 (2), Siemens 811 (2), Spectrasonics 101, Peavey VMP-2, EvilTwin tube DI/pre
MICROPHONES: Neumann U87, KM84 (2), Lawson L47MP, Soundelux U99, AKG 414EB, Sony C38B, Schoeps CM060, Coles 4038, RCA 44A, EV RE20, 666, PL10; Beyer 201, Sennheiser 421, 441; Audix D2 (2), D4; Shure SM57 (3), SM98; Crown PZM30 (3)
COMPUTERS: Apple PowerMac G3
DAW: Digidesign 001, Audiomedia III, ADAT Bridge; Apogee Rosetta, MOTU 2408
SOFTWARE: Digidesign Pro Tools LE, MasterList CD, Waves Multi-Rack
KEYBOARDS/MIDI: Wurlitzer 200, Fender Rhodes Stage 88, Hohner Clavinet/Pianet, Organa 12; Moog Source, Opus3; Hammond M3 with Leslie, Kohler & Campbell piano, Alesis D4
STUDIO NOTES: Retromedia Sound Studio owner/operator John Noll says, "When the studio was built, a lot of emphasis was placed on creating an inspiring vibe. The space is clean and spacious and has lots of natural light. Scattered about are classic keyboards and a nice assortment of vintage guitar amps. Instead of trying to be like everyone else, we've stuck to being an analog studio. Why use a plug-in to simulate the sound of tape, a classic compressor, or reverb, when you can use the real thing?

"Everything is recorded direct to tape. I'm a big fan of that classic transformer sound and that character can be obtained with the vintage outboard gear that overflows our racks.

"The Amek/TAC Magnum console has been re-capped and re-chipped; it sounds clear, open, and quiet and the EQ is very musical. Mixes can be printed to Studer B67 or through an Apogee convertor to Panasonic 3800 DAT or 24-bit Pro Tools.

"We try to approach recording so the vibe in the room is integral to the sound. Many classic recordings have a sense of vitality and excitement that was a direct result of good musicians playing together in one room. That's an approach that's not prevalent these days. Our aim is to capture sounds that are specific and unique."

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

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Jodd Thibaud Band ©Thomas.Neukirchner@t-online.de

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MACHFIVE™

- **Universal compatibility**
  Supports all major plug-in formats, host applications, soundbank libraries and sample formats, from Giga to Sample Cell to Akai to Roland to Kurzweil.

- **Plug-in convenience**
  Open MachFive directly within your host software. Save all MachFive settings with your audio sequencer projects for 100% recall. No separate files or settings.

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  Draw cross-fade loops while the sample plays in the context of your music. Apply destructive edits. Normalize, fade, reverse and process.

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- **Now shipping for Mac OS**

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