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NOVEMBER 2008

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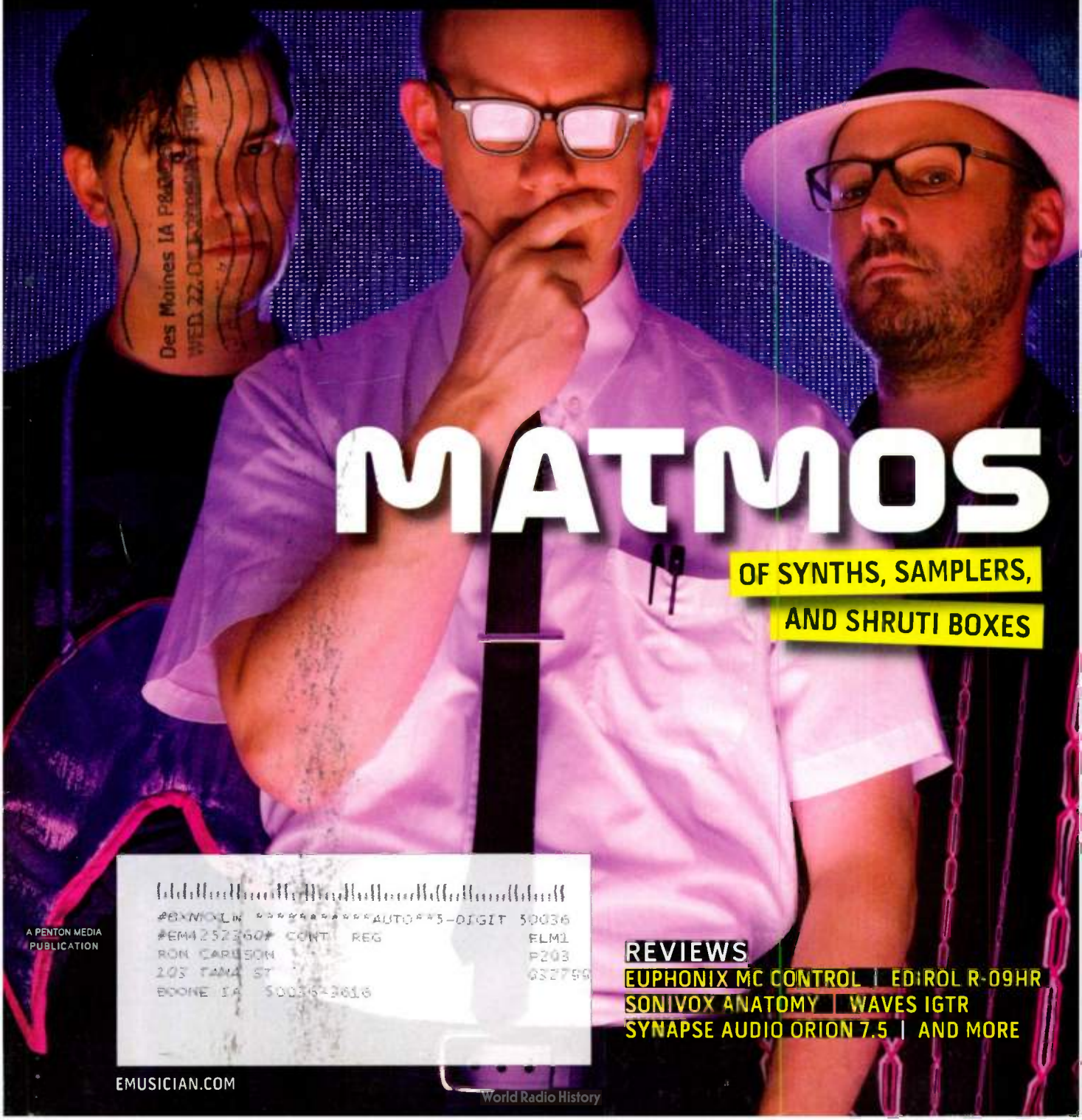

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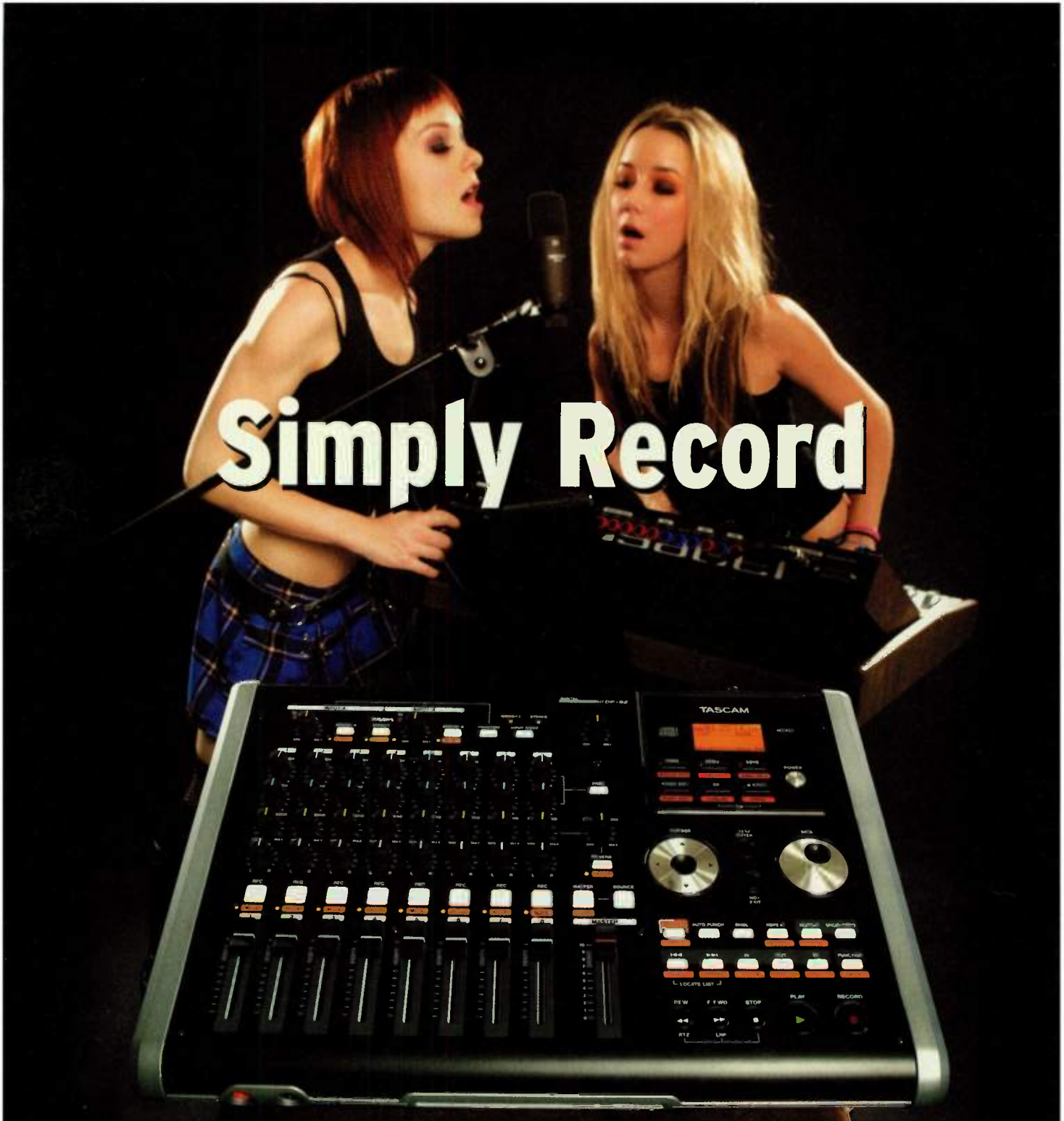


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By Mike Levine

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# The Two Best Teams
## For the Gear You Want This Holiday Season!

>>FIRSTTAKE

# Sacred Space

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JANE RICHEY

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You've learned how to use the tools for music making. Now give yourself the time to use them to satisfy our own creative urges.

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**Editor**


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## FEATURES

RICH MARKESE

# 36 SUCH WONDERFUL TOYS

For their latest album, *Supreme Balloon*, Martin "M.C." Schmidt and Drew Daniel of Matmos made one rule—no microphones—and chose one main mode of expression—all the vintage synths they could handle.

By Bill Murphy

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CHUCK DAHMER

## SUPERSIZE YOUR TONE

Want to record your guitar with a real amplifier but don't think you have the space? Try these techniques for getting big sounds when miking amps at home.

By Rich Tozzoli

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## YOU OUGHT TO BE IN PICTURES

You don't need a major-label budget to make a pro-looking music video. All you need is a camcorder, professional video-editing software, and these tips and tricks from independent filmmakers.

By Mike Levine

## DEPARTMENTS



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- **Sonivox Anatomy (Mac/Win)** Kontakt sound library
- **Mackie 802-VLZ3** compact mixer
- **Waves iGTR** personal guitar processor
- **Unique Recording Software Classic Console Strip Pro 1.1 (Mac/Win)** channel strip plug-in


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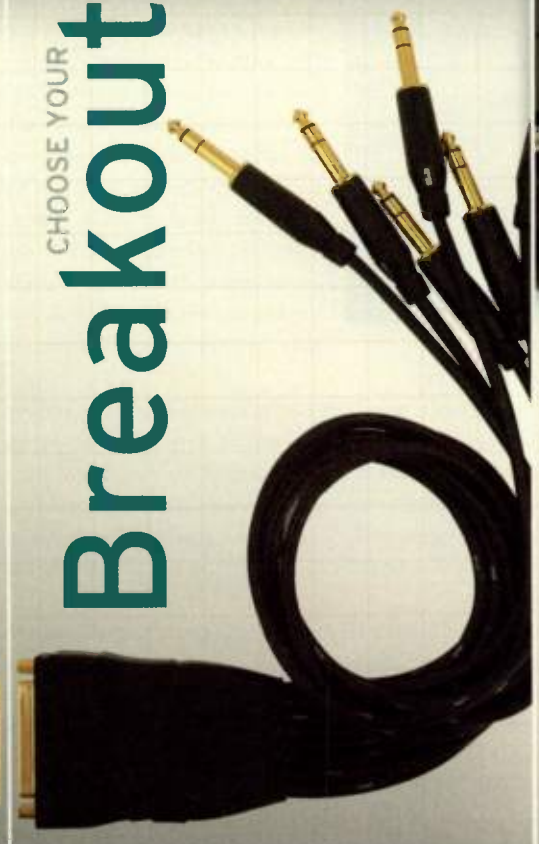

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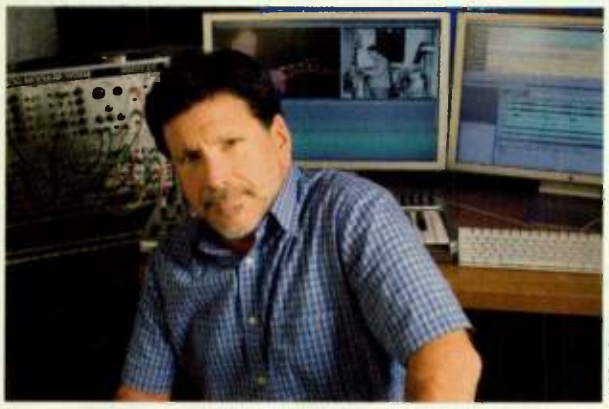

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# FRONTPANEL

By Gino Robair

## Download of the Month

### DDMF's IIEQ Pro 2.0 (Mac/Win) By Len Sasso

IIEQ Pro 2.0 ($0.50 minimum) from EQ plug-in developer DDMF (ddmf.eu) is a multistage filter plug-in (VST/AU) with a few special tricks up its sleeve. It is easy to use and CPU efficient, and it sounds great. You can try it out by downloading the free demo, which drops out briefly every 30 seconds. You buy the full version through PayPal (you do not need a PayPal account), and, of course, the developer would appreciate more than the minimum PayPal processing fee.

You start by selecting a configuration (series or parallel), activating up to ten filter stages, and choosing a filter type for each stage. All the usual filter types are represented: lowpass, highpass, bandpass, allpass, peak, notch, and shelf. For instance, you might configure a channel strip EQ consisting of a low-shelf filter, one or more parametric filters (called AnaPeak and DigiPeak), and a high-shelf filter in series. Each stage has gain, width (Q), and cutoff- or center-frequency settings, although for some filter types, the gain setting is not relevant. You can enter values numerically or by dragging dots around the display. The response curves of the focused stage and the combined effect of all active filters are displayed with light and heavy traces, respectively.

Parallel setups differ from what you might expect: the output of all the filters is summed with the unfiltered input. Because the filters are not phase linear, this configuration produces interesting phase-cancellation effects. For example, start with two bandpass filters, high- and low-shelf filters, or bandpass and allpass filters and then dial in the color you like or automate one of the filter frequencies for sweeping phaser- and flangerlike effects (see **Web Clip 1**). IIEQ Pro could well become your go-to plug-in for these kinds of effects.

ONLINE BONUS MATERIAL

## OPTION-CLICK By David Battino

### Sweet Streams

Discover cool features lurking inside popular programs

One of the handiest audio utilities is a *stream ripper*, a little program that captures the digital audio coursing through your computer and saves it to a file. I use stream rippers to capture sound bites from DVDs and encrypted movie files, musical excerpts from Web audio players, and voices from ancient speech synths (see emusician.com/tutorials/emusic_free_speech). I've also used them to mix multichannel MPEG soundtracks into editable stereo WAVs. Not only is stream ripping faster than loading the original file into an editor, but sometimes it's the only way to gather material for fair-use educational purposes.

On the Mac, I use Ambrosia WireTap Studio (ambrosiasw.com), which offers basic stream ripping for free. Rogue Amoeba Audio Hijack (rogueamoeba.com; $32) provides many more features at a modest cost. On Windows, my go-to stream ripper is Applian Freecorder (freecorder.com; free), which runs as a browser toolbar. (For more about David Battino's work, visit batmosphere.com.)

Freecorder, a free Windows stream ripper, capturing a DVD sound bite to MP3.

## Before Digital Sampling: Tape-Replay Keyboards . . .

**1948 Chamberlin**
Harry Chamberlin saw the potential of magnetic tape and manufactured the first tape-replay keyboard.

**1963 Streetly Electronics Mellotron**
With a name that's synonymous with prog rock, this British-built tape-replay instrument is still being manufactured.

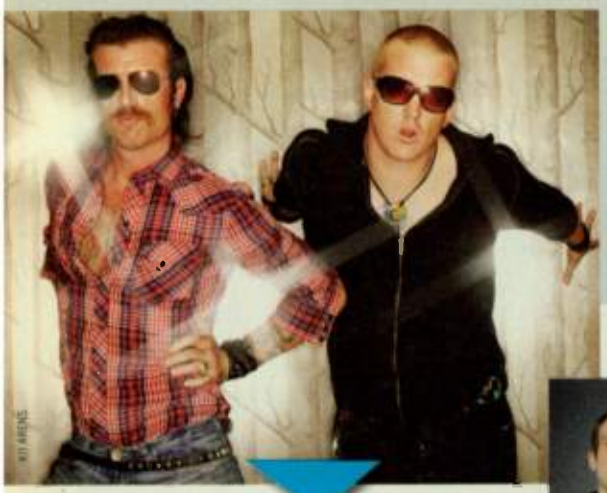
**1975 Birotron**
Dave Biro and Rick Wakeman's collaboration used tape loops in order to sustain sounds over 8 seconds.

# THIS MONTH'S SOUNDTRACK

**These albums encompass a diverse range of styles and composition methods, from rock and avant-garde electronics to Afro-pop.**

**THE LEGENDARY PINK DOTS:** *PLUTONIUM BLONDE* (ROIR)
Playful, evocative, and strange like a Victorian photo, this recording shines with early Pink Floyd influences.


**KASAI ALLSTARS:** *IN THE 7TH MOON, THE CHIEF TURNED INTO A SWIMMING FISH AND ATE THE HEAD OF HIS ENEMY BY MAGIC* (CRAMMED)
Rhythmically and melodically addictive percussion and guitars from a Congolese supergroup.



**PAUL RUDY:** *IN LAKE'CH* (TWISTED TRAIL)
The sophisticated use of timbre and space enhances the beauty of this electroacoustic suite.

**TALKBACK**

**EM Readers!**
Next month we focus on the importance of creating space in your mix. Ever had trouble getting clarity in a mix? Email us at emeditorial@emusician.com, and your responses will be posted online with the article.

**EAGLES OF DEATH METAL:** *HEART ON* (DOWNTOWN)
A mix of '70s-era cowbell rock and 21st-century tech, with a nod toward the Jon Spencer Blues Explosion.

**THE SEA AND CAKE:** *CAR ALARM* (THRILL JOCKEY)
A dozen tightly arranged pop songs that have an attractively breathless quality.

## . . . vs. Optical Disc

**1970**

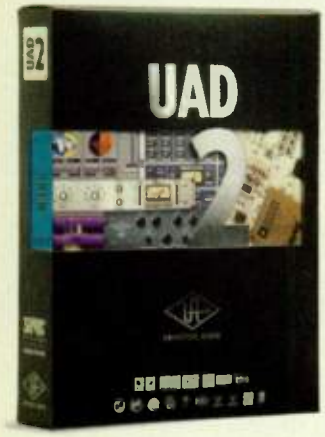
**Optigan**
With a name that connotes "optical organ," this instrument offered quirky rhythm tracks in a variety of musical styles, played by real musicians.


**Chilton Talentmaker**
The extremely rare follow-up to the Optigan included improvements in the disc drive and playback audio quality.

**1975**

**Vako Orchestron**
This ill-fated optical-disc keyboard was designed for the pro market and meant to go head-to-head with the Mellotron.

By Len Sasso




# UNIVERSAL AUDIO UAD-2

## SHARC HUNT

Universal Audio (uaudio.com) has upped the ante in DSP accelerator cards with its new UAD-2 series (Mac/Win, from $499). You can mix and match up to four of the Solo, Duo, and Quad PCIe cards, which respectively offer 2.5, 5, and 10 times the DSP power of the original UAD-1. The new cards are powered by Analog Devices 21369 SHARC floating-point processors in single and multichip configurations. Universal Audio's existing DSP plug-in partners—Neve, Roland, SPL, Valley People, and Empirical Labs—will be joined by new partners, including Harrison, Moog, and Little Labs, to continue the high level of authenticity of UAD-2 plug-ins.

# TOONTRACK SUPERIOR DRUMMER 2.0

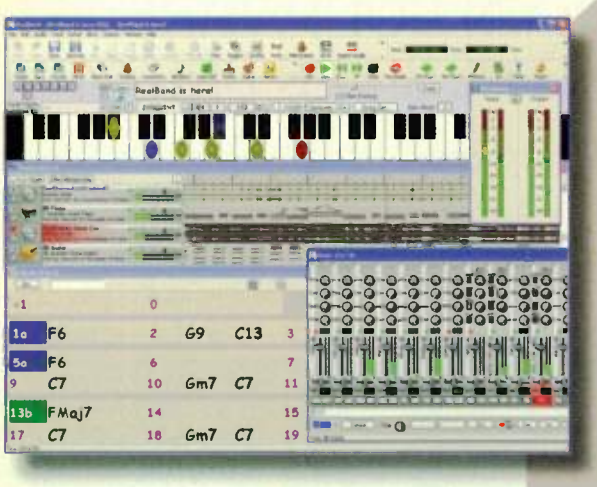
## CHOPS FOR SALE

Toontrack (toontrack.com) Superior Drummer 2.0 (Mac/Win, $349, upgrades from $129) puts a full-featured drum sampler on your desktop and fills it with a 60 GB (compressed to 20 GB on disk) multimiked drum kit, *The New York Studio Legacy Series*, vol. 1. The package includes EZplayer Pro for auditioning and multitracking MIDI files. EZplayer Pro supports mapping for a variety of popular drum samplers as well as direct through for playing generic virtual instruments. Both plug-ins come in AU, VST, and RTAS formats for Mac and PC. The bundle also includes Toontrack Solo for standalone operation.


## CAPTURE THE MOMENT

# TASCAM GT-R1 PORTABLE RECORDER

Tascam (tascam.com) has launched the GT-R1 portable recorder ($349) for guitar and bass players. The unit expands on the DR-1 recorder with features from Tascam's guitar-trainers series to make it an ideal songwriters' sketch pad. You can record MP3 or 24-bit, 44.1 kHz WAV files using the built-in condenser mics or the ¼-inch instrument input. Sketch pad and training features include overdub, speed change without affecting pitch, and guitar and bass cancellation. The package includes a 1 GB SD card, a rechargeable battery, and a USB 2.0 connection for file transfer and charging.



# PG MUSIC REALBAND 2008.5

## MORE IN THE BOX

PG Music (pgmusic.com) RealBand 2008.5 (Win, $129 [MSRP]) combines the most popular features from PowerTracks Pro Audio and Band-in-a-Box for a complete sequencing solution. Start with a blank slate or a Band-in-a-Box arrangement, add your own tracks (including RealTracks and RealDrums live instrument parts), and dial in DirectX and VST plug-in effects to complete your song. Notation, intelligent automatic arrangements, the Audio Chord wizard, support for all audio and MIDI file formats, and a 48-track MIDI/audio mixer with 16 effects buses per track complete the scene.


## LESS IS MORE

# MACKIE U.SERIES MIXERS

Mackie (mackie.com) has entered the field of quick-access, easy-to-use mixing with the release of the U.420 ($229.99) and U.420d ($279.99). These 4-channel mixers feature 24-bit, 96 kHz FireWire I/O along with standard ¼-inch TRS jacks and RCA phono inputs. The U.420 offers four stereo line inputs, and you can switch channel 1 to direct input for guitar and bass. The U.420d adds two mic preamps and 48V phantom power. All channel strips have 3-band, full-kill EQ. Both units come with Mackie Tracktion software. Add a pair of Mackie MR5 monitors, and you have a full-performance project studio for right around $500.

# GET SMART

### The MIT Press's Game Sound

*Game Sound* ($28) from the MIT Press (mitpress.mit.edu) offers both practical and theoretical discussions on creating audio for games. The book's two underlying themes—why game audio is different and technological constraints—are interwoven in coverage of the history of game audio, the difficulties posed by nonlinearity and interactivity, and the production process for a contemporary game at a modern, large game company. Author Karen Collins is Canada Research Chair at the Canadian Center of Arts and Technology, University of Waterloo.

### Course Technology PTR's Artists on Recording Techniques


Curious about what techniques your favorite artists use to capture their music? Jeff Touzeau has been asking that question in his "Music, Etc." column in *Pro Sound News*. *Artists on Recording Techniques* ($29.99) from Course Technology PTR (courseptr.com) presents, for the first time, the full, unabridged interviews and related bonus material. Everything from vocals to guitar to drums in a variety of styles and genres is covered. Well-known pop and rock artists such as Roger Waters (Pink Floyd), Nick Rhodes (Duran Duran), and Tony Bennett share their insights into every aspect of the creative process.

### Hal Leonard's The Business of Audio Engineering

You've mastered the mixing desk and know your way around the studio. Now what? In *The Business of Audio Engineering* ($17.69), Dave Hampton (davehampton.com) leads you through the real-world jungle of professional engineering, showing you how to establish yourself in the business and make a real living. You learn how to attract and keep clients, book studio time, handle problem artists, deal with producers and labels, and manage those crises you can't prevent. When school's out and it's time to move on, you'll find this book at your local bookstore or online from Music Dispatch (musicdispatch.com).

# Sound Advice

## Soniccouture (Bowed) Piano

Start with a 9-foot Baldwin grand piano, some nylon fishing line, and bow rosin and add a dollop of imagination and lots of patience, and you have Soniccouture's latest offering (soniccouture.com). *(Bowed) Piano* (Mac/Win, $99 download, $104 disc) is a 1.6 GB collection of multisampled instruments for Native Instruments Kontakt 2 and 3 and Apple Logic EXS24. In addition to the long, sustained notes played by drawing the nylon through the piano strings, you get short, staccato articulations produced by tongue depressors faced with horsehair. This very playable instrument comes in dry and effects-processed incarnations.

## TrackTeam Audio Drum.Crate


TrackTeam Audio (trackteamaudio.com) expands its library of Live Packs for Ableton Live 7 with the vinyl-inspired *Drum.Crate* (Mac/Win, $39.99). It starts with more than 1,100 one-shot samples of dry and processed electronic and acoustic percussion. Those are organized in 30 Drum Racks with associated professionally recorded MIDI clips. You also get a collection of MIDI effects called the Articulator, which contains more than 60 MIDI Effect Racks for creating authentic articulations such as flams, release strokes, roll, fills, echos, and so on.

## Fixed Noise Kreate by Speedy J

*Kreate by Speedy J* (Mac/Win, $199.99) is a 4 GB collection of more than 500 instruments for Native Instruments Kontakt Player 2 (included). This techno-, trance-, and dance-inspired library from Fixed Noise (fixednoise.com) by Jochem Paap, aka Speedy J, has something for most electronic genres. The instruments are spread across six categories. Kits contains mostly processed percussion hits. FX is a broad assortment of ambiences and otherworldly effects. Loops contains fully composed dance loops, whereas Konstrukt consists of the elements of those loops. In the Sequences bin, you'll find rhythmic as well as abstract sequenced material. Tones rounds out the collection with basses and tuned percussion.

# VIRSYN SOFTWARE SYNTHESIZER PRISM

## SHIFTY BUSINESS

VirSyn Software Synthesizer (virsyn.de) takes a fresh approach to pitch-shifting with its AU, VST, and RTAS plug-in Prism (Mac/Win, approximately $295). Prism divides the signal into 27 separate frequency bands, then applies frequency shift (single-sideband modulation) by a different amount to each


band. That preserves transients much better than granular- or FFT-based pitch-shifting, while shifting narrow frequency bands preserves harmonic relationships better than broadband frequency shifting. Prism offers lots of creative potential. For example, you could repitch the kick drum in a drum track to fit better in the mix without affecting instruments, such as cymbals, in other frequency ranges.

# HERCULES DJ CONSOLE MK2

## DJ MIXING 4U

Hercules (hercules.com/us) has released the DJ Console MK2 (Mac/Win, $249.99 [MSRP]), a cost-effective entry point for aspiring DJs. The 2.5-pound desktop unit controls two virtual decks with large jog wheels, pitch and volume controls, three EQ buttons, and a crossfade slider. In addition to digital USB inputs supporting most popular formats, you get two line/phono inputs for mixing analog signals, a mic input with talk-over function, and a headphone output for cueing. The unit includes Virtual DJ 3 DJ Console Edition software for Mac and PC.

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**Keyboards used:** Moog Voyager, Hammond B-3, Nord Lead, Wurlitzer 200A

**Web site:** eastvillageoperacompany.com

DEAN KARR

# Fresh Aria

## East Village Opera Company melds rock with opera.

Classical influences are nothing new in rock music: back in the '70s and '80s, virtuosos like Emerson, Lake & Palmer and Yngwie Malmsteen were more likely to be influenced by Paganini than by Presley. East Village Opera Company (EVOC)—founded by arranger, multi-instrumentalist, and programmer Peter Kiesewalter, along with singer Tyley Ross—has carried on the tradition by using rock instruments and arrangements to play arias from the classical canon. "The philosophy of this project is simple: playing old music on new instruments," Kiesewalter says. "And while we see blues, jazz, rock, and country artists rework old songs all of the time, I don't see many artists stripping away arias of their orchestrations and treating them as simple songs" (see **Web Clip 1**).

ONLINE BONUS MATERIAL

By Emile Menasché

Canadians Kiesewalter and Ross developed the idea of performing operatic arias with a live rock band while working together on a film score. Soon a residency at a New York City club was followed by a major-label recording contract and an eponymous debut album on which, Kiesewalter says, the material didn't change much from the stage to the record.

The band's sophomore effort, *Olde School* (Decca/Universal, 2008), came together more slowly. "We basically had to write, arrange, and record this album while we were still touring the last one," Kiesewalter explains. "I knew there was no way we would be able to record it in a hurry. So I found a space on the Lower East Side in New York, pulled lumber out of Dumpsters, built my studio, and bought some gear that would enable us to do it slowly and organically at our own pace."

Before recording could begin, the band needed to choose the arias, match them to singers (they work with several in addition to Ross), develop arrangements, and write English lyrics based on the spirit of the original pieces. "Then we'd do rough demos in MIDI using [Spectrasonics] Trilogy for bass and [Toontrack] EZ Drummer for drums—later adding rough guitars, MIDI keys, and orchestral instruments," Kiesewalter says.

The band's rhythm section rehearsed with charts developed from these demo sessions. As the tunes came together, Kiesewalter wrote orchestral parts on paper before transferring them to Sibelius notation software. (The Czech Philharmonic Orchestra recorded the final orchestral tracks in Prague.) The nonorchestral instruments were recorded into Digidesign Pro Tools. The basic tracks were cut at commercial facilities, and most of the overdubs were done at Kiesewalter's studio.

Kiesewalter says EVOC used a lot of analog gear, miking electric guitar played loudly through vintage amps and deploying an arsenal of hardware keyboards like the Moog Voyager, Nord Lead, Hammond B-3 through a Leslie, and Wurlitzer electric piano. "We used no real tricky recording techniques to speak of—just microphones in front of musicians and amplifiers," he notes. "The stereo electric parts were my Wurlitzer 200A through a Fender Vibro Champ on one side, doubled with Digidesign's Velvet plug-in on the other for that Supertramp vibe" (see **Web Clip 2**).

Additional studio tools used by Kiesewalter included a Line 6 POD for some guitar tracks and a range of soft synths such as Logic ES2, EastWest Nostalgia, and McDSP SynthOne.

Would EVOC's use of fuzz and filters make the classical masters roll over in their graves? Kiesewalter doesn't think so. "Mozart, Puccini, et al. would use Pro Tools and electric guitars were they alive today." em

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uad-2.com

Home base: Venice, California
DAW software used: Digidesign Pro Tools
Sampler: Akai MPC 3000
Web site: myspace.com/sunnylevine

DIANE GERSHUNY

# When Sunny Goes Solo

## Producer Sunny Levine steps out from behind the console.

Producing literally runs in the family for Sunny Levine. His grandfather is none other than Quincy Jones; his dad is Stewart Levine, known for his work with the Crusaders, Minnie Riperton, and Simply Red; and his uncle is QD3, who forged hip-hop paths with LL Cool J, Ice Cube, and Tupac Shakur.

By Diane Gershuny

Levine has made his own way as a producer, working with the likes of Mickey Avalon, Happy Mondays, Pete Yorn, and Hugh Masekela; he has also worked on film scores with Ry Cooder. Levine's work has earned him a burgeoning reputation for his unconventional style.

*Love Rhino* (Quango, 2008) represents his debut as a solo artist. When he began recording what was to become the tracks for the CD, he was creating music simply as a release from his busy schedule of producing film and album sessions in his home studio. "Musical therapy" is how he describes the sessions that began the project. But they developed into more, and his project was picked up by the indie label Quango. *Love Rhino* offers an intimate chronicle of love gone wrong, featuring quirky and insightful lyrics set to laid-back So-Cal beats (see **Web Clip 1**).

ONLINE BONUS MATERIAL

Levine calls his distinctive production method "organized freestyling." He often starts with a random gathering of material, such as audio snippets plucked from his vast vinyl collection and sampled into his Akai MPC 3000, or live-guitar riffs or drum patterns recorded into an Apple Power Mac G4 with a Digidesign Pro Tools MixPlus system. He then slices, filters, processes, and rearranges these elements into musical collages. The results are eventually punctuated with horn flourishes, bass fills, or whatever enhances the melody.

"I use a lot of samples, especially from bad '70s new-age records, but manipulated so they're unrecognizable," he explains. "Even before a sound gets to my Akai MPC to sample, it'll go from the Technics turntable into a Mackie 1604vlz board and a rack of effects."

"Glass Jaw" (see **Web Clip 2**) epitomizes Levine's nontraditional song-evolution process. "We used a sample from an old spaghetti western soundtrack while working on the score to a bad Hallmark movie," he recalls. "Amir Yaghmi, who collaborated on these songs, played this cool guitar thing, and that night I put it all together—chopping it up and moving it around. I later freestyled the lyrics, punching in one line at a time until I had a whole verse."

Orange Stella is the name of Levine's studio, a skylit loft near Venice Beach. "My glamour items are Tannoy SRM-10Bs (monitors), which are wonderful to work on," says Levine. "A Neve 8-channel sidecar makes it all sound great—everything goes through the mic pres and sometimes back out. I'm also into cheap stuff; I like old tape recorders and toy synths. I use an Akai stereo cassette (recorder) to saturate sounds, and the built-in limiters make for strange dynamics and distortions. My brother circuit bends these crappy little keyboards and adds controls so I can change the speed and add distortion. A broken Nord Lead is also a big part of my sound, especially on hip-hop records. It makes these weird sounds—I wouldn't dream of fixing it."

Prior to mastering, Levine had the enviable opportunity to remix the project. "When Quango decided to release it," he says, "I didn't want to put out that sad record and spend a year promoting it. My compromise was to give it a lighter, poppier feel. It was actually fun—I could go back and fix things, and the feelings didn't mess with me." em

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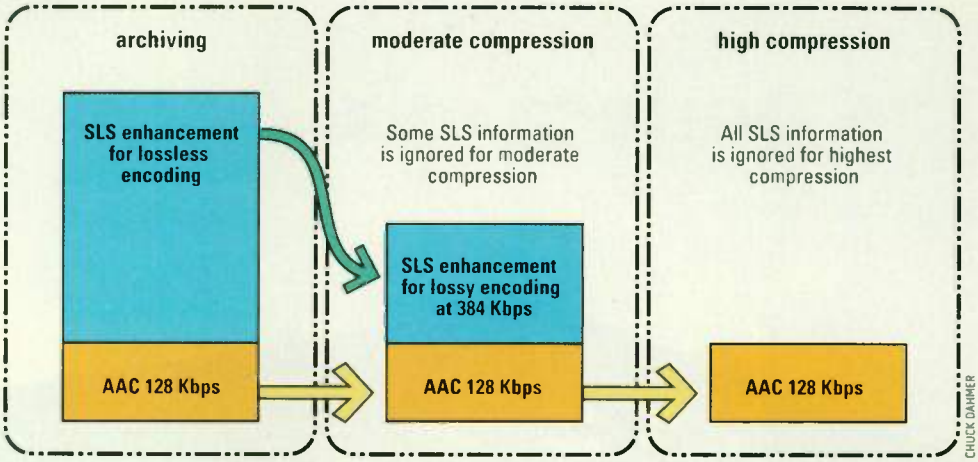


**FIG. 1:** HD-AAC encodes digital audio as an AAC core with an SLS extension layer that together represent the original file losslessly. Depending on the capabilities of the playback system, some or all of the extension data can be removed or ignored while still leaving enough data to play the music.

# One for All

## A new audio codec can serve many applications | By Scott Wilkinson

Data compression is probably the single most important factor in the meteoric success of digital audio, especially when it comes to Internet downloads and portable players like the iPod. Lossy compression formats such as MP3 lose as much as 90 percent of the original data—hence the term *lossy*—so that music tracks can be quickly downloaded. In addition, such files require very little memory, allowing thousands of songs to be stored on a device no bigger than a matchbook.

However, many people bemoan the sacrifice of sound quality in favor of convenience, going so far as to claim that lossy compression removes most of the music's emotional impact. Also, lossless compression, which provides a perfect bit-for-bit representation of the original audio file, is critical for archiving high-quality recordings. In that case, of course, the decrease in file size is not nearly as dramatic—losslessly compressed audio files are about half the size of the original, whereas lossy compression reduces the file size to as little as 10 percent of the original.

The Fraunhofer Institute for Integrated Circuits IIS (www.iis.fraunhofer.de/EN), the organization that brought us MP3, has developed a solution that could bridge the gap between the convenience of lossy compression and the quality of lossless compression. Dubbed HD-AAC, the new scalable audio codec (coder/decoder) combines two codecs from the Moving Picture Experts Group (MPEG), the international organization that standardized MP3, more technically known as MPEG-1, Audio Layer 3.

At the core of HD-AAC is MPEG-4 AAC (Advanced Audio Coding), a type of lossy compression that is more efficient—and therefore higher quality at a given bit rate—than MP3. To achieve lossless compression, HD-AAC adds an extension layer called MPEG-4 SLS (Scalable Lossless Coding—I've found no one who can explain why this is abbreviated "SLS" and not "SLC"). Together, these codecs compress any audio file losslessly.

The brilliance of HD-AAC is its scalability. Some or all of the extension data can be ignored depending on the bandwidth and storage requirements of the playback device (see Fig. 1). If all the extension data is ignored, you're left with standard AAC, which most portable players can easily handle. However, if you have, say, a media-server system with lots of storage and bandwidth, you can enjoy the same file with higher quality.

Another advantage of HD-AAC is backward compatibility. Older devices simply ignore the extension layer and play the AAC core, while newer players with an HD-AAC decoder can access more of the data for higher-quality playback.

HD-AAC can encode 2-channel audio up to 192 kHz/24-bit, but 96 kHz/24-bit is more common and can also be used for multichannel surround mixes. Losslessly compressed 2-channel, 192 kHz/24-bit audio requires a bit rate of about 3.5 Mbps, while the AAC core is normally encoded at 128 Kbps, illustrating the wide range of bit rates this codec can accommodate within a single file. Even better, an HD-AAC file can also include album art, liner notes, lyrics, and other metadata normally associated with physical media such as CDs.

There are many possible applications for HD-AAC, from lossless archiving and audiophile listening to high-quality broadcast transmission at a near-lossless bit rate to playback on portable devices at lower bit rates. In all cases, the source is a single file with no need to reencode for different applications. For example, you could rip your CD collection losslessly and listen to it on your home entertainment system, then play lossy versions of the same files on your iPod. This is a very exciting development that will become increasingly important in our digital world.

# Supersize Your Tone

By Rich Tozzoli

## Tools and techniques for recording killer electric-guitar sounds in your apartment or small studio.

Capturing great guitar sounds is easier said than done. This is especially true for people working with amps in small-to-medium-size home studios or personal-producer rooms. Still, when you're plugging in an electric guitar, you don't always need a big room to get a big sound. With a little creative use of space, a few choice pieces of gear, and some solid fundamental recording techniques, you can turn out killer tracks.

It all boils down to the amp, the microphone, and the sound of the guitarist. In my experience as a player and from recording countless guitar sessions as an engineer, the rest of the variables (including preamps, pickups, cables, picks, speakers, strings, and ambient room tone) are important but not primary.

These days, many guitarists solve the problem of getting big sounds in small places by using amp modelers (software or hardware based), bypassing actual amps altogether. This technique can be very effective, and I frequently use amp modelers for some sounds. What's more, if you have noise restrictions in your studio, using an amp modeler may be the only way to go. But this article will focus

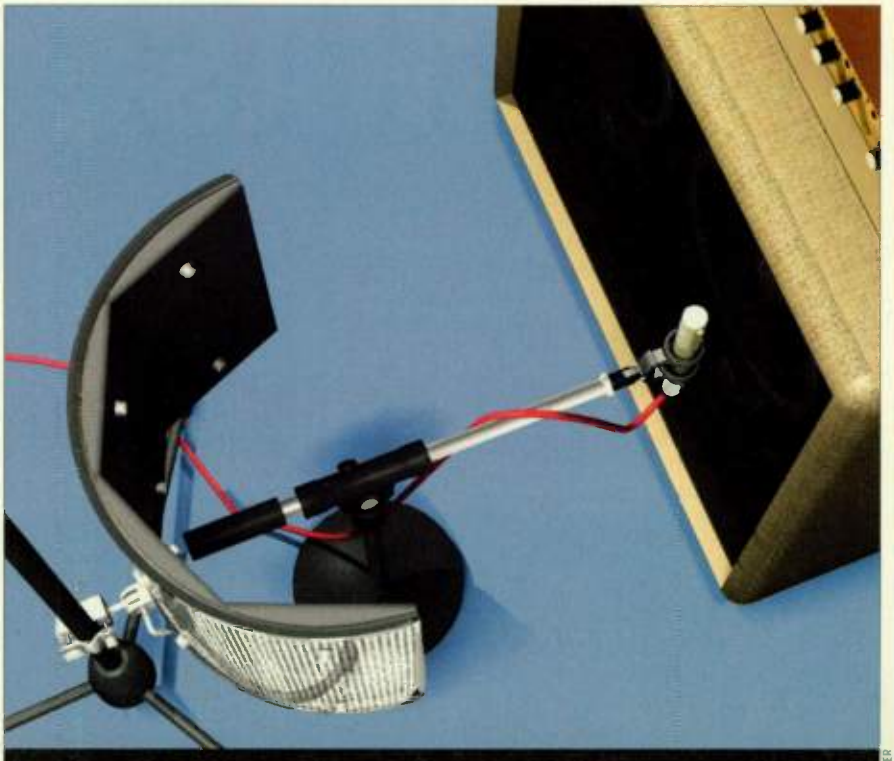

FIG. 1: If you want the tone of your ribbon mic but don't want to pick up as much room sound, try putting a portable absorber like the sE Reflexion Filter or a gobo about a foot or two behind the mic.

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mainly on getting your tone the old-fashioned way: by miking an amp.

## Amped Up

With the huge range of amps on the market, there is no right or wrong make or model for the job. From vintage classics to small cheapies, there's something out there for every budget. That said, the amp is a crucial part of your overall tone. There's a reason why great guitarists use great amps. That's not to say you can't get creative sounds from less expensive models—you certainly can. But by choosing an amp that outputs a high-quality sound that inspires you, you're starting with the right ingredients before cooking.

Many amps, especially tube models, need a little extra love in order for you to coax out a sound worthy of recording. In my studio, I have a small but effective collection of amps that need to be maintained, just like my car. Because amp maintenance is not my forte, I have an amp technician keep them updated with such things as tubes, capacitors, and resistors (see the **online bonus material** "Amp Tune-up" at emusician.com).

ONLINE BONUS MATERIAL

Other small touches, such as making sure your amps are grounded properly, will pay dividends when the red light is on and it's tracking time. For example, on my old '62 Gibson Falcon, I had an amp technician change the AC cord from the original 2-prong to a 3-prong, which helped dramatically with buzz and grounding issues.

Also, don't forget to listen to the amp's speaker. Doing so serves two purposes. The first is to check for cracks or tears—you don't want your session to come to a halt after you find out that a rip is causing unwanted crackling. If you can, have someone else play through the amp so you can focus on just listening. Make sure to give the speaker a visual inspection as well.

The second purpose is to enable you to find the best speaker (or speakers) to place the mics on. Most often in 2 × 12 or 4 × 12 cabinets, each speaker will sound different. Be careful when exposing your ears to loud volumes, but at least have a listen to each speaker (this time just for the tone). Then choose the one or two that sound best and work from there.

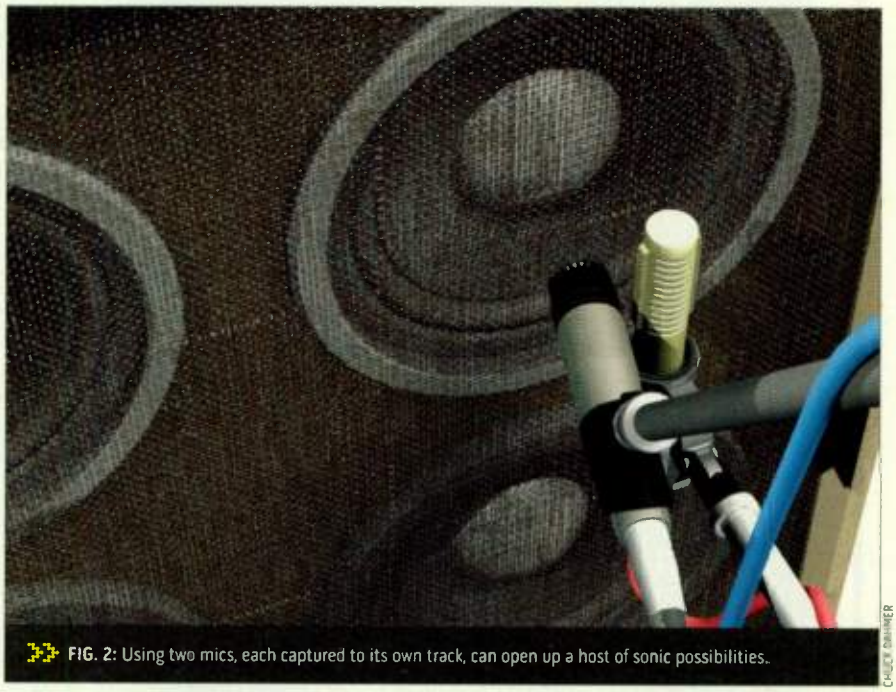

FIG. 2: Using two mics, each captured to its own track, can open up a host of sonic possibilities.

CHUCK DAMMER

## I Like Mics

As with amps, countless brands and types of mics are available, at prices ranging from $50 to $5,000. A great mic to use for starting out any amped-guitar session is the Shure SM57 (see the **online bonus material** "Manufacturer Contacts"). Many engineers would say it's their "desert island" mic. This dependable, inexpensive dynamic cardioid-pattern mic has a frequency response from 40 Hz to 15 kHz and has recorded innumerable classic guitar tones through the years. It can be placed quite close to the cabinet and can handle extremely high sound-pressure levels. Of course, placing the mic on-axis (directly facing the speaker) or off-axis (slightly angled) will each yield different tonal results. The only way to find out what works for your session is to try both and use your ears.

A variety of modifications can be made to the standard SM57 to alter its sound. Engineer-producer Pete Moshay, whose multi-Platinum work includes the likes of Hall & Oates, Ian Hunter, and the Average White Band, has three different kinds of 57s in his collection. "The stock 57 is like your mama," says Moshay. "It's such a familiar sound, you have to love it.

"However," he continues, "if you pull the transformer from the 57, it will have at least 10 dB less gain. But the trannyless model also has more balls to the sound, with more bottom pushing out. It's a bit more muffled, but in a good way."

The last model Moshay uses has a different transformer (T58), made by Tab-Funkenwerk. "It's the same guts and glory as our old friend, but with a more inviting mid quality. It's like a 57 just got a more hi-fi sound without losing the classic character. The word *open* seems the best way to describe it." Moshay notes that he sometimes uses his three different 57s together (held with a rubber band) and adjusts their levels as needed.

The Shure SM58, also in many people's mic drawers, has a similar sound to the SM57. A major physical difference is the grille, which is smaller on the SM57. That allows you to place it closer to the source, therefore increasing the output and bass response of the mic. But if you have a 58 rather than a 57, it's worth trying it on your cabinet—you may be able to get similar results. Shure also has Beta 57s and 58s available, which have a slightly modified frequency response and hotter output than their cousins.

There are many other good dynamic mic choices for capturing amp sounds. The

Sennheiser E609 and MD 421 are quite popular, as are the Electro-Voice RE20 and Audix i5. I've used the 421 and RE20 on many sessions, and they provide a nice warm sound with a lot of extended bottom end.

While a dynamic mic is a good one to start with for guitar recording, other effective options are available. Ribbon mics, which have bidirectional (or figure-8) polar patterns, are a favorite of mine. (For more on mic patterns, see "Square One: Mic Specs Demystified" in the February 2007 issue of EM, available at emusician.com.) Though pricier than a typical dynamic, ribbon mics have a unique sound that's often described as "smooth," "realistic," and "creamy"—great words to live by when seeking a nice guitar tone. You've certainly heard and seen the classic models (such as the RCA 44) used on some amazing Sinatra, Nat King Cole, and Brian Wilson vocal tracks. Today's ribbons, made by companies such as AEA, beyerdynamic, Blue, Groove Tubes, Royer, and sE Electronics, are solid, reliable mics that can easily withstand high guitar volumes—unlike some of their predecessors.

For much of my work, I use a Royer 121, which can handle up to 135 dB. Because of its figure-8 pattern, the back of the microphone is responsible for quite a bit of the sound. This is useful because while the front records the direct sound of the speaker, the rear captures the sound of the amp reflecting in the room. The size and type of the room will affect the tone, but the figure-8 pattern adds a nice sense of space to a guitar recording (see **Web Clip 1**).

Also interesting is that at distances closer than 2 feet, the back of the Royer 121 is slightly brighter than the front. With that in mind, you can experiment recording with the rear side (the one without the label) of the microphone facing forward. Just make sure to flip the phase if you try this, because the front side is inherently in phase and the back is phase reversed.

## Time to Reflect

One technique that I've used effectively in a small space when using my Royer (or any figure-8 mic) is to place an sE Reflexion Filter or other portable absorber (even a thick packing blanket suspended on mic stands) about 1 to 2 feet behind the mic at about the height of the speaker. That minimizes the room ambience and reflection and provides more isolation (see **Fig. 1**).

This tighter sound can also be more effective when the space you're recording in isn't complimentary to the overall tone. Moving the absorber in even closer to the mic will change the bass response by minimizing the acoustic energy reflecting around the amp. This can then be used to provide more low end in your guitar track without the need for additional EQ.

## Two for One

When recording myself or many of the artists I work with, I often use a combination of a dynamic mic and a ribbon—captured onto separate tracks. The dynamic provides the aggressive midrange grit, while the ribbon delivers a smoother, warmer sound. By recording an amp with two mics, you have more tonal options at mixdown and can create a blend that works in the context of each song. This 2-mic technique is especially useful when recording heavy, distorted sounds.

A tried-and-true technique for using a dual-mic combination is to place a dynamic slightly off-axis, just outside the center of the speaker cone, about an inch or two from the grille. Then place a ribbon mic at the tip of the dynamic, directly on-axis to the speaker (see **Fig. 2**). Experiment with both the left/right positioning and the distance from the grille cloth; each minor movement will change the tone. Closer in will yield a tighter sound, and farther out will add more air.

Try moving the ribbon mic back a few feet (you could also try replacing it with a large-diaphragm condenser mic like an AKG C 414, an Audio-Technica 4050, and so on), while leaving the dynamic tight on the amp. Or use a combination of all three: the dynamic and ribbon tight on the amp, and a large-diaphragm condenser room mic. You'll then have an ambient room mic to add depth to your close-in, tight guitar sound.

## Multiple Amps

In addition to using more than one mic to get a great guitar sound, using more than one amp increases your sonic options (see **Web Clip 2**). But if you do so, try not to simply use a Y-cable to split your signal. That will degrade your signal path and drop the level going to each amp by 3 dB. A better solution is to use a quality guitar DI splitter.

A box like the Radial JDV Mk3 not only is a DI, but also has three instrument amplifier outputs. Taking it a step further, Radial's JD7 Injector is a high-impedance, unity-gain guitar-signal distribution amplifier that can drive up to seven amps at the same time from a single input signal. Little Labs makes a product called the PCP Instrument Distro for a similar purpose.

For multiple-amp recording, I use the Creation Audio Labs MW1, which was designed as a studio tool for guitarists. Like the JD7, it can output to a number of amps from a single input source. It can also be used as a high-quality DI and a reamping unit. Of course, you'll need to use more mics with several amps, but the end result can be powerful.

> "The stock 57 is like your mama."

While not cheap—the JD7, the PCP Instrument Distro, and the MW1 all sell for more than $1,000—these units use high-quality components to keep the guitar signal pristine. They also have the ability to switch grounds, which is critical when you get hum using multiple amps. Not every amp reacts the same way to an input signal, and I'm constantly playing with the grounds (called the Chassis Ground Lift on the MW1) to keep the recording clean. There are also less expensive options for simply multing your guitar signal, such as Morley's MOR ABC Switch Box and ART's ABY Cool Switch Pedal.

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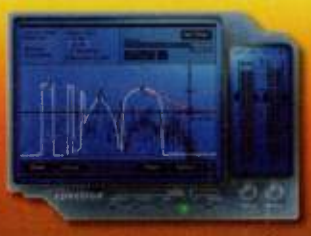

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## But Wait, There's More

Units like the MW1, the JD7, and the PCP Instrument Distro also offer the ability to output a clean DI sound (through balanced XLR outputs) to your recording device. This comes in handy because besides capturing the amps, you get a clean guitar track that can be used in many creative ways.

First, you can place any of the excellent guitar-amp software plug-ins available onto the clean DI track, for even more tonal options. Second, you can reamp the signal at any time by sending it out to an amplifier and rerecording it. (For more on reamping, see "Better Tone Through Reamping" in the October 2008 issue.) Note that you'll need to turn a balanced +4 dB signal from your recorder into the high-impedance signal that guitar amps like to see. In addition to the previously mentioned boxes, many other products are available for such purposes, like the Reamp V.2 box, the Little Labs Red Eye, and the Radial X-Amp.

## Direct to You

Some amp heads also have a direct out, which can be used to record the output without the cabinet. I have a Mesa/Boogie MKIV head, which I often use for heavy distortion. By using the direct out (which in this case is not clean—it's the saturated sound from the amp), I can record anytime, day or night, without cranking up my 4 × 12 cabinet.

For extra kick, I use a software plug-in such as Digidesign Eleven (see **Fig. 3**), which has the option to bypass the modeled amplifier and use only the cabinet. When it's configured as such, I then apply any assortment of cabinets from the software to the hardware tube output from the Mesa/Boogie. Most of the time, I will create two instances of Eleven panned hard left and right—each with a separate type of cabinet (see **Web Clip 3**). I'll also add a few milliseconds of delay to one (usually around 40 ms) and a nice spring sound from an impulse response reverb.

**FIG. 3:** This screen shot shows Digidesign Eleven, with the amp model bypassed but the cabinet model engaged. Such a configuration works well when used with the signal from the direct output of an actual amp, such as the Mesa/Boogie MKIV.

## Far, Far Away

I live in a corner-unit condo, up on the third floor. Directly next to my second bedroom, which I've turned into a production studio, is a giant master closet. After drilling through the wall, I ran a series of XLR, ¼-inch, and headphone cables into the closet, where I lined up

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my amp collection. The clothes in the closet act as a great buffer of sound, and I can still record my amps in isolation, adjust the mic levels from the preamps, and monitor them live through the speakers in my control room.

But sometimes I like to record standing directly in front of my amp, for both the overall feel and the sustain (and feedback) it can deliver. In order to do so, I picked up a Frontier Design TranzPort, which is a remote DAW controller. Mounted atop a mic stand, this $199 wireless unit controls my Pro Tools HD right through the walls (it works with most popular DAWs), letting me keep my cable run to the amp supershort. It's an excellent, inexpensive solution for those who want to get away from the computer screen when recording. Just make sure your headphones give you enough level to hear your tracks over the amp sound.

If you don't have the luxury of using an amp closet, an amp room across the hall or in the basement would work. Radial and Little Labs offer products designed for such situations. Costing around $250, Radial's SGI Studio Guitar Interface features transmitter and receiver modules that you connect using a standard balanced XLR cable. This system lets you record amps more than 300 feet away, so you can easily turn any distant room into an amp den for a few hours of tracking. The Little Labs STD ($150) uses a single base unit and offers two outputs. As an alternative, you could also plug your guitar into a DI, run an XLR cable out of it, plug that into a reamping device, and connect its output into the amp.

## In or Out

By experimenting with the phase of the mics coming from a multiamp or a multimic-with-1-amp setup, as well as that of your clean DI signal, you can create some unique guitar sounds. By mixing in phase-altered tracks, the tone and character will change considerably. You can alter the phase at either the preamp source while recording or later during mixdown—something easily accomplished using any software plug-in that offers phase reversal. When altering the phase relationships of your various sources, you'll need to experiment. As with other techniques, sometimes it will work for your track and sometimes it won't.

When mixing guitars, I rely on a good metering plug-in such as Waves PAZ Analyzer or Roger Nichols Digital Inspector to check for phase and overall frequency response. I recommend downloading the free copy of Inspector at rndigital.org/authorizeinspector.html. Last but not least, close your eyes and use your ears. They will rarely steer you wrong.

*Rich Tozzoli is a producer, engineer, and surround mixer who has worked with artists ranging from Al Di Meola to David Bowie. A lifelong guitarist, his music can be heard on Fox NFL, the Discovery Channel, and Nickelodeon.*

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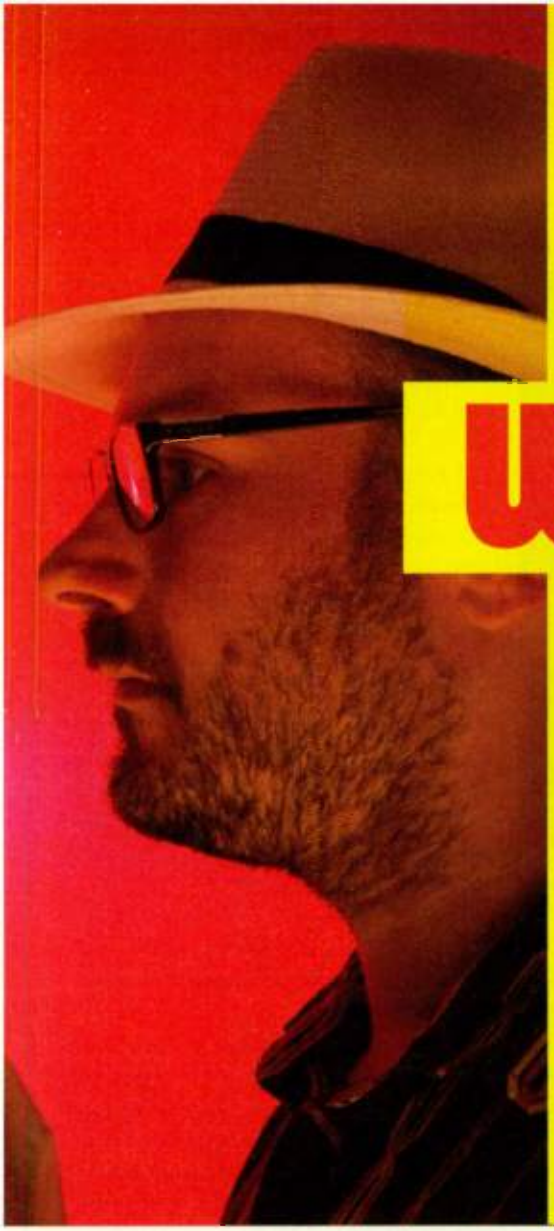
FIG. 1: Matmos has always relied on esoteric sound sources. On *Supreme Balloon*, they used the Swar Sudha Electronic Shruti Box (left) to generate drones.



# Such Wonderful Toys

## Experimental electronic-music duo Matmos takes on all the synths they can handle.

By Bill Murphy

Not many bands would start a live set in total silence—armed only with a pair of penlights—and move through the crowd while randomly illuminating faces, one by one, on a serpentine route to the stage. Call it situationist, interactive, or even performance art, but if there's one thing that Martin "M.C." Schmidt and Drew Daniel—collectively known as Matmos—enjoy doing, it's throwing a wrench in people's expectations. They did all that and more at a recent show in New York's Greenwich Village, in the same space where the legendary Village Gate once hosted the iconoclastic performances of Thelonious Monk, Albert Ayler, Timothy Leary, and many more.

But Matmos always has a grand (dare we say "intelligent"?) design for everything they do, and that includes the string of albums they've made since 1997, starting with their self-titled debut on their own Vague Terrain imprint, then based in San Francisco. From the beginning, Matmos has embraced the tenets of experimental music without the macho bombast: found sounds, constructed sounds, and quirky samples (cracking ice cubes, screeching rats, cards being shuffled—even aspirin tablets bouncing on a drumhead) are chopped, processed, and rearranged, but in a careful way that seeks the organic melody in the mixture.

### Roads Less Traveled

From there, Schmidt and Daniel take whatever bend in the musical road feels most natural or interesting. In 1999 it was *The West*, which tapped elements of folk, rock, and country from a raft of guest musicians (the bands Tortoise, Slint, and Neurosis among them). Two years later, it was *A Chance to Cut Is a Chance to Cure* (Matador), which turned the sounds of various surgical procedures into an upbeat techno odyssey. By then, Matmos was also drawing attention on a worldwide scale; in 1998 Björk asked them to remix "Alarm Call," from her breakout album *Homogenic*. It wasn't long before she invited them back, this time for a full-fledged collaboration on her follow-up disc, *Vespertine*.

"Things got weird for us after working with Björk," Daniel recalls with amusement, "because we had started to realize, 'Oh yeah—there's this certain chord-change structure that's fun to play with.' I mean, most of our pieces that are built percussively out of collaging and stacking noises are kind of literally monotonous, in that we don't *have* chord

"When we mix stuff, we radically change it," says Martin Schmidt. "We're more inclined to do 19 mixes and then pick the best one, rather than try to set it all up perfectly." Matmos's live setup reflects this aesthetic.

changes. So we were suddenly on the devil's pathway to making 'real music,' which we never really set out to do. But it's starting to intrude in ways that are maybe worth talking about now."

## Synths Reign Supreme

*Supreme Balloon*, the fourth Matmos album for the Matador label, is the duo's latest installment in the conversation—a beautifully melodic head trip, with honest-to-ARP key changes, into a synthesizer-based otherworld. While the album whiffs of Klaus Schulze, Vangelis Papathanassiou, Wendy Carlos, and other synth pioneers who have exerted an influence on the group, it's far from just a throwback experiment in idol worship. Using Cycling '74 Max/MSP, Ableton Live, MOTU Digital Performer, and an unusual array of exotic synths, rhythm boxes, and sound-generating techniques like optical synthesis, Schmidt and Daniel have made what years from now might be described as their "synth-pop" album—with some significant twists.

"It's one of those things I've wanted to do forever," Schmidt says. He's referring to the fact that the music on *Supreme Balloon* was almost entirely synthesized, without using any microphones. He could, however, just as easily be citing the album's impressive guest list. From the Sun Ra Arkestra's legendary saxophonist Marshall Allen (playing the Steiner-Parker Electronic Valve Instrument, or EVI, on "Mister Mouth") to classical pianist Sarah Cahill (on "Les Folies Francaises") to experimental-music legend Terry Riley (who appears on the vinyl-only track "Hashish Master"), *Supreme Balloon* is very much a group foray into full-on synthesis.

"I've been the synthesis geek in the band from the beginning, and well before that," Schmidt continues. "A pal of mine had an ARP 2600 in the '80s. It terrified me, and I didn't understand it then. In fact, some of the pots were sticky, and I remember opening it up and spraying WD-40 inside it *[laughs]*. By sheer karmic return 15 years later, I reacquired that same machine from him, and it's on this album—after a few repairs, of course. I literally paid for that mistake."

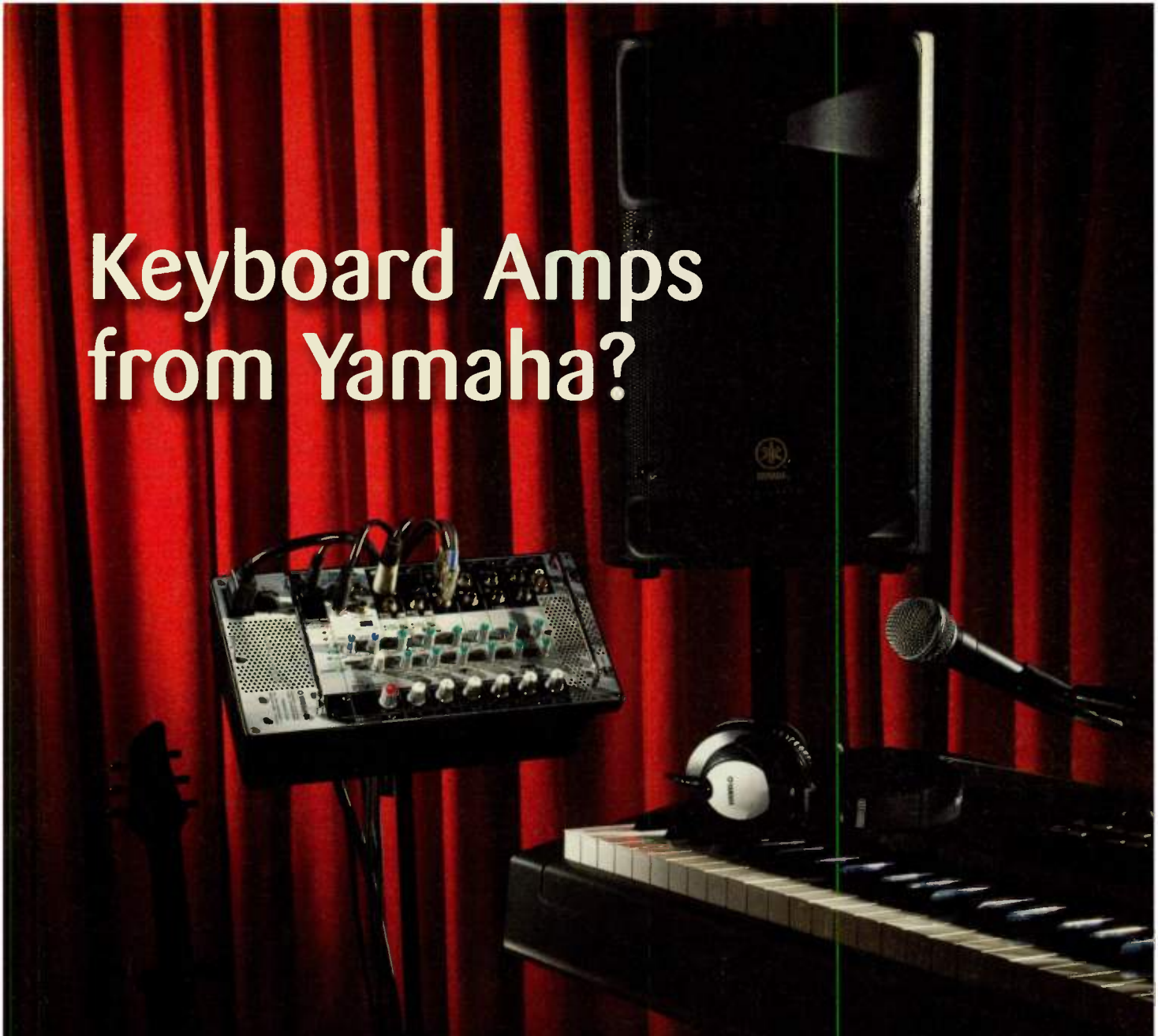
Before their New York show, we corralled Schmidt, Daniel, and multi-instrumentalist (and honorary Matmos member) Jay Lesser in the lobby of New York University's Tisch School of the Arts, where they'd just taped a segment for a WNYU radio broadcast. Not only were they more than willing to talk about the ins and outs of how *Supreme Balloon* came together, but they also openly reveled in that arcane pursuit known as gear porn—backed up by the extensive information that's now on their Web site (brainwashed.com/matmos). From modular synths to Stylophones, the guys in Matmos love their toys, and they know how to use them (see Fig. 1).

### Can you talk about how you work together in the studio? Does it change with each album?

**Schmidt:** It's stayed largely the same. In the case of objects, I actually handle the object, play it, thwack it, rub it, bow it, or whatever, and we record that to DAT. Then we listen to the DAT for either rhythmic or melodic phrases. I think of some of the longer phrases as a voice. Because we generally eschew using any vocals in our music, I feel like compositionally there

Drew Daniel describes how combining disparate elements often yields unexpected results. "Oh, the chocolate and peanut butter are going together really well here."

# Keyboard Amps from Yamaha?



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| FEATURES | STAGEPAS 150M | STAGEPAS 250M |
|---|---|---|
| Mic Inputs | 2 | 2 |
| Stereo Line Inputs | 3 | 4 |
| Phantom Power | - | Yes |
| Max. Output Power | 150W | 250W |
| Digital Class D Amplifiers | Yes | Yes |
| Speaker Configuration | 8" Two-Way | 10" Two-Way |
| Removable Mixer/Mic Stand Mountable | Yes/Option | Yes/Option |
| Channel Input Compressors | - | 2 |
| Reverb | 1-Bit Modulation | SPX® Digital |
| Balanced ST Sub Output | Yes | Yes |
| Click Track Assign | Yes | Yes |
| Wedge-shaped Enclosure | Yes | Yes |
| Speaker Stand Mountable | Option | Yes |
| Weight | 21 lbs | 29 lbs |

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**You're definitely getting an analog thickness on the album. How did you mix it?**

**Schmidt:** We go out of Digital Performer through the MOTU 2408 [audio interface] and into a Mackie [24-channel] board. But again, this goes back to what I started on. I learned on a TEAC 8-track reel-to-reel, and now we just substitute Digital Performer for the eight tracks. We still mix everything out on eight channels of the board.

**Daniel:** I was worried about shrillness, because we like bright high end—that slightly shredding range of frequencies. But if you do that for an hour, people won't return to the record, and we really wanted a record that people would return to and enjoy. So riding that line of keeping it really sharp and clear, but not so sharp that you're killing them—part of that is knowing that we'll master with Thomas DiMuzio, because he has a great pair of ears.

> I remember spraying WD-40 inside an ARP 2600.

**Schmidt:** And when we master, we change it. The first time we did it, we were like, "Do that more." Thomas told us that people usually don't change things this much in the mastering process. So I think the short answer is that's where we did a lot of the softening and sculpting.

**Daniel:** Especially with "Supreme Balloon"—a 24-minute piece of music. It sounds pretentious to say it, but you want the dynamics that we associate with classical music, where there's a real range from very quiet to the peak. And most people nowadays slam the compression. They never want things to sound murky or quiet.

**Since you mentioned that song, could you talk a bit about the Radel Taalmala?**

**Schmidt:** The tabla machine, yeah. It looks like a little boogie box.

**Daniel:** It's so precise about where it lands tempowise. Supposedly you can tune the drone machine that we have, too, but I don't really trust it. We end our live set by sucking all the sound out of the P.A. and turning [the tabla and drone machines] on and walking through the audience with them.

But "Supreme Balloon" emerged as a result of two separate compositions joining forces. One was a Taalmala piece, and when I was learning how to use the sequencer in Ableton, I wrote some really simple patterns. We slowed them down to the tabla tempo and realized, "Oh, the chocolate and peanut butter are going together really well here."

**Then there's the Dubreq Stylophone on "Rainbow Flag."**

**Schmidt:** Jay plays a mean Stylophone solo when we do that live.

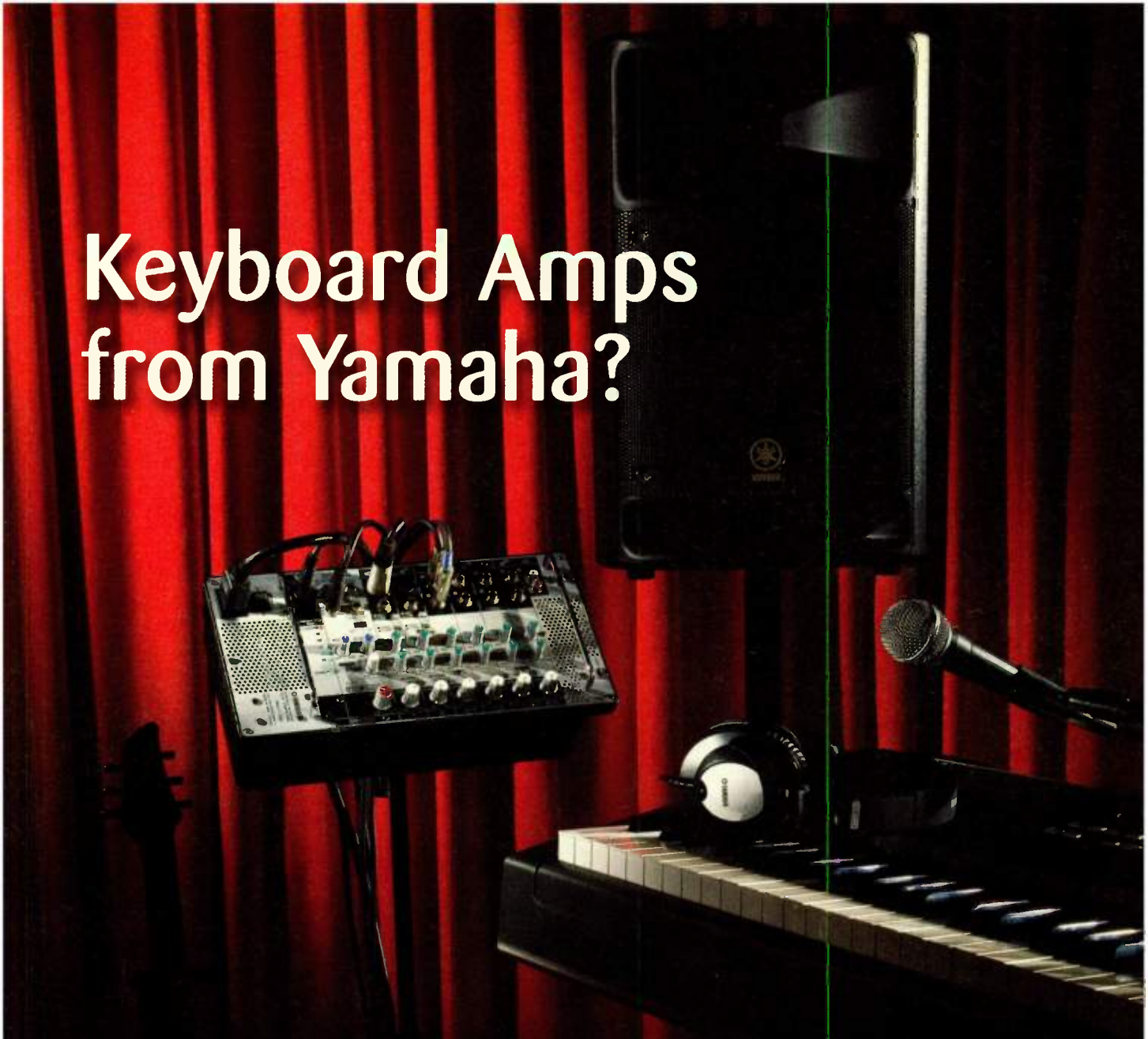
**Daniel:** Yeah, a fan sent that to us in the mail. I love how the tuning knob is always a little off, and it sits so well with the analog gear, which is often a little askew tuningwise. It just avoids that clean, control-freak thing that I don't like about electronic music. I mean, I love making electronic music, but you can get so seduced by your own power to micromanage that you end up producing airless, indistinguishable fluff. If you start to work with things that have a little resistance, it's actually more fun.

**On that note, do you think advances in technology have maybe made things a little too easy for people who want to make music?**

**Schmidt:** Well, we do a lot of stuff extremely inefficiently. To me, it makes no sense to apply theories of efficiency to music, and yet people do. It extends out to our physical world, where we could run this whole show on two laptops. It would be extremely efficient, but it would also be nothing to watch. There would be very little variation from show to show—and besides, with all the money we're charged on baggage overages, how would airlines ever make a living *[laughs]*?

*Bill Murphy is a regular contributor to* Remix.

# Keyboard Amps from Yamaha?



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| Channel Input Compressors | - | 2 |
| Reverb | 1-Bit Modulation | SPX® Digital |
| Balanced ST Sub Output | Yes | Yes |
| Click Track Assign | Yes | Yes |
| Wedge-shaped Enclosure | Yes | Yes |
| Speaker Stand Mountable | Option | Yes |
| Weight | 21 lbs | 29 lbs |

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"We take turns being in charge of our albums because we fight otherwise," Schmidt explains. "Going all synthesis for this album was a fight-reduction technique." In harmony here: Jay Lesser, Schmidt, and Daniel.

should always be a track that takes that place.

**Daniel:** Typically, I'll then take those DAT recordings and chop them into many, many samples using Digital Performer. A typical Matmos song will have 90 to 100 different samples laid across many different preset keyboard setups, so 36 samples might be spread across 4 octaves. When you stack noises like that, the harmonics inside them start to emerge. You can pull out the implicit note inside of the noises, which tells you where the center of the piece is going to be.

So after I've made those samples, we'll take turns playing them as sequences, then edit the MIDI, and then decide what sort of solos are needed on top of that, and a gradual song structure will emerge. We'll cut the sequence, and then Martin usually mixes the records because he has more patience and a better ear [for more, see the **online bonus material** at emusician.com].

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**You're known for your extreme rhythmic explorations with samples—and now on this album, with synthesizers. You've always been very meticulous and hands-on when it comes to rhythm.**

**Lesser:** I've always found it really strange that [Daniel] works in Event mode in Digital Performer. He'll play something as a beat, then he'll open up Event to tighten it up or switch it around, and I'm like, "What the hell is he doing?" It's just numbers. How the hell can you possibly make something funky out of that *[laughs]*?

**Daniel:** You stumble onto certain tricks that come from working in the Event List. That's really where I do my MIDI editing—like in the song "Polychords." Even though I started it in Max/MSP by building a virtual autoharp, I wouldn't have been able to build the structure without the Event List. For someone as deeply unmusical as I am, it allows me to create inversions and variations of the notes within a chord. So MIDI is really what permitted that song to evolve in the way that it did.

Some rhythmic patterns on the album are heavily swung, and that's part of the fun of using the Event List, too. There's such a world of nuance between an accent that's 120 ticks after the 1 and an accent that's 160 ticks after the 1. When you can go in and edit in a really precise way, you can give a lot more nuance to those rhythms. I never use built-in swing quantization.

**Like the old Roger Linn drum machines.**

**Daniel:** Yeah, exactly. I don't swing that way—so to speak *[laughs]*.

**What kinds of synthesizers did you have in mind before you started work on the album?**

**Daniel** *[to Schmidt]*: You've owned some odd synths that have a lot of history behind them.

**Schmidt:** Well, the Roland V-Synth is my main one now—but yeah, besides the ARP 2600, in the '80s, I had a [Sequential Circuits] Prophet-10. I bought it from the studio where they recorded the soundtrack to *Invasion of the Body Snatchers*. It belonged to John Carpenter at one point. My first synths were a Roland Juno-60 and the SH-101 that I'm playing tonight.

I've always been in love with synthesizers, but it's played slightly second fiddle in Matmos because Drew is such an amazing sampler. The rule for *Supreme Balloon* wasn't so much "use synthesizers," but it was definitely "don't use microphones." I just wanted to see what we could do without our usual bag of tricks, and that ended up being synthesis.

**I want to get into some more of the specific machines you used on the album, but when you say "synthesis," does that extend beyond just VCOs and LFOs?**

**Schmidt:** We also used optical synthesis—optical film striping. We stole most of that, and I shouldn't say from whom because it's against the law *[laughs]*.

**Daniel:** But we were inspired by that technique. It goes back to Daphne Oram in England, and Norman McLaren, a Scottish filmmaker who was funded by the Film Board of Canada. They both discovered that if you draw lines across the optical track of film, the exciter lamp that reads the track will interpret the lines as sound. You can do the same thing with an Optigan [a toy optical organ made by Mattel in the early '70s]. That was an early protosampler that had sound waves as circular rings on a transparent plastic disc. It would shine a light through that and read it as sound.

There are modes in Max/MSP where you can just scribble and draw, and it'll read that as sound. I like to do that with amplitude curves; if you go into the mode, select a bunch of MIDI, and sign your name, you'll produce this mountain range of variation that you would never write as a smooth curve up or down. You can just harvest these habits and apply them to sound.

**Are you using that technique in "Exciter Lamp and the Variable Band"?**

**Schmidt:** That one's made out of optical synthesis, but there was that one melodic line that I thought it really needed—the melody from "O Canada"—so I played that on a Korg MS2000, which has a great built-in delay. I think I'm using the arpeggiator and I'm playing a 1-note melody, and it's set to give you that mandolin effect.

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## Such Wonderful Toys

**Daniel:** And Jay is doing all the really ridiculous, swung rhythmic patterns in Ableton Live.

**Lesser:** Well, [Sonic Charge] MicroTonic is the drum machine [hosted on Ableton]. Each voice in it has two oscillators, and with a noise source you can get some wacky stuff going on.

**So you're using synthesis to create the actual drum hits?**

**Lesser:** Right. That's why I'm waiting with bated breath for the Dave Smith drum machine [the LinnDrum II, which Smith designed with Roger Linn] to come out, because that's what it has—four voices of analog synthesis.

**You guys are also using the Coupigny modular synthesizer on "Exciter Lamp." A picture of it is on the front of the booklet that comes with the CD. You went to Paris to record that, right?**

**Schmidt:** Yeah. Now *that* synth's a one-in-the-world. It was built by this engineer named Francis Coupigny for the INA/GRM studio [founded by Pierre Schaeffer in 1958].

**Daniel:** At the very end of the song, there are these bacon-frying, acidic sweeps that the Coupigny makes. Sometimes you can get a speaking quality just by stacking one oscillator onto another. The cool thing about it is there's no ADSR or waveform shaping. All you do is create relationships between eight oscillators and one filter, and there's a matrix that you use.

**Schmidt:** It's like the pins in the [EMS] VCS Synthi A's matrix patching, except that this one is deep as well. There are different lengths of pins, and the different colors of pins go different depths. It was definitely a machine that was not for making pitch-based music.

**With all the vintage gear you use, I've heard that your software setup is pretty old school as well.**

**Schmidt:** I just updated the technology to reproduce what I worked with in the '80s *[laughs]*. This is the first album where we did not use [Macromedia] SoundEdit [16], because it absolutely will not work in the new Mac OS. And we're still using an older version of Digital Performer.

**Daniel:** I keep one laptop at OS 9 so I can use SoundEdit, but there isn't much on this record. I didn't really want the music to feel too digital. We tried to avoid that.

# Power Trio

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**You're definitely getting an analog thickness on the album. How did you mix it?**

**Schmidt:** We go out of Digital Performer through the MOTU 2408 [audio interface] and into a Mackie [24-channel] board. But again, this goes back to what I started on. I learned on a TEAC 8-track reel-to-reel, and now we just substitute Digital Performer for the eight tracks. We still mix everything out on eight channels of the board.

**Daniel:** I was worried about shrillness, because we like bright high end—that slightly shredding range of frequencies. But if you do that for an hour, people won't return to the record, and we really wanted a record that people would return to and enjoy. So riding that line of keeping it really sharp and clear, but not so sharp that you're killing them—part of that is knowing that we'll master with Thomas DiMuzio, because he has a great pair of ears.

> I remember spraying WD-40 inside an ARP 2600.

**Schmidt:** And when we master, we change it. The first time we did it, we were like, "Do that more." Thomas told us that people usually don't change things this much in the mastering process. So I think the short answer is that's where we did a lot of the softening and sculpting.

**Daniel:** Especially with "Supreme Balloon"—a 24-minute piece of music. It sounds pretentious to say it, but you want the dynamics that we associate with classical music, where there's a real range from very quiet to the peak. And most people nowadays slam the compression. They never want things to sound murky or quiet.

**Since you mentioned that song, could you talk a bit about the Radel Taalmala?**

**Schmidt:** The tabla machine, yeah. It looks like a little boogie box.

**Daniel:** It's so precise about where it lands tempowise. Supposedly you can tune the drone machine that we have, too, but I don't really trust it. We end our live set by sucking all the sound out of the P.A. and turning [the tabla and drone machines] on and walking through the audience with them.

But "Supreme Balloon" emerged as a result of two separate compositions joining forces. One was a Taalmala piece, and when I was learning how to use the sequencer in Ableton, I wrote some really simple patterns. We slowed them down to the tabla tempo and realized, "Oh, the chocolate and peanut butter are going together really well here."

**Then there's the Dubreq Stylophone on "Rainbow Flag."**

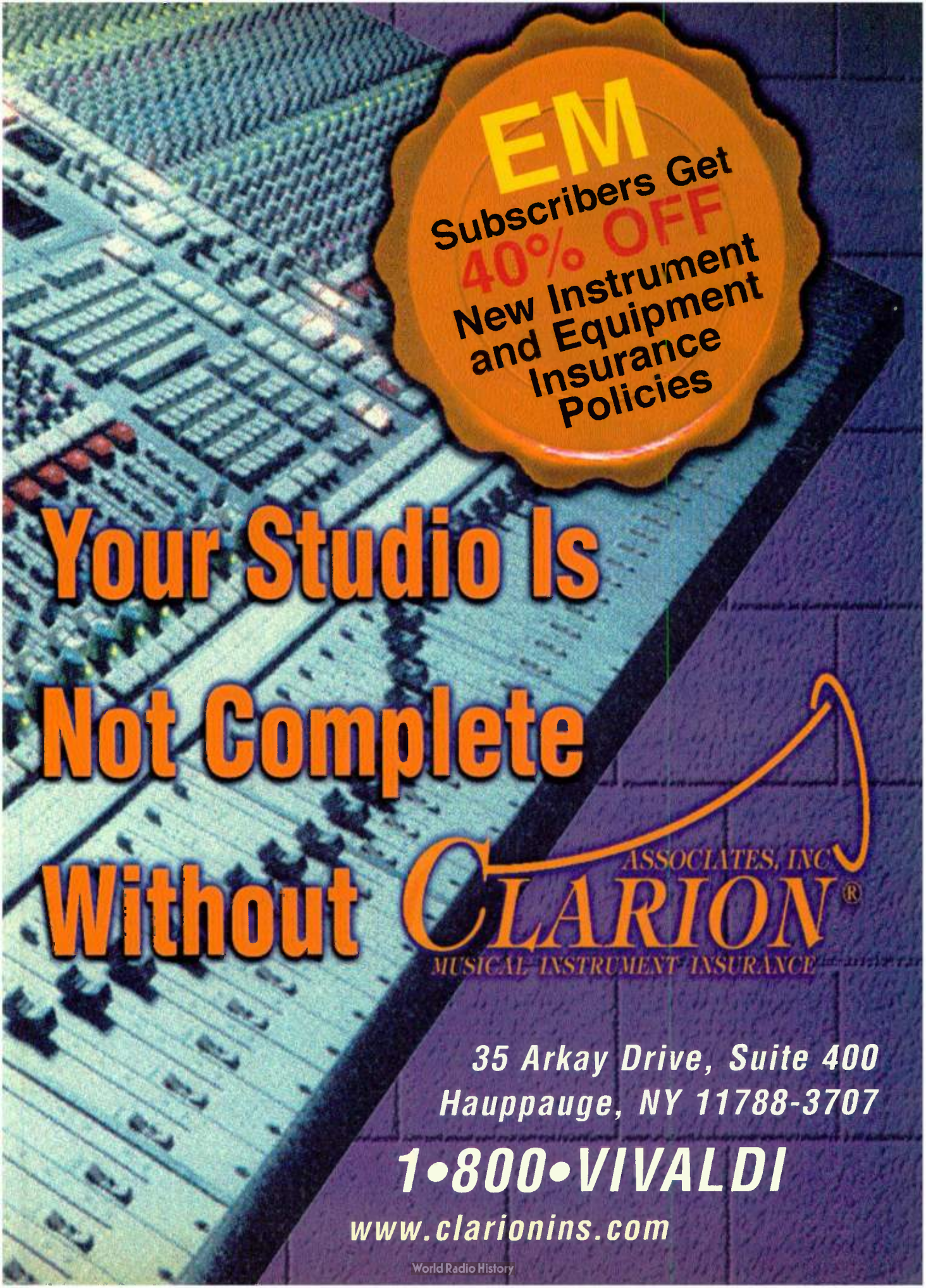
**Schmidt:** Jay plays a mean Stylophone solo when we do that live.

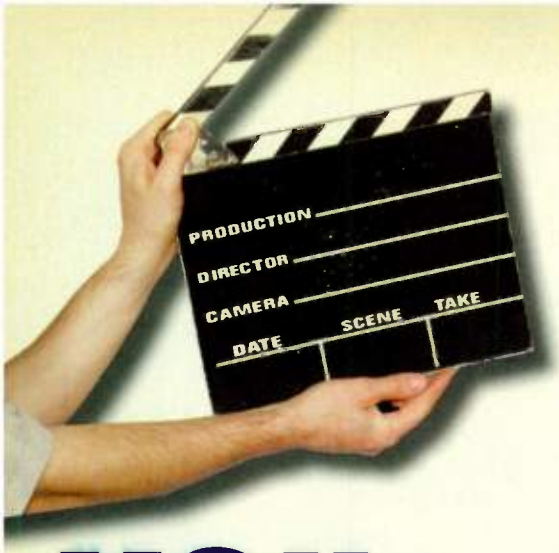
**Daniel:** Yeah, a fan sent that to us in the mail. I love how the tuning knob is always a little off, and it sits so well with the analog gear, which is often a little askew tuningwise. It just avoids that clean, control-freak thing that I don't like about electronic music. I mean, I love making electronic music, but you can get so seduced by your own power to micromanage that you end up producing airless, indistinguishable fluff. If you start to work with things that have a little resistance, it's actually more fun.

**On that note, do you think advances in technology have maybe made things a little too easy for people who want to make music?**

**Schmidt:** Well, we do a lot of stuff extremely inefficiently. To me, it makes no sense to apply theories of efficiency to music, and yet people do. It extends out to our physical world, where we could run this whole show on two laptops. It would be extremely efficient, but it would also be nothing to watch. There would be very little variation from show to show—and besides, with all the money we're charged on baggage overages, how would airlines ever make a living *[laughs]*?

*Bill Murphy is a regular contributor to* Remix.






# YOU OUGHT TO BE IN PICTURES

## HOW TO MAKE A LOW-BUDGET, DIY MUSIC VIDEO.

By Mike Levine

In the glory days of MTV and VH1, a recording artist needed a record deal and a fistful of major-label cash to produce a music video that would be seen by the masses. Today, that's no longer the case. The convergence of inexpensive digital-video technology, broadband Internet, and Web-based video sites—YouTube in particular—has made self-producing a credible music video and making it available worldwide a realistic goal.

Will your DIY video have the production values and the audience reach of one of the classic video hits from the MTV days? Almost certainly not. But your video can still have a positive impact on your act's promotion, and there's always the potential for it to become a viral favorite that gets spread all around the Web.


You won't need a ton of gear to produce your video. You will need a digital video camera (consumer cameras work fine) and professional video-editing software such as Apple Final Cut Studio, Adobe Premiere, or Sony Vegas Pro. (Consumer video applications such as Apple iMovie typically don't have the features necessary for some of the techniques described in this story.) Two more essential ingredients are ingenuity and creativity.

If you're not sure you want to do it all yourself, a good option is to find a budding director or film student willing to direct your project at little or no cost. In return for giving you time and expertise, this person will get to use your video on his or her demo reel (for more on this option, see the **online bonus material** "Catch a Rising Director" at emusician.com).

To get real-world details on the subject of DIY music videos, I spoke with a number of people experienced in making them. George Petersen not only is the executive editor of *Mix*, but also has produced and directed many music videos and has extensive audio-engineering experience. Michael Coleman of Colemanfilm Media Group has directed music videos and live videos for musical artists such as Ozomatli, David Grey, KT Tunstall, Counting Crows, and the Matches. Tony Swansey has directed indie music videos for Manna and Quail and Ericson, among others. I will also present several examples of music videos that were produced on shoestring budgets and that feature techniques you can apply to your own productions.

### Decisions, Decisions

The first thing you'll need to decide is what kind of video you want to make. Will it capture your live performance, or will it be a *concept video*, where you're lip-syncing to a song from your CD while on a beach, in a warehouse, on a street corner, or in some other interesting location?

These are two very different types of productions, each with its own challenges. This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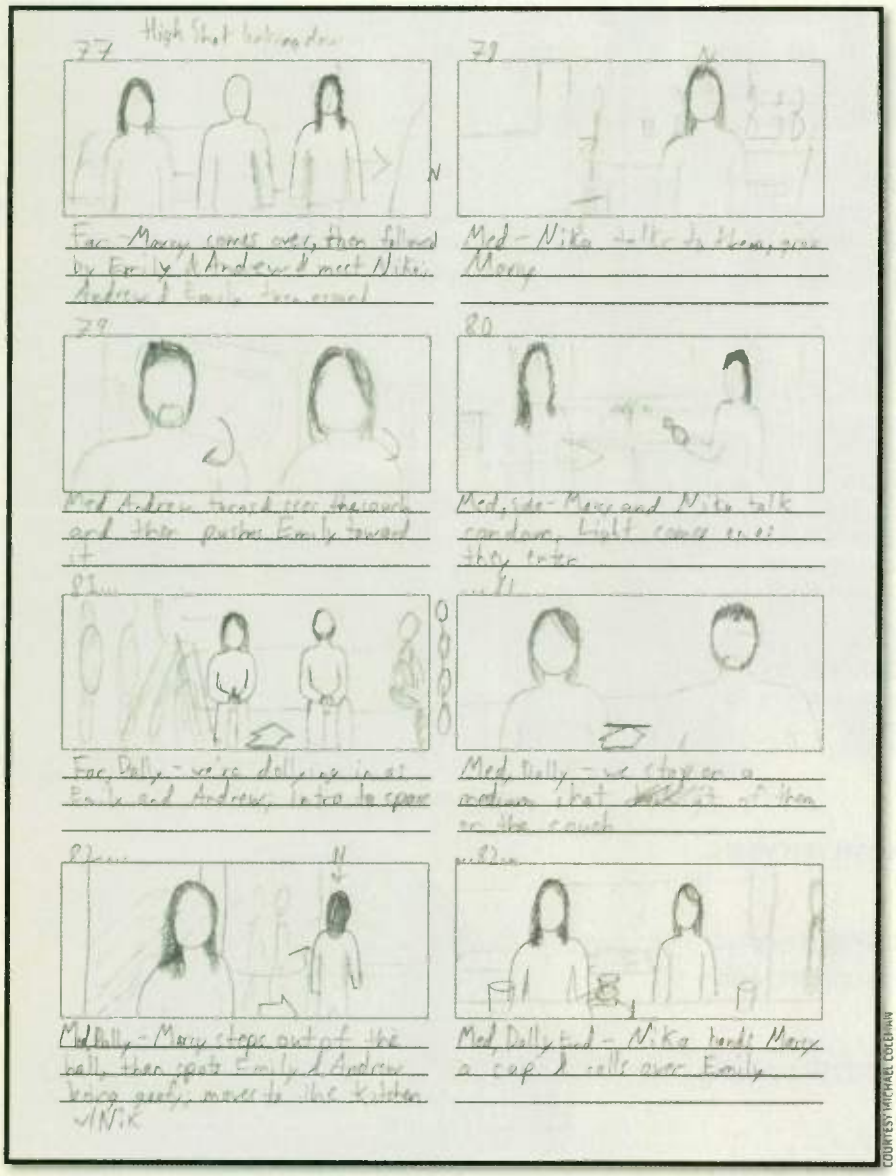

COURTESY MICHAEL COLEMAN

FIG. 1: A storyboard can help you get your ideas together for the video and plan shots and camera angles.

article will focus on making concept videos, but you can read about techniques for shooting a live-performance video in the **online bonus material** "Shooting a Live Video."

A concept video allows you to go beyond just showing a band performing. You can add a secondary story line to it, which can make a video more engaging, especially if your band isn't particularly dynamic in its stage presence or performance skills. One big advantage of a concept video is that you don't have to worry about recording the song, because you're using a track from your CD as the audio. That gives you the freedom to shoot in locations that would never work if you had to capture quality audio as well.

## What's the Idea?

Not surprisingly, the first thing you'll need for your concept video is a concept. Don't even think about picking up a camera until you have the whole video planned out, down to the shots you'll be using (even the camera angles if possible). Naturally, you can change things on location, but you should have a pretty good idea of what you're doing going in.

One critical factor that can dictate the concept of your video is the type of locations available to you. "Just about everybody has access to some kind of location that would be really cool," says Petersen. "And sometimes it's cool to script your music video, your concept video, around such a location. Like if you have access to a steel mill and you go, 'Wow, why don't we use the steel mill as a backdrop and shoot it in there?' Or you have access to a classroom. Locations like that can give you a lot of production value even though you don't have any money."

Swansey agrees. "If you have access to actors or old cars or anything that will provide any sort of production values, just exploit it," he says. However, if you're shooting on someone else's property, Coleman advises that you get what's called a *location release* and have it signed by the property owner. This document (you can find generic versions online) gives you permission to use the property, generally limits your liability to the property owner, and clarifies various legal issues that could arise from your video shoot.

## Sketch It Out

Once you've figured out a basic concept and a location, it's time to get specific with your planning. A good way to get your ideas together is by making a *storyboard*, which is a graphical depiction of the various scenes and actions in a video. "A storyboard is really easy," says Petersen. "It's like a comic strip. You say, 'All right, what is my first shot going to be?' You can do a storyboard and then deviate from it, if you want, once you get on location."

A storyboard consists of a series of boxes containing drawings that depict the different shots in the video, with descriptions or dialog—or, in the case of a music video, lyrics—underneath (see **Fig. 1**). You don't need to be a good artist to draw one (although that does help); as long as you can scrawl out a basic sketch of the various scenes, you'll be okay. Use stick figures if necessary.

One way to get your planning off the ground, prior to making your storyboard, is to start with a lyric sheet and a recording of the song and write down the start and end times of each line in elapsed time from the start of the song. This will give you a basic structure to

build your ideas around. Coleman likes to use a spreadsheet to get his concept together. "I'll put in the lyrics, I'll plot out times," he says. "I'll basically start the track and go through it and come up with, 'At this point this is what we're going to be seeing.' And according to that field, I might draw out a storyboard frame to reference later on."

Once you've storyboarded or otherwise planned your video, you'll want to make a *shot list*, which is a document showing all the shots you'll need to complete the production. "You're definitely going to want a shot list," says Swansey, "because you're going to have to plan out everything so it makes sense. You [may] have to shoot out of order, just because of [the logistics of dealing with] actors, performers, and locations."

> Look for transients such as snare drum hits to use as reference points.

Coleman adds that a shot list should contain "all the camera angles for the shoot, the coverage that you're going to need, and any cutaways." (*Cutaways* are shots that interrupt the main action of the video and typically show something different. You can edit them in for variety or to cover up a momentary problem in one of your primary shots.) Having the shot list on set with you will give you a checklist to make sure you get what you've planned for. You'd hate to get to the editing room and realize that you forgot an important shot.

When setting up the shot list, make sure to plan on shooting one pass of the entire band from the beginning to the end of the song. This will serve as your *master shot*. Even if it's not integral to the final edit (say, you end up using mostly close-ups instead), the master shot gives you reliable footage you can always cut to if needed. Typically, you'll shoot your master shot from a tripod. Avoid cheap tripods if you can. "It's important to have a really good-quality tripod, preferably with a fluid head," says Petersen. "You could rent a tripod like that for $20 a day from a rental house." Quality tripods make for steady-looking shots and smooth pans and can add a lot of production value.

You'll also want to plan to shoot a pass of each band member individually, playing through the whole song. These can be handheld or tripod shots. These individual shots, together with the master shot, give you lots of fodder for editing. (See the sidebar "On Location: In Studio" to see how Blue Ajay of the band Booze Monkey used this approach in an interesting way.)

In addition, depending on what your concept is, you'll want cutaway shots that you can edit in at various points for visual variety. You might want to include close-ups of the instruments as the song is being played, including the drummer hitting crashes, the kick drum pedal hitting the drum, and so forth. Consider shooting cutaways that show something other than the band playing, which you can intersperse with the performance shots. (John Taglieri did a good job of using such shots in the video for his song "Starring Role." See the sidebar "Almost Live" for more info.)

And of course, if you have a story line going on in the video beyond just the band playing the song, you'll need to plan the shots for that. (See the sidebar "Leafy Dreams" to read about how Swansey produced and directed such a video for the band Manna and Quail.)

## Light Me Up

The lighting you use can have a big impact on your video's production values. Although you won't have the benefit of state-of-the-art lighting equipment and experienced lighting designers like you would in a high-budget production, you can bring to bear serviceable illumination for your production without spending a fortune. If you're shooting in an indoor location, unless it's a performance venue with stage lighting, you're likely to need supplemental lighting. Space doesn't allow a detailed lighting discussion here, but you should be aware of the *3-point lighting technique*, which is the basic method used in video and photography. This method consists of a key light, which provides the main illumination; a fill light, which fills in shadows caused by the key light; and a backlight for adding illumination from behind. A good basic primer on this technique can be found at mediacollege.com/lighting/three-point.

When you're on location, shoot a lot of tests to see how your lighting is working for each particular scene. Are there problems with shadows on the band members' faces? Does it look bright enough overall? Is the lighting harsh? Just as you'd move a mic around to find the sweet spot when setting up for a recording session, do the same with your lighting, prior to shooting, until you're satisfied with the results.

Petersen recommends renting lighting. "In most big cities there are film/video rental houses. And as long as you have a credit card to leave a deposit, you can rent a kit of lights," he says. "You can rent a Lowel lighting kit, which is one of the standards in the industry. You typically get three high-output quartz lights with stands and barn doors [shuttering devices for the lights]." (Lowel also has a good site for learning lighting techniques: lowel.com/edu.)

Coleman suggests a more DIY approach: "If you're just trying to do basic lighting and just need some even light, it's so easy to go down to your local hardware store, to Home Depot, and get some clip lights." Then, he says, "go to a photo/video/studio place and get some 250W, 32K [photoflood] bulbs." You can mount the lights on tripod stands. (P.A. speaker stands would do the trick, for example.) Coleman also recommends purchasing some gels (translucent colored plastic) for filtering, which can be held on the lights with wooden clothespins. Make sure the lights can handle the bulbs' wattage, and be careful of anything flammable touching the bulbs to reduce fire hazards. If you're shooting for only one day, it might be cheaper just to rent, and you'll get better lights that way.

A less expensive option is to shoot your video outdoors to take advantage of natural lighting. You might want to factor that in when planning your location. Although natural light can make it possible to avoid the expense of

# "We Had a Hit Single with Jesse McCartney, and it all Began with TAXI"

*Andy Dodd and Adam Watts – TAXI members*
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We submitted a song we wrote with Jenn Shepard called "You Make Me Feel" to one of TAXI's Industry Listings. We didn't hear anything back for a while and eventually our TAXI membership ran out. Thankfully, we began to get so busy with production and writing gigs that we decided to wait and renew our membership at a later date.

Little did we know that TAXI had sent our song to a production/management company that was looking for material for a young, male Pop artist they were developing.

Later that year, Jesse McCartney's managers called us saying they had just heard "You Make Me Feel" on a CD they got from TAXI and wanted to have him cut the song. Although Jesse decided not to record "You Make Me Feel", his managers asked us to write more songs for him. We wrote a handful and they ended up putting his vocal on two of the tracks we produced, "Take Your Sweet Time" and "Beautiful Soul".

"Beautiful Soul" got played on Radio Disney, and Jesse's management got the song to a label executive at Disney. Soon after, Jesse was signed to Hollywood Records. "Beautiful Soul" became his first single, and we both signed publishing deals with Disney Music Publishing.

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renting or buying lighting, it can be tricky because the light changes as the day wears on, and you're at the mercy of the weather.

"The best thing you can hope for is a bright cloudy day—that's absolutely perfect," says Petersen. "When you look out the window and it's bright sunshine but it's cloudy, with an even light, that's the day you want to shoot." When doing an outdoor shoot, avoid working at noon, when the sun is directly overhead. "You don't want things to be directly overlit, or top lit," says Swansey. "The more sidelight you get, the better things will look." Not only will overhead sunlight look harsh on camera, says Petersen, but "you're going to have all kinds of shadow problems."

If shadows are causing difficulties at your outdoor shoot, Petersen suggests using a piece of white foam core (aka foam board), an inexpensive, cardboardlike material, as a reflector. "Hold it just off camera, up near somebody, to reflect some sunshine into the person's face."

## I Sync, Therefore I Am

Because you'll be lip-syncing in a concept video, you'll need a way to hear the music as you pretend to play. If no sound system is available in your location, a boombox will work in a pinch. To facilitate syncing your video to the song on the CD, you'll need to make a special version of the song with a count-off added at the beginning. For the sake of this discussion, I'll refer to this as the "CD Mix." The count-off will allow you to start lip-syncing the song right from the beginning, and the clicks or beeps of the count will also serve as your *slate*—your master timing reference. You'll eventually get rid of the count-off when you're editing, but it makes lining up the song in your video-editing software significantly easier. Using a CD player, which is frequency-locked at 44.1 kHz, assures that your reference track will record at exactly the right speed.

When you're shooting passes of the song, such as the master or individual shots, you should record the sound of the CD Mix (including the count-off) coming out of the boombox through the camera's mic. Note that you'll be using that audio only for the purpose of syncing. Shoot each video pass from the beginning to the end of the song, including the count-off.

When you're editing, import your various video tracks into the video editor's timeline, and also import the CD Mix. Then line up the clicks on the CD Mix with the clicks on the audio picked up by the camera's mic when shooting the video (which will show up as an audio track in your editor for each video track you've imported in), and your CD Mix will be in sync with the video. Zoom in really close so that you can make sure those clicks start exactly at the same time. Mute all the camera-recorded audio before playback.

If you happen to shoot small video segments that didn't start at the beginning of the song (and therefore don't include the count-off), you can do what's called *wild syncing*,

## On Location: In Studio

Sometimes you don't have to go far to find a location. Blue Ajay, who fronts the band Booze Monkey (reverbnation.com/boozemonkey), shot his most recent video in his own studio (see **Fig. A**) for the song "Dick Frankenstein's Night Out" (see **Web Clip A**). The video features Ajay playing all the instruments.

The video was shot with a Sony DCRTRV-900, which is a consumer model MiniDV camera. "My girlfriend of many years does most of the camera work," says Ajay. "We went one instrument at a time. Usually there were several takes for each instrument."

Ajay was able to get enough brightness from the lights in the studio that he didn't need any supplemental lighting. He says that setting your camcorder correctly can be very helpful to shooting quality video. "I only buy camcorders with manual white balance [control]," he says. "If you use manual white balance, you can get rid of that amber tint that usually comes in your household lighting. It just makes the colors very natural, as long as you, between every shot, get your white balance set. Just take a piece of printer paper, hold it up against the wall, and get the white balance as needed."

When planning the video, Ajay decided to give it a frenzied feel because of the subject matter of the song. "Because it was so chaotic and had a lot of quick cuts," he says, "I had her do all handheld camera work. And she just moved around and worked the camera. She's very good with the camera. I would go ahead and crank the music up in the studio through speakers, because that way it picks up in your camcorder and makes the syncing very easy after the fact."

Ajay edited the video in Adobe Premiere. "I'd just pile them [the various takes] on top of each other and tweak the heck out of it," he says. "The only hard part is all those fast cuts."

Because the video was shot in his studio, Ajay didn't have the time pressures of being on location. If need be, he could always reshoot something later if there was a problem or if a needed shot was missing. But that wasn't necessary in this case. The video was shot in one night, and the editing took two days.

**FIG. A:** The video of Booze Monkey's "Dick Frankenstein's Night Out" was shot in the home studio of Blue Ajay, who played all the instruments in the video.

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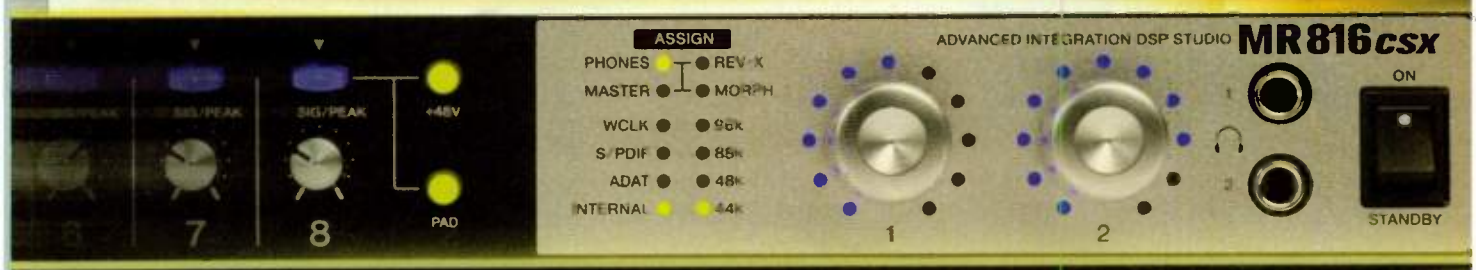



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## Leafy Dreams

FIG. B: Manna and Quail's v deo of "Fill Me Up" features scenes shot at double speed and then slowed down to 100 percent.

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With the concept in mind, Swansey drew up storyboards for the video. Next, he and his camera operator worked out a shot list. The video switches between scenes of a kid walking around his neighborhood and shots of the band playing (see Fig. B). It also includes a group of dancing kids, and actors in animal costumes. The video, which was shot during the fall, features many scenes where leaves are falling in and around the action. (An off-camera leaf blower helped create the falling-leaf effect.)

Because the video was shot outdoors and was naturally lit, it required careful planning. "We had to go scout that little area," Swansey says, "and we had to basically take note of where the sun was and what time we had to be over there to have our light the way we wanted it."

Swansey used the sunlight to his advantage, backlighting many of the shots and giving a dreamy feel to the video, which was shot in HD. He accentuated that dreaminess by shooting the footage of the band playing at double speed. Then, during editing, the video was slowed back to normal. "That way," Swansey explains, "the leaves will fall slower, the movements will be smoother." The biggest challenge to doing it that way was that it meant the band had to play along to a mix of the song that was at 200 percent normal speed. Luckily, the band adapted well to it. "It only took them one or two times because they knew the song so well," says Swansey.

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FIG. C: John Taglieri's "Starring Role" video alternates lip-synced performance shots with cutaways of the band offstage.

John Taglieri's video of his song "Starring Role" (see **Web Clip C**) was shot in the showcase room of a rehearsal studio in New Jersey. It was directed by a friend who had some film-business experience but was looking to break in as a director. The video consists mostly of shots of the band onstage lip-syncing to the song (see Fig. C), which was playing back through the P.A. system. The band actually played along with the music rather than just pretending to. "We didn't want it to look lip-synced," says Taglieri.

In addition to the performance shots, there were a bunch of cutaways shot of the band horsing around between takes. These were presented in grainy black and white. Using black and white for the cutaways was done "just to differentiate the two points of view," says Taglieri. The editing was full of fast cuts and added to the energy of the song.

Although the concept seems simple, it was storyboarded in advance. "We drew out a lot of what we had and we timelined it," Taglieri says. "Then it was just a matter of recording the song enough times so that he [the director] could get a few takes of every person doing the entire song. And then we had enough footage to go back and choose a lot of different moments to be the right ones for the video."

you do a dissolve between the latter shot (with no band) into the former shot (with the band). Petersen continues, "Since the fixed elements in that shot haven't moved—the furniture, the trees in the background, or whatever—the effect is that the people in the band will materialize into the shot. It's really cool, and it's easy and simple."

John Taglieri used a variation on that effect in the video of his song "Starring Role" (see the sidebar "Almost Live"). "At the end, we took one of the cameras and mounted it on top of

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a [P.A.] stack and shot the song three times, with all of us switching instruments," he recalls. "We would shoot and then switch instruments. Near the end of the video—and you'll see that for every beat of the song—we're all in a new place. Everyone went from playing drums to playing guitar to playing keys to playing bass. But the camera never moved, so we just magically switch places."

possible. With a little ingenuity, you can come up with plenty more. If you have some graphics abilities, you can even incorporate some simple animation (see the **online bonus material** "Acting Animated").

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few additional points to keep in mind: when transferring video into your computer (known as *capturing*), you should name each shot according to your shot list. This will make the process of assembling your video a lot faster, and you won't have to constantly watch your video clips to figure out what they are.

Adjust your software's settings to match the native format and size of the video from your camera. Keep it uncompressed if you have enough disk space. It's best to have little or no compression on your master video, because you're going to have to compress it heavily when you put it online, and you want to avoid having to compress more than once if possible.

Line up your various video tracks using the method described earlier (see "I Sync, Therefore I Am"). Once everything is playing in sync, hit Save, and then save a copy of the video project under a different name. If you knock something out of sync as you're editing, you can always go back to a synced copy. You also want to take the precaution of "saving as" every time you make a significant change (or every 20 minutes or so) and naming each successive save incrementally. That way, if you go off in a direction that you later regret, you can backtrack.

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# "We Had a Hit Single with Jesse McCartney, and it all Began with TAXI"

*Andy Dodd and Adam Watts – TAXI members*
*www.reddecibelproductions.com www.adamwatts.com*

Adam and Andy's success through TAXI is a little bit different from all the other stories you've probably heard. They got their *biggest* deal after their membership ran out!

Here's how it happened: "We joined TAXI in 2001 and found that it was a great motivator for us. We were members for two years. We learned a lot, wrote a ton of songs, and got a few film and TV placements -- some through TAXI, and some on our own.

We submitted a song we wrote with Jenn Shepard called "You Make Me Feel" to one of TAXI's Industry Listings. We didn't hear anything back for a while and eventually our TAXI membership ran out. Thankfully, we began to get so busy with production and writing gigs that we decided to wait and renew our membership at a later date.

Little did we know that TAXI had sent our song to a production/management company that was looking for material for a young, male Pop artist they were developing.

Later that year, Jesse McCartney's managers called us saying they had just heard "You Make Me Feel" on a CD they got from TAXI and wanted to have him cut the song. Although Jesse decided not to record "You Make Me Feel", his managers asked us to write more songs for him. We wrote a handful and they ended up putting his vocal on two of the tracks we produced, "Take Your Sweet Time" and "Beautiful Soul".

"Beautiful Soul" got played on Radio Disney, and Jesse's management got the song to a label executive at Disney. Soon after, Jesse was signed to Hollywood Records. "Beautiful Soul" became his first single, and we both signed publishing deals with Disney Music Publishing.

Jesse McCartney's album (entitled "Beautiful Soul") has gone Platinum in the U.S. and Australia.

"Beautiful Soul" went to #3 on Radio and Records CHR Pop Chart, #5 on Billboard's Top 40 Chart, #19 on Billboard's Adult Top 40 chart, it's a Platinum Digital Single Download, it's on the Gold-selling 'Cinderella Story' Motion Picture Soundtrack, the Gold-selling 'That's So Raven' TV Soundtrack, and the video was nominated for Best Pop Video at a 2005 MTV Video Music Awards."

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renting or buying lighting, it can be tricky because the light changes as the day wears on, and you're at the mercy of the weather.

"The best thing you can hope for is a bright cloudy day—that's absolutely perfect," says Petersen. "When you look out the window and it's bright sunshine but it's cloudy, with an even light, that's the day you want to shoot." When doing an outdoor shoot, avoid working at noon, when the sun is directly overhead. "You don't want things to be directly overlit, or top lit," says Swansey. "The more sidelight you get, the better things will look." Not only will overhead sunlight look harsh on camera, says Petersen, but "you're going to have all kinds of shadow problems."

If shadows are causing difficulties at your outdoor shoot, Petersen suggests using a piece of white foam core (aka foam board), an inexpensive, cardboardlike material, as a reflector. "Hold it just off camera, up near somebody, to reflect some sunshine into the person's face."

## I Sync, Therefore I Am

Because you'll be lip-syncing in a concept video, you'll need a way to hear the music as you pretend to play. If no sound system is available in your location, a boombox will work in a pinch. To facilitate syncing your video to the song on the CD, you'll need to make a special version of the song with a count-off added at the beginning. For the sake of this discussion, I'll refer to this as the "CD Mix." The count-off will allow you to start lip-syncing the song right from the beginning, and the clicks or beeps of the count will also serve as your *slate*—your master timing reference. You'll eventually get rid of the count-off when you're editing, but it makes lining up the song in your video-editing software significantly easier. Using a CD player, which is frequency-locked at 44.1 kHz, assures that your reference track will record at exactly the right speed.

When you're shooting passes of the song, such as the master or individual shots, you should record the sound of the CD Mix (including the count-off) coming out of the boombox through the camera's mic. Note that you'll be using that audio only for the purpose of syncing. Shoot each video pass from the beginning to the end of the song, including the count-off.

When you're editing, import your various video tracks into the video editor's timeline, and also import the CD Mix. Then line up the clicks on the CD Mix with the clicks on the audio picked up by the camera's mic when shooting the video (which will show up as an audio track in your editor for each video track you've imported in), and your CD Mix will be in sync with the video. Zoom in really close so that you can make sure those clicks start exactly at the same time. Mute all the camera-recorded audio before playback.

If you happen to shoot small video segments that didn't start at the beginning of the song (and therefore don't include the count-off), you can do what's called *wild syncing*,

## On Location: In Studio

Sometimes you don't have to go far to find a location. Blue Ajay, who fronts the band Booze Monkey (reverbnation.com/boozemonkey), shot his most recent video in his own studio (see Fig. A) for the song "Dick Frankenstein's Night Out" (see **Web Clip A**). The video features Ajay playing all the instruments.

The video was shot with a Sony DCRTRV-900, which is a consumer model MiniDV camera. "My girlfriend of many years does most of the camera work," says Ajay. "We went one instrument at a time. Usually there were several takes for each instrument."

Ajay was able to get enough brightness from the lights in the studio that he didn't need any supplemental lighting. He says that setting your camcorder correctly can be very helpful to shooting quality video. "I only buy camcorders with manual white balance [control]," he says. "If you use manual white balance, you can get rid of that amber tint that usually comes in your household lighting. It just makes the colors very natural, as long as you, between every shot, get your white balance set. Just take a piece of printer paper, hold it up against the wall, and get the white balance as needed."

When planning the video, Ajay decided to give it a frenzied feel because of the subject matter of the song. "Because it was so chaotic and had a lot of quick cuts," he says, "I had her do all handheld camera work. And she just moved around and worked the camera. She's very good with the camera. I would go ahead and crank the music up in the studio through speakers, because that way it picks up in your camcorder and makes the syncing very easy after the fact."

Ajay edited the video in Adobe Premiere. "I'd just pile them [the various takes] on top of each other and tweak the heck out of it," he says. "The only hard part is all those fast cuts."

Because the video was shot in his studio, Ajay didn't have the time pressures of being on location. If need be, he could always reshoot something later if there was a problem or if a needed shot was missing. But that wasn't necessary in this case. The video was shot in one night, and the editing took two days.

FIG. A: The video of Booze Monkey's "Dick Frankenstein's Night Out" was shot in the home studio of Blue Ajay, who played all the instruments in the video.

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### Got the Shot

Space doesn't allow a detailed description of camera techniques, but here are a few pointers. As mentioned, use a quality tripod whenever possible. Avoid zooming or panning quickly; instead, go slowly and evenly.

In addition, learn and observe the *rule of thirds*, which guides you for framing a subject in a shot. Basically, it says to mentally divide the frame into thirds, both vertical and horizontal, and to place the subject at one of the points where those lines intersect rather than dead center. You can find a lot of camera technique info online, such as at mediacollege.com/video/camera/tutorial.

As for the format of your video, shoot at the best quality you can. If you have an HD capable camera, by all means shoot in high definition. Although HD has a 16:9 *aspect ratio* (the ratio of horizontal to vertical dimensions), which is wider than that of standard video (4:3), that extra width is often a godsend for band videos, where you need to get four or five people constantly into a single shot. HD video will show up as *letterboxed* in a video screen, with black fields above and below the picture, but viewers are accustomed to that and it shouldn't hinder you from shooting in HD.

The only disadvantage to HD is that your file sizes will be larger. This brings up an important point. Whether shooting in 16:9 or 4:3, video files take up a great deal of hard-drive space. You should have a dedicated drive with plenty of free gigabytes, and ideally an equal-sized drive to back up your files. You don't want to go through the time and effort to shoot a video and then lose all your data to a hard-drive crash.

### To Great Effect

Used judiciously, visual effects can add spice to a music video. You might think they'd be too expensive or complicated for a DIY production, but there are actually some striking ones you can incorporate relatively simply and without spending a dime. Petersen describes one in which you put a camera on a tripod and start with a shot of the whole band playing: "Then you leave the camera exactly where it is on the tripod, or just leave the camera rolling, and you take everything away. Strike all the gear and all the band members," he says (alternatively, you could leave the gear and just have the band members go). When you're editing,

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John Taglieri used a variation on that effect in the video of his song "Starring Role" (see the sidebar "Almost Live"). "At the end, we took one of the cameras and mounted it on top of a [P.A.] stack and shot the song three times, with all of us switching instruments," he recalls. "We would shoot and then switch instruments. Near the end of the video—and you'll see that for every beat of the song—we're all in a new place. Everyone went from playing drums to playing guitar to playing keys to playing bass. But the camera never moved, so we just magically switch places."

Petersen describes yet another no-budget effect: "You can have your lead singer or your band have scenes where they're walking backwards. You shoot the whole scene with everybody in the band doing their actions backwards. Usually you have to storyboard these pretty carefully," he says. "Then [when editing] take that whole clip and reverse it so that essentially it looks like the band is walking forwards but everything in the world behind them is going backwards."

Those are just some of the effects that are possible. With a little ingenuity, you can come up with plenty more. If you have some graphics abilities, you can even incorporate some simple animation (see the **online bonus material** "Acting Animated").

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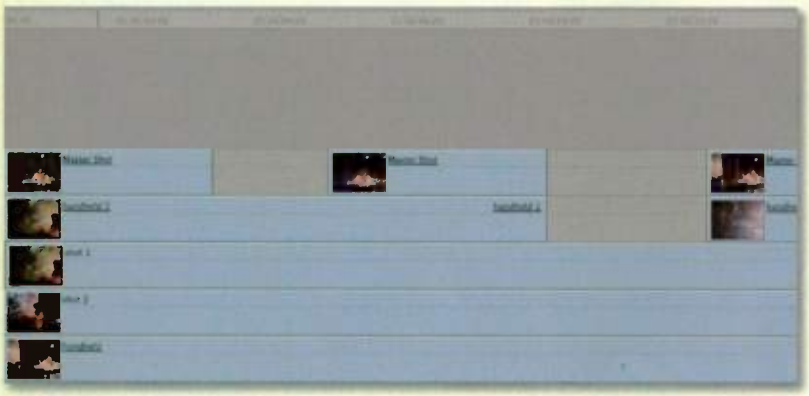

FIG. 2: This shows video tracks stacked in the Timeline in Apple's Final Cut Pro. Like in other pro video editors, the topmost track is the one that's visible in the video (in most situations). You can make a lower track visible by cutting the track or tracks above it for the duration you want it to show.

pro video-editing software, the video track at the top of the timeline is the one that is active (not including titles and other non-full-frame tracks). What shows in the top track shows in the video. Because you're likely to be dealing with multiple tracks that are stacked on top of each other in the timeline, the simplest way to get one of the lower tracks to be active is to cut out tracks above it for as long as you want that track to show through (see Fig. 2). Doing so makes it easy to try different shots at a particular point in time.

## Putting It All Together

Although I've only scratched the surface with this article, my aim was to demonstrate that even though there are a lot of aspects to a music-video production and many skills are required, you *can* produce a credible music video if you put in the effort. It won't be easy, but it can be extremely rewarding.

Between you, your fellow musicians, and your friends, you're likely to have the skills and gear you need to make the leap into the music-video world. As a creative musician, you're sure to enjoy the process, and the resulting video can be a great promotional vehicle for your act. So what are you waiting for? Start storyboarding.

*Mike Levine is EM's executive editor and senior media producer. He hosts the twice-monthly Podcast "EM Cast" (emusician.com/podcasts).*

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*– EQ Magazine, June 2008*


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# The Next Step

Transform your step sequences with these pro tips. | By Tim Conrardy

Before MIDI and digital audio, there was the mighty analog step sequencer. These were most often found on large modular systems, and they provided the backbone of the electronic-music movement. Although it might be easy to draw a few notes in the piano-roll editor on your favorite DAW, better step-sequencing tools are now available as VST plug-ins. They're fun to use, and their retro approach leads to more-authentic results.

I recently collaborated with Boris K of BK SynthLab on the virtual step sequencer Atomic (algomusic.net). It has 16 steps arranged in a circular design reminiscent of the hardware sequencers Buchla Arbitrary Function Generator and Future Retro Revolution (see Fig. 1). Atomic has a built-in synth, and it offers MIDI output, which you can route within your DAW or a modular host, such as Plogue Bidule or Energy XT, to drive other virtual or hardware instruments.

## Step on It

The first thing I do after opening Atomic is to set the number of steps to 3 by clicking in the outer-circle grid. Less is more to start. Next, I put Atomic in Latch mode by playing and holding a note and then clicking the Key LED off. Then I set the rate to 2 or 3 and start the sequencer. (The rate is set in steps per beat.) I keep the first step set to 00, which corresponds to the pitch of the incoming trigger note. I adjust the second and third steps by ear; settings of plus or minus 05 and 07 (musical intervals of a fourth and a fifth) work well. Once I have a 3-step sequence, I add steps one at a time until I've set the full 16 steps (see "Step-by-Step Instructions" and Web Clip 1).

ONLINE BONUS MATERIAL

After I've composed the sequence, I work on the sequencer itself by trying different play modes, such as forward, backward, backward-forward, and random. Atomic has a built-in arpeggiator that, when used in conjunction with the step sequencer, repeats individual step notes. To create unusual and interesting rhythms, turn it on and adjust its rate along with the sequencer rate and individual step gate lengths. Also experiment with the arpeggiator's

## STEP-BY-STEP INSTRUCTIONS

**Step 1:** Create a sequence a few steps at a time, adjusting each step as you go.

**Step 2:** Try different play modes, adjusting the rate and other controls to taste.

**Step 3:** Get a good sound that goes with the sequence by tweaking Atomic's synth parameters.

mode (direction) and octave settings.

When I have a sequence I like, I tweak the sound using the synth section of Atomic. I make sure that the ADSR is modulating the filter with sharp attacks. I like to simultaneously modulate the filter with a slow LFO to make a churning effect.

Turn on the delay in Atomic's effect section and adjust its left- and right-tap rates relative to the rate of the sequencer. For example, rates of 1/2 for the left and 1/4 for the right sound good. Adjust the feedback to work with the sequence without making things too cluttered.

## Constant Change

What made those analog sequences of the past so mesmerizing was that their creators didn't just push the play button and walk away. They changed the sequence and the sound continuously over time.

Changing sequence parameters during playback lets you introduce rhythmic variations. Options include changing the playback order and the number of steps, muting steps, and tweaking a step's pitch, Velocity, and duration. A knob box comes in handy for this type of thing.

Changing synth parameters introduces timbral variation. Good targets include filter cutoff, portamento, and oscillator settings. Very percussive filter and amplitude envelopes combined with reverb and delay effects add rhythmic character, and tweaking the delay settings can yield some surprising results (see **Web Clip 2**).

Create an ascending scale, then speed up the rate to get a very fast arpeggio (see **Web Clip 3**). Set all the step transposes to 00, and use the step Velocities to affect the filter and other synth parameters to create effects such as filter gating. Try using two or three instances of Atomic and routing the MIDI outs and ins to each other. You might also set up your favorite hardware or software synths and have Atomic control them to produce a layered sound (see **Web Clip 4**). To save CPU, you can turn Atomic's synth off by setting its level Velo knob (on the left) fully counterclockwise.


**FIG. 1:** Atomic combines a 16-step sequencer, an arpeggiator, an analog-modeled synth, and three effects.

Don't fall asleep at the switch. Step sequencing is at its best when it's interactive, like performing on an instrument. Most of all, it's fun. em

*Tim Conrardy is a sound designer for many popular soft synths, works for Camel Audio, and designs sounds for his company, Algomusic.*

**Step 4:** Use the built-in delay effect with different tempo-synced rate settings to give a syncopated feel to the sequence.


**Step 5:** Make rhythm and timbral changes while the sequencer is playing to add the all-important performance factor.

**Step 6:** Control your favorite virtual instruments and hardware synths with Atomic for a layered sound.

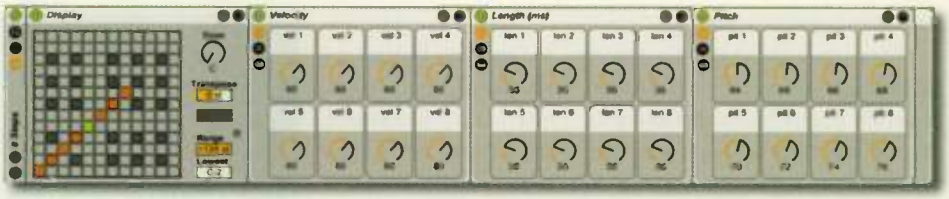


FIG. 1: In this 8-step sequencer, the Scale effect at the left displays the active step in green, and the Macro controls of the three MIDI Effect Racks control the step Velocities, lengths, and pitches.

# A Step in Time

## Build your own step sequencer in Ableton Live 7 | By Len Sasso

Although Ableton Live 7's MIDI effects collection does not include a step sequencer, it has all the ingredients for building one in a MIDI Effect Rack. I'll start with a basic 8-step sequencer and then go on to describe several useful enhancements. You'll find all the tools mentioned here in **Web Clip 1**. For an alternative approach, check out the free Fib 02 step sequencer from TrackTeam Audio (trackteamaudio.com).

ONLINE BONUS MATERIAL

I'll use notes C2 through G2 (MIDI Note Numbers 48 through 55) to trigger individual sequence steps. Trigger notes can come from MIDI clips, live playing, or an arpeggiator, and each has its advantages. Separate racks for Velocity, length, and pitch will have their eight Macro knobs mapped to individual steps. If you have a MIDI control surface with continuous rotary knobs that is supported by Live (such as the Novation Remote SL series), you can quickly shift its focus between the three racks to update step values in real time.

### Eight Is Enough

Insert a MIDI Effect Rack on an empty MIDI track, reveal its Chain List, create eight chains, and rename them Step 1 through Step 8. Use the Key Zone editor to limit each chain to one note: Step 1 to C2, Step 2 to C#2, and so on. Create two copies of this rack so that you have three racks in series, and rename them Velocity, Length, and Pitch.

Insert a Velocity effect in each chain of the Velocity rack, map its Out Hi knob to the corresponding Macro knob, set its Operation to Velocity, and set its Mode to Fixed. Insert a Note Length effect in each chain of the Length rack, set its Mode to Time, and map its Length knob to the corresponding Macro knob with range 25.0 ms to 4.25 s. (Controlling the length in milliseconds rather than beat divisions gives you greater flexibility.)

In the Pitch rack, insert two Pitch effects in each chain and map the Pitch knob of the second one to the corresponding Macro knob with range –48 to 48. Delete the first Pitch effect in the first chain, and set the Pitch knob of the first Pitch effect in successive chains to –1, –2, –3, and so on. The first Pitch effect ensures that each Macro knob has the same range: C-2 through C6.

Insert a Scale effect before the Velocity rack and rename it Trigger Display. That lets you see when each step is triggered, and you can also use it to turn off or remap steps. Group everything into a new MIDI Effect Rack and save it. You now have an 8-step sequencer that you can route to any instrument plug-in (see **Fig. 1**). When you create sequences you like, save the whole sequencer rack or save the individual Velocity, Length, and Pitch racks to swap into other sequencer racks.

To create a sequencer with 16 steps, duplicate the chain in the 8-step sequencer and precede it with a Pitch effect having a fixed offset of –8. Notes Ab2 through Eb3 will trigger the second chain (Steps 9 through 16). You can create larger sequencers in the same way.

### Trigger-Happy

You can trigger steps in real time by playing the trigger notes on your MIDI keyboard, or you can create a looping MIDI clip for more-complex step sequences. The MIDI clip determines the rhythm, quantization, and order of the steps but has no effect on their Velocity, length, or pitch. Try adapting a percussion MIDI clip to trigger sequencer steps while using the original clip to play percussion (see **Web Clip 2**).

Inserting an Arpeggiator effect before the step sequencer is a more traditional solution (see **Web Clip 3**). Hold mode lets you set up sequences adding one step at a time. Use the Style setting to change the step order or to make it random. Also explore the Retrigger and Repeats controls.

You can insert Chord and Arpeggiator effects after the sequencer to create chord sequences and then arpeggiate the chords (see **Web Clip 4**). Use a Scale effect to filter or correct the sequence to any scale as well as to transpose the whole sequence. Web Clip 1 contains step sequencers of each of these types with their Macro knobs mapped to the important parameters. EM

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

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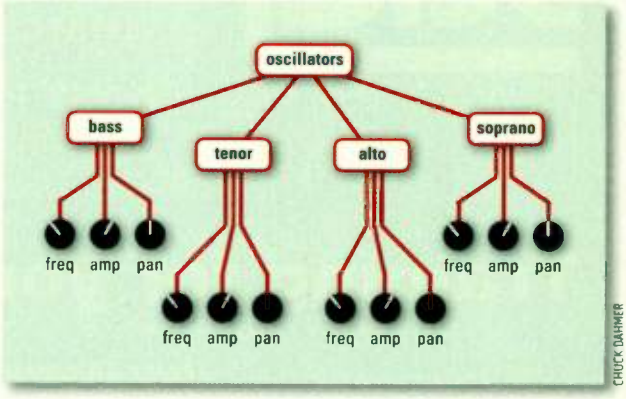


FIG. 1: The oscillators in this graphic are configured in a hierarchical name space, or treelike structure, which allows OSC messages to address different levels of activity in its messaging format.

# Open Sound Control

## Using OSC to share data between applications. | By Mark Ballora

In "Square One: Into the Ether" (see the September 2008 issue, available at emusician.com), Brian Smithers discussed alternative protocols for MIDI and audio, one of which was Open Sound Control. In this article, I'll show you how to get two programs to communicate via OSC. Thierry Coduys and Guillaume Ferry's IanniX, a graphical music-control program, will control audio that's generated in Native Instruments Reaktor. I'll cover enough essential parameters to get you started connecting any two OSC-compatible applications.

OSC was invented in 1997 at the UC Berkeley Center for New Music and Audio Technologies (CNMAT; opensoundcontrol.org), and the protocol controls networked sound modules and multimedia devices. Typically, OSC is transmitted between devices via Ethernet cables, which are more commonly used to connect computers to the Internet—although in a simple configuration, one piece of software can control another on the same computer. In a complex setup, a device can control any other device connected to the Internet to create a performance that transcends geography.

Until recently, OSC dwelt primarily in experimental research environments. Lately, however, it has become an important component of many commercial hardware devices, such as JazzMutant's Lemur (jazzmutant.com) and Angelo Fraietta's Smart Controller (www.smartcontroller.com.au), and software, such as Reaktor (native-instruments.com) and Cycling '74 Max/MSP (cycling74.com).

Think of OSC as an improved version of MIDI. Though MIDI remains essential, it suffers from an inherently limited vocabulary and a shaky sense of time. OSC is more open ended in its vocabulary and is far more precise timewise.

### MIDI, Supersized

MIDI is constrained by its 8-byte message format, which limits the range of values and types of messages that can be sent. It requires an arbitrary numbering of channels, patches, controllers, and the like. OSC's message structure allows more-detailed messages that consist of text and numbers. This means that any software or hardware synthesizer supporting OSC could have any combination of parameters, and any other supporting device could control those parameters by simply declaring their name and a value to be applied.

Moreover, MIDI is slow, transmitting at 31.25 kilobaud. Things can bog down with dense streams such as multiple continuous controllers. In contrast, OSC transmits some 300 times faster over Ethernet, typically in the range of 10-plus Mbps, using the Internet Network Time Protocol, which synchronizes machines at the subnanosecond level. In addition, rather than sending messages serially (one at a time) the way MIDI does, OSC allows *packets*, or groups, of messages to execute at specifically defined times. It's like a fireworks show: shoot out a packet of messages, and all the devices simultaneously flare up into action.

For communication between devices over the Internet, OSC uses an addressing scheme called an *address tree* or a *hierarchical name space*. This protocol allows the devices to use addresses that resemble Internet addresses. **Fig. 1** represents a simple example that shows a set of oscillators arbitrarily named "bass," "tenor," "alto," and "soprano." Each oscillator has controllable parameters for frequency, amplitude, and pan position. The address of the tree-based OSC message that's used to set the tenor oscillator's frequency to 220 looks like this: /oscillators/tenor/freq 220.

### Nuts and Bolts

The first step in understanding how to set up an OSC connection is to learn a little terminology. In networkese, devices called *clients* send messages to receiving devices called *servers* or *hosts*. Think of it this way: when you go to a restaurant, you're the client of that establishment—you make requests, and a server or host produces something (a meal) in response.

For a client to control a server, it first has to know the server's Internet Protocol (IP) address, which identifies a machine on the Internet. IP addresses take the form of four numbers separated by periods—sometimes called a *dotted-quad* formation—which looks something like "127.0.0.1." The client application then has to packetize the OSC messages and send them over a network port, typically a User Datagram Protocol (UDP) port, which is compatible with the time-sensitive, packetized nature of OSC messages.

When the client and server are on the same machine, some applications prefer using the IP address *localhost* (meaning "this machine here"), as opposed to a dotted-quad address.

For a simple OSC startup configuration, it's best to begin with two applications on the same machine and then send control signals from one to the other. For this example, I'll describe how to use IanniX as a client to control sliders in Reaktor, the server.

## Making Connections

Most EM readers are familiar with Reaktor but might not know of IanniX. IanniX (le-hub.org) is a freeware version of the UPIC system designed in the 1970s by composer Iannis Xenakis. Like a MIDI controller, it produces no audio on its own but instead sends commands to an audio program or device. What's unique about IanniX is that like UPIC, it allows you to draw shapes and curves for use as musical control signals. It also can be an effective component of a multimedia presentation, with animated visuals accompanying music.

In IanniX you create a *score*, which is a grid of graphic objects (see **Fig. 2**). These objects can be *trajectories*, which can be straight or curved, or *cursors*, which run along the trajectories like playback heads. You can create any number of trajectories, each with its own cursor that runs independently of the others when the score is played. Trajectories can intersect with *curves*, so that when a running cursor overlaps with part of a curve, it sends out values that describe the curve. You can also put *triggers* on trajectories, which send a value when the cursor runs over them.

Both curves and triggers produce OSC messages.

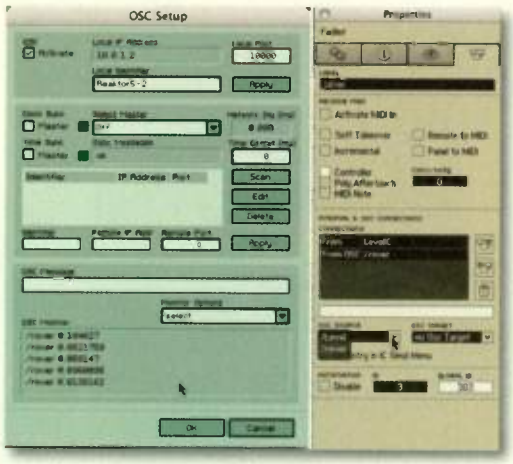


**FIG. 3:** Reaktor's OSC Setup panel (left) shows OSC coordinates and displays incoming messages. The Properties panel (right) is where you create an OSC hook, which binds the fader's position to values received from the rover curve in IanniX.

IanniX's Control Center lists the transmission information for each curve and trigger. In Fig. 2, there is just one trajectory, cursor, and curve, and messages are sent only to the top level of an address tree. More-elaborate scores can have dozens of trajectories, curves, cursors, and triggers, sending out multiple streams of information.

## Can You Hear Me Now?

To make the connection between IanniX and Reaktor, start by checking Reaktor's OSC Setup panel (see **Fig. 3**). Reaktor recognizes a computer's IP address automatically and displays it here, where you can also assign a Port number, which needs to be in the range of 10,000 to 10,015. You can also monitor incoming OSC messages in this window.

Now jump back to IanniX. Go to the Control Center window and give each score element a distinctive name (in Fig. 2, the curve is named "rover"). Make sure that each element's IP address and UDP port number match the values from Reaktor's OSC Setup panel. You'll also want to go to IanniX's OSC Preferences window and uncheck the option to send Group and Layer identifiers—they're helpful for advanced configurations but can gum up the works for simple communications with Reaktor.

Play the IanniX score once, and you'll see messages appearing in Reaktor's OSC Setup panel. Having thus awakened Reaktor to their presence, you can now assign them to a Reaktor element, such as a fader. Go to the element's Properties panel, where you can create an *OSC hook* for that element by selecting the name (rover) from the OSC Source pull-down menu. This completes the connection. Play the IanniX score again, and the current value of the Reaktor fader updates and moves in response.

## Onward and Upward

The sites for OSC and IanniX have many example files to get you started making OSC connections between various programs. Chances are, something you own is OSC compatible. If the documentation isn't clear on how to establish connections, users groups and Web forums are a good place to find the necessary nuts and bolts. Once a simple connection is made, it's easy to make additional connections, creating complex control networks of different clients and servers. em

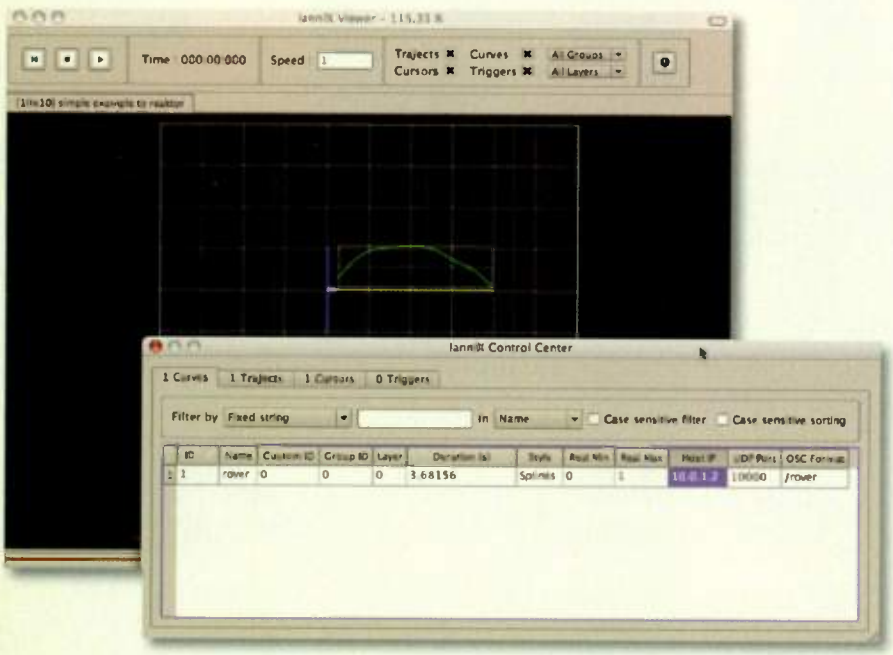


**FIG. 2:** This figure shows a simple IanniX score with one trajectory (yellow), one cursor (blue), and one curve (green). The Control Center is where you set properties such as name ("rover"), host IP address, UDP port number, and the OSC messages format.

*Mark Ballora teaches music technology at Penn State University.*

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# Q&A: Marilyn Bergman

## Discussing ASCAP's Bill of Rights for Songwriters and Composers.

The American Society of Composers, Authors and Publishers (ASCAP), the oldest performing-rights organization in the United States, recently released its Bill of Rights for Songwriters and Composers (see the sidebar on the next page). The initiative puts forth ten core principles pertaining to the rights of music creators. Although it was written by ASCAP, the ideas presented in this document are germane to all songwriters, no matter which performing-rights organization they belong to.

By Fran Vincent

COURTESY MARILYN BERGMAN

**FIG. 1:** Marilyn Bergman is ASCAP's president and chairman of the board.

ASCAP has already gathered more than 8,000 signatures for its Bill of Rights, including those of writers Jerry Leiber, Mike Stoller, Stacy "Fergie" Ferguson, Justin Timberlake, Jackson Browne, and Steve Miller. I spoke with ASCAP president and chairman of the board Marilyn Bergman (see **Fig. 1**), who is herself an Oscar-winning composer. She detailed the impetus behind the Bill of Rights initiative and what songwriters and composers should be aware of as they build their music careers.

**What prompted ASCAP to create this Bill of Rights?**

The Bill of Rights for Songwriters and Composers is intended to act as a stake in the ground—clearly and succinctly [outlining] the rights to which every songwriter or composer is already entitled. We as creators are simply not always aware of the rights inherent in our craft. And amid all the issues and confusion surrounding the music industry today, it can be all too easy to overlook the source of it all: individual songwriters, lyricists, and composers.

**What is the ultimate purpose of the document?**

The Bill of Rights is a rallying cry heralding the inherent rights to which music creators are entitled. Awareness building is a very important aspect of this initiative. We must remind the public, members of the music industry, and legislators about the central role and rights of those who conceive and create music. ASCAP will absolutely continue to be a very strong advocate for legislation that is fair to both music creators and music users.

**Music can be found all over the Internet on sites like MySpace and YouTube, and even on Yahoo and AOL videos. How are writers being compensated for these uses, and what role does ASCAP play?**

What's interesting—and sometimes disturbing—about new-media channels is the sense that somehow the old rules no longer apply. Technology like social networks or file-sharing software are new and innovative content-delivery channels. This innovation in content delivery should not, and does not, change the underlying rights inherent in a creative work, nor should it change the treatment of the creator. It's often this creative content, like music, that makes online sites and services so attractive and valuable to consumers. ASCAP is working hard—and meeting success—at negotiating fair music-performance licenses with various technology players across many categories, each of which is tailored around the way

music is performed on the site or service.

**What kind of progress have you made?**

There was a major milestone on the front this year. In April of 2008, a federal rate court [in New York] ruled on the licensing fees owed to ASCAP by AOL, RealNetworks, and Yahoo. [See ascap.org/press/2008/0430_ratecourtdecision.aspx for details.] ASCAP feels that the court's finding represents a major step toward proper valuation of the music contributions of songwriters, composers, and publishers to online businesses—many of which have built much of their success on the foundation of the creative works of others.

**What do you think of the trend in film and TV to give no up-front monies to writers for music placement?**

This trend is certainly a reality in today's film and TV landscape. If the up-front money is sacrificed, then the performance right becomes particularly essential—and critical for the composer or songwriter. Film and TV is one area where the need for and role of the performance right becomes starkly clear. [Even if a writer does not receive up-front money for a film or TV usage, he or she will still receive performance royalties for TV airings in the United States and abroad, and for theatrical film showings outside of the United States.]

**Why should writers expect a share in all associated profits for new-media usages?**

That was the recent conclusion of the federal rate court judge. When the performance of a songwriter's work directly contributes to the overall revenue of a [Web] site—across all aspects of the site—it's only fair for the songwriter to share in that revenue. As was reflected in the court's comprehensive decision, ASCAP's blanket license was deemed the best model for facilitating the legitimate performance of musical works online.

**Is it enough for a licensee to pay a fee for a usage, or should writers always demand or expect to share in revenues generated by anything that incorporates a music usage?**

Every situation is somewhat different. And there are certainly examples of where the ASCAP blanket license—essentially a licensing fee—is itself based on a share of revenue of the entity taking the license. So in that case, our members are indeed sharing in the revenues that use of music generates. The bigger-picture point here is that with intellectual property, just like with physical property, the owner's permission must be obtained prior to use. Songwriters have the right to be compensated—which can mean more directly sharing in the revenues of a business supported by music use or can mean receiving a fair license fee for use.

**Some detractors argue that songwriters benefit from the exposure that free Internet sites filled with user-generated content are giving them, so writers shouldn't be entitled to share in profits. What would you say about that?**

Exposure is one thing, but making a living is clearly another. Ultimately, ASCAP believes that the ability of music creators to make a livelihood out of their art cannot be sacrificed—especially not for the chance that some may hit it big via MySpace or another online site. That is simply not a reasonable expectation, nor is it a compelling reason to let companies that generate significant audience engagement and revenue—from the use of musical works—off the hook relative to compensating creators. For this reason, ASCAP will continue to fight and ensure that commercial businesses share a reasonable portion of their sizable revenues with some of the smallest of small-business owners: music creators. After all, it is their content that in many cases attracts and sustains these business models. But at the very least, the user needs to get their permission, and the decision rests with the creator.

**How would you advise a songwriter or composer who is asked to give up their rights or compensation?**

Being faced with the choice of surrendering rights or compensation is always difficult, particularly for a new songwriter or composer. Ultimately, though, it is critical that they try to take the long-term view. Once surrendered, a right is lost forever. So while "free exposure" may sound appealing or "work on spec" may seem like a foot in the door, there has to be some thoughtful analysis of whether the reward outweighs the risk. It is often a good idea in those cases to try to get a few professional points of view—which can include making an initial call to a lawyer who understands the entertainment field, talking to someone you know who may be further along in the field, [and] reaching out to a performing-rights organization like ASCAP. em

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*Fran Vincent is the author of* MySpace for Musicians *(Thomson Course Technology, 2007) and president of Retro Island Productions, Inc., a music-services and marketing/PR firm. Visit her at myspace.com/retroisland.*

## The Bill of Rights for Songwriters and Composers

**The following is the ASCAP Bill of Rights for Songwriters and Composers. For the full text, including the preamble, visit ascap.org/rights.**

1. We have the right to be compensated for the use of our creative works, and share in the revenues that they generate.
2. We have the right to license our works and control the ways in which they are used.
3. We have the right to withhold permission for uses of our works on artistic, economic or philosophical grounds.
4. We have the right to protect our creative works to the fullest extent of the law from all forms of piracy, theft and unauthorized use, which deprive us of our right to earn a living based on our creativity.
5. We have the right to choose when and where our creative works may be used for free.
6. We have the right to develop, document and distribute our works through new media channels—while retaining the right to a share in all associated profits.
7. We have the right to choose the organizations we want to represent us and to join our voices together to protect our rights and negotiate for the value of our music.
8. We have the right to earn compensation from all types of "performances," including direct, live renditions as well as indirect recordings, broadcasts, digital streams and more.
9. We have the right to decline participation in business models that require us to relinquish all or part of our creative rights—or which do not respect our right to be compensated for our work.
10. We have the right to advocate for strong laws protecting our creative works, and demand that our government vigorously uphold and protect our rights.


FIG. 1: The MC Control is a visionary product that brings customizable touch-screen control to Mac-based sequencers and other media applications.

# Euphonix
## MC Control
### Improve your work flow with speed and style.

By Nick Peck

**PRODUCT SUMMARY**

| | |
|---|---|
| control surface | $1,499 |

**PROS:** Terrific faders. Visionary approach to user-programmable software control. Sleek design. High-resolution Ethernet communications.

**CONS:** No Windows support. Crowded touch screen. Difficult to read onscreen text. Uncomfortable data wheel.

| | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| FEATURES | | | | ● | |
| EASE OF USE | | | ● | | |
| DOCUMENTATION | | | ● | | |
| VALUE | | | | ● | |

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In our reviews, prices are MAP or street unless otherwise noted.

ONLINE BONUS MATERIAL

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

The MC Control is a control surface designed for DAWs and other media-based Mac applications. It utilizes Euphonix's EuCon protocol, which acts as a conduit between the hardware and the software it controls. The MC Control's Ethernet connection gives it significantly faster throughput and higher resolution than control surfaces that rely on MIDI or USB. The system is compatible with any 1.25 GHz Mac G4 or better running Mac OS X 10.4 or later. Currently it does not support Windows.

The MC Control communicates most effectively with EuCon-aware applications such as Apple Logic Pro, Apogee Maestro, and Steinberg Cubase and Nuendo (MOTU Digital Performer should support EuCon soon). It also offers a HUI-emulation mode for use with Digidesign Pro Tools and other compatible software (for more information, see the **online bonus material** at emusician.com). In addition, it supports any software that responds to the Mackie Control protocol, such as Ableton Live and Propellerhead Reason. The Mac application EuControl, which allows you to configure the control surface, furnishes a soft-key editor for programming commonly used keystrokes for any other application.

## Hands on Hardware

The MC Control is about the same width and twice as deep as a computer keyboard (see Fig. 1). The hardware was specifically designed to fit on the desktop between the keyboard and the monitor—a form factor that puts the MC Control at the user's fingertips at all times.

The MC Control has four fader strips, each with a 100 mm touch-sensitive motorized fader, Solo and On buttons, and dual-purpose Record/Automation and Select/Assign buttons. The faders have a smooth, silky feel, and they're quiet when they move. The fader strips don't have dedicated data knobs; instead, the data-control knobs surrounding the touch-screen area handle functions such as pan.

The touch screen near the center of the control panel is the heart and soul of the product. Its dimensions are 6 × 3.6 inches, and it operates at 800 × 480–pixel resolution. The

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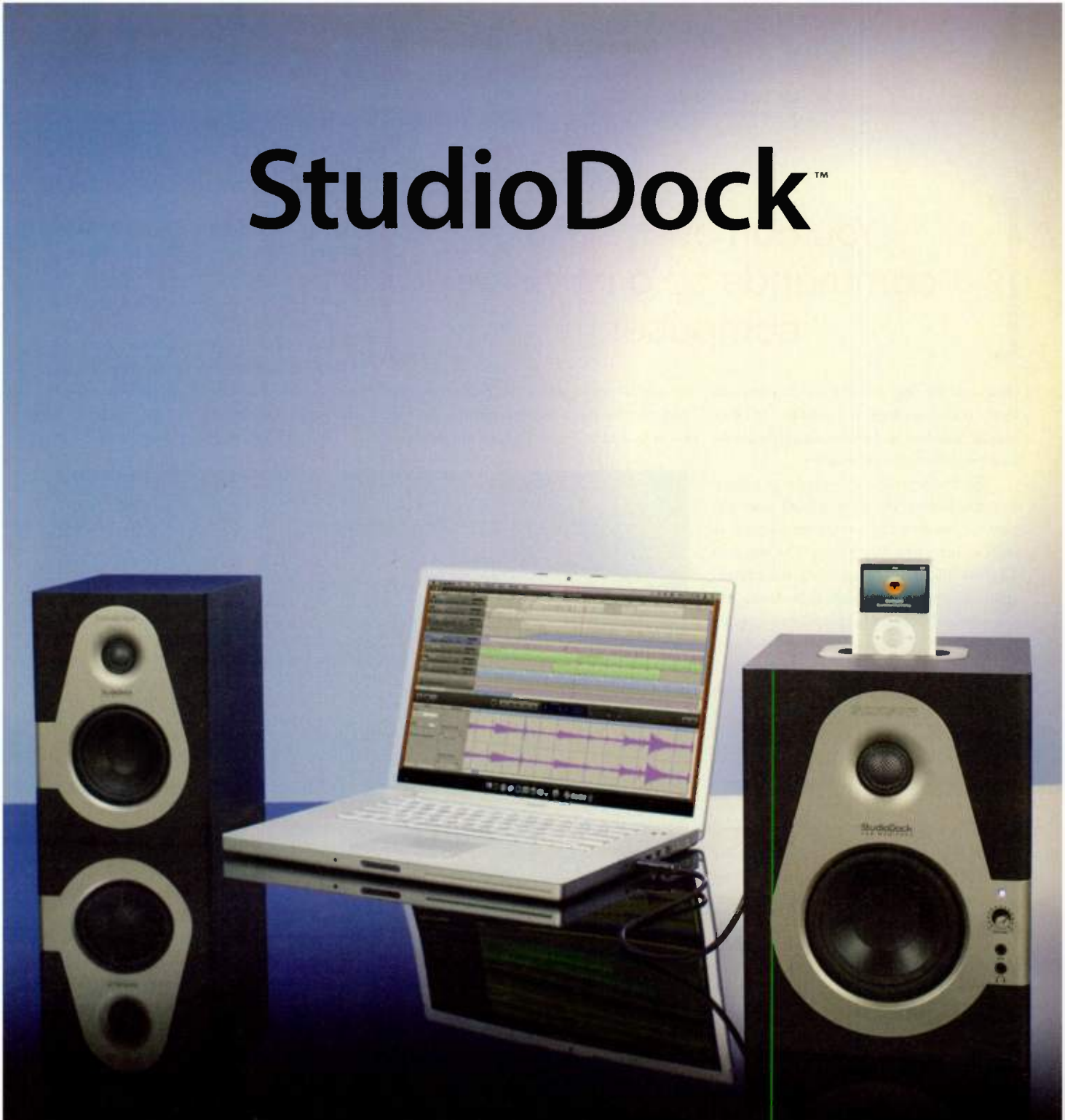

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colors are vibrant, and the text is crisp and clean. The screen displays a great deal of information, however, and some of the data can be a bit tough to read comfortably.

The touch screen is divided into several functional areas. The right and left sides display the position and parameter assigned to each of the eight data knobs. The top area displays information regarding the current application selected, as well as the name and gain level of the four tracks represented by the fader strips. The bottom area shows the labeling for the 12 surface soft-key buttons. Data used in the view modes (more about those later) takes up the lion's share of the touch screen's real estate.

Directly beneath the touch screen are 12 physical soft (reassignable) keys, arrayed in 2 rows of 6 buttons. These keys execute the soft-key commands displayed in the touch screen's bottom section. You can have as many soft-key banks as you like; a pair of navigation buttons scrolls through the banks. Euphonix designed the physical soft-key bank to hold the keystrokes and tools you would use most often, and thus added the tactile controls below the labels so that you could operate the buttons without moving your gaze from your computer monitor.

Eight Velocity-sensitive parameter knobs are adjacent to the touch screen, four on either side. They feel great and have sufficient room between them for easy use. Pressing down on the knobs causes them to act as buttons. You use the parameter knobs primarily to change plug-in settings.

The MC Control has eight navigation buttons. The Bank and Nudge buttons allow you to scroll between tracks. A pair of Page buttons lets you scroll through parameters currently assigned to the parameter knobs. A Mixer button brings up the mixer window in applications that have such windows, which is a nice touch. The Workstation button allows the MC Control to operate applications running on another computer on the same network; you can even use it to send keystroke and mouse commands to a remote computer. In addition, the front panel has two unlabeled Shift buttons, one in each lower corner.

The transport section is located in the lower right-hand corner. The transport buttons are laid out in a curved fashion designed to emulate the positioning of the four fingers of your right hand. Below those are Jog/Shuttle and Zoom buttons, and to the right is the Jog/Shuttle wheel. The data wheel has a ridge around the top and ribbing to grip your finger, but I found it stiff to move and awkward to use. I would have preferred a more standard-issue jog-wheel design.

## Soft Highlights

The MC Control has three views—Tracks, SoftKeys, and Setup—which you select using three virtual buttons near the bottom of the display (see Fig. 2). Tracks view displays up to 32 tracks simultaneously as icons. You can set record, mute, or solo status for each track directly within the Tracks view window, or you can select them to assign them to a fader for further attention.

SoftKeys view displays as many as 24 virtual buttons in the middle of the screen. You can have an unlimited number of soft-key banks organized any way you like. Setup view allows you to regulate the control room and monitor levels in Nuendo or Cubase and lets you control mixer levels in products that use Maestro. In addition, an included application called Studio Monitor Express provides complete control room and monitoring functionality to any Core Audio app (such as Logic Pro) that lacks such capabilities.

EuControl's soft-key editor is the MC Control's coolest aspect (see Fig. 3). This feature allows you to edit, create, and configure


FIG. 2: Tracks view mode lets you control as many as 32 tracks at a time using the MC Control's touch screen.

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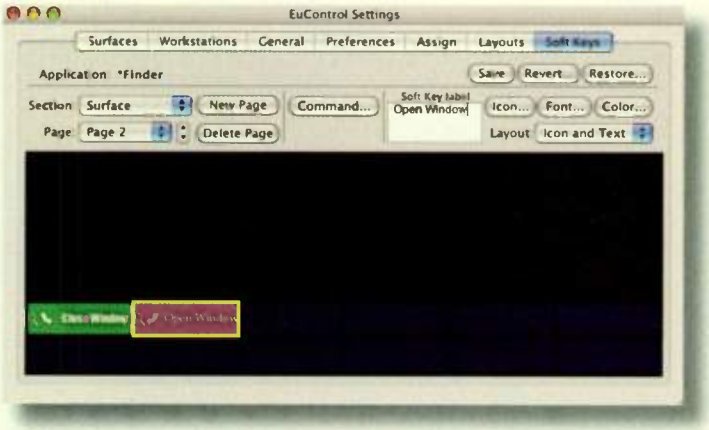


FIG. 3: The included EuControl software's soft-key editor allows you to create assignable buttons that appear on the MC Control's touch screen.

touch-screen and surface soft-key buttons for any app. You can assign one or more EuCon, HUI, Mackie Control, or navigation commands to each soft key. You can also assign your choice of icons, colors, and fonts to each soft key. You can even use soft keys to change the data wheel's function, and they work with any application.

## Plug-in Control

The eight data-control knobs give you hands-on, real-time editing of plug-in parameters. In Logic Pro, for example, you select a plug-in for editing by selecting a track and then pressing the insert's data-control knob. All plug-ins assigned to that track then appear on the knobs, and pressing the appropriate knob opens the plug-in window onscreen and maps the first bank of parameters to the knobs.

The selected parameter's name, value, and knob position are displayed next to each knob. Any changes are reflected in real time within the DAW's plug-in window. The Page Forward and Page Back buttons scroll between banks of parameters, and the Back button moves you back up the hierarchy to the plug-in selection view again. Once I got used to the system, I found it to be comprehensive and pretty easy to use.

Considering the MC Control's flexible approach to programmability, I would love to be able to custom-map plug-in parameters to the data-control knobs. That would allow me to access my eight favorite parameters at the same time.

## Sound and Vision

The MC Control is a visionary product. Though it took me a while to find my sea legs, once I delved into what it was capable of, I really liked it. If Logic Pro were my primary DAW, the MC Control with a pair of MC Mix fader packs would be my control surface of choice. Its minimalist, *Star Trek*–inspired design has an undeniable *wow* factor, and its programmability and feature set are powerful. That said, I would still prefer a different type of data wheel and a larger LCD touch screen, but those are quibbles. If you like to tinker with your work flow, and especially if your primary DAW is a EuCon-aware application, then MC Control is a heavyweight contender.

> EuControl's soft-key editor is the coolest aspect.

---

*Nick Peck is a composer, Hammond organist, audio engineer, and sound designer in the San Francisco Bay Area. His latest CD,* Fire Trucks I Have Known, *is available through CD Baby.*







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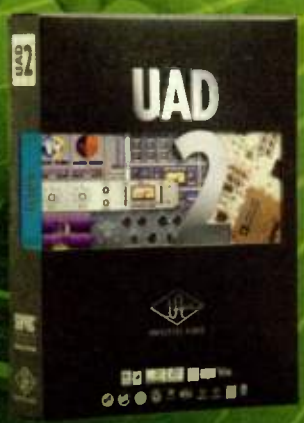




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FIG. 1: Orion provides more than a dozen sound generators, lots of effects, and capabilities for sequencing, audio recording, and mixing.

# Synapse Audio

## Orion 7.5 (Win)

An intuitive alternative to a full-fledged DAW.

By Allan Metts

### PRODUCT SUMMARY

| soft synth workstation | $149 |
|---|---|

**PROS:** Intuitive work flow. Great variety of soft synths and effects. Plug-in support. Very good value.

**CONS:** No amp/speaker simulation effect. Documentation only in nonsearchable Windows Help format.

| | | | | | |
|---|---|---|---|---|---|
| FEATURES | 1 | 2 | 3 | 4 | 5 |
| EASE OF USE | 1 | 2 | 3 | 4 | 5 |
| DOCUMENTATION | 1 | 2 | 3 | 4 | 5 |
| VALUE | 1 | 2 | 3 | 4 | 5 |

Synapse Audio
synapse-audio.com

ONLINE BONUS MATERIAL

Synapse Audio's Orion has roots as a software synthesizer workstation offering pattern-based MIDI sequencing, a few software synthesizers, and a basic set of effects. The application has continued to evolve over the years and now provides multitrack audio recording, more than a dozen sound generators, and compatibility with other software instruments and effects using VST, DirectX, and ReWire.

EM reviewed Orion in the January 2003 issue (available at emusician.com), so I'll cover the basics here only briefly. The program is no longer offered in multiple versions with different price points and features; the lone offering now is what Synapse Audio previously called the Platinum version. Though Orion isn't intended to replace a high-end DAW, you get a remarkable amount of music-making power for the money.

### Musicians' Intuition

Orion is remarkably intuitive (see Fig. 1). You insert sound generators (software instruments) into your project and create patterns for each generator to play. You can record patterns in real time or step time, or enter them with the mouse in a piano-roll display. Each generator gets a channel in the mixer and a track in the Playlist. The Playlist determines which patterns play as your song progresses.

Orion is a bit more "hardwired" than some of the other offerings out there. To change the generator associated with a pattern, you have to cut the pattern data out of one generator and insert it into a new one. Your options for mixer routing are also fixed; each channel supports two insert effects, four effects-send buses, and routing to four mixer subgroups in addition to the master channel. You cannot add or delete effects buses or subgroups.

In practice, though, I found it extremely refreshing to have fewer menus to dig through and fewer choices to make. Orion's simplicity is arguably its greatest strength, because it allows you to focus more on making music and less on dealing with the configuration settings.

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## Effects Everywhere

Orion furnishes many more slots for plug-in effects than its configuration of channels and buses might imply. The send buses, subgroups, and master channel can each accommodate four effects (as opposed to the two slots available in the mixer channels). What's more, two of Orion's effects are actually holders for other effects.

Orion has two types of effects holders, BandFX and MultiFX. MultiFX can accommodate four effects in either a parallel or serial configuration; when used in a parallel configuration, a convenient *x-y* controller lets you determine how much of each effect will be applied. The BandFX holder splits your signal into three frequency bands and provides two effects slots for each band. The frequency breakpoints are configurable, and each band has a dedicated gain control. Orion's effects holders provide an intuitive and powerful mechanism for adding just the right effects to your project. I was even able to put one effects holder into the slot of the other effects holder without any complaints from the program.

More than 40 effects are available. Some of the newest include virtual analog distortion, a saturation effect, convolution reverb (see Fig. 2), and a peak limiter modeled after the Universal Audio 1176LN. Also new are autotracking EQs, which can boost or cut as many as four partials of the input signal's frequency (obviously, an effect like this works best on monophonic source material). The autotracking EQs can save you from having to instantiate multiple EQs to address problem frequencies relating to a moving bass or lead line.


FIG. 2: Orion's convolution reverb is a relatively new addition to the program. Several other reverbs are available if you're short on CPU and don't need the convolution capabilities.

The effects sounded great, and I appreciated the inclusion of processors—such as the pattern- and sidechain-controlled filters—that can automatically infuse some movement into your audio. Orion covers all the bases, with one notable exception: when trying to dial up a good guitar sound, I had to resort to a third-party VST-based amp and speaker simulator. Orion has tube-based and analog distortion but nothing that can make your guitar sound just like it's coming from a Fender Twin.

In addition, many of the effects aren't as graphically detailed as those you'd find elsewhere. You often see only knobs to set the configuration, as opposed to flashing indicators with moving graphs and meters. I didn't miss them too much, though, and I appreciated the extra screen real estate (with fewer distractions).

> You get a remarkable amount of music-making power for the money.

## A Creature with Features

Orion's software instruments use a variety of synthesis techniques. Check out the **online bonus material** at emusician.com for descriptions of my four favorite generators and a link to an audio clip created with the program.

The Plucked String generator provides numerous variations, including approximations of nylon and steel strings. If you're looking for realistic instrument emulations, you'll probably have more luck with a good set of samples in the sample player, but I found the plucked-string module's sounds to be quite pleasing (albeit slightly electronic sounding).

Screamer specializes in saturated, sometimes distorted, lead sounds. It's a 2-oscillator monophonic synth with extra settings for Saturation and Rage. Also available is a monophonic bass synthesizer with a basic set of oscillator, filter, envelope, and portamento settings.

If you're looking for something a little less realistic than the sample-based drum synth, you have two alternatives. XR-909 emulates a Roland device with a similar-sounding name, and Tomcat creates excellent-sounding renditions of electronic kicks, toms, handclaps, and rim shots.

Two more sample-based synths round out Orion's collection. Wavefusion offers wavetable synthesis using three oscillators, three LFOs, a filter stage, and three envelope generators. And Ultran uses four oscillators to provide wave morphing using a variety of transition techniques. Both synths are great for evolving pads, textures, and arpeggiated passages.

A MIDI Out generator provides a convenient interface for linking external MIDI gear into Orion. Here you have access to the same sequencer window and arpeggiator as the software synths, but the synth parameters are replaced with port and channel assignments for the external connection. You can also specify patch and bank settings, and automate as many as eight MIDI controllers using the same parameter event recording and editing capabilities that the generators have.

Orion's arpeggiators are powerful indeed. Each generator gets its own, with complete control over the direction, speed, notes, rhythm, and duration of the arpeggiated passages. You can specify a total of eight different chords (root and chord type), and the arpeggiator will cycle through them as it generates notes. The arpeggiator's output can be written to the pattern in case you'd like to edit it (or have more control over what gets played).

## Audio Additions

Audio recording is straightforward in Orion. You begin by inserting the Audio Track

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Tony DiLorenzo
Electronic Musician Magazine

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generator into your project. Audio tracks don't have property pages and piano-roll pattern editors like the synths, but they do appear in the mixer and song Playlist. Once it's in place, you can arm the track and record in a manner similar to DAW applications. And you can apply effects in the mixer just as you can with the other generators.

Recording isn't the only way to bring audio into Orion. You can also import WAV files into audio tracks, or use the sample-player generator to trigger audio phrases as you need them. Orion supports sampling rates up to 192 kHz and bit depths as high as 32 bits.

Once your masterpiece is complete (or ready for refinement in a full-fledged DAW), you can stream everything to one or more files. In addition to setting the export format (MP3, Ogg Vorbis, or WAV), you can choose whether to generate a single file, a file for each generator, or a file for each mixer channel (some generators, such as the drum machines, can send their output to multiple mixer channels).

## To the Stars

Orion is an excellent environment for music composition and recording. If your work is primarily MIDI based and you're comfortable building your projects as a collection of generators and patterns (keeping in mind that patterns store a maximum 10,000 steps), Orion may be all you need. Other users will eventually need the extra features that a more complete DAW application provides. But even if you already use a major sequencer, Orion can be a terrific tool for composing your song's initial tracks. There's much to be said for its intuitive environment, which lets you compose quickly without getting in the way (unlike some DAWs I've used).

The program's documentation is adequate, though it isn't searchable or context sensitive and a few of the newest features aren't yet covered. I'd certainly appreciate a PDF-based alternative to the help file.

Overall, though, I found Orion a joy to work with. Download the demo today and experience it for yourself.

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*Allan Metts is an Atlanta-based musician, software/systems designer, and consultant. Check him out at ametts.com.*

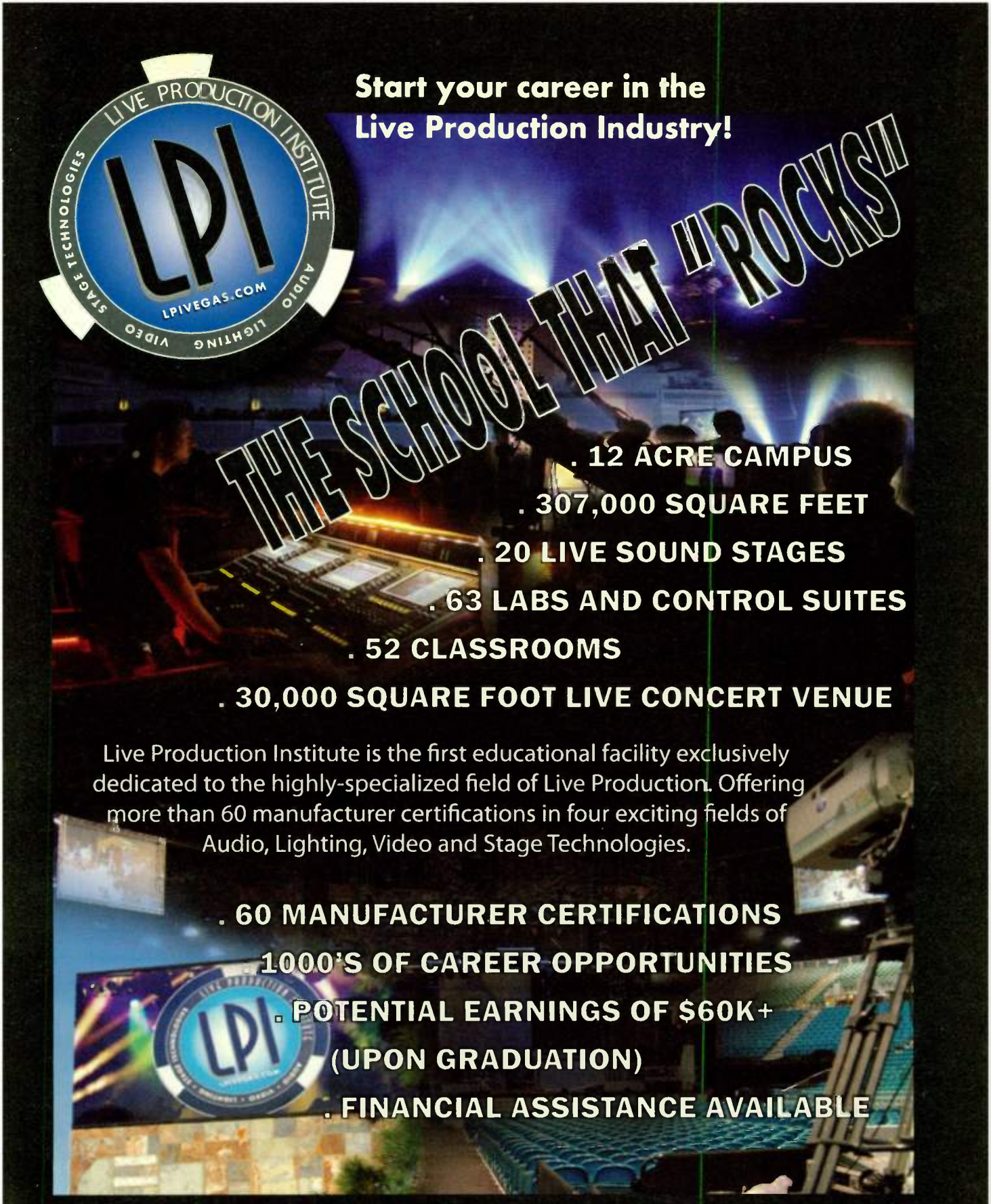


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FIG. 1: The R-09HR's front panel sports a large OLED display and controls for adjusting playback speed, enabling reverb, and splitting files on the fly. Transport controls also execute menu and file-navigation functions.

# Edirol
## R-09HR
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**PRODUCT SUMMARY**

| compact stereo recorder | $399 |
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**PROS:** Big bang for the buck. Quality sound. Built-in stereo mic and mono speaker. User-friendly file directory and menu structure. Limiter, AGC, and low-cut filter provided. Easily fits in a shirt pocket. Handy wireless control included.

**CONS:** Headphone output has 6 ms latency and is not very loud. Playback-speed control causes slapback sound. Mic and line inputs are on unbalanced 3.5 mm minijacks.

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

Edirol
rolandus.com/edirol

ONLINE BONUS MATERIAL

By Michael Cooper

Pocket-size digital recorders have been around for a couple of years now, but the latest offerings deliver bigger bang for the buck. Memory capacities and feature sets are expanding, while interfaces have taken a cue from computer-based GUIs to become increasingly user friendly. What's more, prices for portable digital recorders are generally headed south.

The Edirol R-09HR stereo recorder is a shining example of this trend toward mega feature sets at modest prices. This new model replaces the earlier R-09 (see the February 2007 and June 2008 issues of EM, available at emusician.com). One of only a handful of similar products that feature a built-in speaker, the R-09HR provides an integral stereo (omnidirectional) condenser mic, external mic and line inputs, signal processing, a large OLED display, and a well-designed file directory (see Fig. 1). It's also the only product in its price class to offer a wireless remote control.

## The Going Rate

The R-09HR can record 16- and 24-bit WAV files at standard sampling rates from 44.1 to 96 kHz, and MP3 files from 64 to 320 Kbps bit rates (see more product specs on the EM Web site). Playback capabilities are the same as those for recording, but in addition to 32-bit WAV files, it can also play 32 Kbps and VBR (variable bit rate) MP3s. The included 512 MB Secure Digital (SD) memory card allows between 13 and 980 minutes of stereo recording time, depending on the file format chosen. The audio file format has a write-protect feature that prevents accidental erasure of important files. Higher-capacity memory cards—up to 32 GB—allow proportionally greater record times.

The R-09HR can be powered by two standard AA alkaline or rechargeable AA nickel-metal hydride (NiMH) batteries (neither type is supplied). Edirol says a fresh pair of NiMH batteries will allow 8 hours or more of continuous recording time using the R-09HR's internal microphone. An AC adapter is also included (see the **online bonus material** "Extra Goodies" for more about the R-09HR's included and optional accessories).

The internal mic sports two capsules that point outward in opposite directions on the head of the R-09HR's chassis. On the unit's

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FIG. 2: On its rear panel, the R-09HR provides a built-in speaker, a mic sensitivity switch, a battery compartment, and controls that activate a low-cut filter, 5V plug-in power, a hold function, and a user-selectable limiter or AGC.

front panel, transport buttons also serve as controls for navigating the recorder's user-friendly Finder file directory (see the **online bonus material** "Show and Tell"). In addition to the transport buttons, hardware-based controls include those for setting input and output levels, activating a low-cut filter (set in software to a 100, 200, or 400 Hz corner frequency), and enabling either a limiter or AGC (automatic gain control) function (see Fig. 2). The limiter prevents accidental overload while recording, whereas the AGC function prevents levels from getting either too high or too low.

When activated during recording, a Hold switch locks out most recorder functions to prevent you from accidentally changing levels or stopping. With the push of a button, you can split audio files on the fly while recording, creating two or more files. This is a great feature for, say, recording a concert and creating a separate file for each song without having to start and stop. You can also loop a section of a file and increase or decrease playback speed without changing pitch, to facilitate learning a recorded guitar solo or transcribe dictated notes, for instance.

Another switch activates 5V plug-in power for the optional CS-15 external miniature condenser mic ($109). The R-09HR has three 3.5 mm minijacks for mic and line input and headphone output. A somewhat flimsy plastic hatch opens to allow access to a memory card slot and a USB port (for transferring files to and from a computer). A USB cable is supplied with the R-09HR.

Four types of reverb (one room, one plate, and two hall programs) are singularly available during playback at supported sampling rates below 88.2 kHz. You can't record the reverb or hear it while monitoring your recording, and depth is the only reverb parameter you can adjust.

## In the Pocket

It takes about 11 seconds to put the R-09HR into record mode from a powered-down state. In all the recordings I made with it, the sound quality was surprisingly detailed and spectrally balanced, especially considering the microphone design limitations that must have gone into a product with such a low price point. On acoustic guitar, aiming the head of the recorder so that the omni capsules were near the 12th fret yielded a detailed and full-bodied sound.

I also recorded the natural ambience outside my studio, where a light wind was blowing through tall pine trees. The R-09HR provided plenty of input gain to record this quiet soundscape at full scale. The mics weren't as sensitive to turbulence as some other condensers I've used, but the low-cut filter—set to 200 Hz—nevertheless came in handy in all but preventing rumble from the wind. That said, I would recommend fitting the mic capsules with urethane-foam windscreens when recording in the field. Characters on the R-09HR's OLED display—when adjusted to maximum brightness—were visible even in direct sunlight.

While recording, I could monitor my input source with headphones. However, the recorder's inherent 6 ms latency was distracting when recording an instrument in the same room, especially when I was the performer. Output levels at full bore were adequate for monitoring a quiet acoustic performance in the same room using my AKG K271 Studio headphones. But it was clear the headphone output wouldn't be loud enough for confidence monitoring anything substantially louder, such as a rock band, in close proximity.

I loved being able to hear my files play back through the R-09HR's rear-panel speaker, which precluded the need to use headphones for listening to recordings of my songwriting ideas. I could also navigate to a folder for a given song's files and then record a new file directly into that folder—obviating the need to move it there from the Finder's root level after recording. Renaming files and folders was also really fast and easy.

The AGC function worked great for recording song ideas on the go without the hassle of setting optimal levels. The recorder's loop-playback function worked like a charm and was a great boon to transcribing my dictated review notes for this article. However, changing a file's playback speed produced distracting slapback echoes, making that feature only marginally useful.

## Quibbles and Kudos

The OS 1.03 software that was installed on my review unit was a bit buggy, causing arbitrary power-downs during playback on several occasions, preventing a split file from being directly accessed, and even making the recorder's functions freeze up one time. Edirol assures me that the OS 1.04 software (which was released too close to press time for me to test) fixes all those problems. Additionally, I wish the R-09HR had balanced XLR or TRS jacks for its mic and line inputs, but the unit's small form factor and modest price point probably made that infeasible.

The R-09HR offers a lot for the money. Many similar products have a leaner feature set yet cost more. Whether you need a high-fidelity recorder to record your band's concerts or capture nature's finer moments, or a low-fidelity memo pad for recording songwriting ideas or a meeting with an entertainment lawyer, the R-09HR is a solid choice.

---

*EM contributing editor Michael Cooper has written more than 300 articles about pro audio in the past 20 years. Visit him at myspace.com/michaelcooperrecording.*

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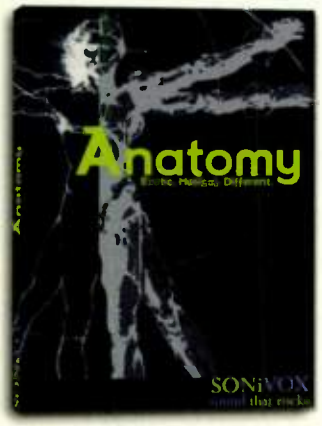
## SONIVOX

### Anatomy (Mac/Win)

By Rich Tozzoli




Sonivox Anatomy contains dry and processed sounds derived from the human anatomy.

Imagine creating a groove from breaths, burps, snores, cheek pops, heartbeats, and bones. Layer that with a few bees, chanting robots, bubbling water, and sea monster pads. Throw in some tempo synced frogs, dancing bulls, and warlock circle rhythms, and you have a few prime examples from the new sound library Sonivox Anatomy ($219 [MSRP]).

Designed and built for Native Instruments Kontakt 2 and 3, Anatomy contains more than 4 GB of content arranged in over 800 scripted Kontakt instruments. To install it, you simply drag the contents of the Anatomy DVD to any hard drive and point Kontakt to it.

#### BARE BONES

Anatomy requires Kontakt 2.2.4.001 or later or any version of Kontakt 3. The manual states, and I verified, that other versions will not open any of the Anatomy instrument files.

Anatomy comprises two main categories: Machine and Man. Machine is divided into Body Percussion, Drum Kits, FX, Leads, Pads, and Tempo Synced (FX, Leads, and Pads). Man is divided into Choirs, Drum Kits, Foley & FX, Leads, Pads, Tempo Synced Pads, and Vocal & Body Percussion. Each of the Anatomy Kontakt instruments displays the same custom-scripted interface.

ONLINE BONUS MATERIAL

A wise creative decision was made to facilitate easy access to the controls Sonivox felt the user would need the most in the Kontakt sampler; only a handful of controls are on display at any one time. The main interface offers Attack, Decay, Sustain, and Release knobs for the amplitude envelope as well as filter on/off, type, frequency, and resonance controls.

Clicking on the FX Settings button reveals an additional page of effects settings. A drop-down menu offers Reverb, Delay, Chorus, Flanger, and Bit Crusher effects, along with a button to turn effects processing off. Each choice has associated controls—for example, Delay offers Time, Feedback, and Return.

MIDI Modulation and Pitch Bend provide other ways to tweak the sounds for everything but the drum kits. Whereas Pitch Bend is usually assigned to pitch, the effect of Modulation is undisclosed; simply turn the wheel and experiment with some real-time creative control. You also have the full power of under-the-hood Kontakt instrument tweaking at your disposal.

#### TRANSMOGRIFY

Happily, the presets are not huge and are programmed so they load quite fast. Running through the various subcategories, you quickly realize that nothing else is quite like this instrument. The Man sounds are much less processed than the Machine sounds, which, according to the manual, "are recognizable as human elements, but the point has been to transmogrify these into something patently unquantifiable."

The best way to appreciate Anatomy is to open some sounds and go for it. Angelic Bee Pad (Man: Pads) is very cool. Playing a simple chord progression up two octaves is perfect for kids' TV work. Chattering 1-Touch Pad (Man: Pads) is right out of a sci-fi film, and the Mod wheel not only affects the filter, but it also alters the pitch (see **Web Clip 1**).

Things like the Male Choir Ohhs (Man: Choirs) are more traditional yet still retain an oddly eerie quality. The choir samples are from the Arlington Master Chorale in Texas. With patches such as this, I achieved the best results by turning off the Kontakt effects and busing out to something a little deeper (see **Web Clip 2**).

Anatomy is a powerful tool for sound design. Some samples, such as Breathing (Man: Foley & FX), have a separately triggered release so you can take air in (note on) and breathe out (note off). You might follow that up with Breathy Arctic Thrusters (Man: Foley & FX), which sounds like a giant monster is coming to attack you on an ice cap (see **Web Clip 3**). These clearly show how the programmers manipulated basic samples to morph them into wild sounds.

More highlights include great body percussion like heartbeats and foot stomps. You get full drum kits made of cell-phone beats, industrial farts, and laughs and coughs. I also liked the Tempo Synced sounds such as Computer Vowel Arp and Hard House Voice Pad.

It's impossible to cover the wide range of offerings and options in a short review. Anatomy is a unique and highly creative tool. Whether for reaching for the unknown and unexpected or simply for thinking outside the box, this is a go-to software instrument. Check out the free samples on the Sonivox Web site.

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**Value (1 through 5):** 4

Sonivox

sonivoxmi.com

## MACKIE

### 802-VLZ3

By Rusty Cutchin


>> Mackie's 802-VLZ3 provides eight channels of clean sound and versatile routing options at a bargain price.

Mackie's new 402-VLZ3 and 802-VLZ3 compact mic-line mixers—"subcompact" or "notebook" mixers might be more accurate terms—advance the company's time-honored reputation for packing quality analog circuitry into ever-smaller spaces. The 802-VLZ3 mixer ($199.99), in particular, offers a nice set of input and output options in a package that takes up barely a square foot of desktop space.

#### PRETTY PRES

The 802-VLZ3 provides eight channels, configured as two mono channel strips and three stereo channel strips. Each channel strip has fixed 3-band EQ (80 Hz, 2.5 kHz, and 12 kHz), pan pots, an aux-send pot, prefader solo, mute buttons that route signals to an Alt 3-4 bus, and rotary level pots at the bottom of the mixer's face.

Channel strips 1, 2, and 3-4 have gain pots and low-cut filters for the XLR inputs. The gain pot and filter do not affect the stereo line inputs on channel strip 3-4, and there are no gain pots or filters on stereo line channels 5-6 and 7-8.

Channels 1 and 2 each have XLR mic and ¼-inch line inputs that share circuitry. These channels feature a low-cut switch (18 dB per octave at 100 Hz), a high-impedance switch for plugging a guitar into the line-in jack, and a TRS insert jack.

Stereo channel strip 3-4 includes mic input 3 (XLR) and line inputs 3 and 4; these line inputs share circuitry with the mic input. This channel strip retains the low-cut filter switch but omits the high-impedance switch and insert jack.

A big advantage of the 802-VLZ3 is its incorporation of Mackie's popular XDR2 preamps (with XLR connectors) on mic inputs 1, 2, and 3. I tested the XDR2 preamps with dynamic and condenser mics, and the preamps were quiet and were consistently true to the input signal, adding no unwanted color to the sound.

#### ON THE OUTS

The 802-VLZ3 has balanced XLR outputs with a switch that selects between +4 dBu for main-mixer operation and mic-level output for routing signals to a larger mixer. You also get balanced/unbalanced output on ¼-inch connectors, an aux-send output, stereo return jacks for the aux sends, the Alt 3-4 output jacks, and control-room output jacks.

A switch engages phantom power on all three mic inputs. You can also switch the channel aux sends between pre- and post-fader/mute/Alt 3-4. Stereo tape ins and outs are provided on RCA phono jacks.

There's also a dedicated pot for the stereo return signal and one for headphone level. The headphone jack is on the extreme right of the mixer's face, and Mackie's Control Room Source matrix lets you monitor your choice of the main mix, Alt 3-4 bus, or tape returns on the control-room headphones and meter display.

The rear panel of the 802-VLZ3's steel housing hosts a power switch and a 3-hole connector for the locking power cable, which uses an in-line DC converter.

#### TESTING, TESTING

The 802-VLZ3 has no digital interfacing capability, so I fed its stereo returns from the outputs of my FireWire interface after connecting the mixer to my powered monitors. I fired up a mix in my DAW and, as expected, heard clean sound and ample gain, the hallmarks of Mackie's mixers. The outputs were clean, exhibiting only a small amount of noise with the control-room and main mix knobs turned almost all the way up.

In addition to the aforementioned mic tests, I listened to a Fender Telecaster in channel 1, using the high-impedance switch, and to keyboards in the stereo line channels. I was able to record back through my interface with no apparent signal degradation. Best of all, I was able to clear up lots of desk space by using the 802-VLZ3 for simple recordings like voice-overs and audio examples for education projects.

#### VL-EZ

The 802-VLZ3 is a clean, compact mixer that is sturdy enough for road work and versatile enough for many basic studio projects. It is bundled with a copy of Mackie's Tracktion 3 Project Bundle. Tracktion is a well-regarded digital audio sequencer, and the Project Bundle also includes software from IK Multimedia, Garritan, Submersible Music, LinPlug, and Sonic Reality.

Using the mixer's main and alt buses, you could record as many as four tracks at a time with effects and EQ through a small digital interface with multiple inputs. The 802-VLZ3 has its limitations, such as having only three mic inputs, but one can ask only so much of a compact mixer, especially at this price. Studio owners who need to add some extra inputs to their rig and small bands who play the club circuit and don't want to haul a large mixer should take a closer look.

**Value (1 through 5): 4**
Mackie
mackie.com

## WAVES

### iGTR

By Marty Cutler

The pocket-size guitar processor is hardly a new idea; quite a few gizmos offer layers

# loquat

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The Waves iGTR is an extremely compact guitar processor for on-the-go practice and jamming.

of effects with diverse levels of programmability and connectivity. Some can even record audio, loop, and change tempo. These small gadgets can be very handy in this era of mobile music making, and besides, most guitarists love small, handy gadgets.

With its iGTR ($79.99), Waves has taken the guitar-processor-and-interface concept and put it in a very small footprint: the device is housed in an attractive black plastic case that is roughly the size of an iPod. It is powered by four AAA penlight batteries (included) or by a 6 to 9 VDC external power supply (not included). A black plastic clip lets you attach the iGTR to a guitar strap or belt, which is handy because the lightweight unit can get tossed around, even when you just move the guitar cable slightly.

## PORTS OF CALL

I plugged my Brian Moore iGuitar 8.1.3 into the unbalanced ¼-inch guitar input on the bottom of the iGTR. An ⅛-inch stereo auxiliary input and 50 cm (approximately 19.7-inch) cable with ⅛-inch plugs accepts the output of an MP3 player or other sound source so you can play along with recordings. You can also feed the output of another iGTR to the aux input, allowing you to jam with a friend. A level slider for the aux input is provided on the right side of the unit.

The top of the device hosts two ⅛-inch headphone/line-out jacks, so you can monitor on headphones or powered speakers and use the second output to feed a recording device, a guitar amp, or another iGTR. I would have preferred a ¼-inch output, but given the size of the unit, the ⅛-inch jack is a reasonable choice. The power switch sits next to the two output jacks, and when you power up the iGTR, the letter *i* in the stenciled iGTR logo turns bright red. A single slider controls the level of both outputs.

## THREE AMIGOS

The iGTR incorporates three dedicated processors, one for Effects, one for Amplifier (models), and one for Ambience. In each of these categories, a slider selects one of three effects and a dial adjusts a preset parameter. Which parameter the dial controls depends on

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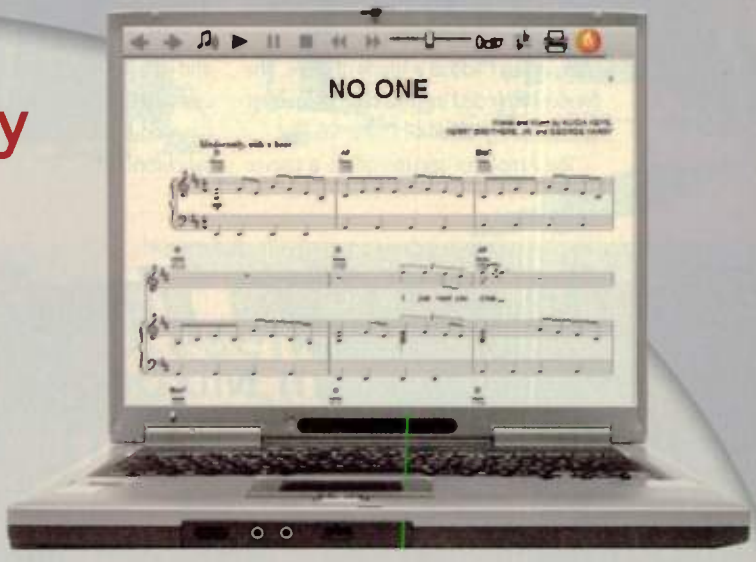


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half that of its closest practice-amp competitors. If you're the parent of a budding guitarist, your kid will probably get a bigger kick out of the iGTR than you will.

**Value (1 through 5): 3**
Waves
waves.com

## UNIQUE RECORDING SOFTWARE

### Classic Console Strip Pro 1.1 (Mac/Win)

By Brian Heller

Classic Console Strip Pro ($599; TDM-RTAS version, $1,199) extends Unique Recording Software's line of emulated vintage EQs and compressors, and it raises the bar significantly. This iLok-protected VST, AU, and RTAS plug-in combines an integrated channel strip (input stage, EQ, and compressor) with a fully modular signal path. Depending on the section, you'll find from 5 to 60 models that let you faithfully reproduce an entire vintage signal path, mix and match components from 1951 through


>> Input and output controls on the left, compression in the center, and EQ on the right give you many channel strip options in Classic Console Strip Pro.

1980, or go with the uncolored, digital option.

You choose the input stage from a drop-down menu presenting 30 model algorithms, including tube stages, British Class A transformers, and tape machine heads. An intensity slider determines how much of the chosen color is applied (without affecting the input volume). A separate knob lets you boost or cut the input by up to 12 dB. Presets (called Starting Points) will configure the input-stage and compressor modules with logically matched choices. Alternatively, you can lock your input-stage choices to defeat the interdependence of the module settings.

#### GO WITH THE FLOW

The interactive Signal Flow display is useful and well implemented, with its labels updating as Pre/Post switches on various modules are changed. In a welcome touch, the display's buttons double as bypass switches, eliminating the hunt for each section's bypass.

The compressor section contains all the controls you expect on a modern compressor, including many that were not on the original hardware units. You can place the compressor pre- or post-EQ. Because the 60 available Starting Points model vintage hardware units among which there was little consistency, changing Starting Points even within the same algorithm family alters all the other compression parameters. Although this accomplishes the goal of truly emulating the hardware, it makes it fairly difficult to make A/B comparisons.

The compressor is fed by a lowpass and highpass filter module below it that you toggle between the internal signal and an external source for sidechaining. I found the implementation of the Threshold knob odd—turning it clockwise increases the amount of compression.

The EQ section has four fully parametric bands as well as the lowpass and highpass filters just mentioned. You can configure two of the bands as shelving filters, and each band has its own bypass button. You get a choice of five algorithms for each parametric EQ band. That makes Classic Console Strip Pro the EQ to beat for tonal flexibility (see **Web Clips 1 through 4**). It's worth noting that like the hardware it emulates, Classic Console Strip Pro doesn't offer a graphical EQ-curve display.

ONLINE BONUS MATERIAL

#### BEYOND BASIC

Input and output VU meters, along with a gain reduction meter, round out the control panel. A thoughtful option lets you choose linear (up and down) or circular mouse control.

Classic Console Strip Pro reports less than 1 sample of latency (at 44.1 kHz), and, although not a CPU hog, it does take some power. One stereo instance used about 25 percent of my aging 1 GHz PowerBook G4. A more limited but excellent-sounding and more CPU-efficient plug-in, Classic Console Strip, is included.

The documentation is well written and comprehensive, and it is necessary reading to get the most from this plug-in. For example, the intensity control on the input stage is a nice feature, but it isn't labeled, so its function is not immediately apparent. Mastering the shorthand for the various algorithm names also requires referencing the listings in the manual. Detailed as the algorithm names are, the actual names of specific pieces of gear are never used. URS didn't offer an explanation, but with a little bit of background, one might infer that the 1967 FET Limiter with the "4," "8," "12," "20," and "All" choices might be a model of a UREI 1176, or that the models called "TubeChild" could somehow be based on the Fairchild 660/670.

Classic Console Strip Pro lives up to the high goals it has set for itself. With all its algorithms and controls, you can achieve an almost limitless variety of timbres. Some of these, such as the various 15 and 30 ips tape input stages, are quite subtle, whereas others, like the tube stages, add color when driven hard. This is one of the most useful plug-ins I've seen for recording and mixing the staple instruments of rock. em

**Value (1 through 5): 4**
Unique Recording Software
ursplugins.com

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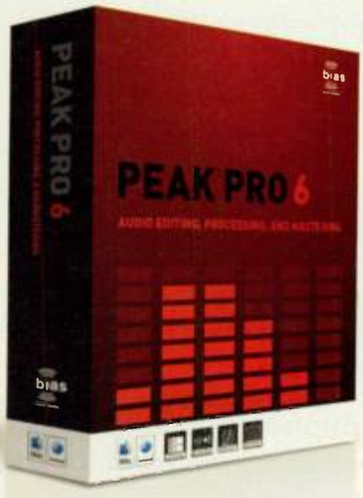


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# The MOTU Desktop Studio

## Powerful. Stylish. Compatible. Expandable.


CueMix FX

### Apple 3GHz iMac

**Beauty. Brains. And now more Brawn.**

Setting the highest standards for elegance and simplicity, the all-in-one iMac now includes an Intel Core 2 Duo processor running at speeds up to 3.06 GHz, offering dazzling performance for **DP6**, **MachFive 2**, and all your 3rd-party instruments and plug-in processing.

### MOTU UltraLite-mk3

**Compact FireWire I/O with effects & mixing**

The UltraLite-mk3 isn't just a 10 x 14 FireWire interface. It's a full-blown digital mixer with effects, including modeled analog EQ and compression on every channel, plus reverb — all accessed via the elegant **CueMix FX** on-screen mixer.



### Waves Jack Joseph Puig Collection

**Add his vintage sound to your MOTU rig**

When JJP requires the perfect sound, he turns to three studio legends: the Fairchild 670, Pultec EQP-1A, & Pultec MEQ-5. Now, Waves has precision-modeled these rare pieces in JJP's studio to capture every detail of their rich harmonic complexity.

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## Ocean Way Drums from Sonic Reality

### The premiere virtual drum instrument

Put the power of the world's most awarded studio complex in your MOTU desktop studio. Ocean Way Drums delivers 19 drum kits immaculately recorded in legendary Ocean Way Studio B where artists like Radiohead, Green Day, Eric Clapton, Kanye West and Paul McCartney create hit records.



## NI KOMPLETE 5 and KORE 2

### Legendary virtual instruments with hands-on control

For Digital Performer users who want it all: 11 legendary instruments including KONTAKT 3 and the award-winning MASSIVE, combined with instant hands-on control. Choose from 7,500 presets in seconds and instantly tweak with real knobs.

## Dangerous Music D-Box

### Killer analog summing & monitor management

Dangerous Music's renowned analog summing adds incredible punch, depth and warmth to "in the box" mixes. Now add monitor control with two speaker outs, two digital ins with D/A, talkback, two phone outs and aux analog input and you've got a must-have final analog mixing stage for your MOTU mixes.

## Euphonix Artist Series

### High-end console for your MOTU studio

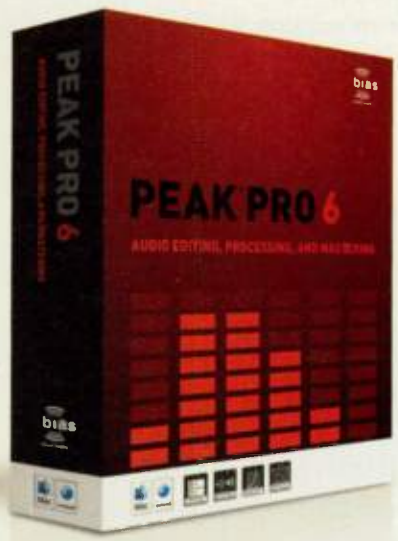
Euphonix brings high-end console technology to your MOTU personal studio in a revolutionary ergonomic, slim-line design that fits perfectly in front of your Mac. Use **MC Control** and **MC Mix** independently or together as the ultimate unified desktop console with up to 36 faders.

## Monster Pro PowerCenters
### Power conditioning and surge protection

Protect your MOTU studio investment and achieve optimal sound quality with the Monster Pro 2500 or Pro 3500 PowerCenters. Exceptional power conditioning, combined with Monster's patented Clean Power™ filter circuitry, provides separate noise isolation filtered outlets for digital, analog and high-current audio components for the cleanest sound possible.

## RØDE NT2-A
### Professional large capsule studio mic

Born from the legendary RØDE NT2, the NT2-A incorporates three pick-up patterns, three-position PAD and a three-stage high-pass filter conveniently located on the microphone body. The transducer has been voiced to complement today's modern recording techniques for the flexibility and superlative audio characteristics that make the NT2-A one of the most versatile condenser mics available. Backed by RØDE's industry-leading ten-year warranty.




## BIAS Peak Pro 6
### Evolution of an award-winning standard

Whether you're a musician, sound designer, audio editor, multimedia producer, or mastering engineer, Peak Pro 6 offers more creative potential than ever before. Used side-by-side or launched directly from within DP6, Peak Pro 6 streamlines your workflow with industry-renowned sonic quality and precision. For additional mastering, restoration and DDP 2.0 delivery power, step up to Peak Pro XT 6.

## PreSonus Central Station
### Control room monitoring with remote

The missing link between your MOTU recording interface, studio monitors, input sources and the artist. Monitor from among five sets of stereo inputs (three analog and two digital) and manage your sessions with hands-on control room features like talkback and listenback.





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MO

# The MOTU Desktop Studio

**Powerful. Stylish. Compatible. Expandable.**

## Mackie Control Universal Pro

### The most complete control surface for Digital Performer

Nine motorized, touch-sensitive faders effortlessly control bankable channels while eight assignable V-Pots and over 50 master buttons provide unparalleled DAW control. A massive transport section with weighted jog wheel and robust build quality offers a true console feel. The 8-channel Expander Pro and C4 Pro virtual instrument controller allow seamless expansion.

## Mackie HR824mk2 Active Studio Monitors

### Premium performance to perfect your mix

A mainstay of professional studios worldwide, the HR824mk2 high-resolution monitors employ the new Zero Edge Baffle, which minimizes diffraction for a crystal clear image and an evenly dispersed ultra-wide sweet spot. Acoustic Space, LF roll-off and HF controls allow custom configurations, which are sure to suit your MOTU studio space... and your taste.

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# An Open Letter to Steve Jobs

By Nathaniel Kunkel

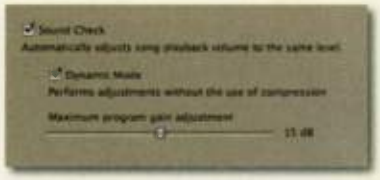
Steve Jobs
Apple Inc.
1 Infinite Loop
Cupertino, CA 95014

Dear Steve,

Word has it that you are extremely into music (and that you even have a pretty cool stereo setup). You must have noticed one of the most troublesome trends we music lovers are dealing with: the current practice of compressing the living daylights out of our music. The justification used to come from a combination of our competitive nature and the multidisc CD changer, but now it seems it is just a bad habit. Apple has even implemented a feature in iTunes called Sound Check to address the vast average-dynamic-range window of most users' libraries. The feature is almost a necessity given today's musical landscape. Indeed, I use it all the time.

However, the method that is implemented with the current version of iTunes penalizes the dynamic recordings by adding gain and limiting them to match the overly compressed ones. In other words, it normalizes them.

I have an idea that would level the playing field in a super-hi-fi way and end these level wars once and for all. I think you should have iTunes turn down the loud tracks to match the average level of the dynamic ones. I also think the average output level of the application should be dictated by the average level of the quietest song in the library, and that louder recordings should be turned down to match. It should be a suboption of Sound Check and have a maximum adjustment amount. It could be implemented as shown here.




I do not think it should be a compressor/expander like Dolby AC3 can implement. Rather, it should be a straight level offset, more akin to a DTS dialog normalization parameter. The level information of individual songs is already stored in the iTunes library, so it would be really easy to implement, and the software could be dynamically tailored for each user. For instance, if you had a lot of classical music in your library, the level of a compressed rock record could be dropped by as much as 20 dB. Conversely, a user with nothing but speed metal in their library would notice no difference. Either way, the music's dynamic range would be unaltered.

It would be such a service to all of us who love to listen to—and make—big, dynamic albums. With the Apple Lossless Audio Codec and more storage, an iPod is now a high-fidelity music-playback solution. I, for one, sure would love the convenience of Sound Check with an unaltered presentation of my dynamic catalog.

I hope this letter finds you well.

Respectfully,

Nathaniel Kunkel
Studio Without Walls, Inc.
npk@studiowithoutwalls.com

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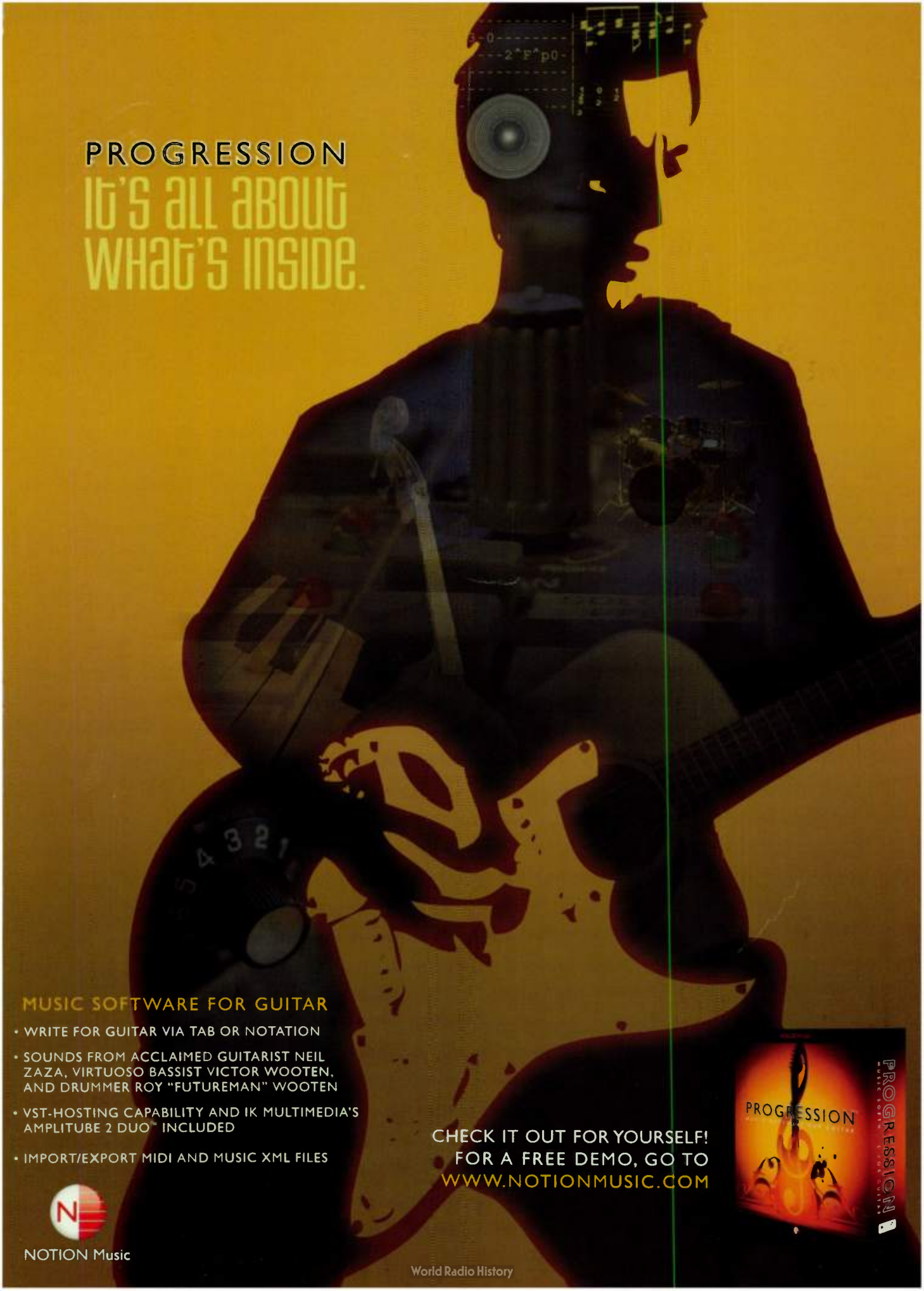
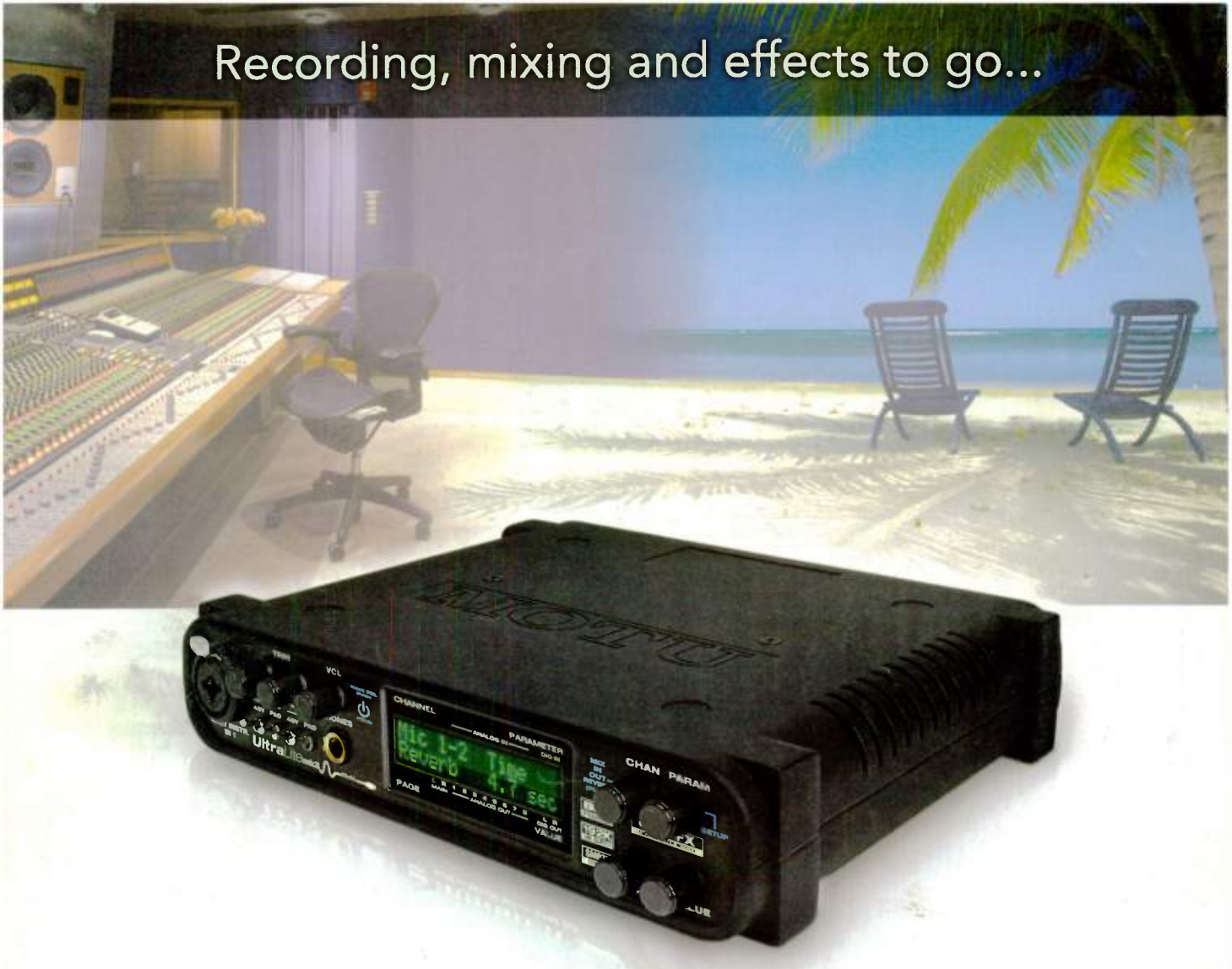
*Nathaniel Kunkel (studiowithoutwalls.com) is a Grammy and Emmy Award–winning producer, engineer, and mixer who has worked with Sting, James Taylor, B.B. King, Insane Clown Posse, Lyle Lovett, I-Nine, and comedian Robin Williams.*



# Recording, mixing and effects to go...




## Compact FireWire audio interface with on-board effects and mixing

- **Compact size** — fits easily into a backpack. Sits nicely next to a laptop.
- **Bus powered** — via FireWire with no power supply needed. Includes power adaptor for stand-alone operation.
- **Plenty of I/O** — 2 mic/guitar inputs with preamps, 6 TRS analog ins, 10 TRS analog outs, S/PDIF & phones for a total of 10 inputs and 14 outputs.
- **On-board mixer with effects** — 10 input by 14 bus mixer with hardware DSP effects, including reverb, EQ and compression on every input and output.
- **CueMix FX software** — Advanced graphic control for on-board mixing and effects with tabbed design and precision peak/RMS metering.
- **Vintage compression** — Automatic Gain Control faithfully modeled after the legendary Teletronix® LA-2A® optical leveling amplifier.
- **British console EQ** — 7-band parametric EQ modeled after legendary British analog consoles.
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- **Sample-accurate MIDI** — connect a MIDI controller and/or sound module with no separate interface needed. MIDI I/O is sample-accurate with supporting software.
- **SMPTE time code sync** — resolve to or generate time code via any analog in/out with no extra synchronizer.
- **Stand-alone operation** — a complete mixer with effects. Adjust any setting quickly with intuitive LCD menus.
- **Drivers for Mac and Windows** — Works with all of your favorite software.

# UltraLite mk3

MOTU