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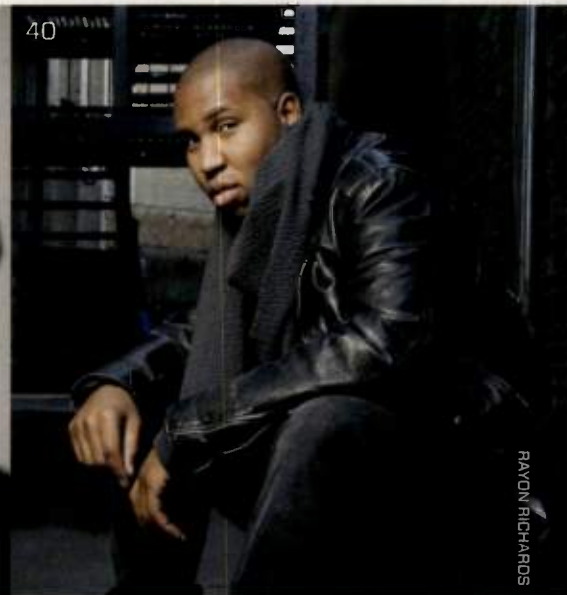


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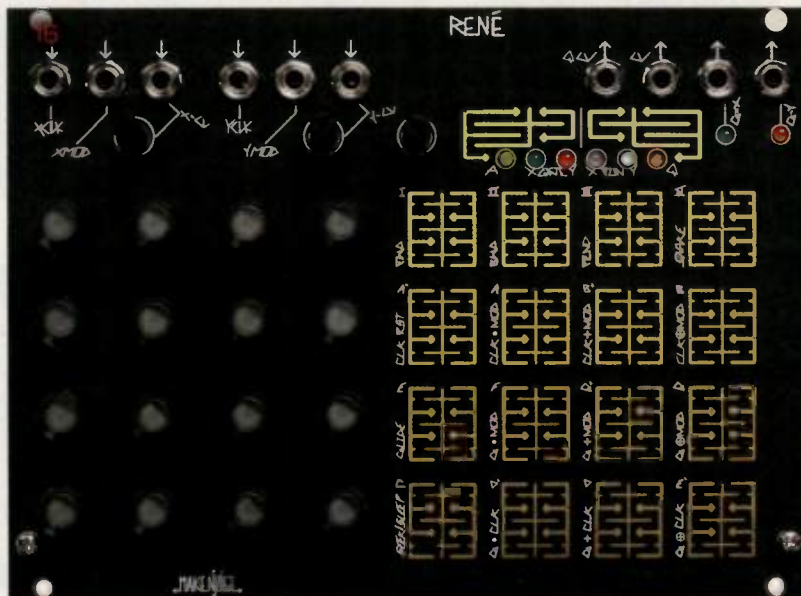
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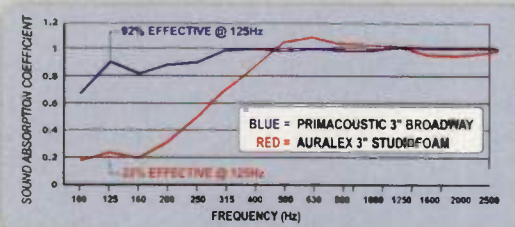
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- B Broadway™ Broadband panels
- C MaxTrap™ corner bass traps
- D Easy-to-mount impaler system
- E Broadway™ Control Columns
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~ Rob Wells

(Backstreet Boys, Cyndi Lauper, Mika, Justin Bieber, Selena Gomez)

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insight

The Measure of Success

I RECENTLY interviewed The National at a Grammy event in San Francisco; the evening focused on exploring the songwriting process, but eventually we got to talking about defining success as artists.

The National are indie-rock heroes, headlining major festivals and opening for the likes of Paul McCartney and the President. But the band has paid their dues over 15 long years, releasing six albums, building an intensely loyal fanbase, and quietly earning acclaim while watching peers like The Strokes and Interpol shoot to stardom.

When I asked singer Matt Berninger whether he viewed the band's success as critical or commercial, the answer was obvious: critical. But when asked which was more important, he joked that maybe commercial success might have been the better option.

Which matters more to you, praise or profits? Or do either

matter? Your perspective likely depends on where you are in your career path.

We all aspire to make a living doing what we love, and in an ideal world, we would find fulfillment in making art for ourselves first, and that process would be the only thing that matters. And some of us are fortunate to be in that position.

Just remember that career accomplishments and creative accomplishments do not have to be at odds with each other.



SARAH JONES

EDITOR

sjones@musicplayer.com

As we head into the new year, here's to achieving our own personal ideal of success.

COMMUNITY

"YOU CAN'T DEVALUE MUSIC. IT'S IMPOSSIBLE. SONGS ARE NOT WORTH EXACTLY 99 CENTS AND ALBUMS ARE NOT WORTH PRECISELY \$9.99."

Google Play Head of Global Content Programming Tim Quirk, at the Future of Music Summit in Washington, D.C., October 28, 2013

The Electronic Musician Poll

HOW DO YOU FEEL ABOUT MAJOR MUSIC STREAMING SERVICES LIKE SPOTIFY AND PANDORA?



THEY ARE A GREAT SOURCE OF INCOME FOR ARTISTS **8%**
THEIR ROYALTY STRUCTURES HURT ARTISTS **51%**
ANY EXPOSURE TO MY MUSIC IS GOOD EXPOSURE **41%**

DIG MY RIG

This is my home studio, where both of my Imploded View albums have been recorded.

I like to get a degraded, aged type of sound for my electronic instrumental tracks, and use all kinds of means to achieve these results, including 1/4-inch reel-to-reel tape, and I love my vintage analog synths, including SH101, Polysix, and Jen SX1000.

Anything that's done "in the box" is usually bounced out of the box several times over to get the saturated tape effect or some other form of mangling.

My latest album, *Anomaly Domine*, came out on August 19, 2013 on Blurry Pup Records; for more information, visit implodedview.bandcamp.com.



JEROME MCCORMICK
VIA EMAIL



43%

OF MUSICIANS DO NOT HAVE HEALTH INSURANCE

Source: Future of Music Coalition Artists and Health Insurance survey, August 2013

ask!

I'VE BEEN LISTENING TO SOME OF THE GREAT POP MUSIC OF THE '60S AND '70S, AND NOTICED SOME OF THE SONGS HAVE A SORT OF BRIGHT SOUND WITH WHAT I CAN ONLY DESCRIBE AS EXTRA "PRESENCE." I'VE WANTED TO DO COVERS OF SOME OF THESE, BUT I NOTICED THAT SOME OF THEM ARE A LITTLE BIT TOO A LOT SHARP. WAS IT STANDARD BACK IN THOSE DAYS TO TUNE DIFFERENTLY TO GIVE A DIFFERENT TIMBRE?

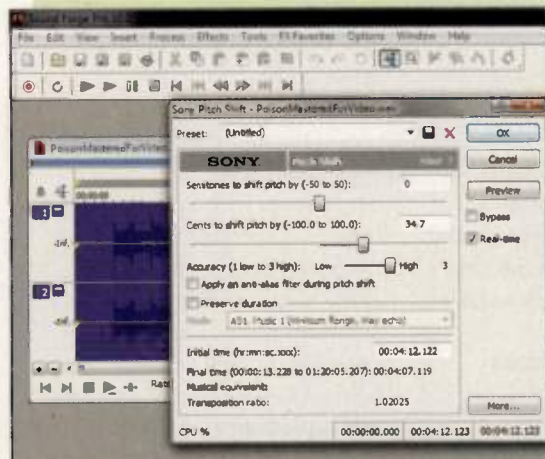
CHARLIE CAMERON
SPOKANE, WA
VIA E-MAIL

Charlie—It's more likely that what you're referring to was the practice of mixing down to a two-track tape deck with its variable speed set a little bit slow, like 2 percent or so. Then when it ran at normal speed the tempo was a little faster, the pitch a little sharper, and the rhythm a bit tighter because a hit that was off by a few milliseconds would be off by somewhat less. Furthermore, the

formant and timbre would be somewhat brighter overall. It was also possible to create the same effect by running a multitrack with variable-speed capability a little faster during mixdown.

Although most of today's DAWs don't have the equivalent of variable speed, during the mastering process you can reproduce this effect easily with a digital audio editing program like Sony

Sound Forge. Look for a DSP pitch-shift option, then raise the pitch by a couple percent. Do not select anything that preserves duration, as that will affect sound quality—speeding up tempo is a natural result of transposing the pitch upwards. Try this on some of your songs, particularly ones that seem to lag a little bit, and you'll probably hear the sound you want. **THE EDITORS**



Sound Forge is shifting a stereo mix's pitch upward by 34.7 cents, or about two percent, to give it a brighter sound. Note that the "Preserve Duration" checkbox is unchecked.



Got a question about recording, gigging, or technology?
Ask us! Send it to ElectronicMusician@musicplayer.com.

NEW GEAR

highlights from 2013 Convention



3



4



1 Focusrite Red 1

500 Series mono
preamp module
\$999.99 street

HIGHLIGHTS Based on the original Red 1 mic preamp • Lundahl LL1538 input transformer • custom Carnhill output transformer • gain range from -6 to +60dB in 6dB steps • switches for +48V phantom power and polarity inversion • VU meter
TARGET MARKET Engineers with a 500 Series rack looking for the classic Focusrite sound
ANALYSIS Two decades after the launch of the original model, Focusrite has created a single-channel Red 1 that is perfect for portable and personal studio setups.

us.focusrite.com

2 Sonnox Codec Toolbox Plug-in **\$55**

HIGHLIGHTS Audition the effect of data compression on your mix in real time and compare it to the uncompressed signal • includes several codecs from Fraunhofer and Apple for encoding your files • metadata editor • batch processor • Clip Safe • 15-day trial version
TARGET MARKET Recordists and engineers planning to encode mixes for online delivery
ANALYSIS This plug-in contains the basic features of the Fraunhofer Pro-Codec, but is priced squarely for the personal studio.

sonnox.com

3 Cloud Microphones CL-4 4-channel preamp **\$499 street**

HIGHLIGHTS Provides 25dB of gain to four dynamic and passive ribbon microphones • accepts phantom power without passing it through to the mics • XLR inputs and outputs • perfect for use with low-cost, low-gain audio interfaces
TARGET MARKET Any musician and engineer who uses dynamic and ribbon mics

ANALYSIS The original Cloudlifter won an Editors' Choice Award because it's so useful onstage and in the studio. Now you can have four of these preamps in a single rackspace.

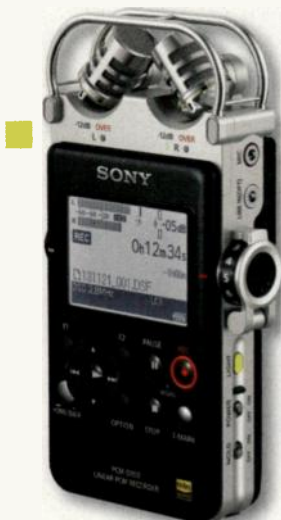
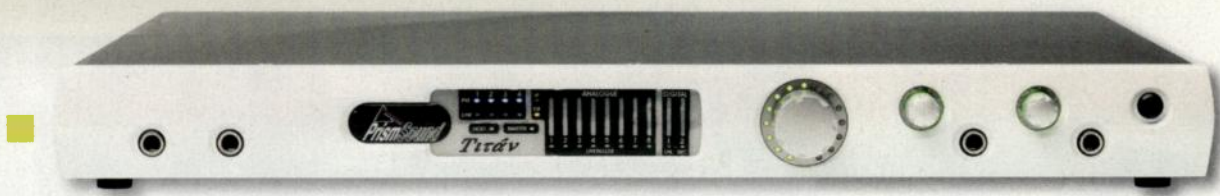
cloudmicrophones.com

4 Focal Spirit Professional Closed-back headphones **\$349**

HIGHLIGHTS 5Hz–22kHz frequency range • 40mm Mylar/titanium-alloy drivers • ear pads made with memory foam • cable has built-in microphone and track selector for use with mobile products • 13-foot coiled cable and 4.6-foot straight cable are provided

TARGET MARKET Producers, musicians, and engineers who want closed-back reference headphones without a hyped frequency spectrum
ANALYSIS After creating some of the best sounding near-field monitors, it is no surprise that Focal has designed a set of headphones for critical listening.

audioplusservices.com



5
Sony
PCM-D100
Portable high-resolution digital recorder
\$999
HIGHLIGHTS Records DSD (2.8MHz), Linear PCM (up to 192kHz), and MP3 formats • also plays AAC, FLAC, and WMA files • separate A/D converters for DSD and LPCM • records MP3 and LPCM files simultaneously • limiter and lowcut filter • 32GB built-in flash memory • supports SD card and memory stick
TARGET MARKET Musicians and engineers who want to easily capture high-res audio
ANALYSIS The PCM-D100 rounds out Sony's High-Resolution Audio Initiative by adding audio capture to its editing and playback products.
pro.sony.com

6
Prism Sound
Titan
USB audio interface
Below \$5,000
HIGHLIGHTS 8x8 24-bit, 192kHz audio interface • 8 channels of analog I/O; 4 mic preamps with -20dB pad; 4 line inputs; 2 front-panel instrument inputs • 2 headphone outputs with independent volume controls • 10 digital I/O channels are available via TOSLINK and S/PDIF I/O
TARGET MARKET Musicians and project-studio owners
ANALYSIS A high-end USB audio interface that also supports Pro Tools HDX, among other external I/O options, using the MDIO interface expansion slot.
prismsound.com

7
Radial
SB-7 EarMuff
Headphone interface for musicians
\$99
HIGHLIGHTS Mutes one side of stereo headphones to eliminate bleed when recording with an ear cup removed • balanced 1/4" TRS input • stereo 1/4" and 3.5mm outputs • mono sum switch • level control • mute button • passive design; does not require power • 3-year transferrable warranty • solid construction • made in Canada
TARGET MARKET Singers and instrumentalists who need to leave one ear uncovered when recording
ANALYSIS Yet another why-didn't-anyone-think-of-that-before product from Radial Engineering.
radialeng.com

8
Coles
4030L
Ribbon microphone
\$1,099
HIGHLIGHTS Bi-directional, figure-8 polar pattern • identical ribbon as the Coles 4040 and 4050 • frequency range from 50Hz to 20kHz • lighter than other Coles mics • made in England • includes adjustable clip
TARGET MARKET Personal studios and musicians buying their first ribbon microphone
ANALYSIS Although the company refers to it as an "entry-level ribbon mic," the 4030L is not cheaply made. It feels well built and provides the Coles sound without breaking the bank.
coleselectroacoustics.com

Continued



11



9



10



12



9

Neumann
TLM 107

Condenser microphone
\$1,699.95

HIGHLIGHTS Dual-diaphragm design offers 5 polar patterns: cardioid, wide cardioid, hypercardioid, omnidirectional, and figure-8 • lowcut at 40Hz and 100Hz • -6 and -12dB pad • parameters are selected using a single button • stand mount included • available in matte nickel or black

TARGET MARKET Instrumental and vocal recording

ANALYSIS The first of a new line of mics that has an updated capsule design and modern electronic switching for selecting pad, filter, and pattern settings.

tlm107.neumann.com

10

Slate Digital
Virtual Mix Rack
Plug-in suite
\$TBA

HIGHLIGHTS Uses 500 Series-rack paradigm as a way to host several effects within one plug-in instantiation • 8 modules can be loaded into one virtual rack • includes British-style EQs modeled after Neve and SSL, and two compressors • drag-and-drop interface • iLok required

TARGET MARKET Musicians, sound designers, and recording engineers

ANALYSIS Slate Digital intends this to be a new plug-in platform and has plans to launch additional modules for the format in the near future.

slatedigital.com

11

Dangerous Music
Dangerous Compressor
Two-channel dynamics processor
\$2,799

HIGHLIGHTS Limits peaks as it compresses the average level using Smart Dyn Dual Slope Detection circuit • true stereo operation • auto attack/release • sidechain input with Sibilance Boost, Bass Cut, and Sidechain Monitor switches • soft knee

TARGET MARKET Professional and personal studios in need of a mastering-grade compressor

ANALYSIS A high-quality compressor/limiter designed to give you good results, quickly, while tracking, mixing, or mastering.

dangerousmusic.com

12

Schoeps
V4 U
Condenser microphone
\$3,000

HIGHLIGHTS Cardioid pattern • designed for recording vocals • retro look based on the classic 1951 CM 51/3 mic • capsule tilts forward/backward approximately 45 degrees • includes wooden case and clamp • optional elastic shockmount • available in blue or gray

TARGET MARKET Musicians and engineers who specialize in vocal recording

ANALYSIS Despite its vintage look, the V4 U utilizes a modern capsule design with a transformerless output stage.

schoeps.de

13



13

**Line 6
V75-40V**
Handheld wireless
microphone
\$1,679.99

HIGHLIGHTS Earthworks WL40V hypercardioid capsule • works with Line 6 XD-V75 digital wireless system • 24-bit resolution • 30Hz–20kHz frequency response • includes hardshell case • operates for 8 hours on two AA batteries • LCD shows system parameters and battery level

TARGET MARKET Vocalists performing onstage
ANALYSIS Line 6 adds a new level of sound quality by marrying a studio-grade capsule to its popular wireless stage microphone.

line6.com

14



15



14

**littleBits
Synth Kit**
Modular analog synth.
\$159

HIGHLIGHTS 12 modules, co-developed by Korg, that magnetically snap together: two oscillators, keyboard, filter, envelope, delay, sequencer, mixer, split, random, speaker, and power • includes booklet with step-by-step instructions for 10 projects • requires no soldering, programming, or wiring

TARGET MARKET Kids interested in experimenting with sound and the adults who love them
ANALYSIS While this is a great way to introduce young people to synthesis, it will be just as fun for grown-ups who enjoy synth gadgetry.

littlebits.com

16



15

**Source Audio
Hot Hand USB**
Wireless MIDI controller
\$119 street

HIGHLIGHTS Lightweight ring with internal accelerometer allows you to use realtime gestural information to control instruments via MIDI • tracks movement in three dimensions • USB receiver plugs into your Mac/Win computer • software editor for assigning axes to instrument parameters • range and sensitivity settings

TARGET MARKET Instrumentalists and DJs looking to take advantage of MIDI's expressive capabilities

ANALYSIS This wireless ring may soon become your favorite modulation source for adding excitement to a musical performance.

sourceaudio.net

16

**Universal Audio
API Vision Channel Strip**
Channel-strip plug-in
for the UAD platform
\$299

HIGHLIGHTS Models five API modules used in the Vision console (right down to the nonlinearities of the op-amps and transformers): 212L preamp, 550L 4-band EQ, 235L compressor/limiter, 235L Gate/Expander, and the 215L “hi-pass” and “lo-pass” filter • preamp includes phase and pad switches • stereo linkable sidechain

TARGET MARKET Musicians, sound designers, and recording engineers

ANALYSIS The colorful sound of these API modules is a welcome addition to the UAD system, whether you're tracking or mixing.

uaudio.com

Make Noise René

Transport your patches into the next dimension

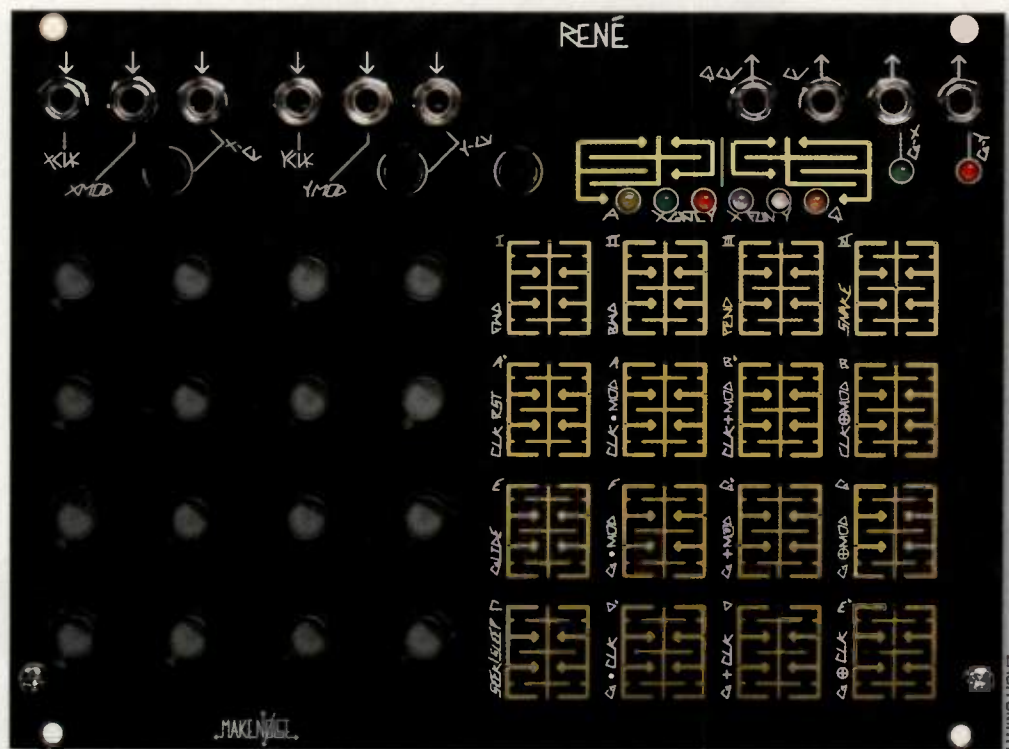
BY GINO ROBAIR

SEQUENCERS ARE an important part of a synthesist's toolkit. But even with multiple outputs at each stage and the ability to store sequences, skip steps, and scan through the voltages in either direction, a step sequencer can sometimes feel one-dimensional. Consider how musically useful it would be to move through a series of notes in a non-linear way while adding varying degrees of unpredictability.

With René (\$500), Make Noise has reimagined the step sequencer by taking as inspiration the Cartesian coordinate system developed by the module's namesake, René Descartes. The result is one of the most interesting controllers ever put into a module.

At its most basic level, René is a 16-step non-linear sequencer, in the Eurorack format, that allows you to create complex, realtime pattern variations using CV and gate input to navigate a two-dimensional space. The module's microprocessor also provides logic functions, stores sequences, and offers playback modes that expand the unit from a mere compositional tool to an exciting live-performance controller.

Each axis—x and y—has a clock input, a modulation input, and a CV offset input with an attenuator. There are two CV outputs (one of which is quantized), as well as individual gate outputs for the x and y axes. The functionality of each input and output is based on the operating mode you choose. All of this may sound complex, but the module is very easy to use in the basic modes, with the results getting



The Make Noise René is a versatile, realtime controller that pushes the step-sequencer paradigm to a new level.

more and more interesting as you dig deeper into the feature set.

René has a 4x4 grid of knobs for setting CV levels, a matching grid with touch pads for programming or performance, Page and Latch pads, and a row of analog I/O on 3.5mm jacks. Touch the pads to play any of the 16 steps individually, or scan through the grid in several ways—forward, reverse, back and forth (Pendulum mode), or with one of the eight factory preset patterns in Snake mode. You can momentarily pause a sequence in one spot by touching a pad; lift your finger, and the sequence picks up where it left off. Add in the logic operations or the unique Seek and Sleep modes (which provide fast and slow “behavioral” movement through the grid), and you will soon be creating sequences that sound organic and alive.

You can save four sets of mapped pitches (referred to as Stored Quantized Voltage levels) to a preset and, using the touch pads, select which set plays back from the quantized CV output. Then, as your stored scale plays, you are able to use the knobs in the grid to independently control the voltage level of each step that goes to the unquantized

output, without disturbing the scale levels you stored. The Glide function lets you introduce portamento between steps.

One might argue that much of this functionality could be done using a computer, yielding even greater control over your modular system. However, René's usefulness lies in the elegance of its interface, which is easy to navigate once you learn the various pad combinations used to select playback modes. More importantly, the module's ergonomics are well suited to a hardware system designed for performance, making René a great candidate for a shallow horizontal case, or skiff, that you can use as a portable control surface.

And while René may seem expensive within the Eurorack's ecosystem of inexpensive, single-function modules, you will find it to be indispensable and worth the investment once you experience how powerful it is. ■



More Online

Watch Gino Robair demonstrate the René.

Emusician.com/January2014



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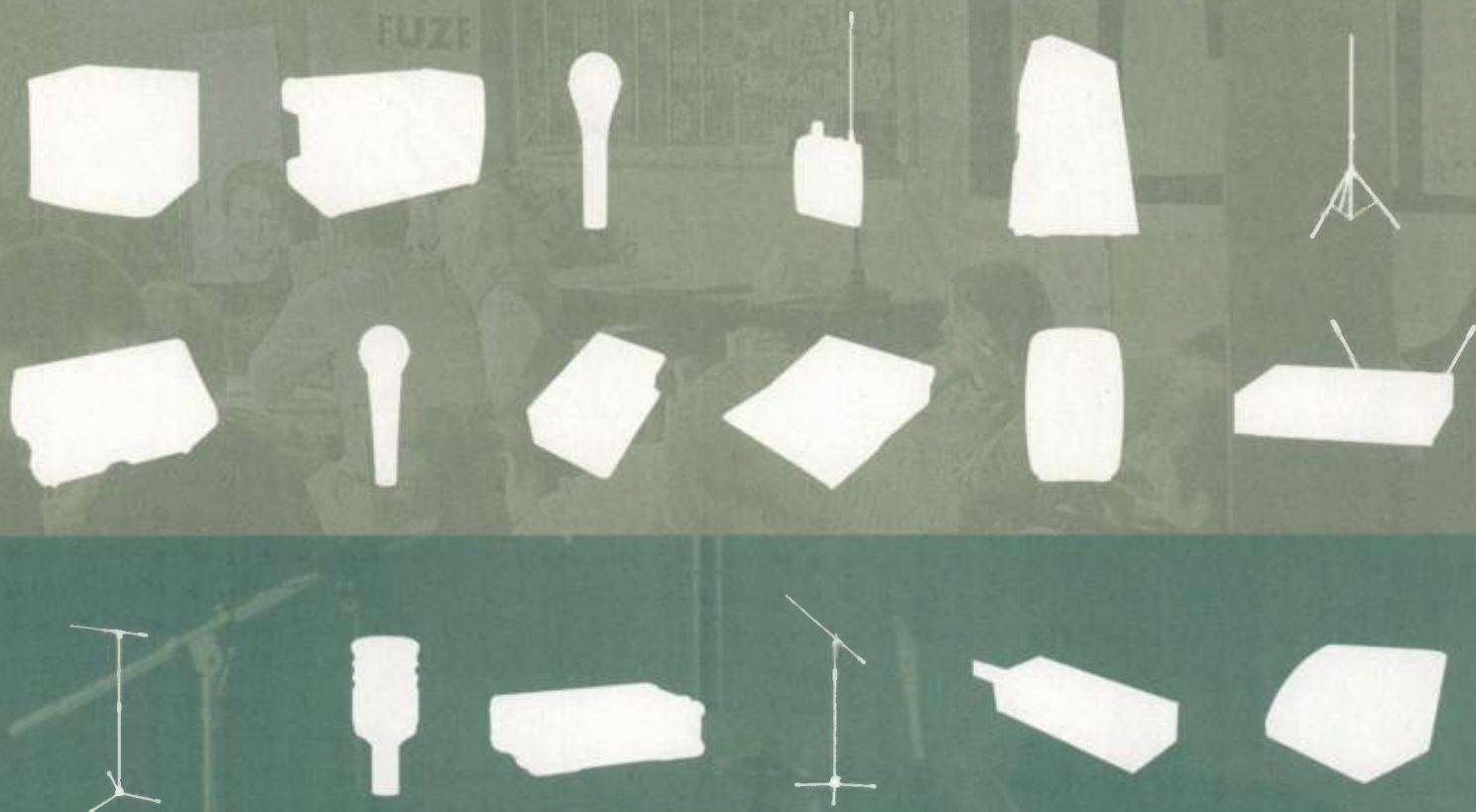
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SAMSON

FOR ANY GIG
BUILT A
I LIVE
IT
GIG



Ready to put together a P.A. system, but don't know where to begin? We've assembled three complete options for three performance scenarios.

BY STEVE LA CERRA

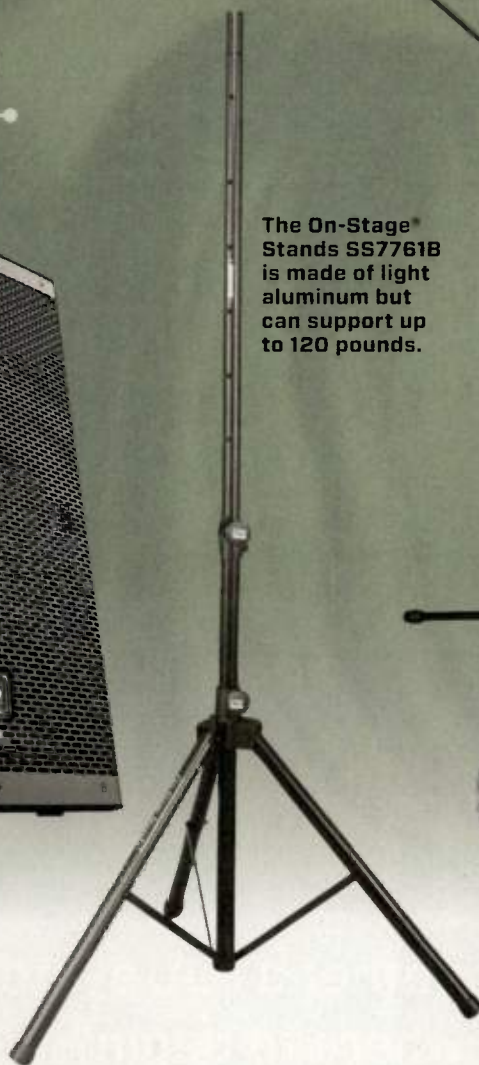
ONE OF the questions we get asked frequently at *Electronic Musician* is, "What kind of P.A. system should I buy?" Purchasing P.A. gear can be a confusing prospect, due to the many categories involved (mixers, mains, monitors, crossovers, outboard processing, etc.) and the huge number of offerings within each category. How do you make the right decisions so that you get the most from your purchase? Have no fear, *EM* is here to help you navigate through the forest of electronics, transducers, and slithering copper snakes. We've assembled three unique P.A. systems for working musicians, each designed to facilitate gigging in specific situations.

The criteria for our suggestions include maximum performance, efficiency, reliability, and versatility for your money. We feel it's important to be able to incorporate components from a smaller rig into a bigger one when you're ready to work larger venues, or scale down a larger system for use in smaller rooms so that you don't have to rent a 20-foot truck to do a cocktail hour! So, let's take a look...

BUILD A LIVE RIG FOR ANY GIG



The Electro-Voice ZLX-15P has two XLR/TRS inputs, each with its own control.



The On-Stage® Stands SS7761B is made of light aluminum but can support up to 120 pounds.

Quik Lok A300



Shure SM58



Audio-Technica AT2010



Audix OM2



ProCo S12NN-25 speaker cables feature ProCo's Excellines 12-gauge cable with Neutrik connectors.



The Radial ProDI provides TRS in and through, XLR out, ground lift, and is built like a tank.

Best Acoustic Performance by a Soloist

Our first system accommodates a solo performer working gigs in coffee houses, cocktail lounges, and small bars. The goal here is fast setup and ease of use. This system will fit into the smallest of cars (no need for a van) and you can move it without assistance (or an ambulance the next morning). The thing about this rig is that—even though there is no mixer—you won't outgrow the gear when you graduate to larger rooms because you'll be able to re-purpose the components into a larger system. *[Editor's note: all prices shown here are street prices.]*

Our solo performer system is built around the Electro-Voice ZLX Series of powered loudspeakers. We'll start with a single ZLX-15P (\$499) for the house speaker and a ZLX-12P (\$399) for a monitor. Both of these are two-way systems, the ZLX-15P using a 15-inch woofer and the ZLX-12P employing a 12-inch woofer. The ZLX-15P has two XLR/TRS inputs, each with its own gain control,

so you can connect a microphone and one instrument without a mixer. The ZLX-15P's link output can be used to feed the input of the ZLX-12P, which we'll use as a floor wedge. To accommodate larger rooms a second ZLX-15P can be linked to the system.

Either of these speakers can be set on a floor stand with a standard 1 3/8-inch pole. The On-Stage® Stands SS7761B (\$49.95) is constructed of aluminum so it's light but it can support up to 120 pounds at heights up to 6.5 feet. Add \$29.95 for a travel bag that holds two stands.

There are tons of great vocal mics designed for live sound at very reasonable prices. It's tough to beat the industry-standard Shure SM58 (\$99), but if that's not the right mic for your voice, check out the Audio-Technica AT2010 or Audix OM2 (priced similarly). A Quik Lok A300 (\$39.95) serves as our mic stand, featuring a tripod base, fixed-length boom arm, and adjustable height from 38 to 62 inches.

We'll need cables to connect everything, and ProCo microphone cables are a no-brainer.

The Ameriquad Series uses four conductors with a 96-percent-coverage braided shield and Neutrik XLR connectors, and has a 20-year warranty. Price varies with length; we'll budget for two 20-foot (\$30) and two 30-foot (\$35) cables. The 20-footers can be used to connect the mic and instrument to the first ZLX, and the 30-footers can be used to link the first ZLX to a second and/or third. We'll add two ProCo EG15 Excellines instrument cables (\$16.99 each), 15-foot with TS connectors at each end: one for a guitar or keyboard and a second for backup.

Although the ZLX input will accept instrument-level input, a DI box will maximize performance with a keyboard or guitar. Since there's no phantom power available, we'll go with a passive DI such as the ProDI from Radial Engineering (\$99). It provides TRS input and through connectors, an XLR output, and a ground lift switch, and it's built like a tank so you'll have it for the rest of your life.

Total system cost: approximately \$1,350; add \$550 for another E-V ZLX-15P and stand.



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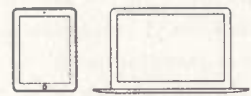
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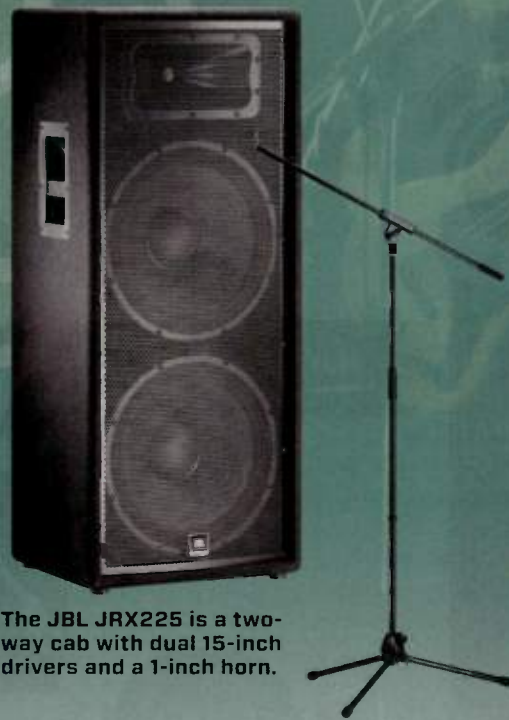


Designed in California
Made in U.S.A.

BUILD A LIVE RIG FOR ANY GIG



The Mackie PPM1008 combines an 8-channel mixer with two 800-watt amps.



The JBL JRX225 is a two-way cab with dual 15-inch drivers and a 1-inch horn.

K&M 21070



Sennheiser e845



Audix OM5



JBL EON510



Radial Engineering Pro48 active DI



Planet Waves PW-CMIC-25

Best Acoustic/Electric Performance

By a Duo or Trio The next step up the gear ladder adds more power and more inputs to accommodate two or three performers, each with an instrument. This system utilizes a powered mixer for the nucleus, negating the need for external power amps and their associated wiring. Our mixer is intended to be located at the stage and will be operated by the performers.

The Mackie PPM1008 (\$899) is up to the task, combining an 8-channel (6 mono plus 2 stereo) mixer with two 800-watt power amps. Each mono channel has an insert and 3-band EQ with a sweep midrange; the first four also have built-in compressors. Two of the inputs (5/6) may be switched to high-impedance to accommodate instruments without need for a DI, while channels 7 and 8 provide both 1/4-inch and RCA jack inputs. Onboard effects may be fed from one of the aux sends.

A useful feature of the PPM1008 is that the two power amps can be configured for use in three different ways: main/main, main/monitor send 1, or monitor send 1/monitor send 2. Front-panel outputs allow you to “tap” the main L/R out so if you need more power for the mains you can add external power amps and use the PPM1008’s amps to run two monitor mixes. On smaller gigs where you only need one main speaker, you can use one amp for the main speaker and the other amp for a monitor, and have separate house and monitor mixes.

This system uses two JBL JRX225 speakers for the mains (\$449 each). The JRX225 is a

two-way cab with dual 15-inch drivers and a 1-inch horn. Capable of producing SPLs as high as 133dB(!) the JRX225’s HF compression driver is mounted on JBL’s proprietary Progressive Transition™ waveguide for low distortion and smooth frequency response, and features SonicGuard™ circuitry to protect the high-frequency driver from excessive power.

Stage monitors are also from JBL: two EON510 (\$399 each) compact multipurpose monitors, each with a 10-inch woofer, a 1-inch HF driver, and onboard Class D amplification. The EON510 can be used with a line or mic-level input and can be daisy-chained so we’ll run the Mackie’s monitor send to the first EON510 using Rapco Horizon 1/4-inch TRS cables (\$18.99/20 feet) and then link the first EON510 to the second, providing one monitor each to two musicians, or allowing three musicians to share two monitors. The Mackie PPM1008 has two sends so we’ll either designate the FX/MON2 for a second monitor send, or use it to perform double duty as a send to the second monitor mix and the internal effects simultaneously.

Since the Mackie PPM1008 and the JBL JRX225s offer Speakon™ connectors, we opted for a pair of ProCo S12NN-25 speaker cables (\$40 each, 25-feet long). These are available in a variety of lengths from 10 to 100 feet and feature ProCo’s Excellines 12-gauge cable terminated with Neutrik connectors. We like the idea of using Speakon connectors because they lock in place and can’t accidentally be

removed by inquiring patrons(!). Planet Waves PW-CMIC-25 25-foot microphone cables (\$19.95 each) feature nickel-plated brass connectors, low-capacitance wire, and a lifetime guarantee. (We’ll get five.) Due to the fact that our trio includes electric bass and a keyboard, we’ll tap RapcoHorizon for four 20-foot G4 instrument cables (\$20 each) with 95-percent spiral shield and a 20-gauge inner conductor.

Just in case we host a guest appearance from a visiting musician, we’ll add a direct box. The Mackie PPM1008 provides phantom power on the mic inputs. We can use it to run a Radial Engineering Pro48 active DI (\$99). The Pro48 was designed to handle high-output instruments such as active basses and acoustic guitars and has a 15dB pad to accommodate the hottest of outputs.

Although we expect only two or three musicians, we’ll get four microphone stands: three K&M 21070 (\$59) boom stands for the vocal plus one Quik Lok A341 (\$30) short boom—in case we have to place a mic on a “guest” guitar amp. We’ll add a small variety of vocal microphones, starting with the Shure Beta 58 (\$159), Audix OM5 (\$159), and Sennheiser e845 (\$140). These dynamic mics complement a variety of voices and offer excellent feedback rejection. To these we’ll add an ol’ reliable: a Shure SM57 (\$100), which can serve as a vocal mic or for that guest’s guitar amp.

This system will spill into your backseat but still fits into a midsize car.

Total system cost: approximately \$3,700



The PreSonus StudioLive 16.4.2 operates at 48kHz, and has 16 input channels featuring TRS line and XLR microphone inputs with phantom power, plus a TRS insert, and built-in effects.

RapcoHorizon 16x4 snake



Peavey PV15PM

MSR800W subwoofer



Onboard biampification enables the QSC K12 to achieve SPLs up to 131dB.



QSC KW181



ProCo Stagemaster SMA1604FBQ-50



Loudest Bar Band in an Electric Performance

This system is intended for use with a full band in large, noisy bars, and will probably require someone to run it. It'll fill a small van, but since we're pulling down a couple grand per show, we don't mind. We're going whole-hog here, miking the entire stage and adding multiple monitor mixes for a system that *rocks*.

Selecting a mixer was a tough call, but in the end the PreSonus StudioLive™ 16.4.2 digital mixer (\$1,499) wins the race. Operating at a sample rate of 48kHz, the StudioLive 16.4.2's 16 input channels each feature TRS line and XLR microphone inputs with phantom power, plus a TRS insert. Every input "Fat Channel" and aux send output has a highpass filter, noise gate, compressor, EQ, and limiter—so we won't need any outboard processing for mains or monitors. Plenty of aux sends are available on the 16.4.2, so we can easily route six discrete monitor mixes and still have two effect sends to the internal digital effects. In addition to the XLR main outs, TRS main outs enable us to feed additional speakers to areas of a bar or restaurant that would otherwise not be able to easily hear the P.A. Four subgroups are available; they'll come in handy for subgrouping our drum channels. Mixer snapshots, Fat Channel settings, and effect settings can all be stored and recalled via library. A variety of recording facilities include a FireWire interface, S/PDIF out, and balanced analog direct outputs from each channel.

Loudspeakers will be QSC K Series powered speakers. We'll start with the K12 two-way, full-range speaker (\$849), incorporating a 12-inch low-frequency driver and a 1.75-inch high-frequency driver. Frequency response of the K12 extends down to a very respectable 50Hz but we're going to up the ante (or rather *lower* it) in a moment. Onboard biampification (500 watts each for the LF and HF drivers) enables the K12 to achieve SPLs up to 131dB, and K12 components are protected from thermal and excursion damage. QSC's Tilt-Direct™ pole mount enables the directivity of the K12 to be adjusted by 7.5 degrees to prevent reflections from low ceilings. Each K12 features two rear-panel Combo™ jack inputs plus XLR outputs for daisy-chaining—enabling them to be used *sans mixer* on gigs for a solo performer.

Our K12s will live atop QSC KW181 powered subwoofers (\$1,399), which utilize a single 18-inch driver with a 1,000-watt Class D amplifier for response down to 38Hz and SPL up to 135dB(1). Included with the KW181s are mounting poles for the K12; their threaded design ensures secure, wobble-free support. Integrating the KW181s and the K12s is a breeze because the K12s have a low-frequency contour switch with an External Sub position that tailors the frequency response for use with the KW181s.

There's a good chance that this system will be run by an engineer at front-of-house, so we're going to start our connectivity with

a 16-input x 4-return snake (16 XLR x 4 TRS). The RapcoHorizon 16x4 100-foot snake runs \$549 and would give us plenty of length for any gig, including a small theater, but for shorter runs we'll consider the ProCo Stagemaster SMA1604FBQ-50 (\$329). Both are rugged enough to stand up to heavy use and feature stage boxes with XLR female jacks for the inputs and TRS female jacks for the returns.

We'll be using two of the snake returns for our monitor mixes in this rig. The drummer gets a Yamaha MSR400 (\$499) two-way, biamped cabinet with a 300-watt amp for the 12-inch woofer and a 100-watt amp for the high-frequency horn driver. To satisfy her never-ending appetite for low end in the monitors, we'll augment the MSR400 with Yamaha's MSR800W subwoofer (\$799). The MSR800W's bass-reflex cabinet houses a 15-inch driver, producing low-frequency response extending down to 40Hz. The XLR input and adjustable highpass output make it perfect for linking to the MSR400. The rest of the band needs monitors, too, so we'll add three Peavey PV15PM powered wedge monitors (\$419 each), a low-profile, biamped design with a 15-inch woofer, and a 1.4-inch titanium diaphragm compression driver. A Combo™ jack input accepts mic or line level signals and a 1/4-inch TRS is provided for linking—so we can chain a second monitor later if necessary.

Notice that we have not given the lead singer any monitors. She's getting Sennheiser

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stereo in-ear system
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Audix
D6



ew300 IEM G3 in-ears (\$999) with ER•4™ MicroPro earpieces from Etymotic Research (\$299). Operating in the UHF band, the ew300 is a stereo system. Two of the aux sends from the PreSonus mixer will be linked to create a stereo ear mix, and two more aux sends will run through the returns of the snake to the stage for two wedge mixes. This still leaves us two aux sends on the PreSonus StudioLive for the future when other band members add wireless in-ears.

Continuing with the wireless theme, we'll give our vocalist a handheld wireless mic from Audio-Technica. The ATW-3171 (\$599) boasts true-diversity operation and a choice of 200 frequencies. The receiver has remote battery monitor so whoever is running the P.A. will know when it's time for a new battery before there's a mishap. An SKB Shallow X Rack (\$99, two spaces) will secure our wireless gear during transport.

Microphones abound in this rig, starting with the drum kit. We'll use an Audix D6 or AKG D112 (\$199 each) for the kick drum, and a Shure SM57 (\$100) for snare. A three-pack of Sennheiser e604s (\$349 for the pack) covers our toms and the clip-on design means we can leave three mic stands home. A pair of Shure KSM137 mics (\$299 each) serve as overheads; these have three-position pads and low-frequency rolloff switches. Another Shure SM57 or Audix i5 (\$100 each) covers the guitar amp. Vocal mics for the band will all be Shure Beta 58 (\$159); keeping the mics consistent across the front can help reduce feedback issues in the wedge monitors. Three DIs handle our keyboards and bass: a

Countryman Type 85 active DI for the bass (\$160), and a Radial ProD2 (\$149) passive stereo DI for keys.

An assortment of mic stands will be needed for this system, starting with five Ultimate Support Tour T-T stands (\$129 each) to handle three vocals and the drum overheads. Three Quik A-341 stands (\$30 each) handle the snare, kick, and guitar-amp microphones. Our lead singer prefers a straight stand, so we'll go with an On-Stage MS9700B+ Platinum Series stand (\$39.95), which features a solid-steel upper shaft, scratch-resistant finish and steel leg housing.

Wherever possible, we'll use XLR cables due to their robust construction and ability to lock in place. Twenty 20-foot ProCo Ameriquad cables (\$30 each) will be used to connect mics and DIs to the stage box, and four BPBQXM-30 Excellines 30-foot XLR male-to-TRS (\$35 each) will connect the stage box to our QSC mains and to the Peavey monitors. We'll use two ProCo EXM5 XLR cables (5-foot, \$18 each) to patch the QSC subs to the QSC K12 tops and two BPBQXM-10 XLR-to-TRS cables (\$19 each) to link the Peavey monitors.

Approximate system cost: just under \$15,000, including dinner for the band and crew. Hey, we gotta eat! ■

Steve La Cerra is an independent audio engineer based in New York. In addition to being an Electronic Musician contributor, he mixes front-of-house for Blue Öyster Cult and teaches audio at Mercy College, Dobbs Ferry campus.

HANS ZIMMER

PERCUSSION

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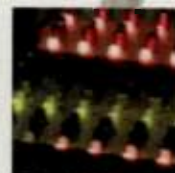
SPITFIRE

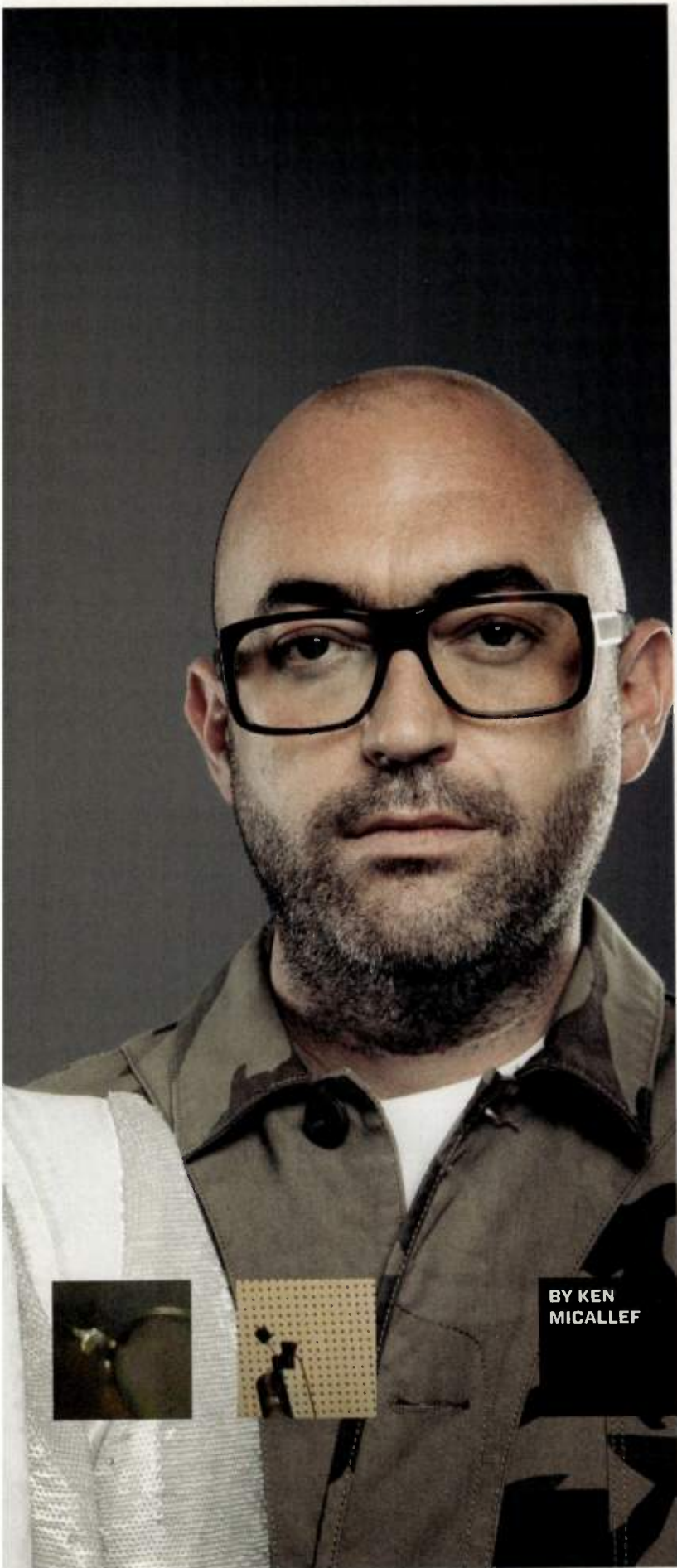
Morcheeba (left to right)—Ross Godfrey, Skye Edwards, and Paul Godfrey.



morcheeba

space soul sounds redux





BY KEN
MICALLEF

22nd-century
trip-hoppers
record *Head Up
High*, thanks
to Rupert
Neve, Robert
Moog, and
Extra Sleepers
Silent Way

UK TRIO Morcheeba hit Platinum paydirt on their 1995 debut, *Who Can You Trust?* and its follow-up,

Big Calm, the albums' nascent trip-hop a sleek amalgam of retro English soul, loping big beats, psychedelia-drenched melodies, and Skye Edwards' grittily beautiful vocals. Morcheeba's music became the quintessential sound of late-night London. Almost 20 years later, Morcheeba still meshes past and present tenses, whether layering simmering blues guitar over programmed dub grooves or quirky analog synthesizers against Native Instruments Maschine-produced R&B beats. Befitting a group whose music could easily adorn a classic 007 soundtrack by John Barry, Morcheeba's 22nd-century trip-hop treatise, *Head Up High*, was recorded at their 17th-century converted farmhouse/studio in the south of France.

"I did most of the man hours on the record here at our French studio, Moog Island," Morcheeba's DJ/producer/lyricist Paul Godfrey explains from Bordeaux. "The studio is named after a song from our first record. Moog Island is kind of a fantasy place, like the enemy's hideout in a James Bond movie. But instead of having controls for nuclear weapons, it's all Moogs.

"Since the early days," he elaborates, "I've collected equipment that helps me get closer to my natural musical inclinations. We use vintage equipment including a Binson Echorec, Leslie cabinets, Neve 1073 preamps, and Moog Voyager, as well as plug-ins to saturate the sound, particularly SoundToys' Decapitator, and the old Digidesign Lo-Fi plug-in; it gives clean sounds a really nice crunch. If you have a sound



Choice Moog Island gear: "I've collected equipment that helps get me closer to my natural musical inclinations," says Godfrey.

in mind from your favorite records, it's just there with the older gear."

When Morcheeba splashed down in the mid-'90s, sampling rates were barely in the seconds, and computers deemed worthy for music-making were slow and prone to crash. Perhaps the challenges bettered the music?

"We've made Platinum records on a Mackie desk with ADATs," Godfrey laughs, "working like mad, just turning the knobs inside out trying to find that sound in our heads. So when Ross (Godfrey, his brother and multi-instrumentalist), Skye, and I could afford the right gear and good microphones, our jobs became so much easier. I have an engineering background, but it's ultimately about having the experience to know what not to do; when not to f*ck with it."

Godfrey cut his engineering teeth at Astra Audio Studios in Kent, recording such heroes of the legendary Canterbury scene as Caravan,

"We ran the guitar through a Leslie cab, so you really hear that rotating, seasick, spacey sound. And the sampled vocal says, 'I feel much better.'"

—Paul Godfrey

Soft Machine, Gong, Richard Sinclair, Pip Pyle, Hugh Hopper, and the Albion Band.

"Those guys were old school," Godfrey exclaims. "They'd worked at The Manor and all the great English studios. I learned a lot from them about sound and arranging. I worked with a lot of great musicians at a time when I was very impressionable. I was lucky."

Head Up High is trip-hop only in its essential aural sheen, that hyper-extended sense of a never-ending club crawl, a thousand sordid tales all contained under the umbrella of the night. The album's adult-oriented soul toys with blues, funk, ska, rap, and reggae, touching down in dance music, but never quite landing full stop.

"We've always been on the fringes of dance music," Godfrey offers. "I come from a hip-hop background and we have reggae and blues influences, a lot of black music, so there is obviously a crossover. But I find most modern music very brittle. When you play our music



At left, Godfrey's mic shootout. At right, the control room, with Tonelux modular console, and Neve and Calrec pres.

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against most modern music, it can sound quite soft if you don't hear the subtleties."

While Morcheeba recorded primarily at Moog Island, the band's members live far and wide, so home ties took priority over studio familiarity. "Our own studios are more personal," Godfrey says, "but because Ross was having a baby we recorded at Perry Vale in London, which is close to him. It has an incredible 1976 Neve 5305 24-channel 4-bus desk. It had transformer-balanced direct outputs fitted to each channel (with 24 mic pre/EQs: 33115x22, 33114x2). Jesus and Mary Chain, Robyn Hitchcock, Swervedriver, and Primal Scream have all recorded there. We tracked vocals and guitars there using the Neve console and all its mic pres."

Moog Island, by contrast, is where Morcheeba gets personal with go-to effects, instruments, and old and new technology. Describing Moog Island as a "hybrid studio," Godfrey owns a Tonelux modular console, which "has transformers on every channel, 32 channels but with a footprint of two by one foot" augmented by Neve pres and "old BBC Calrec preamps. We tend to mix in stereo stems now so we will end up with ten stems that have all been processed through analog gear. While we're tracking, it tends to

be analog compression and analog EQ, then I might add saturation and distortion using the Thermionic Culture Culture."

Moog Island is comprised of a live room with piano, amps, and Hammond organ with a Leslie cabinet, while the control room typically houses the Tonelux console, computers, and outboard.

"The studio was a barn," Godfrey says. "I live in the attached farmhouse. I walk through the courtyard to get to work."

Godfrey's go-tos for *Head Up High* included Native Instruments Maschine with his voluminous sample library. "Maschine is very tactile and I can bash out some beats then edit them in Pro Tools and arrange them later." Moog Voyager is his go-to bass synth. "It's so easy to use, and also the Cwejman S1 MKII, a semi modular synth built in Scandinavia, and the EMS Synthie. The Cwejman is more aggressive than the Voyager, but the Moog has that depth and warmth. And the ARP 2600 as well gets used quite a lot."

Head Up High's opener, "Gimme Your Love," is a trip-hop stoner's paradise, all woozy doom'n'dread synths, behind-the-beat drums, dreamy wah-wah guitar, and Skye's luscious vocal and staggered cadences, which when tied

to Godfrey's lyrics recalls Donovan Leitch's 1967 hit "Wear Your Love Like Heaven." (Coincidence or synchronicity? The first line of Donovan's song is "Color in Sky brush and blue.") The song closes with what sounds like a woman curtly pronouncing, "Well, it could be better."

"I came up with that drum loop on Maschine," Godfrey recalls, "and then added spring reverb from the Binson Echorec (which was famously used on David Gilmour's guitar on "Shine On You Crazy Diamond" and on John Bonham's drums in "When the Levee Breaks"). The main loop is a dusty, old breakbeat-sounding loop I had. And there's a tom through a Roland Space Echo that is quite ominous. Then I added Moog bass. I practically wrote that alone 'cause everyone was away. I started jamming the bass line on the Moog, sent the riff to Ross and Skye, and they loved it. The pads are from Studio Electronics Code 8 synth, a kind of polyphonic Moog. The ARP 2600 is doing the atmospheric sounds. The guitar is a '60s Fender Jaguar through a Roland Phase II pedal and a 1960s Selmer Truevoice 50-watt head. We ran the guitar through a Leslie cab as well, so you really hear that rotating, seasick, spacey sound. And the sampled vocal says, 'I feel much better.'"

The strangely evocative "Under the Ice" begins with a plucked instrument, gurgling percussion and log-drum rhythm underpinning Skye's enchanted vocal. The rhythm bucks and sways; it could as easily be New Orleans as São Paulo. The mood reflects sadness, layered vocals matched to subtle synths and electronic effects.

"That's Ross playing a charango," Godfrey says. "It's a South American instrument with an armadillo shell and ten strings. It's supposed to be strummed but Ross always picks it, for a harpsichord sound. I based the rhythm on that old U.K. two-step or jungle, but wanted to use more spacious, world-music sounds to give it an organic feel. One of my favorite records is Dr. John The Night Tripper's *Gris Gris*. I am always trying to create those kinds of sounds mixed with the Rick Rubin hip-hop sounds. And there's a Native Instruments Massive bass line. Also in that track is M-Tron Pro by G-Force Software, one of my favorite virtual instruments. It's like a Mellotron, you can put it at half-speed and experiment like mad. We also filter it to become quite atmospheric. That creates the background drones. And you're also hearing the vibraphone from the M-Tron."

The album's most challenging track was "Do You Good," states Godfrey. A bed of pulsating electronic sounds and stomping drums sets the stage, a virtual 4/4 rocker. A long rest is aborted with a wall of crescendo-ing synths bubbling like a lava flow. If this is the end of our James Bond

soundtrack, then it's Duran Duran riding the 4/4 groove to the heart of the sun.

"We're mixing Talking Heads with a tribal approach and house music," Godfrey says. "That was way beyond our comfort zone so we had to work hard to find a balance. We did that with a few tracks and it's been a really educational experience to get it right. I try to push things to where we'll feel uncomfortable and Ross will try to pull me back to where he feels comfortable, then somewhere in the middle we find that sweet spot that is Morcheeba.

"Splitting credit is one key to longevity," Godfrey says, anticipating the publishing royalties question for this 20-year old band. "Most of the musical parts are Ross, and I did more lyrics this time. I am more from a hip-hop angle so I program the beats and sample and generate ideas for moods. Ross is a multi-instrumentalist, and he's into melody, as is Skye. Ross played keyboards and guitar. I started out of my bedroom with a 4-track and a sampler that would only do two seconds, so I had to get creative. Every hip-hop producer out there thinks he is a producer before he's even sat in front of a mixing desk."

Godfrey tracked Skye's vocal with a Neumann U47, which he considers a male vocalist's tool. She typically cuts five passes, then they comp.

"I always associate the U47 with male voices but it sounded really creamy with Skye's voice," he informs. "The AKG C12 was too sharp. We used the 33115 pres from Perry Vale's Neve board. And I also brought in a Mercury 66 valve compressor; it's a Fairchild clone. I ended up using a Urei 1176LN to catch the peaks while the Mercury gave it the tone and that creaminess."

Godfrey's analog synths went direct via a Little Labs DI, into an 1173 and a Teletronix LA2A compressor, or the Thermionic Culture Phoenix for a touch of distortion. The Moog Voyager ran direct for bass lines, recorded at Ross' home and also at Perry Vale studio, where Skye's husband, Steve Gordon (who was key in getting her to rejoin Morcheeba after their 2003 split), also tracked bass using a Fender Precision through a Warwick tube amp and alternately a vintage Ampeg fliptop and a Big Tree DI. The Mercury M66 was also used for bass compression.

Ross Godfrey's many guitars include a Gibson SG, Fender Telecaster, Stratocaster, and vintage Jaguar, Martin, and Hofner acoustics, and a Silvertone Craftsman Jimmy Reed Model. His work is *Head Up High's* secret spice, creating fizzy blues caterwaul, Eastern drones, and Hendrix dream flanger quotes, always in the most unexpected places.

"For Ross' guitars I used an old Unidyne SM57, an AKG C24, or Neumann SM69," Godfrey says. "We'd have a stereo mic a few feet back from the grill of a vintage Fender Tweed for ambience and then the Unidyne very close just off axis, up against the grill. We added some ribbons for tone, and balanced the mics on the board to get the final sound. Ross plays loud in the studio in order to get the kind of harmonics he wants. But we use smaller amps and drive them hard. Sometimes we ran the guitars through the Leslie cabinet and used extra flangers on the mix."

"It was so all beyond our reach when we were younger. Now with \$100 you can start building a rack and you have access to incredible gear. It's a golden age of being a consumer of audio gear. As long as you can control it and not let it control you."

—Paul Godfrey

Godfrey used various drum machines in conjunction with his vintage 1970s Ludwig maple kit and a custom kit with a 26-inch bass drum.

"I've always programmed drums to sound organic," Godfrey says. "I like the atmosphere of old breakbeat loops. When programming drums I use a lot of spring reverb or plate reverb like the Binson Echorec just to fill in the gaps and give that kind of atmosphere.

"I have a big library of drum sounds sampled from vinyl," he continues, "and different drum machines including an SP-808, Roland CR68, DMX, and the Maschine. I layer them up and make sure they're all phase-coherent on the grid, not as far as timing but so they align. I use the 808 a lot; I love its sub-bass as a flavor."

Godfrey is such a wiz, it's nigh-on impossible to know where the acoustic drums end and

the programming begins. He's absolutely painstaking and ready to sacrifice for the sound.

"I put a Neumann U47 FET condenser microphone in front of the kick into a Neve 1073 into a vintage LA2A," he details via email. "I aim a Coles 4038 ribbon mic at the snare between the hat and the hanging tom then into another Neve into a Bluestripe 1176. The main balance of the kit depends on one mic: the vintage Neumann SM69 tube. I'd advise everyone to get one while they're still relatively affordable—sell a kidney if you have to! That goes overhead through another couple of Neves and then the Thermionic Phoenix in stereo. I love the sound of Al Jackson on the old Stax stuff so this is my Stax-inspired setup. If I feel we need any more attack on the kick, I'll use a dynamic microphone like the Sennheiser 421 either in the kick or beater side with the phase reversed. This would also hit a Neve and some light 1176 compression. I'll also use compression, parallel distortion, and transient design and then bounce them into stereo to make loops. I try to get the kick pitched to the home key of the song before we start as it just punches through a mix better."

At end of day (or end of the record), who can really tell if a particular sound is vintage or new, analog or digital? Apparently Godfrey can, but of greater interest to him is using new technology to control and benefit vintage gear. "It's incredible," he exults. "A program like Expert Sleeper Silent Way can control all your old analog synths and they will be perfectly in time. Without it, it would be a nightmare to connect them all up. For years we'd be like safe-cracking, trying to dial in the right tempo on an LFO. Or trying to get samples to run in time with old computers and syncing them to two-inch tape. It was maddening. Now there's a plug-in for everything. We live in an amazing time."

The new economic realities are not lost on Godfrey either. While pro studios continue to close down, bedroom studios flourish. The tools of the trade are available to almost anyone, even if the experience to yield their full benefits remains hard won.

"It was so all beyond our reach when we were younger," Godfrey reflects. "Now with \$100 you can start building a rack and you have access to incredible gear. It's a golden age really of being a consumer of audio gear. As long as you can control it and not let it control you—then you're onto a good thing." ■

Ken Micallef is freelance writer and photographer based in New York City. His work has appeared in many publications, including DownBeat, eMusic, and Modern Drummer.

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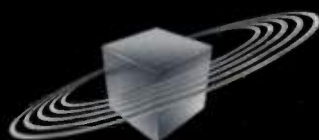
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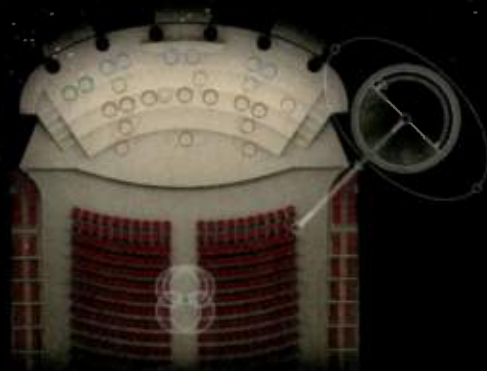
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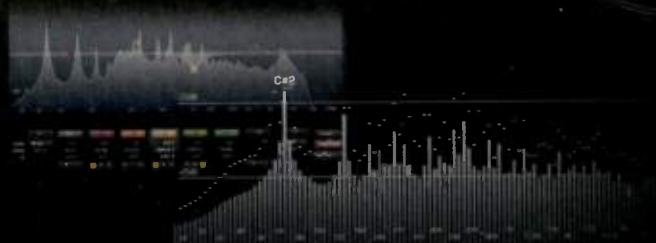
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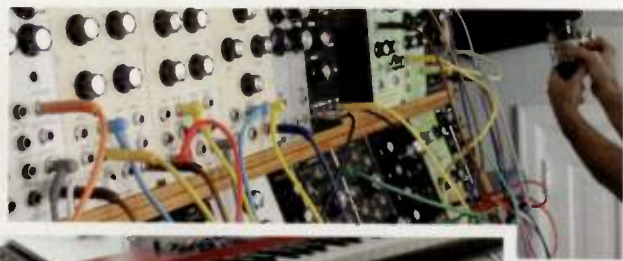
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Rjd2



The veteran instrumental electronic/hip-hop artist/producer talks about creating the sample-stuffed *More Is Than Isn't* on his beloved Akai MPC and wall of DIY synths, perfecting minimal miking techniques, and how one of his tracks ended up as the *Mad Men* theme

BY KEN MICALLEF | PHOTOS BY WENDY KAISER

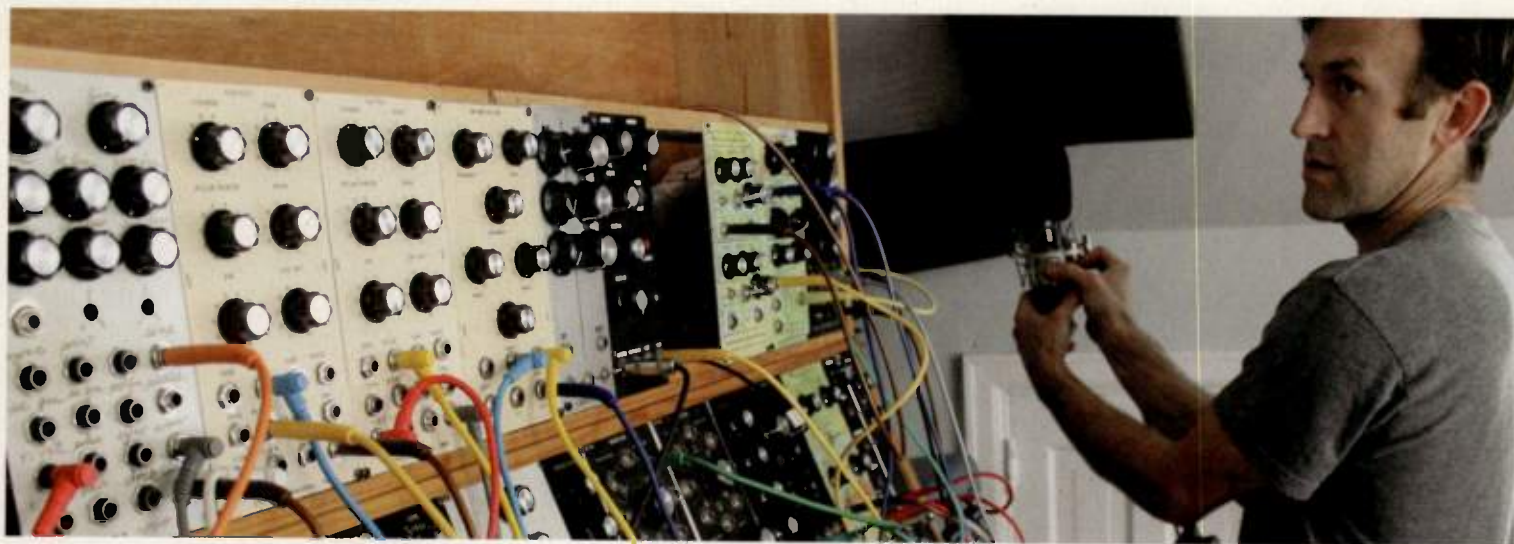
WHAT WOULD you do if a popular Emmy-winning television program used one of your compositions as its theme song but paid you not one red cent in publishing royalties? Would you get mad or get even?

"*Mad Men* bought the publishing rights, so they don't even have to run my name in the credits, but it's certainly raised my visibility," Rjd2 (a.k.a. Ramble John "RJ" Krohn) responds when asked about his song "A Beautiful Mine," which was purchased lock, stock, and two smoking barrels for the theme to *Mad Men*, AMC's acclaimed series about loutish Madison Avenue admen, set in the 1960s. Rjd2's music has since enjoyed commercial use for products from Blackberry, Wells Fargo, Adidas, T Mobile, and Anadin Extra.

An uneasy jumble of descending piano notes, arcing strings, and herk-a-jerk beats, "A Beautiful Mine" perfectly frames the quagmire of *Mad Men* protagonist Don Draper's existence, yet it's also the kind of sample-stuffed cocktail Rjd2 typically conjures. Maligning samples from an Akai MPC into potent musical gems is kid's stuff for Rjd2, heard to glorious effect on his fifth LP, *More Is Than Isn't* [Electrical Connections]. Built from hip-hop, funk, and electronic fare (both sampled and performed live by Rjd2 and a small cast), *More Is Than Isn't* offers generously catchy songs, a groove-heavy joint where Barry White's Love Unlimited Orchestra slams up against dirty funk, exotic flutes, itchy guitars, and warm DIY and analog synths.

"I've always tried to transform instrumental music—which can sometimes sound like elevator music—into something that has the same cohesion as a Stevie Wonder song," Rjd2 explains from his Philly flat. "I am





hopeful in that endeavor, but I don't always know if I am successful."

Unlike most contemporary producers immersed in Pro Tools in-the-box recording and grid-heavy beat directives, Rjd2's primary tool remains the primitive Akai MPC.

"I've spent a long time trying to make an MPC sound not like an MPC, but like a band," he laughs. "This is the first record where I've felt comfortable *not* doing that. Instead of masking something that is sequenced and digital in nature, I'm playing it up. There's no learning curve for me on the MPC; I can free my mind of technique and focus on exploring the song."

Fifteen years in to a still-burgeoning career—why disrupt a successful songwriting approach now? "I never want to write the same song twice," Rjd2 says. There are a number of different ways to create a song or explore new musical territory. You can work in an unusual tempo or in a different texture, or in a medium that is familiar but using different tools. My approach on 'Behold, Numbers!' for example, was to let the technique itself be obvious. You can tell the strings have been sampled and cut up; I put that up front."

More Is Than Isn't runs the gamut of sampled-meets-live-performance songcraft. "Milk Tooth" recalls a British library track à la KPM, all groovy beats, analog synth noise, barking brass, and er, whistling. On the opposite tip, "Got There, Sugar?" is a schmaltzy, '70s-era lounge number complete with swizzle-stick brushes and smoky saxophone gurgles. First single "Her Majesty's Socialist Request" ups the beat-driven jazz quotient further with a Lalo Schiffrin-esque groove and Middle Eastern tinged flutes. "Behold, Numbers!" excels in cut-up string samples and rapid-fire MPC solutions.

"Behold, Numbers!" is me playing up the idea of an obvious MPC-based composition," Rjd2 says. "In the past, I would have taken all those little samples of strings and sequenced

"In a pro studio, the first thing they'll do is put up two overhead mics then close-mike every drum; that is, like, ten mics. I would mute eight of those tracks and pick two."

a couple different patterns to make them feel like a loop, to present a plausible argument that it wasn't a sample. But now I'm comfortable making it obvious that these are strings that have been chopped up in the MPC to feel syncopated, weird, and rhythmically unnatural."

More Is Than Isn't was recorded at Rjd2's Dustbowl Studios, which inhabit four rooms of his two-story Philadelphia home. A "sampling room" consists of two Technics SL 1200 Mk turntables, Akai MPC 2000XL, and approximately 8,000 vinyl records. The "synth room" contains an eight-core Mac (running Pro Tools 10), DIY modular and analog synths and percussion. Two drum kits, amplifiers, vibraphone, Wurlitzer, Yamaha CP80 electric piano, Hohner Clavinet, and a Fender Rhodes outfit the live room. A bank of tricked-out synthesizers fills a fourth room.

"I have two rows of DIY modular synths built with parts purchased from Synthesizers.com," Rjd2 reveals. "DIY synths offer the stability of a new synth with custom sounds. There's a burgeoning world of DIY synth makers who can design and build a PCB with a bill of materials for around 20 bucks.

Then you buy the parts, drill the panel, solder, and wire it up. Then calibrate and troubleshoot. It's time intensive, but because this is a relatively popular pursuit there are forums to help you, like Electro-music.com. It has the lowest noise floor of any hangout on line. No Internet dickfaces!"

As for hardware synths, Rjd2's Clavia Nord Lead Electro, Korg Polysix, Yamaha CS-80 and SY-2, ARP Pro Soloist, and Moog Minimoog provide color to his beat-pulsing tunes. The "synth room" holds an ARP 2600, Moog Polymoog, Sequential Circuits Prophet 5 and Prophet T8, Rhodes Chroma, Oberheim Matrix 12 and Oberheim OB-Xa, Roland Juno-60, Elka Rhapsody 490 String Machine, and Elka Synthex.

"The Yamaha CP80 sends MIDI," Rjd2 elaborates, "so it can trigger both the Nord Lead Electro and the Korg Polysix. Sometimes I layer those three synths together to get some cool sounds, running it all through a Leslie cabinet.

How does Rjd2 ensure that samples and old synths stay in key within a song? He also plays the album's drums (a classic '60s Ludwig black pearl set à la Ringo Starr), keyboards, guitar, and bass (with additional musicians on cello, violin, saxophones, and flute), so the possibility of sound-clash is serious.

"I'll chop up samples and pitch them to where it sounds natural," he replies. "I try to keep it at A 440. But sometimes I forget to do that. Some of my older songs are between A and A-flat. Often I will start at 440 as closely as possible and still end up pitching stuff. With analog synths, you have to consider their ability to stay in pitch. I reference things against the Rhodes to know if it's bang-on in terms of 440. Other times, I'm in the mixing phase and I'll have to fix the pitch using the pitch shift in Pro Tools."

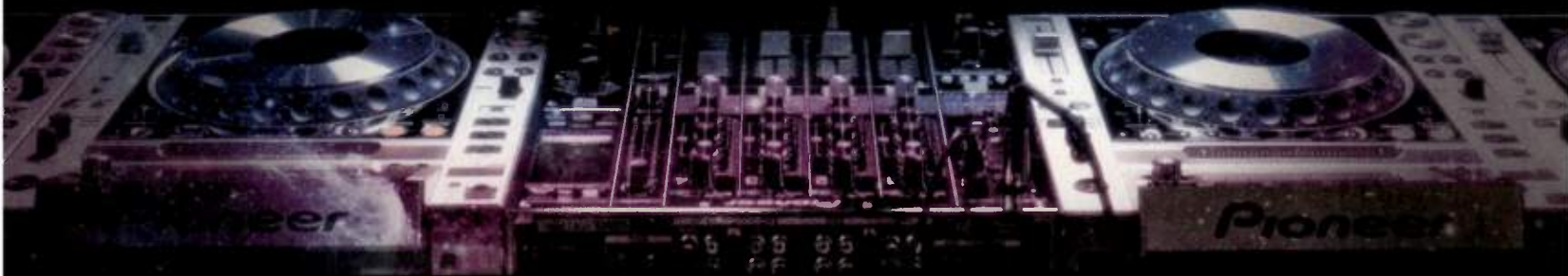
Rjd2's songwriting process begins with a beat, "trying to find a good meeting point between an awesome rhythmic idea and a good harmonic

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Having started with vinyl, Kaskadee had multiple considerations when he moved to the digital world. "I'm very comfortable with the Pioneer gear. I love the 900 Nexus—I've been using this mixer since they introduced it. And I've been using the CDJ—I had the first model—the touch wheel was very different. So I've been [using] these guys for a long time," he says. "I think the reason I chose this equipment is because I learned on [Technics] 1200s. I grew up playing vinyl, so it was very comfortable to have a tactile interface and a tempo control on the side. When [Pioneer] designed these, they were meant to replace the 1200. So when they put the design together, although it looks and feels different

than a 1200, it's the closest thing to it."

One of the major advantages of going digital is how much it's simplified life on the road. "Now, this is my preference because it's very quick and easy—I put stuff on an SD card, I load it up, and I know how to move. It's similar to digging through a crate of vinyl and throwing it down," Kaskadee says, "[but] this is a lot quicker and easier. I used to have to carry around two 80-pound crates of records. Now it's just a little SD card. I feel very comfortable on this setup."

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idea.” But contrary to what you’d expect from a producer with a heavy sample finger, Rjd2 keeps his music minimal when necessary.

“Not everything I do is vocally exploratory or ambitious instrumentally. One of the beauties of a really great rap song is its repetition. It’s just a loop, the same groove for four minutes. But when the groove is so awesome you can’t stop listening, there is a beauty and power in that. So I’m not always trying to go totally apeshit, embellishing the hell out of an instrumental.”

And while Rjd2 typically tracks drums on the grid, he will sometimes record tracks off the grid, singing the song to himself as he maneuvers a beat, then layering additional sounds.

“Recording on the grid makes editing easier,” he says. “But ‘It All Came To Me In A Dream,’ for instance, is off the grid and has no BPM. Sometimes I’ll cut drums with no grid and map out the song in my head as I’m playing it. That’s fairly atypical for me, but I need to be on the cusp of something being difficult to stay focused. Recording off the grid is one way I challenge myself. It’s easier to record one performance and loop it throughout the song than play it perfectly for four minutes straight.”

Rjd2 is a schooled guitarist, but his drumming cracks with special determination and tonal resonance. There’s an immediacy to his drum sounds that recalls the warmest, wettest ’70s production (think such rarefied studio drummers as Al Green’s Al Jackson, Jr. or Muscle Shoals’ Roger Hawkins) yet with the clarity of digital recording. Rjd2’s beats, some tracked live start to finish, stomp hard with tumescent intent.

“I came to recording live drums from sampled drums. The bar for that is set in classic hip-hop drum breaks sampled from Skull Snaps’ ‘It’s A New Day’ (sampled by Ol’ Dirty Bastard, Eric B. & Rakim, Digable Planets), The Honey Drippers’ ‘Impeach the President’ (NWA, De La Soul,

“DIY synths offer the stability of a new synth with custom sounds. There’s a burgeoning world of DIY synth makers who can design and build a PCB with a bill of materials for around 20 bucks.”

EPMD), and Melvin Bliss’s ‘Synthetic Substitution’ (Moby, Kanye West, 50 Cent). Those tracks were recorded in the 1970s. Nothing recorded today sounds like that; how do you even get close? But when you’re the same person playing the drums as engineering the drums, you have an advantage. Then the dynamic between where you place the mic on the drum and how hard you hit the drum is something you have an innate understanding of.”

Rjd2 keeps his literal mic setup close to his vest; but less is more is his message, typically employing a Heil PR40 for kick drum, with Beyer M160 and AKG C12 mics for the remaining set.

“Minimal miking is my approach,” he confides “In a pro studio, the first thing they’ll do is put up two overhead mics then close-mike every drum; that is like ten mics. I would mute eight of those tracks and pick two. You have to trust your ears and not your eyes. It’s really hard to make six mics sound good together. That’s phase wizardry. Even if you do it well, it’s still not my first choice, aesthetically speaking.

A rebadged Chinese TNT APM1200 large-diaphragm tube condenser is his go-to mic for vocals. “It was part of a group buy and everything was \$75 to \$150 a pop. Some were duds; some were cool. I had a guy mod the transformers and upgrade the circuit paths.”

Rjd2’s minimalist concept follows a similar esthetic on MPC for tracking and composing sounds, but he’s not afraid to use plug-ins, preferably from Universal Audio.

“The Universal Audio plug-ins are my bread and butter,” he says. “I use the UAD EMT 140 [Classic Plate Reverb], the Lexicon [224] Digital Reverb, and the Roland [RE-201] Space Echo. If drums or bass sound boring, UAD’s Fairchild 670 Compressor beefs stuff up and gives them character. Or the [Teletronix] LA2A plug-in on bass. Synths go straight to Pro Tools. Guitars and piano go to onboard effects like the hardware Space Echo, which I love for its unpredictability. I used a Manley Massive Passive EQ a lot too. The TubeTech CL-1B was the main vocal compressor. And I have a set of Lucas Limiting Amplifiers into a pair of Amtek Pultec PEQ-1A clones. That is a dummy-proof signal path. It’s hard to botch that.”

He may not botch his signal chains, but you could make the argument that Rjd2 did botch his publishing deal with *Mad Men* creator Matthew Weiner and the AMC network. While he’s followed his hero’s sampling scenarios, Dr Dre and Snoop could definitely teach him a thing or two about business—and show business.

“I am not in the business of selling publishing,” Rjd2 insists. “I wanted to sell the rights just once, because I had never done it. They wanted the full publishing; they were persistent. Finally I said, ‘Okay I will do it once.’ I am not bitter about it, even though, financially speaking, people think I am driving a Ferrari now and believe me, I’m not. But the marquee value is worth it. I’m happy with that. I’m at peace with it.” ■

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CLAUDE KELLY

Award-winning pop master writes the songs that the whole world sings, because no one sings along to production

BY MARKKUS ROVITO

FROM HIS KMA studio space in Times Square, songwriter/producer Claude Kelly lives his dream and builds his legacy. After getting his big break with Akon in 2007, he soon signed with Warner/Chappell Publishing. Scarcely two years later, the New York native sat at #14 on *Billboard's* Hot 100 Songwriters, having penned smash hits for Kelly Clarkson ("My Life Would Suck Without You"), Britney Spears ("Circus"), Miley Cyrus ("Party in the U.S.A."), and many others.

Now, having barely cracked his third decade, this musical natural who was playing piano before he could climb onto the stool by himself could brag about his songs selling more than 25 million copies worldwide—that is if he wasn't so busy writing and producing more singles. Kelly hosts a never-ending string of top pop artists in his studio—names you may have heard of, like Flo Rida, Bruno Mars, Pitbull, Ke\$ha, and Christina Aguilera.

He's graduated now from "it boy" multi-Grammy-nominated songwriter to multi-Grammy-nominated executive producer of albums from Tamia, Jessie J, and there's plenty more on the way, on Kelly's breakneck journey

to becoming one of the new musical auteurs—a behind-the-scenes mensch guiding the path for some of popular music's biggest stars of today and tomorrow.

When did you start writing songs?

I actually didn't start writing until I graduated from Berklee College of Music. I went to college thinking I'd get into A&R, and wasn't even looking at songwriting as a career path. I discovered it kind of by happenstance. I came

back to New York, and a bunch of my friends were in a studio, writing, and I was sitting in the back giving my two cents and saying what I thought was good or not. I got bit by the bug just hanging around the studio and quickly fell in love with it and made it my passion really fast.

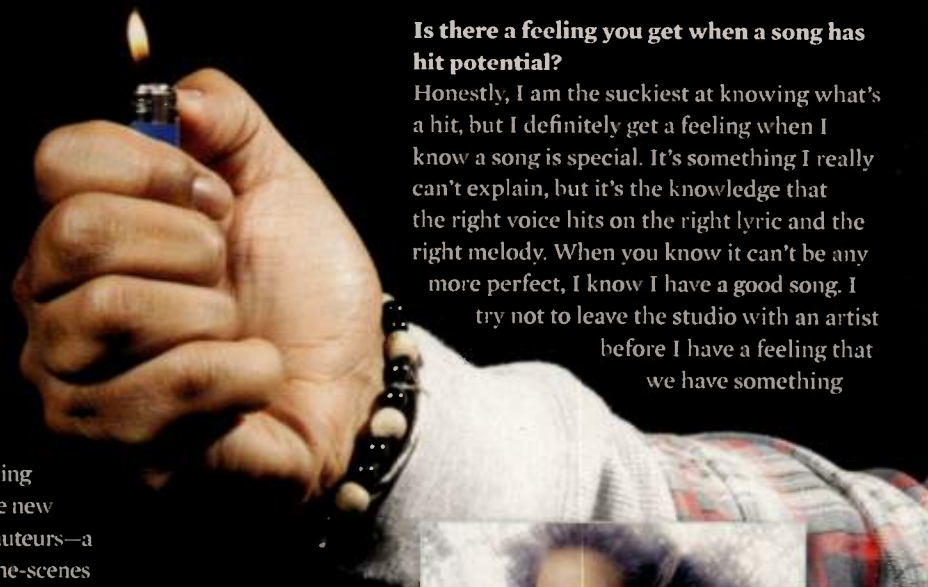
A very high percentage of your writing credits on albums end up becoming singles. Is that something you know will happen going into it, or do you just have a knack for it?

It's definitely something that is never promised. And that doesn't change throughout your career. Getting singles is never a guarantee. You really have to earn it by being the best of the bunch. I try to get in with artists on a personal level and find out what's going on with them. That helps create something the artists can attach themselves to, so they want to perform it and fight for it as a single. I've been very fortunate, but it's not something that's promised. I just really worked my ass off and do my homework to make sure the songs are capturing who the artist is.

Is there a feeling you get when a song has hit potential?

Honestly, I am the suckiest at knowing what's a hit, but I definitely get a feeling when I know a song is special. It's something I really can't explain, but it's the knowledge that the right voice hits on the right lyric and the right melody. When you know it can't be any more perfect, I know I have a good song. I

try not to leave the studio with an artist before I have a feeling that we have something



special, and that's important to me. Whether it's a hit or not is determined by so many other things—the label, the marketing, the timing. But I like to leave the studio with something that could potentially be a hit.

You often have artists watch movies before or during a session. What's the concept behind that, and what kind of results do you get?

First of all, it's a good conversation starter. Sometimes you'll work with an artist you've never met before; it's kind of impersonal. Movies and TV break the ice. I love *Game of Thrones*, *Scandal*, and a few others. You can get a lot of a person's personality from what they're watching, and sometimes a movie in the studio on mute can set the mood. If you want it to be epic and grand, you'd put on *Avatar* or *The Lord of the Rings*—something big and over the top. If you want romance, you might put on a love story. It allows the artist to feel comfortable because it's a movie they love. It's kind of a cool little trick I use to set the emotional tone for the writing and recording.

What's your greatest strength at songwriting?

I'm really big on melodies that are unique and that people can sing along to. And I don't want lyrics that are for nothing; I like to tell a story all the way through that people can relate to. People don't



sing along to production. They don't sing along to the beat or the drums. They sing along to the lyrics and melody that will stand the test of time. I fell in love with music that had stories, and I want the same for my songs.

You branched out into more genres around 2011. Was that a deliberate choice or was that due to opportunities that came from your growing reputation?

I think it's more about people searching out my style. I was always interested in everything from pop to rock, R&B, gospel, and jazz. The industry has a bad habit of putting you in boxes. I don't believe in genres. I believe genres are to attract sales. That's not my responsibility. So in 2011 I think the industry caught up with what I could do with my diversity, but I've always been there.

Now that the industry caught up with you, are you able to pick a lot of your own projects?

If it's a big, top artist, it could mean a lot of money, and you don't turn it down. I like to balance that with passion projects with artists who may not be that big or have the budget. A lot of R&B artists don't have the money that Britney Spears has, but are incredibly talented. I get a lot and learn a lot from working with Miley and Britney as much as I do working with Ledisi and Tamia and artists like that.

How much do the Grammy and Billboard nods affect you business-wise? Are you able to raise your rate, get bigger projects, etc.?

I think it's awesome that people respect your work and want to reward you for it, but this industry works different, I think. If you're nominated for an Oscar as an actor, your pay scale is better and you get more elite roles, but that's not really the case here. You earn your work day by day. I've seen plenty of Grammy winners who never had another hit record, and plenty who've had many, many hits. It's really about re-proving myself day by day, and in terms of price point, I don't price myself out of any opportunity, because you never know where your next success will be. It's almost more enjoyable to watch a rise to the top, like [singer/songwriter] Olly Murs, than an artist who already had several Number Ones.

You have production chops, too. When did you get into that?

Songwriting and production came together at the same time. I'm a bit of an imaginative weirdo; I hear all of this in my mind. I know what I want to hear sonically, so it's more about me saying, "I think this should be piano, rather than guitar," or "you should change the drum sound here

because it'll make the chorus better." It's all for the sake of making the song as good as possible. I don't profess to be a Timbaland or a Dr. Dre, but I put my two cents in.

Do you consider yourself to be a vocal specialist?

Yeah, I'm a singer first. I demo all the songs almost to a T how it should be on the radio. I'm really good at bringing out a singer's best, vocally. A lot of songwriters have someone else track their vocals; I'm very hands-on. I tell artists at the beginning I'm going to be hard on you; I'm going to get the best vocal out of you as possible, and because of that, they trust me. They see my track record and allow me to really push them to get—not so much a perfect vocal—what's believable. I'm looking for emotion.

"The most important thing about having a studio is creating an environment where artists feel comfortable to create. I'm essentially a therapist."

—CLAUDE KELLY

Besides capturing emotion, do you have any vocal production tips?

Everyone uses [Antares] Auto-Tune, because it's very popular and gives your vocals perfect pitch. It's a great tool. I've used it, but I don't believe in over-using it to the point that it sounds robotic. I've found that a better program is [Synchro Arts] VocALign. That's one of my favorites. A lot of times it's not the artist out of pitch, it's when you're asking them to double their own voice. It's really difficult for anyone to match themselves identically on vocal comps. VocALign kind of ties your vocals together, and a lot of times it sounds perfect without using Auto-tune at all. I spend a lot of time making a sound that's true to a live performance.

How important is it for a songwriter to know at least some production?

Bad engineers can make or break your session. If they're slow, if they don't know what they're doing, if they're messing it up with plug-ins, it kills the vibe. Really early on, I worked with a producer who made me record myself, and I hated it. I was

so bitter. But that was the best, because I know if something's wrong, I can fix it. I know how to go in there myself and make things right. It's really like helping yourself. I don't profess to be an engineer. I don't know all the details, but I know the basics of how to mix and how to record.

What's the balance between concentrating on songwriting and studio production?

First thing is always creating an amazing song that you're proud of all the way through. Once you have the song, the production is secondary. The production could go a million ways. You could make it a country song, a rock song, or even hip-hop using the production and arrangement. The third thing is the vocal. That's the order for me: an amazing song, an amazing production that supports it, and an amazing vocal performance.

What's the most important equipment in your studio?

I'm always partial to singers, so I love to use [Neumann] U47 and U87 mics for top vocals. Of course, Pro Tools or something like Logic, but I'm more of a Pro Tools guy. You need some preamps and all those things, but really for me, it's funny. You spend so much money on equipment and all these crazy tech things, but we are the business of selling vibe and emotion. The most important thing about having a studio is creating an environment where artists feel comfortable to create. I'm essentially a therapist. You're asking someone to come into your therapy room and feel comfortable enough to share. You want to make sure that the colors are right, the lights. Sometimes you want flowers or candles that set the tone.

Do you have any ambitions to do solo projects?

I've always put it on the back burner because I know what it takes to be an artist, and I respect it so much that in order to do it, you have to dedicate 100 percent of your time. Songwriting takes up so much of my life, but I definitely have aspirations. I have a great respect for people like Quincy Jones and Babyface for being the maestro and bringing people together. Doing soundtracks or specialized projects where I call in some of my very talented friends to sing with me or sing on songs I've written: I would never rule that out. But it has to be a creative project rather than just being an artist and going through the bouts of emotion that I see every day. ■

Markkus Rovito drums, DJs, and contributes frequently to DJ Tech Tools and Charged Electric Vehicles.

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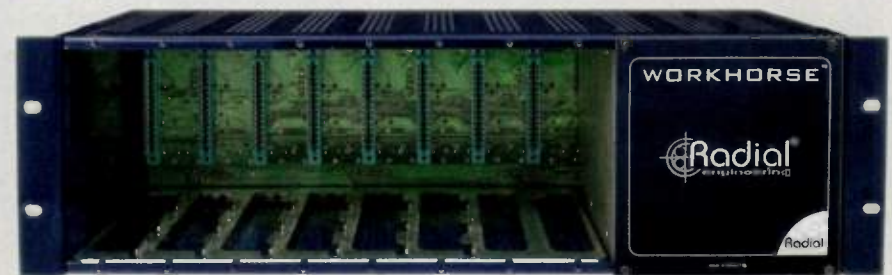
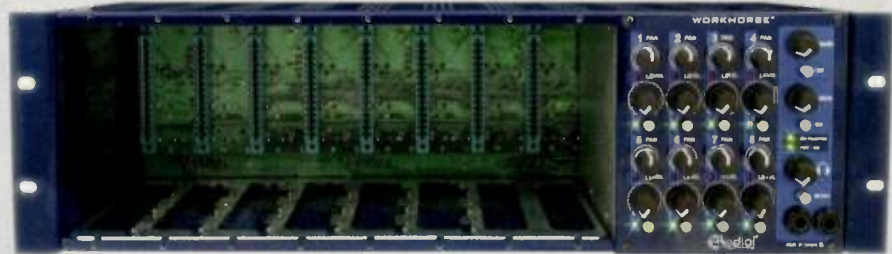
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"The Workhorse is a more sophisticated, more capable, and more costly re-thinking of what a 500-series rack frame should be."
~ Electronic Musician

Amsterdam Dance Event 2013

A global EDM gathering on an epic scale | BY SARAH JONES

AUSTIN MAY have SXSW, Miami has the Winter Music Conference, but Amsterdam has ADE. The behemoth dance music festival, which launched in 1996 with 30 DJs in three venues, has grown into what is arguably the largest EDM event in the world. From October 16–20, 300,000 festivalgoers and industry pros gathered for five marathon days of performances and events featuring 2,156 artists in more than 100 spots across the city.

Activity runs 24/7 at ADE: All-nighter showcases were held in venues ranging from small clubs to major venues such as the Heineken Music hall

and the 17,000-seat Ziggo Dome. All EDM genres were represented, from deep house to techno to progressive; headliners included Tiësto, Afrojack, Calvin Harris, Armin Van Buuren, Fedde Le Grand, Pete Tong, David Guetta, and Paul Oakenfold, to name a handful.

During the day, while festivalgoers recharged their batteries and checked out the various pop-up film, art, and retail events around town, more than 5,000 producers, musicians, label execs, and tech leaders took part in 300 conference sessions, featuring talks by Nile Rodgers, Giorgio Moroder, Bob Lefsetz, and Dave Smith, and Q&As

with DJs including Armin van Buuren, Tiësto, Richie Hawtin, and Hardwell.

Six panel tracks offered a range of content, from the evolution of DJ technology to PR and management to staging design, with a dedicated track for students and a new Green track, focusing on sustainability. Across town, Native Instruments, Waves, Ableton, Pioneer, Novation, Sonos, and other technology companies hosted all-day “playgrounds” featuring production seminars and hands-on demos geared toward both pros and beginners.

Here are a few of our favorite moments from ADE.



Microsoft's Kyle Hopkins on securing videogame syncs: “There are fewer substantial game titles and fewer in-game syncs, but more marketing spots, a lot more sync opportunities.”



Richie Hawtin on going green on tour: “The first thing to do is be aware, make small changes. I used to leave the house and leave all my machines on. Now, I don’t do that. Go from everyday life, and see where it makes sense to make a difference.”



Dave Smith (left), on the birth of MIDI: “We wanted something simple, easy to implement, and free.”

Tiësto kept 17,000 people on their feet until 8 A.M. at the Ziggo Dome.



More Online
See an expanded slideshow.

Emusician.com/January2014

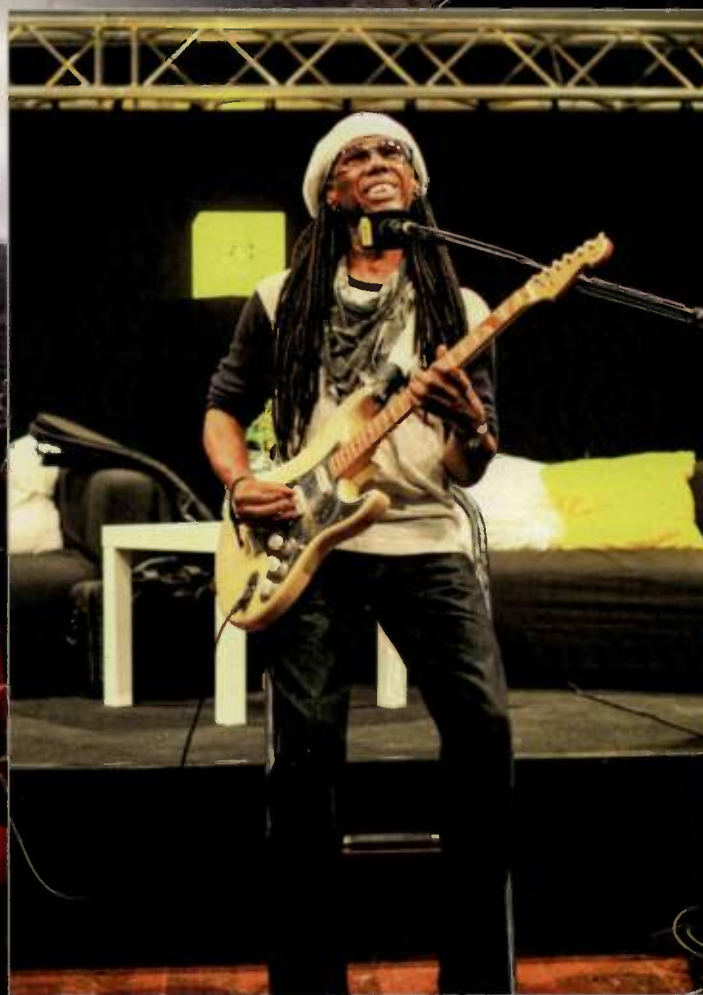
Waves held a four-day Art of the Mix series at Amsterdam hotspot Jimmy Woo.



The Native Instruments Playground included Traktor and Maschine workshops.



Festivalgoers check out gear at the Pioneer DJ Playground at the Amsterdam View.



Nile Rodgers shared the number one lesson he learned about music from one of his early teachers, after he expressed his disdain for pop: "What the f^{ck} makes you think you are the ultimate consumer? Any record that sells one million copies is great. What makes you think those one million people are wrong and you are right?"



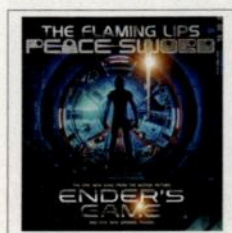
Juan Blanco

Nuestro Tiempo/Our Time

INNOVA

The history of electro-acoustic music has become richer with the release of this unusual retrospective of works by Cuban composer Juan Blanco (1919-2008). Like other pioneering musicians of his era, Blanco pushed the boundaries of sound and multimedia performance by inventing instruments, establishing an electronic music studio, and challenging societal and political norms. This disc provides a concise introduction to his exceptionally beautiful electronic music and includes tracks combining synthetic textures with voice, Latin percussion, and sax. Essential.

GINO ROBAIR



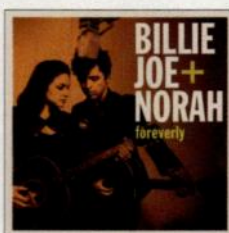
The Flaming Lips

Peace Sword

WARNER

Fragile melodies in anthemic arrangements; anxious transmissions sputtering across the stereo field like time-lapse daybreaks: These are Flaming Lips calling cards, and all are evident on this 36-minute EP inspired by the film adaptation of Orson Scott Card's *Ender's Game*. Following *The Terror* (labeled bleak and somber by many), these six songs capture blankets of hazy synths, console input-overloading motorik drums, and zero-gravity harmonies in symphonic jams that are equal parts dystopian and celebratory.

TONY WARE



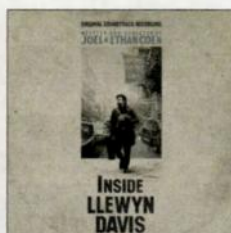
Billie Joe + Norah

Foreverly

WARNER

So mad are Billie Joe Armstrong and Norah Jones about the Everly's classic *Songs Our Daddy Taught Us* that the punker and the sweet country sister recorded a note-perfect cover album, right down to matching close harmonies, twangy guitars, and hop-a-long drums. Recorded at the Magic Shop in Manhattan, the album has all the sweet appeal of a reverential museum piece. Though immaculately performed and sung, this odd couple makes you interested in hearing the original item.

KEN MICALLEF



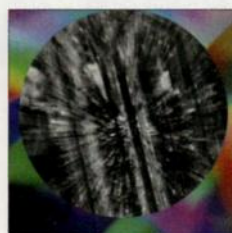
Various Artists

Inside Llewyn Davis: Original Soundtrack

NONESUCH

Music for the Coen brothers' latest film, set in the 1960s Greenwich Village folk scene, has Justin Timberlake singing "500 Miles." That's intriguing enough, right? There's also a previously unreleased Dylan song, and an embarrassment of rich harmonies and strumming by Mumford & Sons, avant-bluegrass group Punch Brothers, and more. As he did for *O Brother*, co-producer T Bone Burnett strikes a balance of true folk art and that slight, deliberate overearnestness that comes with critical distance.

BARBARA SCHULTZ



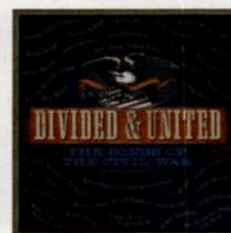
Four Tet

Beautiful Rewind

TEXT

Kieren Hebden spins yesteryear to flow forward, reminiscing with jungle drum loops and short sample passages while imbuing everything with his trademark psychedelic melodies. Such rolling tracks as "Gong" and "Parallel Jalebi" are downhill loop extravaganzas, while the stuttering cadences of "Kool FM" borrows sub bass notes from what sounds like a '90s-era jungle sample CD. "Body Feels" has the agitated pulse of a broken sonar transmission, until spider melodies wrap its frigid rhythm in honey-coated goodness.

KEN MICALLEF



Various Artists

Divided and United

ATO

Soundtrack producer Randall Poster developed this 32-track tribute to music of America's Civil War era. Beautifully arranged for authentic instrumentation, these songs evoke the pain of families separated by war, the shame of racial prejudice, and patriotic pride. It's both a joyful, enjoyable listen and a music history lesson taught by today's greats, including Loretta Lynn, Steve Earle, and the Carolina Chocolate Drops. Disc two closes with the late Cowboy Jack Clement's version of "Beautiful Dreamer."

BARBARA SCHULTZ



Total Slacker

Slip Away

BLACK BELL

RIYL: Nirvana; My Bloody Valentine; Smashing Pumpkins; Pixies; Sonic Youth; Hum; quiet-loud-quiet; Fender Jazzmasters, Jaguars and Mustangs; BOSS, DigiTech and DOD distortion; thrashin' guitarists; stoic bassists; resolute thwack; strangled chords; scuzzy "solos"; woolen riffs; third-generation VHS tapes of "120 Minutes"; watching infomercials while baked; despising yuppies; mangy thrift-store sweaters and flannel shirts; the smell of teen spirit and suburbia burnout; everything that defined the early '90s, over-driven but miraculously not overblown.

TONY WARE

"Once you try the **Audix i5** there's no turning back."

Richard 'Dickie' Chappell, Music Engineer - Peter Gabriel

Here's what engineers are saying about the i5:

"I have been using the i5 on snare (top and bottom) for five years, and it's become one of my favorites. This microphone has an incredible SPL response with a smooth low end, and is durable enough to stand up to all the abuse from touring."

**Stephen Shaw - Front of House Engineer,
Buckcherry**

"When JD Blair is out with us, I use only Audix mics on his kit. I have also used them for Derico Watson (Victor Wooten Band) for years. For full clarity, body, and accurate snare reproduction, I trust only the i5. Audix has never let me down!"

**Jack Trifiro - Front of House Engineer,
Victor Wooten Band**

"The best thing to happen to snare drums since Charlie Watts!"

**Paul Hager - Front of
House Engineer,
Miley Cyrus**

"The Audix i5 is a workhorse and is one of the most durable mics I own. It can adapt to most situations, but I prefer it on snare because it doesn't color the natural tone of the drum."

**Joe Amato - Front of House Engineer,
The Gaslight Anthem**

"On the road you need three things: WD-40, gaffer tape, and an Audix i5. Use the first if it won't move, the second so it doesn't move, and use the i5 when it has to sound good. The Audix i5 is the thinking man's standard for an all-purpose snare mic."

**Howard Burke - Front of House Engineer,
Little Feat**

"Thanks to the Audix i5, getting a great snare drum sound is something that I take for granted. The i5 is what style of music. It is equally outstanding on stage and in the studio. The i5 keeps everyone happy: drummers, engineers, producers, and the audience."

**Charles A Martinez - Front of House Engineer,
Steely Dan**

Audix is extremely proud of our award-winning i5 dynamic microphone, and of the many prestigious artists and audio pros who rely on it for live performances and studio sessions. The i5 accurately captures the backbeat of every drum kit - the snare drum.

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Fig. 1. Orion32 packs an impressive 32 channels of I/O, as well as a master clock, into a 1U box.

Antelope Audio Orion32 AD/DA Converter

A whole lot of interface in a 1U box

BY LARRY THE O

SUMMARY

STRENGTHS: Superb audio quality. Excellent master clock. High channel count. Easy-to-use control-panel app. High build quality.

LIMITATIONS: Some anomalies, presumably from pushing USB to the boundaries of performance. Only five presets.

\$2,995 MSRP
antelopeaudio.com

FOUNDED IN 2004 by Igor Levin, whose Aardvark Audio Aardsync left a large footprint in the area of high-quality master clocks for the studio, Antelope Audio has released several modern master clocks, as well as audiophile-quality digital converters. The Orion32 starts from this legacy and adds a high channel count, I/O in several formats, sample rates up to 192 kHz, onboard mixing and matrix routing, word clock inputs and outputs, and a front-end client application that runs under Mac OS or Windows.

As the name indicates, the Orion32 is capable of running 32 channels of input and output, although the actual number is determined by the sample rate and the output format you choose. The Orion32 transfers all of these channels to and from your computer via USB 2.0 Hi-Speed. Although USB is not designed for carrying lots of real-time data, Antelope uses a custom USB chip to accomplish Orion32's channel count.

Panel Discussion Analog audio is carried over eight DB-25 connectors on the rear panel—four D-subs for input and four for output—wired to the old Tascam TDIF pinout, which is now adopted as the AES59 standard.

Be prepared to drop a few hundred dollars extra for breakout cables.

Digital audio connections are similarly abundant: S/PDIF, ADAT Lightpipe (16 channels each of input and output), a MADI connector providing 64 channels of I/O, and a USB port. To keep everything in the system locked together, the Orion32 includes four word clock outputs, one word clock input, and a 10MHz clock input intended to be driven from the company's Isochrone 10M atomic master clock.

The front panel is somewhat simpler, with LEDs to indicate clock locking, buttons for selecting the sample rate, preset buttons, a multifunction Antelope button, the power button, and a multifunction display that shows the current sample rate and input and output levels for each channel (see Figure 1). Astonishingly, even with all of these features, the unit consumes only 20W of power, so it does not get hot or require a fan.

The software control panel (Mac/Win) provides routing matrices, a 32-channel mixer, and two 32-channel level meters that display levels from any of the I/O connectors. The meters on the hardware unit are necessarily small, making them mostly useful for verifying

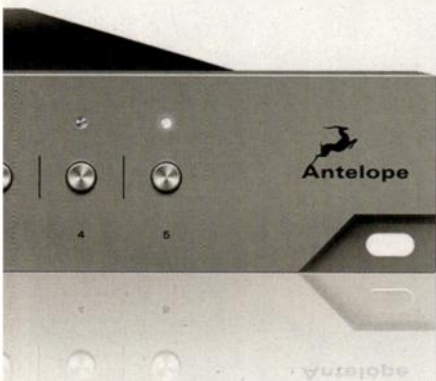


Fig. 2. A view of the routing matrices, mixer, and meters of the Orion32's control panel software.

signal presence and identifying extremely high or low levels. The meters in the control panel app are narrow, but they are longer and have good resolution, making them much more useful for actual level monitoring. The control panel also includes preset buttons duplicating those on the front panel (see Figure 2).

The routing matrices work simply by dragging inputs from the top matrix to the desired outputs in the bottom matrix. The presets allow you to store up to five different configurations and recall them from the front panel or software control panel. But while the matrices are very powerful, it quickly became evident that the ability to save presets is more than a matter of convenience. Overdubbing called for DAW playback plus live inputs to generate a low-latency cue mix. After the overdub, I needed only DAW playback channels. In order to reroute channels in the matrices each time, I saved the overdub-record and playback configurations as presets. But with only five presets, it's necessary to make new ones each time you work with a different set of channels.

In Situ With a Quad-core, 3GHz Mac Pro (and 8GB of RAM), I used the Orion32 to

record a number of sources—vocals, drums, vibraphone, electric guitar, acoustic guitar, and percussion. The sound quality is excellent. In fact, the transient response is so good that I had to modify my usual vibraphone miking technique to deemphasize the mallet attacks. Additionally, the tracks maintained crystalline clarity when a substantial number were mixed; this is not always the case with down-market converters, which can sound fine on two or three tracks but mushy when mixing larger numbers of tracks.

Anytime the capabilities of technology are pushed the way Antelope does by trying to send so many channels of real time data over USB, it increases the possibility of anomalies. When I began working with the Orion32, playback from it was distorted. The recordings were fine and played back beautifully through my MOTU interfaces. Antelope's tech support worked with me to find the "favored" USB port (shouldn't they all be equal?), and I eventually found a configuration that worked. (Antelope Audio reports that "all USB ports work fine" on "all new Macs" when using its latest driver.)

While there were no significant issues using the Orion32 with any of the three DAWs

I have—Presonus Studio One 2.6, Avid Pro Tools 10, and MOTU Digital Performer 7—the unit confused the heck out of the Audio MIDI Setup application several times, causing "spinning beach ball" delays and, sometimes, crashing the app. Audio MIDI Setup also would not show 192 kHz as an available sample rate until I changed a setting in the control panel app to make Orion32 use only 24 USB channels. (Mac computers have internal USB hubs that limit bandwidth, because of all of the devices demanding it, so this is a computer-based limitation.)

Stellar Overall, the Orion32 is a versatile interface and master clock with fine build quality and a price point that is astonishingly low for the quantity of features, channel count, and performance it delivers. Although I encountered a few small bumps using it, nothing stops me from giving the Orion32 an enthusiastic thumbs-up. ■

Larry the O has been a musician, composer, sound designer, engineer, producer, and writer for more than 30 years. He operates out of his Studio Faire La Nouba facility in Vallejo, California.

Yamaha HS5 Powered Studio Monitor

Sky-high performance
for a rock-bottom price

BY MICHAEL COOPER

SUMMARY

STRENGTHS: Unsurpassed clarity, detail, imaging, and transient response in its price range. Performance doesn't degrade when placed on shelves. Built-in filters and level control. Small footprint. Exceptional value.

LIMITATIONS: Very slightly understated sibilance. XLR connector doesn't latch.

\$250 MSRP each
Yamahaproaudio.com

SMALL MONITORS aren't just for people who can't afford large ones. Savvy engineers know that tiny near-fields provide an invaluable alternative reference to full-range monitors when mixing. Problem is, most near-fields sound mediocre when placed where they ergonomically belong—on workstation or console shelves. Yamaha's new HS5 active monitor, on the other hand, sounds sensational in that setting. And it lists for only \$250 each.

Small Room? No problem! Measuring only 6.7" x 11.25" x 8.75" (WxHxD) and weighing only 11.7 pounds, the HS5 accommodates even the most cramped control room. And its Room Control filters, which provide 2 or 4dB of low-shelving cut below 500Hz when activated, compensate for speaker-boundary effects that would otherwise muddy low-frequency response when the monitor is placed near a wall. A companion High Trim filter boosts or cuts the HS5's response 2dB above 2kHz to make up for an overly damped (boost) or live (cut) room.

The HS5's 5" woofer and 1" dome tweeter are bi-amplified with enough juice to make a stereo pair of these little guys plenty loud unless you're as deaf as a post. (A 45W amplifier powers the woofer, while a 25W amp drives the tweeter.) A continuously variable level control is provided. Balanced XLR and TRS connectors provide alternate input; the latter can accept unbalanced signals. It would've been nice if the XLR connector latched, but that's asking for the moon in a monitor with such a low price.

The monitor's frequency response is stated to be 74Hz to 24kHz, -3dB (with 10dB-down points at 54Hz and 30kHz). If the HS5 is to be your only wide-range monitor, you'll need to add a subwoofer (such as the Yamaha HS8S) in order to properly mix bass instruments with everything that voices higher up. The response begins to significantly drop off below around 200Hz, almost recovering at 80Hz before tailing off again below. There's also a minor dip (around 2dB) between 7kHz and 10kHz, which makes vocal sibilance sound slightly understated. There is a significant peak (around 3dB) in the response between roughly 650 and 1,300Hz, which tends to bring lead vocals slightly forward in the mix. A slightly less prominent peak between 10kHz and 16kHz lends the HS5 enhanced detail and air.



The Yamaha HS5's performance excels even with shelf-top placement.

Shelf Life Yamaha recommends that you place the HS5 at least five feet from the nearest wall for the flattest response with its built-in filters bypassed. My studio's ergonomics necessitated placing a stereo pair three feet from the nearest wall, mounted on Primacoustic Recoil Stabilizers that are placed on the shelves of an Omnirax workstation (furniture) for my console. With that placement, setting each monitor's Room Control switch to its -2dB setting sounded best—make that phenomenal. The imaging, transient response, high-frequency detail, and depth all sounded superb. But the hallmarks of this monitor—and where it bests the competition—are its tight upper-bass and open low-midrange reproduction. Whereas most monitors sound muddy when placed on workstation shelves, the HS5 sounds extraordinarily clear.

I won't mince words: The HS5 is the best-sounding monitor I've heard in its price range by a mile. ■

Michael Cooper is a recording, mix, mastering and post-production engineer, contributing editor for Mix magazine, and owner of Michael Cooper Recording in Sisters, Oregon (myspace.com/michaelcooperrecording).



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Photography by Candace DiCarlo

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Novation Bass Station II

A new generation of
analog monosynth

BY MARKKUS ROVITO

SUMMARY

STRENGTHS: Thick, beefy, sound. Two filter types. Arpeggiator/sequencer. Velocity sensitivity. Aftertouch. Easily editable.

LIMITATIONS: Plastic chassis doesn't instill confidence.

**\$624.99 MSRP,
\$499.99 street**
novationmusic.com

TWO DECADES after Novation released the original Bass Station, the company has reimagined its classic synth in nearly every way (except price). In addition to an all-analog signal path, the Bass Station II adds a new filter topology, USB for data dumps and optional bus power, and effortless programmability. The result is an instrument capable of providing everything from gut-quaking basses to ear-splitting leads that will make it the go-to analog monosynth for modern music makers.

Start Your Engine The monophonic synth-engine kicks off with a generous Oscillators section, switchable between the two main oscillators. Provided are top-panel controls for pitch range, Coarse and Fine

tuning, waveform selection, pulse width, and pitch modulation via LFO 1 and Mod Env. A crucial sub-oscillator has a three-waveform switch, and the Mixer blends the three oscillators with the other sources: a noise generator, ring mod, and the external 1/4-inch TRS audio input. External audio is sent through the filter and analog effects section, comprised of distortion and Osc Filter Mod, where Osc 2 modulates the filter frequency.

The Bass Station II has two filter types—the Classic Bass Station filter and the new Acid filter, an extra-squelchy diode-ladder—that can be set to lowpass, bandpass, or highpass with a 12 or 24dB slope. Besides the standard frequency and resonance controls, the filter also has a dedicated overdrive effect and the ability to be modulated by LFO 2 and the Mod Env.

The two LFOs have selectable waveforms and controls for Speed and Delay, while the ADSR sliders can control amplitude, modulation, or both. The Glide Time control lets you create a smooth and creamy portamento.

The Bass Station II's versatile arpeggiator gives you six pattern types, each of which can play back in 32 different rhythmic patterns. Turn on the Latch, hit some notes, and let the arpeggiator rip while you develop a new sound. This section also houses a

32-step sequencer, where you can store and playback up to four sequences.

Edit & Save The instrument's 70 preset patches mostly fall into the Bass, Lead, Organ, and Keys categories and amply demonstrate the Bass Station II's range—from light and airy ear candy to wobbly, distorted, wet, and crunchy bass and lead sounds. As nice as they are, you'll quickly tweak them into a twisted new creation. Saving a patch—either to the same memory location or one of the 58 Init Patch locations—is just two presses of the Save button away.

Most of the synth parameters have 1-to-1 hardware controls, so it's easy and gratifying to quickly beef up sounds. For extra programmability, the Function button lets you select parameters assigned to (and labeled above) each of the full-size synth-action keys, and then edit their values on the three-digit display. For example, you can edit the pitchbend range, Aftertouch response, mod wheel settings, MIDI channel, and other global settings.

Station to Station II With its excellent control set, easy programmability, USB connectivity, attractive price, and soul-shattering sound, the Bass Station II will make you forget about the good ol' days and love living in the now. ■

Fig. 1. The Bass Station II is an analog monosynth capable of creating vintage and modern timbres.



modern meets classic



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DSI's Prophet 12 combines digital oscillators with analog filters and amplifiers in a roadworthy package. Red backlighting will help gearheads identify it from way offstage.



Dave Smith Instruments Prophet 12

A legendary synth designer delivers a new classic

BY GEARY YELTON

SUMMARY

STRENGTHS: Brilliant user interface. Impressive modulation capabilities. Excellent analog filters. Full-featured arpeggiator. Multitap delay. Tuned feedback. MIDI over USB.

LIMITATIONS: Monophonic signal path. Two-part multitimbral. Receives on only one MIDI channel at a time. Stereo voices reduce polyphony to six notes. Can't allocate voices per layer.

\$3,299 MSRP
\$2,999 street
davesmithinstruments.com

WHENEVER ANYONE mentions the Prophet 12, all of the musicians in the room adopt an almost reverential tone. From the moment synth pioneer Dave Smith appeared in an online video showing off its capabilities and sound last January, practically everyone agreed it was destined to become the most desirable new synth on the planet. Now that it's shipping, does it live up to expectations?

First Impressions Count The P12 features 12-voice polyphony, as its name suggests, and two independent timbres per Program (Layer A and Layer B). Each voice is an analog/digital hybrid. All the oscillators are digital, but the voltage-controlled filters, the voltage-controlled amplifier (VCA), and some of the effects are entirely analog. Other notable features include a versatile arpeggiator and an unusual effect borrowed from the DSI Evolver called "tuned feedback."

The P12's build quality is solid enough that it should easily withstand the rigors of the road if treated with respect. The velocity-sensitive keyboard offers channel Aftertouch and a snappy unweighted action.

Although you can read the OLED graphical display from any reasonable angle, I wish it was twice as big. Fortunately, it's extremely clear,

bright, and easy to read, though much of the type is small. Four buttons below the display select parameters that appear there, and four rotary encoders above it affect their values.

Dedicated knobs and buttons on the front panel access most functions. When you turn or press almost any control, the display reveals its associated parameters and values. If you press the Show button, you don't have to change a parameter to see its value. That kind of visual feedback makes it easy to grasp exactly what's going on at any time.

The Modulation section has just two buttons—one to assign sources and another to assign destinations—and a bipolar knob to adjust the amount. Because everything you need to know appears in the display, modulation routing is as clear and straightforward as I've seen on any synth.

The touch sliders are sensitive to finger position (indicated by an LED ladder) and pressure, providing a total of four latching modulation sources you can route to any destination.

The two footpedal jacks on the back double as CV inputs: Use them to control volume, filter sweep, and other pedal-type parameters, or configure the modulation matrix to control any mod destination using a CV source.



Tracing the Signal Path Some of the effects and all of the oscillators, filters, and VCAs are monophonic, and they stay monophonic until they reach the stereo output stage. Nonetheless, the P12 sounds gorgeous, thanks to plenty of oscillators, well-designed filters, extensive modulation capabilities, and stereo delay combined with other effects.

Each voice has four audio oscillators and a sine-wave suboscillator. You get four analog-style waveforms, a dozen more-complex digital waveforms (with names like Nasal, Gothic, and Buzzzz), and three flavors of noise (white, red, and violet). The four oscillator buttons are arranged in a circle representing how they connect when they're synced or modulating one another using FM or AM. A Slop parameter makes the oscillators sound more analog by randomly detuning them as much or as little as you want.

The Shape Mod/Pulse Width knob changes the symmetry of pulse, sawtooth, and triangle waves and adds harmonics to sine waves. It brings digital waveforms to life by scanning between any three you select to make up a wavetable. The knob's center position chooses the first waveform; turning it clockwise or counterclockwise results in different spectra, and you can view the waveshape in the display

as you change it. Applying any modulation source multiplies your chances of adding motion to your sounds.

The 4-pole button lets you toggle the Curtis-based lowpass filter between 12dB- and 24dB-per-octave slopes. The lowpass self-oscillates only in 4-pole mode and has a dedicated envelope generator. Because you can modulate the resonant highpass filter, you can create highpass sweeps independent of the lowpass. For bandpass filtering, the two filters are arranged in series.

Four DADSR envelope generators and four LFOs provide plenty of opportunities for automated modulation. The LFOs are especially versatile, with settings for waveform, phase, and slew rate, which reshapes waves by smoothing their edges. Although two of the envelopes are devoted to the lowpass filter and VCA, you can route control signals from any envelope to any modulation destination. The filter and VCA envelopes can loop their delay, attack, and decay segments for as long as a note is held.

Eight fixed modulation routings let you assign all the LFOs and envelopes to control any of 97 destinations. Sixteen additional routings let you freely assign any of the 26 mod sources to any destination, which may

include individual envelope segments, lowpass or highpass resonance, delay time, character depth, or feedback tuning.

One with Effects Each voice has a 4-tap stereo delay that can sync to the arpeggiator, mod sources, or MIDI Clock. Use the Delay section's Time, Amount, and Feedback knobs to create echoes as long as a second, to simulate reverb, or to program chorus and flanging effects using shorter delays. Surprisingly, you can't save or recall delay settings as separate presets; you can only save them as part of a program.

Thanks to the P12's tuned feedback, guitarists aren't the only players who can make their axes howl. Each voice's VCA output is routed back to an internal input and mixed with the oscillators to create a feedback loop. You select the amount of either positive or negative gain and set the loop's initial frequency, which is quantized by semitones over a 4-octave range. And because tuned feedback always tracks the keyboard, you can play the feedback melodically.

Each of the Character section's effects has a single knob for controlling depth. Girth is a low-shelf filter (for bass boost), and Air is a high-shelf filter (for treble boost). Drive is

The back panel includes four unbalanced 1/4-inch outputs, one footswitch and two pedal inputs, MIDI I/O, and USB. The main outputs carry both layers, but when you plug into the second pair of outputs, each pair carries a separate layer.



a variable distortion for each voice. To really dirty up your sound, Decimation reduces the digital sampling rate, and Hack reduces the bit depth. A separate Distortion knob near the volume control affects the entire mix.

Timbral Powerhouse The P12 stores 792 programs in eight banks of 99 programs each. Four factory banks are etched in stone, and four user banks are rewriteable. The numeric keypad lets you instantly access any program.

Programs containing two timbres can be split or layered, or you can select one at a time. When programs are split, you get six voices from the right side and six from the left. When

they're layered, you get voices in stereo and 6-note polyphony. You can't specify how voices are allocated.

Although the P12 delivers screaming leads, thundering basses, ethereal atmospheres, and in-the-pocket arpeggios, a number of the factory programs don't take full advantage of the realtime controllers. Very few respond to Aftertouch, for example. Fortunately, it's easy to customize modulation routings to suit your preferences.

I'll Take 12 Combining some of the best ideas from the Prophet '08 and Evolver series, the P12 transports the Prophet concept firmly

into the future, making it an instant classic. For my money, it's the one hardware synth introduced in 2013 that's most worth having.

DSI deserves praise for incorporating touches such as tuned feedback, an extensive modulation matrix, and a user interface that makes complex patches easy to grasp. If fabricating timbres that steer clear of acoustic sounds appeals to you (it certainly does to me), try the Prophet 12 and decide for yourself whether it lives up to its reputation. ■

Geary Yelton was an editor at Electronic Musician for ten years. His first book, The Rock Synthesizer Manual, was published in 1983.



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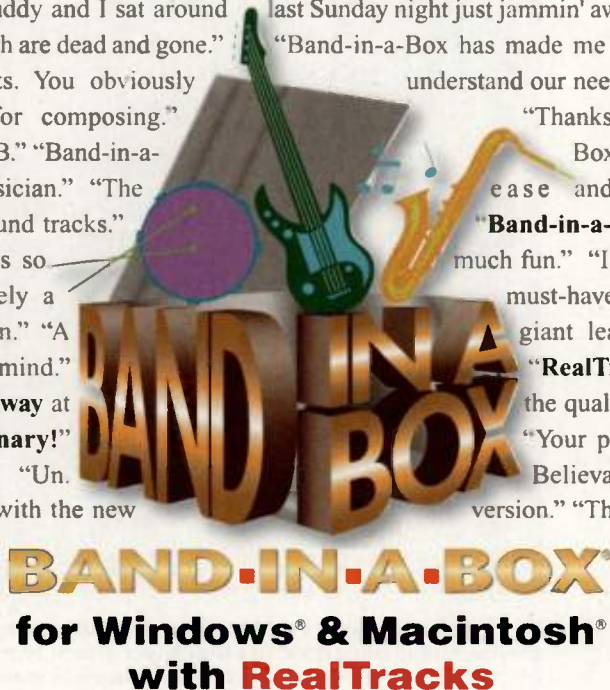
"The way to make **high-quality** background tracks." "RealTracks is by far the easiest accompaniment software." "This is so **Band-in-a-Box** is the **holy grail** for much fun." "I'm speechless." "Who says you can't buy happiness." "This is absolutely a must-have item." "Band-in-a-Box is now on a whole other level of sophistication." "A giant leap forward!" "Keep the **RealTracks** coming!" "It blows my mind." "RealTracks add a whole new dimension of realism." "I was absolutely **blown away** at the quality of **Band-in-a-Box**." "Your **Band-in-a-Box** program is **extraordinary!**"

"A fantastic leap forward." "Unbelievable" "I can't believe how fast I can generate **RealTracks** and renders with the new version." "They've **outdone themselves** this time, and I'll be singing the praises of **Band-in-a-Box** every chance I get."

"This new musical concept you have created is nothing short of evolutionary. If it were a living creature, it would be a whole new species." "I'm awestruck." "Just when you think **Band-in-a-Box** is as **Brilliant!**" "All of the new instruments are just **smashing**." "I must say, the pedal steel is perhaps the greatest accomplishment in the history of this brilliant program." "The **RealTracks** are fantastic and provide great **inspiration** for creativity." "This is a great gift to jazz musicians, educators, and singers." "Oh, wow. **This changes everything.**" "It's **stunning.**" "Thanks for a superbly useful piece of software." "I tried with many audio files and the chord detection is **amazingly accurate!**"

"I tried item." "Wow, I'm learning tunes Wizard." "It finds the exact chords perfectly." "Wow!" "I am **blown away!** The jazz/swing **RealTracks** stuff is amazing." "Awesome." "Is this cool or what?" "I'm in seventh heaven" "You won't regret it (and if you do, there's the **30 day money back guarantee**)."

"I never thought I'd see the day this was possible." "I know it's been said before, but you guys are **incredible**." "This is **gonna set the world on fire!**" "I'm so stoked about how good everything sounds I can hardly stand it." "This is just killer." "Amazing, simply amazing." "[RealDrums] is really awesome sounding. Good work!" "Many kudos all around." "You never cease to **amaze** me. You got it." "**Wow and Double Wow.**" "The **RealTracks** and **RealDrums** sound awesome." "Long live PG Music!" "Mind bending." "I am frankly amazed at most of the styles." "I am absolutely **Kudos** to you and your team!" "First time I did a song with **Band-in-a-Box**, I **couldn't believe it!**" "I use it in the classroom and also in creating music in my studio. It is a fantastic piece of music software to own. I am greatly impressed." "I am very impressed with your fantastic **improvisational** program." "It's a great educational tool." "Awesome software at a fantastic price!"



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Sony SpectraLayers Pro 2

Standalone spectral processor gets an adrenaline shot and new features

BY MICHAEL COOPER

SUMMARY

STRENGTHS: Dramatically improved engine. Streamlined noise extraction. New spectral processors. New loop-playback function. Can set and name markers. Allows offline processing with third-party VST plug-ins.

LIMITATIONS: Buggy. Vague and incomplete documentation. No interpolation function. Can't snap playback to markers. Can't make time-range selections starting at 0:00:00:00.

SpectraLayers Pro 2:
\$399 MSRP
 (upgrade from SLP1:
\$199.95)
sonycreativesoftware.com

FROM ITS initial release, Sony SpectraLayers Pro could extract various elements embedded in a stereo track and process each independently before recombining them to create an entirely new blend. You could also paint frequencies with your mouse on, for example, selective drum hits in a dense mix to reinforce their bottom end. Powerful noise-reduction tools jettisoned hiss and AC hum and buzz.

That said, the original release was hamstrung by an extremely cumbersome GUI and incomplete and sometimes baffling documentation. The new SpectraLayers Pro 2 (SLP2) promises a refined GUI, souped-up engine, and new tools.

See Me, Hear Me Audio is displayed in SLP2 in an auto-scrolling spectrogram: The timeline occupies the horizontal axis, and progressively higher frequencies are illustrated farther up the vertical axis (see Figure 1). Louder elements appear brighter. Stereo material is split into top (left-channel) and bottom (right-channel) display panes.

Imported audio appears in SLP2 as a layer. You can copy bits of material from this layer—limiting your selection to a specific frequency range (or one fundamental frequency and its harmonic series) over a select period of time—and paste them to a new, empty layer. For example, you can extract from an audio file only the midrange frequencies in a dog's bark, keeping or eliminating the extracted material in the original file as you wish. You can also add a frequency or noise to an audio file by painting it with your mouse.

Offline processing—using either SLP2's built-in spectral processors or your third-party 32- and 64-bit VST plug-ins—can be auditioned before rendering. You can drag and drop edited and processed files into your DAW or mix them in SLP2 to create a new file. Files and sections of files can be directly imported from and exported to Sony Sound Forge Pro 11.

Exploring the New Features Spectral displays require a ton of horsepower, especially

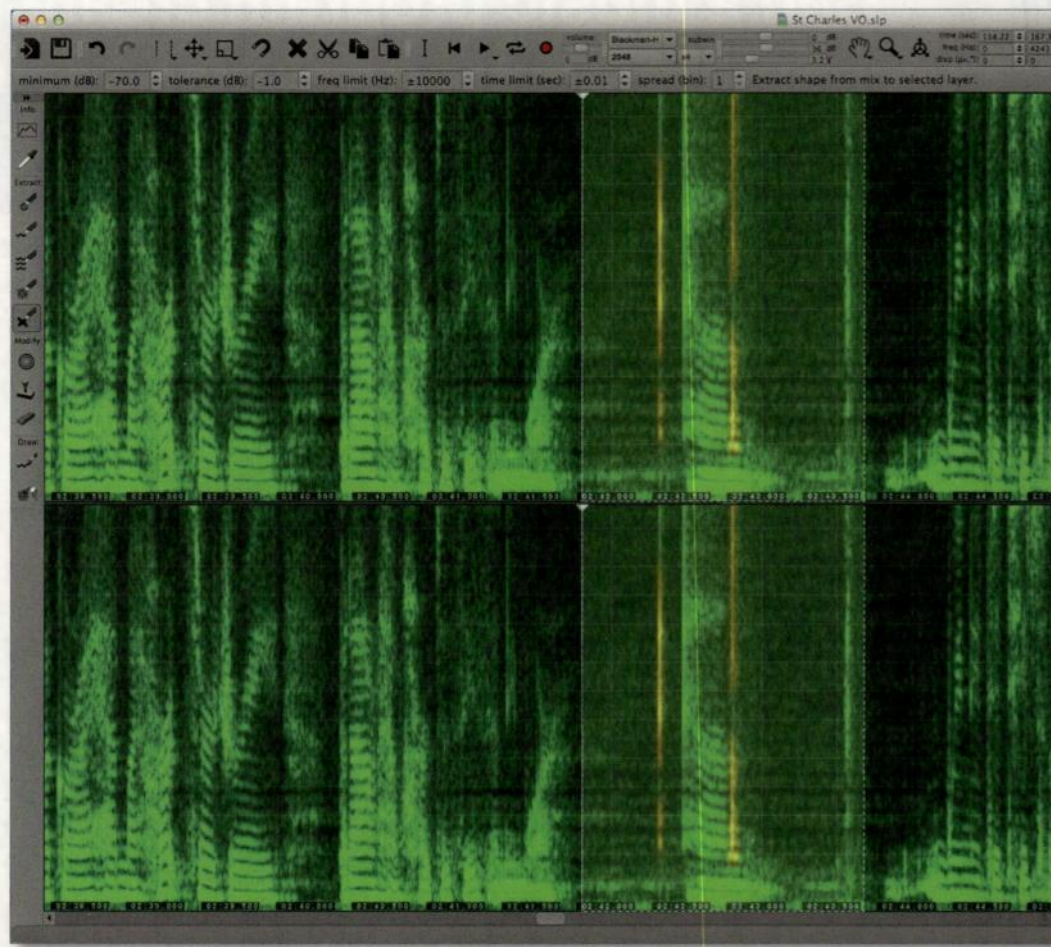


Fig. 1. SpectraLayers Pro 2's new Extract Shape tool removes clicks (shown here as orange lines) embedded in a voiceover track. The clicks were copied to a new layer (depicted as a red horizontal bar on the right side of the GUI), and the layer's phase was reversed to null the click's amplitude when combined with the layer containing the original, unprocessed program (green horizontal bar on the right).

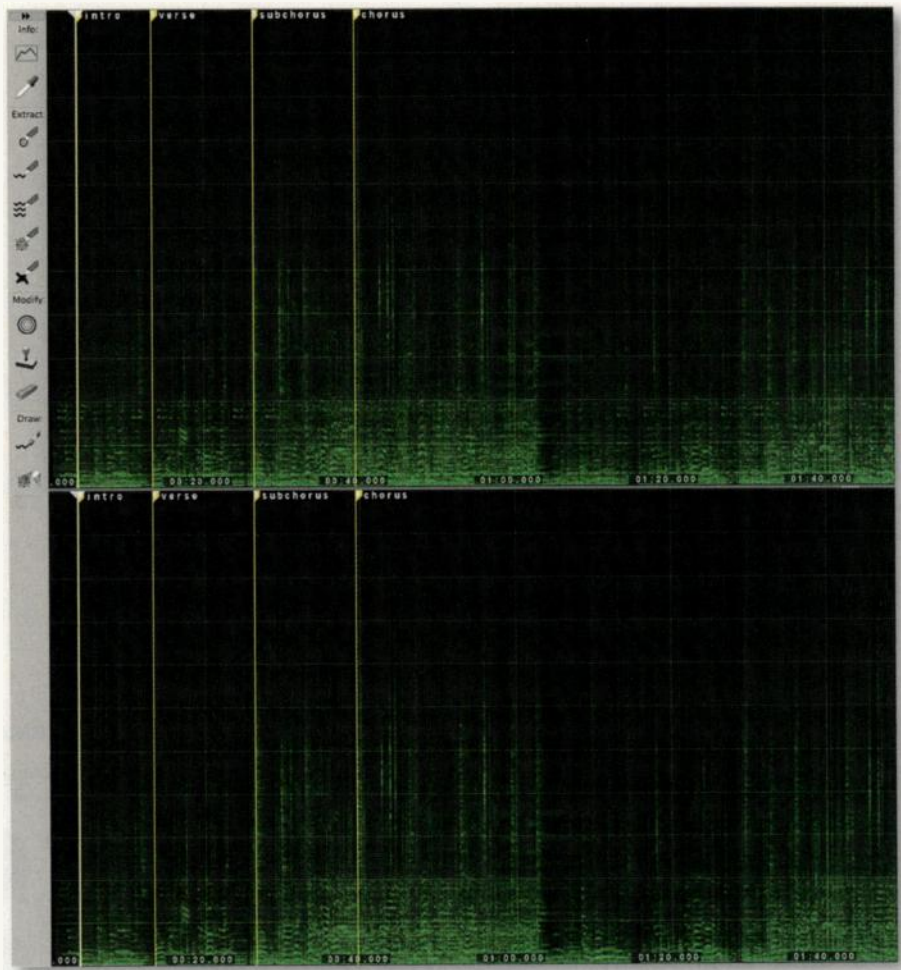
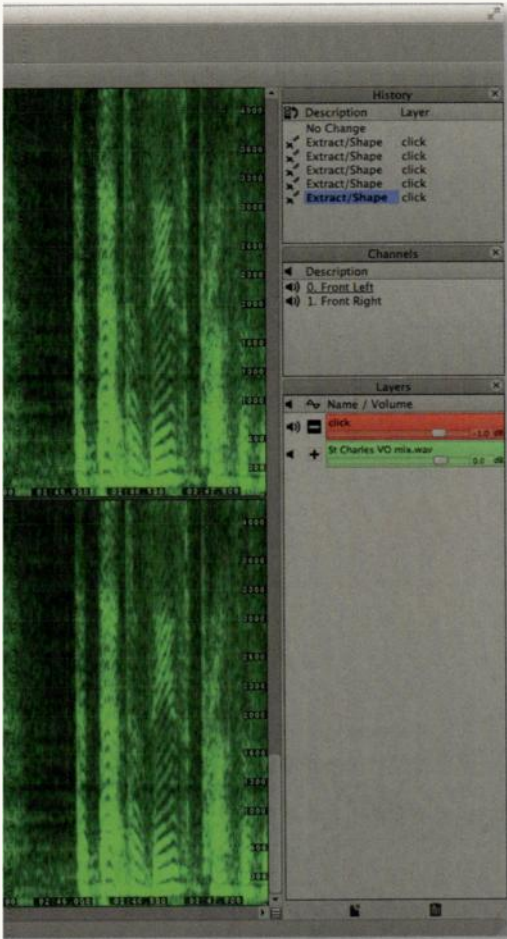


Fig. 2. SpectraLayers Pro 2 allows you to create and name markers. These are for visual reference only and can't be used as navigation aids.

when zooming way in to see microscopic details. Unlike with the original software, SLP2 never got sluggish even when zooming in to view a slice of audio spanning only a tenth of a second and 300Hz bandwidth with maximum frequency resolution (an analysis-window size of 32,768 samples); I used an 8-core Mac Pro with SLP2. I could zoom the frequency axis while keeping the bottom of the display anchored to 0Hz and switch among five different frequency scales (including linear and logarithmic) to optimize my view of various spectra. After making a selection over time and frequency ranges in the spectral display, I could loop playback of my selection. Although I could set and name markers, these were only useful as visual cues and couldn't be used as navigation shortcuts (see Figure 2).

The new Extract Noise command makes the process of removing broadband noise and AC hum throughout the total length of program material exponentially faster and more intuitive than in the original software. I also used the new Extract Shape tool—which selects objects in the spectrogram

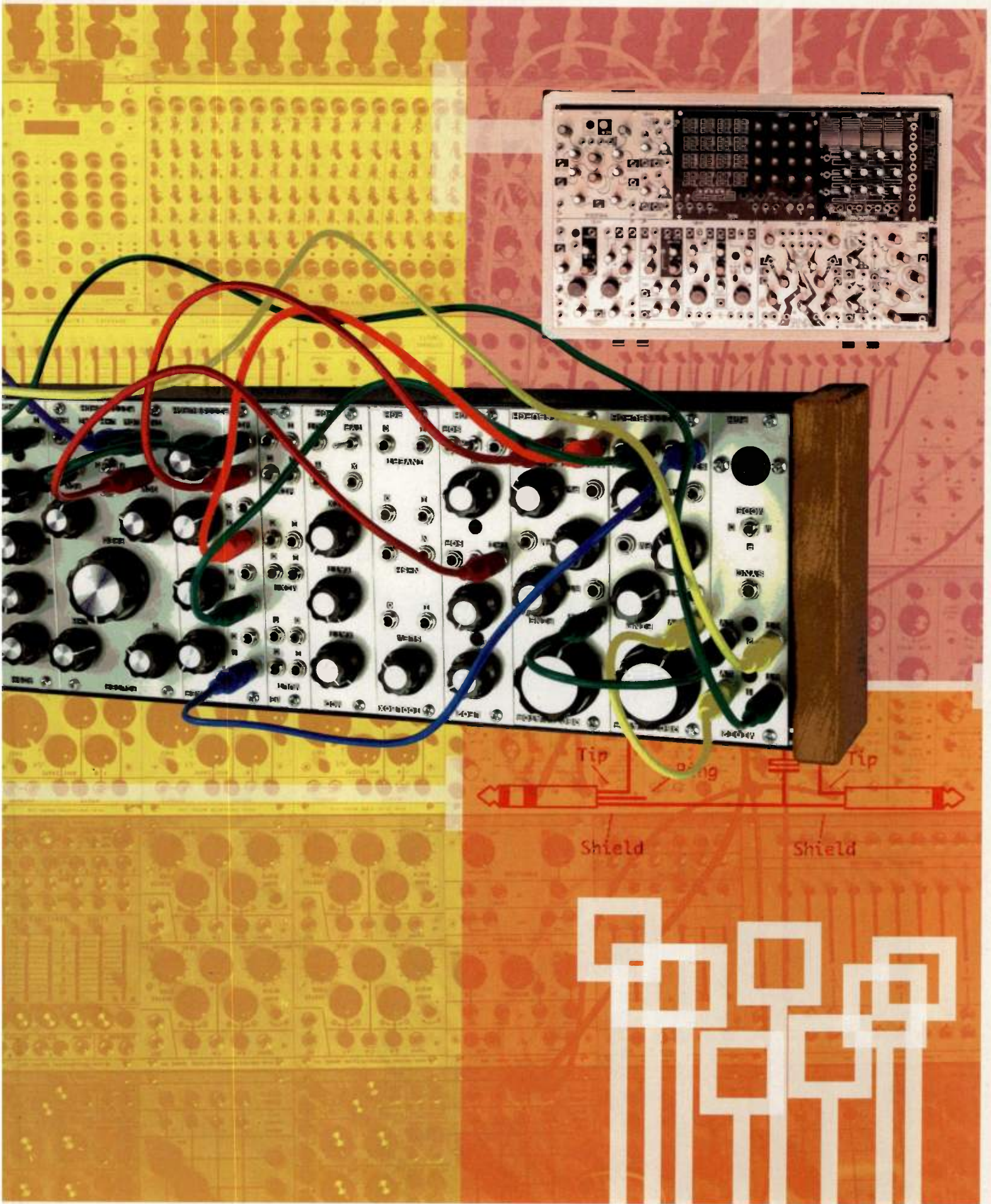
based on your specified power range—to virtually eliminate clicks embedded in a voiceover track (shown in Figure 1). This entailed copying the clicks to a new layer and reversing the layer's phase with respect to the original, unprocessed program to null the click's amplitude.

I used SLP2's new Spectral Casting function to subtract the spectra of a music bed from a voiceover (VO) track (working with bed and VO contained in discrete layers). This essentially eliminated frequency masking and made the VO clearer when the two layers were played together. When soloed, the processed music bed exhibited mildly phasey artifacts and occasional dropouts (inaudible when the two layers were played at once, unless I made subsequent EQ or level changes to either layer). I liked the new Spectral Molding function for sound design; I used it to make a synth pad voice using only the spectra of a discrete VO, creating a vocoder effect for the pad.

As with the original release, SLP2 wouldn't let me make time-range selections starting at

0:00:00:00; make sure you import audio with a handle (blank pre-roll). Because SLP2 cannot extrapolate content that borders extracted spectra to fill in a resulting gap, there is the potential to create “holes” in your program. SLP2 is also very buggy, and the learning curve remains steep (in part due to documentation that's vague or incomplete in places). (The developer notes that the SpectraLayers Pro Seminar Series has been posted in the Training section at sonycreativesoftware.com.)

Compared to What? People working in sound design will want to compare SLP2 to iZotope Iris, a competing spectral processor that's far easier to use and more feature-packed than SLP2 for that application. But if you also need powerful noise reduction tools for restoration, post-production audio sweetening or audio-forensics work, SpectraLayers Pro 2 is the only spectral processor I know of that gives you tools for executing all these tasks under one roof. ■



HOW TO

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Better Sound Through Modular Living

A guide to processing audio through your voltage-controlled synth

BY GINO ROBAIR

A MODULAR synthesizer is more than just an instrument for playing basses and leads. It can also act as an audio processor that is both highly responsive (via CV or hands-on control) and fully expandable (just add more modules).

Fully integrating a modular synth into the modern studio workflow has never been easier, and utilizing a DAW expands your options exponentially. In addition to traditional MIDI-to-CV converters, there are software applications that generate CVs, allowing you to control module parameters with greater precision from your digital audio workstation, whether for processing or playing an instrument.

Regardless of whether your synth modules are fully analog or a digital hybrid, they are designed to generate and accept voltages. So no matter which module format you have—Frac Rack, Eurorack, Moog-style, etc.—they all play well together, though there might be some cable adapters and level tweaking involved.

In this article, we will look at various ways you can control your modular system when using it to process audio. We will also examine specific products that improve workflow (and some tips on how to get the most out of them).

Brute-Force Audio Processing So you want to run some drum tracks through your favorite filter module? No problem: Just go direct. Simply route a DAW Send to an analog output on your interface to run an audio track to your synth, and then “perform” the processing using the module’s knobs. With another cable, you can return the processed sound to an input on your interface and record it to a audio track. Once you’re finished, simply nudge the processed audio track on the timeline until it’s in sync with the other tracks.

Of course, this type of processing is done by ear and is otherwise unsynchronized with the DAW. And it does not allow you to record the controller movements, tweak them, and play them again with the changes, unless you use a synth module that is designed for that specific purpose. However, in the right situation, this kind of hands-on control of hardware-based processing can inject the excitement of a performance into a track while imparting extra character provided by the synth module.

The main technical issue you will encounter is level matching between the output of your mixer or interface and the inputs on your modular. Because you’re working with line-level signals, balancing audio levels between products is fairly easy. Some modules even respond well if the input signal is a little on the hot side. Obviously, if your mixer or interface has 1/4-inch I/O and your modular has 3.5mm jacks, you will need adapter cables with the proper connectors on each end.

If you plan to run mic- or instrument-level audio through your modular system in addition to line-level signals, you will want an interface module, such as the Doepfer A-119 External Input/Envelope Follower (\$99) for Eurorack systems or the Blacet Research I/O 2225 (\$179 assembled) for Frac Rack users. Not only do these types of modules help you attain usable audio levels for processing, they can also provide envelope and gate/trigger signals by following the contour of the input signal.

For example, the Doepfer A-119 has two inputs: Asym for line-level audio and Sym for instrument and mic-level input. The

Envelope output tracks the input level and gives you a proportional voltage, which you can use to control a VCA or VCF. The module’s comparator provides a Gate signal (when the input crosses the user defined Threshold level), which you can use with an ADSR envelope generator or other modules that accept gates.

If you’re looking for studio-grade audio interfacing, Cwejman offers the AI-2 (\$325), a Eurorack module that has two balanced I/O channels on XLR jacks with gain trims and 3.5mm send and return jacks.

MIDI-to-CV While it’s fun to have hands-on control over your processing, things get really interesting when you control your modular via MIDI. In addition to helping you play your modular as an instrument, a MIDI-to-CV converter provides control information based on MIDI data that is stored in and synchronized with your DAW. The control information can include gates, triggers, and CVs generated by MIDI sequencers, for example, which can then be used to change parameters such as filter cutoff or modulation depth in time with the MIDI Clock.

MIDI-to-CV conversion can be done with a dedicated module or a standalone device. Kenton Electronics makes a line of MIDI-to-CV converters, including several types of standalone units as well as a Eurorack module (see Figure 1). Doepfer, which helped launch the Eurorack modular craze, offers a variety of MIDI-to-CV modules, as well as the Dark Link (\$170), a USB/MIDI-to-CV converter based on the circuit used in its Dark Energy module. (Doepfer also sells the A-192-2 (\$190), a CV/Gate-to-MIDI/USB interface designed for controlling MIDI synths, including soft synths, from your modular.) Other manufacturers of MIDI-to-CV modules include Analogue Systems, Analogue Solutions, Kilpatrick Audio, and Pittsburgh Modular.

Another option is to use a MIDI control surface through a MIDI-to-CV converter to tweak your analog gear when processing audio. This may sound crazy, because the analog gear already has knobs, and CVs generally have a finer resolution than MIDI. But there are times where I have found it made more sense to have several knobs and sliders in one place (within a MIDI controller) when “performing” a patch rather than having to reach in several places to get to knobs that are partially obscured by patch cords. In this situation, you would also have to record your MIDI performance to your DAW if you plan to recall or edit your performance later.



Fig. 1. The Kenton Pro-2000 MkII is a stand-alone, multichannel MIDI-to-CV converter.

Direct and Indirect Keyboard Control

An interesting trend in recent years is the inclusion of CV and gate output jacks on mass-produced keyboard instruments, such as the Akai Professional Max-series USB MIDI controllers and the Arturia MiniBrute and MicroBrute analog synthesizers. Similarly, an instrument such as the Doepfer Dark Energy (\$625) desktop synth has USB MIDI input that allows you to translate messages from your DAW to CV’s using the synth’s many 3.5mm top-panel jacks.

These solutions provide a more standardized way to get MIDI-to-CV conversion, which can control audio processing parameters in addition to simply playing a synth voice. But while MIDI-to-CV conversion is very, very handy onstage and in the studio, there is still a higher level of control to be achieved.

Interactive Plug-ins and Specialized Hardware

The current state of the art of DAW-to-modular integration involves using software applications and plug-ins to generate CVs, gates, and triggers, which are then sent to your modular system from your audio interface. The result is a level of resolution that surpasses MIDI while providing a higher degree of synchronization to your DAW session. Think of these products as an automation track that can be dynamically created and altered in real time. Software such as Native Instruments Reaktor, Cycling 74 Max/MSP, and Max For Live within Ableton Live are widely used in this regard.

An important issue that needs to be addressed is how to get DC control voltages to your modular from your computer’s interface. If you’re using a standard audio interface, you will need to determine whether it has AC- or DC-coupled outputs, and then assemble the appropriate cabling. Another option is to use a “break-out box” solution. In order to determine which is best for you, let’s look at two software products that are specifically designed for use with hardware synths and provide self-tuning functionality

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for calibrating the CV response to match that of your oscillators.

The first mainstream plug-in to offer self-calibration was MOTU Volta (\$199), an AU/MAS instrument plug-in that sends DC voltages from any interface with DC-coupled audio outputs (which many of the MOTU interfaces have). Volta can create CV output from MIDI CC messages, ramp automation, or from its own trigger sequencer, step sequencer, LFO, and envelopes (see Figure 2). This gives you enough CVs for a complete synth voice from each instantiation of the plug-in, all of which is synchronized with your host DAW (see Figure 3).

To prevent damage to your DC-coupled audio interface, you will need to use a special cable to connect the audio output to your modular when transmitting CVs. The cable must have a balanced plug on the end that goes to your interface and a 2-conductor TS plug on the other for your modular—TRS (with the ring floating) to TS, or XLR to TS, with the XLR's pin 2 going to the tip and the other two pins to the sleeve. These cables are easy to make, but are also available for purchase. In a pinch, you can also use one end of an insert cable.

Because the voltage level from the output of a DC-coupled interface can be anywhere from ± 2 to ± 9 VDC, depending on its make and

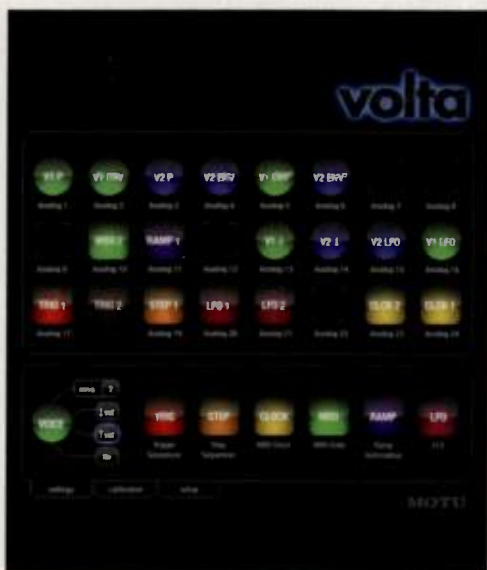


Fig. 2. MOTU Volta is an AU/MAS plug-in that generates a host of control signals that are synchronized with your host DAW. An interface with DC-coupled audio outputs is required.

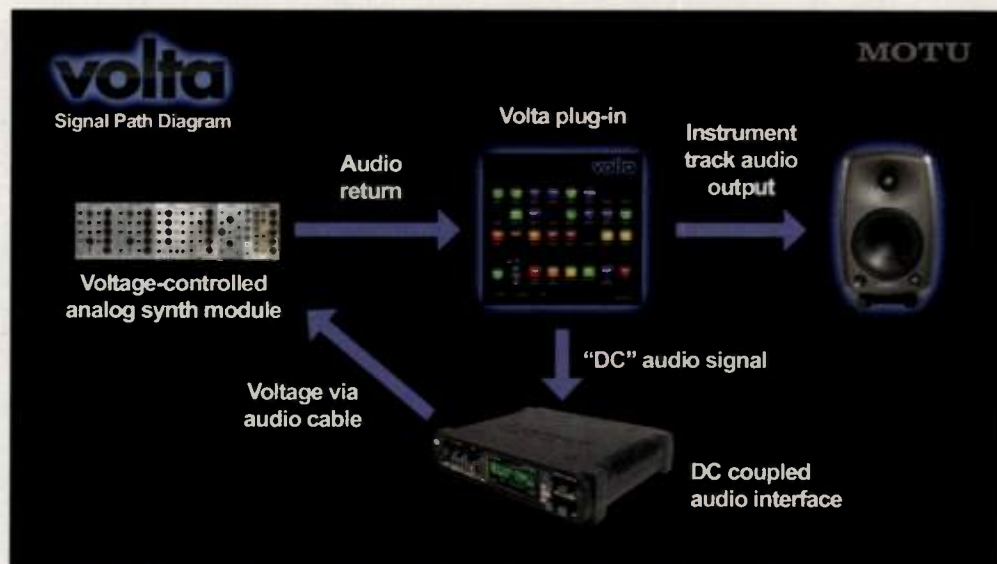


Fig. 3. In order for Volta to calibrate itself to your hardware synth's oscillators, audio from your modular system is returned to the plug-in through your interface.

model, there is some unpredictability when it comes to the tuning range you can achieve. You can use Volta (or any other software that sends CVs) with a standard voltmeter to test and confirm the output voltage of your particular interface. But if you have an AC-coupled interface, Volta is out of the picture.

Expert Sleepers Silent Way (\$59) is a suite of 19 plug-ins (AU, VST, AAX) that sends CV/gate/trigger signals and features self-calibration capabilities, but it offers a greater number of interfacing options. A trial version of the plug-in suite is available online.

While some of Silent Way's plug-ins are used only for specific interfacing situations, others provide the basic functionality that modular users need, with the ability to synchronize the output with the host software's tempo. In addition to the normal synth-like features of an LFO, a stepped LFO, a pitch and envelope follower, and a multistage trigger/envelope, Silent Way offers CV-to-MIDI conversion, CV-to-OSC, a clock plug-in that can generate DIN sync, and a DC module for creating steady-state signals. Silent Way can also accept CVs using the CV Input plug-in, and then process the signals using the Function plug-in, which offers several mathematical functions with offset and scaling options.

Of special note is the Silent Way Voice Controller, a virtual instrument that provides the requisite voltages to control a complete synthesizer voice—pitch CV, trigger, gate, and envelopes, along with LFO modulation, detuning, glide, and transposition (see Figure 4). It calibrates to your hardware oscillator (using either the V/octave or Hz/V

standard, the latter of which is for products by Metasonix, Korg, and Yamaha), and the calibration data can be saved as a text file for later use (or loaded into the Silent Way Quantizer plug-in). A version of the Voice Controller is available as a Rack Extension for Propellerhead Reason.

Although you will get the best results if you interface Silent Way with an Expert Sleepers ES-series Eurorack module, the plug-in can send its DC voltages through the audio outputs of AC- and DC-coupled interfaces, as long as you use the proper cabling. If you decide to use the audio jacks of an AC-coupled interface, Expert Sleepers recommends that you use the Silent Way AC Encoder plug-in with a rectifier cable, which is simply a floating ring cable (as above), but with the addition of a diode and a capacitor (see Figure 5). You can increase the voltage range by adding more diodes/capacitors in a voltage multiplier configuration. Information about making these cables and circuits can be found at expert-sleepers.co.uk/siwaacencoder.html.



Fig. 4. The Expert Sleepers Silent Way Voice Controller provides everything you need to control an entire synth voice with each plug-in instantiation. However, it's also perfect for manipulating synth-module parameters in sync with your DAW when processing tracks.

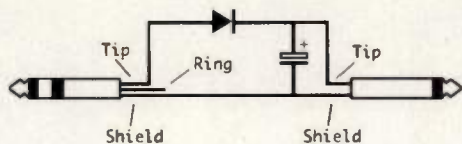


Fig. 5. This diagram shows the basic circuit used to create the kind of rectifier cable required to operate Silent Way from the audio jacks of an AC-coupled audio interface.

If you want to use your interface's audio outputs, but you don't want to hassle with the custom cables, the Expert Sleepers ES-1 accepts standard AC-coupled audio output on 1/4-inch jacks (\$215) or a DB-25 connector (\$195). As above, you will need to use the Silent Way AC Encoder plug-in with this setup, but you will get a greater voltage range than your interface's outputs offer because the ES-1's amplifier design is specifically calibrated for use with modular systems.

The most efficient way to get $\pm 10V$, DC-coupled analog signals from your software—whether it's Silent Way, Volta, Reaktor, or Max/MSP—is to connect one of the digital outputs on your audio interface to one of Expert Sleepers' D/A-converter modules, all of which are in the Eurorack format and have 3.5mm output jacks. The ES-3 Mk3 (\$325) accepts a TOSLINK connection (from your interface's ADAT Lightpipe port) and provides 8 channels of CV or audio, while the ES-4 (\$295) accepts S/PDIF input using a coaxial jack to provide 5 signals (two of which can be calibrated CVs). (The ES-4 module also requires the ES-4 Controller plug-in that is part of the Silent Way suite, or the ES-4 Mac/MSP External, in order to operate.)




Expander modules, with an additional 8 gate outputs, are available for the ES-3 and ES-4 and connect to the host module's circuit board via ribbon cables.

Not only do the ES-3 and ES-4 provide output levels that are best suited for modular synthesizers, they free up your interface's audio outputs, which you would have otherwise used for sending DC signals (see Figure 6). Additionally, the ES-5 (\$150) expander module is required if you want to use


Silent Way to deliver MIDI. The required 3.5mm-to-DIN cable is available from Expert Sleepers.

When you are ready to send audio or CVs from your modular to your DAW, the Expert Sleepers ES-6 (\$175) will do the trick. It accepts input through six 3.5mm jacks and interfaces with your computer using an ADAT Lightpipe connection. You can add two more input channels with the ES-7 (\$120) expander module, which connects to the ES-6's circuit board behind the panel. The ES-6, itself, requires an ES-3 module to provide the required clock signals.

Innerclock Systems provides several breakout box solutions for synchronizing your DAW with your modular and other hardware synths and drum machines. For example, the Sync-Gen IIPro (\$750) is a standalone unit that connects to your interface's audio outputs and provides phase-synchronized MIDI Clock, DIN sync and analog triggers using the company's VST/AU/RTAS/AAX-compatible software. The Sync-Gen IILS (\$650) offers similar functionality in a Eurorack module. Other products designed for high-resolution synchronization are in the works from this company. ■




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Fig. 6. The Expert Sleepers ES-3 Mk3 connects to your interface's ADAT Lightpipe port and provides 8 channels of $\pm 10VDC$ control signals from Silent Way or similar software running on your computer. You can also send audio through any of the module jacks.

Create Your Own Mechanical License

Get paid royalties when other artists record and release your songs

BY MICHAEL COOPER

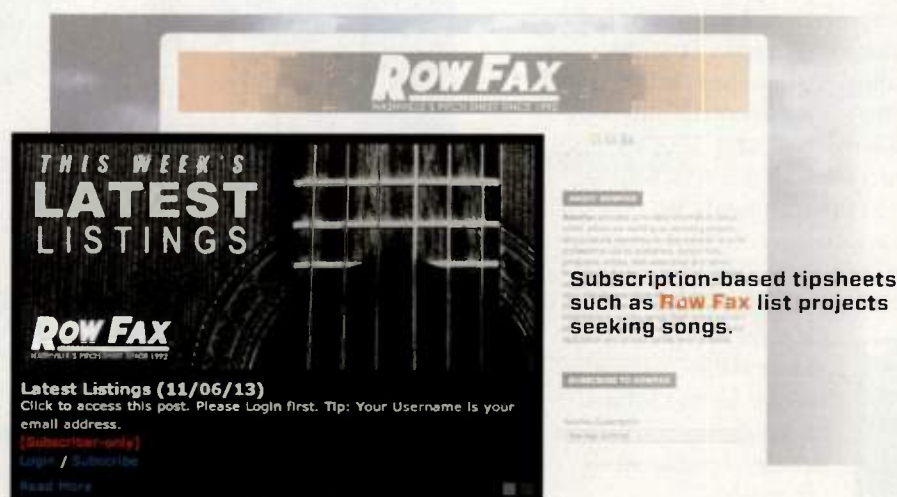
WHILE ROYALTIES on record sales continue to be an ever-shrinking contributor to a songwriter's income, there are still opportunities to make money from other artists cutting your songs. Subscription-based tip sheets such as Row Fax (rowfax.com) list recording projects for which songs are currently being sought by both major and independent labels. And websites such as musicxray.com let anyone pitch songs—for a substantial fee per submission—to labels and producers for their upcoming projects. It's also not uncommon for musicians to record a song written by another songwriter in their network.

You are legally entitled to get paid a royalty for each unit released on a physical medium (such as CD, cassette, or vinyl) or sold in a digital format (for example, a download or ringtone) by the artist covering your copyrighted song. Such a dividend is known as a mechanical royalty, and the license that permits a cover song to be released and sets the rate of royalty payment is called a mechanical license.

The Harry Fox Agency (HFA) issues mechanical licenses and collects and distributes the royalties from there to its affiliated music publishers, in exchange for 8.5% of the take. But if you're not a publisher, or if you simply want to keep all royalty proceeds for yourself, you can do your own mechanical licensing. This article will detail some of the key elements you should include in your in-



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house mechanical-license document. For simplicity's sake, I'll limit the scope to licensing physical releases and digital downloads.

Don't Forget the Basics Your mechanical license should include the name of the artist cutting your song as well as the record company's street and email addresses and phone and fax numbers, along with the name of a contact person at the company. The catalog number of the single and, if appropriate, the album the song will be included on should also be noted, along with the album's title. If the license is for a physical

release, each authorized release format (CD, LP, and so on) should be noted. When licensing digital downloads, the document should note the URLs for all Web pages from which downloads will be executed. The license should also state the recording's UPC and ISRC numbers, the title of the song, its playing time, and the release date.

Stipulate How Much and When You'll Get Paid When licensing a song to a small independent label, I have the company specify the number of units they want to reproduce for sale or offer for download,



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make money

and require payment of all royalties up front. This payment is likely to be the only money you'll ever see from an indie label, so make sure the mechanical license stipulates that recordings not be distributed until the license has been signed and returned to you along with payment in full. The current royalty rate is 9.1 cents for a recording lasting five minutes or less, or 1.75 cents per minute, or fraction thereof, for a recording over five minutes long.

When licensing a song to a major label, spell out when you will be paid for royalties due you each quarter: A reasonable schedule is "within 45 days after March 31, June 30, September 30 and December 31 of each year."

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your due. The license should further stipulate that if the audit shows an understatement greater than 5 percent, the licensee will pay for the cost of the audit plus interest at the maximum rate permitted by law for all sums due. The license should dictate that failure to account for and pay the required royalties will result in the license being automatically

revoked and terminated 30 days from the date you give the licensee written notice of their violation by certified mail; without that clause, a delinquent licensee can continue selling limitless copies of your song while owing you royalties until you're six feet under.

Get Credit For a release on a physical format, the mechanical license should stipulate that the release's label copy or permanent container must have inscribed on it your name, the copyright date, and the name of your publishing company and its affiliated performing rights organization (for example, BMI). After all, every unit that's distributed is a promotion of your song. Make sure the next artist who wants to cover it knows how to find you. ■

Michael Cooper is the owner of Michael Cooper Music (BMI) and a contributing editor for Mix magazine.



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Fig. 1. The 2CAudio B2 plug-in can produce superb infinite-reverb effects. The patch shown here is an edited preset from the optional Imagination Expansion, a collection of supplementary factory patches.

Ethereal Effects

Express your inner Enya with these atmospheric tools and techniques

BY MICHAEL COOPER

WHETHER THE impetus was Steven Halpern's seminal New Age album *Spectrum Suite* or 10cc's mainstream mega-hit "I'm Not In Love," 1975 was the year music escaped earthly bounds to explore new sonic landscapes dripping in expansive reverbs and droning tones. Modern tools and techniques have since made interstellar musical explorations even more fun and compelling. Here are a few rocket boosters to defibrillate your heart of space.

Sing Forever The 2CAudio B2 plug-in can produce outrageous infinite reverb, in which the reverb's tail (decay time) extends forever (see Figure 1). Run background-vocal tracks—singing *oohs* and *ahs*, for example—through an infinite-reverb effects patch to spawn a spacious and mystical effect like no other.

The only problem with infinite reverb is vocals sung in harmony with one chord in the song's arrangement will sustain through

successive chords that might clash. For example, infinite reverb added to background vocalists singing a C major chord will sound harmonious against C major or A minor played by instruments, but it will clash if and when the instrumental arrangement moves to an F major. Remember, the singers' C major chord will sustain through the infinite reverb forever, or at least until you press stop on your DAW's transport. Having the singers switch to singing an F major would not stop their C major chord from ringing; it would only add the notes of the F major chord to those of the C major in the reverb wash, creating an F major 9 chord. That's likely to be dissonant in some sections of the song.

The solution is to record the background vocals (BVs) singing a discrete chord on each of multiple tracks (for example, C major on track 1, F major on track 2, and so on). Instantiate B2 on an insert for each of the tracks, using the same or similar infinite-reverb patch (100% wet in all instances). During mixdown, fade up a single BV track where it will sound harmonious with the backing arrangement; fade it completely down where it would otherwise create dissonance, while fading up another BV track voicing a chord that's harmonious with the backing arrangement at that point. By crossfading your different BV tracks in this way, you create a smooth ebb and flow of otherworldly voices.

Since BVs used in this way sustain potentially forever, it's important that they are either recorded in tune or the pitch of each of their individual voices is corrected before combining the voices onto one track. Doing that on a lot of tracks—one for each chord in the song where you want to use infinite reverb—takes a lot of time. The Sampletekk INIL Choir provides an excellent shortcut. INIL Choir is a Kontakt Instrument containing multi-samples (also available in other formats) of the actual background vocals used in 10cc's hit song "I'm Not In Love" (see Figure 2). Simply play the chords you want (recording each chord to a separate track in your DAW), slap B2 on each track and you're ready to bliss out.



Fig. 2. Sampletekk INIL, a Kontakt Instrument, contains multi-samples of the airy background vocals that were sung by 10cc in their hit song "I'm Not In Love" (circa 1975).

Excite a Piano For a ghostly effect unlike any other, check out Lexicon Stringbox, a plug-in included in the company's PCM Native Effects Bundle. Stringbox imitates the sympathetic resonance that piano strings produce when excited by an external sound (see Figure 3). Simply click on any of the 88 keys in the GUI's virtual keyboard to choose which strings will resonate; selecting roots and fifths in your song's key typically yields the most harmonious sounds. Set the plug-in's pan mode to High Spread for a wider stereo image, and detune the virtual piano strings using the chorus control for a lush sound. Similar to using infinite reverb, you'll most likely want to fade Stringbox in for only select sections of your mix. To avoid dissonance, fade the effect out where accidentals are played in your song's arrangement. Stringbox's effect sounds so mysterious, few if any listeners will be able to identify your production's phantasmal secret sauce. ■



Fig. 3. Lexicon Stringbox emulates the sympathetic resonance of piano strings.

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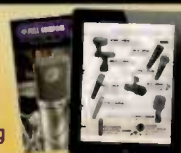
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First One's Free

Convince fans to buy music that you give away

BY RANDY CHERTKOW AND JASON FEEHAN

FOR MOST musicians today, the enemy is obscurity, not piracy. So, making your music downloadable and releasing it for free is one of the best ways to increase the likelihood of someone discovering and liking your music.

But letting fans download your music causes a dilemma: If one of the best ways to get noticed and build a fanbase is to share your music, why would anyone buy your music?

Fortunately, there are ways to convince fans to buy your music even if you give it away. Here are five easy methods you can use:

Streaming Services Rather than make your music downloadable, you can use a streaming service—an option that allows people to hear the song without being able to directly download it. While determined fans can still figure out ways to rip the song from a streaming service, most won't. Sites like ReverbNation (reverbnation.com) or SoundCloud (soundcloud.com) allow you to stream songs, and even let people share them with their friends. But the best part is that these services let you put a “buy” button linking to services like iTunes or Amazon so that fans can make an impulse purchase after they hear it.



ReverbNation and SoundCloud let you stream songs, and let fans share them with friends.



YouTube YouTube is the world's most popular music search engine. So, if your best songs are not already on YouTube, you're missing out. YouTube is the easiest way to turn a song viral, and can make you income through advertising. You can also put a “buy” link

right inside the video description or inside the video itself to encourage song sales. See our previous article “Five Ways to Make Money on YouTube” (October 2013) for the best methods to promote and monetize your songs with YouTube.



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Provide Song Samples Rather than give away the entire song, you can always follow iTunes' method of introducing people to the music by offering a song sample for listeners to download. The upside to providing song samples is that they don't directly cannibalize the sales of the tracks. The downside is they are not as viral, and fans are less likely to keep them in their collections since it's just a snippet of a song.

Add an Audio Bumper Rather than give away the same song that you put up for sale, add an audio tag at the beginning or end of the song so fans know that it's a free version that they downloaded. Just like a radio announcer, you can speak over the intro of the song, announce the title and your band name, or conclude with a statement of where they can purchase the track. The main thing is that the audio on the free track doesn't have to be the same as the track that's for sale.

Acoustic versions, live versions, and remixes are all excellent giveaways that can introduce people to your music without impacting the sales of the original versions.



Release Alternate Versions Even if you give away your best songs, you don't have to give away the same *version* of the song that you have for sale. While you're in the studio, think about making multiple versions of your best tracks: Acoustic versions, live versions, and remixes are all excellent giveaways that can introduce people to your music without

impacting the sales of the original versions.

Keep in mind that many of the techniques above require you to think about marketing and selling your music in the recording studio—before you've even released it. Take your best tracks and make your alternate versions, remixes, sample tracks, and tracks with promotional audio-bumpers before you even master the music, so that you're not giving away the thing you want to sell.

None of this matters if you don't make a "buy" link easily available for fans to click and purchase your music. Get your music on services like iTunes and Amazon before giving your music to fans, so you can capture those impulse sales. Make sure that the links are clearly marked, and easy to use. If you give fans a taste of the music, and then make it as simple as possible to support you, your music will help sell itself. ■

Randy Chertkow and Jason Feehan are authors of The Indie Band Survival Guide (St. Martin's Griffin), now in its second edition.

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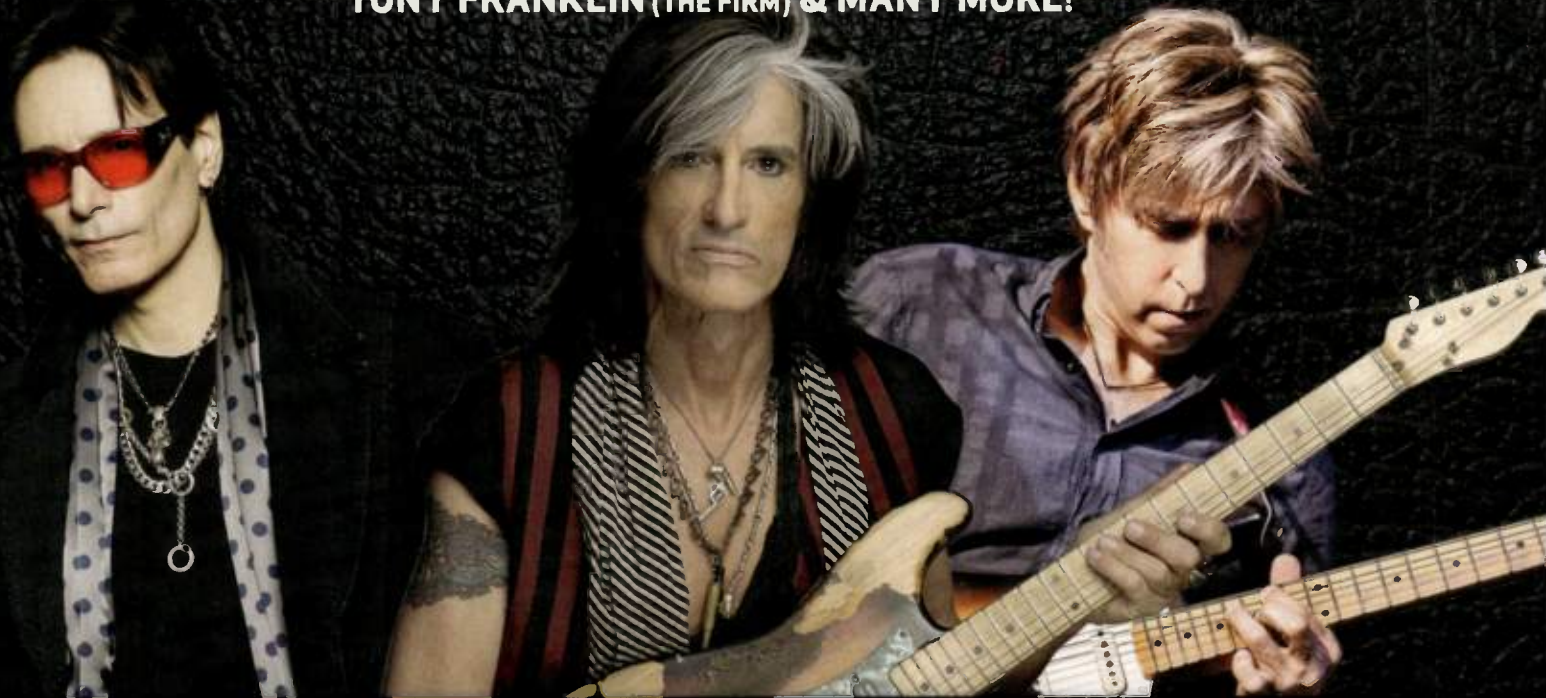
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MOTU Digital Performer 8

Alternate tunings and
more for MIDI guitar

BY MARTY CUTLER

OBJECTIVE

Set up your MIDI guitar with Digital Performer's Multi-Record feature to create alternate tunings, splits, and more.

BACKGROUND

One of the advantages of MIDI guitar is the ability to output MIDI on a separate MIDI channel for each string. That means (for instance) that—even if your MIDI guitar doesn't support alternate tunings, such as DADGAD or Drop-D—your DAW can help. In this example, we'll use MOTU Digital Performer 8 (DP8) to create an alternate tuning patch.

TIPS

■ With this setup, your options multiply exponentially. In addition to creating tunings, you can assign splits with (for instance) bass on the lower two strings, a pad on the 3rd and 4th strings, and a DP Device (a layer of multiple patches from different instruments) on the 2nd and 1st. If you select all six tracks and choose MIDI Editor from the Project menu, you can edit recorded notes from all strings in a single window.



Step 1 Set your MIDI guitar Output to Mono mode. For example, Fishman's TriplePlay requires a reboot procedure for the pickup before selecting Mono mode output to external instruments. Consult your MIDI guitar manual to set this up.



Step 2 In DP8, enable Multi-Record and create six tracks (one for each string).



Step 3 Load any instrument (a multitimbral instrument isn't necessary, but makes assigning different patches-per-string more efficient), and assign each track to that instrument. (For a multitimbral synth, select a different MIDI output channel.)



Step 4 For each track's MIDI input, assign a consecutive MIDI channel from your MIDI guitar.



Step 5 From DP8's new Channel Strip, insert a Transpose plug-in and set the transposition to the interval you want for each track. The plug-in will transpose notes from that string on the fly. You can save different tunings as Chunks in a DP8 file and access all of your tunings from one DP8 file. Save this for later recall.



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individual 48V phantom power and pad, and plenty of gain. Connect to
any Mac or PC with USB, or to any digital mixer or other interface
equipped with ADAT optical. Flexible combo jacks take mics,
balanced line inputs, and even hi-Z guitar inputs.

Novation Launchkey Next-gen USB/iOS controller

The Launchkey 49 gives you cutting-edge control over your MOTU mobile
studio with 49 smooth, synth-weighted keys, and 50 physical controls including
16 velocity-sensitive multi-color trigger pads. Produce and perform music
instantly with powerful integrated free Novation apps for iPad. Launchkey
is Mac, PC or iPad powered and available in 25, 49 and 61 key versions.

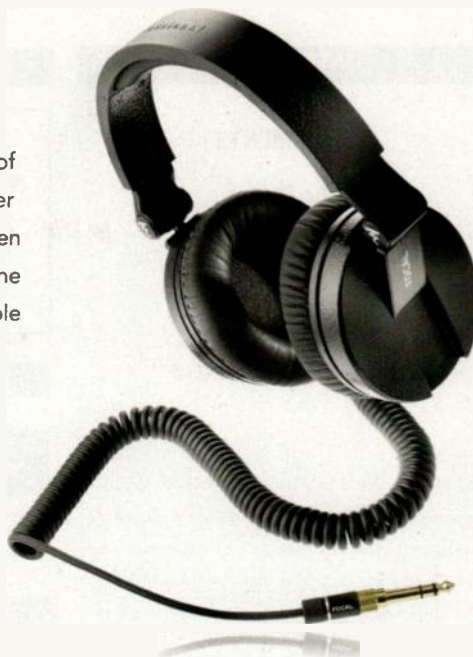


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Focal Spirit Professional Closed Studio Headphones

The Spirit Professional headphones benefit from Focal's years of expertise. Focal has been designing and manufacturing speaker drivers and loudspeakers since 1979. These headphones have been designed for sound engineers and musicians. The neutrality of the sound combined with the dynamics of the transducers will enable you to work with great precision. The memory foam ear cups provide excellent isolation and outstanding comfort.



Shure Beta 181 Stereo Set Ultra-compact side-address instrument mics

Designed for discreet placement and control in live or studio environments, the Sweetwater-exclusive Beta 181 Stereo Set includes interchangeable cardioid, supercardioid, omnidirectional, and bidirectional capsules for superior versatility. The small-diaphragm design provides superior performance in tight spaces. High SPL handling, ultra-smooth frequency response, and interchangeable polar patterns make this a must-have mic bundle. Includes two mic bodies and eight capsules in a custom case.



Mackie MRmk3 Series Powered studio monitors

Mackie MR8mk3 Powered Studio Monitors will help you make better sounding music, with innovations like an enhanced waveguide for a wider sweet spot, custom-tuned rear porting for smooth, extended bass response, and customizable frequency controls to let you dial in the perfect response for your space. Now offered as a full-range series, choose the size that's perfect for your MOTU studio and budget: from 5", 6", or 8" full-range models, as well as a brand new, hard-hitting 10" subwoofer. The MRmk3 series are Mackie's latest assault on the state of the monitoring art.



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The Five Top Musician Competitions at the Sochi Winter Olympics

And you thought the Winter Olympics were only about skiing, bobsledding, curling, and all that other frozen stuff? Just because the musician events don't get coverage on NBC doesn't mean they don't exist—and we'll certainly be watching to see which records fall this year!

BY CRAIG ANDERTON



1

The Yngwie Malmsteen Notes Per Second competition.

While tainted by the previous arpeggiation scandal that led to the banning of all electronic instruments, the appeal remains of musicians playing as many notes as they can, as fast as they can, regardless of any musical relevance.

2

The Golden Ears Acting competition.

This new event involves acting abilities for the very first time, and is open to audiophiles as well as musicians. The competitors listen to music with a 192kHz sample rate, and whoever does the most convincing job of making the judges think they actually hear a difference wins the competition—as well as gets to sign an endorsement deal with the famed fashion line, “Emperor’s New.”

3

The Website Money-Making marathon. In this marathon, musicians are given two weeks to try to make over \$22.50 from selling their music on the web. Although there haven’t been any winners yet, the Olympic committee keeps hoping that 2014 will be the year. Or maybe 2018.

4

The P.A. Speaker Toss event. Calling all muscle-bound roadies! In this replacement for the groupie-juggling event of previous Olympics, contestants are given “portable” P.A. speakers, and whoever can toss them the furthest wins. In the event of a tie, the speaker tosser who causes the most damage wins—and as an additional reward, will be recruited immediately by UPS.

5

The DAW Bootup Race Against Time.

Competitors are all given identical \$399 Windows laptops from Office Depot—complete with unfathomable amounts of bloatware—along with installation discs for a DAW (as chosen by OSC, the Olympic Software Committee). Contestants then try to beat the world’s record time of 22 hours, 36 minutes, and 12 seconds from first turning on the computer to recording an actual audio track. Sorry, but insiders expect the current record to stand.

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