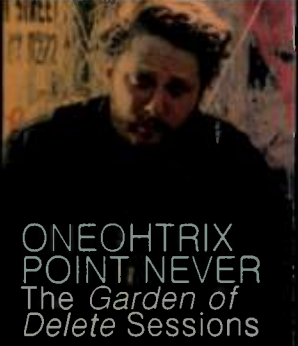
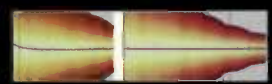


# electronic MUSICIAN

RECORD • PRODUCE • PERFORM



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POINT NEVER  
*The Garden of  
Delete Sessions*



MELODYNE  
Tricks You've  
Never Tried

MASTER CLASS  
Making the  
Most of Free  
Plug-Ins

FIVE  
QUESTIONS  
With Tony  
Bongiovi



## THE ANNUAL ROCK STAR HOLIDAY GIFT GUIDE

STUDIO GEAR WISH LISTS FROM

My Morning Jacket Duncan Sheik Black Violin The Decemberists Dawes The Dap-Kings  
Sylvia Massy The Preservation Hall Jazz Band Chris Lord-Alge Silversun Pickups Kishi Bashi  
Jean-Michel Jarre Galactic Seven Lions Kevin Killen Robot Koch and more!



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### REVIEWS

ROLAND  
System-1m

AKAI  
MPD232

BOSS  
SY-300

ROB PAPER  
eXplorer  
III

HEAVYOCITY  
Gravity

SAMPLE LOGIC  
Cinematic  
Guitars  
Infinity

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DX

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For anyone who prefers the hands-on experience of hardware sequencing, the BeatStep Pro is a dream come true. It offers two independent sequencers, each with 64 steps per sequence. An onboard 16-track drum sequencer allows real-time recording and old-school step sequencing available.



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The Launchpad Pro offers a simple way to create dynamic, expressive performances in Ableton Live. Its velocity- and pressure-sensitive RGB pads light up to match the color of your clips, so you can easily control your performance. Drums spread across the whole grid, while instruments illuminate as a chromatic keyboard, making it easy to create beats and play notes, melodies, and chords.



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10  
COMMUNITY



14

**NEW GEAR**

Products from Roland, Yamaha, Roli, and more!

16

**MOD SQUAD**

Slimline modules with tons of features



18

## THE ANNUAL ROCK STAR HOLIDAY GIFT GUIDE

We asked dozens of artists and producers for their studio gear wish lists.

### HOW TO

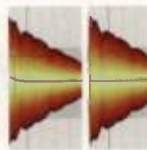
58

**MASTER CLASS**  
Make the most of free plug-ins



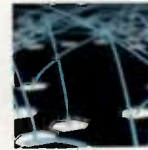
66

**PRODUCTION**  
Melodyne tricks that go way beyond vocals



68

**MASTERING**  
Preparing for long-distance sessions



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# FIVE QUESTIONS

Tony Bongiovi Reflects on a Five-Decade Career



# PLAYLIST

New releases from Black Violin, Deerhunter, Cheatahs, and more!



34

## ONEOHTRIX POINT NEVER

Experimental electronic artist Daniel Lopatin takes us inside his Brooklyn studio Dungeon, where he created the dark, atmospheric *Garden of Delete*.

## GEAR REVIEWS



40

**ROLAND  
SYSTEM-1M**  
Plug-out synth



42

**AKAI  
MPD232**  
Pad controllers



46

**BOSS SY-300**  
Guitar synth



50

**ROB PAPEN  
EXPLORER III**  
Instrument and effects bundle



54

**HEAVYOCITY  
GRAVITY**  
Virtual instrument



56

**SAMPLE LOGIC  
CINEMATIC  
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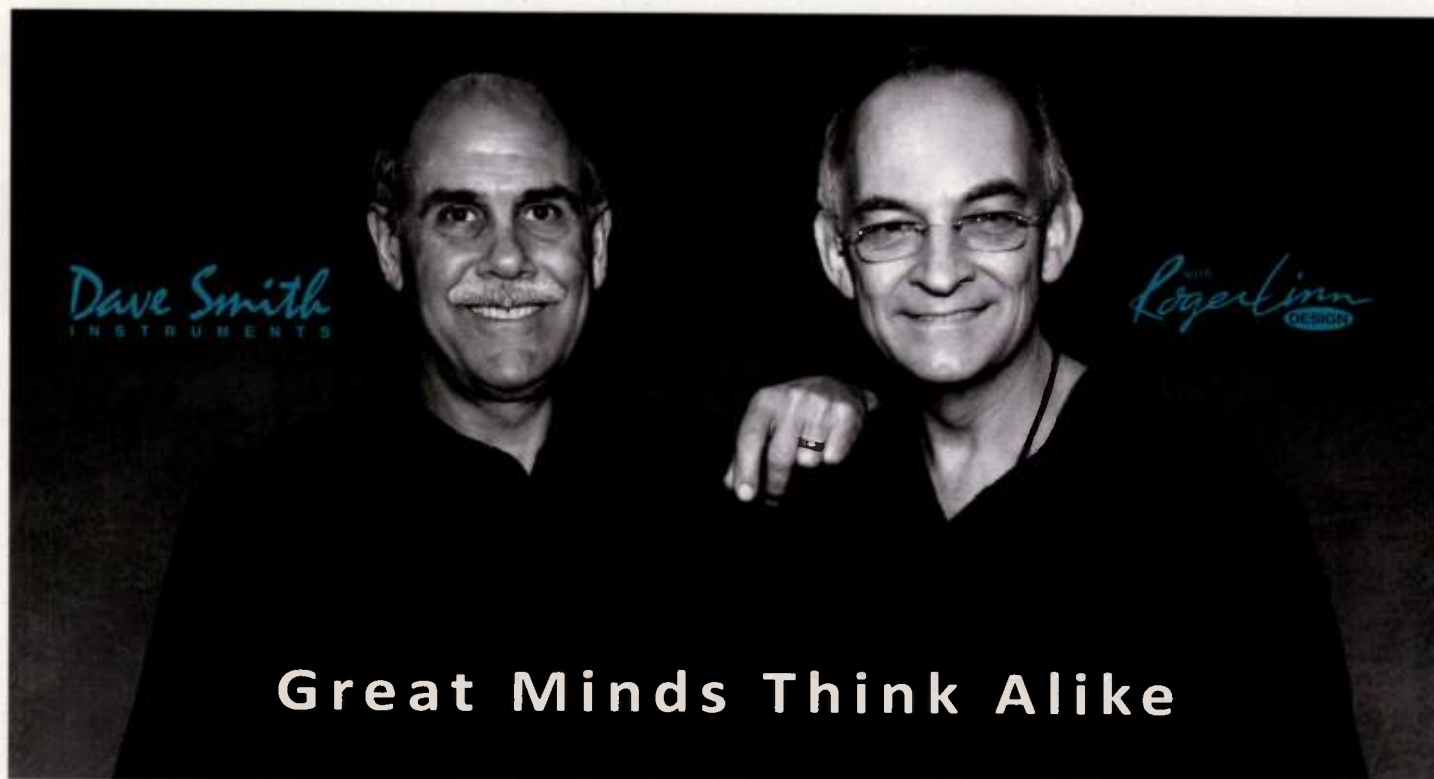
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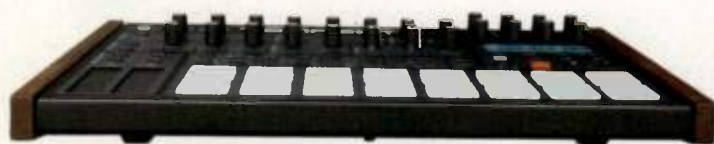
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insight

## Get Your Gift On

IT'S DECEMBER, that time of year when we can finally give in to gear lust without (too much) guilt. Hey, we're just doing some holiday shopping, amiright?

Whether you're scouting out the perfect studio presents for the deserving folks on your list or perhaps looking to get yourself a little something special, we're here to help kick off the season with our annual Rock Star Holiday Gift Guide.

As usual, we hit up superstar artists, producers, and engineers for their gift suggestions for recording musicians, and they did not disappoint. We got some pretty wild, money's-no-object recommendations, but the great news is, rock stars like a good deal just as much as the rest of us do, and they provided plenty of affordable alternatives, from bargain headphones to funky iPad apps to a classic studio card

game. (There's even a DIY option for anyone who has a few pieces of common studio gear and some duct tape.)

So whether you're a jet-setting DJ or a musician recording at home, we have something for you. Check out our cover story, beginning on page 18, and get inspired by these fun—and more often than not, practical—finds.



**SARAH JONES**  
EDITOR

[sjones@musicplayer.com](mailto:sjones@musicplayer.com)

# electronic MUSICIAN

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WEB HIGHLIGHTS

**This month on  
emusician.com**

**Oneohtrix Point Never**  
walks us through his racks

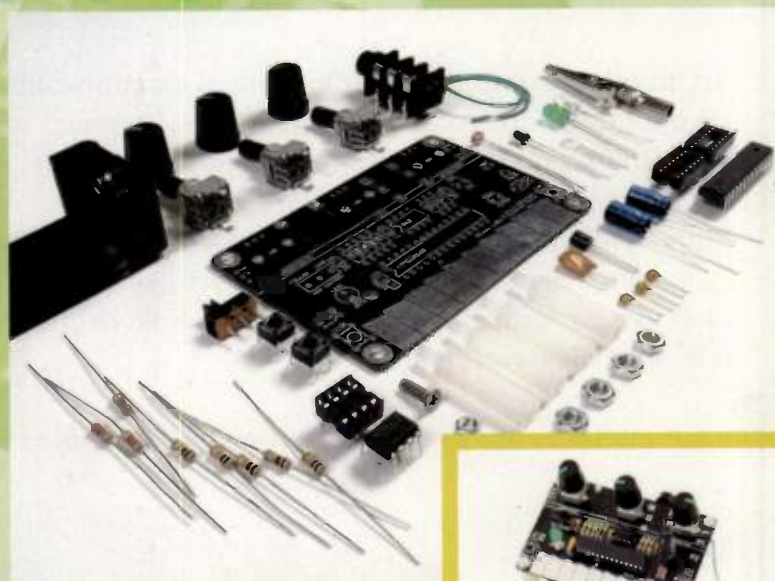
**Plus...**

The DIY Advisor: 7 PR tricks that every musician should use  
Classic Interview: Robert Fripp

...and lots  
more!



## gadget geek



### Tiny Tweaker The Nebulophone

Looking for an excellent stocking stuffer for the musical DIYer on your holiday list? Look no further than the Nebulophone (\$58.99), a wee Arduino-based synth that features a stylus keyboard capable of playing six octaves; a programmable sequencer that lets you record, play back, and manipulate custom arpeggios; a light-controlled analog lowpass filter with five adjustable LFO LED modes; and even a hidden HYPERNOISE 30xx mode. (What's that, you ask? Visit makershed.com to find out.)



## Beat it til the wheels fall off

**PEOPLE** “REINVENT” the drum machine all the time, but Patterning for iPad (iOS 8.1 or later, [olympianoiseco.com](http://olympianoiseco.com)) presents a beat-making system that is both fast and liberating. It comes with many great sounds to boot. Drum patterns have eight tracks, each represented by a segmented circle, like a wheel whose spokes divide the steps of the beat. With these circles, you can quickly tap and draw in beats, duplicate and add to patterns, and string as many patterns as you want into songs.

**1.** In a new file, go to the Drum Kit tab and select one of the five dozen kits that represent lots of genres, eras, and unique flavors of electronic drums. Or build your own kit from all the samples, including your samples you import from Dropbox, iCloud, or AudioShare.

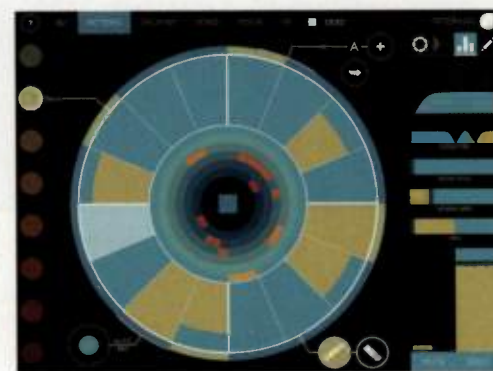
**2.** Under the Pattern tab (pictured), for each kit track, enter beats with the segmented circle, using the height of the segment to control the volume of each hit. You can alter the timing

of each pattern track by changing the step duration, changing the number of repeating steps (1-64 steps), changing playback mode (forward, reverse, “pendulum,” etc.), or by adding an auto-rotate function. In this way, you can create any standard beat, intricate polyrhythms that vary with each other endlessly, or anything in between.

**3.** You can edit each pattern’s individual sound with a synth parameters page and an effects engine offering delay, reverb, and three filter types. A Mixer pages gives you eight channel strips as well as master volume and effects.

**4.** On the Song page, you can string an unlimited number of patterns onto a song timeline that gets saved with your file. You can send Patterning’s eight drum tracks to eight MIDI track outputs or record its audio using either Audiobus or Inter-App Audio.

Roll to the iTunes App Store and pick Patterning for \$9.99.



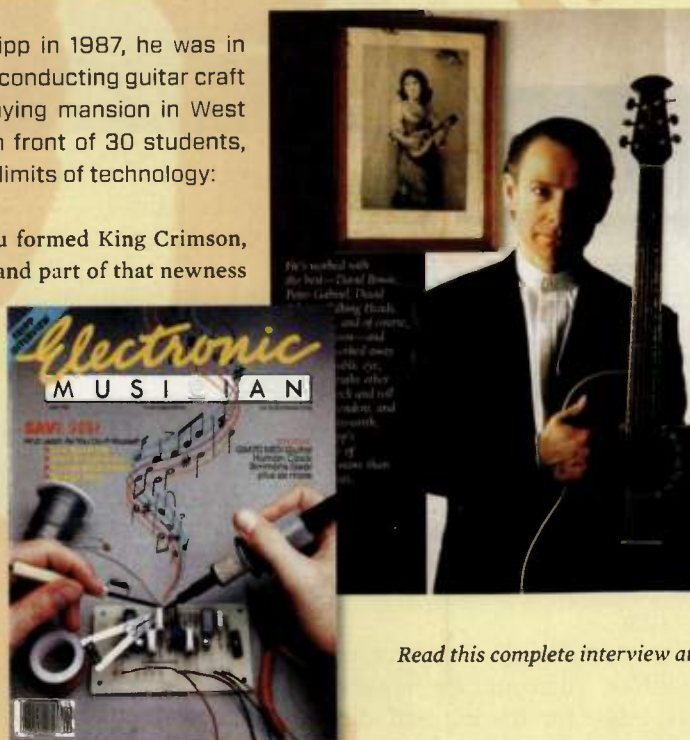
## CLASSIC EM

## Robert Fripp, June 1987

**WHEN WE** caught up with Robert Fripp in 1987, he was in semi-retirement for the second time, conducting guitar craft seminars at Claymont Court, a decaying mansion in West Virginia, where we interviewed him in front of 30 students, and Fripp waxed philosophical on the limits of technology:

**EM:** Bill Bruford said that when you formed King Crimson, you wanted to do something very new, and part of that newness was that you all had new instruments. You and Adrian Belew had guitar synths; Tony Levin played the Chapman Stick.

**Fripp:** My interest in new technology is new music, but people will rarely thank you for interrupting their playing habits. They will maybe allow you to interrupt their playing habits for six to 12 months, and then there will be a change. And they might thank you years later, but at the time, they won't thank you.



## Zen & the Art of Fripp's Guitar



Read this complete interview at [emusician.com/fripp](http://emusician.com/fripp).



## SPOTLIGHT Moog Mother-32



Synthesists who have been pining for a Eurorack-compatible Moog are lining up to get their hands on the Mother-32, Moog's first tabletop, semi-modular analog instrument. The monosynth features a voltage-controlled 32-step sequencer with 64 sequence locations, Moog Ladder Filter, 2 voltage-controlled mixers, a classic Moog oscillator with dual outputs, wide-range LFO with audio-rate modulation capability, MIDI input and MIDI-to-CV conversion, white noise, a modular patchbay with 32 patch-points, and an assignable CV jack with 16 assignable sources.

Optional accessories include 6"

and 12" patch cables, 2-tier and 3-tier rack kits, 60HP Moog Eurorack case, and soft carrying case.

The unit is enclosed in a black, laser-etched aluminum enclosure with wood finishing and is entirely hand-built in Asheville, NC.

\$679; [moogmusic.com](http://moogmusic.com)



## CONTEST ALERT

### Win Free Mastering At Abbey Road!



SOME OF the greatest rock albums in history bear the stamp of London's legendary Abbey Road Studios, from *Dark Side of the Moon* to landmark records by Oasis and Radiohead, to every iconic album by The Beatles, of course. How would you like to add your music to that list?

To celebrate the re-launch of Abbey Road's online mastering service, Abbey Road and *Electronic Musician* are launching a competition: Submit your best mix of an original song, and a panel of judges from the Abbey Road mastering team will select their favorites; the three top tracks will earn free remote mastering by Abbey Road engineers. Select winners will also receive their choice of Waves Abbey Road plug-ins, which model the studio's legendary consoles, mics and other gear.

#### PRIZES

**One grand prize winner** will receive free mastering of four original tracks, plus one plug-in from the Abbey Road Collection.

**One second prize winner** will receive free mastering of one original track plus one plug-in from the Abbey Road Collection.

**One third-prize winner** will receive free mastering of one original track.

All entrants will receive a 10 percent discount on remote mastering services for tracks sent direct to Abbey Road (voucher valid through March 2016).

#### HOW TO ENTER

Submit one original song, no longer than five minutes, to [abbeyroad.com/emusiciancompetition](http://abbeyroad.com/emusiciancompetition). One entry allowed per person. Deadline is December 31, 2015.

For additional contest details, rules, and entry instructions, visit [abbeyroad.com/EMusicianCompetition](http://abbeyroad.com/EMusicianCompetition).





## >> Best Behavior with John Meredith

THE DEBUT album from Best Behavior, *Good Luck Bad Karma*, is frontman Alex Gruenberg's breakup record: Gruenberg found himself in a creative frame of mind after suffering a romantic split and parting from his previous band. Next thing he knew, out poured new songs, starting with guitar-and-vocal demos, recorded to his iPhone.

"From there, I'll go into Logic," Gruenberg says. "I had preconceived what everything would sound like. I had a moment where I was listening to Ty Segall's song 'Girlfriend,' and thought, I need to get back into writing garage rock."

*Good Luck Bad Karma* has a fabulous reverberated '60s punk feel, thanks to the techniques that were used when Gruenberg recorded the songs, one instrument at a time, in John Meredith's Molusk Studios (Queens, N.Y.).

"Alex asked if he could work here, and we tracked a whole song that day, start to finish," Meredith says.

After that first day, they worked at nailing down the rich, reverberant sounds of the album. "Usually I record live bands in my studio, and we go quickly," Meredith says. "But Alex was doing most of the parts himself, so it took longer to do everything." And Meredith means everything—he handled the project from tracking through mixing and mastering.

Meredith's Pro Tools-based studio is situated in the basement of his home. He describes his 20x14-foot main tracking room as "just big enough" for live band recording. But recording piecemeal with Gruenberg, he had space to infuse the tracks with a roomy sound.

"My vocal chain was usually an ADK 51 tube condenser through an API pre and a Fatso compressor and then run the input via Burl B2 Bomber converters to give it more character.

"We worked on guitar sounds quite a bit," Meredith continues. "His [Fender Deluxe Reverb] amp sounds terrific, which helps. A [Shure] 57 is always sort of a go-to mic; I also used a Royer 122 in the back, and a Beyers M201 right next to the 57, with both pointed directly at the edge of the speaker, directly in phase. I love the 57 with the 201, because 201 adds a lot of body. They just seem to play well together. Sometimes I'll add a little of the Beyer and sometimes a lot. So, I'd have four tracks for every guitar pass, because I'd have a room mic, too."

Meredith ran guitar mics through API 3124 mic pre's, and through the Burl. "After that," he says, "it's plug-ins, plug-ins, plug-ins." Meredith says he employs Universal Audio's UAD Ampex 102 on almost everything. He also favors Waves' SSL and API emulations, as well as the stock EQs in his Pro Tools rig.



MIKE PRIETO



As for drums, "Other than some crash cymbal overdubs that I played, they're all fake," Meredith says. "Alex had a Roland SBX drum pad. He played fake drums to the song, and then I would spend a couple of days editing and making the dynamics sound like a real drummer, and then we re-amped some of the tracks thru a P.A. or bass amp, but mostly that was all MIDI in the box."

However, there's lots of real, miked, and re-amped tambourine on the album. "Tambourine is a big part of the sound," Meredith says. "The cymbal crashes are sort

of subliminal, but they make a huge difference."

Vocal and guitar sounds were re-amped to add layers of reverb and distortion. "My Danelectro and '65 Fender Deluxe Reverb were the cornerstone of the sound," Gruenberg says. "I wanted vocals and guitars to be re-amped to get that washed-out reverb."

"Any time you have multiple mics or sources, you always have issues with phase," Meredith adds. In addition to the ADK vocal mic, I had a 57 running through his Fender amp, and we had a room mic on the amp, too. On a couple songs Alex sang through the 57, and he got terrific vocal takes, but then we had to do a lot of work to make it sound pro, and then re-amp his vocals and get everything in phase. We struggled a little with that—he usually wanted more reverb and more grit, and I would say, 'Yeah, but we need clarity.' I think we ended up at a really good middle ground."

It was actually after completing the album that Gruenberg formed the band Best Behavior with bassist Alex Heigl, drummer Chris Jimenez, and guitarist Jon Mann. Now, Gruenberg has a group that can bring to life the sounds he envisioned on his own. "The best way to really get music out there is to tour," Gruenberg says. "People want to watch you sweat and bleed all over the stage."





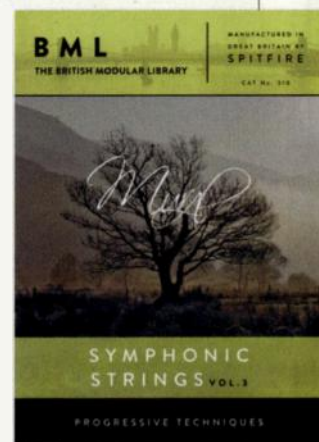
1



3



2



4

**1**  
**YAMAHA**  
**VOCALOID 4**  
Voice synthesizer  
**\$130**

**HIGHLIGHTS** Cyber Diva female voice library sings in American English • input words and melodies to create authentic-sounding vocal parts • Growl Expression parameter adds harsher tone • use the Windows-based Vocaloid4 Editor or Vocaloid Editor for Cubase to compose and synthesize the voices from the data library; offers cross synthesis, pitch render, and other features

**TARGET MARKET** Producers, composers, musicians

**ANALYSIS** State-of-the-art virtual-voice technology for creating realistic-sounding female singing parts.

[vocaloid.com/us](http://vocaloid.com/us)

**2**  
**ROLAND**  
**BOUTIQUE SERIES**  
Analog-modeled synth modules  
**\$299-\$399**

**HIGHLIGHTS** Three limited-edition modules—JP-06, JU-06, JX-03—that re-create the classic tones and programming interfaces of vintage Jupiter 3, Juno-106, and JX-3P synths • use as tabletop MIDI devices or mount in the K-25m keyboard (\$99) • dual ribbon controllers • step sequencer • built-in speakers • MIDI I/O • USB or battery power

**TARGET MARKET** Musicians, producers, DJs

**ANALYSIS** Affordable and desktop-friendly ways to add classic Roland synth sounds to your music.

[roland.com](http://roland.com)

**3**  
**NOVATION**  
**CIRCUIT**  
Grid-based groove box  
**\$329**

**HIGHLIGHTS** Combines two Nova synthesizers (6-note polyphony each) with 4-part drum machine • 4x8 velocity-sensitive grid sequencer with 3-color buttons • built-in effects including sidechain • controls for pitch, decay, distortion, and EQ • stereo outputs • built-in speaker • headphone output • USB and MIDI I/O • powered by batteries or USB • includes Ableton Live 9 Lite software

**TARGET MARKET** Producers, DJs, musicians

**ANALYSIS** A portable and inexpensive, yet powerful beat creator and polyphonic synth with onboard controls for easy programming and editing.

[us.novationmusic.com](http://us.novationmusic.com)

**4**  
**SPITFIRE**  
**BML310 MURAL SYMPHONIC STRINGS VOL. 3**  
String sample library  
**£399 (about \$600)**

**HIGHLIGHTS** Orchestral strings recorded to tape with ribbon mics through Neve preamps and converted to 24-bit/96kHz files for use in Native Instruments Kontakt • includes 92.5GB of uncompressed WAV files • provides a wide variety of bowed and plucked articulations • Ostinatum pattern creation feature

**TARGET MARKET** Composers, musicians, performers

**ANALYSIS** A large resource of orchestral string sounds for use as a standalone library or combined with Mural Symphonic Strings volumes 1 and 2.

[spitfireaudio.com](http://spitfireaudio.com)

All prices are MSRP except as noted





**5**  
**NATIVE INSTRUMENTS**  
**REAKTOR 6**  
 Modular DSP environment  
**\$199; \$99 update**

**HIGHLIGHTS** New Blocks framework allows for modular-synth style patching; 30 blocks are included (oscillators, filters, modulators, effects, etc.) • advanced programming features such as Table Framework data sharing, bundled wire multicore cables, and scoped busing • improved Core library macros • new anti-aliasing oscillators • redesigned GUI

**TARGET MARKET** Musicians, composers, producers

**ANALYSIS** A significant update to a powerful programming and sound-design environment with major improvements in sound and usability.

[native-instruments.com](http://native-instruments.com)

**6**  
**PLUGIN ALLIANCE**  
**BRAINWORX**  
**CLASSIC GUITAR**  
**TONES BUNDLE**  
 Virtual amp and stompbox plug-ins  
**\$345**

**HIGHLIGHTS** In addition to the bx\_bassdude virtual amp (based on the vintage Fender Bassman), the bundle includes four new Brainwork stompbox emulations • bx\_distorange models the Boss DS-1 distortion pedal • bx\_yellowdrive models the Boss SD-1 overdrive • bx\_bluechorus emulates the Boss CE-2 chorus • bx\_greenscreamer is a model of the Ibanez TS-808 Tube Screamer • 14-day demo available

**TARGET MARKET** Guitarists, engineers, musicians

**ANALYSIS** High-quality, native guitar processing plug-ins for stage or studio use.

[plugin-alliance.com](http://plugin-alliance.com)

**7**  
**ROLI**  
**SEABOARD RISE**  
 Polyphonic multidimensional controller  
**\$799**

**HIGHLIGHTS** 25-note/keywave gestural device providing Express MIDI control over x, y, and z axes • onboard controls to scale each axis • wireless with MIDI over BlueTooth • bundled with Equator multidimensional software synthesizer • two USB ports • 1/4" continuous pedal input

**TARGET MARKET** Performer/instrumentalists, keyboardists

**ANALYSIS** In addition to being the first polyphonic multidimensional controller priced under \$1,000, Rise includes software that allows you to take full advantage of the controller's gestural options.

[roli.com](http://roli.com)

**8**  
**SPUTNIK MODULAR**  
**DUAL OSCILLATOR**  
 Eurorack module  
**\$549**

**HIGHLIGHTS** Two independent analog VCOs under one panel that can be linked with an internal bus for FM, AM, and timbre modulation purposes • LFO mode on Generator 1 • Timbre waveshaping available manually or with CV • CV control over even/odd and low/high order harmonics • sync switch

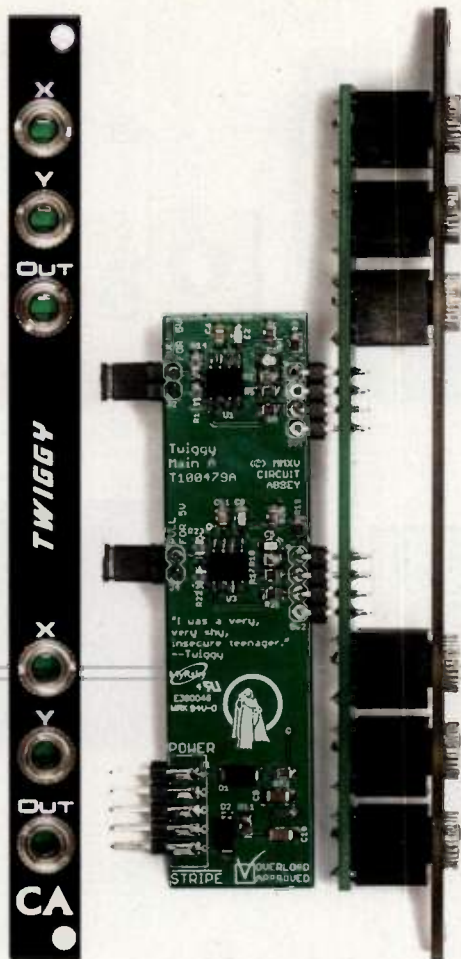
**TARGET MARKET** Musicians and composers who use modular synthesizers

**ANALYSIS** Inspired by the design of the vintage Buchla 259 but available in the popular and affordable Eurorack format.

[sputnik-modular.com](http://sputnik-modular.com)



Circuit Abbey Twigg

Meng  
Qi Dual  
Passive  
Lowpass  
GateQu-bit  
Electronics  
Eon

## Three for 2

### A TRIO OF MODULES THAT FILL 2HP GAPS IN YOUR RACK

BY GINO ROBAIR

**I**t never fails: You scrimp and save to buy your favorite Eurorack modules, only to find that a slight miscalculation has left you with a tiny unfilled space in your rig. And *nobody* wants that!

Until recently the solution was to use either a blank or mult panel, but I've found three products that will fill that 2HP hole with something far more useful and exciting.

#### CIRCUIT ABBEY TWIGGY

Like its namesake, if this module were any slimmer, it would disappear. Utilizing the Analog Devices AD633 four-quadrant analog multiplier chip, the Circuit Abbey Twigg ([circuitabbey.com](http://circuitabbey.com); \$99) puts two ring modulators at your fingertips. Because the multipliers are DC-coupled, you can use them effectively with control voltages. Consequently, when dynamics control is needed, the circuits can be drafted into service as VCAs or CV-controlled attenuverters.

#### MENG QI DUAL PASSIVE LOWPASS GATE

It's not uncommon to have more modules than power-bus connectors. But before you reach for that passive mult, check out the Meng Qi Dual Passive Lowpass Gate ([zlobmodular.wordpress.com](http://zlobmodular.wordpress.com);

\$60 street). As its name implies, the DPLPG requires no power but gives you a pair of 1-pole (6dB/octave), vactrol-based LPGs/VCAs in a skiff-friendly module. According to the manufacturer, the vactrols are hand-picked for their musicality. And at this price, the DPLPG is almost an impulse buy for those who can't get enough of

that "Buchla bongo sound."

#### QU-BIT ELECTRONIX EON

If you really want to get the most out of those two blank spaces, check out the Qu-bit Electronix Eon ([qubitelectronix.com](http://qubitelectronix.com); \$150). It not only has three main operational modes—square wave oscillator (tracking 1V/oct), envelope (linear or exponential), and digital noise (with down-sampling capabilities)—it can produce random gates, cycling envelopes, and an LFO with a triangle waveform. The two outputs provide the added functionality based on the mode you're in—envelope and end-of-attack gate, square wave oscillator plus triangle-wave LFO, or noise and random gate output. Eon is the kind of module you'll use for many years to come. ■





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# The *Electronic Musician* Rock Star Holiday Gift Guide



## Brian Setzer

This holiday season, The Brian Setzer Orchestra can be found touring the US on their 31-city Christmas Rocks! tour in support of *Rockin' Rudolph*, their first studio Christmas album in a decade. So when we caught up with Setzer, he was full swing in the holiday spirit and ready to rock his fantasy wish list.

"Welcome to your dream 'sky's the limit' jam session! A custom-built rehearsal studio has been built for you made of reclaimed wood from an old barn (adds to the vibe of your gift). Guitars and amps of your choice, new and old, are here. Just imagine plugging your new '53 Telecaster into your Bassman amp. Your band would be your favorite musicians. Let's start with Jeff Beck backing you up on guitar, Vince Gill strumming a little mandolin, Flea on the bass, and for a good, solid backbeat, Ringo has agreed to sit in on drums! Let the jam session begin!"

Setzer brings things back down to earth for his practical gift suggestion—or as he calls it, "your practical, cost-effective idea daily regimen: Pencil, music notation paper, tape recorder (Sears brand circa 1975)! Imagination!"



BY SARAH JONES AND BARBARA SCHULTZ

It's the most wonderful time of the year—when we call up some of our favorite artists, producers, and engineers to ask what's on the top of their holiday wish lists. Per our own little holiday tradition, we ask each person for a “sky's the limit” suggestion for those two-percenters out there, and a low-cost alternative for the rest of us. There's a perfect present here for every special person on your studio shopping list. Maybe pick up a little something for yourself while you're at it.



### Chris Funk

Multi-instrumentalist, engineer, producer, and studio owner Chris Funk is a member of The Decemberists and Americana group Black Prairie. His recent credits include Red Fang's *Murder the Mountains*; Black Prairie's collaborative album with the Old 97s' frontman Rhett Miller, *The Traveler*; and Langhorne Slim's *Be Set Free*.

“On the lower end: a set of Oblique Strategy Cards (\$45). It's a box of playing cards created by Brian Eno and Ben Frost. When Eno was in the studio with Bowie, they would they would use these cards; there were all these random things written down like, ‘Close the door and go listen to it from outside the studio.’ Or the next

one would be, ‘Use filters,’ or ‘Start over.’ So when you're recording, if you're in a pickle, you can pull something from the Oblique Strategy set. We got into them when we were recording with Chris Walla from Death Cab [for Cutie]. It's a lighthearted way of approaching a moment of question in the studio, or to get you out of those patterns and ruts you can get into.

“On the more expensive side, there are some great compressors like the Retro Sta-Level (\$2,695). They're very tactile and simple, and there's not many options. I really like pieces of gear that don't have options, because I don't want to have to spend three days learning how to use it. I like to work fast—something where you're just capturing the source and it sounds good.”







## Jean-Michel Jarre

Electronic pioneer Jean-Michel Jarre has been pushing the boundaries of electronic music since he released 1976's *Oxygène*, which went on to sell 18 million copies worldwide.

Part two of his new double album, *Electronica*, will be released in the spring.

Jarre puts the dream in "dream gift": "A fully equipped ideal electronic music studio, in which you could find a modular Moog beside the Fairlight, a Theremin next to the TR808 & TR909, Memory Moog next to the Nord Lead, Jupiter 8 beside the Korg Polyphonic synth, a Mellotron next to the Synthex, the VCS3 beside the ARP2600 and lots of other toys, connected to giant touchscreen with Ableton Live and all plug-ins, and a pair of big Genelec speakers. This is not so far off from my current studio, but this needs a big bay window overlooking the ocean!

His down-to-earth picks? "Teenage Engineering OP-1 (\$850) or the Animoog app for iPad (\$24.99)."



## Kishi Bashi

Kishi Bashi is the project name of multi-instrumentalist/composer/vocalist Kaoru Ishibashi, who also plays with Of Montreal and was a founding member of Jupiter One. His latest project, *Kishi Bashi String Quartet Live* is out now on Joyful Noise Recordings.

"I really like this Nudeaudio Move M bluetooth speaker (\$69.99) that I have. It was a gift to me, and I would give it as a gift as well. It's pretty small, but it has incredible bass response and a really even sound. I take it on tour with me all the time—just for my own enjoyment. I have it backstage and everywhere I go. It's a much better value than some of the other stuff out there; it definitely beats putting your phone in a cup!

"A gift for dreamers would be the new Moog Modular Synth System 55 (\$35,000). I don't actually have any modular synths, but this is the one I would want if I could have any that I wanted. It's a replica of the original synth wall-thing that Stevie Wonder used, the Tonto."

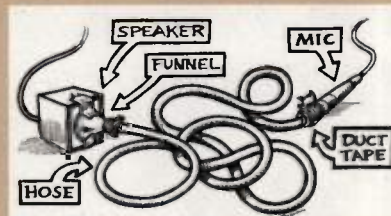


## Sylvia Massy

Producer Sylvia Massy has recorded albums for the likes of Prince, Johnny Cash, Tool, and the Red Hot Chili Peppers; she's famous for her unconventional studio techniques, which she shares in her new book, *Recording Unhinged* (Hal Leonard), available in early 2016.

"My latest discovery is the Soyuz SU-017 tube microphone (\$3,500). I put it up against a dozen vintage German microphones and was shocked at how good it was. I would recommend it for vocals, acoustic instruments, and anything else. They are hand-built in Russia, and you'll pay for that craftsmanship, as they are not inexpensive. But if you want to make an engineer really happy at Christmastime, you'll wrap up a pair of them!"

As far as Massy's practical suggestion goes, a picture is worth a thousand words, so she drew us a diagram (right): "If you are on my holiday gift list, you might get a garden hose, a funnel, an old Auratone speaker, duct tape, and an SM57 mic under your tree. This my favorite recipe for a do-it-yourself Cooper Time Cube analog delay. Just tape the funnel to the Auratone, connect the garden hose to the funnel, and tape the 57 on the other end. Put this device on an aux send and listen to it on vocals... a fantastic and economic delay effect!"



## James Towler

As the studio and FOH engineer for Steve Winwood, James Towler also manages and operates Winwood's Wincraft studios, where he recently mixed a new album from Black Feathers, and recorded and mixed Public Image Limited's latest release, *What the World Needs Now*.

"My low-budget choice would be an item from Overtone Labs; it's called a Tune Bot (\$99.95), and it tunes drums. It clips onto the rim, you tell it what key you want to tune to, and then you just go around the lugs tapping it. It's absolutely fantastic. I am no drum tuner at all, but with this, I'm good. It was actually PIL's drum tech, Stephen Cousins, who showed it to me.

"The big-ticket gift is the Digital Audio Labs Livemix (price range depends on system). Every studio needs a good monitoring system for the musicians, and that's often the most overlooked item in the studio. If you've got a bunch of musicians, you want them to be comfortable, so getting their mix right is the key to a great performance. I love Livemix because it works with my [Audinate] Dante system, and it's got ambient mics in it. There's a jack input so you can plug your iPhone into it to play music for other musicians without the person having to take the headphones off. It's just a really well thought-out box."





Rob Papen

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"One of the highlights of the RP-EQ is that you can dial in that shiny and glossy top end to your vocals. Also the saturation that's built in gives your EDM production that much needed oompf. Icing on the cake is the Mid/Side function to give your leads that bigness. So if you want it big and fat RP-EQ is where it's at!" - **Rob Fabrie** - DJ, Producer and EDM mastering specialist



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## Wil Baptiste, Black Violin

Viola player Wil Baptiste is half of the duo Black Violin, which brings together modern hip hop and R&B sounds and virtuosic classical strings. BV's new album, *Stereotypes*, includes guest performers Robert Glasper, Kandace Springs, Melanie Fiona, and Black Thought from The Roots.

"The budget item would be a computer. If you're a musician starting out doing some recording with a limited budget, you can do a lot with just a laptop, and there are so many free plugins that you can get. You literally have a studio if you have a decent computer—like a 2013 Macbook Pro.

"A dream gift item—if you'd asked me this a couple of years back, I would have said, 'an SSL board,' but now I'm into just warmth and natural, organic sounds. So, I would love to have, from one of the original Universal Audio consoles, the actual channel strip. As a matter of fact, I bought a UA DI preamp last week and I'm going to start using that on the road."



## Jay Newland

Jay Newland's career reached new heights after he produced Norah Jones' Grammy-winning debut. His credits also include Pat Metheny, Etta James, Paul Simon, and many more.

"The FMR RN 1773 'Really Nice' Compressor (\$200) is fantastic. It can go from clean, subtle, and transparent to a really nice smash for drums. Think 'When the Levee Breaks'.

"On the other end of the spectrum is a Teletronix (now UA) LA-2A Leveling Amplifier (\$3,500 new, up to twice that for the original). This is one of my favorite vocal compressors that sounds great on many other things as well. It's a staple at nearly every great recording studio in the world. I can't remember the last session I've done without one."



## Matt Armstrong, Murder by Death

Bass player Matt Armstrong is a member of roots-goth band Murder By Death, who have built a devoted national fanbase after playing together for more than a dozen years. Their latest album on the Bloodshot Records label is *Big Dark Love*.

"For the past couple of years, I've been a big fan of the Fuzzrocious pedals. The company is a total family operation: The dad builds them and the wife paints them. Or, for a small charge you can have one of their very young children paint it for you, which not only gets it to you faster, but they set the money aside for a college fund. Overdrives and fuzzes are their meat and potatoes, and they're totally up for doing custom weird things. I have one that's called the Grey Stache (\$145), which is essentially a big mouth but is designed to be very bass-friendly. They're really affordable and if their stuff breaks or screws up, they'll make it right.

"Lately the big ticket item that has tickled my fancy—though I've never gotten the chance to use it—is the AxeFX II preamp/processing unit (\$2,249.95) by Fractal. I went to see the band Failure when they got back together last year, and they're pretty much exclusively using that. It's an amp-modeling and effect-modeling unit with a floor controller."



## Qmillion

Grammy-winning producer/mixer/composer Qmillion, (Robert Glasper, Seun Kuti, Beenie Man) has just completed the mixes on Tweet's latest album *Charlene* (due in January), as well as production and mixing on a new release from Kenneth Whalum. Qmillion's compositions have been licensed for more than 50 film and TV projects.

"My budget item would be the Waves/Abbey Road Reel ADT (\$249). This baby is based off the Abbey Road Studios process of creating a double track (without actually doubling), using a tape machine. Of course, the Beatles used this method, and I find it incredibly useful as a tool not only on vocals, but also for spreading certain instruments in the mix to leave more room in the center for the main focus, or with sounds I want to fatten or make more rich. The tape emulation gives you drive and saturation control for more coloring options.

"If money's no problem, the Burl Vancouver B32 (\$2,299) allows you to mix in the box as you normally would, but then take up to 32 outputs, run them through Class A electronics, and sum the audio in an analog environment, for real headroom and warmth in your stereo mix. This is as close to a secret weapon for your mixes as there is; you'll get deeper and tighter bass, wider stereo imaging and clarity."







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## Kevin Killen

In his long and stellar career, five-time Grammy winning engineer/producer Kevin Killen has contributed to the success of a broad range of great artists, including Elvis Costello, Peter Gabriel, Kate Bush, U2, Bryan Ferry, Allen Toussaint, and so many more.

"For an everyday-budget item, I would choose the Sonnox Oxford Inflator plug-in (\$169). It's a most wonderful tool to bring life, presence, and analog warmth to your audio path. And it's so versatile, it can be used on anything.

"If the sky's the limit, I would choose an awesome set of reference monitors. I have always subscribed to the position that if you can truly hear what you are referencing then you will make better audio decisions. One of the best and most expensive purchases I ever made was [to buy] a set of ProAc Studio 100 Monitors, coupled to a Cello Encore Amplifier and Transparent Audio cable. It set me back close to ten grand back in 1993, but I have loved listening to that system each and every day."



## Ryan Heyner, Small Black

Guitarist/keyboardist/vocalist Ryan Heyner is a member of synth rock group Small Black. The band's third full-length album, *Best Blues* (out now on the Jagjaguwar label) was written and recorded in their Brooklyn personal studio called 222.

"A great budget holiday gift is the Arturia Beatstep Pro. It's a deep, powerful hardware controller and sequencer that can connect to virtually any musical instrument you throw at it—easily connect your favorite vintage synths or drum machines via CV and MIDI, or control all of your virtual instruments over USB. Beatstep Pro quickly becomes the composing engine of your studio. It's a great tool to spark melodic and rhythmic ideas and is so small and compact you can take it with you anywhere.

"On a bigger budget, the Studio Electronics Omega CODE 8 (\$4,999) is wonderful rackmounted eight-voice poly synth. One of the greatest features with this synth is you can have up to four completely different filters installed at the same time. There's amazing flexibility for sculpting your sounds with Moog, Oberheim, ARP, Roland, and Yamaha-inspired filters. All the synth you'll ever need."



## Chris Lord-Alge

Five-time Grammy winner Chris Lord-Alge has mixed albums by Green Day, Tina Turner, Stone Temple Pilots, Stevie Nicks, Bruce Springsteen, Bad Religion, Deftones, James Brown, and My Chemical Romance, to barely scratch the surface of his discography.

"The sky's-the-limit gift would be a pair of Barefoot MM27 monitors with the stands (around \$10,000). These are my favorite new speakers and are so clear and punchy, and are a dream to have. They are set up in front of my couch at my studio, so I can really enjoy the mixes and any music I like. The most fun I had was sitting there with Steven Tyler listening to AC/DC's 'Shoot to Thrill' from *Back in Black*. We laughed and cheered, and he became an instant fan of the speakers.

The practical gift would be the Focusrite Clare Series Thunderbolt interface (starting around \$499) or the Scarlett USB interface (starting at \$99). These sound fantastic. Add them to your laptop and favorite mic and a couple headphones. Having a portable setup is super important to any engineer or producer, and this makes it possible to record anyone anywhere—which is how you can get the gig!



## Gabriel Roth, The Dap-Kings

Musical multitasker Gabriel Roth is the co-founder of Daptone Records, and the bandleader, producer, songwriter, and bass player for Sharon Jones & The Dap-Kings, as well as a champion for analog recording.

His dream gift? "An acetate. The greatest gift I could think of would be to write, arrange, record, mix, and master a song specifically and uniquely intended for somebody I love. I would cut a single acetate and then destroy the multitrack and master tapes, charts, and any other remnant of the recording so that there would be no other trace of the recording or possibility of re-recording it. I might even slip the musicians a few roofies before the session so they don't even remember how the song went. That's a one-of-a-kind gift."

"I'm giving the new holiday LP by Sharon Jones & the Dap-Kings, *It's A Holiday Soul Party*, to everyone I know! I can't imagine a cooler gift than a nice vinyl 12-inch that features Sharon Jones singing a Hanukkah song!"





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## Wylie Gelber, Dawes

Gelber, the bassist for L.A.-based folk-rock band Dawes, is hands-on in the studio, building homemade instruments and gear to achieve his ideal sound.

Gelber's sky's-the-limit gift is "any sort of complete home stereo system by McIntosh. Pretty much everything they make could be put under the category of 'sky's the limit.' (prices run in the thousands). But they sound incredible. And what's the point of any music gear, if you can't listen to it right?"

His practical choice: "Sony MDR7506 headphones (about \$99). These are a timeless classic for any musician, in or out of the studio. As seen in any studio ever. And they've still got that classic look."



## Robert Mercurio, Galactic

In addition to playing bass in longtime (20 years and counting!) New Orleans-based funk group Galactic, Robert Mercurio is a partner in the band's studio. He co-produced (along with bandmate Ben Ellman) Lyrics Born's recent *Real People* release. Galactic's latest is *Into the Deep*.

"My any-budget item would be the Ampeg SCR-DI (\$199.99). It's a great overall DI, which is needed in any studio. There's also the added bonus that it is an exceptionally good bass DI.

"If the sky's the limit, I would choose a Telefunken ELAM 251 microphone (\$8,995). This is a wonderfully diverse large-diaphragm tube condenser that works great on everything."

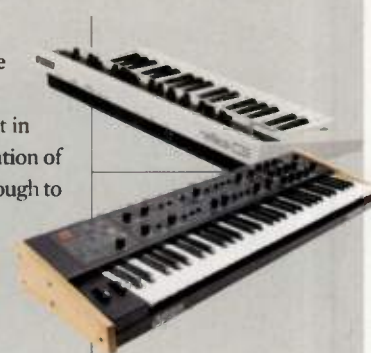


## Duncan Sheik

Grammy and Tony Award-winning singer/songwriter Duncan Sheik has continually evolved as an artist since his eponymous debut in 1996. He says his latest album, *Legerdemain*, is his most keyboard-centric to date.

"A reasonably priced gift could be the Yamaha Reface CS (\$499.99). Of the four units Yamaha just put out in their Reface Series, it is my favorite. There's ten or maybe a dozen knobs and sliders, and the instant gratification of being able to get exactly the kind of analog sound you're looking for is awesome. The interface is great—no menus to scroll through to find out how to change parameters. It's all right in front of you. There's also a cool looping feature, and a good effects section.

"My high-end gift would be the Sequential Circuits Prophet 6 (\$2,799), which I actually just got yesterday. I love it because I can get where I need to go really quickly without having to figure a lot out. The sound sets that are in there—there are 500 presets and another 500 that you can program yourself. Some of those presets are actually the same presets I got from the original Prophet 5. To have that in the mix is fantastic."



## Adam Ayan

Grammy-winning mastering engineer Adam Ayan has been a fixture at Gateway Mastering since 1998. His recent projects include Lana Del Rey's *Honeymoon*, Carrie Underwood's *Storyteller*, and Paul McCartney's *Out There Tour—Live at the Budokan*, and at press time, he was nominated for two Latin Grammy Awards for his work on Juan Luis Guerra's *Todo Tiene Su Hora*.

"For the budget gift: Westone flat frequency response ear plugs (pro models start around \$100). I am of the opinion that every musician and audio engineer should own a pair of these, and should use them often. They are made custom to your own ears, and because they are flat frequency response, they simply take what you are hearing and lower it in level, by the amount determined by the rating of the filters you purchase with them; I highly recommend the 25dB filters. They are comfortable to wear, and they do not change the color of the sound, making them fun to use. Great for rock shows, band rehearsals, and any other high-SPL situations. Protect your ears!

Ayan's sky's-the limit suggestion: Duntech Sovereign loudspeakers (\$13,000 and up). "These are my loudspeakers of choice, and what I have been using in my mastering room since we opened it in 2001. Very neutral, very revealing, and enjoyable to listen to for long periods of time. They will tell you things about your mix/music that you may have never heard before. I believe that the best way to improve any studio is to start with the monitor path. Make it the best it can be and your work will get better by leap and bounds."



## Carl Broemel, My Morning Jacket

My Morning Jacket has been touring this fall in support of their newest release, *Waterfall*. MMJ guitarist Carl Broemel would like a recording room in his stocking this year.

"The sky's-the-limit gift for me would be a complete freestanding prefabricated backyard studio space—something similar to the studio-shed.com Summit Series. Please put a bow on it, thanks!"

A more realistic alternative: "The Radial EXTC (\$259). With this, you can dust off any old pedals you already own and use them in an effects send, which is way more fun than an expensive new plug-in."





# The Spirit of Analogue



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## Joe Lester, Silversun Pickups

L.A.-based Silversun Pickups have been cranking out loud indie rock since they emerged out of the Silverlake scene in 2002; *Better Nature*, their first record in three years, was released in September. Keyboardist Joe Lester shared his gift picks.

"We have a pretty modest demo studio setup in our rehearsal space and until recently, our demoing process has been pretty basic: Throw up a couple mics and just try to get ideas down. But as we started to work on our new record, I got more interested in the actual recording process and learning to make things sound good. We don't have too much space for a bunch of outboard gear, so I started looking around at smaller pieces that could be useful and found the Eventide Mixing Link Preamp (\$299). Plenty of stuff has been written about this little guy, and you can add me to the list of people who really dig it. It really is a Swiss Army knife of a box. We used it for vocal effects, running instruments through iPad apps and as a nice, transparent preamp for direct guitars and things. The possibilities are pretty limitless. For the money, you get a lot of tools.

Feeling spendy? Lester recommends the Korg MS-20 Kit (\$1,399): "On the pricier side, but not too pricey, there's this bit of awesomeness. We've used an MS-10 or an MS-20 on every record we've made in some way or another. They're just so great sounding and so versatile. You can get the MS-20mini for \$500 or so, but I have sausage fingers and mini keyboards are kind of bumme for me. Also, I love building stuff, so when they announced they were putting out a full-sized MS-20 with MIDI and USB functionality that came as a DIY build kit...Sign me up."



## Jesse Parmet, The Yawpers

Jesse Parmet plays guitar in Denver-based roots rock outfit The Yawpers, a band he helped found in 2011. The Yawpers' second full-length album, *American Man*, is out now.

"On a practical-type budget, I like the Shure 520DX Green Bullet (\$119). It was designed as a blues harp microphone, but it can be fun to use on other instruments—anything that you want to give a low-fi kind of dirtiness to. I've used it to overdrive acoustic guitars, piano, vocals, anything. Also, there's a built-in 1/4-inch connector that plugs right into an amp, so you have the option of capturing a second source from the amp. You could run the mic directly through effects pedals, so there's a lot of room for experimentation there.

"Something that's out of my budget—but I have worked with them before—is a pair of Coles 4038s (about \$2,800). They're incredibly sturdy, and they have that classic ribbon microphone warmth to them. They bring out that warmth and depth from acoustic instruments especially, but I would also use them on guitar and bass cabinets. They have provide a unique full-bodied, darker tone, which I love."



## Lawrence Manchester

Grammy-winning engineer Lawrence Manchester's credits include recording orchestral music for Martin Scorsese's Academy Award-winning film *The Departed*, and projects for Broadway shows and pop stars such as Beyonce and Bono, in addition to his regular gig as the music mixer/producer for NBC's *The Tonight Show Starring Jimmy Fallon*.

"On a lower budget, a pair of Audio-Technica ATH M50 headphones (about \$150): As a mixing tool, they sound wonderful, are terrific when recording musicians (both instrumentalists and vocalists), are collapsible and thus easy to travel with, and come in a few color choices. They are a true workhorse for me, and I own several pairs.

"On the other end of the audio spectrum, my second gift idea would be a professionally built mastering-grade listening room (\$all the money in the world). I can't overstate the joy that comes from hearing music in a room that's been perfectly designed, tuned, isolated, furnished, and equipped for the sole purpose of listening. It can change one's life!"



## Robot Koch

Berlin-based producer Robert Koch, aka Robot Koch, was a member of the band Jahcoozi before venturing on a solo career. His latest album, *Hypermoment*, was released in November.

"I agree with Nikola Tesla who said, 'The mind is sharper and keener in seclusion and uninterrupted solitude...be alone; that is the secret of invention.' That's why my ideal gift would not be a piece of gear or an instrument but a month or two at a place where one can write music in seclusion, free of outside influences. This can be anything from a cabin in the woods to a house overlooking a cliff—just someplace where ideas can be born in solitude."

For a cost-effective gift, Koch says "there are lots of great free plug-ins available online. I use the Tal-Dub delay effect a lot for example; it's fun and it's free."



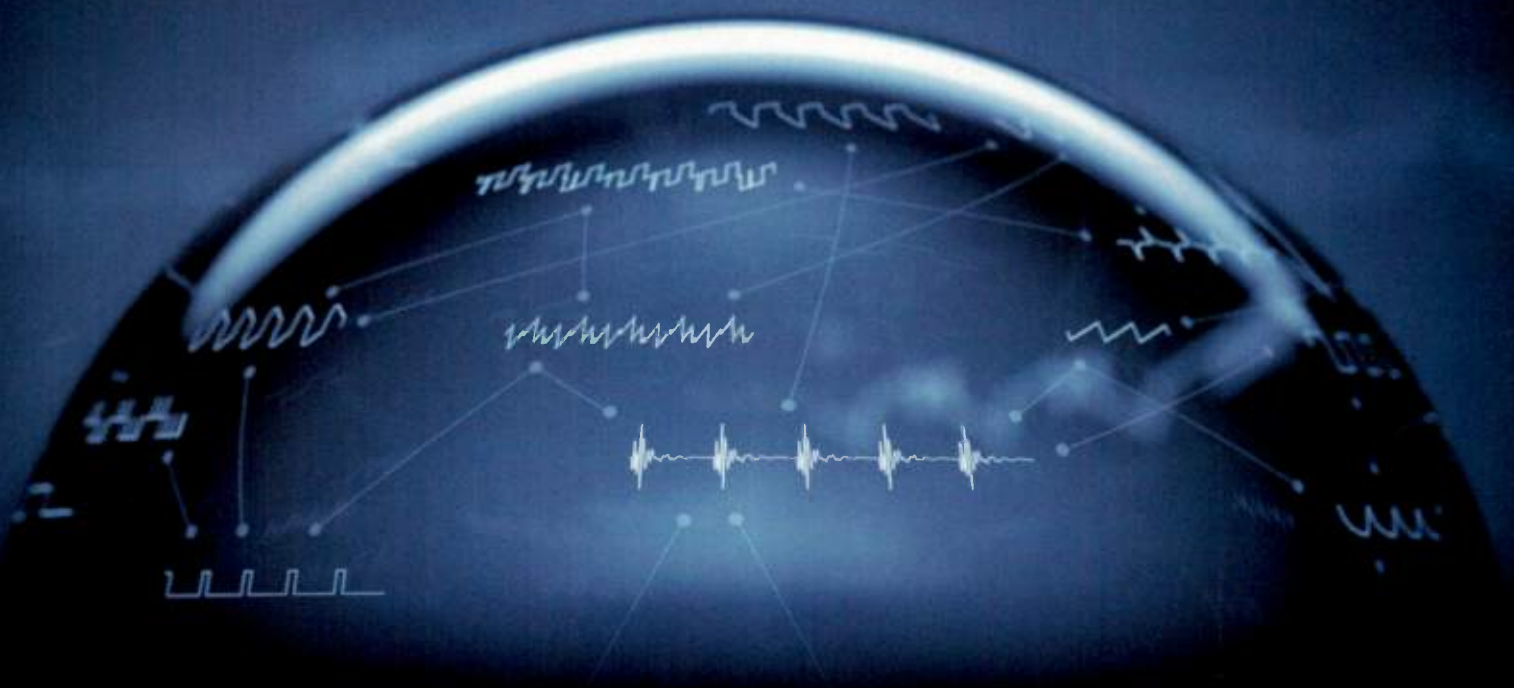




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## Seven Lions

Producer Seven Lions, born Jeff Montalvo, landed on the map when his remix of Above and Beyond's "You Got to Go" won a Beatport competition. His *Worlds Apart* EP debuted at Number One on the iTunes Dance charts, and his latest project, *The Throes of Winter*, was released earlier this year.

For a cost-conscious present, "I would get Spectrasonics Omnisphere (\$479) just because it's so versatile," Montalvo says. "So many different sounds to be made using it."

"As someone who's all in the box, I think monitors are the only really large-ticket item," he adds. "Probably some high-end Dynaudios (about \$1,200), but then I would need to get a larger room also!"



## Ben Jaffe, Preservation Hall Jazz Band

Ben Jaffe is the creative director of NOLA's legendary Preservation Hall Jazz Band; he plays tuba and upright bass with the ensemble, which can be found touring Cuba this month.

"If Santa Claus showed up tomorrow, I wish he'd have a bag full of vintage Neve preamps. They make everything sound warm, clean, and beautifully natural. I'm always on the hunt for them. And each one has its own personality, so the search never ends! Besides that, I'd love a custom studio desk for all my gear. I've got stuff from different eras and nothing on the market fits everything. But that's part of the fun—making it all work with what you've got."

Jaffe's low-cost gift? "I'm down with Crosley turntables (prices start around \$80). You can buy them at Urban Outfitters! They have a model that converts cassettes to digital. It's an easy, quick way to pop whatever onto your computer. I still listen to cassettes and LPs—particularly old 78s. They're inexpensive and you can find the craziest stuff. Every band, big or small, made cassettes back in the '80s and into the '90s. It's crazy what's out there. I really like finding unmarked homemade cassettes. It fascinates me what people take the time to make."



# Tradition, tubes & transformers...

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### tube preamp

The PowerTube is an amazing class-A tube preamp that combines the natural harmonics of a 12AX7 with the sonic performance of a Jensen™ transformer. Inside, a charge pump delivers 140 volts to the tube for maximum headroom while the transformer yields Jensen's legendary Bessel curve. Features a high pass filter to eliminate resonance, an 'air' switch for extra top end and a 10 segment LED ladder for visual feedback.



"The PowerPre is a must hear. I got great results, particularly in high transient situations where you can drive it hard for more transformer color. I bought one."  
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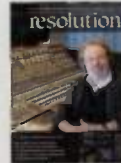
"The PowerPre is a fine example of a well designed, low-noise mic preamp that can give a bit of 'meat' or 'air' when needed. It may well be your preamp of choice."  
~ Electronic Musician



"The PowerTube promises 'tube magic'... retro tone and warmth... and this puppy succeeded. You won't find many options at this price point that deliver on this promise."  
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"The Q4's two Mid bands include a Q setting narrow enough to go all Hendrix with and you can make superb Wah-wah effects with the low-frequency knob. Astonishingly wholesome and lovely!"  
~ Resolution



"Using the EXT-C, I was surprised at how quietly most pedals can perform, and this got me digging out some neglected curios which sounded stunningly clean and juicy."  
~ Resolution







## Shana Halligan

Singer Shana Halligan fronted the pop group Bitter:Sweet before establishing her solo career; her music has appeared in more than 200 movie and television titles, including *Orange is the New Black*. Halligan's new album, *Back To Me*, was released this fall.

"The Neumann U47 microphone (about \$4,000) paired with the Universal Audio 6176 preamp/compressor gives me goosebumps—super-warm, old-school deliciousness! I feel like I could channel Billie Holiday with that setup!"

"If budget allows, I've made a few albums with the Neumann TLM 103 mic (\$1,099), a beautiful-sounding microphone. Something even easier on the bank account is the AKG C214 (about \$250). For the price, it's a super-solid choice. Very crisp and surprisingly warm. Paired with my most recent and fantastic find, the dbx 676 tube mic preamp (\$999), you can really get an incredible sound that won't set you too far back."



## Mako

Veteran DJ Logan Light and Julliard graduate Alex Seaver formed the electronic duo Mako in 2011, and have been churning out high-energy dance music ever since. Their current singles "Smoke Filled Room" and "I Won't Let You Walk Away" will appear on their debut artist album, out in early 2016.

Like the rest of us, Mako like to dream big: "For us, oh man, a room full of live instruments would be unbelievable. I'm talking about a Steinway Grand Piano, little up-right detuned piano, and fill the place with world instruments—percussion and strummed. There would be so many new flavors in our music, always a great thing."

The duo suggests a no-cost alternative: "Learn the tools at your disposal! There is a several-year learning curve on many aspects within music production and engineering; you will force yourself to improve your ear dramatically by narrowing down the amount of plug-ins you use."



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## Jeremy Ruzumna, Fitz and the Tantrums

In 2010, neo-soul band Fitz and the Tantrums reached Number One on the Billboard Heatseekers chart with their debut album, *Pickin' Up the Pieces*, and they've never looked back. Keyboardist Jeremy Ruzumna closes our gift guide with his favorite gear suggestions—and timeless studio advice.

"For the 'sky's the limit' gift idea section, I'd say a Universal Apollo Quad, complete with all the UA plug-ins (starting at \$2,000). Native Instruments Maschine (starting at \$599) plus all the NI expansion packs would be fantastic. Also, all the plug-ins by SoundToys—they're amazing. Decapitator (\$179) is a go to for every song. Lastly, a Dave Smith Instruments Prophet 6 (\$2,799).

"Cost-effective advice for the everyday engineer... At the very least, if you don't have access to all the fancy hardware and sexy out-board gear, just make sure you record your source (vocal, instruments, etc) at a healthy, non-distorted level. Capturing the performance is the most important and crucial thing. It'll give you maximum flexibility and you can always run the tracks through whatever you want to after the fact.

"All the fancy gear and plug-ins in the world are less important than knowing how use whatever you happen to be working with. Even the most stock plug-ins can give you amazing results if you know how to use them."



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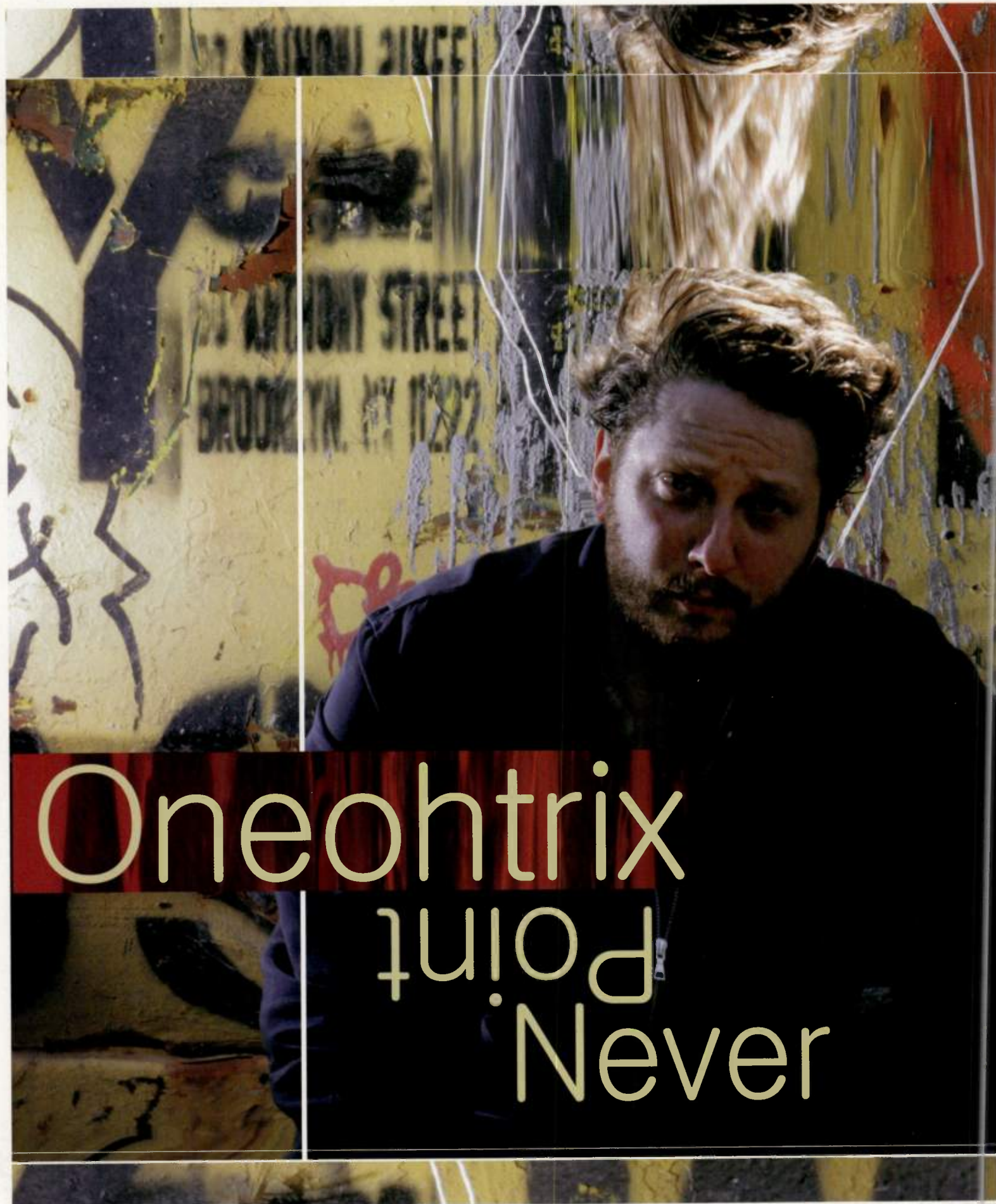


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Experimental artist  
Daniel Lopatin layers  
historic sounds and  
alien atmospheres on  
*Garden of Delete*

BY KEN MICALLEF

Daniel Lopatin, aka Oneohtrix Point Never, is equal parts philosopher and tech wiz, intellectual and sample merchant, his innovative electronic sounds mining deep strains of historic material and modern culture with 21st-century production tools. Lopatin's music has been described as "high-definition living scenes," "dreamily fragmented electronic music," "hazy hypnogogia," and a "psychedelic cosmic synth project." At his core, this prolific musician is as inspired by contemporary visual artists, philosophers, and Allan Holdsworth as by Japanese culture, horror films, Quentin Tarantino, the Dust Brothers, Matt Wallace, Stevie Wonder, Bob Rock, Geddy Lee, and Daft Punk.





The Dungeon, Lopatin's Brooklyn studio

yond such previously soothing and cosmic consciousness-expanding OPN releases as *Betrayed in the Octagon* (2007, Deception Island), *Zones Without People* (2009, Arbor), and *Russian Mind* (2009, No Fun Productions), Lopatin's latest, *Garden of Delete* explores so many twisted samples and nerve-permeating themes from such a fractured cultural milieu that by the time one piece sinks in and you've nailed its sources, it races forward, leaving you suspended and wanting more.

"No Good" blends strange string vibrations and unintelligible Vocoded R&B vocals with hornet-like synths and what sounds like an ocean exploding. "Child of Rage" recalls the spook sounds of Boards of Canada upended by electronic thumb piano, chamber lute/psychedelic synthesizers, and thunder. "ECCOJAMCI" is uncomfortable and looming; "Sticky Drama" recalls JS Bach merged with Meshuggah; the frozen synths and metal guitar riffs of "Lift" intimate physical torture at the polar ice caps. This *Garden* is dark, menacing, troublesome. Oneohtrix Point Never: A dangerous mind at work, indeed.

Your music often combines samples that create a melancholy or nostalgic quality. It's all very human sounding, even when it's not.

The past is inarticulate because it's hard to remember. That's a weird function of humanity; we have some capacity from the past, but it's foggy. I am leery toward nostalgia. I am leery of heightening history so that it would seem better than the present. But an object or an idea, it's all pliable and all things that I can enmesh in this latticework of materials that generate new work.

But you acknowledge the nostalgia in your music, like the way a guitar is effected or a drum sound. Your music is very cinematic sounding.

What you're hearing are very specific, musically historic materials that I find seductive. I was always fascinated with [Miles Davis' producer] Teo Macero and his weird editing and splicing. And what Teo would do versus what Glenn Gould was trying to achieve with his cuts. And the materiality of tape, because once you acknowledge that the tape is another instrument you've added this layer of complexity to the whole project. And so I might take an idea from that, but also something very straightforward, like I'm obsessed with Tony Levin's Chapman Stick playing, which is all over *Garden of Delete*. When I heard the virtual Chapman Stick that is part of Spectrasonics Trilian, I realized I could use it; it's like a historic music room. What other objects can I put in that room that will make the Chapman Stick feel like an alien object?

I hear the Chapman Stick on *Garden of Delete*, surrounded by other memorable sounds.



The Roland Juno 6 and Alesis Andromeda feature heavily on *Garden of Delete*.

## FINDING YOURSELF

Lopatin offers advice for musicians seeking to develop their own unique sound

If the studio is your mode of making music, don't stop at the point where you've processed and effected a track; go as far down the rabbit hole as you can. Even if you destroy the track, you're better off pushing your sound iteratively, over and over. Get it away from the source as much as you can, "phenomena-logically"—meaning, if you want to make music no one has ever heard before, make sure that you don't take a sound verbatim and effect it once. That's what everybody does. Be a monk! The stakes are high. Build a ship in a bottle! These things take time. And they take a certain compulsion. Invest yourself and go deep with it. Otherwise, be cool that you're not into that, and don't fake the funk. Like rap producers, they're like, "This preset is great, and that's what it is, and we're making the track."

But if you have to experiment, you better do it. Know who you are. Destroy the stuff to give it birth and don't rely on these tools; you have to commit and put in the time. Think of yourself as more important than your tools. Don't pray at the altar of technology. Use your ears and brain and make sure your music is something you would share with yourself: that it has purpose and you are making meaningful work. Because all this gear is great, but if you don't have a sense of purpose and a story to tell, nobody else is going to care.



On “I Bite Through It,” you’re hearing a collage of contrasting elements. There’s a metal section, and following that it goes right into this Chapman Stick progression. You’re hearing a monosynth lead and a Chapman together just dancing. They’re duplicate MIDI tracks that I’ve edited to do interesting things together.

**The way you combine these disparate sounds—I hear metal guitars, Joe Satriani-like guitars, garbled voices, snippets of a Korean soft rock band, laughing, dialog, monster growls, hammering rubber band rhythms. Is there a go-to piece you use to effect all these crazy sounds?**

The most important draw for me in a software synth is if I can randomize all the parameters. Even if it’s not a synth that I’m drawn to, if I can randomize it I can search and index while looking for the perfect, weird expressive moment. Like when you’re hearing a monster voice or some weird rubbery thing. That’s from hours of hitting the random button until I, the curator, the arranger, find the right expressive technique to use. I use a lot of distortion on this record, which is new for me. I used a bunch of software synths on this record that I could randomize. (His Mac desktop reveals soft synths and effects including Arturia, Audio Damage, Rob Papen, Prosoniq, Destroy FX, Eventide, FXpansion, Spectrasonics, SoundToys, Sound Guru, Humanoid Sound Systems.) When I hit the Randomize button on the Enzyme synth, for instance, it creates variety very quickly. It’s a gimmick, but I can spend hours to find that one insane thing. I used to love Inear Display’s Bucephal plug-in; it has all kind of modulations but I never get that far; I am just looking for random.

**What else do you use?**

The UAD 2 Satellite (Universal Audio UAD 2 Satellite Thunderbolt QUAD Core DSP Interface) is driving all these virtual plug-ins. I use Ableton as my DAW for everything. Because I’m so obsessed with the materiality of sound, synthesis is not really my vehicle. The actual manipulating of the audio in audio form, instead of synthesis form, is where I do all my work. I use plug-ins, but Ableton is such a strong tool in terms of sampling, time-stretching—even Ableton’s audio-to-MIDI capability allows you to throw anything in there, MP3 or otherwise, and it does a harmonic analysis of the file and gives you MIDI notes. That’s a huge tool. So I’m drawn to Ableton because of its plasticity of sound in that setting. I do everything in Ableton.

**How else are you working in Ableton?**

I will throw a fully realized demo into Audio to MIDI, then after Ableton’s strange job of analyzing that file, I will have all this new color in the form of MIDI notes that Ableton thinks it is try-

ing to create a MIDI picture of. I like to sample in Ableton then get it into audio and see how I can mangle it, how I can push it into new forms. And I cherish Ableton’s ability to resample the whole thing. Say I have the Chapman Stick and Enzyme going; I can tell Ableton to resample and it will record all these tracks into this one track. It will resample the tune until my fingers are bleeding. I generate all this variety and bounce it down to a single track; this will eventually be just one color in this landscape of potential things that gets folded back into the whole arrangement. When you find that Eureka moment, you better use it. ‘cause that’s what’s going to make the track, not the tools.

**How did you effect the voices in “Intro,” “No Good,” and “ECCOJAMC1”?**

“Intro” was time-stretching in Ableton, specifying an external character in a Vocoder effect put through heavily distorted options. The vocoder is actually listening to another input that is extremely distorted and cross-pollinating with these kids laughing. The “ECCOJAMC1” vocal is a sample of a fairly well-known British folk artist slowed down, looped, and with an echo on it. In “No Good,” I used Vocaloid which comes from Japanese culture. (He shares a “Spinal Fluid Explosion Girl” YouTube video.) I also used Plogue Chipspeech speech synthesizer: I’ll write lyrics and put them in Chipspeech and it gives me this bluesy/country twang; that’s all over the record. I wanted to see where the alien-ness of the software becomes human.

**You’ve spoken about searching the Internet for “metaphoric stuff”?**

Have you heard of programmatic music? It’s a classical music term—like Rimsky-Korsakov, who believed that music isn’t fully abstract, that it’s always on some level part of the culture. Using a preset, like the Chapman Stick, what does that sound mean in history? How has that made us feel for 30 years? So I’m fishing for that moment, that *thing*. Comedians sometimes make you laugh by reminding you of something you forgot that was true. I feel that I’ve done that with sound.

**I’ve read you also used the Zebra soft synth, Alesis Andromeda A6, Roland Juno 6, and Korg Kronos Wavestation on *Garden of Dele*?**

Yes, the Kronos has everything, its own sounds, the Karma engine, which is a way of creating MIDI patterns that change and influence your playing. You can export those patterns; hold one chord and see all these crazy patterns the Korg associates with that one patch. It’s a beast. I saw a picture of Angelo Badalamenti scoring a film with just a keyboard and the computer screen in front of him. It seemed so logical. The Kronos is a bounty of sounds.

**How do you create rhythm tracks?**

I will usually take stuff from audio, sample it and use it as a drum. I just cognitively associate something with a snare or kick and play it. Then I will edit the MIDI. The best example of my drumming technique on *Garden of Dele* is on “Child of Rage.” There’s a sidechain compressor on this arpeggio that’s pulsing along, and the sidechain is pulling from another track that’s got a simple drum pattern. When pumped into the arpeggio track, it creates this beautiful pulse. That pulse adds a layer of complexity to the arpeggiator. It makes that kalimba sound using a compressor to actually influence a pulsation pattern on top that. My tracks might start like a super-chaotic Charlie Mingus jam and then get filtered into its final form.

**Your entire process sounds like an experiment, but were there specific experiments on the record?**

My process is to get a bunch of stuff in the sandbox and see what happens. Consider Florian Hecker or Mark Fell; these composers are truly experimental. They are testing an idea or some kind of philosophy or material question or posing a challenge with a process, then showing you the results. I am writing songs. Anyone can hit Randomize, but it’s the myriad decisions to combine these ideas to make a piece of music that’s emotional, that moves you, that says something about the world, that grips you—that’s the ultimate result of all these experiments.

**You’ve noted influences on previous albums, such as social constructivist Bruno Latour, Mexican-American writer Manuel Delanda, Bulgarian-French philosopher Julia Kristeva, and Romanian philosopher and essayist Emil Cioran. How so?**

Julia Kristeva is a French feminist philosopher who wrote an essay in the ’80s called “Powers of Horror.” What I got from it is, we’re fascinated by our guts and organs for the same reasons we’re fascinated by sexual taboos or violence on film or NWA, because we’re told that stuff has to be contained within. That’s a powerful way to think about the materiality of our bodies. That we split the inner and outer could be a problem.

**Are there similar influences on *Garden of Dele*?**

This album is primarily influenced by the period in my life when I first started buying music in Boston. I realized I could buy Rush instead of REM. I bought Rush’s *Counterparts*. I loved that record. It was the first time that I felt I had control over my decisions and that I wasn’t being pressured into buying a Pearl Jam album or something. So I thought about that time period and the music being made then and the sounds that were on those records. I wanted to take certain elements of that and think of it as plastic and combine it and find these new and interesting relationships. ■





## BLACK VIOLIN STEREOTYPES

Universal Classics

In keeping with the spirit of this album, let's not label it as "crossover" or "fusion." *Stereotypes* marries the virtuosic playing of Wil Baptiste (viola) and Kev Marcus (violin) with hip hop beats and/or R&B arrangements, depending on the tune. The result is something new where lush strings often take a front seat next to vocalists such as Kandace Springs, Melanie Fiona, and Black Thought; or the string parts have backing vocals; or the strings simply take front stage as they so richly deserve.

BARBARA SCHULTZ



### HARMONIA COMPLETE WORKS

GRÖNLAND

Comprising five LPs and a 36-page booklet, this inevitable box set brings together some of the finest Kraut-rock ever recorded, and it's only available on vinyl! Harmonia's sublime sounds remain timeless examples of Krautrock's mid-'70s peak; Dieter Moebius and Hans-Joachim Roedelius (Cluster) and Michael Rother (NEU!) produce swirling music—ever tilting forward over rumbling tape machine rhythms, blissful synthesizers, and haunting guitar spirals—that has lost none of its curious, playful majesty.

KEN MICALLEF



### CHEATAHS MYTHOLOGIES

WICHITA RECORDINGS

Cheatahs specialize in hazy, echo-y sounds, most recently fleshed out on *Mythologies*. The backward-sounding, *Poltergeist*-like vocals of "Red Lake" set the tone for the album, which carves distinction amidst fuzz and walls of pedals on "Freak Waves." Not to say there aren't moments of complete distortion ("Colorado") or layers upon layers of reverb (such as on "Supra"). Cheatahs' music is meant to be listened to as a whole and always has a hummable nugget at its core.

LILY MOAYERI



### DEERHUNTER FADING FRONTIER

4AD

Coming two years after the stark, impulsive, and gritty *Monomania*, this seventh full-length from Atlanta-based band Deerhunter is more a spiritual successor to 2010's *Halcyon Digest* in its shimmering guitar and dreamy synth washes. This warm, fluid atmosphere is aided, in part, by returning producer Ben H. Allen. Richly textured, *Fading Frontier* also shares a crowded, multidimensional aesthetic with frontman Brandon Cox's Atlas Sound project—yet maintains poppy accessibility.

TONY WARE



### CHRIS WALLA TAPE LOOPS

TRANS

Eschewing digital technology for an entirely analog-based recording process, former Death Cab for Cutie founding member Chris Walla creates a subtle, saturated tape-loop vision that has all the warmth of a puppy's kiss and all the alienation of the Antarctic. Over an unhurried palette of piano, synths, and errant ambient effects, Walla's inner world is exposed as a place of soothing tones and oozingly slow tempos, providing an insular escape hatch from a noisy world.

KEN MICALLEF



### ELVIS COSTELLO UNFAITHFUL MUSIC

UME

The 20-track companion to Elvis Costello's new memoir, *Unfaithful Music & Disappearing Ink*, features songs from throughout the artist's catalog, plus a couple of demos and live performances. There's also a bonus track where Costello reads outtake stories from his book. This soundtrack was chosen by Costello to illustrate his deep emotional connection and reaction to life events. As a result, these are some of the most important and heartfelt songs so far from his long, magnificent career.

BARBARA SCHULTZ



### KODE9 NOTHING

HYPERDUB

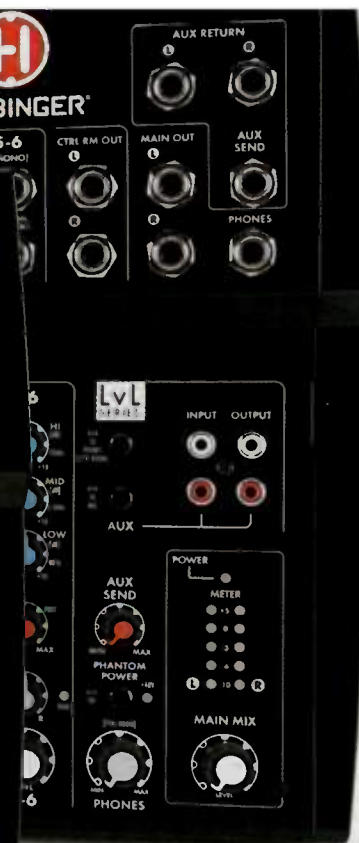
*Nothing* is the first solo album from first-wave dubstep pioneer Kode9 following the tragic passing of his collaborator the Spaceape to a rare cancer, and a sense of loss is palpable. Without the verbal growl, patterns can seem less fricative, though there is still a clammy sensation crafted around panicked snares and unsettling resonance. The primary vibe, however, is more hermetic cloisters than oxidizing infrastructure. Music for skittish androids exploring destabilized chambers, *Nothing* is certainly something.

TONY WARE





L502 5-Channel Mixer



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Fig. 1. Although the front resembles the System-1 keyboard, the System-1m provides a row of 3.5mm jacks that includes CV, envelope, and gate connections for use with standard modular synth gear.

ROLAND

# System-1m

## SEMI-MODULAR PLUG-OUT SYNTH FOR THE DESK OR RACK

BY GINO ROBAIR

### STRENGTHS

Easy to use. USB MIDI and audio. Plug-Out synth host. MIDI I/O. CV/gate control. Works on desktop or in a rack.

### LIMITATIONS

No arpeggiator. No Scatter effects. Limited CV control over parameters.

\$599

rolandus.com

It has taken a surprising amount of time for major manufacturers to trust that the modular synth renaissance is not a short-lived fad. But when Roland joined the fray, it did so with a vengeance, going fully analog with its upcoming American-made line of System-500 modules and offering a set of hybrid Eurorack products based around its innovative Aira technology—Demora, Torcido, Bitrazer, and Scooper—that feature a highly programmable digital core complemented by voltage-controllable parameters.

The most sophisticated of Roland's modular offerings, however, is the System-1m, a semi-modular synth that takes the basic features of Roland's flagship Aira System-1 keyboard and extends the control possibilities. Consequently, the System-1m is designed to meet the needs of a wide range of synth users—from keyboard players and DJs to sound design pros. Moreover, it can be set up flat or angled on the desktop, or housed in a traditional 19-inch, 3U rack or Eurorack case.

If you are familiar with the Aira System-1 keyboard synth, you will immediately see a resemblance in the System-1m's front panel and overall architecture (see Figure 1). Like its keyboard-based sibling, the System-1m can be used as a 4-voice polyphonic synth. It utilizes the Aira ACB (Analog Circuit Behavior) technology, and it can host any synth from Roland's growing list of Plug-Out software-based emulations. Among the things that are not present on the semi-modular version that the System-1 provides are the Scatter effects and the arpeggiator. (For a full review of the Aira System-1, visit [emusician.com](http://emusician.com).)

The main difference in using the System-1m

with the Plug-Out synths, of course, is that you get the enhanced flexibility that CV and gate patching offer. Yet the System-1m remains easy to use, making it a powerful, full-featured instrument for people who want to explore modular synthesis for the first time.

### ON THE FACE OF IT

The primary sound generators on the System-1m are a pair of oscillators, a sub-oscillator (1- or 2-octave

down), and noise (white and pink varieties available). Each oscillator has six waveform options and can be switched to one of six octaves. They can be modulated from one of six sources (envelopes, LFO, oscillators, or manually), cross-modulated, or ring-modulated together. With the Version 1.2 firmware, you can access six new waveforms for each oscillator—FM, FM+Sync, Noise Saw, Logic Operation, Vowel (formant-style synth), and CB (percussive sound)—and store up to 64 presets.

The Color knob works with each oscillator's manual setting, and the results depend on the chosen waveform. For example, with a pulse wave, the Color control alters the duty cycle, whereas with saw-wave 2 and square-wave 2 you get a rich, detuning sound that can be used fatten up the timbre of a patch. Hard sync is also available.

The LFO provides six waveforms (including random) with controls over pitch, filtering, rate, fade time (the rate required for the waveform to reach its full level), and amplitude. Furthermore, the LFO can be set to trigger when a key is pressed. The Mixer provides level controls for each sound source with a switch nearby for setting Legato and



performance modes (Mono, Unison, or Poly).

As with old-school Roland synth modules, the Pitch, Filter, and Amp sections use faders to set the envelope segments. In addition to the 2-stage (attack, decay) Pitch envelope, you get controls for Portamento and for the initial pitch change (e.g., whether the pitch is momentarily raised or lowered when it's first struck).

The filter section has a 4-stage envelope generator, and frequency cutoff controls for the high-pass and lowpass filters. You'll also find a switch to set the lowpass filter to 2-pole (12dB/octave) or 4-pole (24dB/octave) behavior, and controls for setting resonance, key follow, and positive or negative envelope depth. The result is a great deal of flexibility, whether you're creating acoustic instrument emulations (I love Key follow for this) or highly details synth sounds. Similarly, the VCA has an ADSR envelope generator, with an overall Tone control and main output control nearby.

In between, however, you'll find the fun stuff. Each of the main blocks of the synth architecture has a collection of 3.5mm jacks for externally patching audio (colored red) and CV signals (colored blue), which, in some cases, overrides internal connections. Oscillators 1 and 2, as well as the LFO have dedicated outputs. You can take a pulse from Oscillator 1 to use externally for sync, as well as accept a sync signal for Oscillator 2, which works when the Sync button is engaged. (It syncs to Oscillator 1 when no external input is present.) When the Ring button is lit, an external signal sent to the Ring input subtly ring modulates against Oscillator 2 (not Oscillator 1 as noted in the manual).

You can also run an external signal into the System-1m for filtering and processing through the effects. In this case the sub-oscillator level control adjusts the input signal. The Mix output gives you a mono output directly from the mixer (before it hits the filter, VCA, and effects).

hardly a deal killer, considering what you do get with the System-1m.

### A SYNTH FOR ANY OCCASION

If you don't have the space in your Eurorack, no problem: The System-1m works as a standalone module with the included power supply. It easily integrates with your DAW, and the USB port supports audio and MIDI.

Roland's clever positioning of I/O and power connectors helps accommodate the many ways the System-1m can be used. In addition to the front-panel 3.5mm audio outputs, a recessed area on the top edge holds left and right 1/4" audio outputs, MIDI I/O, the power switch and AC adapter receptacle, all of which easily supports desktop use (see Figure 2).

For rack mounting purposes, a second set of MIDI I/O is included on the rear panel. Roland includes rack-ears for mounting the System-1m in a 19" rack, and screws for mounting the synth into a Eurorack case. A special adapter for a Eurorack power bus is also included, along with three 3.5mm patch cables; this is great for starting out, but you'll eventually want more cables.

The most remarkable thing about the System-1m is that it offers a wealth of musically useful features at its price point, especially when you compare it to other Eurorack or desktop synth modules. But there is no fair comparison: The System-1m is unique as a semi-modular, MIDI-controllable 4-voice synth that also holds a Plug-Out soft synth that you can call up at the touch of a button.

The current list of Plug-Out instruments, all of which utilize Roland's ACB technology, includes replicas of the SH-101, the SH-2, System-100, and the ProMars Compuphonic synth (featuring dual VCOs and dual sub-oscillators). And don't forget that your Plug-Out synths can also be used as Audio Units and VST plug-ins within your DAW.

No matter what musical genre you're in, or whether your work revolves around a keyboard controller, a drum machine, a DJ setup, or a DAW, the System-1m can be adapted to any workflow while continuing to provide expressive synth sounds that range from classic analog emulations to over-the-top modern sounds. Impressive! ■

System-1m is a semi-modular synth that takes the basic features of Roland's flagship Aira System-1 keyboard and extends the control possibilities. It's designed to meet the needs of a range of users from keyboard players and DJs to sound design pros.

The digital effects are nice to have onboard and include a bit crusher, reverb (with amount knob), and a delay offering control over amount and time. The knobs and faders throughout the synth feel solid.

### GET PATCHIN'

The top panel gives you access to the system controls you'll regularly use, such as buttons for LFO Key Trig, Tempo Sync, memory Write, and a Pitch/Gate knob that triggers a note, based on its setting, when pushed. A 3.5mm stereo headphone jack and USB port sit at either end.

Other CV options include inputs to control the Pitch envelope and the cutoff frequency and LFO modulation for the filter, a gate input for the VCA, and separate envelope inputs and outputs for the ADSRs of the filter and amp.

The astute modular user will have noticed a lack of CV control over the oscillators (other than sync) and the LFO, as well as the limited ability to create feedback paths. Power patchers will no doubt wish for voltage control over such parameters as the Cross Mod, Color, and filter resonance controls. Those would be useful additions, but they don't fit this semi-modular design and are



**Fig. 2.** The top of the System-1m provides MIDI I/O, stereo 1/4" output, and the DC input and power switch. If you rack the module and lose access to these connections, no problem: You'll find MIDI I/O on the back and audio outputs on the front, and you can power the unit from your Eurorack case or from a powerstrip.



Fig. 1. The MPD232's generous control array looks even better when you factor in the four pad banks and three control banks for the knobs, faders, and buttons.



AKAI

# MPD232

## UPDATED PAD CONTROLLER IS TWICE AS NICE

BY MARKKUS ROVITO

Markkus Rovito drums, DJs, and contributes frequently to *DJ Tech Tools*.

### STRENGTHS

Pads are firm and responsive. 30 editable and storable preset slots. Includes templates for DAWs and plug-ins. iOS mode.

### LIMITATIONS

No memory for storing sequences. No cable for direct iOS connection included.

\$599 MSRP  
\$299 street  
[akaipro.com](http://akaipro.com)

Fig. 2. The MPD232 comes with adapter cables for 5-pin MIDI I/O connections.



The original MPD32 lasted years as a popular pad controller for music, DJing, and other MIDI applications. But the MPD232—the flagship of the new MPD2 line—steps up the game in just about every respect (see Figure 1).

As the bottom line on any MPD product, the 16 pressure- and velocity-sensitive pads have been modernized with 16-color illumination around their edges and a new feel to their playability. There's also iOS compatibility, a 64-track/32-step sequencer, four pad banks, three control banks, and 30 presets, including factory templates for popular DAWs. Two massive drum libraries are included (see "The Big Bang Facts" sidebar).

### PADDING THE NUMBERS

All the new MPD controllers slim down their frames for greater portability and extend less than two inches above the tabletop. That makes the MPD232 too thin to accommodate full-size 5-pin MIDI ports, so adapter cables for the MIDI I/O ports come in the box (see Figure 2).

The newly configured pads feel a lot more firm (rather than squishy) as well as more responsive. In fact, the lack of give on the pads may cause

noobie finger drummers a little discomfort, but that's all the better to build up the strength of those digits. And those who require the utmost precision in their pads should appreciate

how the MPD232's pads respond precisely all the way out to the corners, perfect for two-fingered rolls. And if your drum rolls need help, you have the Akai MPC legacy Note Repeat button for playing drum rolls from a single pad press and the Time Div button for setting the Note Repeat value from 1/4-note to 1/32-note triplets. You also get the classic MPC Full Level and 16 Level buttons for the pads; the latter lays out the sound from the last pad touched across all 16 pads in incremental volume levels.

Pad Banks A-D offer 64 pad controls, grouped by color in the presets. On the other side of the unit, a set of eight endless rotary encoders, eight button switches, and eight 45mm faders also come with Control Banks A-C, for a total of 72 controls. The encoders possess a smooth action and are well spaced apart, while the faders have a familiar plastic-controller feel and are certainly adequate for slight, incremental movements or quick, toggle-like fades.



The smaller options in the MPD2 line—the MPD226 (\$399) and MPD218 (\$199)—pare down the available control sets and the number of banks.

#### PRESET & DON'T FORGET

Each of the 30 presets encompass all three Control Banks and four Pad Banks—136 assignable and editable controls in total. Fourteen of the presets

are factory set for software—mostly DAWs, such as Ableton Live Lite (software included), MPC Essentials (included), Bitwig Studio, Propellerhead Reason, PreSonus Studio One, Pro Tools, Cubase, FL Studio, Sonar, and Logic.

The Live Lite preset works perfectly fine for the full version of Live 9, including transport controls, but don't expect it to be a substitute for a dedicated

live controller such as the Akai APCmkII or Novation Launchpad. The MPD232 doesn't have the same controls for navigating devices and launching clips that those others do. The Reason preset assigns the MPD232 to the currently assigned MIDI device in the rack, and does a fairly good job of covering important features with the hardware controls.

However, should you want to fine-tune the presets to your needs, you can do so straight from the hardware's four-line display or from the included MPD232 Editor software. It's quite simple to edit on the hardware display, cursor keys, and push-button dial—starting with a factory template, tweaking, and saving it to another slot. Then the software editor is great for archiving. The controller's four control types can send different messages, but together they cover note, MIDI CC, Program Change, Program Bank, Aftertouch and increment/decrement messages.

You can set the on and off color for each of the pads to one of 16 colors or none. But one of the coolest—and certainly most practical—additions lets you assign ASCII keyboard shortcuts to the eight button switches by selecting two key values in the Edit menu (see the “Tips: ASCII, Templates and Sequencing” sidebar). In this way, you can devise any keyboard shortcut for your software, such as shift-alt-S, alt-option-2, and on and on (alt equals Command on a Mac keyboard).

### Tips: ASCII, Templates, and Sequencing

To save keyboard shortcuts to a template on the MPD232, pick your DAW template (or a blank one), press a switch you want to reprogram, and press Edit. Use the Enter encoder and arrow keys to change the switch's Type to KeyStroke and change Key#1 and Key#2 to the keyboard command. For example, to create a new MIDI track in Ableton Live, on the MPD display you would change Key#1 to T and Key#2 to SHIFT-OPT (equivalent to Shift-Cmd on a Mac). Press Preset to exit the Edit menu. Now press the right arrow to initiate Save, change the template name and memory slot if you wish, and press Enter to save the template to memory. Repeat to assign more keyboard commands to the template.

To record a sequence in real time, simply press Seq Rec, play the pads, and press Seq Rec again to stop. Then press Seq Edit to edit the pattern or to step-sequence patterns from scratch. In this mode, select a pad to edit (the selected pad turns green), and then enter or delete that pad's notes in the sequence on the 16 sequencer buttons in the bottom right-hand corner. You can also edit each note's velocity from the display. Repeat that process for every sound you want, and then record the sequence to your DAW if you want to save it. To delete an entire sequence so you can start over, press Edit, then press Seq Rec, and then select Clear:All on the display and press Enter.

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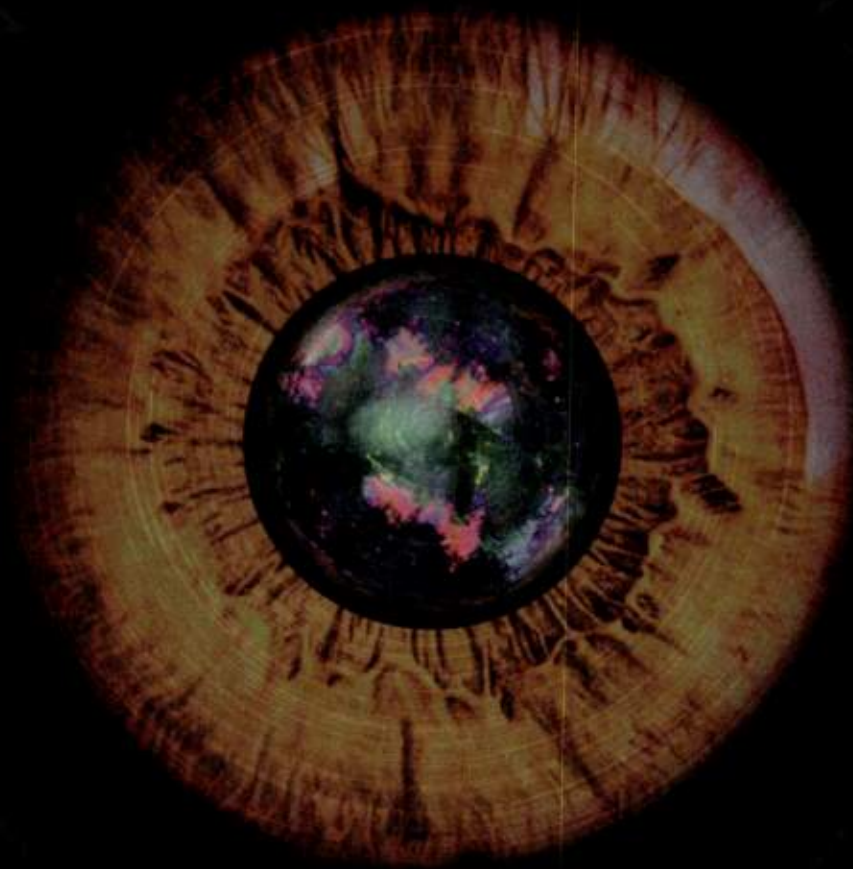
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## The Big Bang Facts

Two virtual instruments—Sonivox Big Bang Drums 2 and Big Bang Cinematic Percussion 2—come with all three of the MPD2 controllers. They include more than 28 GB of drum sounds—a huge haul for a controller bundle. And it's not a case of quantity over quality. Big Bang Drums,

an acoustic drum-kit instrument, gives you many velocity layers and versions for each drum and cymbal sound in a kit. And the more than 400 presets of classic and modern rock-genre drum kits mix and match from more than 15,000 total samples.

Cinematic Percussion feels even more impressive due to the novelty and distinctiveness of its nearly 16,000 samples that cover a ton of ground for orchestral, ethnic, and special effect drum and percussion sounds. They are organized into more than 200 “ensemble” presets according to cinematic genre, drum type, ethnic percussion type, etc.

With either plug-in loaded in a DAW track, you can switch the MPD232 back and forth between your DAW template and the BigBang template. The Cinematic Percussion plug-in is more tightly integrated with the MPD template; its sounds line up to Pad 1 of Pad Bank A, and some other controls are mapped to faders. The Big Bang Drums sounds start on Pad 12 of Pad Bank A, but with the MIDI Learn functions of each plug-in, you can edit and add more controls to the MPD template without too much trouble.

## STEP TO THIS

Regardless of your original intention, once you sit in front of a pad controller, you inevitably start creating rhythms or phrases, and you want to quickly capture any good ideas that come about from that doodling. The MPD232's step sequencer helps you do that. The sequence can be 1 to 32 steps, and there is a sequencer track for each of the 64 available pads.

The row of 16 buttons below the faders let you punch in note events, or you can record in real time. A Step Bank button toggles the sequencer buttons from 1-16 to 17-32. This is convenient for quickly putting down pattern ideas, but you need to record those ideas to your DAW to keep them; there is no sequencer pattern memory.

## YOU CAN TAKE IT WITH YOU

The iOS mode is also most welcome. A specific procedure turns on the MPD with a lower level of power so that the iOS device can power it, but the display, pad, and control illumination still work fine, and my apps recognized the controller instantly.

Overall, the MPD232 makes for an excellent full-featured pad controller. The pads feel great and respond well; the extra banks for the pads and other controls expand its utility massively, and it is straightforward to edit from the built-in display. Highly recommended. ■



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**Fig. 1.** The Boss SY-300 Guitar Synthesizer can be used with any 1/4-inch audio input—no special connections or pickups required. The footswitches are angled and raised to protect the editing controls.



BOSS

# SY-300

## GUITAR SYNTHESIS GOES BACK TO THE FUTURE

BY MARTY CUTLER

Marty Cutler is hard at work on his book about digital guitar applications. Stay tuned.

### STRENGTHS

No tracking issues. Accepts standard 1/4-inch plug. Easy to program. Can process incoming audio via analog or USB input.

### LIMITATIONS

Factory sounds are mediocre.

\$699 street  
bossus.com

**I**t wouldn't be the first time conventional wisdom has been turned on its ear in the audio world, but no one expected guitar synthesis to toss off the shackles of divided pickups and those fragile and expensive proprietary cables. The Boss SY-300 makes guitar synthesis about as close to plug-and-play as you can get: Simply plug in a standard 1/4-inch guitar cable and you are treated to synth sounds that follow the nuances and articulations in your playing (see Figure 1).

Although designed as a floor unit, the well-made SY-300 is equally at home on the desktop. The liquid crystal display is easy to read, and the four solid-feeling footswitches light up when engaged. The footswitches are raised and angled above the control surface, keeping the bottom of your shoe away from the programming area and display.

Alongside the output-level control are buttons for Synth/FX, Blender, and Write. Synth/FX brings up a schematic of the patch's signal flow: You navigate and alter patch parameters using the four contextual knobs below the display and the Select knob on the right. The Select knob also serves as a push-button for entering and confirming a parameter or submenu. Below that are left and right Page buttons for navigating through groups of parameters.

For analog I/O, 1/4-inch jacks are used throughout (see Figure 2). The Input accommodates guitar, bass, or anything else that can feed a strong enough signal. The Thru and Return jacks allow you to insert any additional processors into the signal path. (You can adjust the return level and phase from the SY-300's System menu.)

Stereo pairs of jacks are provided for the Main

and Sub outputs, with the left Main jack doubling as a headphone out: I would have preferred a separate headphone jack, but given the I/O real estate, it's a reasonable compromise. MIDI In and Out ports are provided, with MIDI Out doubling as a soft Thru. The ports are used for transferring System Exclusive, MIDI Clock, Control-Change messages, and patch changes.

If you need more control than the onboard footswitches provide, a rear-panel 1/4-inch jack accommodates an expression pedal or a Roland-compatible footswitch. The USB 2.0 port connects to your computer in order to send and receive audio and shuttle patch data between the SY-300 and the editor-librarian (covered below).

### WHAT'S THE FREQUENCY?

The SY-300 extracts a polyphonic signal from a monophonic input in a manner similar to the technology found in polyphonic tuners, which isolate the dominant frequencies of an audio signal. But the SY-300 is the first of its kind to deploy Roland's next-generation version of Composite Object Sound Modeling (COSM) to restructure the guitar signal into a workable model of a three-oscillator analog-subtractive synth. The result is that the instrument tracks immediately and flawlessly—with no perceptible delay.

As an analog synth, the SY-300 is relatively simple, but it provides enough bells and whistles to customize sounds to taste. Each of the three oscillators gives you a choice of using standard analog-oscillator waveforms, as well as a detuned saw-





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**Fig. 2.** In addition to standard guitar input, the SY-300 provides an effects loop, Main and Sub stereo outputs, MIDI In and Out/Thru, and a USB port. However, the unit does not do pitch-to-MIDI conversion.

tooth, noise, and an audio input. Parameters vary based on the oscillator. For instance, choosing the audio input as an oscillator source disables pitch, sync, ring modulation, and other parameters, but provides filter settings, and limited LFO and amp controls. Amp and filter envelope settings are simple, providing only attack stages, as the signal lasts as long as the string is vibrating or audio input is sustained, although you can program one of the footswitches as a sostenuto switch.

Each oscillator gets its own LFO with a choice of the standard analog-style waveforms, including random and sample-and-hold. One nice touch is the ability to control the depth of the LFO using picking dynamics.

The SY300's sequencer is limited, but each oscillator's sequencer can be linked or run independently, allowing you to create interesting polyrhythms. The Step Sequencer gives you control over the depth of each oscillator, but provides no dynamic control or duration for individual notes. The control-assignment options are surprisingly rich, providing plenty of real-time flexibility via the footswitches as well as the ability to adjust the depth of the envelope. Increasing the noise waveform's Sharpness parameter makes the sound more harmonic, with the maximum setting producing an analog-synth-style choir.

## DIY PATCHES

Many of the presets reflect old-school guitar synth tones: bright, buzzy leads; distorted, growling basses; and effects designed to accompany your guitar's sound. Unfortunately, many of the preset tones drip with too much reverb and distortion, and some simply sound like overly processed guitar.

The good news is that the instrument is easily programmable. Boss facilitates the process with its free Tone Studio editor-librarian software, which lays out all of the parameters to keep you from deep front-panel menu diving. (See the sidebar "The Tone Studio Editor-Librarian.") I was able to coax a reasonable take on Roland JX-10-style horns easily, along with a few good leads and pads. Tone Studio is also a gateway to a free, online library of additional sounds. Although the sonic landscape provided by the SY-300 is considerably better than what the factory sounds present, you are restricted to its analog-modeling synth architecture; there are no realistic pianos, organs, horns, or drum kits.

It's also important to remember that the SY-300 is not a MIDI converter. The SY-300 undeniably tracks more accurately than the best MIDI guitars, although the absence of pitch-to-MIDI conversion is a mixed blessing. Freedom from the typical encumbrances of a MIDI guitar (proprietary pickups and cables to connect external synths, and as-

sociated issues such as ensuring compatible pitch-bend settings and configuring the synth's proper modes) are all refreshingly absent with the SY-300. However, the SY-300 does not provide the means to record MIDI note data into sequencers, or access to the external world of synthesizers at all.

## ALL IN ONE

Nonetheless, the SY-300 is considerably more than a guitar synth or MIDI guitar converter: Any audio material you can feed the unit through the 1/4-inch input or the USB port is fair game for resynthesis through the instrument's oscillators, including vocals or audio tracks from your DAW (a task that no MIDI guitar converter can accomplish).

Furthermore, the SY-300 doubles as a guitar processor, and each oscillator can serve as a different signal chain. The supply of effects is reasonably broad, offering delay, reverb, filtering, chorus, flange, and rotary effects, among other processors. The SY-300 also serves as a 24-bit, 44.1kHz audio interface, albeit one with a mono analog input.

As a player's synth, the SY-300 excels. The typical bugaboos that haunt the guitarist—slow, inaccurate tracking and excessive cabling—are nonexistent with this device. Its easy computer connectivity via USB and the editor-librarian make programming your own sounds a breeze, while its modest dimensions allow the processor to sit on the floor or your desktop. Overall, the Boss SY-300 is a pleasure to use, whether onstage or in the studio. ■



**Fig. 3.** The free Tone Studio editor-librarian simplifies the process of creating your own patches.

## The Tone Studio Editor-Librarian

Tone Studio (figure 3) is a free editor-librarian for the SY-300 (available at [bossus.com](http://bossus.com)) that greatly simplifies the process of creating your own patches. Click on the Tone Central button (located at the bottom left), and you're transported to the Boss Tone Central site, where you can download additional patches.

Tone Studio receives and stores your current patch data. When launched, the editor opens to the patch currently loaded into memory, with a mockup of the SY-300 architecture in view. Click on any section of the header to focus on that parameter and its related pages. In most cases you can edit parameters with a knob or a pull-down menu, with values illustrated on a vertical bar graph. Any

changes you make are immediately reflected in the SY-300, so it is easy to tweak while playing.

Other useful amenities include a tuner, an audio file player, the ability to set input sensitivity, and the System menu, which, among other things, lets you check firmware versions, edit global EQ for the outputs, alter MIDI settings, and edit patch maps.



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Fig. 1. Blade is so jam-packed with knobs and displays that it can be difficult to read clearly. Fortunately, a big-screen mode nearly doubles its size onscreen.



ROB PAPEN

# eXplorer III

## A SYNTH AND EFFECTS SUITE THAT STANDS OUT FROM THE PACK

BY GEARY YELTON

Synthesist and former senior editor Geary Yelton has written for *Electronic Musician* since 1985.

**STRENGTHS**  
Wonderful assortment of virtual instruments and effects processors. Nice variety of sound engines. Impressive programming depth. Plenty of bang for the buck.

**LIMITATIONS**  
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**D**utch software developer Rob Papen and company have long enjoyed a reputation for top-notch soft synths, effects processors, and designer sounds. Since 2011, they've offered a comprehensive collection of their plug-ins in a bundle. Now in its third incarnation, eXplorer III encompasses eight virtual instruments and six effects processors for less than half what you'd pay if you purchased them separately.

### INSTRUMENTS OF PLEASURE

**Blue II:** Introduced last year, the latest version of Papen's best-selling synth combines four synthesis engines—subtractive, waveshaping, FM, and phase distortion. Sounds begin with six oscillators, each with more than 300 algorithmic and sampled waveforms, routed through two stereo multimode filters. Tailor your timbres by editing AHDSR and multistage envelopes, configuring FM algorithms, and routing modulators.

In addition to note sequencing, Blue II's 16-step sequencer lets you assign different waveforms (for wave sequencing) and modulation values (for mod sequencing) to each step. Access an x/y pad for panning between oscillators (for vector synthesis) or manipulating as many as eight parameters simultaneously. What's more, Blue II's preset library serves up some of the best sounds you'll find in eXplorer III.

**Blade:** If Klingons designed a soft synth, it might look like Blade, an additive soft synth with an innovative, streamlined approach to building waveforms. Instead of specifying individual harmonics, Blade's Harmolator lets you turn knobs to determine the fundamental, number of partials, balance of harmonic and inharmonic partials, and so on. You'll

instantly hear your results and view them in a spectrum display.

Alongside the synthesis sections, Blade's GUI is dominated by an x/y pad surrounded by 24 knobs that duplicate the Harmolator's knobs on both axes (see Figure 1). Clicking and dragging on the pad twists the knobs to dynamically manipulate harmonic content in real time. You can record and play back your movements in a loop that you can sync to tempo. Blade also has flexible modulation routing, an arpeggiator with step-sequencer functions, a respectable assortment of effects, and hundreds of presets designed to show off its capabilities.

**Punch:** This unusually deep virtual drum machine generates percussive timbres both by synthesizing them and by playing samples. Its synthesis capabilities go far beyond what you might expect, and you can even import your own samples.

Create and edit individual sounds in meticulous detail, process them with effects, assemble them into kits, and build patterns using the 16-step pattern sequencer. Some notes on your MIDI keyboard trigger individual hits, and others trigger as many as eight grooves or breaks that can play simultaneously. Punch gives you a tremendous library of factory presets that supply hits, grooves, and breaks for any genre.

**Punch-BD:** If you want thick, fat bass drums, it helps to stack your sounds, and Punch-BD can stack six of them at once. Like Punch, Punch-BD lets you synthesize sounds, use factory samples, or import your own.



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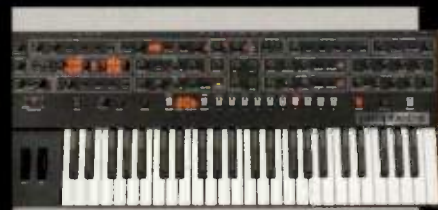
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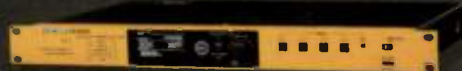
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Depending on the mode you select, hits can be stacked, played individually, played sequentially, and so on. Although you don't get an onboard sequencer, presets include hundreds of bass drums, as well as additional drums, percussion, and sound effects.

**Raw:** Raw specializes in distorted sounds that slice through a mix and tear off your face, making it suitable for experimental, metal, EDM, and other cutting-edge musical genres. Although its content includes some lovely pads as well, Raw has a low-fi personality all its own.

More than anything else, Raw's two oscillators are what distinguish it from Papen's other synths. They generate just four basic waveforms and two flavors of noise. You can also draw your own waveforms and save two of them. (Raw's manual suggests using hand-drawn, low-frequency waveforms to create wobble sounds for dubstep.) Each oscillator has a distortion knob and an x/y pad to dynamically manipulate phase distortion, and Raw will record pad motion synced to tempo. Other features include a waveshaper, a multimode filter, a 16-step sequencing arpeggiator, and 13 flavors of distortion.

**SubBoomBass:** Want to give your subwoofer a workout? SubBoomBass focuses on primarily electronic bass sounds. It comes with over 1,000 presets that include percussion patterns as well as basses. Two oscillators let you choose from 14 single-cycle waveforms, white and pink noise, 10 electric and acoustic bass samples, and 39 drum and percussion samples. Each oscillator is paired with a suboscillator, and many presets layer drum samples with basses to reinforce the bottom end.

SubBoomBass's 16-step sequencer can trigger the two oscillators independently with a different waveform for each step (for wave sequencing, again). You can tie steps and slide between them, TB-303-style. There's also a stereo multimode filter, an additional lowpass/highpass filter, three 5-stage envelopes, extensive modulation routing, and a full complement of effects.

**RG:** RG's onboard step-sequencer operates much like a drum machine, but you program rhythm guitar patterns rather than drums by entering and editing individual up, down, and ghost strokes. Modify the sounds of six sampled guitars using three simultaneous effects and a host of synthesis parameters. Hundreds of presets cover many styles of music.

For playback, RG divides your keyboard into four ranges. The first octave plays a pattern using major chords, and the next plays the same pattern using minor chords. The two higher octaves play a different pattern using major and minor chords, respectively. Even if you don't use RG on your finished track, it could suggest rhythmic ideas that inspire new parts or new ways to approach a composition.



**Fig. 2.** RP-EQ's mono/stereo split filter lets you apply processing to lower and higher frequencies separately, and the Air section offers a wide additional band with a center frequency between 30 and 40 kHz.

**Predator:** Predator is a deep but straightforward subtractive synthesizer with three oscillators that generate dozens of single-cycle waveforms. Its sophisticated arpeggiator doubles as a 16-step sequencer, and you can trigger strummed chords with a single key. You also get two multimode filters, four 5-stage envelopes, six LFOs, and eight assignable modulation routings.

Predator's best trick is creating new sounds by combining characteristics of existing presets. In the Morphing section, simply choose two presets, set the amount, click the Gen button to generate something new, and keep clicking until you hear something you like. I was surprised by how good some of the results sounded. A similar function called Variations creates new sounds from a single preset. Perhaps the best reason to own Predator, though, is its tremendous collection of more than 4,400 presets, with more available online.

## DAZZLING EFFECTS

**PredatorFX:** Predator comes with a separate plug-in that lets you process audio from any source using Predator's effects and filters. It features not only favorites like delays, reverbs, choruses, and amp simulators, but also a 32-band vocoder.

**RP-Delay:** This versatile plug-in comprises two stereo signal pathways, each with three independent delays that can route signals in various configurations. Each pathway provides four LFOs, four multimode filters, four 16-step sequencers, and assorted modulation sources for continuously controlling user parameters. RP-Delay can even play segments of audio in reverse.

**RP-Verb:** Papen's smooth algorithmic reverb has presets tailored for vocals and instruments, as well as variations that mangle sound beyond recognition. In addition to controlling the type and size of the space

being simulated and parameters that affect early and late reflections, it can simulate different reflective materials. You also get simple distortion, 3-band EQ, and a three-stage envelope that modulates the volume, size, and length of the reverb.

**RP-Distort:** With four LFOs and MIDI inputs for controlling parameters, RP-Distort delivers 26 effects types such as clipping, fuzz, ring modulation, speaker-cabinet simulation, and even distortion based on trigonometry. You can use the plug-in's distortion, compressor, filter, and stereo-field enhancer either individually or in any combination and in any order.

**RP-AMod:** Specializing in chorus, flanging, phase-shifting, ensemble, and tremolo, RP-AMod can process high and low frequencies separately, and all effects can sync to tempo. Presets load two simultaneous effects that work in tandem for vocals, instruments, and multipurpose special effects. The control panel provides a choice of modulation waveforms and from five to eight user parameters appropriate to the selected effects type.

**RP-EQ:** This 8-band equalizer is designed for a variety of mixing and mastering applications. Change frequency, gain, and bandwidth by clicking and dragging on the display or by adjusting knobs. Use the x/y pad to dynamically control most parameters and record your movements, or toggle to a spectrum analyzer that displays input or output signals as lines, bars, or peak indicators.

RP-EQ's mono/stereo split filter divides the signal into mono low-frequency and stereo higher-frequency signals (see Figure 2). The equalizer can switch between normal and mid-side mode. You also get lowpass and highpass filters, simulated tape saturation, and an Air section to expand the top end. ■



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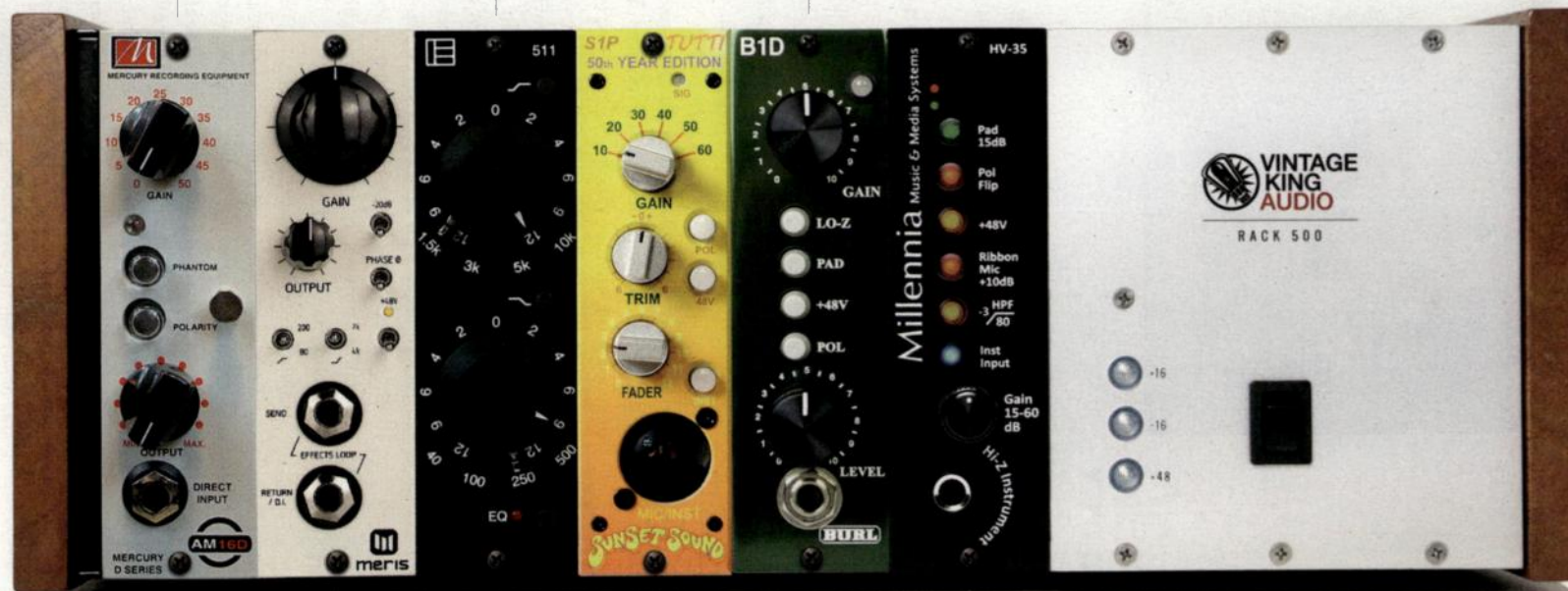
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BY MARTY CUTLER

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### LIMITATIONS

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[heavyocity.com](http://heavyocity.com)



The unique interface of Heavyocity Gravity provides a full menu of effects controls, mixing, and envelope settings, with additional editing pages that offer deeper features. For example, you can use step sequencers to create modulation shapes that control the volume, pan position, and pitch for each channel of a pad.

Heavyocity, a leader in imaginative sounds and sampling, has released Gravity, a virtual instrument specifically geared for use in film scoring and game audio. By using Native Instruments Kontakt 5, the developer has given Gravity a great deal of programmability, along with a few wrinkles you won't find in a hardware instrument. The library ships with 12 GB of uncompressed content, featuring 2,200 sound sources and a slew of presets.

In the center of the instrument is a window with three or four tabs above it. Tab choices differ depending on whether you've selected Hits, Pads, Stings, or Risers. For example, Pads have Mix, Pitch, Punish, and Twist controls. Mix provides faders for each of the three sample channels in a patch: Change levels, mute or solo, modify or randomize sample-start time, and modulate relative channel volumes with an LFO. Hits, Stings, and Risers offer a Sample tab, which lets you adjust or randomize sample start time, in addition to altering tuning, panning, and level.

Common to all main categories are the Punish and Twist controls. These display as glowing orbs that circumnavigate the center window with a high-contrast, radiant fader that regulates the effect amount. The red button, below, toggles the effect. Punish is Heavyocity's custom blend of compression and saturation, while Twist offers frequency-dependent modulation based on EQ, often altering tonal qualities in subtle and sometimes indescribable ways. You also get knobs for Tone and Rate.

On the left you'll find controls for other effects—reverb, chorus, delay, and distortion—with access to basic parameters (such as predelay, size, and mix, for reverb, in addition to a pull-down menu for the

convolution reverb's 23 impulse responses). Although the controls for the effects are fairly standard, they allow for significant timbre shaping—but that party is just starting.

Your sound-design options increase when you use the EQ/FIL, TFX, Motion, and Designer windows, which can be used to alter your patch radically. (TFX are triggered effects settings that instantly transform your

sounds using keys mapped outside of the playable range of the patch.) The Designer page (found in Risers and Hits) lets you recombine sampled elements through key mapping.

Motion is perhaps the most radical and immediately gratifying of the controls, comprising a bank of step sequencers for volume, pan, and pitch. Grab any step, sweep over the entire cycle to reshape them into interesting envelopes, or select from preset patterns to create LFO-type shapes.

Gravity's tonal qualities range from thick and overdriven to gauzy and breathy. You'll find dark, moody, and otherworldly ambiences and pads, startling and electrifying stings and hits, and dramatic risers.

Throughout the collection, the sounds provide the high degree of mixing precision required for film and gaming applications. For example, Risers have pull-down menus that let you adapt a patch to varying bar lengths and tempos. In many cases, sounds are divided into smaller groups of elements, with separate stems for a patch's whooshes and sweeps that let you quickly create hybrid sounds.

Heavyocity has created a virtual instrument that scores high in terms of sound and flexibility. Visual-media composers will find lots to be excited about with Gravity, as will musicians of all stripes. ■



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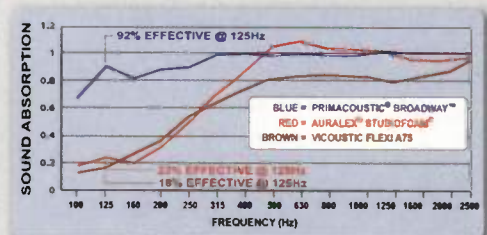
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SAMPLE LOGIC



**Fig. 1.** Sample Logic Cinematic Guitars Infinity packs eight sample channels, and offers presets for animation and morphing. Note the small, but completely programmable, Morph Animator step sequencers for the upper right and lower left sound sources.

# Cinematic Guitars Infinity

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BASED GUITAR  
SOUNDS WAY  
PAST 11

BY MARTY CUTLER

## STRENGTHS

Massive collection encompassing previous and new libraries.

## LIMITATIONS

Cinematic Guitars 1 and 2 do not incorporate more recent developments in the Sample Logic Engine, such as Step and FX Animators and the Wave Synth.

\$599

[samplelogic.com](http://samplelogic.com)

In my April 2011 review of the first Cinematic Guitars release, I described the product as being breathtaking and evocative, while providing a huge amount of sonic variety. Since then, Sample Logic has issued versions Two and Three of the instrument, and then subsumed them all into Cinematic Guitars Infinity.

More than simply adding a new library, CG Infinity's engine incorporates Sample Logic's more recent developments such as Arpology's brilliant Step Animator, Xosphere's Morph Animator, and a built-in supplemental wavetable synth.

While we can quibble over the nature of infinity, the fact is that I would be hard-pressed to use (or even completely explore) every patch available in this collection without carving out a huge chunk of my remaining time on Earth. So let's just agree that Sample Logic Infinity is vast. But is the expanded library worth the extra expenditure and drive space?

CG Infinity contains more than 25 GB of sampled guitars for Native Instruments Kontakt Player or Kontakt 5.5. Top-level folders divide patches into versions One through Three, and patches for Infinity. On the Multi side, you'll find the first three volumes represented—but not Infinity—and there's a good reason.

CG Infinity differs from the rest of the instruments with a novel interface that provides four pairs of sample channels and a slew of modulation features that offer animation and color ported over from earlier titles. In addition, you'll notice that there is no Multi section associated with Infinity; with 8 sample channels per patch, it is unlikely you'll need one. The usual Kontakt header used for choosing a MIDI channel, port, and so on, is also used to shuffle through Infinity's four banks of presets: Atmospheres, Instrumentals, Loops, and Percussives.

The main-screen layout for an Infinity patch starts with a header containing an information panel, which reads out parameter values of edits, a patch-selection and file-management window, and a randomization button. Left and right arrows load patches in alphanumeric order, or you can click on the patch name, open a pop-up browser, and randomly sift through categories such as arpeggiated, pad, guitar, and synth in the Instrumentals bank.

Below the header, Infinity divides the preset into four SoundCores, each of which harbors two sample channels called SoundSources. This scheme endows Infinity with flexibility and speed, as each SoundCore and SoundSource component has its own browser full of presets. For instance, you can change one SoundCore from a guitar to a pad, and load a synth waveform for one of the SoundSources.

At the heart of Infinity is the FX Animator, a central window with an animated x/y axis that displays the instrument's ability to create smooth and continuous crossfades between multi-effects presets. This section, too, has browsers for presets. Or you can record your own moves, as with the Morph Animators that populate each source; these add a small step-sequencer-type window that you can edit on-the-fly with your mouse.

Sample Logic packs four volumes of inspirational sounds and instruments under a single hood. Infinity's terrific range of sound sculpting tools, alone, provides an instrument of enormous depth and flexibility. Between all four libraries, you are likely to find what you need in quadruplicate: If not, the tools to voice the sound you need precisely are here in spades. ■





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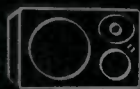
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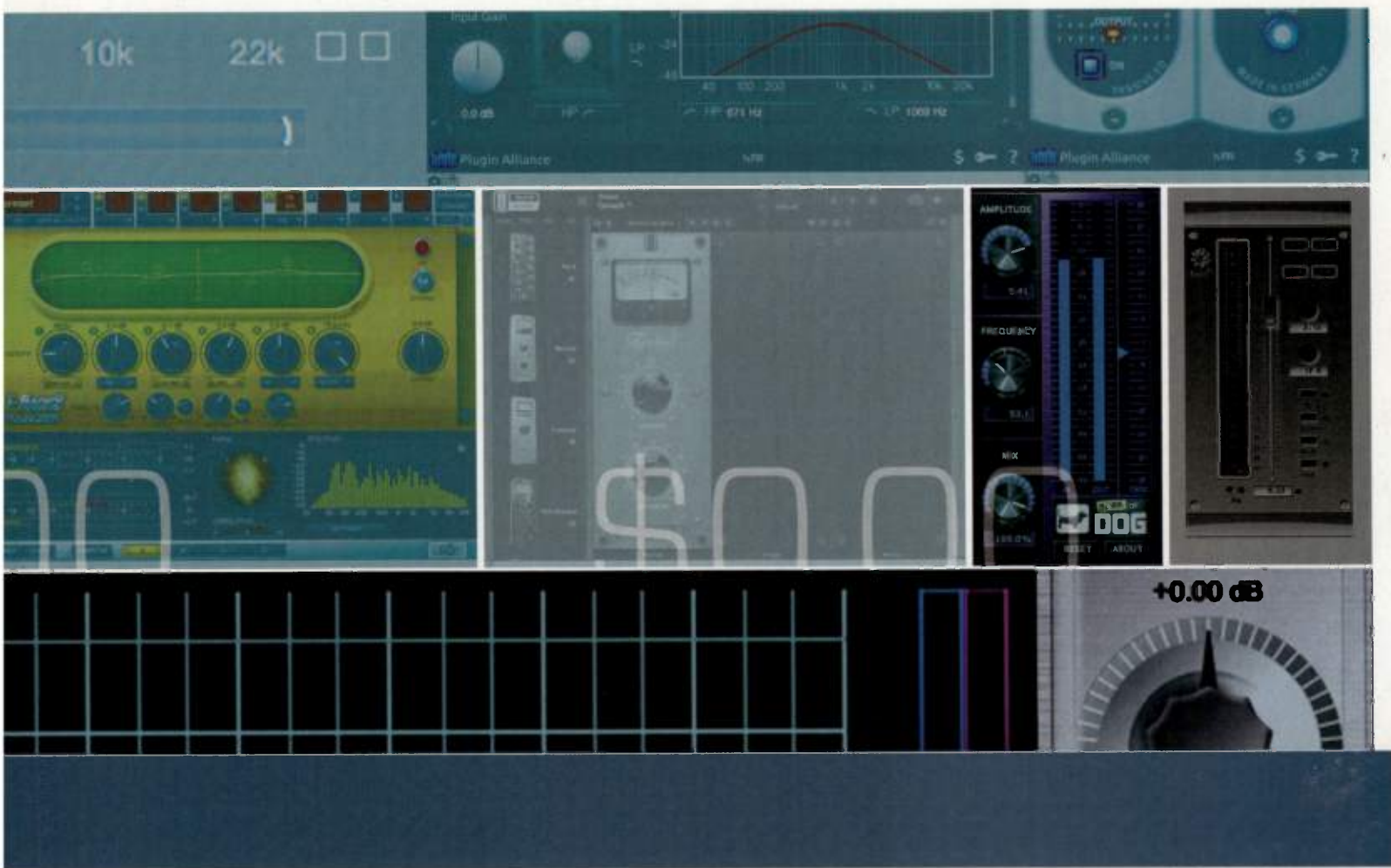
How to set yourself up with free mixing and mastering tools—and what to do with them

**BY MICHAEL COOPER**

Michael Cooper is a recording, mix, mastering and post-production engineer, and a contributing editor for *Mix* magazine. You can reach Michael at [michaelcooper@bendbroadband.com](mailto:michaelcooper@bendbroadband.com) and hear some of his mixes at [soundcloud.com/michael-cooper-recording](https://soundcloud.com/michael-cooper-recording).

**P**lug-in signal processing is the mother's milk of creative in-the-box production. Unfortunately, it can cost big bucks to fill your glass. Thankfully, many manufacturers offer one or more plug-ins for free. I'm not talking about demo-mode free. I mean forever free, with absolutely no time limit or restrictions on use.



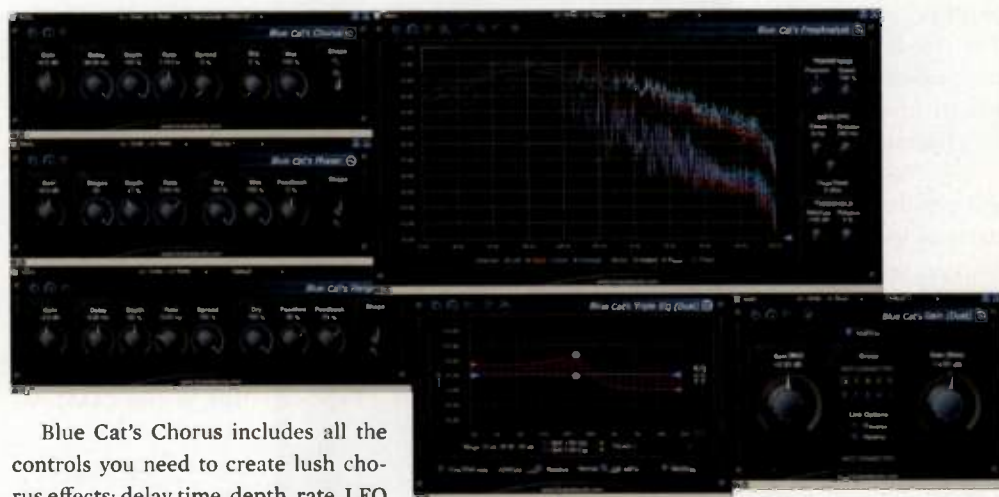


This article is your handy guide to some of the best free plug-ins available for mixing and mastering. And while “no cost” usually implies low quality, that’s simply not the case here. True, some of the free plug-ins detailed in this guide are lesser-featured versions of paid plug-ins offered by the same manufacturer. But while the freebies’ capabilities may be somewhat limited compared to those offered by their cutting-edge, commercial counterparts, their sound quality is just as high.

This guide by no means covers all the gratis plug-ins available on the Internet. You’ll find an incredible bounty of freebies online once you start digging. (Better bring a backhoe!) Rather than fill this article front to back with a laundry list of all the software you can possibly hoard, I’ll focus on a core group of products and tell you what you can actually *do* with them in the studio. Happy shopping!

#### BLUE CAT’S BOUNTIFUL BUNDLE

Blue Cat’s Freeware Plug-ins Pack II ([bluecataudio.com](http://bluecataudio.com)) includes six free plug-ins in AAX, AU, RTAS, VST, and DirectX formats and mono, stereo, and (for some of the plug-ins) dual-mono configurations (see Figure 1).



Blue Cat’s Chorus includes all the controls you need to create lush chorus effects: delay time, depth, rate, LFO waveshape (sine or triangle), separate level controls for dry and wet signals, and (in the stereo version) a spread control that adjusts the stereo image. But you can also mangle sounds in really cool ways that go way beyond chorusing. For example, by switching the waveshape to triangle, cranking the depth control fully clockwise (to 100 percent), plunging the spread control all the way to mono and killing all dry signal, you can make a stereo synth pad pulse with a rounded at-

**Fig. 1.** The Blue Cat’s Freeware Plug-ins Pack II comprises a lavish offering of free plug-ins, including a flanger, phaser, chorus, 3-band semi-parametric equalizer, real-time spectrum analyzer, and master gain controller.



tack to sound more like an electronic piano than a pad; adjust the rate control to determine how quickly the pulses repeat, making them synch with your song's tempo.

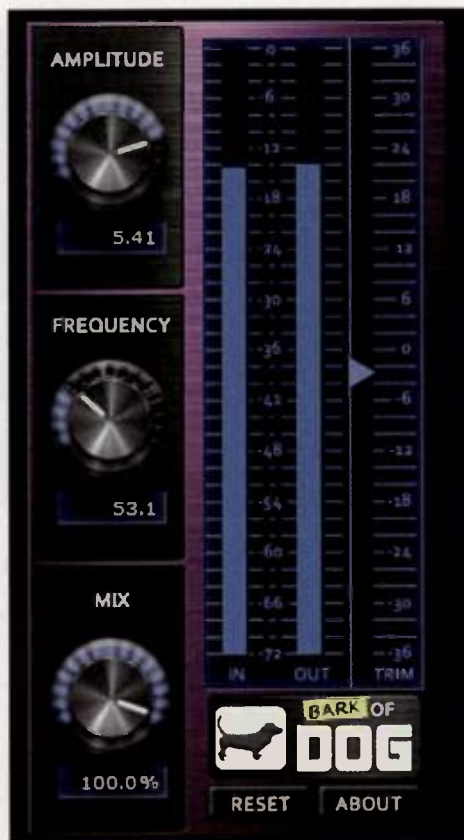
Blue Cat's Flanger provides two key controls for adjusting the depth and tonality of its flanging effect: Feedfwd (feedforward) and Feedback. Feedfwd sets the level of the effect's delayed-signal component. (The Delay control sets the component's delay time, which is modulated using the Depth and Rate controls.) When combined with the dry signal, the feedforward signal creates a comb filter.

The Feedback control sets the amount of effect signal that's regenerated (using a feedback loop), adding resonance to the comb filter's peaks and troughs, and intensifying their effect further. With each control, a setting clockwise from the noon position adds effect signal that's in phase with the dry signal, while counterclockwise-from-noon settings flip the phase of the effect. Try adjusting either Feedfwd or Feedback—or both—to flipped phase settings to keep resonant bass-frequency peaks under control. To create warbling or downright bubbly, synth-like effects, use very high Rate settings.

The control set for Blue Cat's Phaser is similar to that for the company's freebie Flanger but uses a Stages control in lieu of a delay-time control. As you raise the Stages control, you increase the number of phase-shifting all-pass filters used, creating more notches and peaks in the resulting comb filter and intensifying the plug-in's phaser effect. The Wet control adjusts the amount of directly phased (that is, not fed back) signal.

The Feedback control performs essentially the same level and phase functions as the control by the same name in Blue Cat's Flanger. To make your guitar gently weep, crank the Stages control to its maximum value, set the Rate knob to around 3.64 Hz, turn off Feedback, and dial in roughly equal settings for the Dry and Wet controls.

**Fig. 2. Boz Digital Labs' Bark of Dog is a resonant highpass filter that gives bass instruments like kick drum extra punch.**



Considering it's a gratis offering, Blue Cat's Triple EQ is a surprisingly flexible and potent 3-band semi-parametric equalizer. In addition to mono and stereo configurations—and a mid-side mode for the latter—a powerful Dual Channels configuration is also included on the house. With linking defeated between its two channels, the Dual Channels version can apply equalization independently to each channel. For example, you can boost the low end for the bass and kick (and other elements) in the mid channel of a stereo mix without blurring hard-panned electric guitars. And if one of those guitars is making the left channel sound muddy, you can cut low-midrange frequencies in that channel without affecting the clear-sounding right channel.

A Relative mode lets you link channels while preserving any pre-existing control offsets between them. These are advanced capabilities usually only found in the best equalizers on the market—and they're yours for free! And when your tired ears can no longer decipher what you're hearing, reach for the free Blue Cat's FreqAnalyst. This real-time spectrum analyzer can display instantaneous and peak levels in turn or simultaneously for the left, right, or both channels.

Blue Cat's Gain offers mono, stereo, and dual-channel configurations. Using its dual-channel form, you can separately control the gain of mid and side channels, for example, to widen or narrow the stereo image of a keyboard track or full mix. Multiple instances of the plug-in (having the

same configuration) can be linked and controlled from one GUI. Imagine, for example, linking instantiations of Blue Cat's Gain placed on all your synth tracks and ballooning the stereo widths of all the tracks at once using one side-channel gain knob!

#### BARK OF DOG

Bark of Dog (AAX, AU, RTAS, VST, VST3), a resonant highpass filter (HPF) from Boz Digital Labs (bozdigitallabs.com), gives bass instruments such as kick drum extra punch. Dial in the corner frequency you wish to hype on your track, and adjust the plug-in's Amplitude control to boost your selected frequency to taste

(see Figure 2). All other frequencies below the corner frequency will conditionally be rolled off; if you want to more or less preserve those frequencies, lower the plug-in's Mix control to add back some dry signal. Use the Trim slider to adjust the plug-in's output level.

This article is your handy guide to some of the best free plug-ins available for mixing and mastering. And while “no cost” often implies low quality, that's simply not the case with any of the forever-free, no-time-restrictions products described here.

#### IK MULTIMEDIA T-RACKS CUSTOM SHOP

IK Multimedia (ikmultimedia.com) is famous for its Custom Shops, online stores that allow you to buy add-ons to expandable pro-audio and musical-instrument software à la carte. The company's T-RackS Custom Shop offers dozens of mixing and mastering processors, including compressors, equalizers, reverbs, and de-essers.

A free basic version of T-RackS Custom Shop comes both as standalone software and a shell for loading up to twelve processors at once—on a track's insert—in your DAW (see Figure 3). The first eight slots for the processors are arranged in parallel configuration, four slots to each audio path; after submixing the two paths, four more slots follow in series. Along with the T-RackS shell, you get the Classic Equalizer and Metering Suite processors gratis. Around 30 other processors also come pre-loaded and operate in demo mode. All processors can also be instantiated as single plug-ins (AAX, AU, RTAS, VST).

Classic Equalizer is a dual-channel affair offering six bands: two of the bands use parametric peaking filters, while the other four bands feature respective low and high shelving and highpass and lowpass filters. You can EQ the left and right (or





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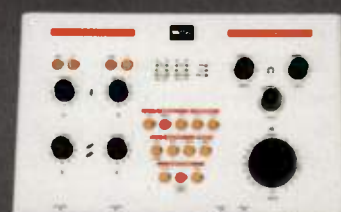
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**Fig. 3.** IK Multimedia's T-RackS Custom Shop comes pre-loaded with the free Classic Equalizer and Metering Suite modules, along with demos of roughly 30 other processors you can buy à la carte at the company's online store.

mid and side channels, in M/S mode) independently or link the two channels to apply the same EQ to both at once.

The T-RackS Metering Suite includes facilities for viewing peak and RMS levels, perceived loudness, phase and spectrum analysis. The perceived loudness meter combines averaging and frequency weighting to arrive at its combined volume display for both channels. Select a music genre (such as Funk Rock) from a pop-up menu to adjust the placement of colored bars underlying the meter; the bars suggest a range of target levels you should aim to achieve in your mastering for the selected genre.

#### PLUGIN ALLIANCE FREEBIES

Four complimentary plug ins collectively from three manufacturers—are currently available from Plugin Alliance (plugin-alliance.com; see Figure 4). The Brainworx bx\_cleansweep V2 (AAX Native, AU, AudioSuite, RTAS, TDM, Venue 32-bit, VST2, VST3) offers continuously variable highpass and lowpass filters, each with their own bypass. Use both filters at once to discard boomy lows and brittle highs from electric guitar tracks, sitting them perfectly in the midrange pocket. Feeling more adventurous? Mouse-drag the GUI's automatable joystick to simultaneously lower both filters' corner frequencies from their maximum to minimum values and back again; this creates a bandpass-filter sweep that sounds great on full-bandwidth synth tracks and drum subgroups.

Every engineer should own Brainworx bx\_solo (AAX Native, AU, AudioSuite, RTAS, TDM, Venue 32-bit, VST2, VST3), baby brother to the company's outstanding bx\_control V2 (which, incidentally, I use on every mastering session I do). The free bx\_solo lets you solo in turn the left, right, mid, and side channels of your mix to hunt down

distortion, clicks, and phase problems. (Hint: If you can hear your sampled kick-drum in the side channel, it's out-of-phase and robbing your mix of low end.) Swap the left and right channels with one mouse click. Use the Stereo-Width control to widen or narrow full mixes, keyboard tracks, guitar subgroups, and tracks for drum-room mics.

The elysia niveau filter (AAX DSP, AAX Native, AU, AudioSuite, RTAS, VST2, VST3) uses tilt equalization to quickly adjust the timbre of your tracks. First, use the EQ Freq control to select the frequency above and below which you want the equalizer to act. Rotating the EQ Gain knob clockwise past its noon position progressively boosts frequencies above the EQ Freq setting while attenuating those frequencies below a commensurate amount.

Rotating the EQ Gain knob counterclockwise from its noon position has the opposite effect, boosting lower frequencies and attenuating higher ones with respect to the EQ Gain setting. For big, pillowy tone on electric bass guitar, set the EQ Freq knob to roughly 100 Hz, and turn the EQ Gain knob counterclockwise from noon.

The SPL Free Ranger graphic equalizer (AAX DSP, AAX Native, AU, AudioSuite, RTAS, VST2, VST3) features four fixed bands respectively centered at 40, 150, 1,800 and 16,000 Hz. Modeling the sound of passive equalizers, Free Ranger sounds particularly flattering on acoustic instruments and full mixes where silvery sweet and round tones are your port of call. Try boosting 40 and 1,600 Hz to add luxuriant weight and open air

to the full mix for your ballad, then sign in immediately for EQ-addiction therapy at the nearest clinic.



**Fig. 4.** Plugin Alliance, a consortium of pro audio companies, offers the Brainworx bx\_solo and bx\_cleansweep V2 (monitoring facilities and sweepable filters), SPL Free Ranger (a modeled passive equalizer), and elysia niveau filter (a tilt equalizer) on the house.

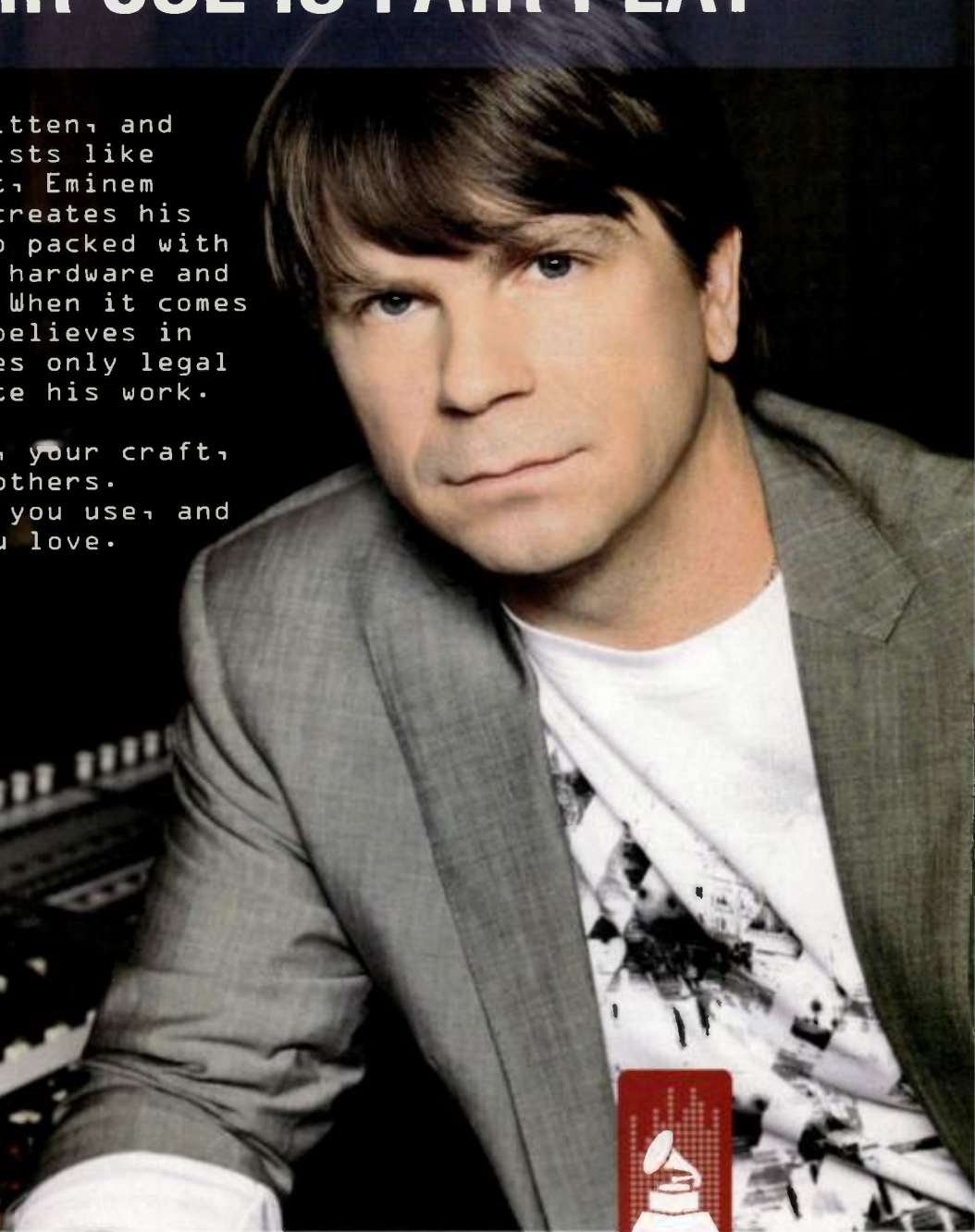




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Fig. 5. PSP's PianoVerb, a stripped-down version of PianoVerb2, produces unique reverberation using twelve string operators tuned to different notes.



Fig. 6. Slate Digital's Virtual Mix Rack (VMR) is yours for the taking at no charge. The virtual effects rack comes pre-loaded with the free Revival Sonic Enhancement Processor and demos of Slate's compressors, equalizers, and Virtual Console Collection (VCC).



Fig. 7. Softube's free Saturation Knob modeled-distortion effect features a three-way switch, labeled Saturation Type, that lets you apply distortion to mostly the lows or highs, or to the entire frequency spectrum.

#### PSP PIANOVERB

When I was a kid, I used to love sticking my head inside an open piano while hammering the keys with the sustain pedal depressed. Now this fascinating sound—absent the childish noodling—is yours for the taking! PSP's (pspaudioware.com) PianoVerb (a stripped-down version of the company's PianoVerb2, available in AAX, AU, VST, and RTAS formats; see Figure 5) produces unique reverberation using twelve string operators tuned to different notes.

Controls let you retune, transpose, and detune the string operators and adjust their damping and decay time. For a bright-sounding 'verb, raise the Transpose control moderately and turn the Damping con-



Fig. 8. Sonalksis FreeG provides a long-throw fader, peak and RMS meters, pan and trim controls, and switches to invert polarity, mute signal, and bypass.

electronic-percussion instruments. Cool!

#### SLATE DIGITAL REVIVAL AND VMR

The Revival Sonic Enhancement Processor is a module for the Slate Digital Virtual Mix Rack (VMR; slatedigital.com), a closed-architecture effects-rack plug-in (AAX, AU, RTAS, VST2, VST3) into which you can load up to eight compatible Slate processing modules (see Figure 6). Revival and the empty VMR rack are both free, while the other modules compatible with the rack—currently including compressors, equalizers, and the company's Virtual Console Collection (VCC)—must be paid for if you wish to continue to use them beyond their 15-day trial period.

Revival has just two controls: Shimmer adds air and brightness to the high-frequency band, while Thickness adds girth to the low end. Goose the Thickness control on kick and bass guitar tracks to fatten them up. Thickness and shimmer both sound terrific on full mixes, but be careful: A little goes an awfully long way in mastering applications.

#### SOFTUBE SATURATION KNOB

Saturation Knob (AAX, AU, VST) from Softube (softube.com) is a modeled-distortion effect that sounds great on a wide variety of tracks, from electric guitars to vocals to trap drums (See Figure 7).

A three-way switch, labeled Saturation Type, lets you apply distortion to mostly the lows or highs, or to the entire frequency spectrum. On electric bass, select the Keep High switch setting to preclude adding fizzy high-frequency distortion to the track while enhancing girth in the low end. Conversely, the Keep Low switch setting is your ticket for adding sparkly highs to vocals without inflating bass frequencies. Try using the Neutral setting to add wideband distortion to full-range synth tracks. A solitary knob adjusts how much distortion is added to your track.

#### SONALKSIS FREEG

If you've ever been frustrated by overshooting your mark when mouse-dragging your DAW's teensy-weensy faders, you'll love the Sonalksis (sonalksis.com) FreeG (AU, VST).

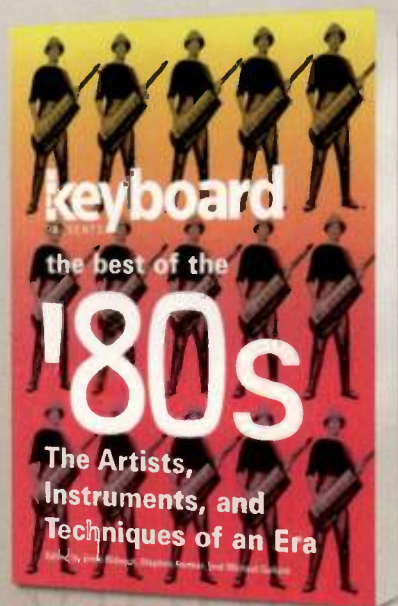
This fantastic plug-in provides a long-throw fader the length of a bowling alley! Joining the fader are peak and RMS meters, pan and trim controls, and switches to invert polarity, mute signal, and bypass the plug-in (see Figure 8). Activate the Pre switch to view signal levels at the plug-in's input for comparison purposes. When you want to make small, ultra-precise fader adjustments, turn on the Fine function to shrink the fader's decibel range while preserving the length of its throw. Essential for both mixing individual tracks and use as a master fader, every engineer should own FreeG. ■



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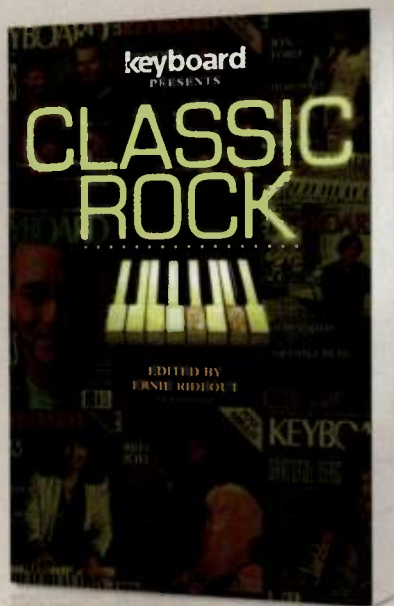
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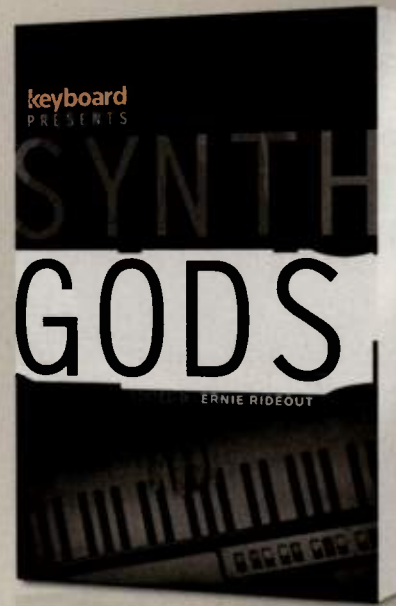
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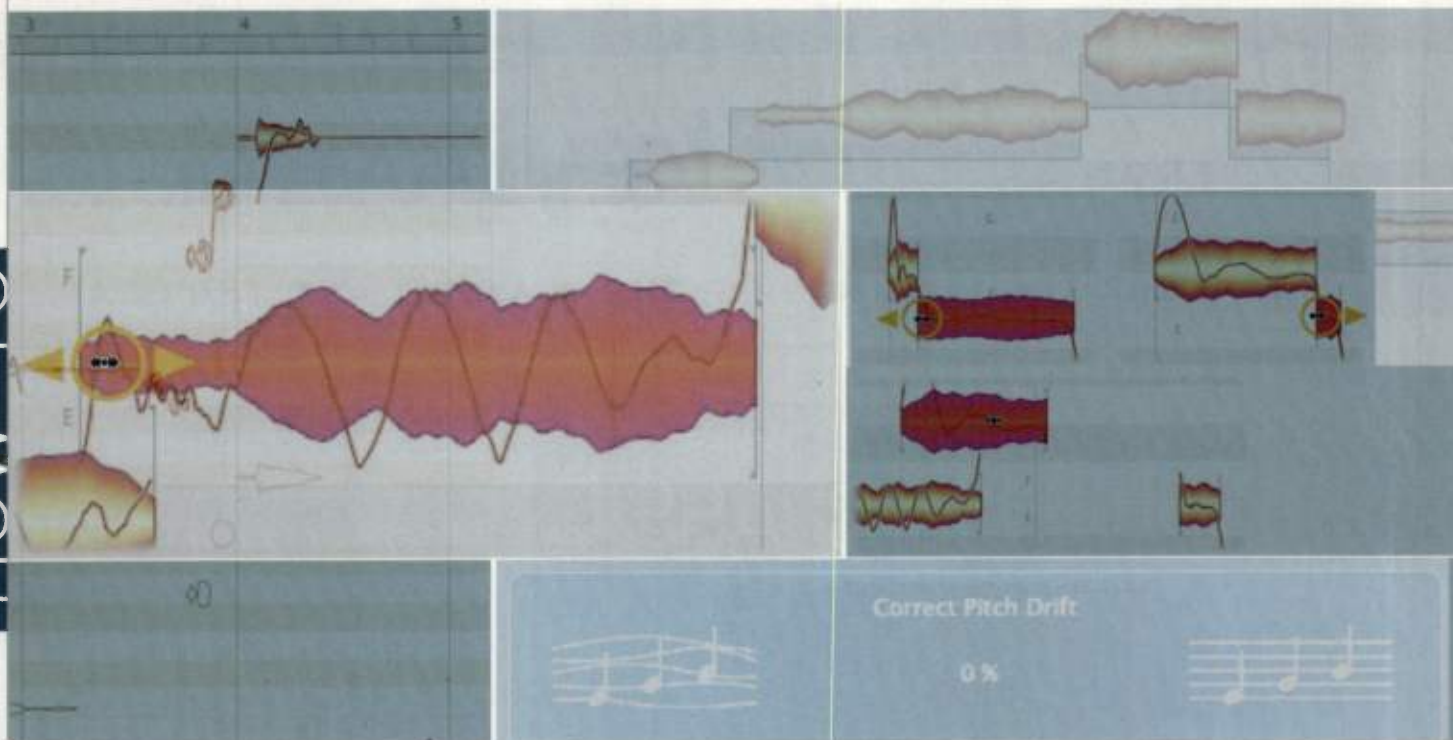
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# 10 Methods of Melodyne Madness

Try these tips that have nothing to do with vocal pitch correction

BY CRAIG ANDERTON

**M**elodyne is known for its natural-sounding pitch correction, but it can do a whole lot more. These ten tips can be done with the Editor version, and when indicated, also with Melodyne Essential (a basic version that's bundled with some versions of Cakewalk Sonar and PreSonus Studio One Pro, but also available for sale separately). The principle behind all these tips is that Melodyne can manipulate both pitch and time—but no law says you need to apply these solely to vocals.



**Fig. 1. Melodyne can do convincing ADT effects by introducing slight timing and pitch variations.**

## 1. AUTOMATIC DOUBLE-TRACKING FOR VOCALS (ESSENTIAL)

Melodyne can do very convincing ADT effects. Before applying any pitch correction to a vocal, copy it. If you plan to do pitch correction, apply correction only to the original vocal. Then, open the copied vocal in Melodyne, and play with the Correct Pitch Center slider and Quantize Time Intensity

sliders. Start at around 50 to 60 percent, and adjust for the most convincing ADT effect (Figure 1). The

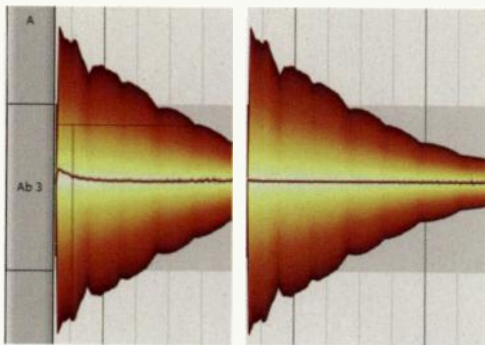
slight pitch and timing changes really sound like two vocals. When mixing ADT vocals, centering the two vocals creates more of a chorusing effect, while spreading them about 30 percent right and left opens up a more spacious soundstage.

You can take this further with the Editor version: Make a few subtle formant changes, and/or choose Edit > Add Random Deviation for additional pitch and timing change options.

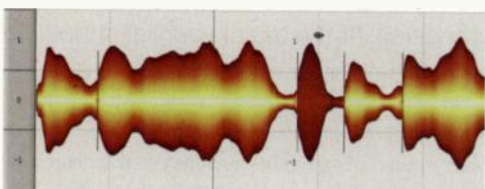
## 2. THE HIDDEN SPLIT TOOL (ESSENTIAL)

You might assume that because there's no Split tool menu in Essential, you can't split notes. Wrong! Hover over the blob where you want to do the split, then raise the cursor just above the blob until it turns into a Split tool. Double-click, and the note





**Fig. 2.** The left image shows a close-up of the initial bass note pitch attack; the right shows the same note after flattening the pitch change with Melodyne.



**Fig. 3.** The highlighted blob used to be the same level as the one to its right, but now its level has been brought up to be consistent with the other blobs.

will split. This also works as a shortcut in Editor.

### 3. HEAVY DRUMS (ESSENTIAL)

To add some meat to wimpy drum sounds, copy the drum track, then insert Melodyne in the copy. Choose Percussive mode, then drop the pitch several semitones. Mix this about 6 dB or so below the main track to start, and behold—instant drum corpulence.

You can also “tighten” drum sounds, particularly kick and toms, by raising the copied pitch several semitones. And to really get your kicks, make two copies of a kick track. Tune one up three semitones, and tune the other down two semitones. You’ll have a full, tight kick. Vary pitch more if you dare, but note this can loosen the timing.

### 4. BETTER BACKGROUND VOCALS

When you’re doubling or tripling your voice, alter the vocal’s format to add timbral differences. Select all notes in the vocal, choose the Formant tool, then click in one of the notes and drag up or down. Usually, one semitone of format change is sufficient; more than two will tend to sound gimmicky. However, I’ve used up three semitones on isolated words for emphasis. Just remember to click on the note and drag to change formant—don’t click on the bar representing the formant shift, or you’ll have to re-select everything all over again.

### 5. BETTER BASS SAMPLING

Multisampling is the usual solution to re-creating the sound of instruments played with different dy-

namics, but it’s a hassle to do all those samples—especially when you can hear the splits between different velocities. Fortunately with bass, there’s a workaround that often sounds *more* natural.

When you hit a bass string harder, the biggest timbral changes are a brighter sound and a higher initial pitch (because the pluck pulls the string sharp before it settles down to pitch). Synth engines can create these characteristics with velocity-controlled lowpass filtering (use a gentle filter slope) and pitch envelope set for a short decay, but a problem occurs if you pluck the string hard so you can obtain maximum brightness at the highest velocities: You’ll have a significant initial pitch variation that won’t sound realistic at lower velocities.

Solve this problem by opening the sample in Melodyne, then flattening the initial pitch change with the Pitch Modulation tool (Figure 2). Now you can control the initial pitch envelope solely with the synthesis engine.

### 6. ENVELOPE-CONTROLLED FLANGING (ESSENTIAL)

Melodyne makes a great flanger. Copy the track you want to flange, open the copy in Melodyne, choose Percussive mode, then select all the blobs in the copy. Set Pitch Grid to No Snap. Click on one of the selected notes, and drag slightly off pitch. You’ll hear note envelope-controlled flanging.

If you have Editor, take this one step further with the Edit > Add Random Deviation function. Pitch Slight maintains timing but creates flanging/timbre variations; Timing variations create the effect of altering a flanger’s initial delay time.

### 7. VOCAL LEVELING WITHOUT COMPRESSION

The lazy path to creating consistent vocal sounds with an inconsistent vocalist is to throw on compression or limiting, but here’s a way to simulate a more consistent vocalist—which means you won’t need to add as much dynamics control.

Open the vocal in Melodyne, and choose Percussive mode. (This technique also works in Melodic mode, but Percussive mode makes it much easier to compare relative note levels.) Then choose the Amplitude tool, and click/drag on notes to adjust levels (Figure 3). Audition the results often—you don’t always want everything to have the same level. Often, you can also use the Split tool to separate breath noises, sibilants, and plosives from the vocals, and reduce their levels.

### 8. THE CHORD PROGRESSION CREATOR (ESSENTIAL)

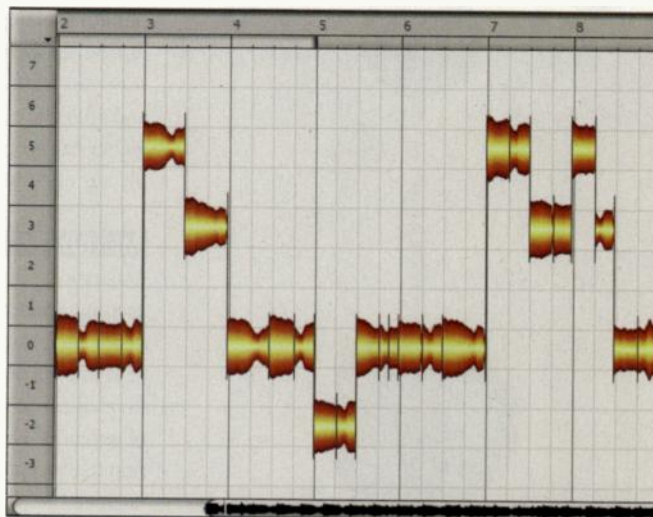
Here’s another fun Percussive mode tip. Record something like a straight rhythm guitar part, but stay on one chord throughout. Now open that part in Melodyne, and choose Percussive mode. Each chord will appear as its own blob, so you can grab a blob and transpose it to experiment with creating different chord progressions. Although the results probably won’t be a “keeper” in terms of fidelity, this is an easy way to experiment with chord progressions when songwriting. (see Figure 4).

### 9. THE OCTAVE DIVIDER BASS (ESSENTIAL)

Let’s face it, octave stompbox dividers don’t sound all that great... so, the bar isn’t set particularly high. But Melodyne can create decent octave-below effects: Create a copy of your bass track, choose Percussive mode, select all, and drag down one octave. For best results, use EQ on the cloned track to take off most of the highs and boost the bass. This technique is particularly helpful when you need to play the bass in a higher range than you’d like to accommodate a particular key, and want some more low-end authority. You don’t need to mix in too much of the octave signal to add some fat.

### 10. PITCH UNCORRECTION (ESSENTIAL)

Finally, remember that the human ear is not always a fan of perfection. I recorded a vocal that just didn’t seem right, but its pitch—and the track underneath it—was perfect. And that’s what wasn’t right: By flattening the pitch just a little bit (remember to turn off Snap to Grid), the way the note resolved was just that much sweeter when the vocals hit the next note. I don’t know if B. B. King ever did bend that flatted seventh all the way to the tonic... but if he didn’t, I think I know why. ■



**Fig. 4.** Open a part in Melodyne, and choose Percussive mode. Each chord will appear as its own blob, so you can grab a blob and transpose it to experiment with chord progressions.



# Master Plan

How to prepare for your remote mastering session

BY MICHAEL COOPER

Michael Cooper is a recording, mix, mastering and post-production engineer and a contributing editor for *Mix* magazine. You can reach Michael at michaelcooper@bendbroadband.com and hear some of his mastering work at [www.soundcloud.com/michael-cooper-recording](http://www.soundcloud.com/michael-cooper-recording).

**I**n most cases, there's no need for clients to attend the mastering sessions for their projects. As long as the mastering house is a professional outfit that offers at least one free revision of their work—in case they don't deliver exactly what you want on the first pass—you can successfully work with the mastering engineer from afar. That said, there are numerous precautions you should take and preparations you should make to get the most out of your remote mastering session. At the top of your list should be technical considerations regarding the mixes you'll deliver for mastering.

## GARBAGE IN, GARBAGE OUT

There are some mix problems that mastering can't completely fix. Never apply a high-pass filter or limiting to your entire mix—once the bottom end and transients are removed, there is little the mastering engineer can do to get them back. (Tricks of the mastering trade can help, but the results will never sound as good as when working with a full-bandwidth, dynamic mix.) While some mastering houses request 6 dB of headroom in the mixes submitted to them, I feel it's far more important to maintain roughly a 10 to 13dB crest factor (the difference between peak and RMS levels); doing so will allow the mastering engineer to optimally shape the dynamic range of your masters, using high-end compressors and limiters. If you are absolutely convinced you need to apply compression to your entire mix to glue it together (and you have the technical chops), make sure you use a top-notch bus compressor and very low ratio and apply no more than 2 dB of gain reduction on peaks.

Never mix down to a lower bit depth and sampling frequency; the higher the resolution of your mixes, the better your masters will sound. Make sure you leave a little blank space before the start and after the end of each mix (so the mastering engineer can crop heads and tails seamlessly), and apply any end fades the way you want them to sound.

## METADATA

Make sure you give the mastering house complete and accurate metadata along with your mixes. List the bit depth and sampling rate for each track. Write the title of each track exactly the way you want to see it appear in releases, including proper punctuation and the use of upper- and lower-case letters. Giving this information to the replicator isn't sufficient, as the mastering engineer may be tasked with, for example, encoding your CD master with CD-Text or CDDDB metadata.

List the ISRC code for each track and the UPC code for each product that will be packaged for retail;

your mastering engineer will embed these codes in your master. (Aggregators such as CD Baby can supply you with these codes.) While an in-depth discussion of ISRC and UPC codes is beyond the scope of this project, suffice it to say that they collectively facilitate royalty collection, establishing the correct retail price of your release at cash registers, tracking sales and getting your songs included in charts generated by Billboard and Nielsen SoundScan (among others).

## CREATIVE DIRECTION

Give your mastering engineer a written list of the order in which you wish your tracks to play. Specify any special instructions regarding the gaps between songs, including any consecutive tracks that should have no gap between them. Discuss how loud you want your master to be vs. maintaining optimal sound quality—there is a tradeoff—and how much bass energy you'd like it to have; consider sending the engineer a reference track or two that demonstrates how you'd like your master to sound in these regards. Also be sure to tell your mastering engineer which release formats you want her to master for, as that will affect her target peak levels, metadata encoding, and so on.

## COORDINATE ALL PARTIES

Let the mastering engineer know which replicator you'll be using for your project and their contact information. The engineer can then determine which delivery format (for example, disc or DDP file set) the replicator can accept and their deadline for receipt of the master. With this last piece of the puzzle in place, you're on your way to a polished and on-time release! ■

*To celebrate the launch of Abbey Road's new online mastering service, Abbey Road and EM are sponsoring a competition. Winners' tracks will be mastered remotely for free! See page 12 for details.*



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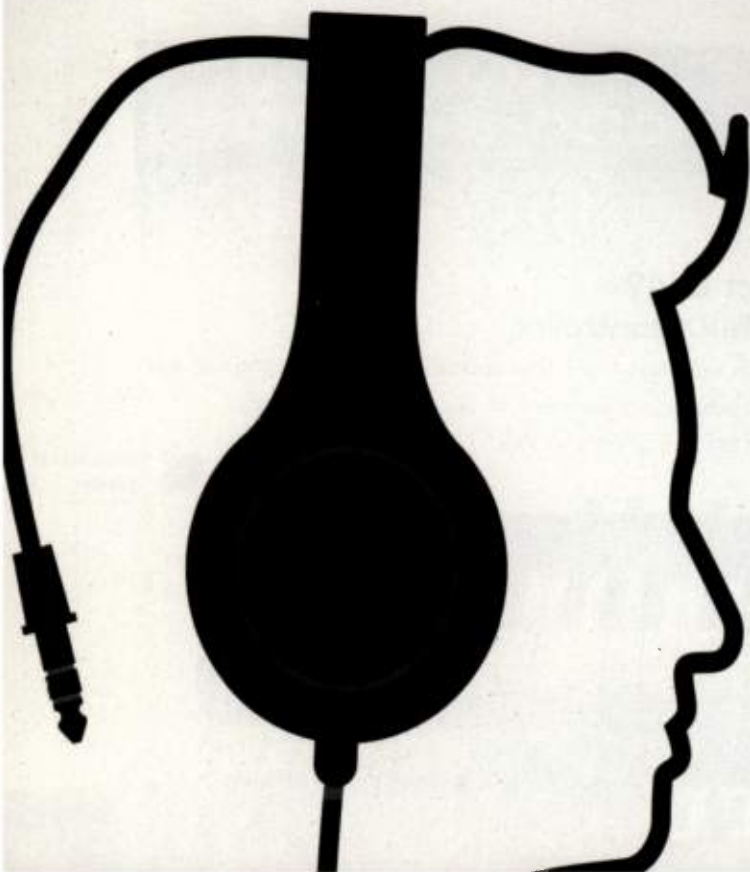
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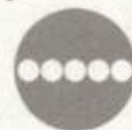
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# Tony Bongiovi

Fifty Years of Audio Innovation—From Motown to Medicine

BY SARAH JONES

**P**roducer, engineer, and inventor Tony Bongiovi is probably best known for building the legendary Power Station Studios (which became Avatar) in New York City; he's shaped some of the mightiest sounds in rock, from Jimi Hendrix to The Ramones, Aerosmith, The Scorpions, Talking Heads, and Ozzy Osbourne.



He has spent five decades pushing the boundaries of recording technology, from his early career work at Motown as a teenager through his latest endeavor, Bongiovi Acoustics, which specializes in DSP products for a variety of industries.

We caught up with Bongiovi in New York, when he returned to record at Avatar nearly a quarter century after his last session in that storied room.

**Before The Power Station, before Record Plant, you got your start at home, re-creating the Motown Sound. Contrast your experience then with the modern home studio environment.**

The home studio today is probably one hundred times more sophisticated than professional studios when I began my career back

in the '60s. Technology has made it possible to create records without leaving your house.

In fact, I give a Motown seminar and in order for me to show how I duplicated that sound, I bought a 4-channel mixer, with echo send on it and equalization. It was \$80! I think it was 6-channel, it had faders, and it had low, mid, and high-frequency EQs, and special effects for delays or reverberation. To get that kind of flexibility in the late '60s, you'd have to spend \$80K.

**You're renowned for designing live recording spaces. How can musicians capture a "big" sound when they are recording in less-than-optimal spaces?**

With the recording equipment that is available now, you can add spatial effects; you can create room size. It's never going to be the same, like at Power Station in New York, where you have a fairly large room and can take advantage of the design of that big room. We used to put the drums out there and got the 1980s rock drum sound that became famous. You can't get that exact sound, but you have the tools available to try to replicate it. You record it as best you can in whatever room you're in. It might not be the optimal situation, but then you have all these special effects that you can use, to change or color the sound, to make it do what you want it to do.

**Tell me about Bongiovi Acoustics and your new DPS plug-in.**

I wanted to do something in aviation, so I needed to find a way to take lightweight speakers and get them to sound like they were built mechanically so that they could deliver acoustically a wider range of frequency. That's when Digital Power Station technology was born. DPS is a patented algorithm with 120 calibration points that optimizes audio in real time. DPS takes compromised or compressed material, like an MP3 or streaming audio, and makes it sound like full-quality audio by adding depth, clarity, definition, presence, and unbelievable stereo field imaging. Through my company, Bongiovi Acoustics, the technology has been utilized in different industries; automotive, consumer products, mobile communications, and medical. We have a joint

venture with some of the biggest tech companies in China. In fact, they want to build an exact replica of the Power Station in China next year!

Our technology is active; the technology listens to the program material and then imprints into the amplifier a sound change, a voltage change, that is coincident with what is necessary to faithfully reproduce those frequencies. It's being told to compensate for deficiencies in the mechanical design of the playback transducer, the speaker. When the plug-in comes out, for a limited time, we're offering it free. We want to get it out there so everyone can try it.

**How do we educate consumers on the importance of audio quality as part of the listening experience?**

There is no right or wrong. Quality is what you believe your sound should be. No more, no less.

More and more, people are breaking with convention. For example, distortion is now used a lot by rappers as a standard recording technique. That started to become popular when I was recording Jimi Hendrix at Record Plant. When he played, it was so loud that it distorted like crazy, and he wanted that. We couldn't find microphones that we could pad down enough that either wouldn't distort or wouldn't distort the input to the console, because back then the equipment wasn't designed to handle that. So we had to figure out all kinds of inline pads and go to dynamic microphones and do all kinds of things to be able to record—that was controlled distortion. Jimi took distortion, which everyone thought to be bad, and turned it into a new aesthetic.

**What was it like to work at Avatar—formerly The Power Station—25 years after your last session there?**

It was quite an experience. As I was walking a film crew through the studio and explaining to them how I designed it, I wondered, "How did I come up with this?" I was 26 years old. Then when everyone started playing, and especially the horns in that big room, it was a real treat because I hadn't been there in so long. The room was designed for musicians to play in. I'm not a musician, but I know what sound means to a musician. ■





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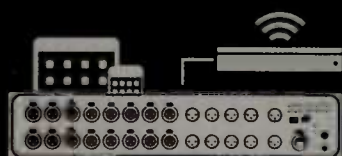
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