# electronic MUSICIAN

RECORD • PRODUCE • PERFORM

MASTER CLASS
Novation Peak

NOW FEATURING
**Keyboard** MAGAZINE
LESSONS!
ARTISTS!
REVIEWS!

The Art of
**Brian Auger**

**Hammond Organ** Master Class

+ More!

**ELECTRONIC GUITAR**
Contro
Softube
Modular
Software

# The 2017 Rock Star Holiday Gift Guide

Ideas from ODESZA, Mystery Skulls, Torres and more for the naughty and nice people on your list

REVIEWS

**MAGIX**
SOUND FORGE 3
MAC

**WAVES**
BAUER MOTION

**SPITFIRE**
AUDIO BT PHOBO

**INTUA**
BEATMAKER 3

**EXPRESSIVE**
E TOUCHE

NewBay
12.2017
$5.99 CAN $6.99
12
0 71486 01017 3
A MUSIC PLAYER PUBLICATION

# EchoBoy

The Creative Standard

"I USE ECHOBOY ON EVERY MIX."

**Dave Pensado**

Pensado's Place, Beyoncé,
Michael Jackson, Kelly Clarkson,
Elton John, Christina Aguilera

Decades of echo devices in a single plug-in.

Free 30 day trial at soundtoys.com

soundtoys

# ANALOG SOUND BIG ENOUGH TO FILL A STADIUM

# NOW SMALL ENOUGH TO FIT IN YOUR BACKPACK

*8-voice configuration also available*

The **Prophet Rev2** delivers 16 massive, all-analog voices, classic Curtis filters, a mind-blowingly deep mod matrix, two types of sequencers, and a potent array of effects for layered pads, gritty industrial textures, blistering leads, and soulful splits. Now available in both keyboard and desktop versions. Fits comfortably in your backpack — and your budget.

**PROPHET REV2**
**16-VOICE ANALOG POLY SYNTH**

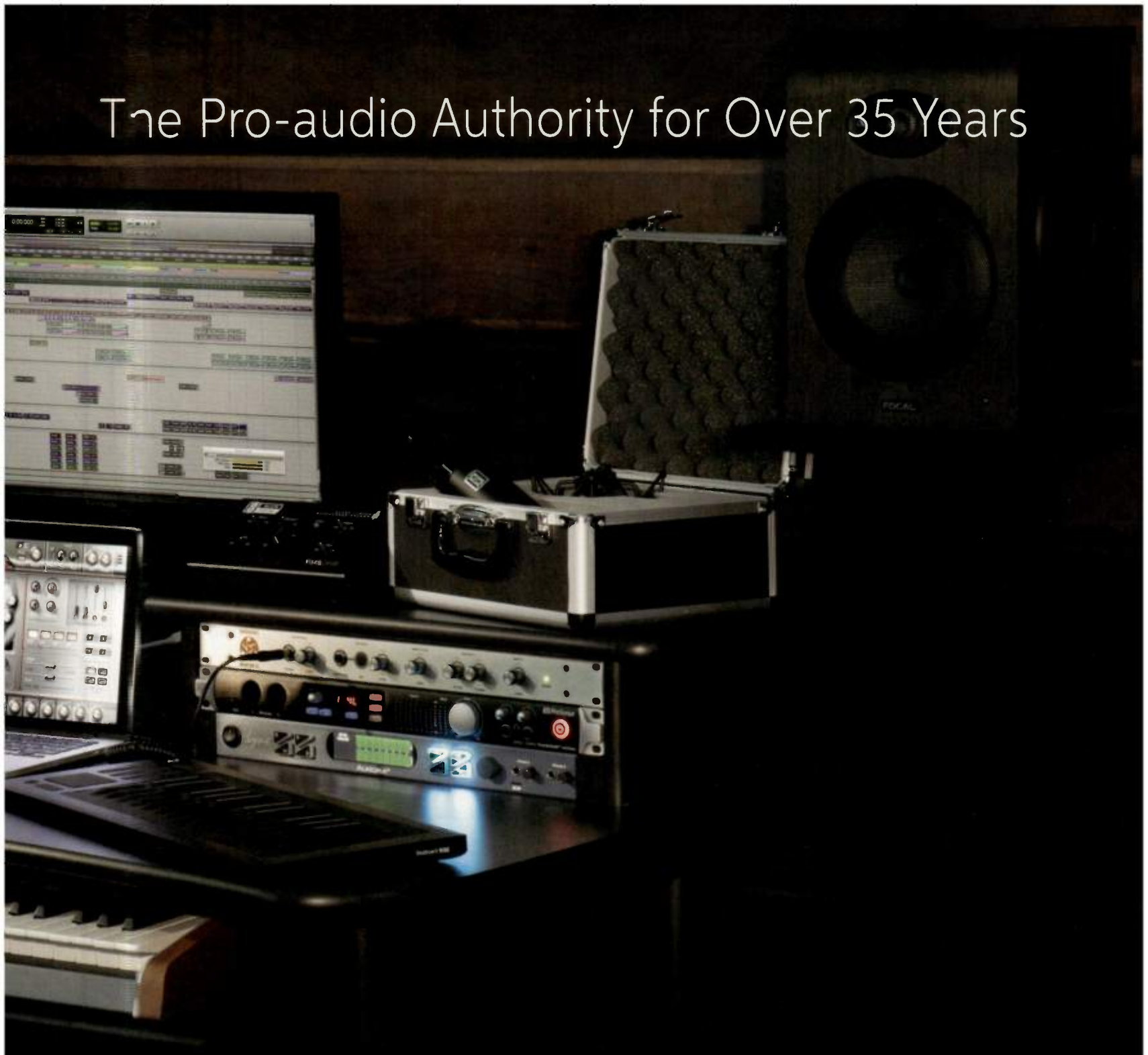
Designed and built in California
Dave Smith INSTRUMENTS
www.davesmithinstruments.com

**PRS** 408, **TC Electronic** Hall of Fame 2, **Focal** Shape 65, **Dangerous Music** BAX EQ, **Universal Audio** LA-610 Mk II, **Roland** TR-09, **Shure** SE846,

0% INTEREST for 24 MONTHS* on purchases of select manufacturers' products made with your Sweetwater Card between now and December 31, 2017 – 24 equal monthly payments required.

*Offer applies only to single-receipt qualifying purchases. No interest will be charged on promo purchase and equal monthly payments are required equal to initial promo purchase amount divided equally by the number of months in promo period until promo is paid in full. The equal monthly payment will be rounded to the next highest whole dollar and may be higher than the minimum payment that would be required if the purchase was a non-promotional purchase. Regular account terms apply to non-promotional purchases.

# The Pro-audio Authority for Over 35 Years



**ROLI** Seaboard Rise, **Slate Digital** VMS, **Dangerous Music** MONITOR ST, **PreSonus** Quantum, **Lynx** Aurora (n)

Sweetwater®

Music Instruments & Pro Audio

THE SWEETWATER **DIFFERENCE**

FREE SHIPPING**

FREE TECH SUPPORT

FREE 2-YEAR WARRANTY

(800) 222-4700 Sweetwater.com

electronic MUSICIAN

# CONTENTS 12.17

Keyboard MAGAZINE




34
**INTERVIEW**
Brian Auger of Oblivion Express

38
**THE ART OF BRIAN AUGER**
Hammond Organ Master Class

18


## THE ROCK STAR HOLIDAY GIFT GUIDE

Have you started making up your shopping list? Today's top artists, producers, engineers, and DJs have ideas that will make you a rock star to all the music-makers in your life. You'll find favorite audio gear, instruments, and music and book releases from ODESZA, Mystery Skulls, CJ Vanston, Mitchell Froom, and many more.

## DEPARTMENTS


10
**COMMUNITY**

12
**NEW GEAR**
Products from iZotope, Yamaha, PreSonus, and more!

66
**FIVE QUESTIONS**
Stephen Webber on Berklee College of Music's acquisition of Avatar Studios


## GEAR REVIEWS

42
**MAGIX**
Sound Forge 3 Mac

44
**WAVES**
Brauer Motion

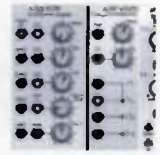
48
**SPITFIRE AUDIO**
BT Phobos

52
**INTUA**
Beatmaker 3

54
**EXPRESSIVE E**
Touche


## HOW TO


16
**ELECTRONIC GUITAR**
Build your own effects with Softube Modular



40
**SOUND DESIGN WORKSHOP**
Understanding Phase

58
**MASTER CLASS**
Novation Peak

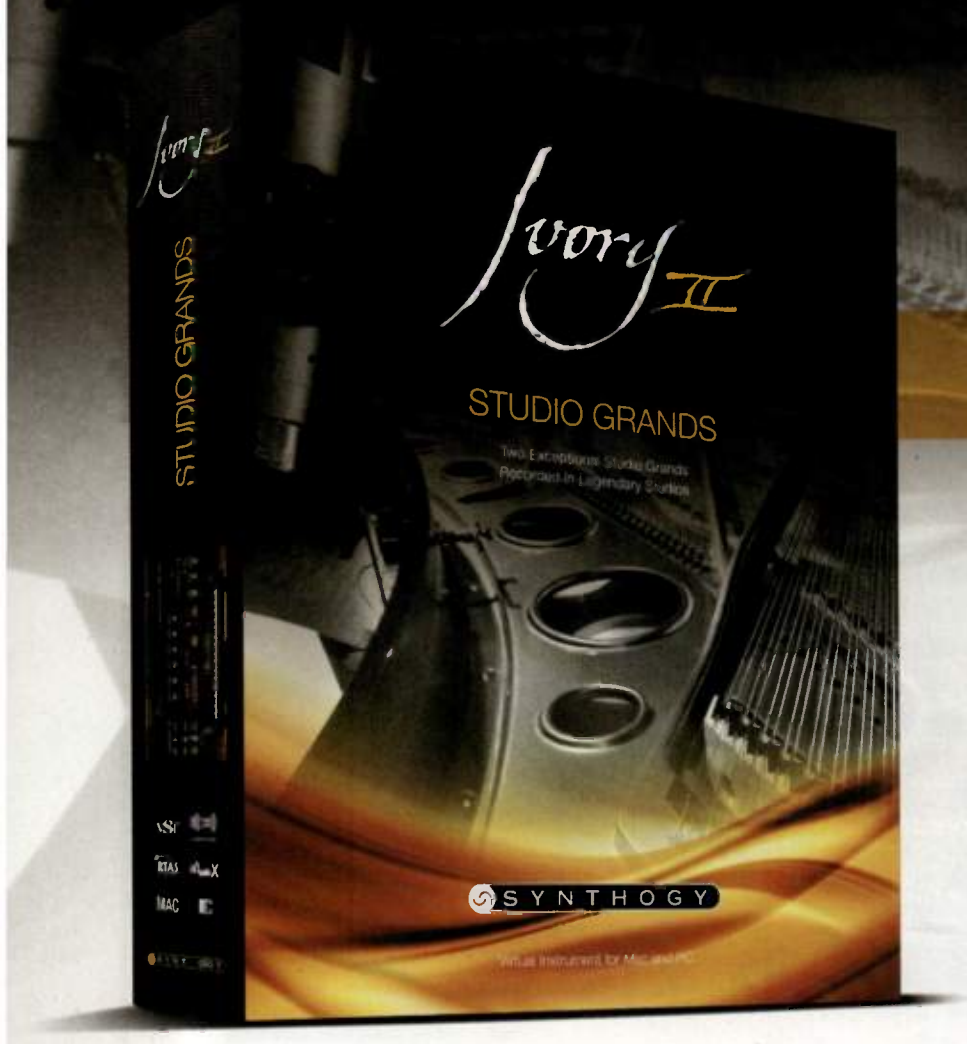
Electronic Musician (ISSN 0884-4720) is published monthly by NewBay Media, LLC, 28 East 28th Street, 12th floor, New York, NY 10016. Periodicals Postage Paid at New York, NY, and at additional mailing offices. Canada Post Publications Mail Agreement #40612608. Canada Returns to be sent to Bleuchip International, P.O. Box 25542, London, ON N6C 6B2. POSTMASTER: Send address changes to Electronic Musician, P.O. Box 232, Lowell, MA 01853.

Electronic Musician is a trademark of NewBay Media. All material published in Electronic Musician is copyrighted (©) 2017 by NewBay Media. All rights reserved. Reproduction of material appearing in Electronic Musician is prohibited without written permission. Publisher assumes no responsibility for return of unsolicited manuscripts, photos, or artwork. All product information is subject to change; publisher assumes no responsibility for such changes. All listed model numbers and product names are manufacturers' registered trademarks.

# Ivory II

## STUDIO GRANDS

Two Exceptional Studio Grands
Recorded in Legendary Studios




## NEW!

**STEINWAY B GRAND PIANO**
*Power Station New England—Waterford, Connecticut*
One of the most recorded pianos in history and widely considered, "The Perfect Studio Piano". Its unique balance of size and power makes it an extremely versatile instrument for all styles of music.

**BÖSENDORFER 225 GRAND PIANO**
*Firehouse Recording Studios—Pasadena, California*
This 7' 4" piano possesses a deeply resonant tone and balance and has appeared on many Grammy® winning records. Its revered sound has been captured for all time in one of the great piano rooms.

SYNTHOGY

ivory2.com

ILIO

***Contact your favorite dealer!***

800.747.4546 www.ilio.com

# The performance mixer ... for keyboards!

The most versatile, dynamic and exciting keyboard mixer ever... and because it's from Radial, you know it's going to be good! Features four stereo channels, 24-bit/192kHz USB i/o, effects loop footswitch, monitor out for stage, isolated XLR outs for the PA, volume pedal jack, MIDI, even a built-in sustain footswitch!

Video - see how Jordan uses it: radialeng.com/keylargo

*"The Radial Key-Largo is my new best friend! It's hard to believe all the audio connectivity goodness inside this compact unit. After I plugged in 2 stereo keyboards, my stereo iPad and my Seaboard as well as a standard MIDI keyboard through the DIN port, all I could do was smile!"*

***~ Jordan Rudess***

Keyboard player, composer / Dream Theater, David Bowie, Liquid Tension Experiment, Dixie Dregs, Steven Wilson

## Key•Largo... small box, Large Sound!

**radialeng.com**

1588 Kebet Way, Port Coquitlam BC V3C 5M5
tel: 604-942-1001 email: info@radialeng.com

Copyright© 2017 Radial Engineering Ltd. all rights reserved
Specs and appearance subject to change without notice

Radial® engineering
power tools for power players



electronic MUSICIAN

www.emusician.com | VOL. 33 NO. 12, DECEMBER 2017



EDITORIAL DIRECTOR Michael Molenda
mmolenda@nbmedia.com

EDITOR-IN-CHIEF Gino Robair
grobair@nbmedia.com

MANAGING EDITOR Barbara Schultz
bschultz@nbmedia.com

EDITOR *KEYBOARDMAG.COM* Jon Regen
kbwebeditor@gmail.com

WEB EDITOR Markkus Rovito
mrovito@nbmedia.com

MODERATOR *THE KEYBOARD CORNER* Davic Bryce

EDITORS AT LARGE Geary Yelton, Mike Levine, Francis Prève

CONTRIBUTORS
David Battino, Michael Cooper, Marty Cutler, Sarah Jones, Jerry Kovarsky, Steve La Cerra, Rebeca Mauleon, Ken Micallef, Tony Ware

FOUNDING EDITOR Craig Anderton

ART DIRECTOR Damien Castaneda
dcastaneda@nbmedia.com

STAFF PHOTOGRAPHER
Paul Haggard phaggard@nbmedia.com

PRODUCTION MANAGER Amy Santana
asantana@nbmedia.com

**NEWBAY MUSIC GROUP, BUSINESS**
VICE PRESIDENT, GENERAL MANAGER Bill Amstutz
bamstutz@nbmedia.com
GROUP PUBLISHER Bob Ziltz
bziltz@nbmedia.com
ADVERTISING DIRECTOR Jon Brudner
jbrudner@nbmedia.com
ADVERTISING DIRECTOR Mari Deetz
mdeetz@nbmedia.com
ADVERTISING DIRECTOR Jeff Donnenwerth
jdonnenwerth@nbmedia.com
ADVERTISING DIRECTOR Jason Perl
jperl@nbmedia.com
ADVERTISING DIRECTOR Scott Sciacca
ssciacca@nbmedia.com
ADVERTISING DIRECTOR, LABELS Chris Enriquez
cenriquez@nbmedia.com
ADVERTISING DIRECTOR, NON-ENDEMIC Anne Triece
atriece@nbmedia.com
PRODUCTION DEPARTMENT MANAGER Beatrice Weir
FULFILLMENT COORDINATOR Anisha Matec

**NEWBAY MEDIA CORPORATE**
PRESIDENT & CEO Steve Palm
CHIEF FINANCIAL OFFICER Paul Mastronardi
CONTROLLER Jack Liedke
VICE PRESIDENT, DIGITAL MEDIA Robert Ames
VICE PRESIDENT, CORPORATE DIRECTOR OF AUDIENCE DEVELOPMENT Meg Estevez
VICE PRESIDENT, CONTENT & MARKETING Anothony Savona
IT DIRECTOR Anthony Verbanac
VICE PRESIDENT, HUMAN RESOURCES Ray Vellmer
DIRECTOR, DEVELOPMENT AND WEB OPERATIONS Eric A. Baumes

LIST RENTAL 914.925.2449
danny.grubert@lakegroupmedia.com

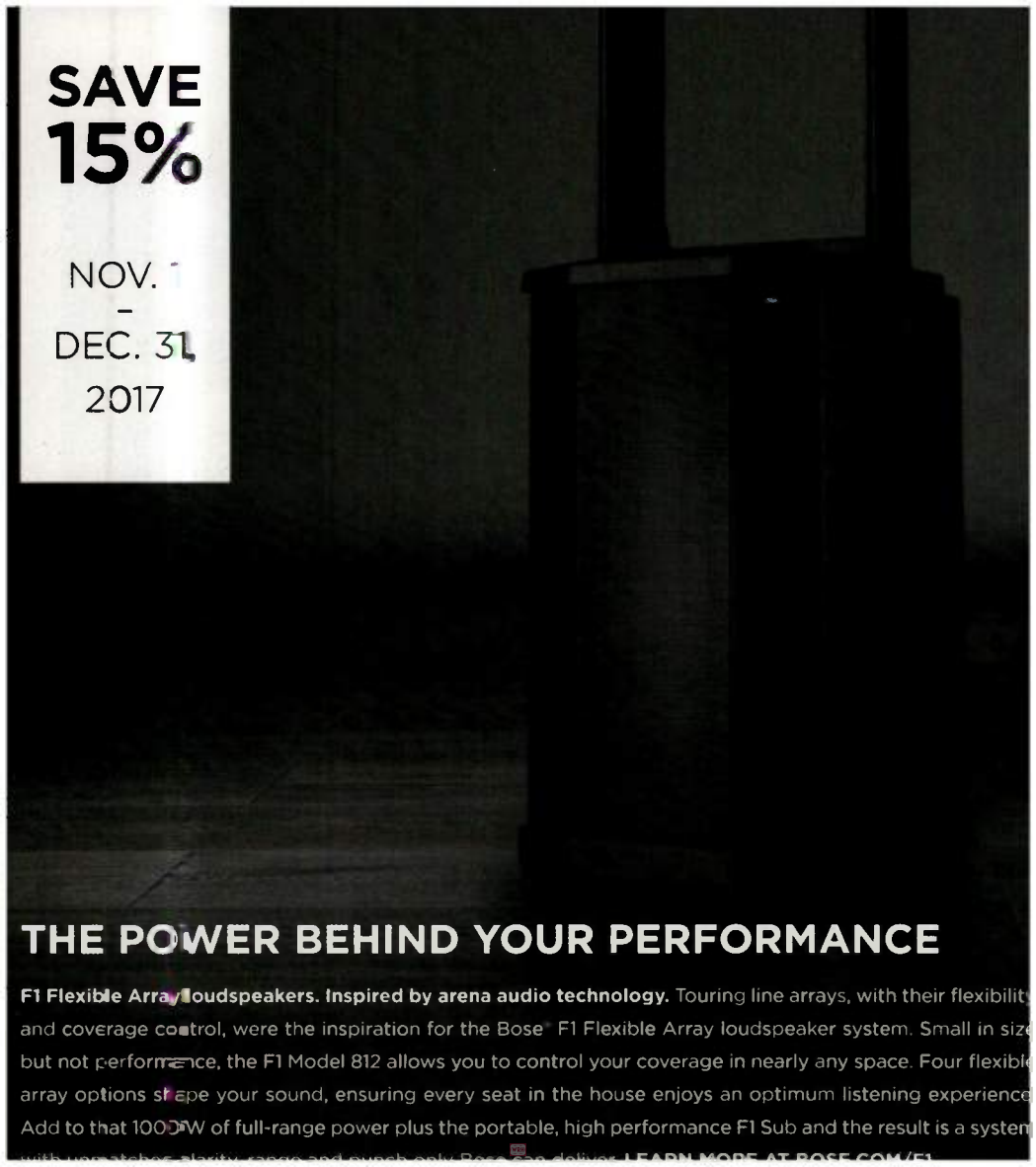
**REPRINTS AND PERMISSIONS**
For article reprints please contact our reprint coordinator at Wright's Reprints: 877.652.5295

PLEASE DIRECT ALL SUBSCRIPTION ORDERS, INQUIRIES, AND ADDRESS CHANGES TO: 800.289.9919, outside the US 978-667-0364, emmag@computerfulfillment.com

Back Issues are available for $10 each at 800.289.9919, 978.667.0364, emmag@computerfulfillment.com

Periodicals Postage Paid at San Bruno, CA, and at additional mailing offices.

Follow us on


SAVE
15%
NOV.
–
DEC. 31,
2017
THE POWER BEHIND YOUR PERFORMANCE
F1 Flexible Array loudspeakers. Inspired by arena audio technology. Touring line arrays, with their flexibility
and coverage control, were the inspiration for the Bose® F1 Flexible Array loudspeaker system. Small in size
but not performance, the F1 Model 812 allows you to control your coverage in nearly any space. Four flexible
array options shape your sound, ensuring every seat in the house enjoys an optimum listening experience.
Add to that 1000W of full-range power plus the portable, high performance F1 Sub and the result is a system
with unmatched clarity, range and punch only Bose can deliver. LEARN MORE AT BOSE.COM/F1

## Editor's Note

# Rocking the Holidays

**GINO ROBAIR**
EDITOR IN CHIEF
*grobair@nbmedia.com*

By the time you read this, the holiday shopping season will have begun in earnest, and you might already be wondering what you'll get for that musical friend of yours (or, perhaps, writing down all the great gear you hope to add to your own studio). But if you're at a loss as to what to buy in either case, *Electronic Musician* is here to help!

Welcome, once again, to our annual "Rock Star Holiday Gift Guide."

This month, we've asked some of today's most successful musical artists, DJs, producers, and engineers what they would give as gifts to their favorite people—from the "on a budget" price range to "money's no object 'cause my track's charting" level (as well as a few things that would challenge anyone's purchasing power). You're in for a real treat!

I'm also very excited about this month's *Keyboard* interview with legendary Hammond organist Brian Auger. *EM*'s contributing editor Jerry Kovarsky refers to him as "one of the rock's rare elder statesmen who is still playing at the top of his game." In addition to being one of *Keyboard*'s early Readers' Poll winners, Brian was featured on the cover of the April 1977 issue. Four decades later, his playing is still on fire.

In fact, I was lucky enough to see his band's stellar performance at the Official Keith Emerson Tribute Concert in Los Angeles last year. Brian tore it up that night with an arrangement of "Rondo," which was, in turn, Keith Emerson's take on Dave Brubeck's classic "Blue Rondo a la Turk." On page 38, you'll find a transcription of the first part of the solo, which is a great way to begin exploring Auger's personal integration of jazz and R&B organ work into blistering rock performances.

Here's to a prosperous and music-filled new year!



# All in a Phase Work

## Do-It-Yourself Surround Sound

Herbie Hancock's answer surprised me. After seeing him play a Korg Karma, I asked if he used it to trigger unexpected riffs as a way to spark new ideas. "Actually, you know how we were using it?" he replied. "As a surround-sound-producing synthesizer, because it has not only a left and a right, but two auxiliary outputs. We'd construct certain sounds so that we were sending some components to the third output, and we sent that to the surround engineer. Then he would place them wherever he wanted in the rear speakers and the side speakers. It made the instruments sound huge."

Herbie explained he typically would route the attack of a note to the front speakers and the body to the sides and rear. "We can also manipulate the sounds ourselves with the Karma's sliders," he said. "That's a great feature in a surround environment, because we're able to move the sounds from the stage."

If your synth doesn't have four outputs, a quick way to play with real-time spatialization is to run the headphone output through a reverb and send that signal to additional speakers. Brian Eno diagrammed another easy surround hack on the back cover of his recording *Ambient 4: On Land*. He set up a third speaker behind the listening position and wired it to the left and right positive (red) outputs of his stereo (see Figure 1). Called the Hafler Circuit, this setup drives the rear speaker with the difference of the left and right signals, which tends to emphasize ambience. DIY writer Rod Elliot shares refinements of the circuit at http://sound.whsites.net/project18.htm.

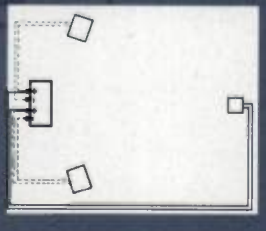
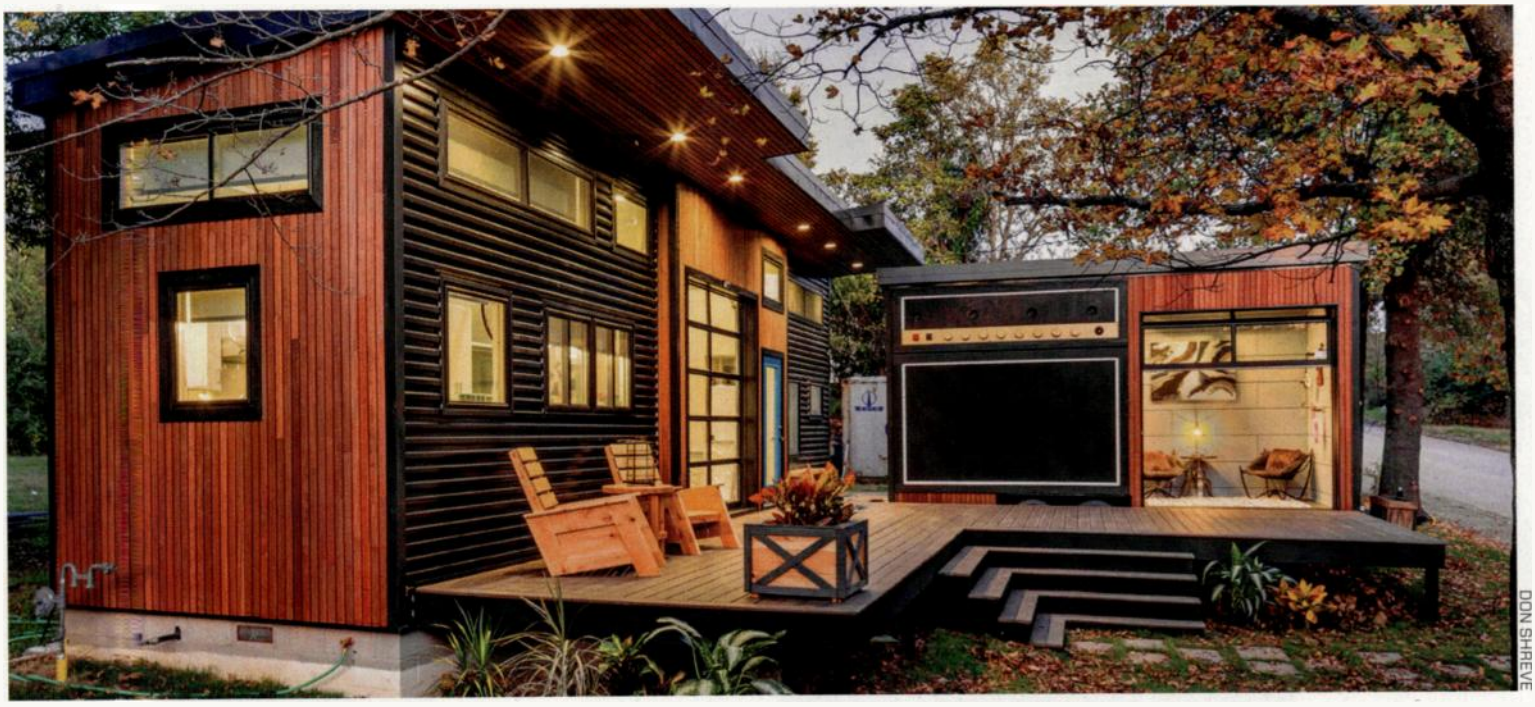


**Fig. 1. Brian Eno's suggested three-way, ambient speaker system, from his 1982 release *Ambient 4: On Land*.**

Another fun trick is to embed a surround signal in your stereo mix using an approach from 1980s Dolby Surround encoding (http://tinyurl.com/dolbys). This splits a monophonic surround track into two streams, offsets the phase of one by +90° and the other by -90° (putting them 180° out of phase), and mixes them into the left and right channels of the recording. On playback, a Dolby Pro Logic decoder subtracts the right channel from the left and sends the result, through a delay, to the surround speakers.

Because I didn't have an adjustable phaser handy, I simply duplicated a whispery vocal track and flipped the polarity of one copy in my audio editor. I then saved an MP3 of the mix to a thumb drive, plugged that into my Blu-Ray player, and dialed up the Pro Logic setting on my receiver. The whispery voices jumped out of the surround speakers. I can't wait to try it with music.



DON SHREVE

# Downsized

## Asha's tiny house goes to 11!

A few weeks ago, an intriguing message popped up in the *EM* inbox: "I recently built a house for a TV show and thought you might be interested...it is a gigantic amp!" Wait...what? We had to find out more.

Turns out that this unusual structure is the home of Asha Mevlana, lead violinist of the Trans-Siberian Orchestra. "I travel a lot, and I had stuff stored all over the country," Asha told me by phone. "I wanted a home base to come back to, but I didn't need anything huge. I'm used to living in apartments in New York, and everything there is kind of small." She also admitted that, while she loved the idea of tiny houses, she wanted something "on the bigger side of tiny."

As luck would have it, she had connections. "I had seen the Tiny House Nation television show and was friends with one of the hosts [Zack Giffin], who encouraged me to apply." Once she was selected, the process happened very quickly. The entire project, designed by architect and tiny-home specialist Brian Crabb, was finished within two months.

"I hadn't even thought about the logistics, before I applied," Asha explained. For example, she needed a place to build and, ultimately, decided on Fayetteville, Arkansas, where her brother had land.

The final design placed two unconnected structures perpendicular to each other—the living quarters on a 10'-wide foundation and the studio on an 8'x20' trailer that she can take on the road. A spacious wooden deck ties the two together, aesthetically. "They had never done anything like that before, where half the house was on a foundation and the other half on a trailer."

The living quarters has a loft bedroom above the kitchen, which Asha notes is bigger than the one she had in her New York City apartment. Her mobile music studio is sound-proofed and the interior walls treated with recycled denim. Within the Marshall-esque design outside are four weatherproof marine speakers, which Asha plugs into from inside the building.

"We're going to start a porch-deck series," she told me. "I've got a band coming today to film a music video on my porch. The idea is to have local bands play here, and have concerts and jam sessions."

When I asked if it took getting used to the reduced living environment, Asha said not at all. "I love it here. Because I have a huge garage door that looks out on the porch, it feels really open, with a lot of space."

Check out all that went into designing and building Asha's tiny home in her blog at ashamevlana.com.

1

**YAMAHA**

## GENOS

Keyboard workstation

**$6,799**

HIGHLIGHTS FSX semiweighted keyboard action with aftertouch • 550 styles • crossfade between two songs (audio and MIDI) • Vocal Harmony and Synth Vocoder features • 1/4"/XLR phantom-powered combo mic input • record via WIFI using iOS app • trigger pads • MIDI Quick recording mode • optional stand and speaker system • Songbook+ app for iPad

TARGET MARKET Keyboardists, songwriters

ANALYSIS With twice as much AWM2 ROM as the Tyros5, the Genos includes Yamaha CFX and C7 concert grands, new drums, FX voices, and much more.

**yamaha.com/genos**

2

**AIR MUSIC TECHNOLOGY**

## LOOM II

Additive softsynth

**$149**

HIGHLIGHTS Expanded to 8 voices • four new modules • Spectral Noise section • two additional Subharmonic Optional Partials • programmable Morph Pad • new Wave Parameter options • choose and combine as many as 34 editable modules • over 500 customizable presets by Richard Devine and Mark Ovenden • 350 remastered presets from original version • requires iLok License Manager or generation 2 and 3 iLok hardware key

TARGET MARKET Musicians, sound designers, game audio and film/TV composers

ANALYSIS A highly anticipated update to an exceptional, modular additive synthesizer.

**airmusictech.com**

3

**PRESONUS**

## QUANTUM 2

Thunderbolt 2 audio/MIDI interface

**$699 street**

HIGHLIGHTS 22x24 audio interface • 24-bit/192kHz • two mic/line inputs and two mic/instrument ins • phantom-powered XMAX preamps • four line outs on balanced 1/4" jacks • headphone out with level control • S/PDIF and ADAT Optical I/O • word clock I/O • MIDI I/O • includes PreSonus Studio One Artist DAW • supports free UC Surface control software

TARGET MARKET Studio and live recording setups

ANALYSIS An updated interface with a slightly smaller profile and the capability of connecting up to four units to build an 80x80 recording/playback setup.

**presonus.com**

4

**IZOTOPE**

## OZONE 8 ADVANCED & NEUTRON 2 ADVANCED (O8N2)

Mixing and mastering plug-ins

**$699**

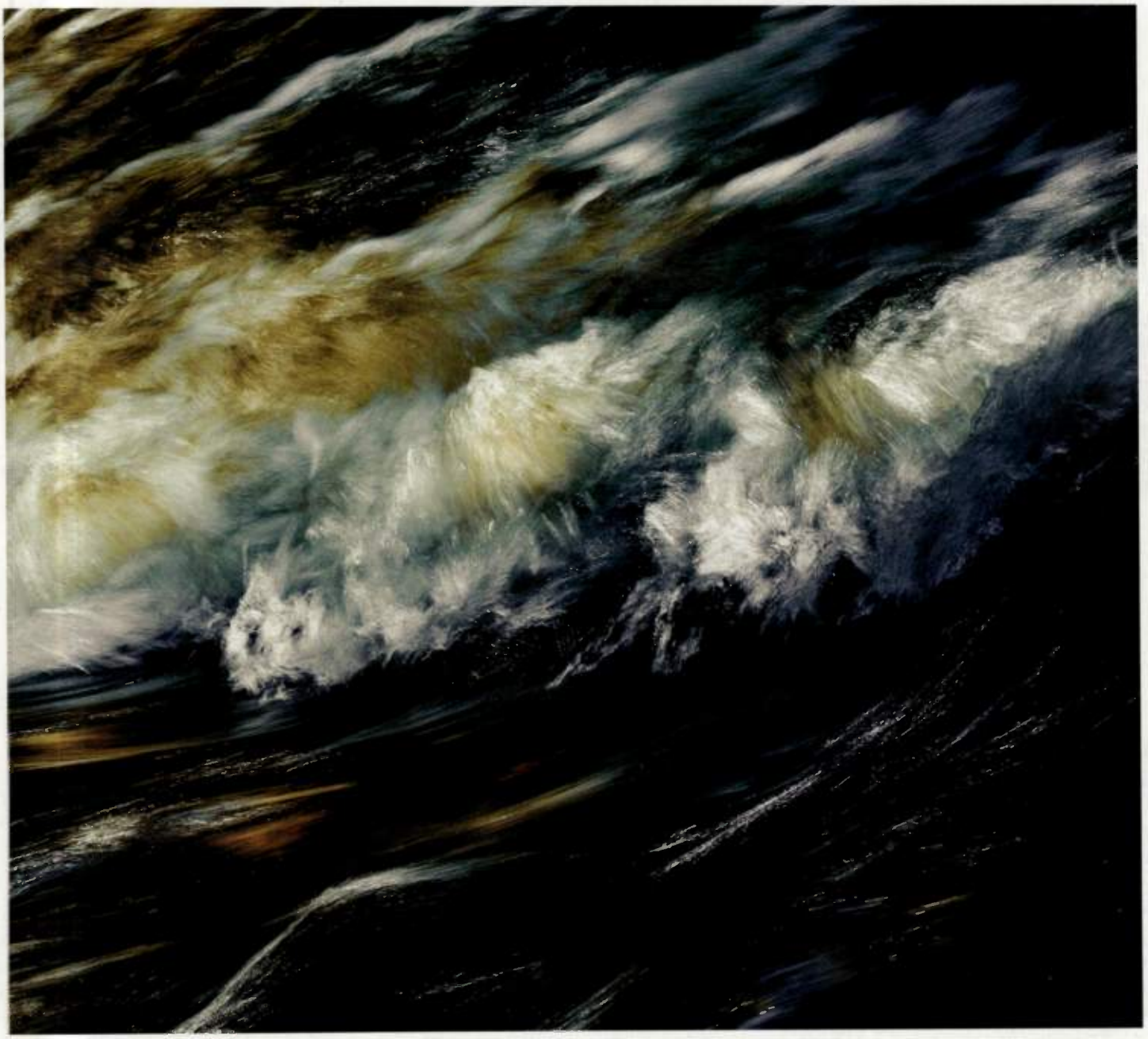
HIGHLIGHTS Tonal Balance Control plug-in allows Ozone 8 and Neutron 2 to communicate with each other • Ozone 8 Advanced adds Spectral Shaper module, Master Assistant for creating presets, and three new modes in the Maximizer—IRC, Learn Threshold, Transient/Sustain Stereo Independence • Neutron 2 Advance adds improved Track Assistant, Visual Mixer, Gate with Hysteresis, and True Peak Limiter

TARGET MARKET Recording, mixing and mastering engineers

ANALYSIS O8N2 is a powerful bundle for the money; upgrade pricing available for owners of earlier versions.

**izotope.com**

**All prices are MSRP except as noted**



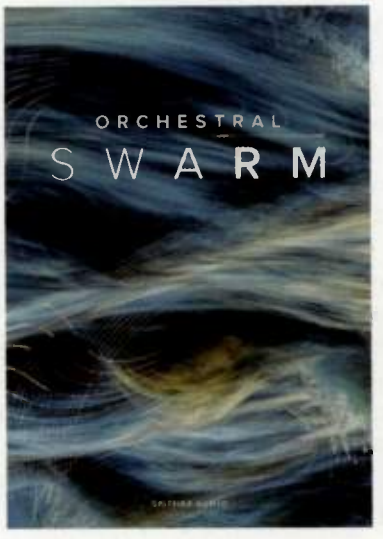
ORCHESTRAL SWARM

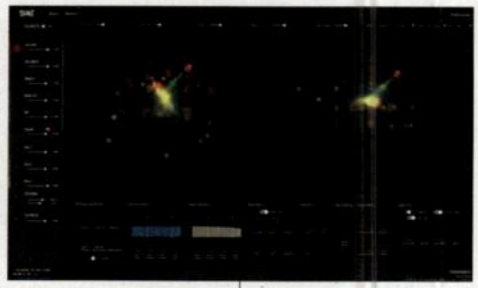
BEAUTIFUL LONG SONIC TEXTURES CREATED

FROM LAYERS OF MICRO-MOMENTS

RECORDED AT BRITISH GROVE

SPITFIRE AUDIO





6

8

5

7

5

**ICONNECTIVITY**

## PLAYAUDIO12

Live playback interface

**$499 street**

HIGHLIGHTS Control and play combinations of software instruments and prerecorded tracks • 10 balanced 1/4" outputs • 24-bit/96kHz converters • MIDI Ethernet connector • USB ports to connect two computers • manual and automatic computer switching • connect MIDI peripherals • headphone output • capacitive touch controls and LED indicators • Control In footswitch input • Control Output for connecting additional PlayAudio12s

TARGET MARKET Performers using multiple computers and MIDI controllers

ANALYSIS Designed for performance, the PlayAudio12 can automatically switch to a redundant computer if the first computer fails.

**iconnectivity.com**

6

**ANTELOPE AUDIO**

## DISCRETE 8

Mic preamp and audio interface

**$1,895 to $2,995, depending on options**

HIGHLIGHTS 26x32 Thunderbolt and USB audio interface • real-time FPGA DSP provides amp and effects and mic models • 8 analog XLR/1/4" inputs • stereo monitor outputs • reamp outs • 8 line outs on DSub connector • built-in talkback mic controllable by button, footswitch, EasyPanel software or iOS app • word clock I/O • S/PDIF and ADAT digital I/O • available bundled with Edge and Verge modeling microphones

TARGET MARKET Professional and personal studios

ANALYSIS Useful as an 8-channel studio expansion pack or as a pro-level starter setup.

**antelopeaudio.com**

7

**M-AUDIO**

## UBER MIC

USB stereo microphone

**$99**

HIGHLIGHTS 16-bit/48kHz resolution • large-diaphragm, 3-capsule condenser mic • 30Hz-20kHz frequency response • headphone output and zero-latency monitoring • 4 polar patterns—single-point stereo, cardioid, omnidirectional, figure-8 • LCD shows selected control level and polar pattern • mic-mute button • integrated desktop stand • can also be mounted on traditional desktop- or floor-stand

TARGET MARKET home recordists, podcasters

ANALYSIS A bargain price for a USB mic that offers four polar patterns, one of which is stereo.

**m-audio.com**

8

**FLUX::**

## SPAT REVOLUTION

3-D audio mixing engine

**$1,790**

HIGHLIGHTS Supports any number of channels—stereo, quad, 5.1, 7.1, Atmos, Auro 3D, binaural, Ambisonic, etc. • multiple formats can be mixed and rendered into new formats simultaneously • AAX, AU, VST • sample rates to 384kHz • time alignment and gain compensation for loudspeakers • external control via OSC • low CPU consumption

TARGET MARKET Sound designers, recording and mix engineers

ANALYSIS Developed with IRCAM, this pro-level plug-in provides a wealth of tools for re-spatializing and adding reverberation in three dimensions within any digital audio format.

**fluxhome.com**

**All prices are MSRP except as noted**

# SP6
## 88 KEY STAGE PIANO

INTRODUCING THE KURZWEIL SP6

# Powerfully Simple

Following the standard of sonic excellence established by the Forte®, Forte SE and PC3 Series. The SP6, powered by the new LENA® processor, brings your performance to new heights with its astonishing sound quality, lightweight, depth of control and simple operation - all within easy reach.

Maximize your real-time control over every preset via the SP6's 4 knobs*, 1 switch, 2 wheels, 2 dual-switch pedal inputs**, and 1 continuous control pedal input.

* *Configured as 4x3 = 12 virtual controls*
** *Support for half-damper pedal for pianos or up to 4 standard switch pedals / 1 standard sustain/switch pedal is included.*

**2 Gigabytes of Sounds**
Hear the new high-definition Japanese Grand and German D Grand, each optimized especially for the SP6 and featuring "KSR" - Kurzweil String Resonance.

**Patented Flash-Play® Technology**
Powered by Flash-Play®, the SP6 boots in 11 seconds with 2 GB of on-board sample content, zero-loading time, loads of powerful DSP and ultrafast performance.

**Powerful FX Engine**
Featuring 32 FX units of horsepower. Enjoy award-winning reverbs, delays, choruses, flangers, phasers, distortions, rotary amplifiers, compressors and more.

**Kurzweil String Resonance**
Piano string resonance modeling for enhanced acoustic piano performance.

**88-note Hammer-Action Keyboard**
Every sound within the SP6 is perfectly matched to its 88-note fully-weighted hammer-action keyboard. Further tailor the SP6 response to your playing style via 10 selectable key velocity maps.

**Gig-Lite**
At only 27 lb (12 kg) the SP6 is our lightest professional 88-note model ever.

**KURZWEIL**
It's the **sound**.
**www.kurzweil.com**

American music & sound AM&S
A division of Jam Industries USA, LLC

For more information email
info@AmericanMusicAndSound.com

# Plug and Play

## Advanced guitar processing using Softube Modular

BY MICHAEL ROSS

For musicians who want to design sounds from the ground up, a modular synthesizer is hard to beat. By patching together the basic elements of an tone or effect—signal generators, filters, envelopes and so on—you can create highly personalized instruments or signal processors.

Fig. 1

Fig. 2

So how can a guitarist get in on the action at an affordable price (especially those of us who don't have any experience with this level of geekery)?

One way is with software such as Softube's aptly named Modular. With a starting price below $100 (as well as a free 30-day demo version), Softube Modular is far less expensive than the hardware products it models. And despite my beginner status, once I installed it and viewed a short introductory video on YouTube, I was quickly patching away and getting fine results. (Our review of Softube Modular is at emusician.com.)

I began with the Doepfer-style oscillators and filters, then added an LFO, a waveshaper for distortion, and various effects and utility modules. Later, I expanded my patch with modules modeled after other Eurorack vendors.

To use the software with guitar audio as an input, I loaded Modular's FX plug-in to an audio track, then created a rack containing two audio mixers, two filters, two LFOs, the waveshaper effect, and a reverb (see Figure 1). The guitar goes into Ableton Live on track 1 and then to track 2 for processing.

From the Modular inputs, my guitar hits the distortion module first (to help accentuate the filter effect), splits into the two mixers, goes to the filters, and finally arrives at the reverb before going to Modular's outputs. The sine wave of the first LFO sweeps one filter, while the second LFO's triangle wave modulates the other filter. If I wanted to, I could've patched the other LFO outputs to the additional CV inputs on the filters to increase the complexity of the modulation.

I then built a different rack that included a multiband resonant filter that processes audio like a classic filter bank, allowing me to create marimba- and vocoder-like sounds, and much more (see Fig. 2). The modeled version of the 4ms Spectral Multiband Resonator has six channels of resonant bandpass filters, each locked to a user-definable scale. The six frequencies of the filters, as well as their level and envelope outputs (among many other parameters) can be swept with a virtual CV or changed manually. (See our review of the hardware version of the 4ms module at emusician.com.)

Again, I used distortion to bring out the filter resonance, and experimented with patching a couple of LFOs to various inputs of the Spectral Multiband Resonator. Then, I recorded a chord progression on a clip in Live so I could patch Modular without having to play the guitar at the same time. When I was done, I had a patch that provided a series of ethereal, electronic tones that would have been impossible to produce using guitar pedals. I also installed Modular in a MIDI track and enjoyed playing its oscillators using Jam Origin's MIDI guitar plug-in.

If you are not quite sure what all this means, don't worry: Part of the fun of modular synthesis is in the exploration—patching things together and hearing the results.

Because this software is very CPU-hungry, check if your computer is able to run it before you buy. If your system can handle it, Softube Modular will open a new universe of ways to modify your guitar sound. ■

Detail
Get vintage tone and unparalleled detail with the **Sterling Audio ST170 Active Ribbon Microphone**. Combining finesse and clarity with rugged design and extreme volume handling, the **ST170** is ideal for recording electric and acoustic guitars, drums, vocals and overhead/room.
**Sterling Audio** specializes in high-value studio condenser microphones that capture every performance nuance. By carefully integrating traditional and modern technologies, we've created a collection of mics that cover a wide array of studio applications. Our latest creations offer bold new looks, unmatched versatility, and advanced tube, ribbon and FET designs.
ST170
ACTIVE RIBBON MICROPHONE
STERLING®
SterlingAudio.net

# The *Electronic Musician* Annual Rock Star Gift Guide

Making out your holiday shopping list? These music-makers have got you covered.

**BY BARBARA SCHULTZ AND SARAH JONES**

If you're searching for some gift ideas for the deserving artists and studio folks on your list—or if you've had a long, hard year and are ready to treat yourself to something nice—you've come to the right place. We've polled some of our favorite artists, producers, engineers, and DJs to round up their favorite gift ideas for you, our favorite music-makers. We've asked each person to suggest one affordable gift and one splurge, so no matter which tax bracket you're in, there's enough gear-spiration here to carry you through the new year.

## Harrison Mills, ODESZA

Clayton Knight and Harrison Mills are better known as the top-selling electronica/pop duo ODESZA, whose third album *A Moment Apart* (Counter Records/Ninja Tune) was at Number 3 on Billboard's Hot 200 chart when we talked to Mills for this feature.

"On a limited budget, I would say the Shure MV88 iOS condenser microphone. The MV88 is our go-to when we're on the road. It's a lot more discreet and portable than a traditional field recording setup, and more sensitive and directional than a phone's built-in mic.

"On a bigger budget, we recommend Native Instruments' Kontrol S49 keyboard and Maschine. We both learned production on hardware samplers, so moving over to Maschine a few years ago was a natural progression for us. It's now the hub of our studio, along with the S49 keyboard. All of the software synths on *A Moment Apart* were played with the old version of the S49. The new version has the same feel and a faster workflow."

## Mitchell Froom, keyboardist/producer

Froom's impressive credits include producing Crowded House's debut, as well as his many collaborations with engineer Tchad Blake, such as albums by Suzanne Vega, Los Lobos, The Bangles, Elvis Costello, The Corrs, Paul McCartney, and Pearl Jam. Based in L.A., Froom continues to work with national and up-and-coming artists as a keyboardist and producer.

"For me, the best gift to give any musician would be Apogee's One. I use it almost every day, even when I travel—very simple and high-quality.

"If money were no object, I'd give everyone a Teenage Engineering OP-1. If you're a keyboard player interested in production/sounds, I think it separates the men from the boys."

## Mystery Skulls

Luis Dubuc, aka Mystery Skulls, is an L.A.-based songwriter and vocalist whose album *Forever* went to Number 3 on Billboard's Dance/Electronic Albums chart. His new Warner Bros. release is *One of Us*.

"Future Retro out of Austin makes a sequencer called the Zillion, and that would be my budget choice. When I'm writing, it lives on top of my Korg MS-20; I use it pretty much every day. It's a modern-inspired reproduction of the Triadex [Muse] Sequencer from 1971. It uses shift registers to generate tones and, literally, you can make one zillion ideas with it.

"If money were no object, for myself I'd want an EMS Synthi. I look at them on eBay and Craigslist pretty much every day. You have to be in a different tax bracket to afford one, but I pine for those."

## CJ Vanston

CJ Vanston is a Hollywood-based composer, producer, arranger, songwriter, and engineer who's collaborated with artists ranging from Toto and Def Leppard to Prince, Ringo Starr, Barbra Streisand and Bob Seger. He has composed music for Christopher Guest's films, including *Waiting for Guffman*, *Best in Show*, and *Mascots*, and he's been musical director and keyboardist on tours with Tears for Fears, Joe Cocker, Tina Turner, and Spinal Tap. Vanston recently produced a new Toto album, recorded the Dalai Lama, and he is wrapping up a solo project for Spinal Tap's Derek Smalls. Vanston went the extra mile for us, suggesting four gifts for musicians and production folks:

"One, a sound-triggered light show: Hang it from the ceiling. Clients think mixes sound better when this is on. It can make people dance, which is a good thing in my opinion.

"Two, a mini turntable with remote: Put the needle on your favorite passage of your favorite record, then switch it on and off with a wireless remote. Good for making a point to young musicians about what real music sounds like. For example, Me: 'I don't think the chorus is hitting hard enough. You're supposed to be a rock band.' Band member: "You don't get our band, or you just don't get rock 'n' roll." Me: [hits remote and "Whole Lotta Love" kicks in at the chorus. Band is embarrassed by how bad their songs sound now. Drop remote, walk out of room.] I credit this idea to my buddy Chris Lord-Alge.

"Three, an instant camera: It's important to document all of the fabulous people who grace your studio, and create a wall to commemorate them. Unfortunately, we take photos with our iPhones and forget to print them out. That's why I suggest a modern twist to a good, old-fashioned Polaroid. It's also useful to embarrass people with, or just for plain, old blackmail. I like the new Fujifilm. Create a wall!

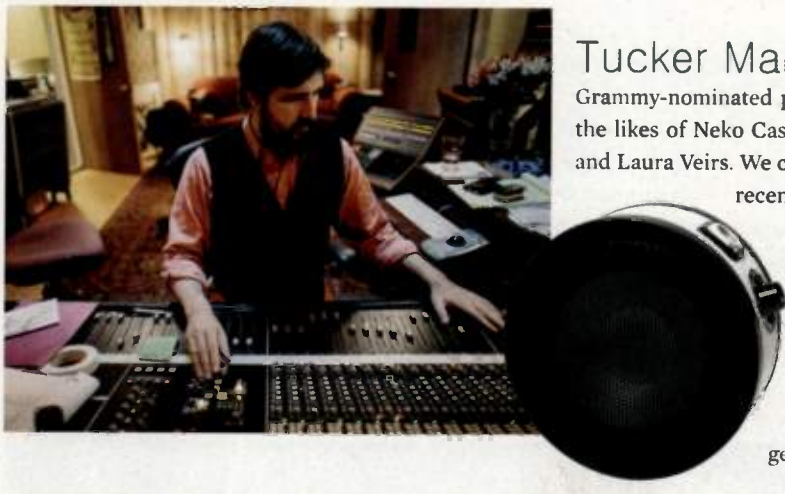
"Four, really expensive and important-looking monitors: I'd say get a pair of Lipinski L-707A Signature monitors. These things are in a class by themselves. You work so hard on your music, why not hear it the way it's supposed to sound? And they're only $17k. Enjoy your holidays and never forget how important music is to this world; it's the best gift of all."

## Torres

Torres, the alter ego of Brooklyn-based songwriter Mackenzie Scott, has received widespread critical acclaim for her first two albums; NPR's Bob Boilen named *Sprinter*, her 2015 debut, one of the best records of that year. Her third album, *Three Futures*, produced by Rob Ellis (PJ Harvey), was released in September on 4AD.

Her affordable gift suggestion: "A Korg volca beats drum machine did real wonders for my songwriting process. It's tiny and light, so you can take it anywhere, and its function can be as simplified or as involved as the user prefers. It also doesn't necessitate recording the drum loop before you can hear it back and play or sing to it. I like to run it through headphones or a little amp to test lyrical and melodic ideas in real time because I can adjust the BPM while I'm trying to get a song structure down. It's really user-friendly."

Sky's-the-limit gift idea: "I recently invested in an Electro-Harmonix POG2 Polyphonic Octave Generator pedal for my board, and it's one of my favorite pieces of gear now. I use it to soften the attack on my guitar, and it saved me; before that I was just using the volume knob on my guitar to swell into individual notes. There's also a really nice choral function that you can bring out crisply or tame so that it's more felt rather than heard. I tend to choose the latter so that the effect doesn't become too distracting."



## Tucker Martine

Grammy-nominated producer and musician Tucker Martine has collaborated on projects with the likes of Neko Case, The Decemberists, Modest Mouse, Sufjan Stevens, My Morning Jacket, and Laura Veirs. We caught up with him at Flora Recording, his Portland-based studio, where he recently wrapped up sessions with First Aid Kit.

"The Solomon Mic LoFReQ sub microphone adds serious girth to any kick drum and is dead-simple to use," he says. "This mic, a few inches from the outside head, paired with a dynamic mic on the inside of the drum, gets me there 99 percent of the time."

"If money's no object, a Roland Space Echo can make almost any sound more interesting and blend into a track better. I keep this nearby especially when tracking or mixing keyboards. If I had to get rid of 90 percent of my gear, this is one of the first things I'd keep."

FOCAL®
PROFESSIONAL

# ALPHAWHITE

## LIMITED EDITION

**Only available in United States at:**

**Sweetwater Sound** - www.sweetwater.com | **Alto Music** - www.altomusic.com

**Performance Audio** - www.performanceaudio.com | **Turntable Lab** - www.turntablelab.com

**HiDef Lifestyle** - www.hideflifestyle.com

www.focalprofessional.com

USA www.audioplusservices.com www.facebook.com/audioplusservices

## Tremaine Williams

Tremaine Williams has touched music as a producer, engineer, songwriter, programmer and stage manager. In 2006, he founded Six7 Music production company in Los Angeles; his credits include Usher, Janet Jackson, 50 Cent, and Ledisi; and his television work includes *Empire*, *Keeping Up with the Kardashians* and *The Real World*. Williams is currently the keyboard tech/programmer on Bruno Mars' 24K Magic tour, and he will be inducted into the Full Sail University Hall of Fame in February 2018.

"For an affordable gift for keyboard players, I'd recommend Roli Seaboard Rise, Roland Boutique Series, and Spectrasonics Keyscape. I know you asked for one, but these are all in the same price range and I use them all, especially when traveling. Keyscape sounds amazing and has all of the older keyboards and pianos that I love. The Boutique series has a variety of classic Roland keyboards, and now drum machines, but can fit in a backpack. The Roli is mind blowing, especially to a keyboard player. I was on the fence at first, but bending notes and controlling other parameters without taking your hands off the keys is *epic* and opens up a new world of possibilities regarding what you can do on stage or in the studio as a player.

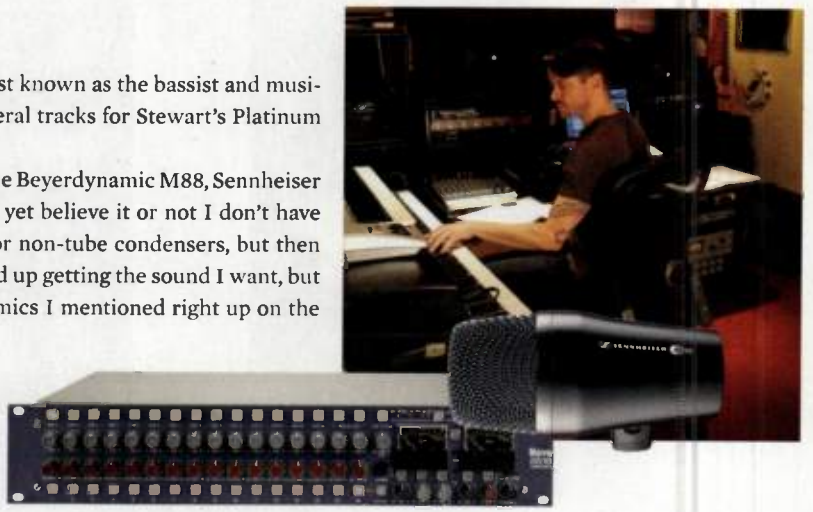
Williams' sky's-the-limit gift? "A 1972 Fender Rhodes Suitcase 73, custom-modded, mahogany and gold. Price tag: $15,000."

## Conrad Korsch

Korsch is a New York City-based multi-instrumentalist and producer, best known as the bassist and musical director/bandleader for Rod Stewart. He co-wrote and recorded several tracks for Stewart's Platinum album *Time*.

"For the budget choice, I'd go for a large-diaphragm dynamic mic like the Beyerdynamic M88, Sennheiser e602II or e902. I always mike a [bass] amp in addition to running a DI, yet believe it or not I don't have a large-diaphragm dynamic mic! I end up using large-diaphragm tube or non-tube condensers, but then have to move them away from the amp and flip the phase, etc. I always end up getting the sound I want, but I have a feeling it would be faster and simpler just throwing one of the mics I mentioned right up on the grille of the cabinet.

"For a pie-in-the-sky choice, I'd say a Neve 8816 summing mixer. I've been mixing in the box all along, but have been thinking about busing out stems to analog then back in for the stereo mix."



## Oak Felder, producer/composer

Warren "Oak" Felder is half of the Pop & Oak songwriting and production duo. With partner Andrew "Pop" Wansel, Felder has contributed to blockbuster hits by Alessia Cara, Nicki Minaj, Kehlani, Alicia Keys, Busta Rhymes, Tamia, Usher, and more. A Grammy winner for Keys *Girl on Fire* and Usher's "Good Kisser," Felder also wrote and produced "How Far I'll Go" with Cara for Disney's *Moana*.

"This might not be low-budget, because this device is about $1,000, but it might be something that a serious aficionado needs to splurge on. It's the VMS [Virtual Microphone System] by Slate Digital. It's a flat-response mic and interface that also comes with a suite of plug-ins that allows you emulate the tone and sound of just about any microphone on the market. I used this on Demi Lovato's single 'Sorry Not Sorry' to emulate a Telefunken 251 microphone and you cannot tell the difference.

"My dream gift would be $50,000 toward room treatment and studio design. It's at least as important as any electronic device. When I first moved into the house where I live in Atlanta, the room I had designated for my studio was just swallowing all my low end. It didn't matter what speakers I put in there, it just didn't kick. I tended to overcompensate for that, and when I listened in another studio or in my car, the bass was too loud. Your room can get between you and the speakers. It's like wearing a pair of glasses that only show red."

TRACK FACTORY PROJECT

# BORN TO ROCK & READY TO ROLL

## Jessica Lynn

*Singer, Songwriter, Track Factory User.*

For music and tour dates visit
www.jessicalynnmusic.org

Completely Pre-configured and ready-to-record, TASCAM Track Factory Project includes everything you need to start recording your next hit song. Simply Turn On, Plug In and Rock Out.

An artist's goal is to create art—not to build PCs. So we've created the ultimate songwriter's PC: **TASCAM Track Factory**.

TASCAM Track Factory has everything you need to get started in desktop recording: a hot-rodded Intel-based music computer, an award-winning TASCAM US-2x2 Audio Interface, studio-quality TM-30 condenser microphone, TH-02 headphones and a completely Pre-Installed version of Cakewalk SONAR Professional recording software. No stripped down "lite" version, SONAR Professional offers unlimited recording tracks, world-class mastering effects and powerful VST instruments.

And to ensure that the Track Factory delivers rock-solid performance, the system has been optimized for recording by the pros at PCAudioLabs—and you'll receive a free 20 minute session with your own personal OBEDIA recording expert to help you get rolling.

Available At: Full Compass · Sam Ash Music Stores · Sweetwater Music Instruments & Pro Audio

TASCAM

intel · pcaudiolabs · cakewalk

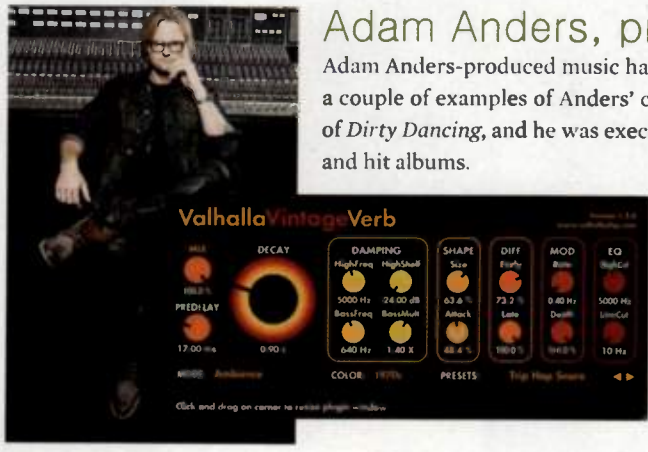
## Lindstrøm

Since launching his Feedelity label in 2002, Norwegian dance producer Hans-Peter Lindstrøm has become one of the most respected producers and remixers on the international club scene, both on his own and with his longtime collaborator Prins Thomas, with remixing credits including LCD Soundsystem and Franz Ferdinand. His latest release, *It's Alright Between Us as It Is*, was released in October on Smalltown Supersound.

"The Organelle from Critter & Guitari is a great little piece of gear," Lindstrøm says. "It can be more or less whatever you want it to be: an organ, an analog/FM synth, a granular sampler, or a drum-machine. Patches are being made using Pure Data (PD), which is something that I don't know anything about at all, but knowing that there are tons of patches to be downloaded and installed (for free) on the web makes me sure that I'll never grow tired of this thing! I also like the fact that it is small, cute, and portable, and fits nicely into my backpack."

His splurge gift idea would please any keyboardist: "I'd love to replace my tired, worn, and trusty M-100 organ with a Hammond B-3 in top shape. I'm sure there are lots of great sample libraries around, but nothing beats the real thing!"

## Adam Anders, producer




Adam Anders-produced music has sold 100 million albums and has been included in dozens of TV programs and films. Just a couple of examples of Anders' credits include serving as producer/executive producer of the Lionsgate/ABC-TV remake of *Dirty Dancing*, and he was executive music producer for FOX-TV's show *Glee*, which yielded multiple Number One songs and hit albums.

"If you are on a budget, I would say my favorite piece of equipment would be the Valhalla DSP VintageVerb plug-in. They also make Plate and Shimmer plug-ins that are cheap and amazing, as well. It works on most platforms and is very easy to use.

"If budget were no issue, my absolute must-have is my AMS Neve 1C73 DPX mic pre. It's two 1073s in a two-space rack unit, and here's where it gets really sweet: It has meters. Finally, you can see if you are overloading the input of your Neve (which historically breaks up quite easily). You can select input or output meter monitoring."


# The recording world is changing...

**PH50 phono stage**
for moving magnet

- Phono stage for moving magnet cartridges
- Ultra low noise transformerless design
- Variable high-pass filter to eliminate rumble
- 91dB dynamic range - 0.002% distortion
- Plug and play easy to set up and use

Andrew Mendelson
**Grammy-Winning Mastering Engineer - Georgetown Masters**
The White Stripes, Kings of Leon, Mariah Carey, Elton John, Keith Urban

*"Following a careful review of the Hafler PH50 phono stage, all I can say is it sounds great. The imaging and clarity are remarkable."*

**HA15 headphone amp**
solid-state circuit

- 100% discrete electronics for optimal sound quality
- Focus™ control simulates listening to speakers in room
- High output to handle virtually any type of headphone
- Thru outputs enable greater connectivity options
- Balanced XLR or unbalanced RCA inputs with thru output

Ed Cherney
**Grammy-Winning Engineer -Producer**
The Rolling Stones, Eric Clapton, Sting, Céline Dion, Billy Joel, Madonna

*"My Hafler HA15 gives me a totally accurate picture of what I'm hearing, with no artifact, plenty of headroom and zero distortion. I don't know how I got along without it."*

**HA75-DAC Tube Head**
DAC with 12AX7 tube drive

- USB 24 bit 192kHz DAC with 12AX7 tube drive for warm sound
- 100% discrete Class-A analog circuit with premium components
- Variable FOCUS™ simulates listening to speakers in a room
- Choice of unbalanced RCA or balanced XLR inputs
- Impedance matching LOAD switch to drive any set of headphones

Frank Filipetti
**Grammy-Winning Engineer -Producer**
James Taylor, Billy Joel, Korn, Andrea Bocelli, Frank Zappa, Elton John, Barbra Streisand

*"The Hafler HA75 sounds terrific. It's clear, transparent and ballsy as hell. Whether you're mixing, or purely listening. It ROCKS"*

These days, more producers are checking their mixes with headphones and referencing vinyl recordings.

Hafler has the right tools for the job... and quality you can trust to get that job done right.

**Hafler®**

**visit hafler.com**

dynaco®

Hafler and Dynaco are trademarks of Radial Engineering Ltd. 15-8 Kebet Way, Port Coquitlam BC V3C 5M5

©2017 Radial Engineering Ltd. All rights reserved. Specifications and appearance are subject to change without notice.

## The Bloody Beetroots

Italian electronic musician, producer, and masked DJ Sir Bob Cornelius Rifo is the mastermind behind Bloody Beetroots, which has composed for TV shows, commercials and video games and crafted remixes for the Chemical Brothers, Depeche Mode, The Refused, Peaches and Britney Spears. The Bloody Beetroots' third studio album, *The Great Electronic Swindle*, was released in October on Last Gang.

Rifo is a big fan of the Electro-Harmonix Micro POG: "This is the guitar pedal I used the most on my new album; this pedal, combined with some fuzzy digital distortion, makes the sound massive, like an elephant, and solid, like reinforced concrete. I can easily say that's my crazy stack in the final production process."

His splurge gift would take your commute to the studio to the next level: "Some underestimate the ultimate power of listening to audio masters in the car. I'm a big fan of it. I sometimes ride for hours blasting my tunes as loud as I'm able, so I can analyze the details and correct the mistakes and spurious mixing. Call me insane, but I would like to have a supercharged Land Rover Defender V8, equipped with four subwoofers, three boom boxes, four amps and 13 speakers—all Sony Xplod—so the entire city can listen along and analyze my album masters with me."

## Michael Beinhorn

Grammy-nominated producer, engineer and songwriter Michael Beinhorn has been making records for nearly four decades, with credits on iconic albums by The Red Hot Chili Peppers, Herbie Hancock, Soundgarden and Marilyn Manson. In 2015, he published *Unlocking Creativity: A Producer's Guide to Making Music and Art* (Hal Leonard), which is dedicated to navigating the creative process of music production.

Beinhorn says he finds the most inspiration in gifts of books and music. "I think there's a parallel between giving recording equipment as a gift to someone who works in music and giving one's spouse a convection oven or a vacuum cleaner—unless it's an 18-karat gold vacuum that can also time-travel."

His book suggestions include Andrey Tarkovsky's *Sculpting in Time*, Rollo May's *The Courage to Create*, and Yamamote Tsunetomo's *The Hagakure*. For music, Beinhorn says, "anything emotionally riveting or interesting makes a great gift for creative types." His long list includes James Brown's *Star Time*, Black Sabbath's *Master of Reality* and the seven-record set *Arturo Toscanini: Nine Beethoven Symphonies*.

"And, if I was gonna splurge on a cost-is-no-object present for that special recording engineer or artist in my life, I'd get them a 12-day guided tour of Tibet or the island of Fernando De Noronha. Or an 18-karat gold vacuum cleaner that can time travel."

*"Radial direct boxes make everything I put through them: warm, punchy and clear. They are great DI's!"*
**~ Chick Corea**

*"My Radial DI's produce pure, transparent sound with full dynamics and do not color my keyboards."*
**~ Chuck Leavell**

*"Once you hear the difference between a Radial DI and the others, you'll never go back. After 300 U2 shows around the world, they work flawlessly."*
**~ Terry Lawless**

**Radial JDI Duplex™:** A stereo 'Swiss Army Knife' of connectivity, equipped with two renowned Jensen™ audio transformers.

**Radial ProD8™:** 8-channels with reversible rack rails to let you set up the ultimate tour rig and wire it *your* way.

**Radial USB-Pro™:** Professional USB interface with 24 bit/96kHz stereo DAC connnects digital audio from computer, instrument or other source to a mixer via balanced XLR outputs. Powerful headphone amp for monitoring.

# PowerTools...
## for Keyboard Pros!

**Radial passive DI boxes** deliver the wide frequency response and headroom needed to properly handle today's ultra dynamic digital keyboards. The magic is in the transformers we use... unlike active DI's that 'square wave' when hit hard, our high performance transformers round out the tone, introducing a natural compression often described as 'vintage sounding'. And with transformer isolation, you immediately eliminate hum and buzz caused by ground loops. Radial has great DI boxes for every application: passive, active, mono, stereo, USB, Bluetooth™, Dante™ network and multi-channel full scale touring rigs.

**Radial - the world's finest direct boxes!**

**Radial JD6™:** Maximum connectivity built in with six Jensen™ audio transformers for superb audio performance. The JD6 is your perfect studio interface for multiple keyboards.

**Radial JDI™ STEREO:** Equipped with two Jensen™ audio transformers, the JDI Stereo handles huge transients without distortion and warms up the tone of acoustics, active basses and digital pianos.

**Radial ProD2™:** Industrial strength Radial stereo DI for keyboards! Compact and built rugged to handle the road.

Radial® engineering
...power tools for power players™

**visit radialeng.com**

1588 Kebet Way, Port Coquitlam BC V3C 5M5
tel: 604-942-1001 email: info@radialeng.com

Copyright © 2017 Radial Engineering. All rights reserved.
Specs and appearance subject to change without notice.

Zaor
STUDIO FURNITURE
YESK LINE

Discover the rest of
the Zaor line at
www.zaorstudiofurniture.com

FOR HOME
& PROFESSIONAL STUDIOS
USA — Distribution by www.audiodesignservices.com
CANADA — Distribution by www.plusrion.com

## Jeffery Salter, Banditos

Salter plays lead guitar in Birmingham, Ala.-based, alt-rock band Banditos. The group's latest Bloodshot Records release is the psychedelic rock 'n' roots album *Visionland*.

"As an affordable gift, I would choose the Quartermaster QMX by The GigRig. Not every pedal plays well together, and doing the pedalboard tap dance isn't conducive to live performance. The QMX gives you standard true bypass loop capabilities while allowing you to stack or flip-flop effects: simple but extremely versatile for ever-changing/growing rigs.

"For a sky's-the-limit gift, I would choose the new PreSonus StudioLive AVB 64Ai Mix System. I've been using the older compact StudioLive 16 for everything—practice, recording, live sound, and as a mobile live-session console. The PreSonus interface perfectly marries the analog workflow with digital capabilities in a mobile package. The 64Ai has unlimited flexibility with 64 channels and 25 buses, recallable motorized faders, and CAT5/FireWire routing."

## Matt Rollings, keyboardist/producer

Musician/producer Rollings performs regularly with top artists including Willie Nelson, Lyle Lovett, and Blues Traveler.

"If money was no object, I'd want a Rupert Neve Designs Shelford Channel strip. It's all the goodness of classic Neve consoles and modules like the 1073 and 1081, but brand-new. It has a mic pre, EQ, compressor. He just keeps getting better.

"On the more affordable side, I'd pick the new Roland TR-08 Rhythm Composer. It's a TR-808, with all the goodness of the original, but tons of groovy new features."

# Create. Mix. Master.

## Introducing V series

# V

## V SERIES 4

### POWERED REFERENCE MONITORS

For over 30 years, we've tenaciously pursued one goal: build monitors that deliver your mix, your way. Now, our new V Series two-way studio reference monitors connect modern technology with the insights gained from building some of the world's most respected professional monitors.

With extremely smooth midrange definition, accurate highs to balance the controlled low end, sonic purity suitable for even the longest sessions, and 49 user-selectable presets that deliver effortless matching to room acoustics and personal preferences, the V Series are truly something new in studio monitors.

We're grateful for the journey of the past 30 years, and the accolades we've received. But our biggest reward is the music you make with KRK monitors...and we can hardly wait to hear what you will create, mix and master.

*Also available as White Noise Edition*

www.krksys.com

KRK SYSTEMS

## Ryan Star, musician/producer/product developer

Alternative rocker Ryan Star is also the co-founder of music tech startup Stationhead, which turns playlists into personal radio stations powered by collective listening. His most recent release is *After the Elephant*.

"On a budget, I am really down with the Roli Seaboard Block. I'd love to use it in a rock piano set with some cool sounds and loops from my phone.

"My dream buy would be the Kemper Profiler Power Rack. I played through it on my last tour in Sweden and I was blown away. It was the first time anything in the digital guitar world has blown my mind."

## Julian Decoret, Joon Moon

French group Joon Moon—House producer Julien Decoret, drummer Raphael Chassin and American singer/songwriter Krystle Warren—combine retro aesthetics and politically conscious lyrics in an otherworldly blend of trip hop, soul, and jazz. Joon Moon's debut album *Moonshine Corner*, was recorded in Studio 237, their Paris recording space, and released in September on Le Plan Recordings. Decoret offers his favorite studio gifts:

"When I used the Roland SH-09 for the first time, I was shocked by the power and capacity of this small monophonic synthesizer. It's not really popular compared to the SH-101, but to be honest, I don't understand why. Each time I use it in a studio session, it directly provides a great taste to the production. It has a very solid construction, which is good for using it onstage, as well. It's really true analog, far more than what we get with a virtual instrument.

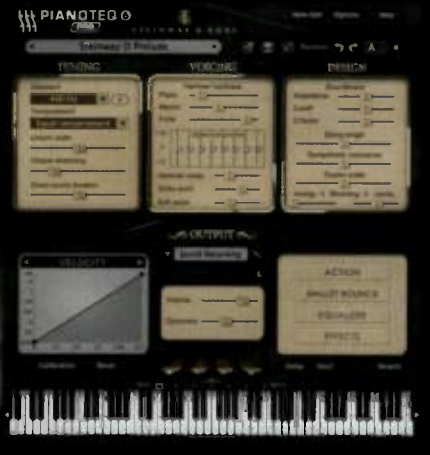
His sky's-the-limit suggestion is the [Neumann] U47 FET: "One of the best microphones we have and use in our Studio 237. Record voices with it, and you'll never forget the sound. You can also use it for kick drums, as we did on our *Moonshine Corner* album with the legendary Slingerland Radio King. Drums, horns, strings, and overheads are more than beautiful with this mic. The great thing is that you don't have to spend your time on production to correct strange frequencies; everything sounds great, directly in the box. I recommend this incredible polyvalent microphone, which is actually identical to the original model."


PIANOTEQ 6

TRUE MODELLING

With version 6, Pianoteq becomes, more than ever, an immense joy to play!

- Awarded physical modeling software
- Virtual grand and upright pianos
- Historical instrument collections
- Electric pianos, harp, vibraphones, steeldrums...
- Build your own piano by adjusting tuning, voicing and design
- Advanced microphone positioning for studio recording



Instruments authorized by

STEINWAY & SONS · Blüthner · GROTRIAN · HOHNER

Download a free trial version at www.pianoteq.com

Install Pianoteq on your laptop and connect it to your digital piano to immediately enjoy an amazingly real piano experience. Installation is simple and fast.

MODARTT

# Zen Tour: Massive Studio in a Tiny Package

60+ Vintage Real-time FX, including classics from BAE, Grove Hill and Lang.

AntelopeAudio.com

Antelope

## Prequell

French composer Thomas Roussel has created music for prestigious brands Chanel, Dior, Kenzo, Michael Kors, Mugler, and Nike, and has composed, orchestrated, and arranged for electronic music icon Jeff Mills. His October debut, *The Future Comes Before*, was recorded at Abbey Road with the London Symphonic Orchestra and features Rae Morris, Claire Laffut, Fyfe, Shy Girls, and Cruel Youth.

An affordable gift: "I love the Biscuit by OTO, a filter, bit crusher, and multi-effect. All my sounds, basses, percussions, and beats went through this little box during the production of my album. It gives to the sound a warm dimension. The sound is more lush and dirty, too."

If the sky is the limit: "anything that Michael Jackson used in a studio, for example the Shure SM7 microphone that Bruce Swedien used for all MJ's vocals."

## Spencer Ludwig

A former member of Capital Cities, artist Spencer Ludwig is a trumpeter, singer and producer. His song "Diggy" is featured in the upcoming video game *Just Dance 2018*. His latest single, "Got Me Like," was released on Warner Bros. Records in September.

"One of the best gifts to give or to get on a budget would be a Universal Audio Apollo Twin interface. The Apollo has basically everything you need to produce great sounding records and is compact enough to travel with, too.

"My high-end choice would be a vintage Telefunken U47 mic. Everything sounds better on that mic." ■

## GIG-READY GEAR

The all-in-one innovative design of the **HERCULES** smartphone (DG200B), tablet (DG300B DG305B) and laptop (DG400BB) holders and stands safely accommodate a wide range of digital devices, making them an ideal choice whether touring on the road or practicing at home.

**SHARE YOUR MUSICAL JOURNEY**
**with us for a chance to WIN SOME FREE GEAR.**
**Visit HerculesStandsEvent.com for details!**

HERCULES

# GO PRO WITH YOUR MOTU STUDIO

Value Added Reseller
Professional Audio

## Apple iMac Pro
### Power to the pro

Pros love iMac. So when they asked us to build them a killer iMac, we went all in. And then we went way, way beyond, creating an iMac packed with the most staggeringly powerful collection of workstation-class graphics, processors, storage, memory, and I/O of any Mac ever. And we did it without adding a millimeter to its iconic all in-one design. So everyone from songwriters to producers to engineers can do what they do like they've never done before. Introducing iMac Pro. A lean, mean dream machine.

## MOTU Digital Performer 9
### Award-winning audio workstation technology

DP9 delivers exciting new virtual instruments and plug-ins, plus the all-new Next-gen Pre-gen™ engine, which dramatically boosts the number of VI's and plug-ins you can run — even at very low buffer settings for imperceptible low-latency performance. Run more DP and 3rd-party plug-ins and VI's than ever before, especially on the new 18-core (!) iMac Pro.

THUNDERBOLT™

## MOTU 624
### 16x16 Thunderbolt/USB3 audio I/O

Equipped with renowned ESS Sabre32 Ultra™ DAC technology, the 624 has the same award-winning audio quality and proven performance as MOTU's flagship 1248 interface — packed into a mobile half-rack enclosure. You get 2 mic inputs, 2 guitar ins, 4 x 6 balanced analog with dedicated main outs and 8-channel ADAT optical.

MOTU

## Zynaptiq DESIGN Bundle

### Sound transform effects plug-ins

Shape sound like never before. The DESIGN Bundle combines three sound design powerhouses into one indispensable package. Design pads, drones and ambiences, perform cross-filtering, and add pristine, lush reverb that harmonically adapts to your audio with ADAPTIVERB. Combine two sources into new hybrid sounds, and create smooth morphing transitions with MORPH 2. Transform your sounds with multi-effects processing from the sublime to the otherworldly and extreme using WORMHOLE. Whether you are a sound designer, music producer, audio artist, or film composer, the DESIGN Bundle is for you!

## Eventide UltraTap

### Versatile multi-tap delay-line effect

UltraTap is a unique multi-tap effect capable of rhythmic delays, glitchy reverbs, huge pad-like volume swells and extraordinary modulation. It's the perfect tool for creating drum fills, vocal choruses, swelling guitar chords and other evolving effects.

## Focal Shape 65

### 6.5-inch 2-way powered studio monitor

The Shape 65 brings top-quality Focal reference monitoring to your studio, editing suite, songwriting workstation or any other application where your space may be limited but your need for accurate monitoring isn't. A cutting-edge flax-sandwich cone, M-shaped inverted-dome driver, innovative acoustics, and ideal electronics all add up to a speaker that's extremely linear and free from distortion, offering clear midrange intelligibility and imaging.

Sweetwater

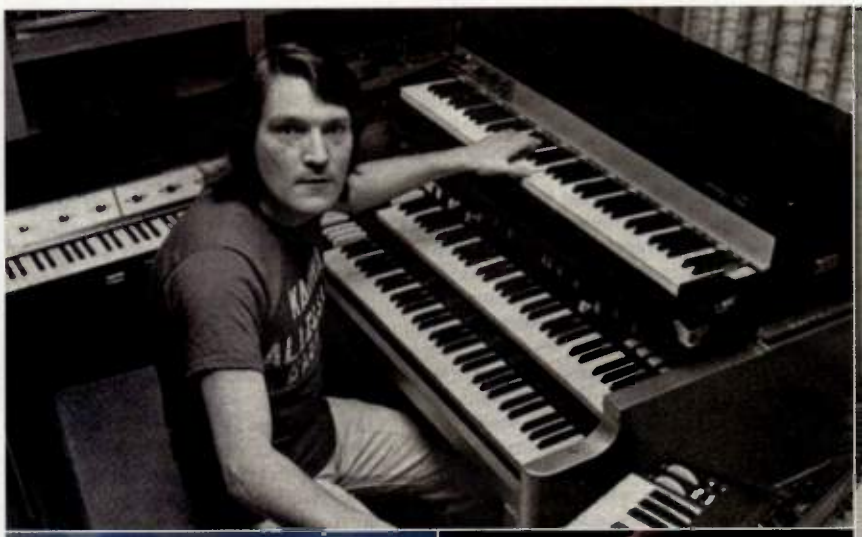
Music Instruments & Pro Audio

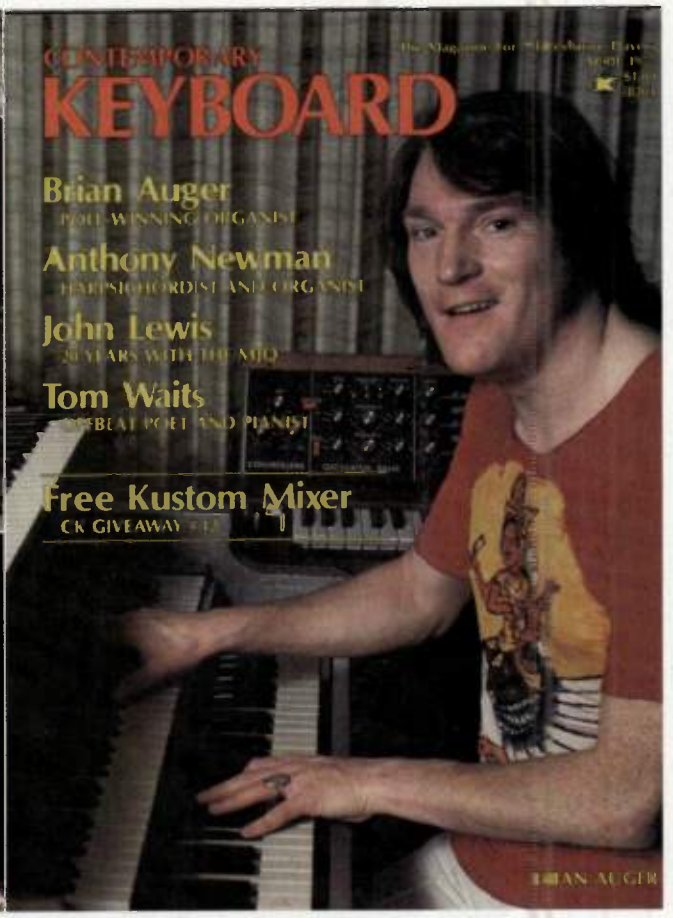
**(800) 222-4700**

**www.sweetwater.com**

©2017 Sweetwater, Inc.

FREE SHIPPING
NO MINIMUM PURCHASE
ON MOST ORDERS. CONTACT US FOR MORE INFO.






# Brian Auger

## A Hammond organ icon, still tearing it up after all these years

By Jerry Kovarsky

To sit and talk with Brian Auger is to sit with the history of our generation's music. He was part of the swinging '60s scene in London, playing and hanging with everyone you can imagine. (Jimi Hendrix played his first London gig with Brian's band!) From there, Auger tore it up in the '70s with his band, the acclaimed Oblivion Express, in which he continues touring and shows no signs of slowing down.

Auger is one of the rare elder statesmen in rock who is still playing at the top of his game and giving it his all every night. Moreover, he is a brilliant wit and storyteller, and this print version is but a tiny portion of our interview. We've posted the longer stories at keyboardmag.com so you can experience his way with words.

**You just got off a long European tour with the Italian artist, Zucchero?**

Yeah, our tour started last year. This leg was about two-and-a-half months with him. We started at the arena in Verona, which holds 12,500 people. We did 11 nights in a row. We go back and do six more concerts again in Verona, have a couple of days off, and then we start the autumn tour with Oblivion Express which goes through most of Europe for about five or six weeks.

**Could you tell me the story of the origin of the name of the band?**

I had been having great success with the Trinity, which was a band I started in 1967 with the great Julie Driscoll. We had number one singles in England, all over Europe—we were in the top five in all of the charts. At the end of that, probably late 1969, I started a new band. Obviously, the record company wanted to keep us in the same old groove. And I had an idea that I really wanted to push on with this kind of mix of jazz and R&B and rock 'n' roll. As I was wading against the commercial tide and my record company, I thought maybe I was headed the quickest way to oblivion. So that became the name of the band, and here we are in 2017, still rolling.

**What was your first exposure to the Hammond organ?**

Basically, I was walking through Shepherd's Bush Market, which is where my record store was. They had a couple of speakers mounted outside the store and I heard this incredible sound. I went in and I said, "What the hell is this you're playing?" And they showed me the cover to *Back at the Chicken Shack*, the first live Blue Note release in England. I immediately said, "Wrap that up!" I took it home and this started my interest in Jimmy Smith. It was a few more years before I played my first gig on organ, and decided to buy one.

**That's an expensive axe to get in England, right?**

Yes, it was. It was like a small mortgage by the time you invested in something to carry it around in and then a couple Leslies, as well, which didn't really suit me, actually.

**Talk to me about that. Obviously, you would have started with the Leslie because that's what everybody was doing.**

I started with the Leslie and I realized that, when I did a fast run, the percussion on the notes would disappear due to the top horn spinning, one side of which is blank to give you that Doppler sound, until the actual speaker came around again. So, I tried stopping it pointed forward. When I started in a band with Long John Baldry, who was a huge star in England, we moved into 500-seat halls instead of being in a little club or pub. You just couldn't hear the Leslie. There were no monitors at that time. I invested in another one and I still couldn't hear over the band. There are all these boffins in London, you know, "Oh, you

# BandH.com

*Visit our website for the most current pricing*

The Professional's Source

B&H PHOTO - VIDEO - PRO AUDIO

JBL 7-Series 705P 5" Powered Master Reference Monitor

JB705P | $999.00

Arturia MatrixBrute Analog Monophonic Synthesizer

ARMBAMS | $1,999.00

Elektron Analog Drive Multi-Circuit Distortion Pedal

ELPFX1 | $359.00

Universal Audio Apollo Twin MKII DUO Desktop Interface

UNAPT2DP | $899.00

Positive Grid Amp Matching Guitar/Bass Amplifier

POPGBIASHEAD | $1,299.00

Softube Console 1 MKII Hardware and Software Mixer

SOCNSOLE1MK2 | $499.00

Auray Stylus Music/Microphone Stands

AUMS300/440/500 | Set - $597.00

Pittsburgh Lifeforms SV-1 Blackbox Desktop Analog Modular Synthesizer - Eurorack

PIPMS1008 | $699.00

Warm Audio WA-87 Multi-Pattern Condenser Microphone

WA87 | $599.00


## TIPS & TECHNIQUES

*From the Pros*

**1 You Don't Need to Slam an Input at 24-Bit**

In the analog days, it was often desirable to drive preamps as hard as possible for tonal purposes. The same held true in the 16-bit world, but for issues relating to the noise floor. However, neither of these issues apply to 24-bit, so give yourself valuable headroom—you'll need it later on.

**2 Check for Mono Even though it's 2017**

In the old days, one often checked mixes for mono compatibility due to technological constraints of the times. You should still do this today, since your average listener won't hear a mix in perfect stereo (think sitting in the driver's seat, or sitting on the left side of a couch).

**3 Try Out a Manual De-Esser on Vocal Tracks**

What is a manual de-esser? The answer is you. Go through the track and manually gain down each sibilance, either by clip or pre-fader automation. Pretty quickly, you'll learn to recognize the football-like shape of a peaky sibilance, which will expedite the process. Sure, it takes time, but it's one of the most natural ways to tame those ear-splitting "ssssss" sounds.


Shop B&H, where you will find all the latest gear at your fingertips and on display in our SuperStore.

www.BandH.com

Where you will find information on over 400,000 items

Visit Our SuperStore

420 Ninth Avenue, NYC

800-947-5509

Cash in or Trade up

Used Equipment

We Buy, Sell, and Trade

Free Expedited Shipping

on orders over $49*

*Applies to In-Stock items. Some restrictions may apply. See website for details. NYC DCA Electronics Store Lic. #0906712; NYC DCA Electronics & Home Appliance Service Dealer Lic. #0907905; NYC DCA Secondhand Dealer - General Lic. #0907906

© 2017 B & H Foto & Electronics Corp.

should talk to Fred Blogs. He's the guy who can make these amplifiers loud enough for you." Well, so okay, he could, but then both of them went up in smoke [*Laughs.*]

**So, he wasn't all that boffin.**

There was a fire. [*Laughs.*] The concert stopped and an enterprising roadie said, "I've got a Vox P.A. with the two columns and the amplifier. I could take a lead off the back of the Hammond and put a female jack socket on the end of it so you could jack it into the amplifier." And bingo, that's it—my sound!

**Nowadays, what's your whole signal chain?**

I'm running an Allen & Heath mixer and a couple of speakers from Mark Bass. They've got great bass equipment, which we use. They don't make speakers for keyboards, but he made me two special speakers that are phenomenal. Over here in the States, I'm using a couple of JBL monitors, with a 15 and a horn in each. And the same mixer, Allen & Heath.

**Do you use any signal processing on it?**

I use a couple of Aphex 207D preamps, the ones with a tube, one for the piano and one for the organ. They really fatten the sound up. And a Lexicon LXP-1 for some reverb. Sometimes we use a SansAmp distortion pedal. If I want to put a little bit of distortion on the organ sound just to give it a little more drive, then we dial that in.

**I always found it interesting that to hit the peak or get the excitement, you turn on the chorus like other people would spin up the Leslie. So, you play the chorus buttons the way other people ride Leslies.**

Right, exactly. As I said, instead of losing the percussion as the horn goes around—you've got everything still there. And it's easier not jumping about trying to switch this on and that. I can reach over and there it is.

**You've got two instruments: one you keep in Europe and one's here. Can you tell me about each of those?**

The American one I brought over from England. I bought it in 1968. It had some sort of FM modulation because of the voltage, and that caused it to drift. So, I took it to a guy here in L.A., Ken Rich. He suggested putting a 110 motor in it and a tonewheel bed. And so now I have an Anglo-American organ.

The other one—when I got here in the '90s, I was using Korg synthesizers to produce whatever I could that sounded like an organ, with the Eric Burdon and Brian Auger Band. I was down in Florida and these guys from Keyboard Specialties turned up with a rental organ that they chopped and put in a streamlined case, and it sounded fantastic. I asked about getting one and he said, "We sold all the ones that we made." They were too expensive to make because they would actually resolder all the joints with brand new silver solder. So, the thing sounded better than it did when it came out of the factory. The owner said, "I've only got one, which I kept because it's a special 1956 model. If anybody, I'd love it to go to you." That's the one I keep in Europe.

**You're a self-taught pianist. You learned to play by ear, correct?**

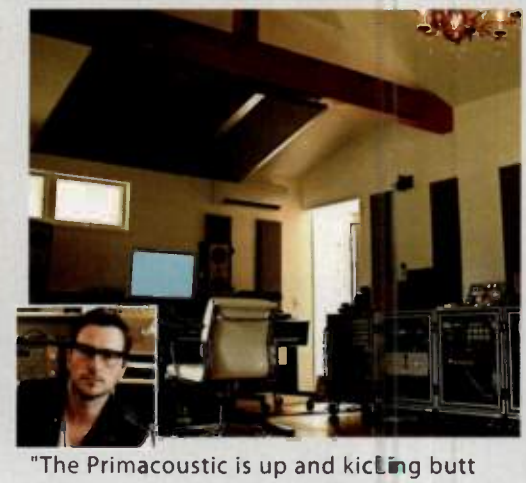
I did. I had a player piano and used to hang on to the underside of the keyboard and pedal away like some demented cyclist. My dad had a whole cupboard full of piano rolls that he had collected. We had all the operas; he had Beethoven's Moonlight Sonata, some Debussy, some Tchaikovsky, plus a lot of ragtime. It was really like a fitness machine and also a brain machine at the same time. I could learn bits and pieces from different tunes.

At the same time my elder sisters were listening to Nat King Cole, Frank Sinatra and Bing Crosby, while my eldest brother had a collection of American jazz records, which I loved. Duke Ellington, Lionel Hampton, the most amazing people. When


# Primacoustic... better design, better

"The ease of install really allowed us to experiment with placement and with the quality of the treatments, we achieved the sonic balance we were looking for!"
**~ Tommy Lee**
Founding member - Mötley Crüe.

"Being able to fine-tune a room on site makes all the difference. The Impaler mounting system make the panels easy to install and let you make adjustments without trashing the surface. It works!"
**~ David Rideau**
Engineer/producer - Janet Jackson, Sting, TLC, George Duke and Jennifer Lopez.



"The Primacoustic is up and kicking butt at my new studio in Santa Monica. I love the way the control and tracking rooms sound now... and so does everyone that records here!"
**~ Butch Walker**
Engineer/Producer - Avril Lavigne, Fall Out Boy, Pink, Sevendust, Hot Hot Heat, Simple Plan, The Donnas.

***"I love the way the control and tracking rooms sound now... and so does everyone that records here!" ~ Butch Walker***

Copyright©2017 Radialeng.com - all rights reserved. Specifications and appearance subject to change without notice.

I was about 10 or 11 years old, my brother gave me an old radio and I rigged an antenna out of my bedroom window. This was 11:00 or 12:00 at night I had to be very careful I didn't wake up my parents, but it was, "This is the American Forces Network in Germany. We present the jazz hour." And I heard Oscar Peterson—the first record that he made I bought in 78 rpm form—and so many amazing people.

**Comping left hand on electric piano is a big part of your sound. What are you using these days?**

I'm still using the Korg M3, which is a great instrument. You and Jack [Hotop] did some acoustic piano and Rhodes sounds for me and that's what I use Sometimes I'm comping with both hands on the piano and doing figures and stuff, like on "Bumpin' On Sunset."

I love to solo with the Rhodes sound. Sometimes I get all looney and decide that I feel like playing "Giant Steps" or a ballad like "Chelsea Bridge," more for me and hope everybody likes it. It always sounds beautiful.

**You talked a little bit about a couple of players. You mentioned Jimmy McGriff and Jimmy Smith. In your playing, I hear a lot of that advanced harmonic pentatonic world that McCoy Tyner first brought to the vocabulary.**

Right. I love McCoy, and all that pentatonic stuff and the modes—I mixed all that into my playing. And I've still got the itch from the ii-V-I jazz harmony. It colors your playing. I can use that ii-V, even in blues, just to give it some other shape.

**But then you have such a nice way of slipping up the half-step or moving away at the end of your line and coming back. That's a signature part of your style.**

I discovered that if I'm ripping a solo, say, in *D* minor, I could just suddenly transfer it to *F* minor. It didn't clash that much, but it just took you out somewhere else and I'd play in that key and then I'd fall back into the [original] key, which is always cool. I love that chromatic stuff if you use it here or there.

**You played at the tribute concert for our good friend Keith Emerson. Can you talk a little about him?**

Keith was a phenomenal player. Another one of those guys who, when I first heard what he was doing, I was like, "Oh my god!" I found out some years ago that he was only living about half a mile from me. We knew each other but we were like ships that passed in the night. We had that wonderful dinner together with you.

**Keith was actually a very shy guy and when we went out it was a while before he warmed up, but you started spinning some stories and you could just see Keith going, "Wait, I've got something I can share."**

Absolutely. He was always getting himself into strange situations and explaining them in this kind of way like, "I don't know how this happened but anyway..." He used to come to my gigs and he would get so excited and would say, "I'm going to announce you." [*Laughs.*] We had a lot of fun together.

**So, what does the near future hold for you?**

After the Oblivion Express tour, I'm taking some time off because we've been going straight for about two years now. And I need some time to finish my book. Basically, it's an autobiography, I'm going back as far as I can remember, and coming forward. The '60s were completely crazy and there are so many things that happened before anybody got famous, and so many people that I've met and worked with, and different funny situations. I just want to make it so that everybody has a real good laugh and recognizes these personalities for who they actually were in the middle of all the madness.

For more information and tour schedules, visit brianauger.com. ■


# performance... amazing results!

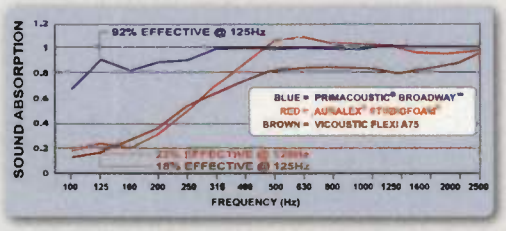
"When building The Leopards Nest studio, we tested a number of different acoustic treatments and chose Primacoustic. It was easy... Primacoustic did the best job and my studio sounds amazing!"
**~ Jason Hook** - Five Finger Death Punch.

"We've got a mixture of bass traps, diffusion and clouds and the result was phenomenal. It ended up costing less than 25% of the custom solution and it turned out very cool."
**~ Keb' Mo'** - Grammy winner, roots-legend.

"Not only does my room sound amazing, it's also really beautiful!!!" **~ *John Rzeznik*** - Goo Goo Dolls.

***"Not only does my room sound amazing, it's also really beautiful!!!"***
***~ John Rzeznik***

*Primacoustic Broadway™ high-density glass wool acoustic panels perform well where the others fail, in the critical low frequencies.*




**Visit the beautiful all new web:**
**primacoustic.com**

PRIMACOUSTIC®

A division of Radial Engineering Ltd. - 1588 Kebet Way, Port Coquitlam BC V3C 5M5

Hammond Organ Master Class

# The Art of Brian Auger

BY JERRY KOVARSKY

Brian Auger has an unmistakable style, combining a jazzy, modal approach with classic organ blues chops. Let's explore some of his stylistic traits using a version of Dave Brubeck's "Blue Rondo a la Turk" that he played at the Keith Emerson Tribute Concert in Los Angeles on May 28, 2016. (The full concert will be released on DVD in early 2018.)

## THE AUGER APPROACH

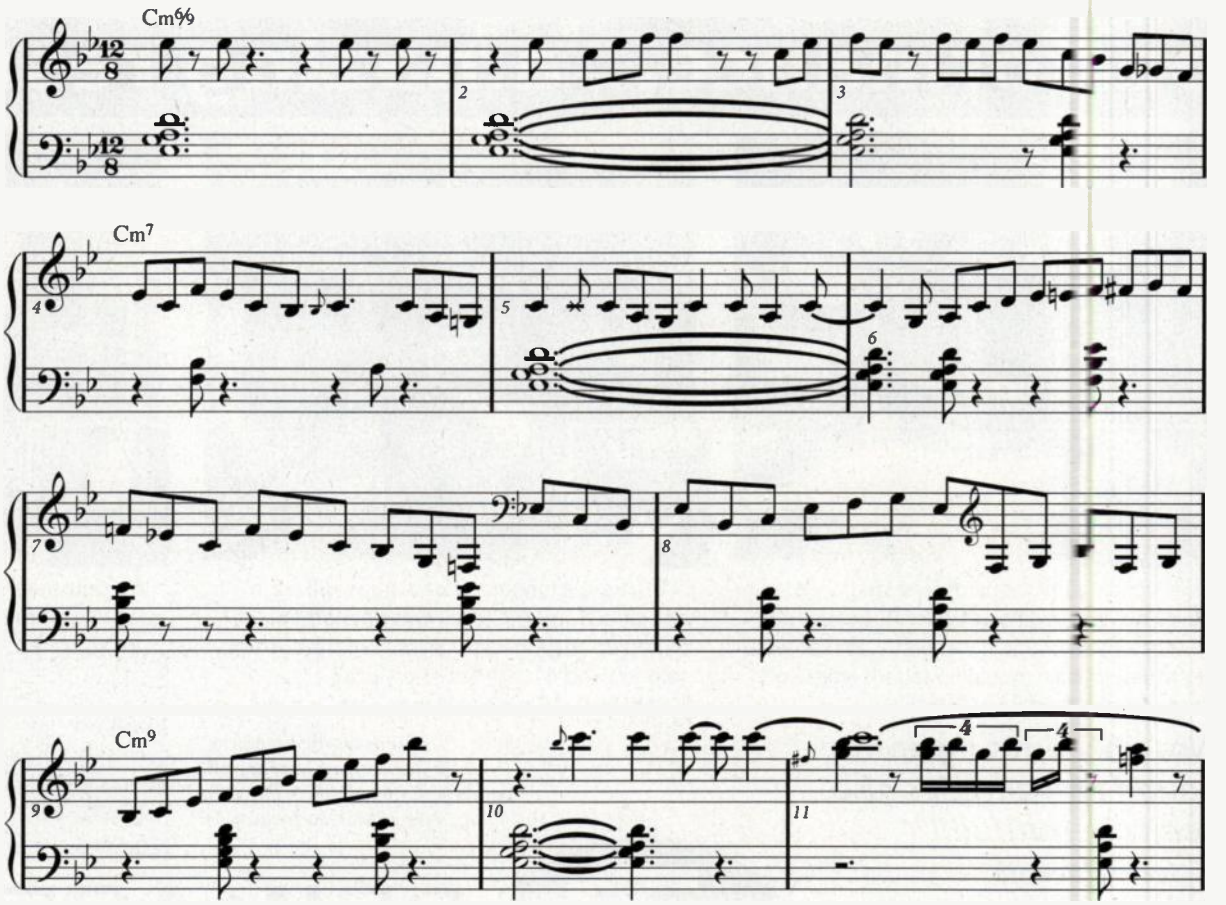
When Brubeck wrote "Blue Rondo a la Turk" in 1959 (from the *Time Out* LP), it was played in 9/8 time. Keith Emerson, a big Brubeck fan, adapted it for The Nice as "Rondo." He put it into a straight-four feel, although it was really in 12/8 emphasizing four beats per bar, with each beat subdivided into three for more of a shuffle feel.

Auger drew from both concepts in his Tribute performance, starting with the original 9/8 feel, then moving into the 12/8 of Keith. Furthermore, he transposed the tune into *C* major from the original *F* major. Starting with a vamp in *C* minor, his approach is a classic Auger move with quartal voicings (chords using fourth intervals). Examples of the sections above are at keyboardmag.com.

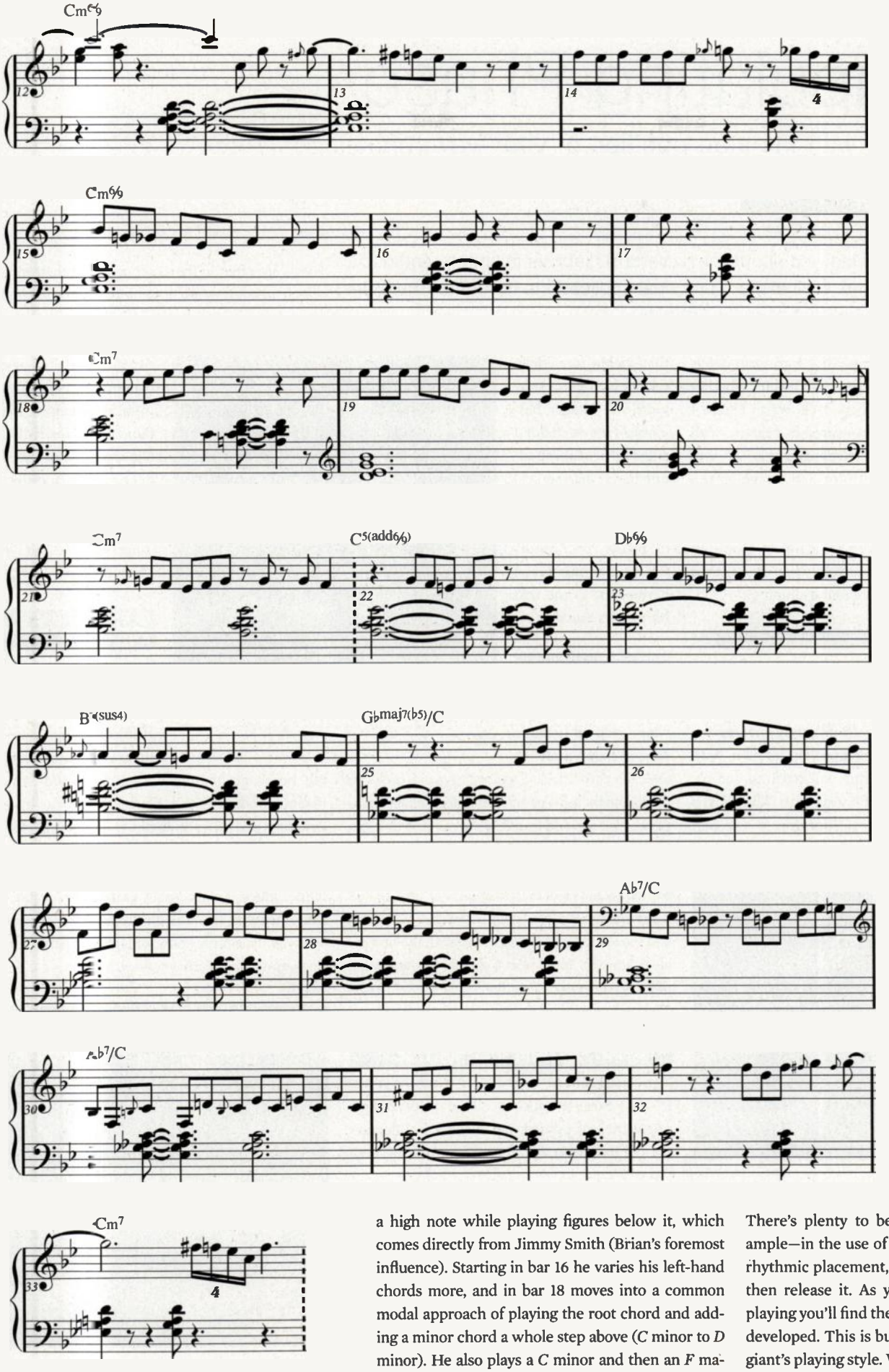
## SOLO TIME!

In the Example, Brian starts his solo economically, using the *C* blues scale against a colorful left-hand voicing that is rootless and outlines a *C* minor with an added sixth and ninth. In bars 4 and 5, he uses an *A* natural as well, which can be thought of as part of the *C* major blues sound. Notice the great rhythmic approach he has, and his interplay between the hands fits in the pocket perfectly.

In bars 11 through 13, he is playing classic blues/jazz organ riffs and uses the technique of holding




**Ex. 1. This is the opening section of Brian Auger's solo, on the *C* minor groove. Note how well he mixes up modal, blues, and some outside harmonies.**




a high note while playing figures below it, which comes directly from Jimmy Smith (Brian's foremost influence). Starting in bar 16 he varies his left-hand chords more, and in bar 18 moves into a common modal approach of playing the root chord and adding a minor chord a whole step above (*C* minor to *D* minor). He also plays a *C* minor and then an *F* major in bar 20, which can be thought of as a ii-V progression, a typical jazz approach.

Things start getting interesting in bar 21, where Auger plays what looks like an *A7sus4* voicing in the left hand, and then in the next bar he includes *E* natural in the right hand, as if he were playing in *C* major or superimposing an *A* minor over the previous *C* minor tonality. In the following bar, he moves up to what sounds like a *Bb(sus4)* chord, although the bass player goes up to *Db*. He moves up once again in the next bar to a *B(sus4)*, while the bass goes to *D*. This chromatic movement, and way of moving outside the tonality for a brief moment, is something Auger learned from listening to McCoy Tyner.

He gets very colorful in bars 25-28 by superimposing a *Gbmaj7(b5)* over the *C* bass note, while playing what seems like a *Bb* arpeggiated line over the chord. He might be thinking of it as a rootless *D7(#9)* sound, with the right hand also adding the flat thirteenth—who knows? Nonetheless, it's a very advanced and tense sound, which he keeps up in bar 28 as his right hand gets more chromatic. This leads him to the next bars where his left hand plays an *Ab7* while the right hand continues its chromatic and jazzy movement, culminating in a great ascending figure that finally releases the tension in bar 33 by returning to the straight *C* minor sound.

## A GREAT LESSON

There's plenty to be learned from this brief example—in the use of colorful chord voicings, great rhythmic placement, and how to build tension and then release it. As you listen to more of Auger's playing you'll find these skills consistently used and developed. This is but the tip of the iceberg of this giant's playing style. We'll have to visit him again. ■

HOW-TO

# Manipulating Phase

## Get creative with the start position of your waveforms

BY FRANCIS PREVE

Last month, we learned about the waveform displays in editors and oscilloscopes. This time, we'll explore practical applications for one of the most misunderstood elements of audio—phase.

Simply put, the phase of a waveform determines the point where its cycle begins, whether it is a sample or a single-cycle wave. Figure 1 shows how phase is measured in degrees, with the four most common angles of phase—0°, 90°, 180°, 270°, and back to 0° (or 360°)—highlighted. Of course, summing two identical waveforms that are 180° out of phase will cancel the audio completely, if their levels are identical. However, phase can be used creatively when it is altered less drastically. Here are four examples.

### TIMBRE SHIFTS

Many soft synths, such as Sylenth1, Operator, and Serum (Figure 2) include adjustable phase for their waveforms. As described above, adjusting the phase of a waveform simply changes the point where its cycle begins. On its own, with no other oscillators, this will have no audible effect on the sound of a waveform. The trick is to adjust the phase in relationship to a second oscillator or audio source. A cool experiment that yields immediate results is to put a sawtooth (all integer harmonics) on oscillator 1 and a square (only odd-numbered harmonics) on oscillator 2, then put oscillator 2 180° out of phase. The result? Only even-numbered harmonics, as the odd harmonics cancel.

Fig. 2

### ATTACK TRANSIENTS

Generally speaking, when editing sample data, it's important to look for zero-crossing points to avoid clicks or pops. And therein lies another phase-related technique: You can add transients to a sound by moving its start point off of the zero-crossing. This is one of the secret tricks of IDM and experimental tracks. To get a feel for this approach, take an 808 kick, which has a lot in common with a sine wave, and move its start point to the peak of the first cycle (Figure 3). You'll hear a click at the beginning of the sound, which can then be adjusted to taste. This technique works great with bass sounds, too.

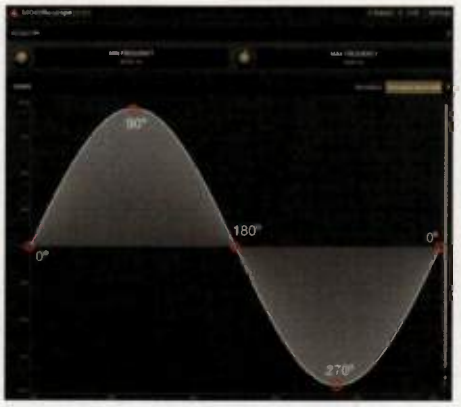



Fig. 1

### CENTER-CHANNEL KILL SWITCH

The classic karaoke technique of removing vocals from an existing track is based on a very simple phase trick of putting one channel 180 degrees out of phase with the other. This works because vocals are often in the exact center of their mix, which means they are present in both the left *and* right channels. To hear this in action, begin with a stereo track (older music works best because panning techniques were more extreme in the golden age of radio). Flip the phase of one of the channels, and then sum it to mono. Figure 4 shows this process using two Ableton Live Utility devices.

### BLENDING BASS AND KICK

Getting the bass and kick to sit properly in a mix is often accomplished using sidechain compression, but here's an additional trick I learned from techno producer Matt Lange. Once you have your bass and kick sitting nicely in your mix, flip the phase of either the bass or the kick. Sometimes, it will instantly clean up the low-end. (Other times, it will actually make things worse.) But when you test this on the low-end of your mix, you'll instantly know which is the better option—and it can work wonders. ■

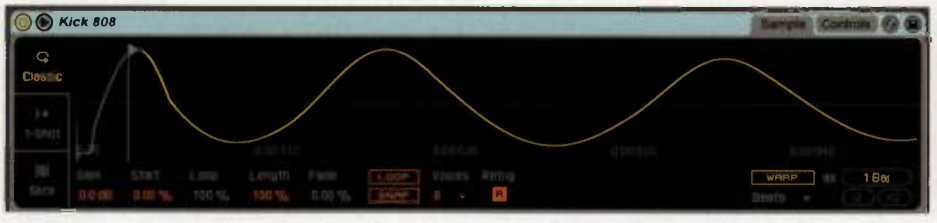
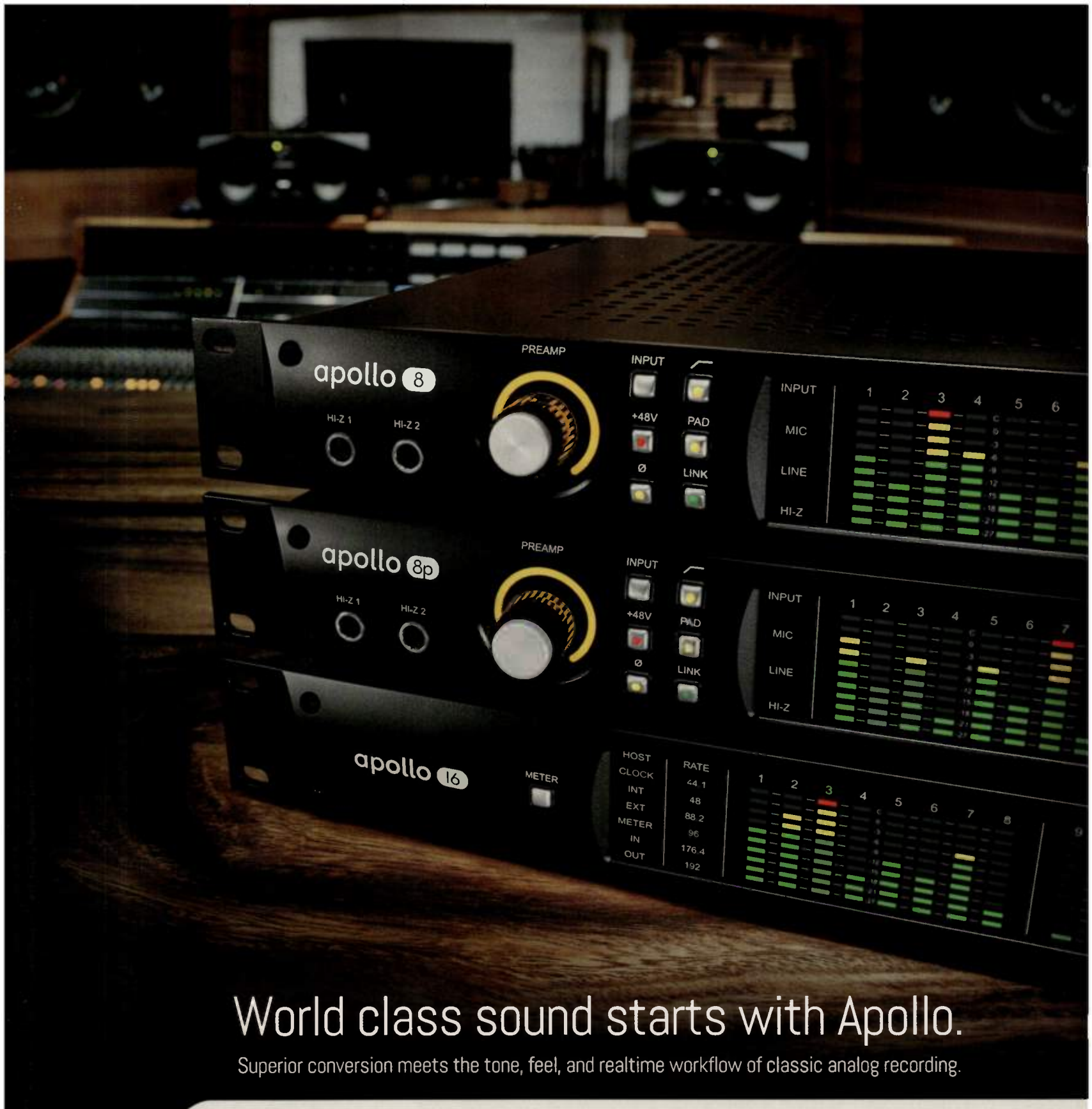



Fig. 3

Fig. 4




# World class sound starts with Apollo.

Superior conversion meets the tone, feel, and realtime workflow of classic analog recording.

Stunning clarity and dynamic range

Realtime UAD plug-in processing

Breakthrough Unison™ mic preamp modeling

The world's best Thunderbolt implementation (Mac/Win)

UNIVERSAL AUDIO

www.uaudio.com/apollo

**Sound Forge Pro Mac 3's customizable interface showing both audio editors with both tabs open—the Media Browser on the left and the Plug-in Choose and Chain on the right.**

**MAGIX**

# Sound Forge Pro Mac 3

## A PROMISING AUDIO EDITOR GETS A NEW FIRST IMPRESSION

**BY MARKKUS ROVITO**

The Mac version of the Sound Forge Pro audio editor has always lived under the shadow of its older and stronger Windows sibling, and previous users of Sound Forge Pro Mac complained of stability problems and too few features. It looked as though the program was going to die on the vine when Sony abandoned it, but Magix took many by surprise when it assumed ownership of the Sound Forge line in 2016. Now, after a few years of waiting, there is finally an update.

With Sound Forge Pro Mac 3, Magix has not tried to reinvent the wheel. The look and feel of previous versions remains largely unchanged. Instead, Magix has shored up the program's stability and added some key features, as well as third-party mastering/restoration processing from iZotope, without sacrificing the program's streamlined workflow.

### REINTRODUCING THE CHALLENGER

Sound Forge Pro Mac 3 (SFPM3) offers a very flexible one-window interface with four panes of operation that can be hidden from the toolbar to suit the user's needs. The main Editor pane can show either two separate waveform editors horizontally or vertically, each with a preview waveform above, or a single editor. The left, right, and bottom panes can each hold a variety of tools such as the Media browser, Record settings, Channel Meters, Plug-in Chooser for all your system's AU and VST plug-ins, and a Plug-in Chain view, where you can design, save, and load custom plug-in chains.

This version supports recording of up to 32 channels simultaneously as high as 24-bit/192kHz resolution, but the program can open, edit, and save audio as high-res as 32- and 64-bit (floating point)/192kHz in almost every major audio format. The update can also import and convert video files to audio only, which you can edit and export. Many video formats like MP4, XAVC, AVCHD, XDCAM and others will work; a few videos formats such as MKV would not open.

SFPM3 performs excellent pitch shifting and time stretching (using the Zplane élastique processor), as well as professional sample rate and bit depth conversion using the iZotope Mbit + Dither and 64-bit SRC plug-ins. All of SFPM3's processes are also available in the included Magix Cnvrt IC audio batch convertor, which works very fast (Figure 1).

SFPM3 provides a number of keyboard short-

**Fig. 1. The bundled batch convertor, Cnvrt, adds metadata, and processes and converts the audio files' format in a hurry.**

Markkus Rovito dislikes the sound of his own voice until it's processed with audio hardware, software, or his own built-in dialect filters.

### STRENGTHS

One-window interface. Light on the CPU. iZotope plug-ins. Batch processor. High-quality audio engine. Supports most audio formats and resolutions.

### LIMITATIONS

Little use of contextual menus. Batch processor not integrated with editor. Video support limited to extracting audio track.

$299 street
magix.com

cuts that you can customize in Preferences. Using those you can mark many separate regions within a single audio file quickly and then export them all to separate audio files at a single stroke (Figure 2). I loved that feature for vocal takes, as well as long found-sound recordings. SFPM3 has the requisite tools, effects, and process to perform accurate editing down to the single-sample level, and it does so with very smooth operation and low CPU load, even with many high-res audio files open.

## NEW TRICKS FOR THE TRADE

Many of the new features of SFPM3 focus on delivering your audio appropriately for many uses and destinations. It includes iZotope Ozone 7 Elements, a preset-driven mastering plug-in designed to produce fast results for more than 20 musical genres. The included RX 6 Elements processors make up two-thirds of the iZotope Elements Bundle and includes a basic standalone spectral editor (Figure 3) along with four plug-ins: De-click, De-clip, De-hum, and De-noise. SFPM3 also has a new automatic clip detection tool in the Find/Repair view, where you can attempt to quickly repair clips, peaks and glitches.

A new Automatic Loudness Leveling function immediately attenuates levels to be in line with broadcast standards of the AES/EBU or the ATSC CALM Act. Detailed Loudness Meters show the audio's momentary, short-term, and overall loudness, as well as the loudness range. In addition, SFPM3's dynamic rendering can process multiple project files including the source audio with unique plug-in chains as they're being burned to a Redbook standard CD, so there's no need to render pre-master files.

The newly added Preview Mastered for iTunes option will encode and export any selected audio using the same technology that Apple uses for the Mastered for iTunes standard. While it's just a preview, because Apple does the final encoding on its end, this Sound Forge option is very handy for hearing how iTunes will step on your pristine sound, so you can try to make adjustments before sending it off. However, Preview Mastered for iTunes doesn't work if your original audio is already compressed. It would be great for future Sound Forge Pro Mac updates to add other previews for other popular streaming/compressed platforms.

## MORE HIGHS THAN LOWS

Sound Forge Pro Mac 3 operates very quickly and with far less CPU than you might expect. Of course, you can bog it down if you're recording more high-res tracks than your computer can handle or by using too many plug-ins at once. However, I was able to keep way more 24-bit/44.1kHz WAV files open and active than I at first thought was a good idea on my aging MacBook Pro.

While SFPM3's performance was not flawless, it did seem far more stable than previous versions. This update crashed on me only a few times in two different ways. The first was while using keyboard shortcuts to record successive short clips of audio quickly, which worked fine many times and crashed two or three times. The second instance happened when attempting to cancel a Preview Mastered for iTunes encoding that was in process. And when it did crash, I only lost a little time, but not the work since SFPM3 restored my session upon reopening.

**Fig. 2. A single key creates Regions of the selected audio, shown in the Regions List on the left. Another command exports all the Regions as separate audio files.**

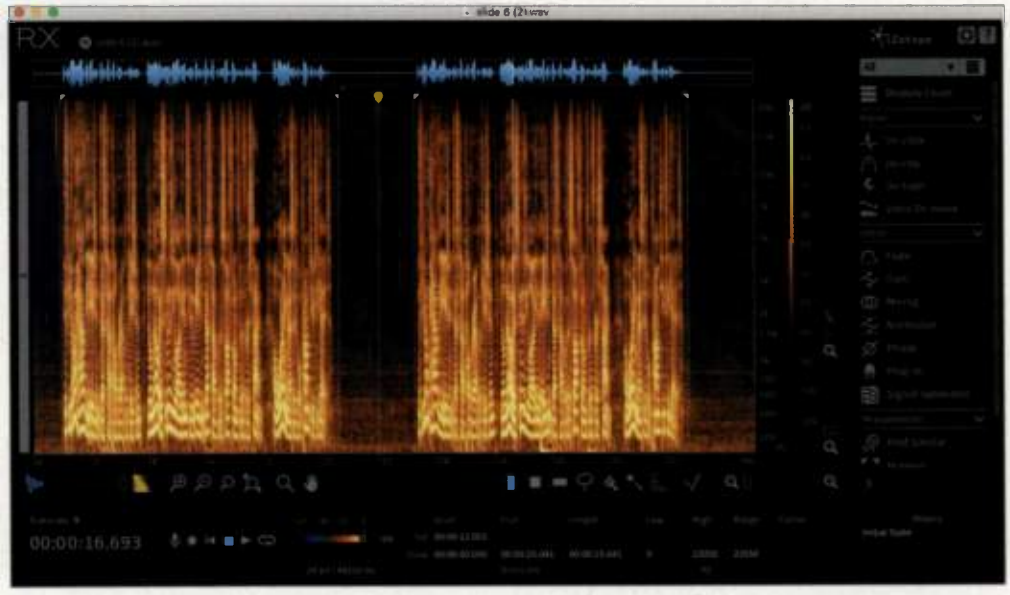



**Fig. 3. iZotope RX 6 Elements includes a simplified, standalone spectral editor and four very effective noise reduction plug-ins for use in Sound Forge Pro Mac 3 or another host.**

## SURVEYING THE OPTIONS

Mastering and post-production engineers, as well as other audio pros have an obvious need for dedicated audio editors such as this. Electronic musicians and producers may not see the point unless they can divine the benefit of Sound Forge Pro Mac 3's workflow compared to other DAWs. However, anyone who commonly treats audio like Play-Doh—recording, editing, and processing it without inhibition just to see how it turns out—will appreciate the speed with which you can render new versions of high-res files, export multiple regions, and batch-convert using custom-saved plug-in chains. And it's priced very competitively if Magix can keep it at its current $299 level. (It's listed at $557 retail, which would put it right in line with many other DAWs.)

With its ample power, smooth workflow and reasonable price, Sound Forge Pro Mac 3 belongs in the conversation for any Mac user looking for a versatile digital-audio workstation. ■

**Brauer Motion's GUI is very well designed and helps you visualize the motion and path of the Panners.**

WAVES

# Brauer Motion

## A PLUG-IN THAT TAKES AUTO-PANNING TO A NEW LEVEL

BY MIKE LEVINE

Mike Levine is a composer, producer, and multi-instrumentalist from the New York area.

**STRENGTHS**
Dual Panners. Sphere display provides visual feedback. Panning Modes. Circular Paths for 360-degree movement. Trigger functions. Dynamics section and Mixer.

**LIMITATIONS**
Complexity might be intimidating for some users

$99
waves.com

Brauer Motion, the result of a collaboration between Waves and noted mix engineer Michael Brauer, goes well beyond just panning signals from side to side. It features two independent Panners, as well as selectable panning algorithms, multiple triggering options, overdrive, a mixer, and impressive 3D graphics. The plug-in offers mono-to-stereo and stereo processing.

### MOVIN' AND GROOVIN'

The GUI's 3D Sphere provides a useful visualization of the panning effects. For each of the Panners, a small glowing circle moves inside the Sphere, depicting the motion of the panner in real time.

The controls for Panners 1 and 2 are identical, but you can only edit one at a time. Pressing the Link button syncs the two Panners' controls, so that changes made on one are mirrored on the other.

The parameters most determinant of how each Panner behaves are the Path Types and the Modes, which can be set independently for Panner 1 and Panner 2. The Path Type defines how a Panner will behave, and Mode determines what controls its motion.

Among the Path Types, Classic creates a standard, side-to-side panning motion, whereas Circle has a 360-degree path. And the 3D-audio technology is stunning the first time you hear the sound go around in a circle. The Circle Phase Path inverts the phase on half of the image, creating an even wider image that seems to go behind your head when set at its full width.

The fourth Path Type, X-Lights, causes the sound to alternate between left and right. (In the manual, Waves compares it to signal lights at a train crossing.) Depending on how fast and wide its set, it can give you staccato, gated effects.

For any of the Path Types, you set Width and Depth using individual controls. Width adjusts the horizontal width of the path. Set to its highest, you can extend the path past the normal stereo boundaries so it sounds like it's a bit outside of your speakers.

Depth adjusts the front-to-back distance: Although you do hear its impact when used with the Classic Path, it's most consequential when used on the two circular Paths. You'll appreciate just how powerful this plug-in is if you set Brauer Motion to its default, select Circle or Circle Phase for the Path, turn the Width to full, and then adjust the Depth as the audio goes through.

### IN A GOOD MODE

You can set each Panner to one of four modes. Sync mode locks the panning effect to the host tempo. Free mode lets you manually set the speed. Input mode is particularly useful, because it sets the panning to follow the amplitude of the signal being processed: For example, if used on a percussion track, the panning moves in lockstep with the movement of the audio. (This is also a good way to get tempo-locked effects on tracks not recorded to a click.)

Manual mode lets you set a static position for each Panner. There's no actual panning in this mode, but the modulation, distortion, and other

# TOTAL NONSTOP CREATIVITY

Discover the next generation of MASCHINE
and KOMPLETE KONTROL.

**www.native-instruments.com/totalnonstopcreativity**

NATIVE INSTRUMENTS

THE FUTURE OF SOUND

effects in the plug-in can be used. Moreover, Manual mode gives you a pathless setting that you can automate from your DAW.

Each mode offers different parameters for adjusting the speed. In Sync mode, you get menus for Bars and Beats, which set the duration of each complete path the Panner takes, based on the host tempo.

In Free mode, there's a Speed knob instead of bars/beats, which can be manually adjusted. Input mode has Sensitivity, which governs how responsive the effect will be to amplitude changes in the source signal: The higher you set it, the more responsive it is. Manual mode has no speed control, because there's no panning going on unless you do it manually or automate it.

## MORE CONTROL

The Range Markers are adjusted by dragging them around in the Sphere display. The A and B Markers set the beginning and end points of a Panner's motion, whereas the Start Marker is the point in the panning Path where the effect begins. From there, the Panner moves between A and B. If the description sounds confusing, don't worry: The graphical depiction of the movement that you see in the Sphere makes it easy to understand.

The Range Markers are critical because they govern the start and end point of each Panner's Path. For example, if you select the Circle Path, and you set the A point at 0 (the lowest setting) and the B point at 100 (the highest setting) the panning motion will go around the complete circle after commencing at the Start Point. If, in that same scenario, the B point is only set to 50, the panning motion will only go halfway through the circle, and then start again from the A point (see Figure 1).

Brauer Motion offers quite a few ways to modify the panned signal. A Modulation section, available for all Paths except for X-Lights, lets you choose between four modulating waveforms, which alter the Panning behavior: The Sine modulator provides a relatively smooth motion whereas the Triangle causes the sound to bounce between the start and end points of the Path; The Reverse button changes the direction of the Panner you're editing, and Offset, which is available in all Path Types except X-Lights, lets you offset the range of a panning Path.

**Fig. 1. The Range Controls (A, B, and Start) allow you to change whether the panning motion will trace the full Path or only part of it.**

> Brauer Motion would be an awesome tool for EDM and other electronic styles, as well as for sound design and any situation where auto-panning is desired.

## MORE GOODIES

In Sync or Free mode, Trigger lets you choose from five different Panner behavior options, which are triggered when the signal reaches a user-adjustable Threshold setting. For example, Simple mode waits until the input signal exceeds the threshold to trigger the panning action. Re-Trigger also starts when the input passes the threshold, but stops again when it falls below. The three other Triggers offer various behaviors related to the Threshold setting.

The Dynamics features offer compression or Drive (overdrive) to either a specific panner, the Direct signal, or the Output. Highpass and lowpass filters are also included. Overall, this section is flexible and convenient to use, and it gives you plenty of options to modify the source sound.

The Motion Filter makes it possible to accentuate or reduce the panned sound as it goes to various points in its path. Technically, this process applies a high shelf filter to the signal as it moves. Practically speaking, you can use it to boost the center or sides on a left-to-right panner (Classic Mode) or the Close Gain or Far Gain for the two circular Paths. It's useful when you want to compensate for the reduction in level that can happen as the sound hits certain points in the panning Path.

Lastly, Brauer Motion has a thorough Mixer section that provides separate knobs for Input, Panner 1, Panner 2, Output, and Mix, making it easy to blend not only the output of the two Panners, but to dial in as much or as little direct sound as you want. It also has Mute switches for each Panner, and Stop switches to halt the panning without muting the signal.

## MOTION WITH EMOTION

I'm extremely impressed with Brauer Motion: Its creative potential goes far beyond the normal auto-panner. With its abilities to combine two independent Panners, and its many ways to modify the panning action and sound, this is one powerful plug-in. What's more, the 3D-audio technology at its core is pretty mind-blowing.

Brauer Motion would be an awesome tool for EDM and other electronic styles, as well as for sound design and any situation where auto-panning is desired. Although it excels at dramatic effects, it's also great for creating subtle panning that adds movement in an almost subliminal fashion. This can make it useful on more organic musical styles, if used judiciously.

Waves and Brauer have done a commendable job making this plug-in easy to operate, considering the breadth of its parameter control. Those who are tech averse might find it a bit intimidating at first, but most users will get the hang of it pretty quickly. What's more, there are plenty of presets available if you don't feel like creating your own. And the cherry on the cake is that it's reasonably priced. Without question, Brauer Motion blows away any other auto-panner I've ever used. ■

# SamAsh®

## WE ARE TECHNOLOGY

APOGEE SYMPHONY I/O MK II 2X6 THUNDERBOLT AUDIO INTERFACE

YAMAHA TF5 32 CHANNEL DIGITAL MIXER

PRESONUS QUANTUM THUNDERBOLT 2 AUDIO/MIDI INTERFACE

UNIVERSAL AUDIO APOLLO 8 THUNDERBOLT 2 AUDIO INTERFACE

NOVATION CIRCUIT MONO STATION SYNTHESIZER

NORD STAGE 3 88 SYNTHESIZER

MOOG MUSIC SUBSEQUENT 37 CV
LIMTED EDITION ANALOG SYNTHESIZER

ROLAND SE-02 SOUND MODULE

FOCAL
ALPHA 65 ACTIVE
2-WAY NEAR FIELD
STUDIO MONITOR

ARTURIA AUDIOFUSE
AUDIO INTERFACE

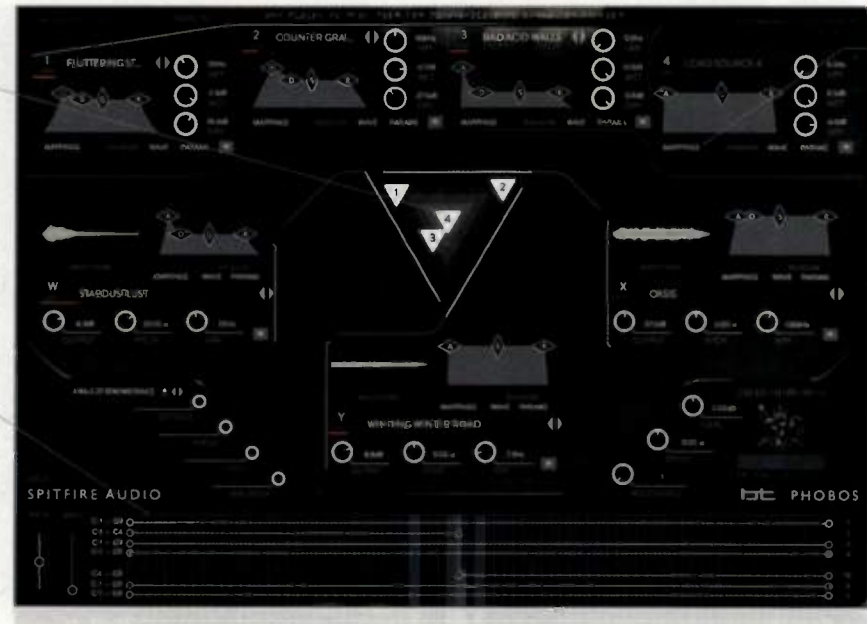
NATIVE INSTRUMENTS KOMPLETE
KONTROL S88 88-KEY CONTROLLER

BEST SELECTION ONLINE

LOWEST PRICE GUARANTEE

SPECIAL FINANCING AVAILABLE

VISIT SAMASH.COM
OR CALL 1-800-472-6274
SPEAK TO AN EXPERT TODAY




**BT Phobos gives you instant access to the parameters you'll want to edit most often.**

**SPITFIRE AUDIO**

# BT Phobos

## A LEADING SOUNDWARE DEVELOPER INVENTS NEW WAYS TO BLEND TIMBRES

**BY GEARY YELTON**

Writer, synthesist, and *EM* editor-at-large Geary Yelton lives in Asheville, North Carolina.

### STRENGTHS

Inspiring factory content. All parameters can be automated. MPE support. Easy to create useable presets.

### LIMITATIONS

Preset name disappears when you make edits. Can't edit loop patterns.

$299
spitfireaudio.com

BT (aka Brian Transeau) is a musician who continually pushes the boundaries of technology. Phobos is the personification of fear in classical Greek mythology and the larger of Mars' two moons.

BT Phobos is a synthesizer plug-in that takes a unique approach to crafting genuinely original sounds and making music with them. Spitfire Audio, a leading developer of mostly orchestral soundware formatted for Native Instruments Kontakt, makes BT Phobos.

BT Phobos' synthesis technique is sample playback, but with a twist that Spitfire Audio calls *polyconvolution*. Convolution, you may remember, is a technique that superimposes an impulse response (IR) from one sound on another sound. Polyconvolution is polyphonic convolution, which superimposes IRs from one or more samples on other samples. Every time you press a key, BT Phobos generates an impulse response from a sample called a *convolver*, which you can use like an effects algorithm to process sounds. The result often sounds like the original sound is vibrating at the convolver's resonant frequencies. For example, if you route a drumbeat through a brass instrument, the beat becomes metallic.

### THIS BINARY UNIVERSE

In BT Phobos, any of the supplied samples can be used as either a sound source or a convolver, rather like an operator can be a modulator or a carrier in FM synthesis. BT Phobos divides its factory samples into two categories, BT Loops and BT Tonal. All samples are uncompressed 24-bit, 48kHz audio data in a proprietary format.

BT Loops are drum and percussion patterns that don't transpose when you press different keys. Most are distinctive and unique, with an emphasis on intricate rhythms and beats suitable for EDM and other danceable musical genres. Because they're unsliced audio loops, you can't edit the patterns. I didn't examine every loop, but I found two that weren't perfectly spliced at the end, making their rhythm slightly off at the loop point.

BT Tonal sounds have pitch, and you can play them polyphonically. Most tonal sounds emphasize complex, engaging, synthesized textures and atmospheres. Although the pitched sounds are looped, too, the release of their envelopes lets you play them melodically.

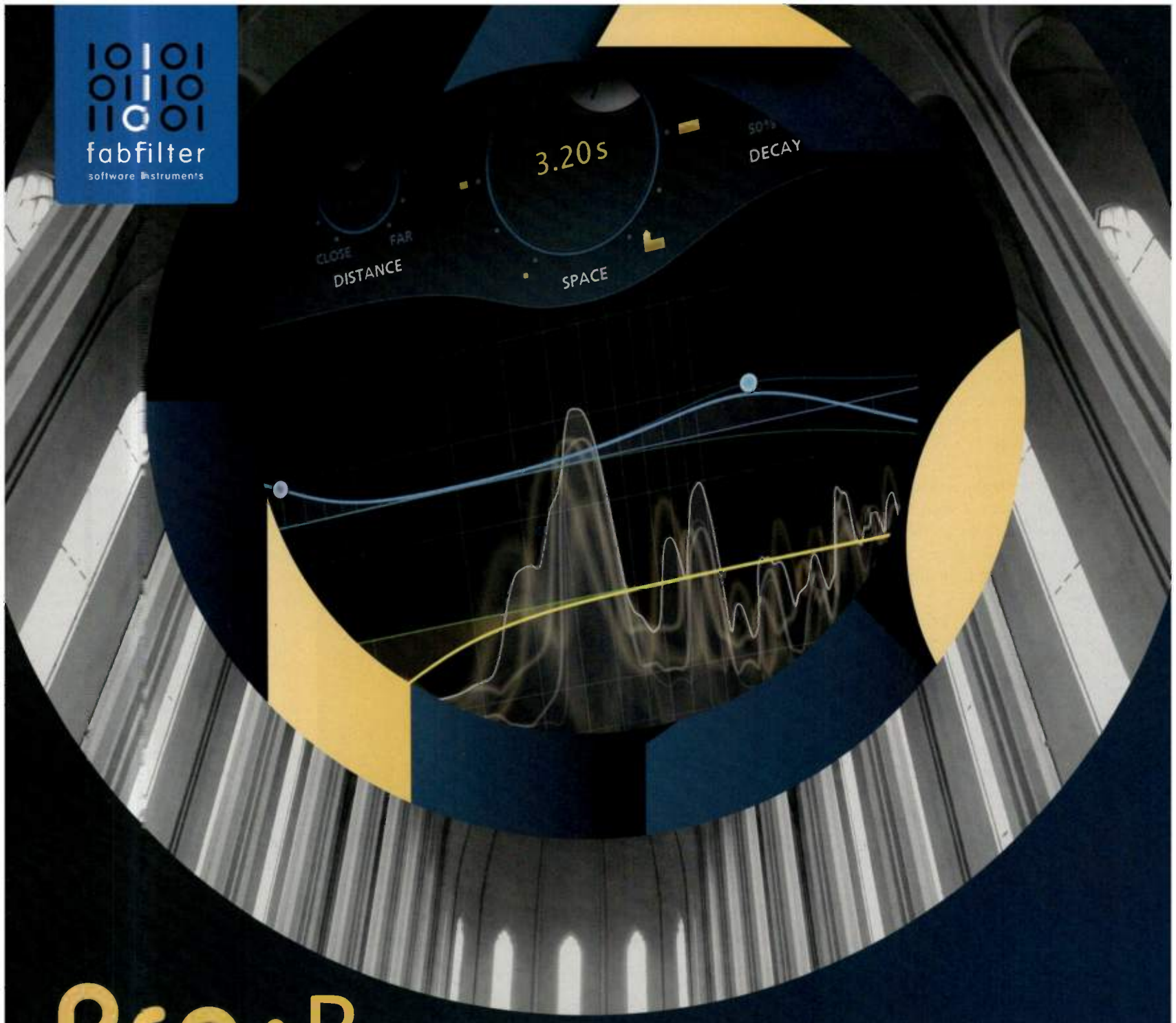
Some of the sound-design work on these samples is just spectacular. Because BT Phobos supplies such a wealth of captivating sounds as raw material, different combinations of sources and convolvers yield a seemingly endless variety.

### THESE HOPEFUL MACHINES

I'm grateful that BT Phobos' GUI is resizable, because its default size displays text so small that it's difficult to read. The main panel divides controls into distinct sections called units, with sound source units at the top and convolver units in the middle. At the bottom, an onscreen keyboard—so stylized I didn't immediately recognize it as such—lets you specify pitch ranges for each source and convolver. In the center of the convolvers, the Convolution Triangle controls how the sources and convolvers interact.

Each of the four source units has identical user parameters, including a highpass filter, wet and dry level knobs, a mute button, and an ADSR

fabfilter
software instruments




# Pro·R

## Give your music some space

As one of the most used effects in the audio world, reverbs come in all forms and flavors. A great reverb sounds natural and sits in the mix perfectly. At the same time, it should not confuse you with over-technical controls, but must be easy to set up and a joy to work with. Enter FabFilter Pro-R.

www.fabfilter.com

envelope you adjust by dragging its breakpoints. Two parameters are labeled Random: Wave, which chooses a source at random from the sound library, and Param, which randomizes all parameters as much as 10 percent in either direction. All knobs display their precise values.

Highpass filters are necessary because many samples have low-frequency content that clashes with low frequencies in other samples. The HPF knob helps you avoid rumbling cacophony while also improving the clarity of higher-frequency material.

The three convolver units have the same controls as source units, with some exceptions. Instead of Wet and Dry knobs, convolvers have a single Output level knob. They also have a waveform display for viewing the convolver's contour at a glance and a pitch knob for transposing in semitones or cents.

The Convolution Triangle contains four triangular pucks representing the four sound sources. Their placement determines how much of each source is sent to each convolver. Each of the triangle's three corners represents a convolver, and a sound source's proximity to a particular convolver determines the level of the source passing through it. For example, placing puck 1 in the upper left corner routes it fully through convolver W. Drag it to the triangle's lowest point to crossfade to convolver Y, the upper right for convolver Z, and the center for all three convolvers equally.

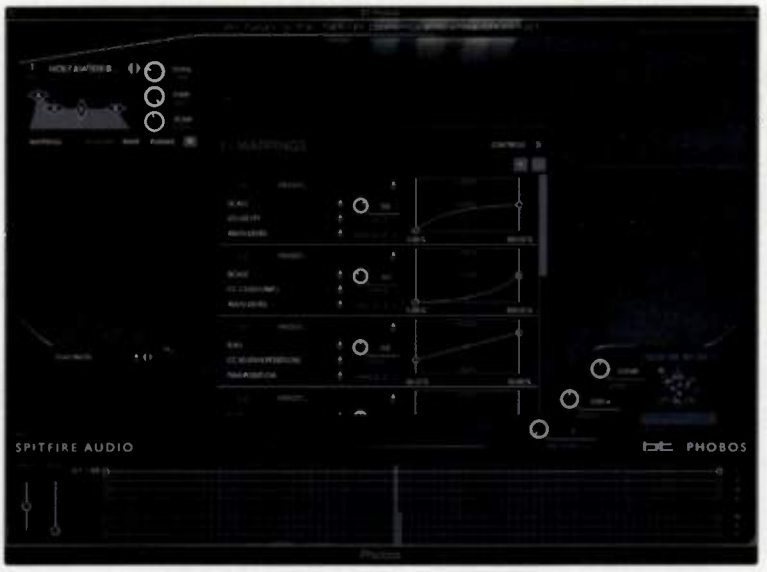



**Fig. 1. Using the Mappings panel, you can create and edit the behavior of the modulators you have routed.**

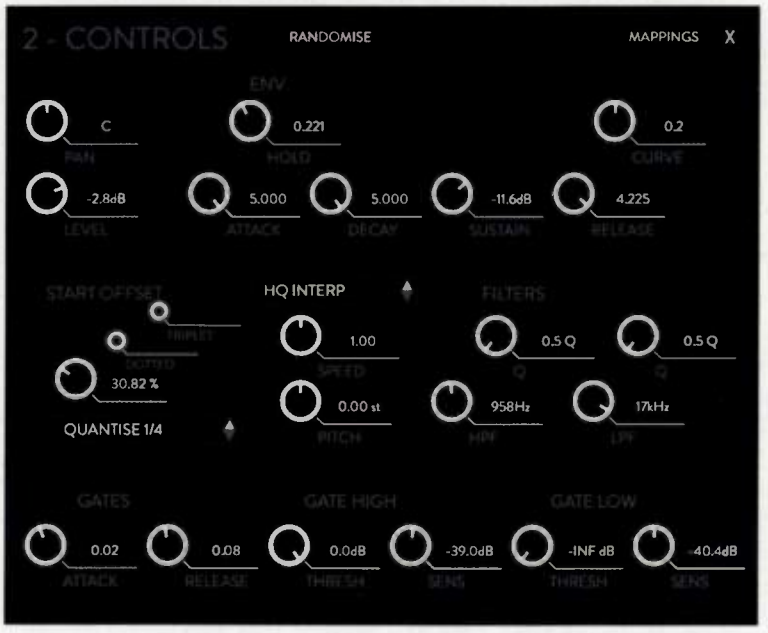



**Fig. 2. The Controls panel reveals a host of additional parameters you can work with.**

## A SONG ACROSS WIRES

Another button that sound sources and convolvers have in common is Mappings (Figure 1). Click on the Mappings button to open the Mappings panel, where you can toggle between Mappings and Controls. Mappings is where you view, create, and edit tons of modulation routings. You can map well over 250 sources, including velocity, the envelope generator, and four LFOs, as well as global or channel-specific aftertouch, pitch bend, and MIDI CCs. In addition to filter, envelope, gate, and level parameters, targets (e.g., destinations) include speed, pitch shift, and send levels.

The Controls panel furnishes knobs for making fine adjustments (see Figure 2). Its parameters include levels, panning, offsets, and gates, as well as highpass and lowpass filter settings. It also has knobs for adjusting envelopes that offer hold and curve parameters along with attack, decay, sustain, and release.

You can access global parameters using master controls on either side of convolver Y. These include knobs to determine BT Phobos' overall gain, pitch, and MIDI channel, across from buttons that enable MPE (multidimensional polyphonic expression) and open panels for adjusting polyphony and LFO parameters. You can automate all parameters in your DAW, too. For creating, controlling, or customizing presets, BT Phobos gives you lots of control over lots of parameters.

## EMOTIONAL TECHNOLOGY

BT Phobos comes with 716 presets and 2,381 samples, totaling almost 23 downloadable gigabytes. None of the sounds are multisampled, but you can define the splits and layers between them using controls that overlay the onscreen keyboard.

Clicking on the name of any source or convolver opens BT Phobos' browser window. On its left is a list of samples, and on its right is a list of attributes. Dropdown menus let you display only tonal samples in a specific key (including clusters) or loops at a specific tempo. You can audition samples before you load them, which helps you locate sounds more quickly. If you find a sample you like but it's not quite right, click on Find Similar to locate comparable samples.

The Presets menu categorizes most factory presets by creator and category. For example, BT's presets are divided into Atonal, Harmonic and Melodic, Hybrid Melodic-Rhythmic, and Rhythmic categories. Christian Henson's presets are categorized as Analogue, Convolution Synth, Drones and Pads, and Loops. Richard Divine's presets are a simple list of 53 presets with no categorization.

BT Phobos displays the current preset's name only in the browser menu, and that name disappears whenever you make the slightest change, which could be a problem. In Logic Pro X, it doesn't even save the name when you close and reopen a DAW file. That leaves you guessing which preset you previously loaded.

The dynamic range of factory presets varies from subtle to aggressive. One preset choice is Default State, which doesn't load any sound sources or convolvers. That proved extremely useful for building my own presets and for exploring and acquainting myself with BT Phobos.

## EMBRACING THE FUTURE

BT Phobos gives you the means to combine and crossfade as many as seven sampled sounds in ways that often mask their origins and generate something new from the combination. Best of all, the variety of timbres it produces is astounding. Need phat, fresh beats? Coming right up. Ominous, otherworldly atmospheres? Piece of cake. Pads that sound like nothing else? No problem. If you're constantly on the lookout for new and different timbres, BT Phobos may be right up your alley. ■

# KH 80 DSP

## The number 1 for 0 compromises.

**Version 3 of Intua Beatmaker is a major upgrade that adds a wealth of new features.**

INTUA

# Beatmaker 3

## A POWERFUL, GROOVE-FRIENDLY DAW FOR IOS

BY FRANCIS PRÈVE

Intua Beatmaker was one of the first iOS apps to offer extensive groove and sequencing tools, even back on the early iPhones. As the platform evolved, Beatmaker's fan base expanded, with version 2 quickly amassing a devoted following among iPad producers, thanks to its extensive features and MPC-flavored approach to composition.

Beatmaker 3 is an order of magnitude more advanced than its predecessors, taking advantage of Apple's latest technologies and the full range of iOS protocols, including all the major plug-in formats and Ableton Link. That means you can actually produce complete tracks with its elaborate sampling functionality or using compatible softsynths.

While the earlier versions evoked the Akai approach to sequencing, Beatmaker 3 takes aim at Ableton, with updated features that strongly evoke both Live and Push. In addition to fluid pitch shifting and time stretching of audio tracks, version 3 gives you the ability to trigger patterns—singly or in groups—in Scenes mode, which functions exactly as you might expect and is a terrific improvisational tool.

Each MIDI track centers on a pad-based kit that serves as the gateway to an integrated sampler with synthesis tools such as envelopes, nine filter types, and assisted loop slicing. Alternately, you can override the sampler and select an instrument from any of your compatible iOS synths. In this way, you can create giant kits with a different sample or synth on each pad, as long as your CPU can handle it.

MIDI data is entered via the pads (with 4x4 or 8x8 grid options), the on-screen keyboard, or using the update's comprehensive MIDI implementation, which allows for both sophisticated controller mapping and detailed parameter automation.

Full audio tracks can also be recorded, either as clips in Scenes mode or using the familiar timeline-based Song mode, with baked-in time-stretching that follows the master tempo. A wide range of insert effects, or any of your compatible effect apps can further process both MIDI and audio tracks. From there, you can assign up to 16 macros *and* four X-Y controllers to almost any parameter for performance or recording automation.

The mixer panel is equally sophisticated, with channels for every track and up to eight global aux buses. Going deeper, if a track is based on a full kit, double-tapping its title opens up a secondary mixer for all of its elements, with independent access to the global aux buses for every pad. Frankly, this is the best mixer implementation I've seen on an iOS DAW.

The whole process feels exactly like working with a computer-based DAW, but with the pros and cons of the iOS approach and your platform's screen size. As a result, locating all of Beatmaker 3's features takes a while. Getting started is straightforward, but advanced productions require a fair amount of familiarization before the process approaches the fluidity of a traditional computer. That said, the exploration process is an enjoyable experience.

Bottom line? Beatmaker 3 is poised to become the DAW of choice for many groove-centric iPad users, because it's astonishingly full-featured and does almost every trick in the book beautifully. ■

Francis Prève has been designing synth presets professionally since 2000. Check out his soundware company at symplesound.com.

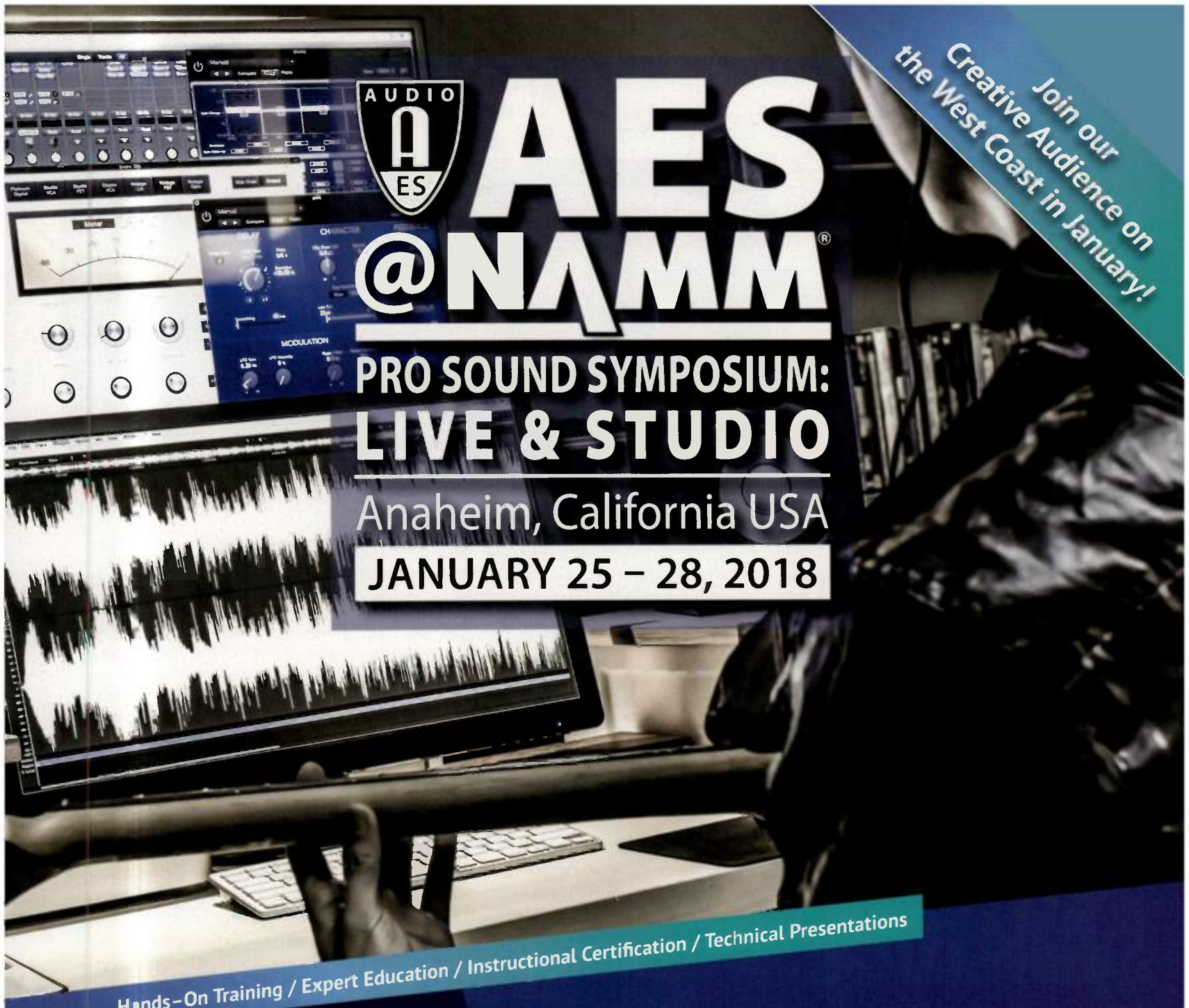
### STRENGTHS

Deep DAW functionality. Extensive sampling tools. Supports AUv3, IAA, and Audiobus.

### LIMITATIONS

Feature density makes for a steeper learning curve.

$39.99
intua.net




NS18
The NAMM Show

The NAMM Show
january 25/28 2018 california

The new four-day **AES@NAMM Pro Sound Symposium: Live & Studio** offers a unique education and training program, aimed squarely at active professionals working in live sound, project recording and performance-audio communities. **AES@NAMM** will be held in the Anaheim Hilton Hotel, adjacent to the interactive pro-audio exhibition floors in the brand-new ACC North Hall.

Come for hands-on training sessions about *Line Array Loudspeaker Systems, Live Sound Consoles, Digital Audio Workstations, Studio & Recording Technology,* plus *Entertainment Wireless Technologies,* and *Sound System Measurement & Optimization.*

Learn more at **aesatnamm.com** *#nammshow*

**The Touché is so sensitive and responsive that barely grazing its surface or lightly tapping it rhythmically can produce wonderfully nuanced effects.**

EXPRESSIVE E

# Touché

## CAN A MECHANICAL DEVICE MAKE YOUR MUSIC SOUND MORE HUMAN?

BY GEARY YELTON

Writer, synthesist, and *Electronic Musician* editor-at-large Geary Yelton lives in Asheville, North Carolina.

### STRENGTHS

Enables subtle expressivity. Transmits any controller message. Includes presets. Software VST-to-AU converter.

### LIMITATIONS

Requires a flat surface. Works only with VST instruments. Incompatible with Pro Tools.

$399
expressivee.com

Playing electronic musical instruments with the emotional depth of acoustic instruments is a constant challenge. To meet that challenge, instrument makers have harnessed wheels, joysticks, touch pads, and other devices for manipulating expressive parameters with one hand as you play the keyboard with the other. Polyphonic multidimensional controllers go furthest toward enabling a broad range of expression, but most are expensive and require many hours of practice to master.

Enter French newcomer Expressive E with an ingenious tactile solution. The Touché is a uniquely expressive MIDI controller designed for one-handed operation. It transmits MIDI data to whatever parameters you choose in response to where and how much pressure you apply to its upper surface, called the Skin. Made of wood, the Skin is magnetically mounted atop a rigid, slightly rubberized plastic housing that sits on any flat surface. The Touché is built to last, and works standalone or paired with a VST and AU-compatible plug-in called Lié. Although it's currently available for the Mac only, Expressive E is developing a Windows 10 version.

### EN GARDE

The Skin tilts in four directions called Shiftings—left, right, top, and bottom—and responds to the slightest touch, transmitting MIDI CCs 16 through 19 by default. You can route them to bend pitch down when you nudge the Skin to the left, for example, bend pitch up when you nudge it to the right, lower filter frequency and increase resonance when you press on the top edge, and boost effects depth when you press on the bottom. You can assign multiple parameters to each Shifting, as long as they total no more than eight. Physical gestures such as stroking, slapping, and wiggling the Skin make the Touché an integral part of your musical performance.

On the 9.5-inch-long housing are two large buttons and a clickable rotary encoder with four LEDs that change color to indicate status. Each of the buttons sends MIDI On/Off messages and lets you select presets. The encoder adjusts the unit's sensitivity, and pressing down on it freezes the values of the four Shiftings (indicated by blinking LEDs), thus freeing your hand for other tasks. A USB connector in back powers the hardware. Also in back are four CV outputs on 3.5mm jacks that can connect to modular synths and other CV-compatible gear. Included miniplug-to-DIN jack adapters connect to two additional 3.5mm jacks, which function as MIDI In and Out/Thru ports.

### PRETTY LITTLE LIÉ

Lié's primary function is as a communications hub between the controller and whatever is being controlled. It includes templates for more than 70 hardware synths, ranging from the Arturia MatrixBrute to the Yamaha Reface series. You can program your own presets for almost any hardware or VST instrument by defining MIDI or CV assignments, value ranges, and so on, using Lié's graphical controls and displays. Once programmed, you can instantly load as many as eight parameter sets on-the-fly.

Lié also includes more than 300 Touché-optimized patch presets. Most are for the free UVI Workstation, which means you can begin using the device

# LAUTEN AUDIO

## SERIES**BLACK**

### LA**120**
SMALL PENCIL CONDENSER MICROPHONE
**$349**/PAIR

### LA**320**
VACUUM TUBE CONDENSER MICROPHONE
**$499**

### LA**220**
FET CONDENSER MICROPHONE
**$249**

## **SIGNATURE**SERIES

### **EDEN** LT**386**
MULTI-VOICING™ VACUUM TUBE LARGE DIAPHRAGM CONDENSER MICROPHONE
**$2499**

### **ATLANTIS** FC**387**
MULTI-VOICING™ LARGE DIAPHRAGM FET STUDIO CONDENSER MICROPHONE
**$1499**

### **CLARION** FC**357**
LARGE DIAPHRAGM FET CONDENSER MICROPHONE
**$999**

### **OCEANUS** LT**381**
TRANSFORMER-LESS DUAL-TUBE LARGE DIAPHRAGM MICROPHONE
**$1999**

USA www.audioplusservices.com www.facebook.com/audioplusservices
CANADA www.plurison.com www.facebook.com/Plurison

**Fig. 1. The software component, Lié, is used for setting up controller assignments and serves as a VST plug-in host.**

right away. This excellent patch collection takes full advantage of the Touché's capabilities right out of the box.

Lié also functions as a plug-in host that can run VST instruments in software that supports only Audio Units, such as Logic Pro X. After it scans your VST folder, it displays the GUI for any instrument plug-in you select. If a plug-in is incompatible, it tells you so, but it worked with almost every one I tried. Thanks to Lié, VST instruments are no longer off-limits for Logic users. However, because it does not recognize AU instrument plug-ins, you'll need to have VST versions installed to use the Touché with software instruments. In addition to live performance and recording, the Touché is ideal for entering controller information after you've laid down a MIDI track. The only issue I encountered was deciding where to position it. It's perfect for a tabletop, but most keyboard control panels and keyboard stands have no place to put it.

Lié also functions as a plug-in host that can run VST instruments in software that supports only Audio Units, such as Logic Pro X.

Nonetheless, I like it so much I've made it a permanent part of my rig. If you want to see the Touché in action, check out the videos on Expressive E's website. ■


THE BEST INTERVIEWS

FROM 35 YEARS OF keyboard®

THE MUSIC, THE VISIONARIES, THE PLAYERS, AND THE GEAR

**THE BEST OF THE '80s**
**The Artists, Instruments, and Techniques of an Era**
Features 20 interviews with noted players, producers, and pioneers like Jimmy Jam & Terry Lewis, Duran Duran's Nick Rhodes, Peter Gabriel, The Human League, Chick Corea, and Frank Zappa.
ISBN 978-0-87930-999-2 $19.95

**CLASSIC ROCK**
It's all here: the gear, the songs, the road stories, and the inspiration behind some of the greatest songs of the '60s, '70s, and '80s.
ISBN 978-0-87930-952-7 $14.99

**SYNTH GODS**
This book spotlights artists who changed the course of music history and inspired generations. Features in-depth profiles of Jan Hammer, Wendy Carlos, Rick Wakeman, Brian Eno and many more.
ISBN 987-0-87930-930-5 $16.99

**Free U.S. shipping** on orders of $25 or more! LEAST EXPENSIVE METHOD APPLIES. USE PROMO CODE **MDKEY** AT CHECKOUT.

800-637-2852 **musicdispatch.com**

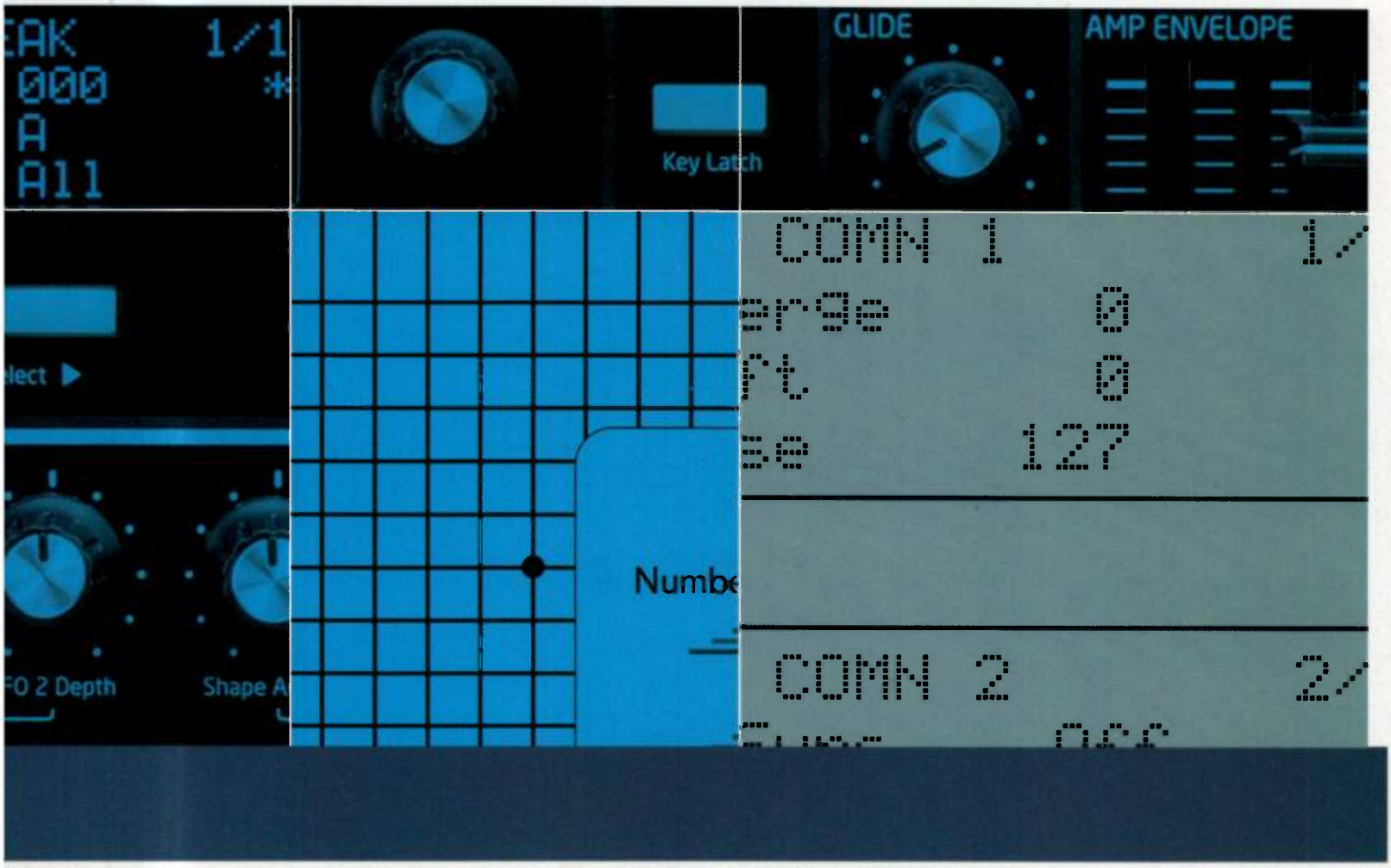
Keyboard
QUINCY JONES
Keyboard
ASTONISHING
JORDAN RUDESS
Keyboard
STAGE SKILLS · STUDIO SMARTS
NAIL THE SOUND OF
Kraftwerk
ON THE KORG ARP ODYSSEY
EDGAR WINTER'S
"FRANKENSTEIN"
Revisited
DR. LONNIE SMITH
Don Was Brings the B-3 Master Back to Blue Note for Evolution
TONY DE MARE
Sondheim Re-imagined
CINEMATIC VIRTUAL INSTRUMENTS
Apple Alchemy
Output Signal
Heavyocity Gravity
Spitfire Albion ONE
Korg minilogue
AND MORE!
PLAY
Kenny Barron
Keyboard
BEATLES GEAR
THE ULTIMATE GUIDE TO THE CLASSIC KEYS
Keyboard
Benmont Tench
Hammond Organ Tips
SHIRLEY HORN
ROBERT GLASPER
Viewing Hip-Hop and Trap from a Jazz Perspective
Tony Banks
Compose Cinematic Music
ON THE KEYS
Keyboard
KENNY BARRON
Keyboard
3 Ways to Stay in Tune with Keyboard
1 Visit keyboardmag.com
2 Download the Keyboard iOS app
3 Sign up for Keyboard's weekly enewsletter
Find all-new product reviews, lessons, and web-exclusive stories and video, plus vintage articles from the archive at Keyboardmag.com, the ultimate resource for keyboardists.
Keyboard
Terrace Martin
HIP-HOP, JAZZ, AND BEYOND
Make Your Chords Play Better
Jamie Saft
CUTTING ACROSS GENRES
The Nashville Numbers System Revealed
DAVE SMITH
FOUR DECADES OF INNOVATION
Keyboard
HIROMI
EXPLORING THE SOURCE OF CREATIVITY
Secrets of Her Playing Style Revealed
Hiromi
FINDING THAT SPARK OF CREATIVITY ON HER FEARLESS NEW TRIO ALBUM
I WANTED TO CAPTURE THE MOMENT WHEN PEOPLE FEEL A

# Novation Peak

Peek under the hood to get the most from this powerful synth

**BY FRANCIS PRÈVE**

Novation Peak has generated a serious buzz in the synth community by combining its innovative Oxford oscillators that deliver analog-grade resolution with a fully analog signal path, as well as modulation options such as polyphonic aftertouch and a pair of Animate buttons capable of real-time patch morphing.




With a front panel packed full of familiar controls Peak gives you direct access to these and many other important functions. But digging deeper into the synth unveils a world of functionality that sets it apart from many modern polysynths. This month we'll investigate those options.

With a front panel packed full of familiar controls, Peak gives you direct access to these and other important functions. But digging deeper into the synth unveils a world of functionality that sets it apart.

## OSCILLATORS

Peak's architecture runs digital oscillators through fully analog filters and VCAs, followed by a digital effects section. While combining digital oscillators with analog filters is a time-honored approach (the classic PPG and Prophet VS both employed this architecture), Novation's new Oxford oscillators are capable of a high level of detail, thanks to digital-to-analog converters that operate at 24 MHz. A full examination of this technology can be found on the Novation website.

Before we get into their tone-shaping features, it's worth examining the parameters that give Peak's oscillators their surprisingly analog flavor. These are located in the Common Oscillator pages and they affect all oscillators equally within a given patch (see Figure 1).

**Diverge.** Many of the classic analog polysynths were based on a set of multiple monophonic voice cards, each with an identical synth that was assigned to notes as they were played. Because the voice cards were discrete entities, individual tuning (and filter) discrepancies were inherent. Peak's Diverge parameter lets you dial in the amount of variation for every note played. Extreme values add a convincing old-school flavor.

**Drift.** As synths age, oscillator tuning often exhibits a small amount of deviation, even over the course of a single note as if there was a slow LFO modulating pitch by fractions of Hertz. The Drift parameter simulates this effect, further decreasing the tuning coherence of a given oscillator.

**Key Sync.** Unlike fully analog units, early digital synths often restarted their oscillator waveforms from the same phase point, giving every note a sameness that was often identified as sounding sterile. Turning Key Sync off switches the oscillators into free-running mode, for a more authentic analog vibe. The downside is that phase is no longer locked, so that sound is largely a matter of preference.

## TIMBRAL OPTIONS

Peak's standard analog waveforms (sine, triangle,

saw, and variable pulse) include shaping controls that allow precise timbral adjustments in addition to traditional pulse-width modulation. A fifth selection, labeled More, accesses 17 wavetables that extend their tonal range considerably. This shape parameter also accepts front-panel modulation from either Mod Envelope 1 or LFO 1, and if you dig into its matrix, you can assign other envelopes or LFOs to create more complex harmonic shifts.

Pro Tip: As with filter envelopes, it's important to pay attention to release times when applying the envelope to wave shape. If the release time is significantly shorter than the amp envelope's release time, you'll hear a sudden jump in timbre on releasing a key, which can itself be useful for adding transients to note-offs, much like that of a harpsichord tone.

**Vsync.** The absence of a front-panel oscillator-sync button can be annoying to savvy synthesists, but Peak's implementation is actually more flexible for many applications. Within each oscillator is a Vsync parameter that offers an independent virtual oscillator that can be used to retrigger the wave cycle, just like traditional hard sync. This parameter controls the tuning of the virtual oscillator, so if you're looking for old-school sync sweeps, just apply an envelope to it within the mod matrix.

Pro Tip: Within a single oscillator, try applying two different modulation sources to wave shape and Vsync. Then apply similar techniques to a second oscillator. Combined, these shifting timbres are striking. Additionally, you can reinforce the fundamental or bass of these patches by setting up the third oscillator as a single sine wave.

**Sawtooth Density & Detune.** While the feature is only available to the sawtooth wave, this is the parameter that delivers that "EDM power chord" effect. Peak's implementation stacks three sawtooth oscillators and facilitates extreme detuning. Because it is available discretely on all three oscillators, with a bit of planning you can get up to nine detuned sawtooth waves on a single voice, without resorting to unison.

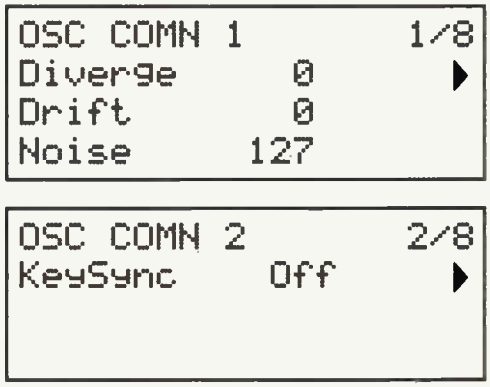



**Fig. 1. Peak's Common oscillator parameters offer a high degree of customization for emulating the idiosyncrasies of vintage analog gear, including pitch drift and variations between voice cards.**

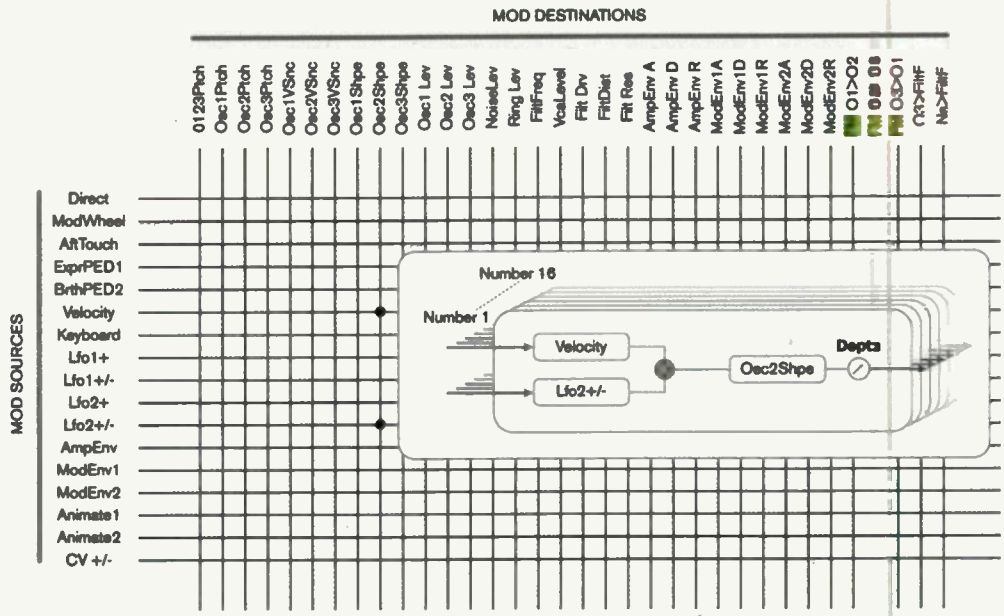



**Fig. 2. Lurking beneath the four-line LCD is a massive modulation matrix that includes linear FM tools for its three oscillators and noise modulation of filter cutoff.**

For rich, evolving pad textures, use a single detuned saw on one oscillator, while using the other two for slowly modulated shapes or Vsync, then adjust the filter to taste.

Pro Tip: For rich, evolving pad textures, use a single detuned saw on one oscillator, while using the other two for slowly modulated shapes or Vsync, then adjust the filter to taste.

**Fixed Note.** This parameter turns off keyboard tracking, so the oscillator plays the same pitch across the entire keyboard—handy for adding transients to percussive sounds. Here, the secret is to apply one of the mod envelopes to that oscillator's volume with a very fast decay, no sustain and immediate release.

**Bend Range.** Each oscillator includes its own pitch-bend range parameter, which facilitates wild THX effects and big room "rises." This parameter has a four-octave range (±24 semitones in either direction).

For chords, set the first oscillator's bend range to 0, the second oscillator's bend range to +3 or +4 (minor and major thirds, respectively), and the third oscillator's bend range to +7 (a perfect fifth). Pushing the pitch bend wheel up to maximum will then result in a three-note chord "boom," which is impressive for both techno and rock leads.

You can also use octaves if you want to re-create the iconic THX sweep. This is accomplished by setting the bend ranges as follows: +7 for oscillator 1, +24 for oscillator 2, and -24 for oscillator 3. Now when you pitch bend upward, the three-note spread will be two octaves up, two octaves down, and a fifth up. Adding delay and reverb to this configuration completes the effect.

## MIXER

In addition to oscillator blending, Peak's mixer includes a few more options such as ring mod for oscillators 1 and 2 and a noise source. The noise spectrum can be further tailored with an integrated lowpass filter accessed in the Oscillator Common pages.

Additionally, the mixer's internal headroom allows for clipping effects if desired. Some users may avoid it, while others will see it as a plus. Either way, it's available and noteworthy.

There's also a master VCA in this section that can be used to maintain consistency between patch volumes, as well as interacting with the amp envelope behavior.

## FILTER

The analog filter circuit is based on Novation's popular Bass Station series, with lowpass, bandpass, and highpass modes that include 12 and 24dB

# electronic MUSICIAN

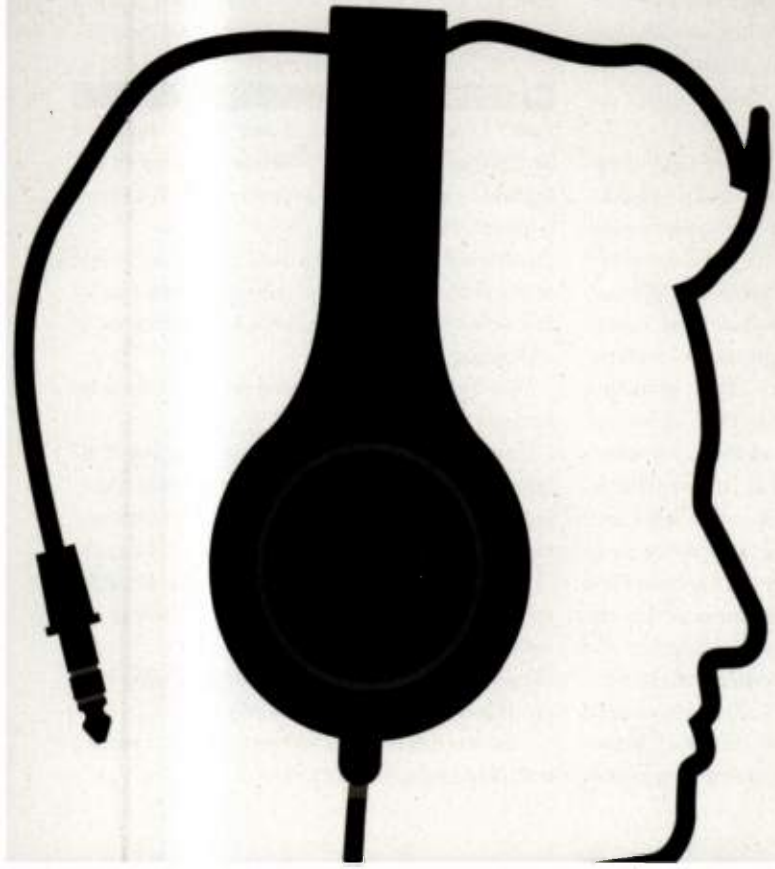
RECORD • PRODUCE • PERFORM

**THE #1 RESOURCE FOR MUSICIANS WHO WANT TO RECORD, PRODUCE, AND PERFORM BETTER MUSIC**

# SPECIAL OFFER
# ALL ACCESS

**SAVE OVER 50% OFF SINGLE COPY PRICES**

| SUBSCRIBE & SAVE TODAY | |
|---|---|
| **Single Copy Price** | **Subscription Price** |
| 12 issues $71.88 | 12 issues $29.99 |



# ALL ACCESS INCLUDES

PRINT + DIGITAL + iPad

**SUBSCRIBE NOW AT:**

**WWW.MYEMMAG.COM/EMVIP1**

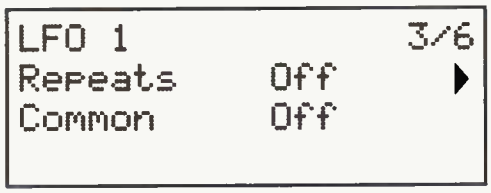


**Fig. 3. Peak's LFOs include a unique parameter that controls the number of repeats up to 127. When set to off (shown here), the LFO functions traditionally.**

**Fig. 4. With clever customization of Peak's dual Animate buttons, you can quickly access patch variations or switch between synced LFO rates for dubstep wobble effects.**

options for each. These all behave as expected, but are set apart by Peak's dual overdrive circuits.

The post-mixer/pre-filter overdrive is accessed from the front panel, whereas a second analog-distortion effect, between the filter and the VCA, is available in the Voices Menu, aptly named Filter Post Drive. Note that these circuits are distinct from the distortion effect at the end of the signal chain.

The cutoff frequency of Peak's filter can also be modulated at audio rates via oscillator 3. The best way to experiment with this feature is to use a single sawtooth from oscillator 1, with a cutoff frequency of 50% and resonance at 0, making sure that no other sources are sent from the mixer. From there, increase the amount of Osc 3 Filter Mod to max. The result will be added timbral shimmer from its frequency modulation. To experiment further, change Osc 3's octave settings and adjust the shape knob (triangle is a great choice).

Pro Tip: Since Peak's filter resonance will self-oscillate, adding FM from oscillator 3 with the resonance at maximum (and your speakers set at a sensible volume) is a great way to create bell-like tones.

Like the oscillators, you can emulate the erratic behavior of old filters with the Diverge parameter—also on the Voice page—giving each voice's filter a slightly different cutoff value.

Pro Tip: Vintage SH-101 and Juno-style sounds can be achieved by switching the filter modulation source to the Amp envelope on the front panel—a thoughtful design decision.

## MODULATION

While many of the modulation depth and routing tools (filter envelope, wave shaping, and amp envelope) are accessible from the front panel, Peak's Modulation Matrix is so deep in the parameter hierarchy that we hope a software editor is in the works. Fortunately, the four-line LCD is friendly enough that you can quickly achieve patching goals with a little forethought.

It's no exaggeration to say that virtually every sonically significant parameter can be modulated, as a quick trip to the manual will attest (see Figure 2). Of special interest is the fact that linear FM synthesis tools are also located here; each oscillator is able to modulate the next in the series, with Osc 3 looping back to Osc 1, like a 3-operator FM synth. There's also an option to modulate the filter cutoff with noise for grungy effects.

The common MIDI control sources (velocity, mod wheel, and so on) are all available here. Of particular note is the inclusion of polyphonic aftertouch, which makes Peak particularly well suited as a companion to the Roli Seaboard line of controllers and Novation's own Launchpad Pro. It's hard to overstate the performance possibilities of polyphonic aftertouch when applied to timbral destinations on a per-note basis, as the results are nuanced and musical.

Peak's implementation of synthesis modulation sources—such as its three envelopes and dual LFOs—are a bit more flexible than the front panel implies, with additional features accessed from the menus.

For the ADSR envelopes, there's a dedicated velocity-sensitivity parameter with both positive and negative values, which can be quite exotic sounding when applied as secondary modifiers for other routings.

The LFOs include the typical waveforms—triangle, saw, square, and sample-and-hold—with selectable frequency ranges, including an audio rate option that reaches 1.6 kHz for sideband effects. There's also a dedicated Fade Time knob for delayed vibrato.

Pro Tip: By applying an audio-rate LFO to amplitude, you can simulate an additional ring modulation source, as the two effects are closely related.

The front-panel LFO options just scratch the surface of what Peak offers. Secondary options, such as the ability to invert the fade time for decayed effects (which sounds spectacular with audio-rate modulation), can create a burst of timbral change at the beginning of a note. Digging further, you can also adjust the slew of the LFO, which functions a bit like glide on a keyboard. That is, increasing the slew value of a square wave will soften the transitions, adding a sine-like curve as the waveform reaches its extremes. Applying Slew to a slow sample-and-hold waveform, which has been routed to wave shaping, is a great way to add drift-like characteristics to the timbre of a patch.

LFO phase can also be freely adjusted and even synced to tempo in Common mode, which makes it monophonic in the context of polyphonic patches. This is essential when re-creating Deadmau5's trademark eighth-note sawtooth filter pulses, as adding additional notes to chords won't desynchronize the rhythm.

Another uncommon LFO feature is Peak's ability to set the number of cycle repeats for each LFO (see Figure 3). When set to off, the LFO functions traditionally, but turning it on lets you set the number of repetitions from 1 to 127. Trivia buffs take note: The famous 808 handclap begins with three quick sawtooth repetitions applied to the noise volume. Apply that technique, in addition to a bandpass filter, and you'll be pleasantly surprised by the similarity.

Pro Tip: Setting a sawtooth LFO to a single repeat, with 0 degrees of phase, allows it to be used as an additional rudimentary envelope, with rate controlling the decay time (faster rates equal shorter decays). This technique is also good for adding transients to patches without sacrificing an envelope.

The innovative Animate buttons on Peak's front panel offer instant parameter transformations by way of the modulation matrix. At their simplest, you can use them to toggle LFOs or momentarily introduce ring modulation as you perform. But if you map multiple parameters (like filter cutoff, wave shape, and envelope decay) to a single Animate button, you can momentarily switch to a drastically different patch with a single button. While this feature is deceptively simple, it's packed with potential.

Pro Tip: Setting both Animate buttons to different amounts of synced LFO-rate modulation lets you quickly switch between note values. This is great for performing syncopated dubstep "wubs."

## EFFECTS

Peak's effects section offers four effects that will be familiar to most users—distortion, chorus, delay, and reverb. Here are a few highlights of Peak's implementation:

Although distortion is fixed at the beginning of the chain, the three delay-based effects can be reordered in six different serial configurations, as well as parallel.

You can use the chorus for flanging effects by increasing its feedback.

Increasing the chorus highpass-filter cutoff allows it to be used in bass patches without creating unwanted phase artifacts in the low-frequency range.

Lowering the delay's LP Damp value is useful for analog- and tape-echo effects, whereas increasing its HP Damp value thins out the repeats. In combination, these can be used for a wide variety of analog and circuit-bent effects.

The Reverb includes its own LFO for creating lush chorused ambiences. ■

## HV-32P and HV-35P Mic Preamps

**Millenn a**

Available Now

The critically acclaimed Millennia sound in their most affordable and portable packages yet. Hear the improvement in quality and clarity these high resolution preamps make with your music.

**Street: $1079.99 HV-32P, $719.99 HV-35P**
www.mil-media.com
sa es@mil-media.com
(530) 647-0750

## New Limited-Edition Red ATH-M50x Professional Headphones

**Audio-Technica**

Available Now

The critically acclaimed ATH-M50x provides exceptional clarity with deep, accurate bass response. Features large-aperture drivers, 90° swiveling earcups and three detachable cables. Available in black, white and limited-edition red.

**Street: $169 (red, white); $149 (black)**
www.audio-technica.com
pro@atus.com

**UNITED STATES POSTAL SERVICE**
**STATEMENT OF OWNERSHIP, MANAGEMENT, AND CIRCULATION**
(All Periodicals Publications Except Requester Publications)

1. Publication Title: EM (Electronic Musician) 2. Publication No: 493290 3. Filing Date: October 3, 2017
4. Issue Frequency: Monthly 5. No. of Issues Published Annually: 12 6. Annual Subcription Price: Requester
7. Complete Mailing Address of Known Office of Publication (Not Printer):
NewBay Media, LLC, 28 East 28th Street, 12th floor, New York, NY 10016
Contact Person: Kwentin Keenan Telephone: 703-852-4604
8. Complete Mailing Address of Headquarters or General Business Office of Publisher:
NewBay Media, LLC, 28 East 28th Street, 12th floor, New York, NY 10016
9. Full Names and Complete Mailing Addresses of Publisher, Editor, and Managing Editor:
Bill Amstutz, Publisher; 28 East 28th Street, 12th floor, New York, NY 10016
Gino Robair, Editor; 28 East 28th Street, 12th floor, New York, NY 10016
Barbara Schultz, Managing Editor; 28 East 28th Street, 12th floor, New York, NY 10016
10. Owner: The Wicks Group of Companies, LLC 405 Park Avenue, Suite 702, New York, NY 10022
11. Known Bondholders, Mortgagees, and Other Security Holders Owning or Holding One Percent or More of Total Amount of Bonds, Mortgages, or other Securities: None
12. Tax Status: The purpose, function, and nonprofit status of this organization and the exempt status for federal income tax purposes has not changed during preceding twelve months
13. Publication: EM (Electronic Musician)
14: Issue Date for Circulation Data: November 2017

| 15: Extent and Nature of Circulation | Avg. No. Copies Each Issue During Preceding 12 Months | No. Copies of Single Issue Published Nearest to Filing Date |
|---|---|---|
| a. Total Net Copies (Net Press Run) | 16321 | 15949 |
| b. Paid and/or Requested Circulation | | |
| 1. Outside-County Paid/Requested Mail Subscriptions Stated on PS Form 3541 | 12023 | 11586 |
| 2. In-County Paid/Requested Mail Subscriptions Stated on PS Form 3541 | | |
| 3. Sales through Dealers and Carriers, Street Vendors, Counter Sales, and Other Paid or Requested Distribution Outside USPS | 2566 | 2653 |
| 4. Requested Copies Distributed by Other Mail Classes Through the USPS | | |
| c. Total Paid and/or Requested Circulation | 14589 | 14239 |
| d. Non Requested Distribution | | |
| 1. Outside-County Non-requested Copies Included on PS Form 3541 | 1029 | 720 |
| 2. In-County Non-requested Copies Included on PS Form 3541 | | |
| 3. Non-requested Copies Mailed at Other Classes Through the USPS | | |
| 4. Non-requested Copies Distributed Outside the Mail | 319 | 803 |
| e. Total Non Requested Distribution | 1348 | 1523 |
| f. Total Distribution | 15937 | 15762 |
| g. Copies not Distributed | 384 | 187 |
| h. Total | 16321 | 15949 |
| i. Percent Paid and/or Requested Circulation | 91.5% | 90.3% |

16. Electronic Copy Circulation
17. Publication of Statement of Ownership for a Requester Publication is required and will be printed in the December issue of this publication.
Bill Amstutz, Vice President & Publishing Director. October 3, 2017

# MARKETPLACE

Piano
Organ
Synth

Note-for-Note
Sheet Music - MIDI Files

TRANSCRIPTIONS

Learn Your Favorite Keyboard Parts
Exactly As They Were Recorded

Visit ManyMIDI.com

Free Sample

Money Back Guarantee

VINTAGE REVISTED

Fatkeys™ Four-Pole VCF
*Improved re-issue of iconic filter by original SSM team members*

SOUND SEMICONDUCTOR www.soundsemiconductor.com

Don't miss your cue... with the VoxGuard VU™!

PRIMACOUSTIC
www.primacoustic.com/voxguard

HALO
studio desk

ARGOSY
www.halodesk.com

Derrick Wright
Drummer/Musical Director/Producer
*(Adele, Toni Braxton, Babyface)*

Total Sound Control Since 1977
Auralex acoustics
www.auralex.com

"Auralex has now become part of my sound, on stage and in the studio."

SamAsh

BEST SELECTION ONLINE | LOWEST PRICE GUARANTEE | SPECIAL FINANCING AVAILABLE

VISIT SAMASH.COM OR CALL 1-800-472-6274
***SPEAK TO AN EXPERT TODAY***

CONTOUR SERIES
*Ergonomically Superior*

- Three Sizes
- Multiple Finishes
- Fixed & Adjustable Height
- Multiple Riser Configurations

Free Design Session
800-332-3393

Omnirax FURNITURE COMPANY
www.omniraxcontour.com

AUDIOPLUGIN.DEALS
ONE INSANE DEAL EVERY TWO WEEKS!
WWW.AUDIOPLUGIN.DEALS

FIVE QUESTIONS

# Stephen Webber

BerkleeNYC's executive director has lofty goals for preserving an iconic studio, developing a sustainable music-business model, and rethinking music technology education.

BY SARAH JONES

The recording industry breathed a collective sigh of relief earlier this year with the news that Avatar Studios was rescued from the chopping block by Berklee College of Music. The 33,000-square foot complex, which was founded in 1977 by producer Tony Bongiovi as the Power Station, is one of the last big studios in New York. The building had been up for sale since 2015 and was in danger of becoming another casualty of the shrinking studio industry.

But thanks to a public-private-nonprofit deal involving the city of New York, Berklee, and hedge fund investor Pete Muller, a Berklee trustee, Avatar will live on, rebranded Power Station at BerkleeNYC. The school will operate the facility as a commercial studio, adding video capabilities, a rehearsal/performance space, educational programs, and an artist-development company.

At the helm of this ambitious project is Berklee's Dean of Strategic Initiatives Stephen Webber, an Emmy-winning composer, producer, DJ and recording artist who has been shaping the school's Music Production and Engineering program since 1994, and designed Berklee's Master of Music Production, Technology and Innovation program in Valencia, Spain.

**How did this project come together?**

I was wrapping up my tenure in Spain, when I got the call from Roger Brown, our president. We have this wonderful trustee named Pete Muller, who is a singer, songwriter, and piano player, and is also one the pioneers of quantitative investing. To put it in his own words, he'd "made more money than he ever thought was possible," and was looking at just the right project to undertake with Berklee.

We approached the city of New York and began working with the Mayor's Office of Media and Entertainment and the Economic Development Council. It was a pretty complicated process, but I think we've positioned the studios and Berklee to be able to embark on a really grand mission, not just to preserve some studios, but to have a shot at prototyping ways to make the capture of music performance relevant again in a way that, hopefully, other studios can emulate, and help turn the large-format studio business back into a sustainable business model.

**How did your work in Valencia prepare you for this undertaking?**

That was such a great warm-up, because I got to start a new program in music technology with a blank sheet of paper. We decided to focus on innovation and created a program that's unique in the world right now. It includes recording, but also delves into music video production, projection mapping, electronic music production and DJ'ing, mobile app development, virtual reality, and all the cool things that you never get the chance to delve into the way you want to in an undergraduate program. It got me thinking in an entirely different way.

**How will you apply those ideas to a place that serves as both an educational facility and a modern commercial studio?**

What it means to capture live musical performances in 2017 has modulated significantly from what it meant in 1977 when Tony built this place. The Power Station studios defined the state of the art at that point, but these days, people discover music in different ways, and they hear with their eyes. So, we're going to be incorporating video into all the rooms with the goal of making it as seamless as possible; with great lighting as integrated as the acoustic treatment. And then staying up to date with technology, from [Dolby] Atmos systems in control rooms to capturing 360-degree visuals or audio, to putting a VR/AR lab in the lower level.

Something that worked for me very well in Valencia was bringing together all stripes of musical artists—singers, instrumentalists, songwriters, beat makers, DJs, producers, and engineers, with code writers, app makers, and video specialists; bring the nerds together with the creators of musical content, taking advantage of physical proximity. When you get disparate artists here at the same time, you create the potential for collaboration.

**What about educational programs?**

We're talking about having music production and engineering majors in Boston, and music production technology innovation master's students from Valencia, being able to opt to do their last semester here. We'll be offering senior-level classes and some master's level classes; students will be able to have a soft landing when they move to New York.

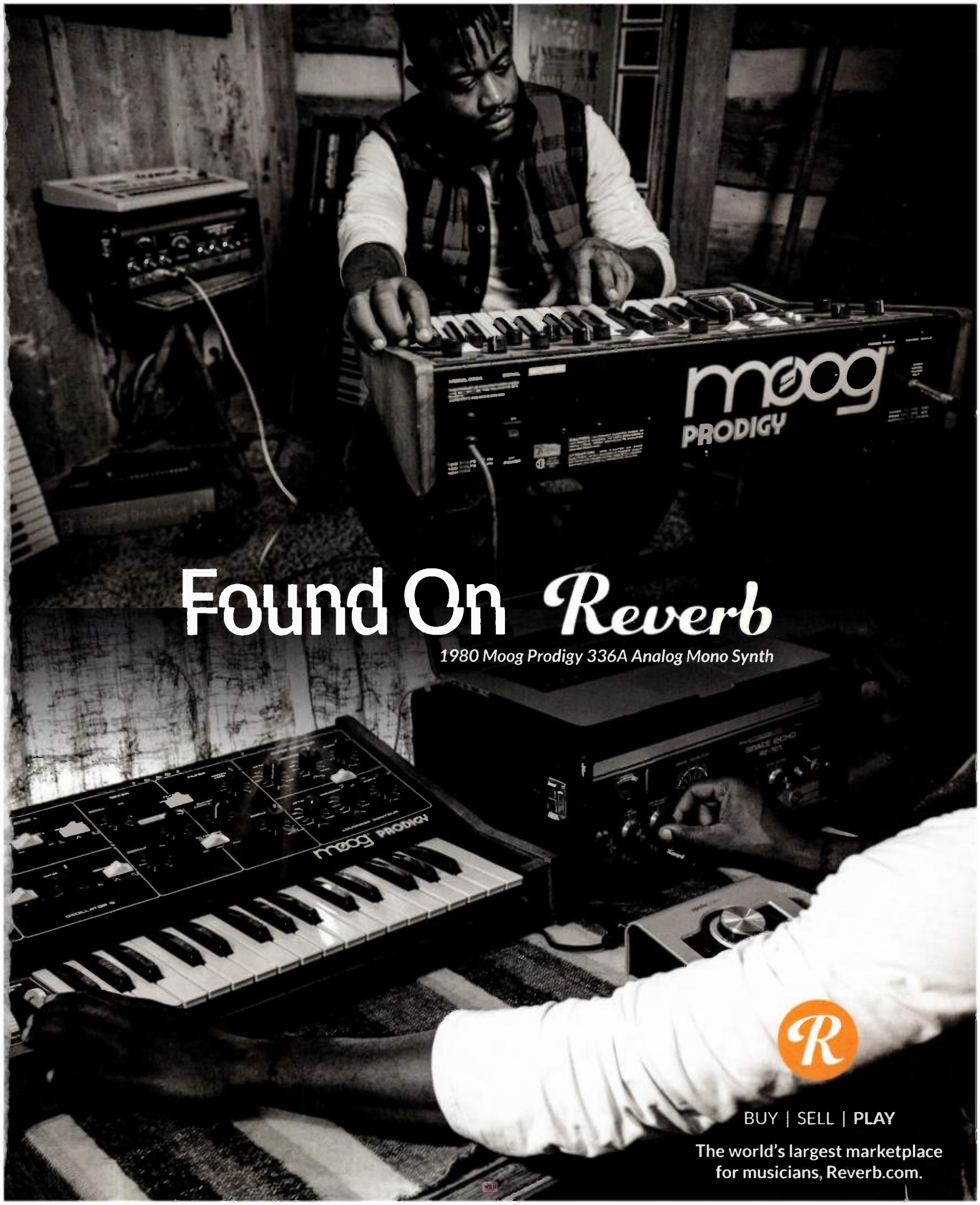
Berklee already is partnering with the Department of Education. We've created a partnership called Amp Up, and deployed a free curriculum called PULSE, in which we've already trained more than 300 New York City school teachers, reaching over 60,000 public school kids at this point. We really want to get school kids into the building and inspire them, not just make this a place for famous recording artists, but also a place for working musicians and college students and public-school students alike.

**How does this venture fit into Berklee's mission?**

I love technology and I think it's really fantastic that we can all make records in our bedrooms now, but the nice thing about having a physical space where you all come together is that you wind up forging new connections that you didn't even anticipate.

I've been doing sessions here in this past year, and I walked in and there's Al Schmitt standing there in the lobby, so we had a long conversation, and he wound up introducing me to some friends of his. There are connections that are made that are just totally unexpected.

Part of our whole mission at Berklee is to forge new connections among art forms and musical traditions and technologies and institutions, and in the process, foster innovation and collaboration and community. ■


moog
PRODIGY
Found On Reverb
1980 Moog Prodigy 336A Analog Mono Synth
BUY | SELL | PLAY
The world's largest marketplace
for musicians, Reverb.com.

Introducing the

# 828ES

## Proven performance. Superb analog sound.

- ESS Sabre32 Ultra DAC Technology™ for 123 dB dynamic range on balanced, DC-coupled outs
- Ultra-low latency (1.6 ms at 96 kHz/32 buffer)
- Thunderbolt™ and USB for Mac, Windows and iOS
- 60 channels of simultaneous I/O (28 x 32)
- AVB/TSN networking for system expansion
- A/B monitor select with mute and mono summing
- Talkback control with built-in mic
- Two independent headphones
- Powerful DSP
- 48-channel mixing with effects
- MIDI and time code I/O
- Pre-converter sends for mic inputs
- Wi-Fi control

motu.com/828es

© 2017 Mark of the Unicorn, Inc. All rights reserved. Mark of the Unicorn and MOTU are registered trademarks of Mark of the Unicorn, Inc. Apple, Mac and iOS are registered trademarks of Apple, Inc. Thunderbolt and the Thunderbolt logo are trademarks of Intel Corporation in the U.S. and/or other countries. Windows is a trademark of Microsoft Corporation in the U.S. and/or other countries. All other trademarks are the property of their respective owners.