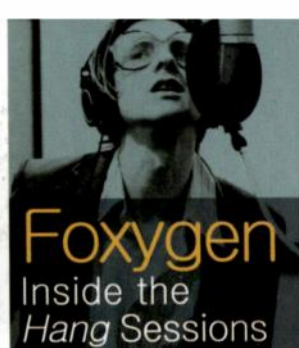


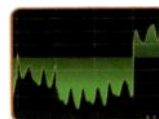
Electronic MUSICIAN

RECORD • PRODUCE • PERFORM



Foxygen
Inside the
Hang Sessions

Mod Squad
KOMA ELEKTRONIK
COMPLEX
SEQUENCER



**Xfer
Serum**
POWER
TIPS



25th
ANNIVERSARY

electronic
MUSICIAN
EDITORS' CHOICE 2017

23

of the
Year's Most
Innovative
Music
Production

PLUS
20 Products That Changed
The Way We Make Music



REVIEWS



DIGITECH
Trio+



HEAVYOCITY
Scoring
Guitars



MEEBLIP
Triode

WORKS
DrumCore 4

Neutron

U-Coast

Vocoder

797-EM1
001185138

RON CARLSON
PRODUCTION ASST
TRUTH BROADCASTING
103 TAMA ST
BOONE IA 50036-3616
PK 101008
P0291

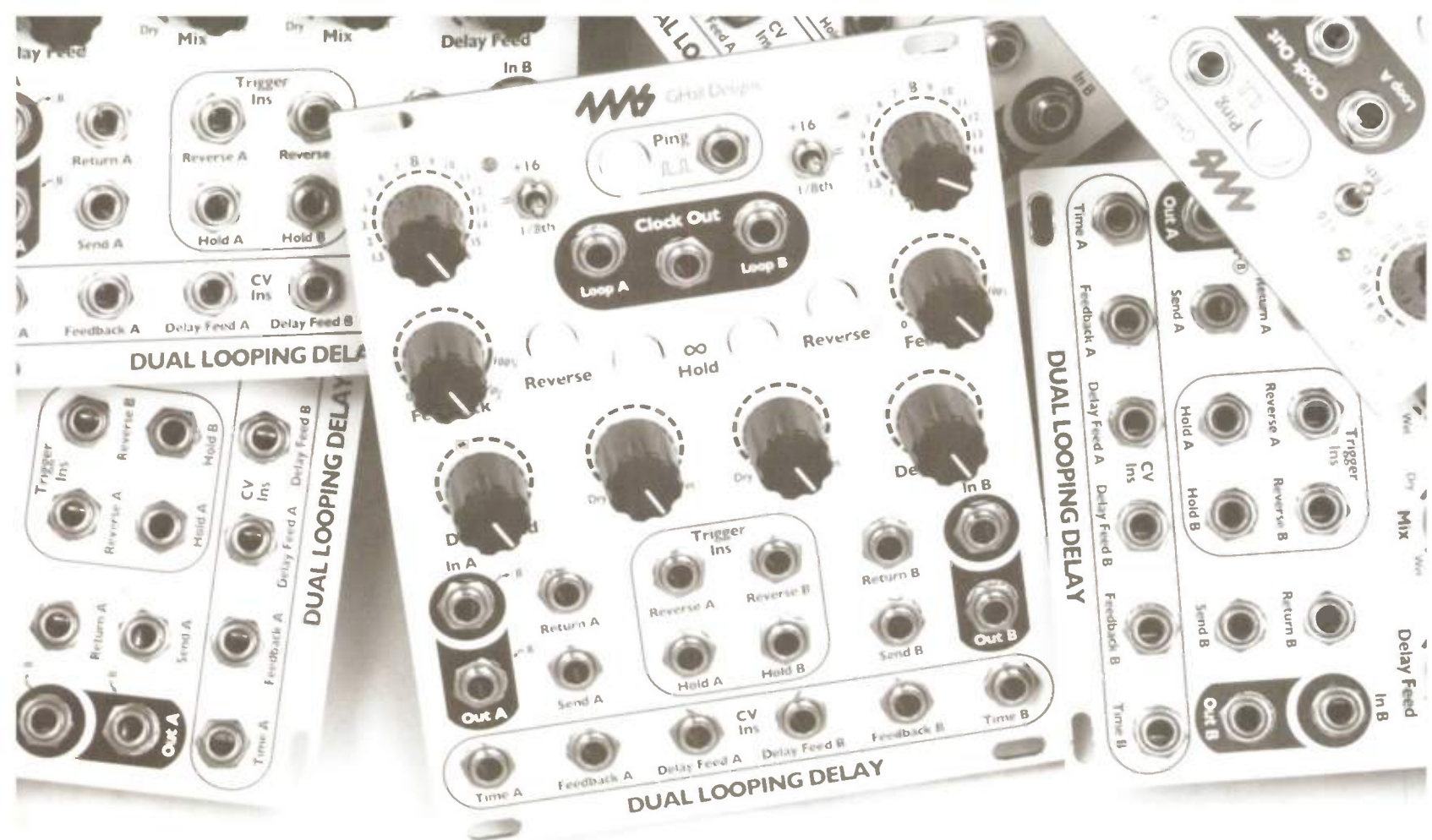
#BXNKXLW CAR-RT LOT C-004 MIX COMAIL M
#0304884 0# EMQA 0304884 E 1602

02.2017

\$5.99 CAN \$6.99



A MUSIC PLAYER PUBLICATION



Dual Looping Delay

Winner of 2017 Electronic Musician Editors Choice Award



4ms Company





LAUTEN
AUDIO

SERIES **BLACK**

WHERE PROFESSIONAL RECORDING BEGINS.



LA-120
SMALL PENCIL CONDENSER
MICROPHONE PAIR
\$349

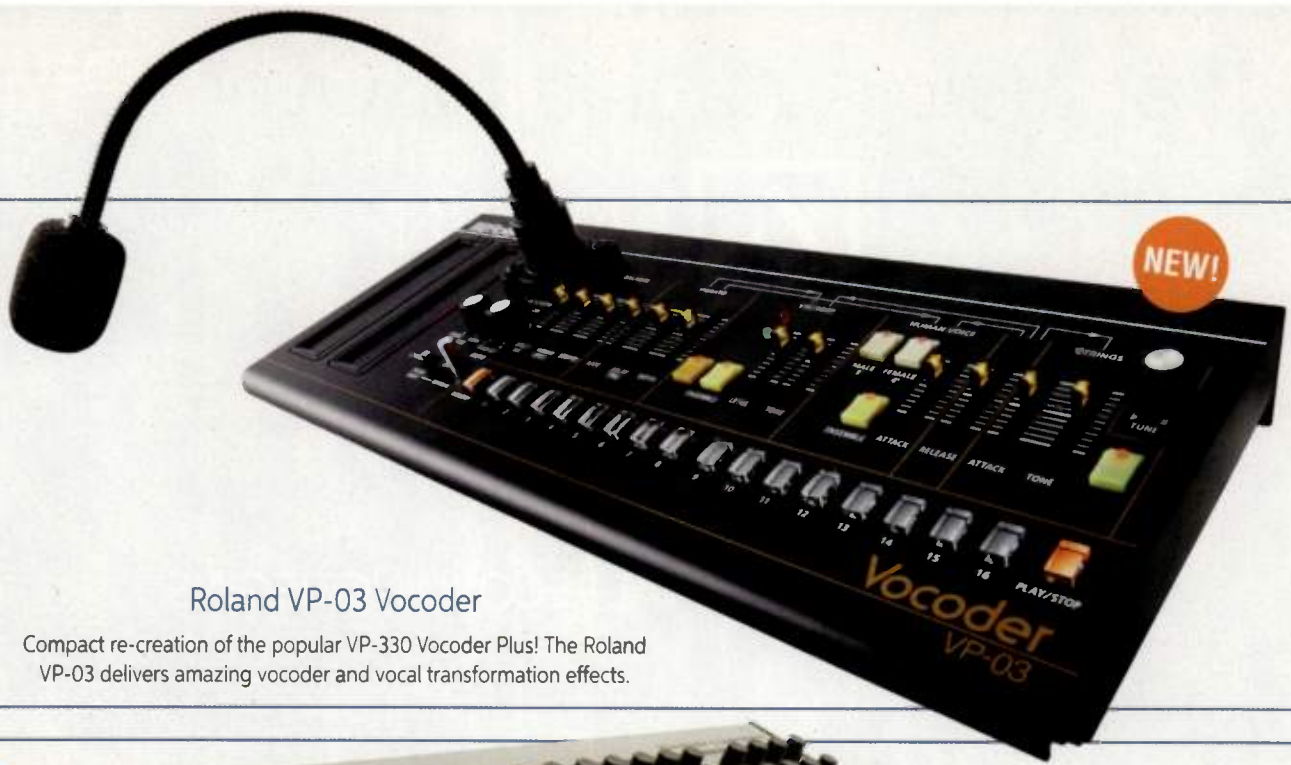
LA-220
FET CONDENSER
MICROPHONE
\$249



LA-320
VACUUM TUBE CONDENSER
MICROPHONE
\$599

DARRELL THORP
7-time Grammy &
2-time TEC winner





Roland VP-03 Vocoder

Compact re-creation of the popular VP-330 Vocoder Plus! The Roland VP-03 delivers amazing vocoder and vocal transformation effects.



Roland TR-09 Rhythm Composer

The original TR-09 defined the sound of '90s electronica — Roland's TR-09 Rhythm Composer delivers that iconic sound with more performance potential than ever!



Roland TB-03 Bass Line Synthesizer

A faithful re-creation of Roland's TB-303, the TB-03 Bass Line Synthesizer delivers hypnotic sequencing, overdrive and delay effects, and more modern enhancements!

0% INTEREST for 24 MONTHS*

on purchases of select manufacturers' products made with your Sweetwater Musician's All Access Platinum Card between now and February 28, 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. For new accounts: Purchase APR is 29.99%; Minimum Interest Charge is \$2. Existing cardholders should see their credit card agreement for their applicable terms. Subject to credit approval.

The Pro Audio Authority for Over 35 Years.



KRK V4 V Series 4

Experience ultra-flat frequency response from custom Kevlar drivers, dual Class D amplifiers, and a ported cast-aluminum/MDF enclosure.



Aston Microphones Origin

Aston's versatile, great-sounding large-diaphragm condenser mic is an all-around studio and stage workhorse.



Universal Audio Apollo Twin DUO

A premium recording interface with innovative preamps — plus incredible UAD Powered Plug-ins!



Elektron Analog Heat

Eight stereo distortion circuits in one amazing processor, complete with a 7-way multimode filter and a 2-band EQ — plus MIDI, CV, and USB connectivity!



Nektar Impact LX25+

Powerful and compact DAW control! Play instruments, control mixer channels, and switch between custom preset modes for a fast workflow.



Sweetwater Custom Computing CS100

The computing power and connectivity you need, packed into a pint-sized package and loaded with apps and software!

Sweetwater®

Music Instruments & Pro Audio

FREE TECH SUPPORT

Get professional
SweetCare support, 24/7

FREE 2-YEAR WARRANTY

Total Confidence
Coverage™ Warranty

FAST, FREE SHIPPING

On most orders, with
no minimum purchase!

(800) 222-4700

Sweetwater.com

10
COMMUNITY12
NEW GEAR
Products
from Arturia,
Universal
Audio, PSP,
and more

 14
MOD SQUAD
Koma
Elektronik
Komplex
Sequencer
42
PLAYLIST
New music
from
Deadmau5,
Metallica,
Bonobo, and
more74
FIVE
QUESTIONS
Alex Noyer

25th ANNIVERSARY

electronic MUSICIAN

EDITORS' CHOICE 2017

EDITORS' CHOICE AWARDS

For 25 years, *Electronic Musician* has recognized the most outstanding tools for making great music. This year, we profile 23 of the best new products—and in honor of our special anniversary, we also look back at iconic award winners that have changed the way we make music.

FOXYGEN

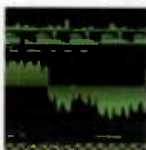
For their new album *Hang*, the indie band recorded with a live orchestra, in one of L.A.'s oldest studios.

THE FEELIES

In Between is the longtime alt-rock outfit's first album in five years, and their first to be recorded in frontman Glenn Mercer's basement studio.

64
MASTER CLASS

Conquer Xfer Serum's advanced features

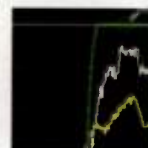
44
SONOMA
WIRE WORKS
DRUMCORE
Virtual instrument48
IZOTOPE
NEUTRON
Mixing plug-in52
MAKE NOISE
O-COAST
Eurorack synth
module56
ROLAND VP-03
Vocoder58
DIGITECH TRIO+
Guitar pedal60
HEAVYOCITY
SCORING
GUITARS
Virtual instrument62
MEEBLIP
TRIODE
Synth module

HOW TO

70

PRODUCTION

De-Ess with Metric Halo



Electronic Musician (ISSN 0894-4700) is published monthly by NewBay Media, LLC, 1311 Bayhill Drive, Suite 440, San Bruno, CA 94066. 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. POSTMASTER: Send address changes to Electronic Musician, P.O. Box 1560th, North Hollywood, CA 91615. 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.

Canada Post: Publications Mail Agreement #4012036. Canada Returns to be sent to Electronic International, P.O. Box 25342, London, ON N4C 6B2. Periodicals Postage Paid at San Bruno, CA, and at additional mailing offices.



Over 30 modular synthesizer designers trust
Metalphoto of Cincinnati to create their custom panels.

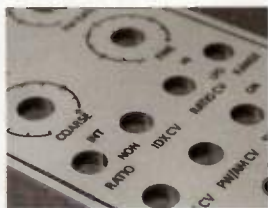


HIGH RESOLUTION/ DETAIL



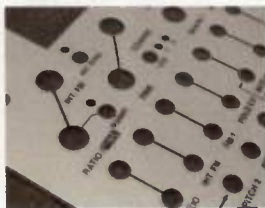
Our imaging processes have significantly greater resolution than screen printing or laser/chemical etching. Color and greyscale options available.

INDUSTRIAL DURABILITY



All images are printed beneath the anodized layer, providing unmatched durability and the smooth-to-the-touch feel of classic analogue electronic instruments.

ACCURATE FABRICATION



Computer Numerical Control (CNC) fabrication systems hold tolerances to $\pm 0.015"$ (0.381mm). Higher tolerances available.

Material Options:

- 3U Eurorack and 5U panel heights are standard; custom sizes available.
- 0.063" thickness is standard; 0.090" and 0.125" are also available.
- Satin (mill) finish anodized aluminum is standard; matte and brushed available.
- Blank panels available to fill empty case space.



Metalphoto of Cincinnati

Visit details.mpofcinci.com/audio-faceplates
for quote and samples.



Primacoustic... better design, better performance, amazing results!



"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.



"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.

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



"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' - Roots music legend

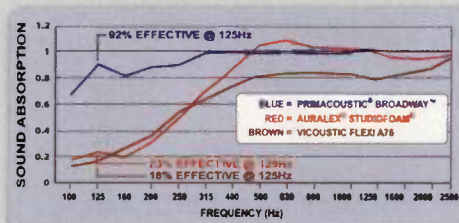


"Not only does my room sound amazing, it's also really beautiful!!!"

~ John Rzeznik

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

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



PRIMACOUSTIC®
www.primacoustic.com

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

electronic MUSICIAN

www.emusician.com | VOL. 33 NO. 2, FEBRUARY 2017

EDITORIAL DIRECTOR Michael Molenda
mmolenda@nbmedia.com

EDITOR Sarah Jones
sjones@nbmedia.com

TECHNICAL EDITOR Gino Robair
gino@ginorobair.com

MANAGING EDITOR Barbara Schultz
bschultz@nbmedia.com

WEB EDITOR Markkus Rovito
mrovito@nbmedia.com

CONTRIBUTORS
Michael Cooper, Marty Cutler, Steve La Cerra,
Mike Levine, Ken Micallef, Lily Moayeri,
Francis Prève, Tony Ware, Geary Yelton

FOUNDING EDITOR Craig Anderton

ART DIRECTOR Damien Castaneda
dcastaneda@nbmedia.com

ASSISTANT ART DIRECTOR Laura Nardozza

STAFF PHOTOGRAPHER
Paul Haggard phaggard@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 Triage
atriage@nbmedia.com

PRODUCTION DEPARTMENT MANAGER Beatrice Weir
FULFILLMENT COORDINATOR Ulises Cabrera
OFFICES SERVICES COORDINATOR Mara Hampson

NEWBAY MEDIA CORPORATE

PRESIDENT & CEO Steve Palm

CHIEF FINANCIAL OFFICER Paul Mastronardi
CONTROLLER Jack Liedke

VICE PRESIDENT, DIGITAL MEDIA Robert Ames
CORPORATE DIRECTOR, AUDIENCE DEVELOPMENT
Meg Estevez

VICE PRESIDENT, CONTENT & MARKETING
Anthony Savona

IT DIRECTOR Anthony Verbanic

VICE PRESIDENT, HUMAN RESOURCES Ray Vollmer
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 ADVERTISING AND EDITORIAL INQUIRIES TO:
Electronic Musician, 1111 Bayhill Dr.,
Ste. 440, San Bruno, CA 94066

PHONE 650.238.0300
FAX 650.238.0262

EMAIL electronicmusician@nbmedia.com

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



OLD SCHOOL / NEW SCHOOL

Respect the past. Embrace the present.

The golden age of analog is happening right here, right now with the **Prophet-6** and **OB-6** — the two fattest analog poly synths to hit the scene since legendary designers **Dave Smith** and **Tom Oberheim** originally invented the concept.

Pure old school sound. Unrivaled new school playability.

prophet~6 | 6-Voice Analog Poly Synth



VCOs · Low-Pass & High-Pass VCFs · VCAs · Poly Mod · Dual FX · Poly Step Sequencer · Arp

OB-6 | 6-Voice Analog Poly Synth



VCOs · State-Variable VCF · VCAs · X-Mod · Dual FX · Poly Step Sequencer · Arp

Designed and built in California by

Dave Smith
INSTRUMENTS
www.davesmithinstruments.com

Visit us at NAMM booth #5400

insight

Generations of Game Changers

IN 1992, when *EM* launched the Editors' Choice Awards, we were witnessing a home-recording technology revolution. That previous year had seen the launch of the Alesis ADAT, which—at the revolutionary price of \$4,000—brought multitrack digital recording within the reach of project studio owners. And Digidesign's Sound Tools stereo editing software had evolved into Pro Tools, which brought multitrack functionality to workstation technology.

Some of those first award winners, such as Pro Tools, evolved into standards; others, like the ADAT, were largely eclipsed by evolving technology. And a few of those products have disappeared entirely. (Soundtrek's The Jammer DOS-based accompaniment software, anyone?) Yet all of their influence is evident in modern studio tools.

The way we define innovation is always evolving. Our 2017 Editors' Choice Awards honor 23 of the

year's most groundbreaking new products—from an app that offers powerful real-time processing for iOS, to a digital DJ controller that does it all.

And in honor of our anniversary, we're also recognizing 20 of the most iconic award winners from the past 25 years. Some are long obsolete, others are still in use everyday. But they've all played a role in shaping the way we produce music. We congratulate you all.



SARAH JONES

EDITOR

sjones@musicplayer.com

electronic
MUSICIAN

Search Electronic.com

WEB HIGHLIGHTS

**This month on
emusician.com**

**Expanded Roland VP-03
review with audio clips**

Plus...

The DIY Advisor: Seven legal mistakes made by musicians
Mini gear guide: DACs and preamps

...and lots more!



gadget geek



Get Touchy With Tetrax

The Tetrax Organ from the Ciat-Lonbarde family of wooden electronic instruments is a touch-sensitive, four-voice stereo synth offering some innovative ways to get expressive. Four oscillators are represented by wooden bars embedded with fine-tuning sliders; four knobs represent master pitch and "chaos" functions that increase modulation from one oscillator to the next in a circular pattern. The bars and knobs surround a grid of 28 modulation points built from banana patch points that respond to standard CV signals; these are arranged in a grid that corresponds to the oscillators, and are color-coded to represent input and output. Other features include stereo mini jack, power switch, and optional built-in batteries or an external, 9-volt battery strap. Available for \$500.33 at ciate-lonbarde.net.

Pauline Oliveros (1932-2016)

A Brief Overview of Her Life and Work

BY GINO ROBAIR

A PIONEER in the field of electronic music, Pauline Oliveros, has died. She was 84.

Ever curious, Oliveros explored cutting-edge technology throughout her life, from magnetic tape and analog synthesizers in the early '60s to real-time digital signal processing and telematic performance in recent years.

As a writer and educator—at the university level (U.C. San Diego and Mills College, among them) and through her courses at the Deep Listening Institute—Oliveros influenced a generation of artists and musicians with her emphasis on attention and awareness of sound.

As a young person, Oliveros was fascinated by the sounds of her grandfather's shortwave radio and the Morse-code rhythms produced by his telegraph key. Not surprisingly, after studying accordion and composition at San Francisco State University in the '50s, she quickly moved away from traditional musical forms and into the direction of electronics, improvisation, and performance art.

In the early '60s, Oliveros—along with Morton Subotnick and Ramon Sender—formed the San Francisco Tape Music Center, and it was there that she began her seminal work with electronics and tape. An important aspect of her music was the use of difference tones produced by the heterodyning of high-frequency oscillators. These tones, which would mix with the ultra-high bias frequencies on the tape, provided her with a rich palette of broad-band sound.

Oliveros' early attempts at audio processing included using her bathtub as a reverb chamber, as well as filtering sounds through different lengths of cardboard tubing, which had mics stuck into one end.

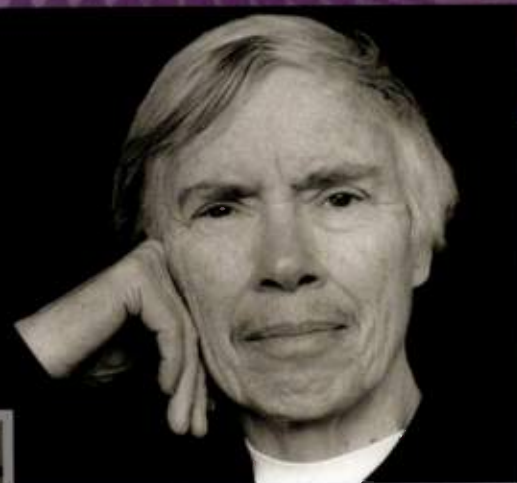
However, she first became known for her virtuosic use of tape delay. By threading a reel of tape through two or three recorders, and interconnecting the inputs and outputs to create feedback paths between the machines, Oliveros was able to get a variety of echo effects (including an impressive 8-second delay). Her best-known works with this system include "I of IV" and "Bye Bye Butterfly."



Oliveros created the pieces "Alien Bog" and "Beautiful Soop" during her year as director of the Mills Tape Music Center, where she combined the new Buchla 100 Series modular synthesizer with her delay system. A chapter of her book *Software for People* (1984) is devoted to her tape-delay setup.

What's notable about these early tape pieces is that they were generated from real-time performances. Oliveros' way of working—improvising with live electronics and using the studio as an instrument—stood in contrast to the standard methods of the day, which often relied on collage forms or highly deterministic structures. As a result, her pieces have a freshness that has withstood the test of time.

In recent years, there has been a resurgence of interest in these works, resulting in a pair of CDs—



Alien Bog/Beautiful Soop (Pogus) and *Electronic Works* (Paradigm)—and the box set *Reverberations: Tape and Electronic Music 1961-1970* (Important).

The study of T'ai chi ch'uan in the early '70s led Oliveros in new directions and ultimately to one of her most influential works. *Sonic Meditations* (1971) is a collection of verbal instructions designed to help people explore the relationship of attention and awareness in a variety of activities (although not necessarily in a concert setting). Oliveros created the pieces so that anyone could use them, "regardless, or in spite of, musical training."

"Music is a welcome byproduct of this activity," Oliveros said about the work.

The instructions in *Sonic Meditations* range from "Focus mentally on stopping or starting a sound at a particular time" to "Take a walk at night. Walk so silently that the bottoms of your feet become ears." Although a connection to the text pieces of John Cage, La Monte Young, and the Fluxus movement are evident, Oliveros' intentions are much different.

"The enhancement and development of aural sensation is one of their goals," Oliveros wrote about her verbal scores. "Sound, both inner and outer, real and imaginary, is the stimulus of *Sonic Meditations*."

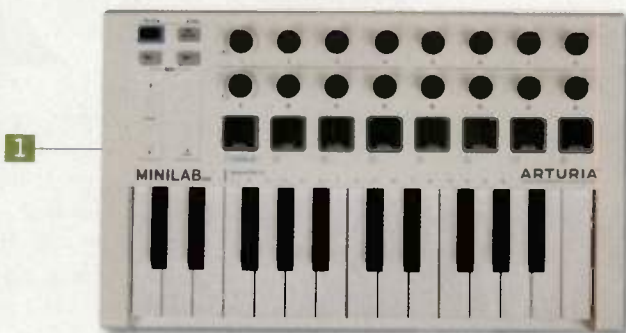
Improvisation, the accordion, and real-time electronic processing played an important role in Oliveros' work throughout the rest of her career. For example, she developed the Extended Instrument System (EIS), a sophisticated setup of digital signal processors designed for use in live performances, which can be heard on recordings by the Deep Listening Band, among others.

Oliveros kept a busy schedule of composing, teaching, and performing until the end, including an evening of readings from the book *The Selected Letters of John Cage* on November 21, 2016, in New York City.

Read more about Pauline Oliveros at keyboardmag.com, paulineoliveros.us and at deeplisting.org.



2



1



4



3

1
ARTURIA
MINILAB MK II
Keyboard controller
\$119

HIGHLIGHTS 2-octave USB/iOS controller with velocity-sensitive keyboard • 8 RGB-backlit pads • 16 knobs (two of which are clickable) • touch-strips for pitch bend and modulation • octave up/down buttons • comes with Analog Lab Lite and hundreds of presets from V Collection 5 • sustain pedal input • Ableton Live Lite and UVI Grand Piano Model D software included

TARGET MARKET Beat producers, musicians, composers

ANALYSIS A low-cost, portable controller that's bundled with a killer set of virtual instruments.

arturia.com

2
UNIVERSAL AUDIO
API 2500 BUS COMPRESSOR
Plug-in for UAD-2
\$299

HIGHLIGHTS Stereo plug-in modeled after API's classic dynamics processor • adjustable knee • two styles of compression • new parallel processing capabilities • added Headroom control • Thrust sidechain filter • adjustable stereo linking • three filter choices—highpass, lowpass, bandpass • includes presets created by Vance Powell, Ryan Hewitt, Adam Hawkins, and Jeff Balding

TARGET MARKET Recording and mix engineers; all UAD-2 users

ANALYSIS An affordable way to add realistic API-style compression to stereo and mono tracks.

uaudio.com

3
HEAVYOCITY
PUNISH
Effects plug-in
\$249

HIGHLIGHTS Compression, limiting, saturation, EQ, and transient shaping based on a custom analog signal-chain used by Heavyocity • includes the Punish macro control • three types of compression—Console, Modern, Classic • three kinds of saturation—Vintage, Modern, Tube • position the EQ before or after the compressor • input and output level controls • wet/dry Mix knob • VST, AU, AAX • 10-day trial version available

TARGET MARKET Musicians, media composers

ANALYSIS Dynamics processing that can inject plenty of attitude into your music.

heavyocity.com

4
KRK
V SERIES 4
Studio monitors
\$399, \$599, \$799 each

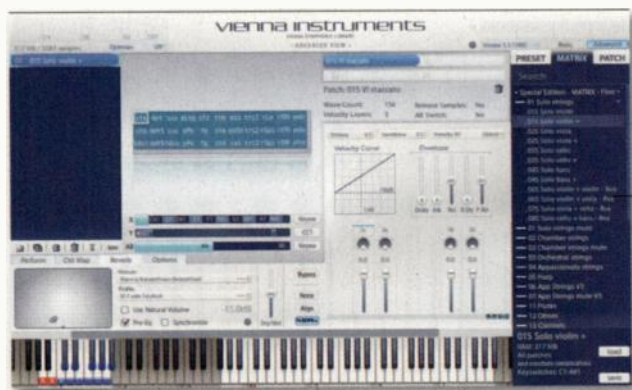
HIGHLIGHTS Available with 4", 6", and 8" woven Kevlar woofer • bi-amped with Class D amplification—85W, 155W, 230W, respectively • Kevlar tweeter • front-ported bass-reflex enclosure with foam pad on the bottom • 48 EQ choices (low, mid, and high frequencies) for matching the monitor's response to the studio environment • input-level attenuation switch • Neutrik XLR/TRS combo jacks

TARGET MARKET Recording studios, broadcast facilities, educational facilities

ANALYSIS A significant update to a popular studio monitor.

krksys.com

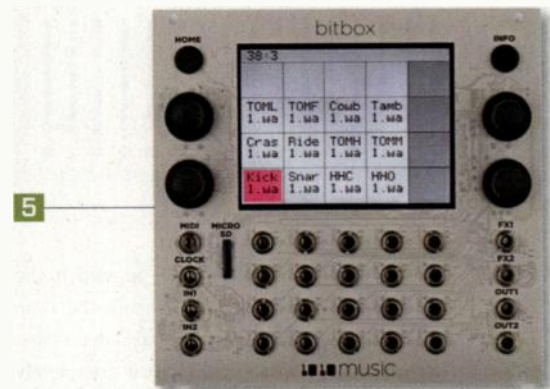
All prices are MSRP except as noted



6



8



5



7

5

1010MUSIC BITBOX

Eurorack sampling module
\$599

HIGHLIGHTS Samples stereo or mono audio input (24-bit/48kHz) to internal memory or microSD card using a touch-screen interface • trigger 16 samples simultaneously from internal memory using touchscreen, MIDI, or CV/gate inputs • one-shot, toggle, gate, and repeat modes • sync to analog or MIDI clock • save/recall 12 banks • two mono effects sends • CV control over sample parameters • import/export WAV files

TARGET MARKET Composers and performers

ANALYSIS With its app-like interface, Bitbox provides an intuitive way to capture and play audio in a modular-synth way.

1010music.com

6

VIENNA SYMPHONIC LIBRARY

SOLO VIOLIN 2/ SOLO CELLO 2

Sample libraries

\$185 each

HIGHLIGHTS Solo string sample libraries of violinist Dimitrie J. Leivici and cellist Florian Eggner • available individually • sustained tones with and without vibrato • pizzicato • legato and portamento performances • staccato repetitions at various speeds • crescendos and diminuendos of different lengths • trills in four different intervals • AU, AAX, RTAS, and VST supported

TARGET MARKET Composers, musicians

ANALYSIS Well-crafted, solo-string virtual instruments that can be used on their own or to augment other VSL products, such as the Solo Strings 1 collection.

ilio.com

7

ELEKTRON ANALOG DRIVE

Distortion effect
\$379

HIGHLIGHTS Fully analog signal path with 8 types of distortion • 3-band EQ with sweepable mid band • two expression-pedal inputs that can also accept control voltages • MIDI I/O • pedal can send MIDI Program Change messages • 100 user presets • power supply included • 3-year warranty

TARGET MARKET guitarists playing onstage or in the studio

ANALYSIS Offers a range of tones from clean boost to high gain and “harmonic fuzz,” with convenient control capabilities via MIDI.

elektron.se

8

PSP STOMPFILTER

Effect plug-in
\$69

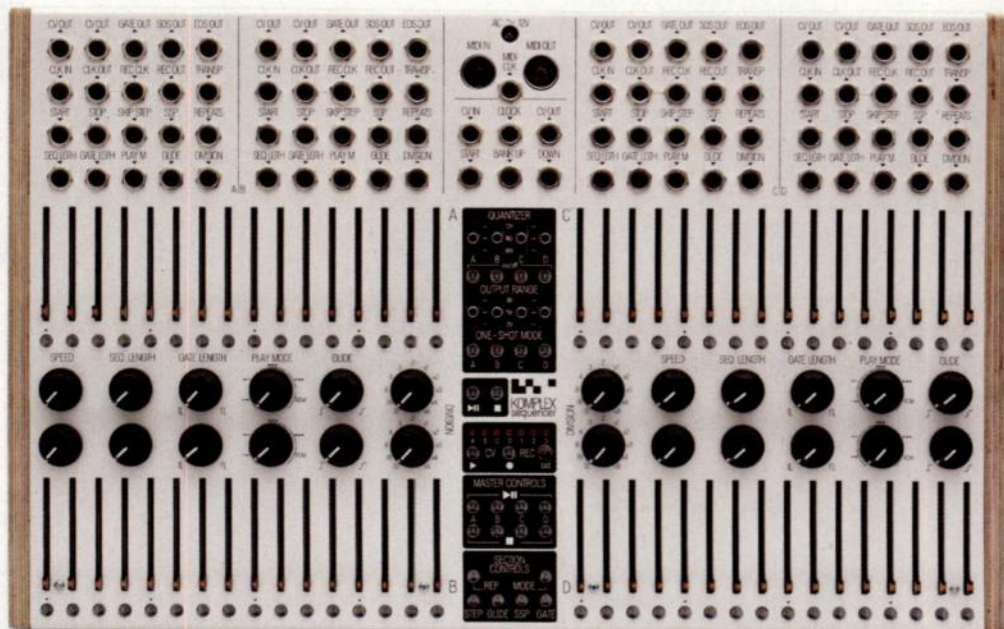
HIGHLIGHTS Modulated filter and gain effects for Audio Unit, VST, RTAS, and AAX hosts • tempo sync • lowpass, bandpass, and highpass filtering with resonance • auto-wah • LFO randomization • compression, limiting, and soft saturation • cross-modulate the LFO with the envelope • modulation freeze button • selectable signal routing • separate wet and dry output controls

TARGET MARKET Beat producers, musicians, mix engineers

ANALYSIS A dynamic, resonant filter with features that make it suitable for electronic dance tracks as well as tempo-related processing.

pspaudioware.com

The Komplex Sequencer has an aluminum frame and feels solid, yet it remains lightweight and easy to carry.



**KOMA
ELEKTRONIK**

Komplex Sequencer

ANALOG AND
MIDI CONTROL
OF YOUR
MODULAR FOR
STUDIO OR
STAGE

BY GINO ROBAIR

At first glance the Koma Elektronik Komplex Sequencer looks like a straightforward 4-channel step sequencer that would work with any 1V/octave synth—and it is. Yet despite its name, the sequencer is simple to operate while providing a variety of musically useful options. These include the ability to combine the sequencers to get up to 64 steps, or drive a sequencer at audio rate to create an oscillator.

Each sequencer can be used independently and includes identical features, such as 20 patch points, 16 CV sliders and multicolor step-select buttons, and six knobs: (clock) Division, Speed, Sequence Length, Gate Length, Glide, and Play mode. (Play mode determines step-playback direction—forward, reverse, ping pong, ping-pong reverse, and random.) The four sequencers can have different numbers of steps, and the step number can be changed during playback (manually or with a CV). In addition to global Play and Stop buttons, individual sequences can be set to One Shot mode, so a selected sequence is played only once when started manually or with a gate/trigger.

Shared controls and programming options include MIDI I/O and MIDI Clock output, channel-based quantization and CV output ranges (2V, 5V, 9V). A CV Recorder stores seven banks of sequences, which you can play and step through using voltage control.

Section Controls set parameters for each step in each sequencer—step select, number of repeats, glide amount, sequence start point, and gate on/off. Button color indicates the parameter you're editing.

Furthermore, the Mode button selects one of two options for certain parameters of each sequencer. For example, Repeat mode can be set to play a selected number of note repetitions in time with the clock (thus adding steps to a sequence) or play them

in Ratchet mode, in which the repeats happen within the time of a step. You can also determine whether a sequence completely skips a step or holds the previous step through the skipped one. Other Mode parameters include the ability to select unipolar or bipolar response from the CV outputs of any of the sequencers, as

well as set their MIDI parameters.

In addition to a Gate output and a pair of CV outs, each sequencer provides pulse outs, one sent when a sequence begins, another when it ends—useful for chaining sequencers together.

The complexity begins to emerge when you exploit the CV options of each sequencer. From the patch points, you can start and stop a sequence, control the CV recorder's playback speed, change Play mode, skip a step, transpose notes, and alter a sequencer's starting point, gate length, sequence length, clock division, and the number of iterations in a repeated step. (A quick-start manual provides CV levels to set the clock division and Play mode.) Put it all together to create detailed, organic sequences quickly and intuitively.

Although the Komplex Sequencer is a desktop device, it's roughly the size of a standard 6U Eurorack case. And with everything situated on top (including power input), it seems well suited for rackmounting.

At \$1,625, the Komplex Sequencer may seem expensive until you realize the price includes four independent sequencers in a powered case, plus MIDI I/O, a CV recorder, and plenty of CV I/O. But no matter how big your modular system is, the wealth of options in the Komplex Sequencer makes it fun to play and useful in nearly any performance or studio situation. ■

ODYSSEY FS

UTILIZE



**Pretty.
Straight.
Forward.**

It doesn't get any bigger than this: The full-sized ARP Odyssey has arrived, with a completely analog signal path to deliver the full Odyssey experience.

Assembled right here in the U.S. - where the ARP story began - and available in extremely limited quantities. Choose from all three historic variants (white, black/gold, black/orange), each with all three filters included, and **go big.**



ARP ODYSSEY FS
DUOPHONIC SYNTHESIZER | ASSEMBLED IN NEW YORK

WWW.KORG.COM

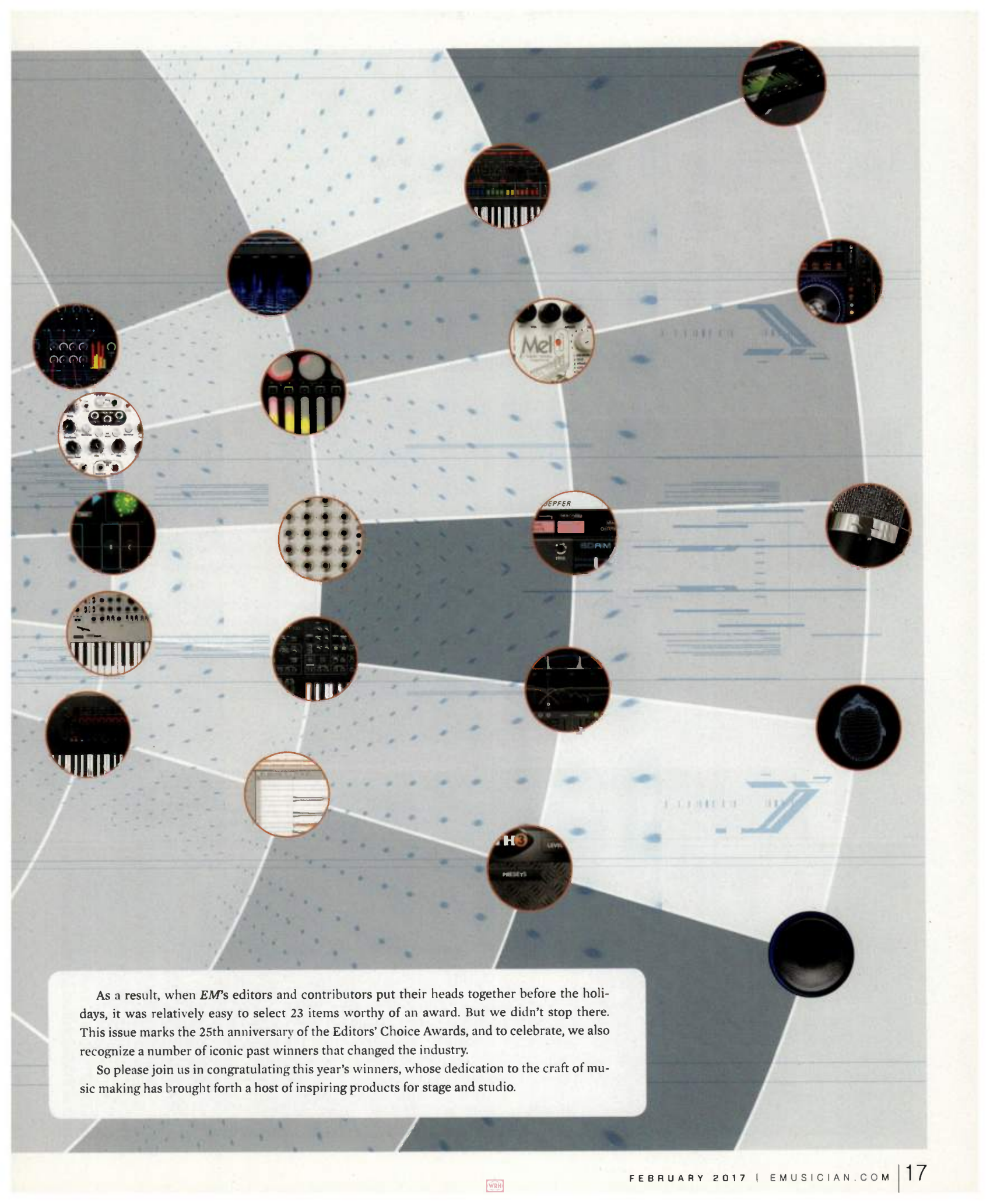
KORG NEW MUSIC. ALWAYS.



25th ANNIVERSARY electronic **MUSICIAN** EDITORS' CHOICE 2017

BY STEVE LA CERRA, MIKE LEVINE, GINO ROBAIR,
MARKKUS ROVITO, AND GEARY YELTON

In terms of music technology, 2016 was a banner year of innovation. While many new releases simply offered more of everything for less money, we've noticed a shift toward *usefulness*, in which manufacturers have designed products or added features that musicians and engineers actually need.



As a result, when *EM*'s editors and contributors put their heads together before the holidays, it was relatively easy to select 23 items worthy of an award. But we didn't stop there. This issue marks the 25th anniversary of the Editors' Choice Awards, and to celebrate, we also recognize a number of iconic past winners that changed the industry.

So please join us in congratulating this year's winners, whose dedication to the craft of music making has brought forth a host of inspiring products for stage and studio.



4MS DUAL LOOPING DELAY

Transform time and space with this Eurorack module

Modular synths and loopers are a natural pairing: It seems like a no-brainer to build one directly into a module, as long as it provides easy-to-use, real-time control. That's exactly what 4ms delivers in the Dual Looping Delay (DLD).

Designed in collaboration with Gary Hall (creator of the Lexicon PCM42), the DLD has two mono channels that can be used together or independently to capture nearly three minutes of audio in each. Among the many ways it can be configured are mono in/stereo out and as a dual-input cascading delay. Each channel has Hold and Reverse capabilities, as well as an insert for processing the delayed signal externally. Plus, you have CV control over a number of parameters, including Feedback, Time, and Delay Feed.

Once you've captured a loop, you can use a CV to scrub it. And if you're a fan of synchronized delay effects, simply send the DLD a clock and enjoy the ride.



ARTURIA V COLLECTION 5

Pretty keys with a Synclavier on top

With astonishing enhancements to its existing lineup, as well as the addition of five impressive instrument models—Synclavier V, Farfisa V, Stage-73 V, B-3 V and Piano V—Arturia's V Collection 5 (\$499) far surpasses its previously lofty standards at a more affordable price. Beautiful new interfaces, fit for 4K displays, are adorned with more intuitive browsers for perusing the plug-ins' ever-expanding libraries.

Arturia fuses spot-on instrument modeling with clever new abilities, such as bonus additive synthesis on the Farfisa V. However, the stunning Synclavier V really sets off this bundle. Created in collaboration with original NED Synclavier designer Cameron Jones, the Synclavier V re-imagines one of the most sought-after synths of all time with an interface that is light-years ahead of the original. Its complex sonic possibilities capture the spirit of the legendary additive-plus-FM synth engine. Although Synclavier V deserves an award all on its own, the V Collection 5 wins hands down.



DIGITAL AUDIO WORKSTATIONS

Nothing since tape has had a greater impact on recording

In the beginning were multitrack sequencers—software for recording, editing, and playing back MIDI data controlling external instruments. In 1990, Opcode Systems paired its sequencer with Digidesign's digital audio hardware, and the DAW was born. Soon other companies developed competing DAWs, scoring numerous Editors' Choice Awards along the way.

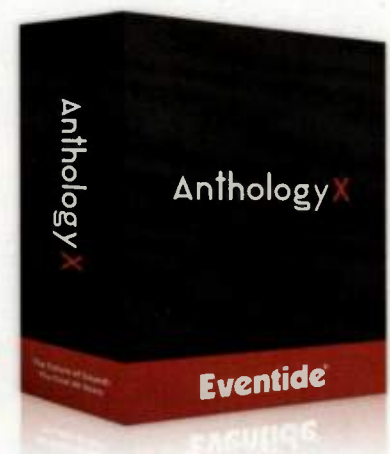
MOTU's Digital Performer ushered in native hard-disk recording. Digidesign (acquired by Avid) advanced multitrack audio with Pro Tools. Steinberg Cubase made plug-ins part of our production workflows. Sonic Foundry's Acid (acquired by Sony and then Magix) introduced the concept of looping sound clips. Propellerhead Reason delivered a virtual rack full of instruments, processors, and mixers. Ableton Live blurred the line between composing and performing. Apple acquired Emagic's Logic and bundled it with tons of previously pricey instruments and processors as Logic Pro. Cakewalk introduced scripting language support into the DAW it later called Sonar. To this day, none of these products has stopped evolving.

The Future of Sound: The First 40 Years

Anthology

Anthology X is a suite of 17 plug-ins that span 40 years of legendary Eventide sounds. From advanced EQs to otherworldly reverbs to an entirely new generation of pitch-shifters, you will find inspiration and solutions galore.

Available for AAX, VST, and AU with no dongle required.



Eventide®

Get your free demo at eventideaudio.com/AX

ANTELOPE AUDIO ZEN TOUR

A desktop interface that's ready to travel

Aimed at working guitarists, Antelope Audio's Zen Tour interface is built into a sexy desktop package small enough to take on the road. Boasting four Combo mic/line and four line/instrument inputs, the Zen Tour can serve as the hub for a jam or recording session. Connectivity includes Thunderbolt, USB, S/PDIF I/O, ADAT I/O, and eight analog line outputs. Separate mixes can be routed to the two headphone outputs, and it offers two pairs of monitor speaker outputs.

Onboard guitar amp models and effects include emulations of classic analog gear, and Antelope's FPGA technology provides Zen Tour with parallel processing capabilities that yield extremely low latency levels. Zen Tour can be controlled from the front-panel, iPhone or Android apps, or using Antelope's Zen Tour Launcher for Windows or Mac OS. It offers a lot of power for the money, and yet it'll easily fit into your carry-on bag. Now *that's* a winner!



AUDIONAMIX ADX VVC 3.0

Transparently adjust vocal levels within a stereo mix

ADX VVC (Vocal Volume Control) 3.0 is a unique plug-in from Audionamix that lets you adjust the volume and pan position of a vocal track that is embedded in a stereo mix, without having to access the original multitrack recording. VVC uses multi-algorithmic vocal extraction technology (VEX) to separate a lead vocal, and then gives you the ability to adjust volume up to ± 12 dB or pan position 60 percent to the left or right. You can also separate the reverb in the vocal track when separating a vocal from the mix.

VVC 3.0 also features a Melody Mode for extracting a monophonic melody instrument such as a guitar, horn, or lead synth. Separation is done online using Audionamix's ADX servers, and access is provided when you purchase the software.

Our reviewer Michael Cooper thought ADX VVC 3.0 could very well be the "miracle cure you need" for fixing older master recordings that were poorly mixed or are not up to today's standards. And considering that it's priced below \$200, ADX VVC 3.0 is even harder to resist.



SOFTWARE SYNTHESIZERS

The first commercial soft synths spawned an industry

The late 20th century gave birth to a new type of instrument that existed only in software running on desktop computers. In 1997, Seer Systems Reality ran on Pentium-based PCs in real time—an unprecedented achievement—offering a variety of sound engines, including sample playback and physical modeling, earning our first Editors' Choice Award for a soft synth.

The initial version of Generator, Native Instruments' debut product, required a proprietary audio interface in 1996, but it grew into Reaktor just two years later. Like Reaktor, it supplied the components you needed to build your own synths and effects processors.



KEYSCAPE

COLLECTOR KEYBOARDS

WWW.SPECTRASONICS.NET

See Keyscape
at NAMM

Hall A
Booth 6724

www.ilio.com



800.747.4546



AUDULUS 3

Powerful synthesis and real-time audio processing for iOS devices

Looking for a customizable, performance-oriented programming environment for iOS? Audulus 3 offers a wealth of modules and nodes that can be used to create highly personalized, low-latency audio processors and polyphonic instruments with gesture control. Inside, you'll find common components such as oscillators, filters, delays, sequencers, and effects, as well as more exotic items like logic modules and mathematic expressions.

Mono and stereo effects can be combined in an Audulus 3 patch, and every parameter can be modulated. The GUI uses the familiar drag-and-connect system for connecting modules and nodes, and you can patch in real time without getting unwanted pops or clicks.

The app utilizes 32-bit floating point signal processing, supports MIDI control and iCloud synchronization, is enhanced for Retina displays, and is supported by desktop versions for Mac, Windows, and Linux OS. Audulus 3 provides such a powerful and robust set of modular tools on the iOS platform that we couldn't help but recognize it with an award.

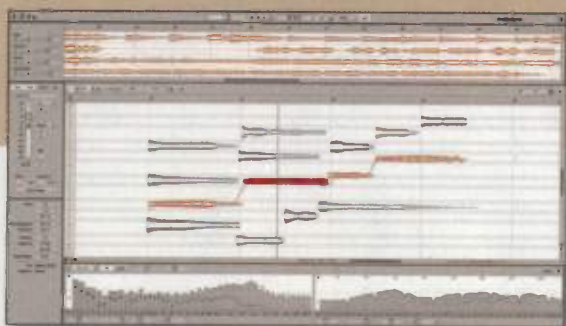


CELEMONY MELODYNE 4 STUDIO

Powerful new features round out an industry-standard product

Melodyne 4 is the first major update of this industry-standard pitch-and-time correction software application/plugin in many years, but it was well worth the wait. Probably the most significant addition is a workflow one; the ability to correct multiple tracks simultaneously in a single screen. In previous versions you had to edit one track at a time, which could be time consuming, especially when dealing with lots of layered vocals.

Version 4 also adds a revamped tempo algorithm that allows you to take a song played without a click and quickly create one that follows the tempo fluctuations of the musicians. You can even sync up loops and other material with a constant tempo to a recording that was made without a click. Melodyne 4's other amazing feature is its ability to edit overtones. You can now get inside of individual notes and adjust the level of individual partials. For sound design, especially, this opens up an entirely new world.



NORD LEAD

The synth that added "virtual analog" to our vocabulary

In 1995, the Swedish company Clavia launched the Nord Lead, the first instrument to use digital signal processing to emulate the sound and functionality of old-school analog synthesizers. Clavia's breakout instrument was a four-part multitimbral keyboard with lots of hands-on controls and tons of performance features that allowed players to shape sounds in real time. It was a pioneer of analog modeling synthesis and eventually led to four generations of Nord Leads, each more powerful than the last.



KURZWEIL K2000/2500/2600

A family of award-winning synthesizers

As keyboard workstations began pushing the boundaries of music technology, Kurzweil pioneered sample-playback instruments and embraced innovations in digital signal processing. The K2000 introduced Variable Architecture Synthesis Technology (V.A.S.T.) with complex timbre-shaping algorithms, multilayer signal routing, and optional user sampling. Its successor, the K2500, featured more memory, live audio processing, greater expandability, and superior sample editing. The K2600 upped the ante with even more memory, 20-bit output, and standard features that were previously options.





SYSTEM 8 | THE NEW LEGENDARY

Powerful and deep, the SYSTEM-8 delivers a vast palette of sounds inspired by over four decades of legendary Roland synths. Its next-gen Analog Circuit Behavior (ACB) engine powers an eight voice, three-oscillator monster with stunning filters and effects, highly versatile LFOs, and a massive array of high-resolution knobs and sliders to control it all. Support for three PLUG-OUT synths means the SYSTEM-8 can host spot-on recreations of numerous Roland classics, and JUPITER-8 and JUNO-106 PLUG-OUTS are even included with purchase.

Learn more at www.roland.com



DAVE SMITH INSTRUMENTS OB-6

Breathing new life into an old friend

In the mid-'70s, Tom Oberheim unveiled his first synthesizers, establishing a sound that helped define an era. As American synth makers faced fierce headwinds a decade later, the company Tom built was sold and vanished a couple years after that. Nonetheless, the Oberheim sound lived on and attained legendary status.

One of Tom's competitors in those days was Dave Smith, founder of Sequential Circuits and inventor of the Prophet-5. Distilling the best of what made Oberheim synths so desirable, Tom and Dave collaborated on designing a 21st-century Oberheim and unveiled it at NAMM 2016. The result is the OB-6, a 6-voice analog polysynth with welcome features like a polyphonic step sequencer, dual multi-effects, X-mod, and USB connectivity. Most important, though, it has that Oberheim sound. It's a dream come true for old-school electronic musicians, and it takes the prize as one of the most exciting new analog synths we've seen in quite a while.



DENON DJ MCX8000

Any way you want it, that's the way you DJ it

There have been two recent trends in mega-digital DJ systems—controllers with built-in dual-color displays that reflect a computer's software, and standalone systems that don't require a laptop. The Denon DJ MCX8000 addresses both needs at a price that trumps competitors in both spaces.

As a controller for the world-class Serato DJ software (included), the MCX8000 provides four decks of mixing, with 16 multicolor, multimode performance pads, full effects control, a comprehensive hardware feature set and two color displays for focusing the DJ away from the laptop. There are also four external inputs for line/phono sources that are ready for an upgrade to Serato DVS control. Additionally, the MCX8000 has Denon's own Engine 1.5 software built in, so you can DJ without a laptop from music on USB sticks with two decks of Engine running on the onboard displays. What's more, the full-featured mixer's four channels switch sources, so you can perform with Serato DJ, Engine, and external sources simultaneously on a road-worthy tank of a controller.



IZOTOPE NEUTRON

Applying artificial intelligence to your tracks

iZotope has built much of its stellar reputation on innovative signal processing software such as Ozone and RX. Its latest entry, Neutron, may be its most ground-breaking product to date. It's actually a whole suite of processors in one plug-in, including an EQ, two compressors, an exciter, and a transient shaper. Its Advanced version lets you open the separate components as individual plug-ins, as well.

Two unique features make Neutron different. The first, Track Assistant, uses artificial intelligence to create a customized preset after analyzing a short section of audio from the track. It sets the EQ with nodes at impactful frequencies, and opens and sets the compressor and other processors based on its analysis. If you instantiate Neutron on two or more tracks, you can kick in cool feature number two, the Masking Meter, which shows you the frequencies at which one track is masking another, making it easy to carve out frequency space. Neutron aims not to take over the mixing job from you, but rather to provide insights and let you do the rest.



YAMAHA 02R

Putting the "pro" in project studios

Once upon a time, pro-level digital mixing boards were beyond the reach of mere mortals. But when Yamaha released the 02R in 1995, it was a runaway success, thanks to mix automation, 32-bit processing, and onboard effects on every input. Optional I/O cards made it compatible with a variety of digital audio formats. With 24 analog and 16 digital input channels and a graphic LCD display, the 02R quickly found its way into project studios worldwide.



+ Countless new features to help you make music differently

Now you can trigger a different sample on each step of all four drum parts. Create crazy sonic changes. Condense multitrack drums down to single tracks. Free up space for additional sounds.

Sample Flip

Introducing

CIRCUIT v1.3



CIRCUIT v1.3

Introducing

Sample Flip

Now you can trigger a different sample on each step of all four drum parts. Create crazy sonic changes. Condense multitrack drums down to single tracks. Free up space for additional sounds.

+ Countless new features to help you make music differently



novationmusic.com/circuit-components



ELECTRO-HARMONIX MEL9

Get realistic Mellotron sounds from any guitar

Among the emulation pedals that Electro-Harmonix has created to provide authentic keyboards timbres to guitarists, the Mel9 is the shining star: It absolutely nails the unique timbres of the Mellotron when you play idiomatic parts in the proper register on your axe. The Mel9's nine presets include the recognizable tones of the flute, cello, brass, choirs, and orchestra as heard on recordings by The Beatles, Moody Blues, and Led Zeppelin, among many, many others.

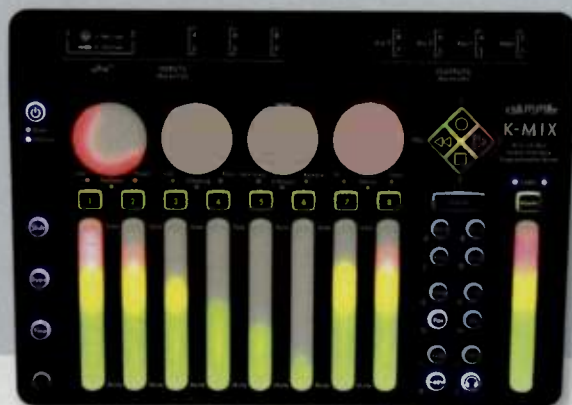


The Mel9 does not trigger samples, nor is there any need for a special interface or pickups. Rather, it does the job through digital signal processing, and it tracks your playing remarkably well. The Attack and Sustain controls give you the ability to tweak the pedal's response to increase the realism of each instrument. And independent wet and dry controls let you balance the level of your instrument right from the pedal. If you're a guitarist looking to spice up your rig with the sound of a Mellotron, here's your chance!

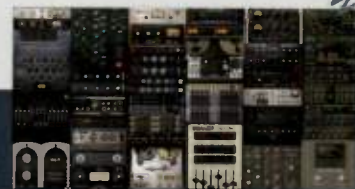
KEITH MCMILLEN INSTRUMENTS K-MIX

Take tactile control to the next level

Nowhere else will you find a USB 2 audio/MIDI interface that includes a programmable, 8x10 surround-capable digital mixer, DSP effects that work with or without a computer, and the ability to work as a control surface, for well below \$600. The Keith McMillen Instruments K-Mix bowled us over for its versatility, features, build quality, and visual appeal. With its desktop-friendly size, great-sounding preamps, and 24-bit/96 kHz audio quality, the K-Mix fits the bill just as well in a pro-level recording system as it does in a live-performance P.A. system.



With its multicolored touch-controller, the K-Mix uses KMI's trademark "opto-tactile" control surface and assigns multiple layers of functionality to almost every control, making highly efficient use of the rotaries, faders, and buttons. The K-Mix marks a significant breakthrough in technology and occupies a class all its own.



UNIVERSAL AUDIO UAD-2

DSP done right

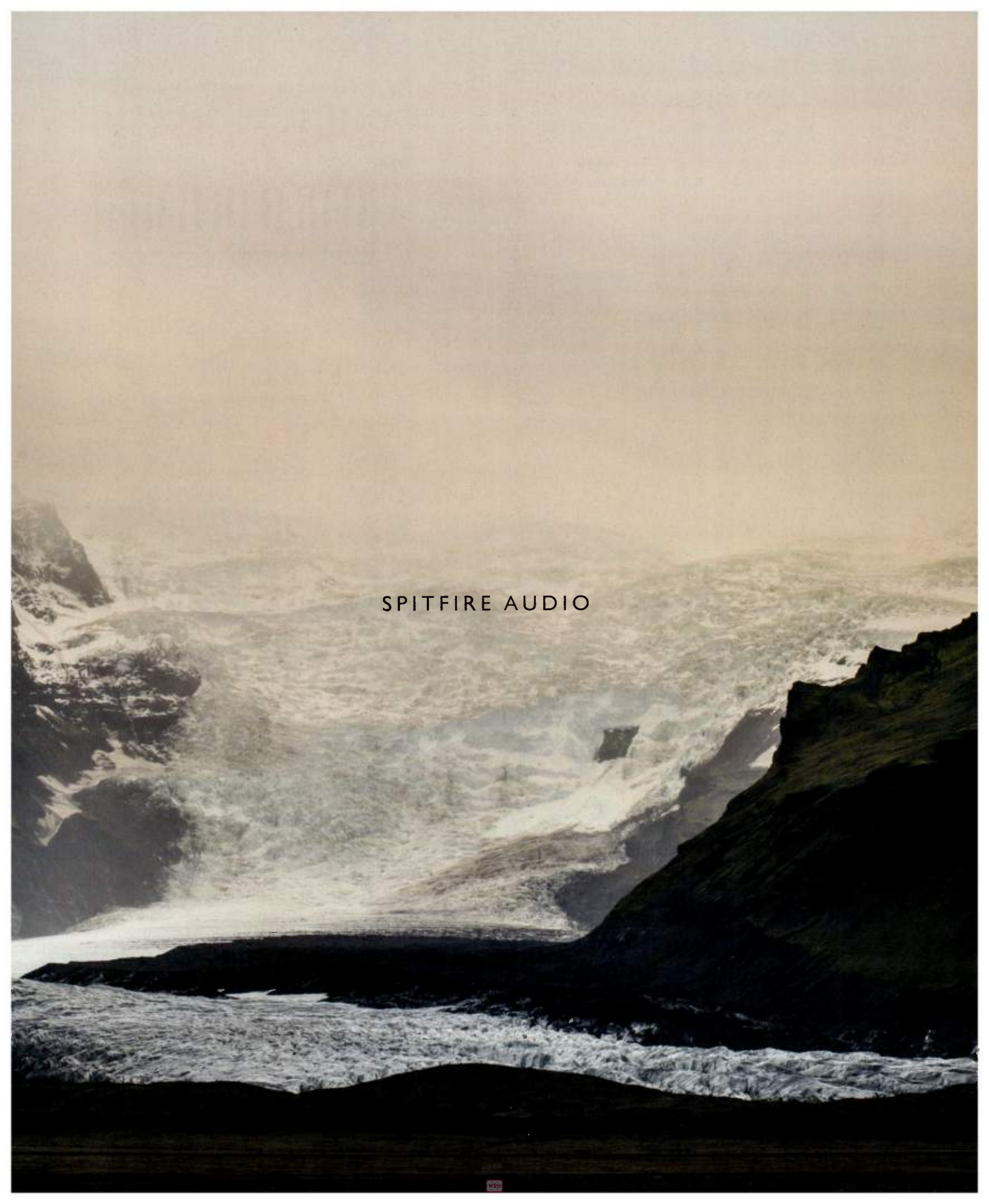
The audio quality of a plug-in has a lot to do with the processing resources it gets. Yet as DSP has improved, the demand it places on your computer has increased. Universal Audio's answer to this dilemma, the UAD-2 platform, continues to be the most successful DSP accelerator system on the market. In addition to aggressive pricing of its hardware and software products, the developer continues to strive for the highest sound quality possible. The result has long been a win-win for both pro and personal studio users.



ALESIS ADAT

The digital home-recording revolution starts here

In an age where computers can record and mix hundreds of audio tracks using low-cost software, it's difficult to fathom the transformation brought about by the ADAT. Short for Alesis Digital Audio Tape. ADAT machines provided 8 tracks of 16- and 20-bit digital recording on S-VHS tape for just under \$4,000 in the early '90s. But it was the ability to link multiple ADAT machines that sealed the deal. Suddenly, everyone had a 24-track recording studio, and the race to create a new prosumer level of gear was on.



SPITFIRE AUDIO

KORG MINILOGUE

A new classic in analog polysynths

In this Golden Age of synthesizers, we've seen amazing re-creations of vintage beasts, as well as modules and boxes that make analog accessible. This year's standout is the Korg minilogue, a 4-voice polysynth that impressed us with its affordability and mobility on top of a unique signature sound and feature-set. Instead of imitating something from the past, Korg built the minilogue largely from scratch, with new circuitry and an eye toward both studio production and performance.

Each of the minilogue's four voices has two oscillators, an analog filter, and flexible LFOs and modulation. The eight voice-allocation modes—including Poly, Duo, Unison, Mono, Chord, and Arp modes—help you wield those voices in powerful ways. Moreover, the instrument includes a 16-step sequencer that records notes and controller moves. If the 100 dance-oriented presets aren't enough, it's easy to create and save your own to the 100 user-memory slots. The Korg minilogue is fun all around and a real breakthrough in the world of analog keys.



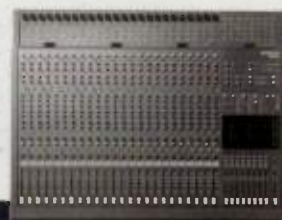
LAUTEN AUDIO LA-320

Now you can afford a great-sounding tube mic

A high-quality tube microphone at an entry-level price? Impossible! Or so we thought. But that's what we discovered with the Lauten Audio LA-320, a large-diaphragm tube condenser microphone that is equally adept at tracking vocals as it is other instruments, such as acoustic guitar and piano.

The LA-320 has a 1-inch capsule with a cardioid pickup pattern and utilizes dual-triode amplification circuitry with a transformer-balanced output. The built-in highpass filter (at 120 Hz) can be used to clean up muddy sources while the unique 12 kHz lowpass filter helps compensate for bright sources. The mic's frequency response is stated as 20 Hz to 20 kHz, and the LA-320 will handle SPLs up to 130 dB.

The LA-320 is packaged with a dedicated power supply and cable, a shock mount, and padded carrying case, making it an excellent introduction to the world of tube mics for the personal studio, houses of worship, or educational institutions.



MACKIE 8-BUS

A mixer for the masses

With so much home recording happening in the '90s, musicians began looking for a high-quality, yet affordable mixer. Mackie unveiled its 8-bus mixing console just as the ADAT and other multitrack digital-tape formats were flourishing. The mixers could be purchased in configurations up to 32 channels, and included surprisingly clean mic preamps and EQ on every channel, not to mention metering and a wealth of patch points. Depending on the mixer you chose, you could end up paying just over \$100 per channel—not a bad deal back then.

OVERLOUD TH3

An amp-and-effects sim with a wider-than-average palette

The third time was definitely the charm for Overloud's TH-series amp-and-effects-modeling software suite. Its amp collection offers a lot more than just the ubiquitous classic amp types, adding features that you don't see anywhere else, such as official models from Brunetti, Randall, DV Mark, and THD.

One of our favorite amp models is the Brunetti Metropolitan, which excels for both distorted and clean sounds. In fact, while clean sounds are often a weak point for amp sims, they're a strength in TH3—as are crunchy and distorted tones, for that matter.

TH3's effects go beyond the expected. Of particular note is the Harmonizer, a two-voice pitch shifter that offers clean and accurate transposition. The ring modulator is stellar, too. The reverbs, many of which are based on Overloud's Breverb, are smooth and natural sounding. To top it off, Overloud gave TH3 a new, easier-to-use interface.



“

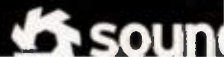
*I USE ECHOBOY
ON EVERY MIX.*

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



PRESONUS R80

Monitor with clarity and comfort

New studio monitors are released all the time, but only occasionally does a particular model jump up and grab your attention. That happened for us this year with the PreSonus R80, an active 8-inch model. It's the larger of two models in the R-series (the other is the 6.5-inch R65), and is remarkably compact considering the size of its driver. However, the R80's smaller-than-expected footprint doesn't hinder its ability to impressively reproduce bottom end.

Probably the most unusual aspect of the R80 is its AMT (Air Motion Transformer) tweeter, which is similar to a ribbon tweeter in the way it responds. Thanks to this tweeter, the R80 reproduces highs with accuracy but not harshness, allowing for long mix sessions without ear fatigue. The back panel offers a useful array of controls for tailoring the R80 to the acoustics of your room, plus XLR, 1/4-inch TRS, and RCA inputs.



RADIAL ENGINEERING WORKHORSE

A modular storage problem solved

When it comes to finding solutions to real-world problems in pro audio, no one can compete with Radial Engineering. Case in point is the Editors' Choice Award-winning Workhorse, a 500 Series rack with an integrated 8x2 summing mixer (with panning and level controls) for the 8 modules it can hold. You can audition your mix using its pair of headphone jacks and configure the rack onstage or in the studio using its Main and Monitor outs, effects inserts, expansion bus jacks, and 8-channel D-sub I/O. The fortified power supply keeps it all running smoothly.

ROLAND SYSTEM-8 PLUG-OUT SYNTHESIZER

A forward-thinking keyboard that carries the legacy of the past

Twenty years after releasing the great JP-8000 analog-modeling keyboard, Roland has another digital classic on its hands. This time around, it's the System-8 Plug-Out Synthesizer, which utilizes Roland's next-generation Analog Circuit Behavior (ACB) technology to magnify analog modeling down to the component level. And while the 8-voice synth has its own incredible sound engine, it can also host up to three Plug-Out synths at a time. These are essentially software synths that you have complete hands-on control over. The Jupiter-8 and Juno-106 Plug-Out versions are included.

But the System-8 really is its own beast. Designed to be easy to operate, it's packed with a laundry list of perks—a built-in vocoder, arpeggiator, 64-step polyphonic sequencer, one-note chord memory per patch, onboard effects, and a Performance mode that lets you layer two sounds or split the keyboard with two sounds from either the onboard or Plug-Out synth engines. And to top it off, connectivity is available through USB, MIDI, and CV/Gate I/O. Overall, the System-8 is a key addition to any studio or stage rig.



ROYER R-121

Vintage mic technology, rediscovered



You can blame the ribbon-mic renaissance on the mad genius of David Royer. Like so many music-related technologies (e.g., vinyl LPs, analog synthesizers), ribbon mics were considered passé at the very time their smooth audio response was needed most—in a world of digital recording.

Brought to market in 1998, the R-121 became hit for its sound quality, relatively small form factor, and especially for its affordability. Suddenly, every studio wanted the modern ribbon-mic sound, and Royer has kept the pace, creating new products for both studio and stage.

Audionamix
SEPARATE2CREATE

LOST IN THE NOISE?



ADX SVC

NEW
RELEASE

It is finally possible to make independent volume adjustments to speech or background noise in troublesome recordings.

ADX SVC automatically separates dialogue from background elements within a mixed audio file for **Speech Volume Control** like never before.

FIND YOUR VOICE!

From the makers of the award winning
Vocal Volume Control plug-in.

ADX VVC



WWW.AUDIONAMIX.COM

ROSSUM ELECTRO-MUSIC EVOLUTION

You'll never think of a ladder-filter the same way again

If the name Rossum rings a bell, it's likely you know your synth history: Dave Rossum was a co-founder of E-mu Systems and pioneered designs in both analog and digital music technology.

Rossum's return to the modular world has provided Eurorack users with a handful of innovative modules, one of which is the Evolution. Taking E-mu's '70s-era lowpass ladder-filter as its starting point, the Evolution gives you CV control over the cutoff slope—from 3-pole to 6-pole. Moreover, the filter goes easily into a tunable resonance, and you can dynamically control the Q and gain: As its panel suggests, this module can add character when you want it. Need to process control voltages? The Evolution can do that, too, as the I/O is DC-coupled.

The Evolution is a winner this year because its combination of overall flexibility and broad timbre capabilities—from smooth to shredding, even before you add modulation—sets the bar high in a field crowded with lowpass filters.



SHURE KSM8

A revolutionary vocal mic for the stage

Shure's KSM8 Dualdyne microphone is the first handheld, dynamic vocal microphone to employ two diaphragms in the same capsule. The design uses a reverse airflow system that takes energy from the rear diaphragm, re-directs it, and alters its phase relationship with that of the front diaphragm to achieve control over proximity effect, frequency response, and directional characteristics. This enables the KSM8 to behave as an omni mic at low frequencies (enough to control the proximity effect) but maintain directionality to control bleed from nearby instruments.

The KSM8 has an internal pneumatic shock-mount that reduces handling noise, and a hardened carbon-steel grille lined with water-repellent fabric to protect the capsule from damage. Shure's Diaphragm Stabilization System balances the active diaphragm when it is struck with plosive sounds.

The thing that makes the KSM8 innovative is that it provides the fidelity you would expect from a condenser mic, but with the ability to reduce leakage from nearby instruments, mitigate proximity effect and handling noise, and still have a wide enough sweet spot so you don't have to stay glued to the grille when performing.



SOFTUBE MODULAR

Imaginary hardware in a virtual world

What makes a winning formula? First, collect some of the most useful synth modules from Doepfer (the company that invented Eurorack) and hire a team of modern-day alchemists to create computer models of all those modules. Make it easy to save and recall all your patches in every detail. Bundle the whole shebang in a software plug-in and sell it for less than \$100. Then, team up with Intellijel, a Eurorack manufacturer that pushes the boundaries of what synthesizers can do, and release emulations of those modules, too, for a fraction of what the hardware costs.

That's exactly what Softube has done with Modular. Known for making realistic digital emulations of classic studio gear, Softube stuffs a gigantic modular system into your computer so you can use it in your favorite DAW. You decide which modules to use, and every module looks and functions just like the real thing. Everybody wins!



SPECTRASONICS KEYSCAPE

A clutch of keyboard classics

Ten years in the making, Keyscape is a massive collection of three-dozen desirable keyboard instruments expertly sampled in painstaking detail. Pianos include some of the finest and most versatile Rhodes, Wurliizers, and Yamahas on the planet. Rare vintage keyboards from the 19th and 20th centuries feature some achingly beautiful instruments like the dolceola, dulcitone, and ChimeAtron, right alongside some of the funkier Clavinets you've ever heard and an electric harpsichord that just screams 1967. Top it off with a roomful of amps and effects matched to the instruments to help capture that authentic vibe.

Spectrasonics has sampled every glorious tone, every incidental noise, and every eccentricity and imperfection to re-create the experience of actually playing these magnificent instruments. If you own Omnisphere 2, you can import Keyscape's instruments and use its filters and envelopes to tailor your sound ever further. If keyboards are your forte, we're sure

you'll agree: Keyscape is a crowning achievement.



WAVES NX VIRTUAL MIX ROOM

Headphone mixing in multiple dimensions

Waves Nx is an innovative plug-in that offers a significant improvement to the experience of mixing on headphones. The technology in Nx creates a 3D effect in your cans that accurately simulates the listening experience of using speakers in a well-treated mix room. The frequency response is determined by the quality of your headphones, while Nx adds the virtual space.

Nx comes with an accompanying application called HeadTracker, which tracks your head movement (using your computer's webcam or the optional Waves Head Tracker hardware) and adjusts the sound accordingly. You can move the speakers around in the virtual room, adjust room reflections, and designate a virtual sweet spot. Amazingly, Nx can also create a credible 5.0 or 5.1 surround sound emulation in your stereo headphones. It's incredibly inexpensive—

less than \$100—considering its power. We gave Nx an award not only because this technology is groundbreaking but because it solves a real-world problem very effectively.



Zaor

STUDIO FURNITURE

MIZA LINE



www.zaorstudiofurniture.com

USA — Distribution by www.audioplusservices.com
CANADA — Distribution by www.plurison.com

WIZDOM MUSIC/MOFORTE GEOSHRED

Get monster guitar sounds from your iOS device

When it comes to emulating strings, physical modeling is hard to beat. But to get the most out of a virtual instrument, you need an interface that takes full advantage of everything PM has to offer. That's what makes GeoShred so exciting.

The result of a collaboration between Dream Theater keyboardist Jordan Rudess and developer moForte, GeoShred fully exploits your iOS device's multitouch capabilities to provide an intuitive instrument that it easy for beginners to play while giving experienced players something they can, well, shred on. Pick a performance mode: Guitar, which is fretted; Slide, for

a fretless experience; or Piano. Then, specify the tuning you want—with or without pitch quantization. GeoShred comes with a cache of virtual amps and effects, and an arpeggiator is also onboard.

Once you get the hang of playing it, you'll be adding vibrato, harmonics, and feedback like a pro. GeoShred's high level of expressivity takes this app to 11.



ROLAND V-DRUMS

Giving the drummer some control

Percussion controllers are an integral part of music making. But whether they're used for tracking MIDI parts in a session or triggering sounds on stage, drummers prefer controllers that respond like real drums. That's where Roland's V-Drums hit the groove.

Decades of innovation have yielded an array of road-ready pads and sound modules that are available at a variety of prices. Yet nothing beats Roland's multi-trigger cymbal pads and mesh-head drums in terms of a satisfying playing experience. Their comfortable and dynamic response continues to set the standard.

There's a DI PowerTool™ for that...

JDI Stereo™

Jensen equipped
stereo passive DI



"Our Radial JDI's are rugged, reliable, and sound great - so much better than the competition -

in fact there is no competition!"

~ Alan Parsons

the Beatles, Pink Floyd,
The Art of Noise, Alan Parsons Project

J48 Stereo™

phantom powered
stereo active DI



"The Radial J48 can be relied upon in my worldwide touring to deliver what it needs to ... and that is to

deliver good audio."

~ Paul 'Pab' Boothroyd

FOH: AC/DC, Paul Simon, Paul McCartney, Faith Hill, Pink

PZ-DI™

variable load piezo
optimized active DI



"With the PZ-DI we are able to integrate multiple piezo-electric devices seamlessly and

with glorious results."

~ Brad Madix

FOH: Rush, Shakira, Marilyn Manson, Def Leppard

JDX-48™

48V phantom powered
reactive load amplifier DI



"The JDX gives me all the character and distortion without the worries of

bleed and feedback."

~ Jim Warren

FOH: Radiohead, Arcade Fire, Nine Inch Nails, Peter Gabriel

jensen
transformers
DESIGN

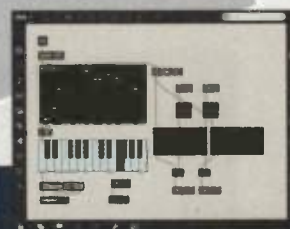


YAMAHA MONTAGE

A flagship keyboard for a new generation

The king is dead. Long live the king! For 15 years, the Motif and its offshoots practically ruled the world of keyboard workstations. Now comes the Montage, succeeding Yamaha's flagship digital synth and offering a pair of updated sound engines and a host of real-time control capabilities called Motion Control. With 128 stereo voices, exceptional sample content, lots more memory, and two effects for each of 16 parts, the Montage makes an ideal axe for getting the job done onstage or in the studio.

The Montage expands Yamaha's 8-Element AWM2 sound engine and pairs it with an 88-algorithm enhancement of the classic DX7 engine, dubbed FM-X. The Montage offers more hands-on, real-time control of both engines, not only letting you edit sounds on the fly using a bank of assignable sliders, but also by leveraging Motion Control to animate sounds using Motion Sequences, an envelope follower, and the one-of-a-kind SuperKnob. ■



CYCLING '74 MAX

A programming environment anyone can use

Named after computer-music pioneer Max Matthews, Max traces its roots back to Miller Puckette's work at IRCAM in the '80s. Since David Zicarelli got his hands onto it, Max has become a ubiquitous source of creativity for musicians and multimedia performers worldwide—and not just the nerdy ones!

In addition to the audio and video processing capabilities of MSP and Jitter, respectively, Max for Live has given Ableton Live users a sophisticated way to customize their rigs, thus providing the benefits of a deep programming language to the masses.

...from Radial!

Trim-Two™
adjustable input
versatile stereo passive DI

USB-Pro™
professional 24-bit - 96kHz
high performance USB DI

BT-Pro™
professional A2DP + EDR
stereo Bluetooth® DI



**No matter what your
audio application...**

...live or studio, Radial has just the right direct box 'PowerTool' for it! Our design team is in constant contact with audio professionals around the world to develop innovative solutions that fit their needs and are built to withstand the rigors of touring.

Radial - PowerTools for professionals!



"The Radial Trim Two provides a clear controllable path for my sound with insanely great,

road worthy, construction!"
~ Jody Whitesides
Singer - Songwriter - Guitarist



"The USB-Pro is the most useful device to come along for a while. With all the video and computer backing tracks these

days I could not live without it."
~ Dave Natale
FOH: The Rolling Stones,
Fleetwood Mac, Tina Turner



"Radial takes its world class DI's to another level with Bluetooth technology. The BT-Pro has ex-

cellent features and sounds great!"
~ Byron Lonneberg
TD: House of Blues,
Commodore Ballroom

Radial®
engineering
...PowerTools for power players

radialeng.com

1588 Keblet Way, Port Coquitlam BC V3C 5M5 tel: 604-942-1001

CARA ROBBINS



Foxygen

BY KEN MICALLEF

For *Hang*, their third record, indie duo Sam France and Jonathan Rado aim for a vintage vibe, tracking and mixing to 2-inch tape in one of L.A.'s oldest studio spaces.





Opposite page: Foxygen's Sam France (left) and Jonathan Rado. Clockwise from above left: Michael and Brian D'Addario, Trey Pollard, and Steven Drozd.

Foxygen, the L.A.-based duo of vocalist Sam France and multi-instrumentalist Jonathan Rado, create the musical equivalent of a Hollywood glam ball circa 1937 on their sophomore effort, *Hang* (Jagjaguwar). Foxygen's guests for the gala include the spirits of Warren Zevon, Scott Walker, Roxy Music, and The Kinks. Grandstanding it over intricate arrangements cut live to a 3M M79 reel-to-reel, including a 40-piece orchestra, *Hang* is a sprawling epic—think *The Day of the Locust* meets *The Big Sleep*, gowns by Edith Head.

Hang's eight songs are built around France's tremulous vocals and Rado's Wurlitzer in extended arrangements fueled by Gretsch hollow-bodied and Fender Jaguar guitars, Memory Moog, Hal Blaine's roto-toms, Mellotron, Arp Solina String Ensemble, Ferrari Roxy Chord organ, the big beats

of Flaming Lips multi-instrumentalist Steven Drozd and drummer Michael D'Addario, as well as the guitar of Brian D'Addario (the latter two of Long Island band the Lemon Twigs).

Hang was recorded at Woody Jackson's Vox Studios in L.A., which opened as Electro Vox in 1936 and is said to be the oldest studio in the world. It's home to an array of vintage instruments and recording gear, including Wally Heider's 16x4 Universal Audio/API Custom Console built by Frank Demideo in 1967, which features UA 1108s, UA 508 EQs, and API 560, 554, 550, and 550A EQs. No computers were used in the recording process of making *Hang*; it was recorded and mixed entirely on 2-inch tape.

"Technically, we were trying to re-create L.A. in the '70s," 26-year-old Rado explains. "The goal

was to make a record that didn't rely on any modern technology. It's more than possible to do that. I do a lot of outside production with people who are very afraid of committing to ideas. But we embrace that. Our aesthetic is live takes and committing to ideas, mistakes, or whatever.

"We were listening to classic Hollywood soundtracks," he adds. "It's a sound that is hard to pin down. I'm not sure what makes those records special. We were trying to re-create late-'30s big band music with '70s-style songwriting: Cole Porter meets Warren Zevon."

Hang's sessions began at Electro Vox, then, with tapes transported to Richmond, Trey Pollard arranged and conducted the orchestral parts, with additional arranging from Matthew E. White, and Adrian Olsen at Montrose Recording handling re-

cording duties.

"We didn't use a computer for any of the record," Rado says. "And no grid. We literally tracked to 24-track with summing, flew to Richmond with the tapes, recorded the orchestra on a separate 16-track, mixed it off two synced master tapes connected to machines with SMPTE, then mixed by Sian Riordan to half-inch, then cut the vinyl from the tape."

Band tracks were cut live at Vox, including double drumming takes. Three weeks of live tracking were followed by vocals and overdubs before moving the party to Richmond. Throughout, France and Rado maintained their '70s-aligned focus.

Working at Vox gave the band access to a swimming pool's worth of vintage gear, including the Steinway grand piano used to record Henry Mancini's "Moon River," RMI electric piano, Roland Jupiter, Clavinet, Celeste, and Moog Polymoog, as well as orchestral instruments, all of which forge unique personalities on *Hang*.

"*Hang* was recorded entirely analog, no plugins, all the way down the line," Vox engineer Michael Harris explains. "Recording occurred via the Heider console to a baby blue 3M M79 24-track machine from the '70s. We did an enormous amount of summing down to individual tracks on the tape machine in the typical old way—not a million tracks wide. That was the initial chain, from

the live room to the board to the M79. We lived on tape for a good three weeks."

Harris agrees that *Hang* is a grandiose epic, following a literal album approach in an era of plastic stunted singles. "They wanted to build a real record,"

"Technically, we were trying to re-create L.A. in the '70s. The goal was to make a record that didn't rely on any modern technology."

—JONATHAN RADO

he explains, "something you can listen to front to back and feel emotionally rather than one song being fantastic and the rest lacking continuity."

And with multiple recording locations, many

tape reels, and traveling musicians involved, the process was anything but straightforward. "We had the 24-track machine not running SMPTE but with a track left open," Harris says. "We sent the 24-track and did stereo bounces onto a 16-track, printed SMPTE on both and synced machines together. They took that 16-track tape with the two-track bounce with SMPTE to Richmond for orchestral overdubs, then it went to Sian to mix with two tape decks running simultaneously with SMPTE."

A Neumann U67 microphone through the board's UA 1108s and API 500 Series preamplifiers handled vocals, followed by the UREI 1176/Lang EPQ2 combo into the M79 tape machine.

Describing the keyboard chains as "totally circumstantial," Harris followed multiple approaches, running a Leslie cabinet direct through a UA LA-3A "to stop volume swell to the tape machine," covering the Steinway grand piano with a stereo pair of Neumann KM 54s, and "more often than not running the keyboards to tape and bouncing and running the signal hot, so you don't need compression."

Harris applied heavy EQ and compression to guitars, a semi-hollow-body Gretsch into a Fender Deluxe amplifier miked with an RCA 77 DX, then to 1950s-era Ampex 8-track tape machine as pre-amp, followed by a Lang PEQ2 to "shoehorn ringing frequencies. I'm doing EQ usually after compression using 1176s."



ZEN TOUR

Antelope

Vintage
HARDWARE-
BASED
EFFECTS

Massive Studio in a Tiny Package

Growing library
of Premium Vintage Effects
FREE

AntelopeAudio.com

Antelope

Bass was recorded using both DI and an amplifier, DI going straight into the 3M tape machine after the Heider on-board preamplifier. Also in the bass chain was an original Gates Sta-level compressor.

For drums, Harris miked Hal Blaine's roto-toms with a pair of Coles 4038s, Shure SM 56 on the snare drum, Neumann KM84 on the hi-hat, RCA 44DX covering the floor tom, Neumann FET 47 in the open bass drum, floating U47s to pick up ambient room sounds, and Coles 4038s as overheads, with the board's UA 1108s handling preamplification.

"The first day Michael Harris had everything miked up, there were a lot of microphones on the drum kit and coming into the tape machine, but we wanted only four tracks for drums, so we summed the mics to four tracks," says Rado. "It was nerve-racking, but the sound of the record is committing to those sounds, and that's all you've got. Left and right of the drum set miked, kick and snare, and that's it."

Recording all analog is a dream for most, but does the final product, including *Hang*, reflect the vision? Harris thinks so. "All-analog recording is more engaging, it's more interactive, it requires more of everyone's efforts, and failure is not an option," he says. "You can't go back."

So what does make that sonic difference? Why do the classic recordings of the '70s sound so good? "The process of summing things down is truly why

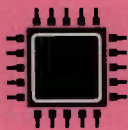


old records have such a specifically unique sound," Harris explains. "When you start amassing a bunch of tracks onto one track, and then you degenerate it by bouncing it down to a separate track and maybe doing a third generation of bounce to even another

separate track, you end up with a massive amount of that tape machine's energy and whatever flavor it's imparting to that signal. I think that really gave those records a girth that was never matched into today's purely digital domain." ■



**RECORDING
I/O
INTERFACE**

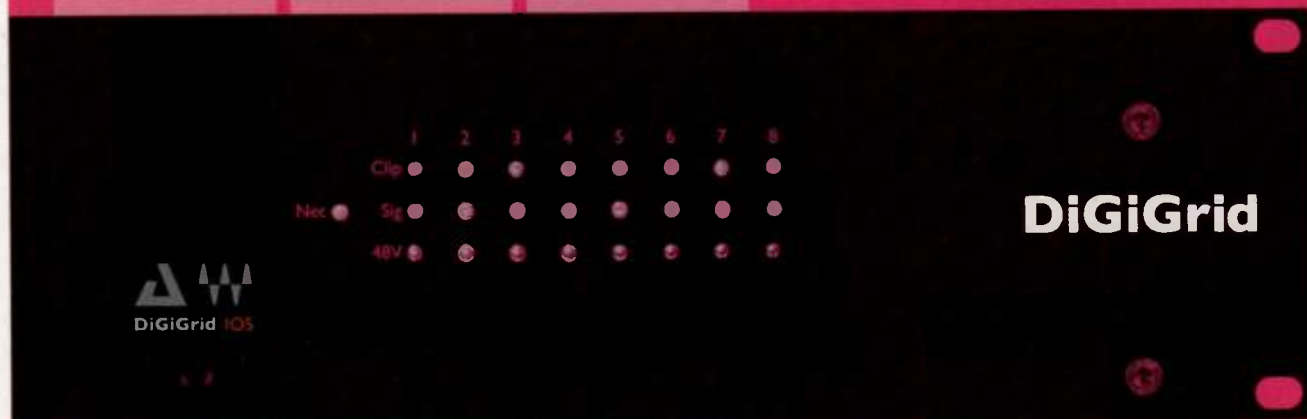


**REAL-TIME
PLUGIN**



**AoIP
NETWORK
CONNECTED**

DiGiGrid



www.digigrid.net/ios

IN THE STUDIO

BY BARBARA SCHULTZ

>> The Feelies and Daniel Francia

If you're looking for the musical bridge between the darkly beautiful strumming of the Velvet Underground and the majestic jangle of early R.E.M., you'll find The Feelies. Fronted by artist/songwriter Glenn Mercer, this New Jersey-born group has been on the edge of what we now call alt-rock since the mid-1970s; they released their first album, *Crazy Rhythms*, on the groundbreaking Stiff Records label in 1980, and scored their first bonafide Modern Rock hit in 1988 when the lovely, punk-ish, off-kilter song "Away" off of their album *Only Life* reached Number 6.

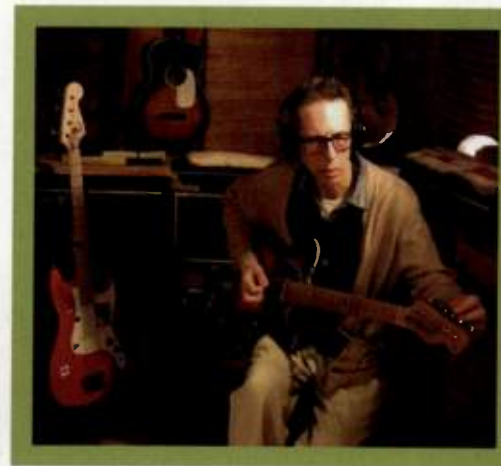
The Feelies, L-R: Brenda Sauter, Bill Million, Stan Demeski, Glenn Mercer, Dave Weckerman



The Feelies' lineup has changed over the years, yet the members always somehow stick around. All of the past and current members continued to perform in various configurations and under various band names throughout the '80s: The Trypes, The Willies,

Young Wu, and Speed the Plough all had at least one of The Feelies in them.

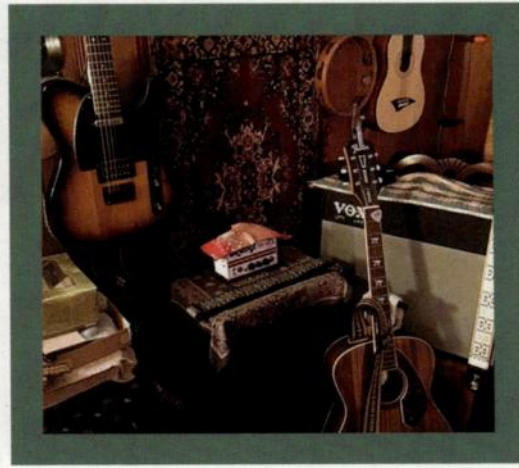
After releasing *Time for a Witness* in 1991, The Feelies called it quits. The bandmembers then carried on with their many splinter projects, and Mer-



cer's songs were placed in a number of films and TV shows. However, The Feelies lineup of Mercer (guitar, vocals), Bill Million (guitar), Dave Weckerman (percussion), Brenda Sauter (bass), and Stan Demeski (drums), returned 20 years later to make the aptly named *Here Before*. And this year, they release *In Between*, a somewhat grim but seriously gorgeous record that carries the torch for strong influences like the Velvets, and fulfills the bandmembers' long-held dream of making a true "basement" record.

"We started doing home recordings not too long after *Crazy Rhythms*," recalls Mercer, speaking by phone from the personal studio in his home, where much of the *In Between* tracking was done. "We always had a hand in the production of our records. Early on it was 4-track tape, and we would do demos, and I did two solo records here, but this is the first Feelies record that was done here."

Sessions for *In Between* began with "demos," with most parts being tracked and assembled in Mercer's 22x20-foot, wood-paneled basement studio and others, such as Bill Million's guitar ideas, created in other bandmembers' spaces. Then the band got together at Mercer's place to cut live basics, inviting Dan Francia—their friend and Sauter's replacement in Speed



PHOTOS COURTESY OF JERRY FLACH

the Plough—to assist with the engineering.

Francia carted his Pro Tools rig, as well as a few other pieces of his gear, and a few that were not his, over to Mercer's house. "I borrowed a 4-channel Universal Audio mic pre from a friend. That's definitely where the kick and snare came from in the basics," Francia says. "I used my neighbor's Summit Audio tube mic pre for bass, and everybody loved that."

Francia says that the basic tracking sessions were mainly designed to capture the drum parts, but some other parts ended up being keepers. And some parts of the demos ended up being keepers as well, with basic tracks or later overdubs being edited together with the demos. "On this new record, Bill had a particular guitar sound in mind, based on the way he did the demos," Mercer explains. "On [demos for] about half of the songs, he sent the guitar track to me and I would overdub everything else on top of that. We liked the sound of the demo and we wanted to capture that sound and vibe of the way Bill recorded his guitar at home."

Million played the same 1980s Gibson 335 that he plays live, through a Musicman amp. "And he has a Gibson cabinet from the '50s with a JBL replacement speaker in it," Mercer says. "We tried to re-create his

sound here, and we set up three signals for him: direct from the guitar and amp, and a mic on the amp. We ended up not being able to use the mic because even though Bill was in another room, the studio isn't soundproofed, and we had a lot of leakage from the drums. So, in those instances when there were songs that really required that particular guitar sound that he'd gotten direct by himself, we would revert to the demo and overdub drums and various things onto the demo.

"We'd keep a lot of the percussion I did on the demo, but Brenda and Stan, in a lot of cases, would replace the bass and drums. That was one way [songs came together]; and another way was totally live and we kept everything except vocals."

The demos that were cut in Mercer's studio were captured to the artist's Tascam DP01 8-track machine, mainly through his MXL 909 microphone, which was also used to capture all of Mercer's vocals, whether they were cut in his studio or Francia's.

"Overdubs and mixes were at my studio," says Francia, whose home studio is equipped with his Pro Tools 10 system and RME Fireface interface, a Soundcraft Ghost analog console, and JBL LSR305 monitors. "Glenn likes to do vocals by himself, so he

cut a lot of his own vocals, but when I was listening back to them in the rough mixes, they had so much hiss, so one day we had him come over and he did all the replacement vocals for four songs, doubled them. It was an incredible day of tracking."

Another incredible tracking memory: "On the last song ['In Between (Reprise)'], they had a weird 'loop' in the demo," Francia says. "And they weren't sure if they wanted to do an acoustic or electric version. So they said, 'Let's play both and see what happens...'"

"It wasn't actually a loop" Mercer says. "I made a 4-track cassette tape of a guitar, sustained with an EBow device, through a tremolo pedal, combined with two other guitar parts playing octaves and a Casio keyboard all playing the same thing—in real time for 9 minutes. It would have been faster and easier to make a loop, but I didn't have a looping device at the time."

"Well, they played to that," Francia continues, "And it was a live take, no click—just playing to this 'loop' that Glenn made. They did it in one take, and it's this incredible jam—almost ten minutes long. Nobody was expecting to play for ten minutes. We thought we were just getting sounds, but we ended up keeping the whole thing." ■





TY SEGALL *TY SEGALL*

DRAG CITY

An album filled with restless electricity and inspired songwriting, Ty Segall's ninth record, *Ty Segall*, resembles a magnificent debut, not a mid-career expression. A master of any minor rock genre he cares to engage, Segall and company blast hard 'n' heavy garage rock in opener "Break a Guitar," go knees-broken Nashville skyline in "Talkin,'" mash Leslie West's Mountain with solo John Lennon in "The Only One," get all poppy flower-power sincere in the single "Orange Color Queen," and cover themselves in fur on "Papers." Is Segall the new Nilsson or the old Rundgren?

KEN MICALLEF



SON VOLT *NOTES OF BLUE*

THIRTY TIGERS

Before "Americana" was coined, Son Volt re-invigorated classic country with punk attitude. Frontman Jay Farrar's songs are warm and spacious, with loads of room for detailed, delicate playing or fierce guitar crunch. And his arresting voice—full of longing and, still, that punk attitude—evokes the elongated mid-range of John Doe, with a pinch of George Jones' propensity to bend one vowel into 2 or 3 syllables. With his lovely *Notes of Blue*, Farrar still carries the torch for timeless, unvarnished American music.

BARBARA SCHULTZ



BONOBO *MIGRATION*

NINJA TUNE

The astronomical success of 2013's *The North Borders* brings too much anticipation to Bonobo's new album, *Migration*. He returns with the unexpected. *Migration* is primarily vocal-free, with much of it awash in quiet atmospheric textures. There is the occasional organic injection, such as the Middle Eastern elements cushioned in the soundscapes of "Ontario," or breakbeats, such as on the hyper "Outlier." And when Nick Murphy, fka Chet Faker, dusts his magic over the pretty "No Reason," it is enchanting.

LILY MOAYERI



JAPANDROIDS *NEAR TO THE WILD HEART OF LIFE*

ANTI

Canadian rawk duo Japandroid returns from a four-year hiatus with a third album that fades in equal parts raw-throated travelogue and vulnerable inner monologue. Drawing on hard-bitten scenes and The Boss, it's eight anthems as cradling, willful, careening, and longing-filled as a tour van, determined to hit hard and not overstay their welcome. The mix by Peter Katis introduces low-end energy and processed haze without sacrificing the guitar's ragged glory and the aggression or brightness of drums and vocal melodies.

TONY WARE



THE ROLLING STONES *BLUE AND LONESOME*

INTERSCOPE

The 2016 Rolling Stones don't sound exactly like they did in 1964. Fifty-plus years of stardom and evolving production values can't not leave a mark. But close enough! If you just close your eyes, and connect to these Chicago-style electric blues covers in the way that the Stones always have, there's zero love lost. Under the ever authentic production guidance of Don Was, *Blue & Lonesome* renews our deep affection for Muddy and the Wolf, as well as for Mick and Keith.

BARBARA SCHULTZ

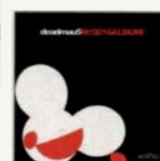


METALLICA *HARDWIRED ... TO SELF-DESTRUCT*

BLACKENED RECORDINGS

With millions sold and Metallica burgers ceaselessly coming off the conveyor belt, it's safe to say the band's formula/fate is set. *Hardwired ... to Self-Destruct* is as fun as a night out smashing windows and picking shards from flesh. Pump your fist to Lars' militaristic punch and Hetfield's scowl, and groove! The pulse is supremely paced in "Now That We're Dead"; approximates jackhammer solidity in "Moth into Flame"; plays guillotine soundtrack in "Halo on Fire"; and finds finger-plucked sincerity in "ManUNkind."

KEN MICALLEF




DEADMAU5 *W:/2016ALBUM/MAU5TRAP*

If the title of big-room electronic producer Joel Zimmerman's eighth album sounds like a sketch repository, that's because in a way it is. Various iterations of these 11 songs got drafted, processed, and streamed online well before final masters. Refined, however, the driving, melodic elements exhibit ranging genres and spectral retro-fantasy atmosphere/contemporary eSports pulse. Even more formulaic electro, prog- and tech-house arrangements breathe with mercurial texture, while highlights delve into bleached- and blissed-out stuttering machine soul.

TONY WARE

ACCIDENTS Happen.

Theft • Fire • Water Damage



Annual insurance
policies starting
at \$140.00.*


CLARION[®]
ASSOCIATES, INC.
MUSICAL INSTRUMENT INSURANCE

* Subject to the terms and conditions of the policy.
Not all applicants will qualify. CA License #0605696

We can Help!

<http://clarionins.com/Electronic.aspx>

800-848-2534

SONOMA
WIRE WORKS

DrumCore 4 Ultra

A VENERABLE
VIRTUAL-
DRUMMER GETS
A NEW LOOK
AND FEATURE
BOOST

BY MIKE LEVINE

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

STRENGTHS
64-bit compatible. Mixer for MIDI kits. Track and global effects. Sample editing. Export from Timeline. Loops automatically render.

LIMITATIONS
No reverb. Multiple outputs not implemented. Non-scalable GUI. No reverb. No standalone version or Gabrielizer. Loops can't be edited for length in the Timeline.

\$49 to \$639
sonomawireworks.com

Choose an audio or MIDI loop

Pick a MIDI kit

Select a drummer, style, or instrument



Fig. 1. DrumCore 4 includes a revamped user interface and a host of powerful new features.

DrumCore 4 is the long-awaited update of a popular audio/MIDI virtual drummer, as well as the first version developed exclusively by Sonoma Wire Works, which bought DrumCore from Submersible Music in 2009, just before the release of DrumCore 3.

DrumCore's essential concept—to provide a large collection of drum loops played by well-known drummers—remains unchanged in Version 4. However, the look and features of the program have been improved, with one exception: Although DrumCore was previously available in both standalone and plug-in versions, DrumCore 4 is plug-in only, supporting VST3, AU, and AAX.

LOOK AT ME

DrumCore 4 is available in three levels—Lite (\$49), Prime (\$249), and Ultra (\$639)—with discounted upgrades available to owners of earlier versions. While the GUI and feature set is the same for all three levels, the price is differentiated by the amount of drum loops and MIDI kits that are included. (See sidebar on page 47 for a comparison of the content in each.)

For this review, I used DrumCore 4 Ultra in a number of different DAWs—Avid Pro Tools 12.4, Apple Logic Pro X 10.2.4, PreSonus Studio One 3.3.1, MOTU Digital Performer 9.12, and Ableton Live 9.7. Installation and authorization were relatively easy.

DrumCore 4 is fairly intuitive to use, and the manual is informative when you need it. However, it can be tedious to navigate due to its lack of hyperlinks and page numbers in the table of contents.

BYE BYE, ORANGE

DrumCore 4's GUI has been completely revamped. Gone is the bright orange background

of earlier versions, replaced by a more modern color scheme. Also departed is the Gabrielizer function, which allowed you to create random variations of loops. Although I only used it once in a while, it was nice to

know it was there if I ran out of fills.

DrumCore 4 opens to a Browser window and can be switched between four other windows—Kit, DrumCore Store, Master FX, and Settings—using tabs located at the bottom of the screen (see Fig. 1). The GUI is not scalable, and I found it took up most of the screen when used with a 13" MacBook Pro. In Digital Performer, the GUI was too big to use on the laptop screen, and the page tabs at the bottom were hidden. According to Sonoma Wire Works president Doug Wright, a scalable GUI is one of the priorities for DrumCore 4.1.

CONTENT IS KING

As with previous versions, DrumCore 4 provides you with a library of audio-and-MIDI drum and percussion loops in a wide range of styles, played by renowned drummers such as Alan White, Bill Bruford, Matt Cameron, Matt Sorum, Terry Bozzio, and Zoro. Content for each drummer is arranged in Groove Sets, each based around a specific beat or feel.

In addition to the loops, DrumCore 4 comes with a large selection of MIDI drum kits, which correspond to the drummers. (The number of kits varies depending on the version.) It offers multiple kits for most of the drummers, each one matching up with a particular Groove Set. The idea is for the drum sounds in the audio and MIDI loops to sound similar enough that they can be used interchange-

BandH.com

Visit our website for the most current pricing

The
Professional's
Source



Genelec 8030LSE Triple Play - 2.1 Active Monitoring
GE8030ATPQ | \$2,465.00



Moog Minimoog Model D Classic Analog Synthesizer
MOMMMD | \$3,499.00



T-Rex Replicator Tape Echo Pedal
TRREPLICATOR | \$899.00



Zoom ARQ Aero Rhythm Trak
ZQZAR96 | \$599.99



Senal SMH-1200 - Enhanced Studio Headphones
SESMH1200LER | \$149.99



Audient iD22 High Performance AD/DA System
AUID22 | \$599.00



Roland DJ-808 4-Channel DJ Controller for Serato DJ
RODJ808 | \$1,499.00



ESP LTD Metallica "Master Of Puppets" Electric Guitar
ESLMETALLICA | \$999.00



Neumann U 47 fet Collector's Edition Microphone
NEU47FET | \$3,999.95

TIPS & TECHNIQUES

From the Pros

1 Be Smart with Your Time: Listen in Solo as Little as Possible

Try not to spend too much time working with soloed instruments. You should be listening to instruments within the context of the entire mix or while listening to two or more instruments that are competing for the same frequency range. For instance, trying to EQ and compress a kick drum without the context of the bass or the rest of the track will often leave you disappointed and frustrated.

2 Use Harmonic Distortion on Low End for Laptops and Earbuds

More often than not, people listen to music on their laptops, phone, or through terrible earbuds without proper bass representation. Low-end frequencies don't tend to cut through these platforms, so you must mix accordingly for translation. Take your low-end track—bass, BOB, etc.—send it to an auxiliary channel, notch out everything but the bass with EQ, and add harmonic distortion to emphasize the sound's overtones; when you edge this aux track back into the mix, it'll translate better to laptops and such.

3 Know When to Automate

Volume automation is your friend—it can lend power to a chorus and bring out an otherwise inaudible word or phrase. But don't reach for automation too quickly, because mixing is a balancing act as your mix changes, you'll have to keep going back to tweak your automation, which can become a hassle. Automation can also take up CPU power and slow down your DAW. If you save it for the end, it'll speed up your workflow.

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
© 2016 B & H Photo & Electronics Corp.

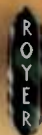
**Winner 2017
EM Editors' Choice
Legacy Award**



R-121

**The #1 ribbon mic for
capturing guitars,
percussion, drums,
brass, strings...**

Thank you EM!



Hears Like Your Ears
Royer Ribbons
royerlabs.com



Fig. 2. The Mixer window with effects revealed and the Timeline at the top

ably when constructing a part. Especially for some of the more recently added content, the match is, indeed, very close. This gives you a greater number of options for customization, considering that MIDI loops are more easily edited.

Virtually all of the included content comes from previous revs of DrumCore and KitCore (the discontinued MIDI-only version), although there is quite a bit of new third-party content available for purchase. A notable exception is the killer collection of New Orleans-style loops from Terrance Higgins, which is included in DrumCore 4 Ultra.

JUST BROWSING

When you open the Browser window, you'll see pictures of the drummers. Clicking on one brings up a list of the corresponding loops that are available. Depending on the version of DrumCore 4 that you own, some content is included, and some is available for purchase and download from the cloud. Fortunately, a button called Show Owned lets you limit the display to what's actually in the version you have.

I was happy to have this feature, because even though I was testing DrumCore 4 Ultra, I still encountered quite a bit of content that I would have had to purchase in order to use. Although more than 50 GB of material comes with Ultra, I can imagine that users who've plunked down the \$639 for it are going to expect a pretty comprehensive collection, and are probably not going to

be keen on buying additional content right away.

Once you've clicked on a drummer, you see a list of related materials on the left and the loops from the selected Groove Set on the right. You can also choose from a list of genres. Switching between views of the audio and MIDI loops is a snap.

Any of the loops can be dragged and dropped directly from the Browser window into your DAW sequence. As with previous versions, the plug-in automatically time stretches the audio loops to match your song's tempo, which is a very handy feature.

DrumCore 4's MIDI loops can be played on any of the included kits. However, if you want a MIDI loop to match as closely as possible to the audio loops from the same Groove Set, use its designated kit.

LISTEN UP

Auditioning is easy: Click on a loop and it plays. Multiple loops can be auditioned in a linear fashion by dragging them up to the newly added Timeline, which runs across the top of the plug-in in all the windows (see Fig. 2).

The Timeline has some pretty cool features. Not only can you assemble groups of loops in it and freely rearrange them, but you can add MIDI and audio loops and hear both when the timeline is playing.

An entire song-length drum part can be created in the Timeline, if you want, although you can't edit the length of loops within DrumCore 4. Various playback modes let you set the Timeline

to loop continually or play through once and stop.

The Export feature allows the entire Timeline—including audio and MIDI loops—to be rendered into a single, stereo audio file. Whenever you drag a loop into the Timeline, it automatically gets rendered into your Rendered folder (at a location of your choosing), making it easy to create a folder full of loops at a specific tempo.

Another notable addition is the Mixer, which works only with the MIDI loops. It features seven channels, corresponding to seven Sub-Mixes—Kick, Snare, Hi-Hats, Toms, Cymbals, Crash, and

Percussion. You can reassign any of the 44 drum and percussion elements in each MIDI kit to any of the Sub-Mixes.

Each mixer channel has a volume control, pan pot, Mute, Solo, FX, and Output 1-2 buttons. Multiple outputs are not yet supported, but according to Wright, they're on the radar for version 4.1.

Effects available on the mixer include Compressor, EQ, Delay and Crush (a bit-crusher). Any or all can be independently applied to each Sub-Mix channel.

The effects are useful for sound shaping, but are relatively basic from a control standpoint. And I'm

puzzled as to why Sonoma Wire Works chose a delay effect rather than reverb, considering the latter is more commonly used on drums. Then again, there were no effects at all in previous versions, so this is definitely a step forward. Global Master FX, which includes a multiband compressor, EQ and delay, are also available. The Kit page can be switched from the Mixer view to the Editor view, where you can edit the amplitude envelope, pitch, gain, panning, mapping, velocity crossover points between multisamples, and more, for each kit element.

A COMPARISON OF DRUMCORE 4 VERSIONS

	Lite	Prime (Flash & Link)	Ultra
Drummers	13	17	18
Library Size	4 GB	20 GB	50 GB
Groove Sets	24	160	265
Audio Loops	1,400	10,000	22,000
MIDI Loops	800	2,000	3,000
MIDI Kits	11	104	139
Available via	Download	Download or Flash Drive	Hard Drive
Price	\$49	\$249	\$639

CORE VALUES

DrumCore 4 is a major improvement over earlier versions in terms of user control, especially regarding its MIDI features, and it also brings the software into the 64-bit era. It still has a few rough edges, but none are deal-breakers. From what the developer says, major issues such as lack of multi-output support and the non-scalable GUI will soon be addressed. I hope that future releases will also include additional new content, especially for owners of the Prime and Ultra versions.

That being said, DrumCore 4 (particularly the Prime version, which offers a good balance in terms of price and content) is one of the best virtual-drummer products on the market and I highly recommend it. ■

Are you equipped for recording?

At Full Compass, being **Equipped** means getting the very best gear at the very best prices. Let us help you get equipped – visit our website at fullcompass.com/recording or call **866-934-8405**.

EQUIPPING
YOU FOR **40** YEARS



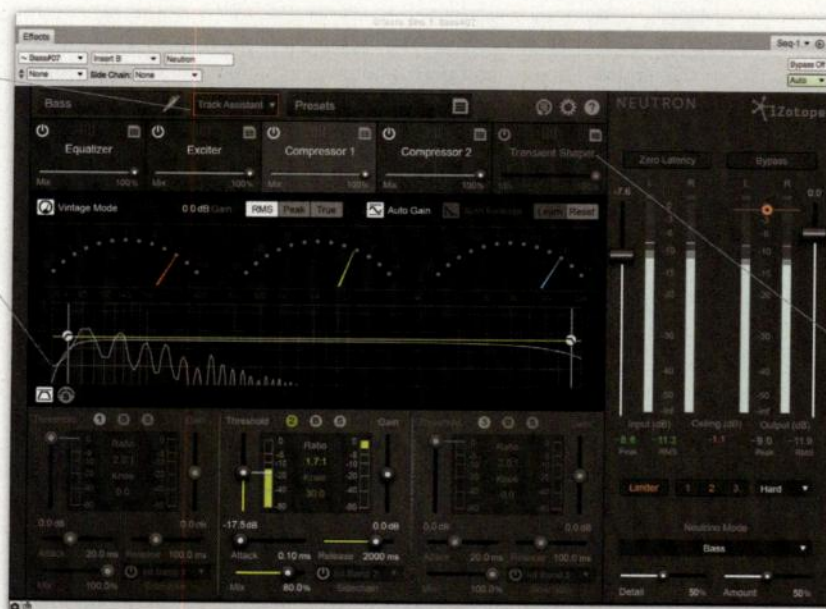
PRO AUDIO VIDEO LIGHTING
MUSICAL INSTRUMENTS



Track Assistant for analysis

Real-time analyzer

Fig. 1. The Neutron GUI lets you choose and re-order processors. Here the compressor is set to Vintage mode with RMS metering selected.



Transient Shaper module

IZOTOPE

Neutron

A POWERFUL PROCESSING PLUG-IN THAT FEATURES ARTIFICIAL INTELLIGENCE

BY MIKE LEVINE

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

STRENGTHS

Powerful suite of processors. Track Assistant. Masking features let you see where tracks are competing sonically. Powerful EQ. Multiband compressors. Exciter offers multiple distortion types. Transient shaper. Parallel processing for each processor. Flexible sidechain.

LIMITATIONS

Limiter can cause latency. Spectral Shaping can be extremely subtle.

\$249/\$349
izotope.com

Artificial intelligence is being put into all sorts of products these days, so it's not surprising that it's made its way into music software. Neutron, for example, is a multi-processor mixing plug-in that uses AI to analyze the audio on your tracks, and then makes suggestions for initial settings on the various modules (see Figure 1). It includes a groundbreaking feature called the Masking Meter, which helps you see areas in which tracks are competing with each other frequency-wise. Neutron also incorporates the Spectral Shaping technology that was introduced in iZotope's free Neutrino plug-in.

Neutron is available in standard (\$249) and Advanced (\$349) versions. In addition to surround-sound support (up to 7.1), the Advanced version lets you open the various components in Neutron as separate plug-ins. Other than that, both versions have the same components. Installation is easy, and the authorization process is quick and painless.

DEEP AND POWERFUL

Neutron's modular structure is similar to iZotope's Ozone mastering suite. The five main processing components, shown near the top of the GUI, are feature-laden and powerful. They include an equalizer, two compressors, an exciter, and a transient shaper. You can turn each one on or off, and slide them around to change the signal order. Each processor has a mix slider that lets you dial in as little or as much of it as you want. In other words, you get individual parallel processing for each component.

The Equalizer can have up to eight bands, plus two filters on each end of the spectrum. You can make any of the bands dynamic. That means that the equalization only kicks in when the signal exceeds a user-adjustable threshold. The sidechain implementation on the Equalizer is impressive, allowing you to use not only external signals for the sidechain, but the signals from other bands in the EQ.

The compressor modules have identical features, but so much variety is built in that you can set them to sound and react quite differently. In Digital mode, they offer transparent compression, whereas Vintage mode adds coloration to the sound. Neutron is the first iZotope product to have this particular Vintage compressor algorithm.

The compressors have three adjustable bands, and offer plenty of other useful features such as sidechaining for each band; RMS, Peak, and True detection (the last is similar to RMS but with fewer artifacts); Auto Gain; Auto Release; and much more.

The three-band Exciter can be used to add presence to a specific frequency range as well as utilize one or more of its four modeled distortion types—Tube, Tape, Retro, and Warm.

The Transient Shaper is also a multiband processor. It allows you to change the attack and sustain characteristics of an instrument. For example, you can use it to make a snare drum

4 PEDALS, 36 SOUNDS, 100s OF HITS.



From the game changing B9 and C9 Organ Machines to the KEY9 Electric Piano Machine and MEL9 Tape Replay Machine, EHX gives you the sounds of enough legendary keyboards to fill a stage and then some!

Each polyphonic pedal provides a unique collection of classic sounds in a simple plug-in-and-play package. No modifications, special pickups or MIDI implementation is required, and tracking is impeccable.

Whether you want to cook up some hot Green Onions, lay down a cool Riders on the Storm style groove, take a trip to Strawberry Fields or spend some time at the House of the Rising Sun, EHX has the keys!

MUSICIAN
EDITOR'S CHOICE 2017

Please visit us at NAMM booth #5396

electro-harmonix
WWW.EHX.COM

sound more ringy or tight.

The metering for each of these processors is excellent, and they include real-time analyzers. As a nice touch, the sliders return to their default positions when you option/alt-click them.

HELLO, TRACK ASSISTANT

Each instance of Neutron has a button on it called Track Assistant, which analyzes your audio and suggests settings for it. The folks at iZotope stress that these are only starting points: Essentially, the Track Assistant creates customized presets based on your program material.

Using Track Assistant is a breeze. Hit Play on

your DAW, press the Track Assistant button, and a screen will appear telling you that the software is working on your audio. In 10 seconds or less, you'll have a comprehensive setting for your track, featuring as many active processors as the system deems necessary. It seems always to include an EQ and at least one compressor. The second compressor and the Exciter and Transient Shaper are activated less frequently.

The algorithm is smart enough to detect whether it's hearing an instrument, drum, or voice, and then assign it to one of the four Neutrino modes (Vocals/Dialogue, Guitar/Instrument, Bass, and Drums/Percussive) in the

Spectral Shaper at the output. It uses the same algorithms that are in the free Neutrino plug-in. (More on the Spectral Shaper shortly.) Where it cannot characterize the audio, it assigns it to a category called Clean.

In my testing, the settings the Track Assistant comes up with were usually solid starting points, but I almost always wanted to do some tweaking. One of the best aspects of Track Assistant is that it comes up with useful settings for the multiband processors, which are more tricky and time consuming to set.

There are preferences for the Track Assistant that allow you to choose whether it should aim for "Broad Band Clarity," "Warm and Open," or "Upfront Midrange." You can also choose among three modes—Subtle, Medium, and Aggressive—that control how light or heavy a touch it has.

Even if you don't want to go the full Track Assistant route, each processor has a Learn button, which in the case of the Equalizer will assign EQ nodes at relevant frequencies (no boosts or cuts, though) and set the frequency boundaries for the multiband processors.

TAKING OFF THE MASK

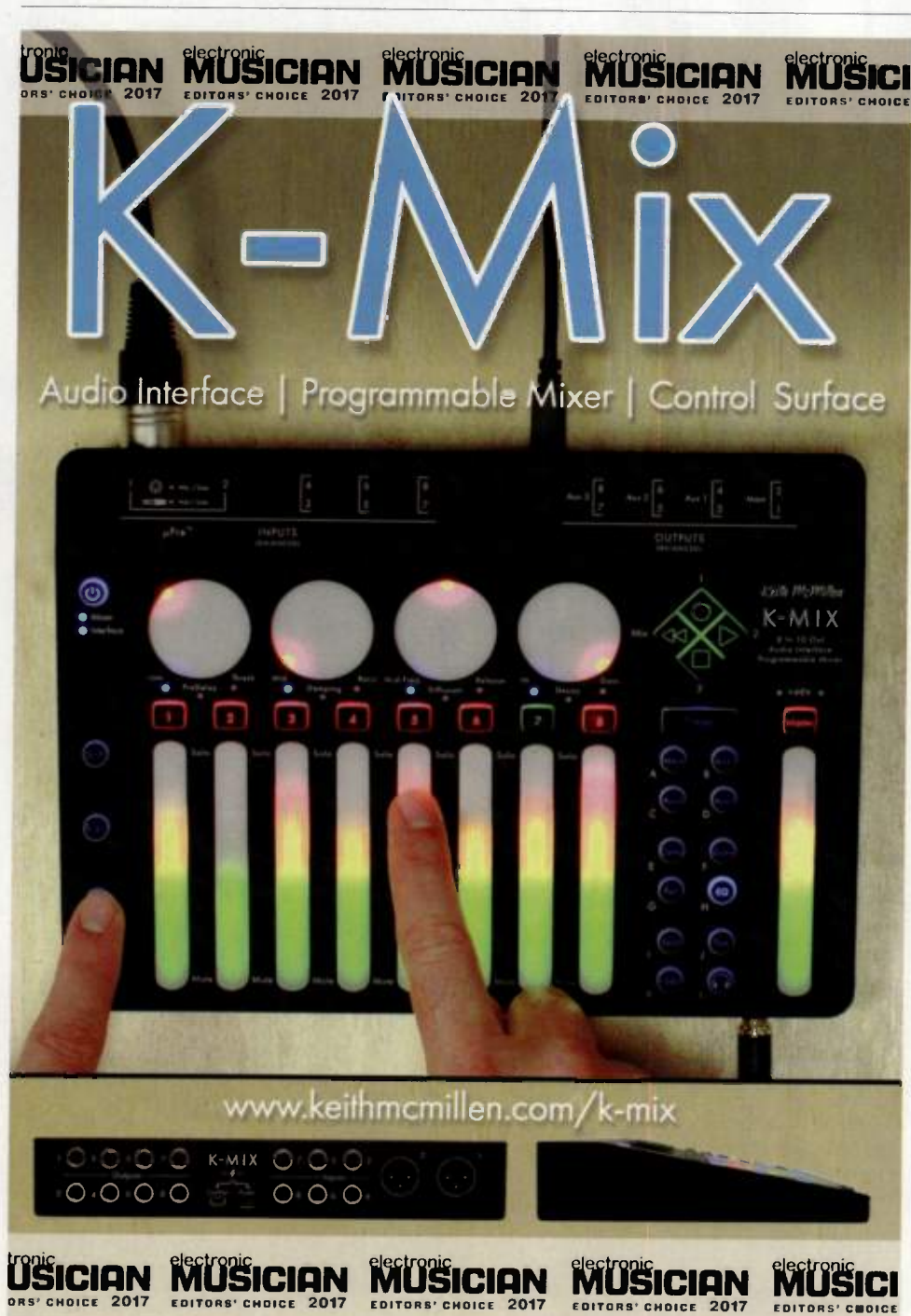
Neutron's unique Masking Meter is designed to help you carve out space for a track when its being masked by another track in the same frequency range and isn't cutting through the mix enough (see Figure 2). To use it, open Neutron on at least two tracks, then open the plug-in window for one of the tracks and press the Masking button in the Equalizer. Then, select another track to link with from the drop down menu. An EQ display for the linked track appears underneath.

Next, hit Play and Neutron will indicate—via flashing white lines on the EQ's frequency display and a real-time bar graph above it—the frequency ranges where the two tracks are masking each other. This provides you with a good idea of where to add cuts or boosts to create more space for the track. As far as I know, no other equalizer does this. One very cool option is called Inverse Link. When activated, boosting on one of the linked tracks causes an equal cut at the same frequency in the linked track and vice versa.

The Masking Meter and its related features give you a perspective on your mix you wouldn't get otherwise. It's not a panacea, however: You still need to use your ears to find what works.

SHAPE OF THINGS

The four different Neutrino modes in the Spectral Shaper module have what the manual describes as "dozens of psychoacoustically spaced frequency bands, each with an adaptive thresh-



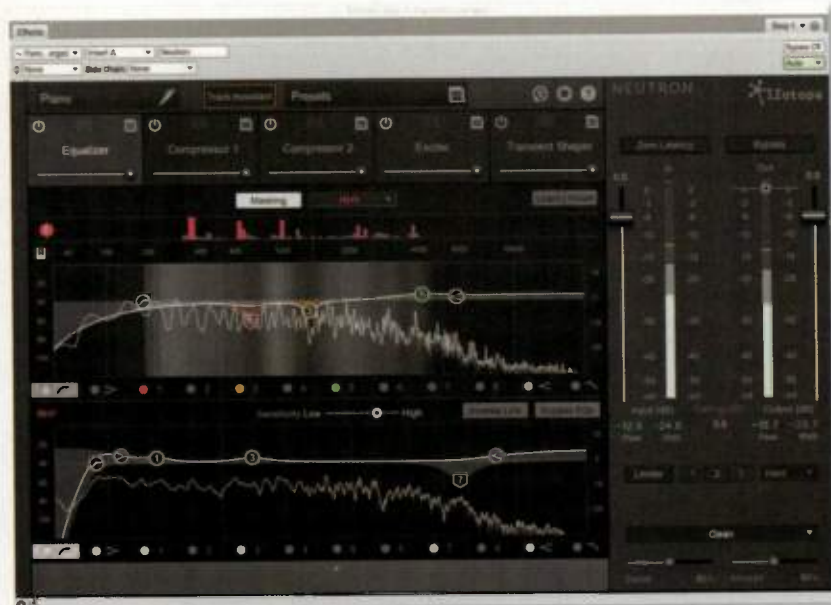


Fig. 2. The Masking Meter in action. The top EQ is the initial track and the one below it is linked.

old based on the audio signal's RMS." When the signal of the track goes above the threshold, it gets attenuated in that range. It behaves partly like a multiband compressor and partly like a dynamic EQ; control it with the Detail and Amount sliders.

However, the Spectral Shaper's impact on your audio is often quite subtle. On some tracks,

I cranked the controls and didn't hear much of a change, but on others, it added a pleasing smoothness.

Neutron also includes master input and output sliders. You can switch in a limiter on the output, using one of three limiter algorithms—IRC LL, IRC 2, and Hard. The latter is a brickwall limiter that I found useful for keeping tracks from going

over 0 dBFS. The other two modes can cause latency: Hit the Zero Latency button to return to the latency-free Hard mode.

Because you get the best results using Neutron on multiple tracks, CPU efficiency is an important aspect. I tested Neutron on a 2.6 GHz MacBook Pro with 16 GB of RAM. Running in MOTU Digital Performer with 10 instances of Neutron open and a buffer setting of 2,048, my CPU load was below 30%.

THE NEUTRON ZONE

Although it is powerful and sounds excellent, it's not the processors in Neutron that make it unique. It's the inclusion of the Masking Meter and, especially, the Track Assistant. The latter has engendered a bit of controversy, as some people feel it lets the computer make processing decisions best left to the engineer. I, too, felt a little trepidation at first, but after using Neutron for a while I came to realize that its features are only intended to give you a customized starting point for processing a track. In that sense, I could really see the value of what Neutron can do, especially when you compare it to a conventional plug-in that offers only generic presets.

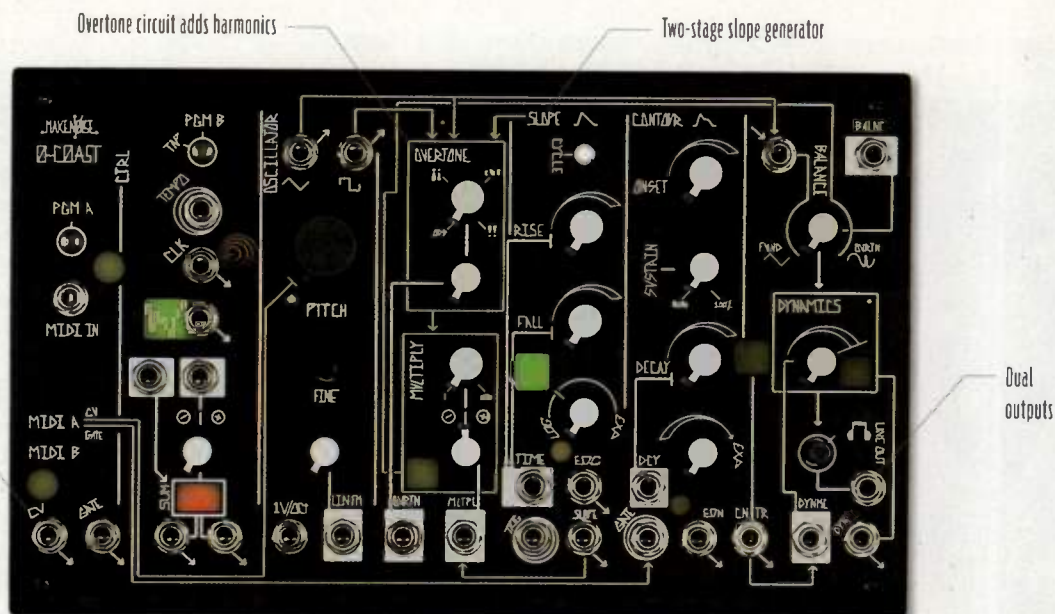
It's probably not a good tool if you're just learning to mix, but if you already know the basics, Neutron gets you where you want to go a lot faster. ■

ULTRA ANALOG VA-2 ANALOG SYNTHESIZER



Fig. 1. Timbral explorers have some new territory to investigate. The O-Coast packs a surprisingly versatile analog synth into a box you'll want to hold in both hands.

Use as MIDI-to-CV converter



ARTURIA®

YOUR EXPERIENCE • YOUR SOUND



ENTER

MatrixBrute is the most powerful analog monophonic synthesizer ever ! As flexible as a modular system but offering presets, 3 Brute oscillators, a Steiner-Parker and a ladder filter, 5 analog effects, and the incredible modulation matrix, it is a dream machine come true!

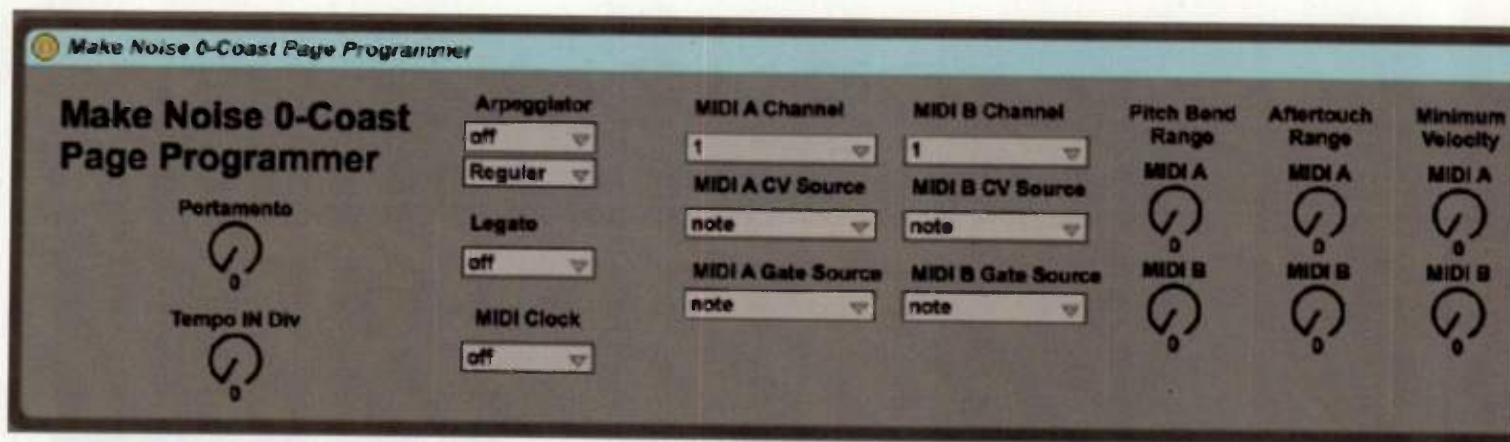


Fig. 2. Editing the 0-Coast is simplified when using the Max 4 Live device in Ableton Live.

puts that can be summed. One input has an attenuator for flipping its polarity. The outputs can serve as a multiple for sending one signal to two destinations, when needed.

An internal clock controls rates for the arpeggiator, LFOs, and a stepped random-voltage generator, with tempo indicated by a flashing activity window and gate signals sent to the Clock output. You set the tempo by pressing the Tap button, enabling MIDI Clock, or connecting a pulsating source to the Tempo input. The Tempo, Clock, and Random Voltage jacks have no normalised connections and must be connected using patch cords.

HARMONIC MODULATION

The 0-Coast's voltage-controlled oscillator (VCO) generates just two waveforms—triangle and square. According to Make Noise, triangle waves are often used as a starting point for West Coast sounds because they have such weak harmonics, and square waves are often used as a starting point for East Coast sounds because they're rich in odd-numbered harmonics.

Internal connections route the square wave to the Overtone circuit and the triangle to both the Overtone circuit and Balance circuit, which passes it through the Dynamics circuit to the output. Overtone adds harmonics to the oscillator waveform, contributing

complexity to the VCO's output. Think of it as the opposite of subtractive synthesis, where filters remove overtones from harmonically rich waveforms.

The Overtone circuit works in tandem with the Balance circuit. With the Balance knob fully counterclockwise, only the fundamental can pass, whereas at the other extreme you'll hear only overtones. With Balance set fully clockwise (overtone position), you'll hear a single lower harmonic give way to higher harmonics as you turn the Overtone knob clockwise from its minimum setting. When the Overtone control is fully counterclockwise, only odd-numbered harmonics pass, with even-numbered harmonics gradually

The recording world is changing...



PH34/44 SUT step up transformer

- Passive step up transformer boosts signal without noise
- Jensen™ transformer inside for unmatched performance
- Hand wired for optimal signal flow and low noise
- Ruler flat frequency response from 10Hz to 100kHz
- Two models: PH34 for 5 and PH44 for 45 Ohm cartridges



Al Schmitt

Capital Records - Grammy winning Engineer

Frank Sinatra, Barbra Streisand, Steely Dan, Yo-Yo Ma

"I've been using Hafler for over 25 years and I have never been disappointed. Their performance is outstanding, they are very dependable and their dynamics are just what I look for."



PH50 phono stage for moving magnet

- Ultra low noise transformerless design
- Variable high-pass filter to eliminate rumble
- -82dB noise floor with 91dB dynamic range
- Less than 0.002% total harmonic distortion
- Balanced and unbalanced models available



Eric Boulanger

'The Bakery' - Mastering Engineer

Imagine Dragons, Neil Young, Colbie Caillat, One Republic

"I installed the Hafler PH50 to the pickup of my Neumann VMS70 cutting lathe. This phono preamp is such an accurate window on the world for me and it can drive a long line with low noise



PH60 phono stage for moving coil

- Ultra low noise Class-A transformerless design
- Switchable high-pass filter to eliminate rumble
- Internal jumpers to match cartridge impedance
- External power supply eliminates a source of hum
- Balanced and unbalanced models available



Emily Lazar

Chief Mastering Engineer - The Lodge

Coldplay, Foo Fighters, David Bowie, Beck, The Killers

"The PH60 translated so incredibly well in conjunction with not just one, but all of our turntables that have moving coil cartridges!"

replacing them as you turn the knob clockwise. A CV input with an attenuator knob controls how much an external source affects the Overtone circuit, allowing you to modulate the spectrum using voltage control. You can also control the Balance setting with a CV.

Audio signals are routed from Overtone to the Multiply circuit, where additional overtones are generated to produce even greater harmonic complexity. Slowly turning up the Multiply knob sounds much like opening a lowpass filter as harmonics appear one by one. Though the results are roughly similar, it's this technique of adding rather than subtracting harmonics that largely distinguishes West and East Coast synthesis.

GO WITH THE FLOW

The 0-Coast's slope generator is essentially an envelope generator with two stages. The Rise knob (attack) determines how long a voltage takes to reach its maximum, and the Fall knob (decay) determines how long it takes to return to minimum. Because slope lets you control rise and fall independently, it can generate asymmetrical waveshapes as well as the usual triangle, pulse, and sawtooth. The continuously variable response knob ranges from logarithmic to linear to exponential.

The slope generator is most useful for modulating the Overtone and Multiply circuits, and that's how it is hardwired. As a single-shot modulator, it can trigger spectral changes every time you play a note. Engaging

the Cycle button loops the slope generator, with the length of the rise and fall times controlling the speed of the loop. The slope generator can serve as an LFO at slower rates and as an audio oscillator at faster rates. It makes an ideal modulator for FM synthesis when operating at audio frequencies. Because you can change the spectrum dynamically with the slightest twist of either the Overtone or Multiply knob, the 0-Coast delivers a broad range of clangorous FM timbres.

Contour is a function generator with knobs for Onset (attack), Sustain, Decay, and Vari-Response. Like the Minimoog's contour generator, Decay determines both initial decay and release time. You can set very fast attack and decay times—so fast that it produces the snappiest envelopes I've ever heard, making it perfect for percussive sounds. Its Gate input is normalled to MIDI Note On and Off, and its output is normalled to Dynamics.

The Dynamics circuit functions as a VCA, and though it isn't exactly a lowpass filter, changing its level also changes the brightness of the audio signal. The Line Out and Dynamics output jacks carry the same monophonic signal, but Line Out has a level control and clips at its highest settings, whereas Dynamics carries a much hotter signal (+10V) appropriate for connecting to an external modular synth.

Editing the digital parameters requires some rather complex button-pushing combinations. Because the 0-Coast has no alphanumeric display, the only

visual feedback comes from illuminated buttons and activity windows. Hold the Program A button to enter menu pages and press it to scroll between pages. Press Program B (which doubles as the Tap button) to set values, and hold it to exit the menus.

To enable the onboard arpeggiator, press the Program A and B buttons simultaneously. You can specify whether the arpeggiator plays notes in the order held and released or that it latches as many as 20 notes at a time. Additional menu pages let you change legato mode, set MIDI channels, enable portamento, and so on.

SAVED BY ZERO

In a world filled with analog (and digital) subtractive synthesizers, the 0-Coast stands out from the crowd. It may take awhile to get to know it thoroughly, but you can generate wonderfully original and distinctive sounds you'd find difficult or impossible to produce without it, simply by twisting a few knobs. Just be warned that because it lacks patch memory, creating a patch means losing another one unless you write down all your settings and connections.

Although it would make an excellent addition to almost any Eurorack rig, Make Noise doesn't offer any means to mount it in a rack. Still, the 0-Coast is the least expensive introduction to Buchla-style synthesis you can get, and it's guaranteed to add unique colors to your musical palette. ■

...Hafler can help!



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
- Dual headphone jacks allow sharing with engineer or talent
- Balanced XLR or unbalanced RCA inputs with thru output



HA75 Tube Head™

tube circuit headphone amp

- 100% discrete Class-A circuit with 12AX7 tube drive
- Variable Focus™ control to simulate listening in a room
- Adjustable negative feedback to tailor signal path
- Choice of unbalanced RCA or balanced XLR inputs
- Dual headphone outputs allow sharing with engineer or talent



"My HA15 headphone amplifier gives me a totally accurate picture of what I'm hearing. I don't know how I got along without it."

Ed Cherney
Grammy winning Engineer - Producer
Bonnie Raitt, The Rolling Stones, Eric Clapton



"We have all suffered with the fatigue caused by listening on headphones for long periods. With the HA75 Tube Head, I am happy to spend hours rather than minutes doing the all-important reviews of my recordings and mixes on the phones, especially at higher levels."

Alan Parsons
11-time Grammy nominated Engineer - Producer
The Beatles, Pink Floyd, Al Stewart, The Alan Parson's Project

These days, you have to check your recordings with a turntable and test your mix with headphones.

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. 1588 Keble Way, Port Coquitlam BC V3C 5M5

©2016 Radial Engineering Ltd., all rights reserved. Specifications and appearance are subject to change without notice.

The VP-03 Vocoder includes a step sequencer, chord memory, standard MIDI I/O, and USB connectivity.



ROLAND

VP-03 Vocoder

A PORTABLE VOCODER WITH VINTAGE STRING AND VOICE TIMBRES

BY FRANCIS PRÉVE

Producer Francis Préve has been designing synthesizer presets professionally since 2000. Check out his new soundware company at symplesound.com.

STRENGTHS
Integrated 10-band vocoder. Flawless re-creation of Roland's iconic choirs and strings. Microphone included. MIDI and audio over USB.

LIMITATIONS
Programming sequences and chord memories requires a trip to the manual.

\$349
roland.com

When I heard Roland was doing a Boutique makeover of the legendary VP-330 Vocoder Plus, my heart began racing. The VP-330 was used by bands ranging from The Cars to Tangerine Dream, and despite never owning one, I could spot its sound a mile away.

Like the other Roland Boutique modules, the VP-03 Vocoder is an uncanny re-creation of its predecessor. The ten-band vocoder is identical in sound to the SVC-350, one of the most popular rackmount vocoders of all time, and is accompanied by two types of analog choirs and a string section. This may not seem like much, but as an integrated instrument, the VP-03's quirky old-school architecture gives it a sound that is both lush and instantly recognizable.

The module includes a pair of ribbon controllers, one of which offers traditional pitch bend, while the other gives you control over pitch shift, a parameter available on the VP-330.

The Boutique treatment also means that the VP-03 is extremely portable, with a sturdy metal chassis and the ability to run on USB bus power or four AA batteries. And, of course, the instrument is compatible with the optional K-25 keyboard controller/dock. A mini gooseneck microphone and an extra pop screen are included with the VP-03.

The choir and string levels are freely mixable, with independent attack parameters and a shared release parameter that governs both. The release segment is part of what gives the VP-03 an identifiable sound. Unlike a traditional release that fades in a linear manner, the VP-03's release has an almost exponential curve (or two distinct segments with a breakpoint between them). The effect is eerily similar to a reverb in a very cool way. The

string section also has its own tone parameter, which functions more like a treble control than a filter.

Even by today's standards, the analog choirs are a knockout. New Wave fans will recognize the

male voices from countless '80s tracks. When combined with the female voices, the result is evocative of the Mellotron choir—a neat trick for any era. The Ensemble effect is always on for the strings, but switchable for the choirs. It's watery and warm, with plenty of animation that works well with the global vibrato and pitch-sweep feature that bends notes upward.

While the strings and voices may be the bigger draw for the vintage-synth crowd, the vocoder is going to blow away electronic and dance-music fans of all types. The only adjustable parameters are mic volume and a tone control, which adds a bit of dry signal through a highpass filter to emphasize consonants and plosives. But that's fine with me, because the vocoder sounds spectacular. And ten bands is more than enough for intelligibility, positioning the VP-03 nicely for the current synthwave resurgence.

With all this vintage-style goodness going on, it's easy to overlook the VP-03's integrated step sequencer and chord memory features, which make it easy to comp string pads with one finger while you focus on soloing. As with the other Boutiques, programming the VP-03 is fairly easy once you get the hang of it.

As a whole, the VP-03's vintage-sounding strings and choir are lush, while the vocoder really stands the test of time and will quickly find new converts. Roland took a chance in reissuing such a niche instrument, but unless I'm mistaken, it's going to be hit. The VP-03 is an absolute must-have for both vocoder users and synth nerds. ■

VâRi SUBstantial

Give yourself more configuration and sound options with a **VâRi Powered Loudspeaker System**. Start with either the **12" V2212**, ideal for parties and medium sized stages, or step up to the **15" V2215**, perfect for moving dance floors. Then add a hefty 1500 watts of bass with the **NEW V2218S** Powered Subwoofer for even more subsonic impact.

VâRi V2212
12" 2-WAY
POWERED
LOUDSPEAKER

THE NEW VâRi 2212/V2215 POWERED LOUDSPEAKERS

- 600 watts, Class-D Amplification
- Choose from 15" or 12" 2-way speaker
- 3-input mixer with 2-band EQ
- Optical limiter with new front-mounted clip indicator
- Ideal for use as upright speaker or wedge

THE NEW VâRi V2218S POWERED SUBWOOFER

- 1500 watts, Class-D amplification
- 18" woofer with 3" voice coil
- Optical limiter with new front-mounted clip indicator

VâRi V2215
15" 2-WAY
POWERED
LOUDSPEAKER



HARBINGER

HARBINGERPROAUDIO.COM



Musician's Friend



The Trio+ provides options for altering the rhythm accompaniment's bass part, dynamics, and feel within each Genre and Style.

DIGITECH

Trio+ A MUST-HAVE GUITAR PEDAL FOR COMPOSING AND PRACTICING

BY GINO ROBAIR

Gino Robair is *EM*'s technical editor, as well as the editor-in-chief of *Keyboard* magazine.

STRENGTHS
Looper. Built-in effects. Effects send. Headphone output with level control. Easy to use.

LIMITATIONS
One level of loop undo. Cannot separate built-in effects from genre selection.

\$299 street
digitech.com

Because it automatically creates convincing bass and drum parts that match the key and tempo of any song you play into it, the DigiTech Trio has become very popular with guitarists for both songwriting and woodshedding.

Last year, DigiTech took the concept further with the Trio +, adding a looper, new musical Genres, and more song parts, among other features.

The "band creator" process is simple: Select a Genre; hit the Band button; play a chord progression; press Band, again. Immediately, the bass and drums enter with parts based on the chord progression and tempo you played. The analysis works best when you play simplified chords.

Next, you can use the built-in looper to layer guitar parts over the rhythm section. The looped material is saved when playback is stopped.

Along with its 12 Styles (4/4 or 3/4, straight or swung rhythm, etc.), the Trio+ adds five new Genres (including metal and hip-hop) for a total of 12. If you change Style or Genre while the rhythm section plays, the bass and drums will change to the appropriate feel—very handy for arranging. (Note that audio loops do *not* change feel when you select a new Style or Genre.) The Tempo control's time stretching sounds smooth, even as you approach the extreme settings.

Each Genre includes rhythm and lead effects that you can add to your guitar input, and any loops you create will include the effect. For example, the Metal style's lead effect is a high-gain sound, which I used when stacking harmonies with the looper.

In the scenario above, I created what DigiTech calls a Part. You can record five Parts and sequence them in any order to create a Song, using the buttons at the top of the pedal. Twelve Songs (and their au-

dio loops) can be stored on the included microSD card. (Cards up to 32GB are supported.) Using DigiTech's free Trio Manager Software, you can transfer Songs and loops to a computer from the pedal's USB port.

Various button combinations are used for storing and loading Songs, programming a Song sequence, and so forth. Behind each button is a multicolored light that indicates its status. To hear a more aggressive rhythm section as your Part plays, press the associated button so that it turns red. Tap the button again for it to glow green and return to the original feel. Furthermore, the Alt Time button changes how the rhythm section interprets the tempo—double or half time, depending on the Genre/Style—while Simple Bass determines how busy the bass part is (with three levels to choose from). You can also add a metronome, a 1-bar count-off, and set individual levels for the bass, drums and loop.

The Trio+ has a stereo headphone jack (with volume control), an effects loop, and individual outs for an amp and mixer. I recommend adding the (optional) FS3X footswitch, which provides three modes of hands-free control over the Trio+.

I admit I was skeptical about its usefulness when I first got the Trio+, but I became a convert the more I used it. It inspired new song ideas (thanks, in large part, to the integrated looper), and I found it especially helpful when practicing riffs and scales (using the Tempo control to help work parts up to speed). And as a person who travels with a guitar, I found that the headphone output and diminutive size of this product makes it perfect for airport and hotel-room use. The Trio+ is a handy device for any guitarist—from beginner to pro. ■



Alpha 50, the most compact of the line, is perfectly adapted for confined spaces.

5"driver
**ALPHA
50**

ALPHA

STUDIO MONITORS

FOCAL PROFESSIONAL ACCESSIBLE TO ALL MUSICIANS!

The Alpha studio monitors series redefines the level of performance you can expect from an affordable monitoring system.

Equipped with 100% Focal drivers and robust class A/B amplifiers, the Alpha series will reveal your music like never before.

www.focal.com

The Alpha 65 performs just as well with instrumental music as with electronic music, and is characterised by its great versatility.

6.5"driver
**ALPHA
65**

Flagship of the line, Alpha 80 is particularly ideal for producing music which is rich in bass or which requires high power reserves.

8"driver
**ALPHA
80**

HEAVYOCITY

Scoring Guitars

CINEMATIC SOUND LIBRARY FOR NATIVE INSTRUMENTS KONTAKT

BY MARTY CUTLER

Marty Cutler is busy putting the finishing touches on his new book for Hal Leonard.

STRENGTHS

Huge library of guitar-derived pads, drones, solos, and loops. Gravity engine provides tools for extensive customization. NKS compatible.

LIMITATIONS

Loop and phrase selections focus on minor keys.

\$99

heavyocity.com

Phrases available in both directions

Punish control

Integrated effects



Scoring Guitars gives you greater control over the included sounds than most cinematic libraries by offering a range of à la carte elements.

Many cinematic libraries fill the soundstage with an excess of ambience, harmonic motion, and rhythmic activity, often painting the musical direction into a corner. In contrast, Scoring Guitars offers plenty of those elements, but in a cleverly arranged, uncluttered way, handing you more immediate control over the dynamics of any musical scenario.

Scoring Guitars works as an AU, AAX, and VST plug-in, in both the full and Player versions of Native Instruments' Kontakt engine, and it supports the Native Kontrol Standard (NKS), easily integrating with NI's Komplete Kontrol and Maschine hardware.

The library revolves around electric guitar sounds in categories such as Beds and Drones, Melodic Pulses and Phrases, Pads, and Performance Palettes. As part of a series of Gravity Packs using the versatile DSP engine in Heavyocity's flagship Gravity, Scoring Guitars imparts plenty of harmonic and rhythmic motion.

The first folder subdivides into a pair of Drone and Ambience Menus—one nominally in the key of A minor and the other menu in E minor. Each note in the upper range of the keyboard holds a unique drone performance, while the lower end of your controller supplies two octaves of keys to transpose the drones. The drones are distinct from one another in tonal character or voicing, giving the collection plenty of range. And even though they are earmarked as drones, playing a handful of notes will yield beautifully animated chords as you change keys with your left hand.

Two folders contain patches composed of the individual elements, again, broken down into A and E minor. Patch names indicate the note where the element is found in the menu mapping.

The Melodic Pulses and Phrases folder continues in a similar manner, dividing everything into

E minor and A minor menus, with phrases also available in reverse. An additional folder for each of the two keys provides individual phrases and menus, including reversed versions.

The overall tone of the collection is dark and well-suited for adventure games and sinister

film scores. According to Heavyocity, this explains the predominance of minor-key performances, along with a few harmonically neutral loops (utilizing root-and-fifth patterns, for example). Some of the minor-key loops adapt well as blues and pentatonic lines to major keys with a bit of harmonic imagination. Still, the absence of explicitly major-key material tends to limit the application of some patches.

Within the folder of pads, you are not confined by key or tonality. Here, the variety of sonic delights demonstrates the programmer and guitarist's skills. The sounds range from billowy and cloudy to metallic and complex, with sparkling artifacts and blooming envelopes. Some of the patches tagged with MW (Mod Wheel) take advantage of the Gravity engine, providing Punish, Twist, Pitch, and other parameters. They sound especially dramatic in the folder of pads, which use up to three layers of samples.

Lastly, the Performance Palettes provide menus of looping ambience, drones, and emotive guitar lines, played forward or backward. These serve as construction kits, offering both beauty and complexity. As you'd expect, you can utilize Heavyocity's real-time Trigger FX on top of any of the above patches.

Overall, Heavyocity Scoring Guitars is an extraordinary collection of gorgeous—albeit, somber—loops, drones, and atmospheric sounds. ■

Sam Ash®

WE ARE TECHNOLOGY



NORD STAGE 2 EX
88 KEY SYNTHESIZER
\$4,499.00



KRK ROKIT 4 G3 10-3
3-WAY ACTIVE MONITOR
\$499.00 (Each)



YAMAHA MONTAGE 6
SYNTHESIZER
\$2,999.99



ARTURIA MATRIXBRUTE
ANALOG MATRIX SYNTHESIZER
\$1,999.00



MOOG MUSIC
MINIMOOG MODEL D SYNTHESIZER
\$3,499.00



ARTURIA MINIBRUTE
RED SYNTHESIZER
\$399.00



MIKTEK CV4
LARGE DIAPHRAGM
MULTI-PATTERN TUBE
CONDENSER
MICROPHONE
\$1,599.00



PIONEER TORAIZ SP-16 PROFESSIONAL SAMPLER
\$1,499.00



NEW!
PRESONUS
STUDIOLIVE 32
DIGITAL MIXER
\$2699.95



NEW!
ELEMENT 88 THUNDERBOLT
AUDIO INTERFACE FOR MAC
\$1495.00



MANLEY LABS CORE REFERENCE CHANNEL STRIP
\$2,000.00



NEW! ROLAND DJ-808 CONTROLLER
\$1499.00

BEST
SELECTION
ONLINE

LOWEST
PRICE
GUARANTEE

SPECIAL
FINANCING
AVAILABLE

VISIT **SAMASH.COM**
OR CALL **1-800-472-6274**

MEEBLIP Triode

BY FRANCIS PRÉVE



SYNTH CONNOISSEURS typically prize an instrument's character over its versatility. Case in point: The Minimoog wasn't the most flexible monosynth of all time, but its sound made it immediately identifiable. With this in mind, I've become enamored with the character of the MeeBlip Triode (\$149; meebliip.com).

With its straightforward knob-per-function front-panel, the Triode provides a high degree of tweakability in both studio and performance settings. Like its predecessor the Anode (read the review at emusician.com), the Triode's digital waveforms and

resonant analog filter can create sounds that cut through a mix in a distinct way. Yet unlike the Anode, the Triode offers three waveforms (sawtooth, pulse, and pulse with pulse-width modulation), a square-wave sub-oscillator, and three banks of eight wavetables that you access by switching firmware during power-up.

The Triode has a 5-pin MIDI connector,

rather than USB, and responds to MIDI on channels 1-8: Velocity controls filter envelope, mod-wheel sets LFO Depth, and CCs 48 through 70 are mapped to other parameters, including ones without front panel controls such as LFO Randomize, Filter Envelope Modulation, and Oscillator Pulse Width. In other words, this little synth is ready for real-time performance right out of the box.

If you noticed that the front panel has only Decay knobs for the amp and filter envelopes, it's because the attack parameters are controlled via MIDI. Moreover, when Sustain is switched on, the Decay knobs set both sustain and release times.

And in typical MeeBlip fashion, the Triode has an open-source architecture. (The product is a collaborative effort between James Grahame of blipsonic and Peter Kirm of Create Digital Music.) Anyone interested in hacking the Triode need only visit meebliip.com to get the source material.

Overall, the Triode's sound palette is going to be a big draw for artists who gravitate toward nasty, in-your-face timbres. For more subdued productions, the Triode is like adding a dash of habanero sauce to a track, making it perfect for attention-grabbing accents. (Hear audio clips at emusician.com/meebliip.)

Most importantly, at this price the Triode hits all of the sweet spots and is small enough to fit in your pocket—definitely a winning combo. ■



SLICK AUDIO

Slick Audio
The Ultimate
Audio PC





Turn-key DAW Systems

5 Year Warranty
*3 Year Warranty for M and L series

SuperQuiet™ Technology

Unmatched Support

Hardware RAID

Hot-Swap Drives
*Rack Chassis Only

Superior knowledge of
pro audio and computers.
The best customer service
in the industry!

www.slick.audio | 570.371.5800

The
COMPLETE MANUAL
for the
**DO-IT-YOURSELF
MUSICIAN**


CRITICALLY ACCLAIMED!

“

**PRAISE
FOR THE INDIE
SURVIVAL GUIDE**

[Chertkow & Feehan]
are the ideal mentors for
aspiring indie musicians
who want to navigate an
ever-changing
music industry.
-Billboard magazine

**A MUST HAVE
FOR EVERY
MUSICIAN!**



PURCHASE at

INDIEGUIDE.COM/BOOK

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



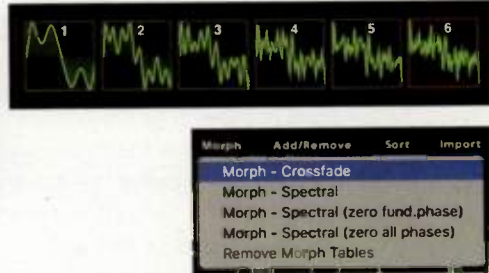
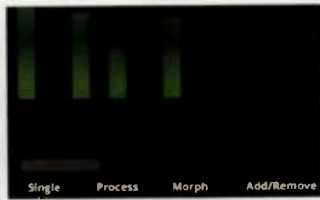
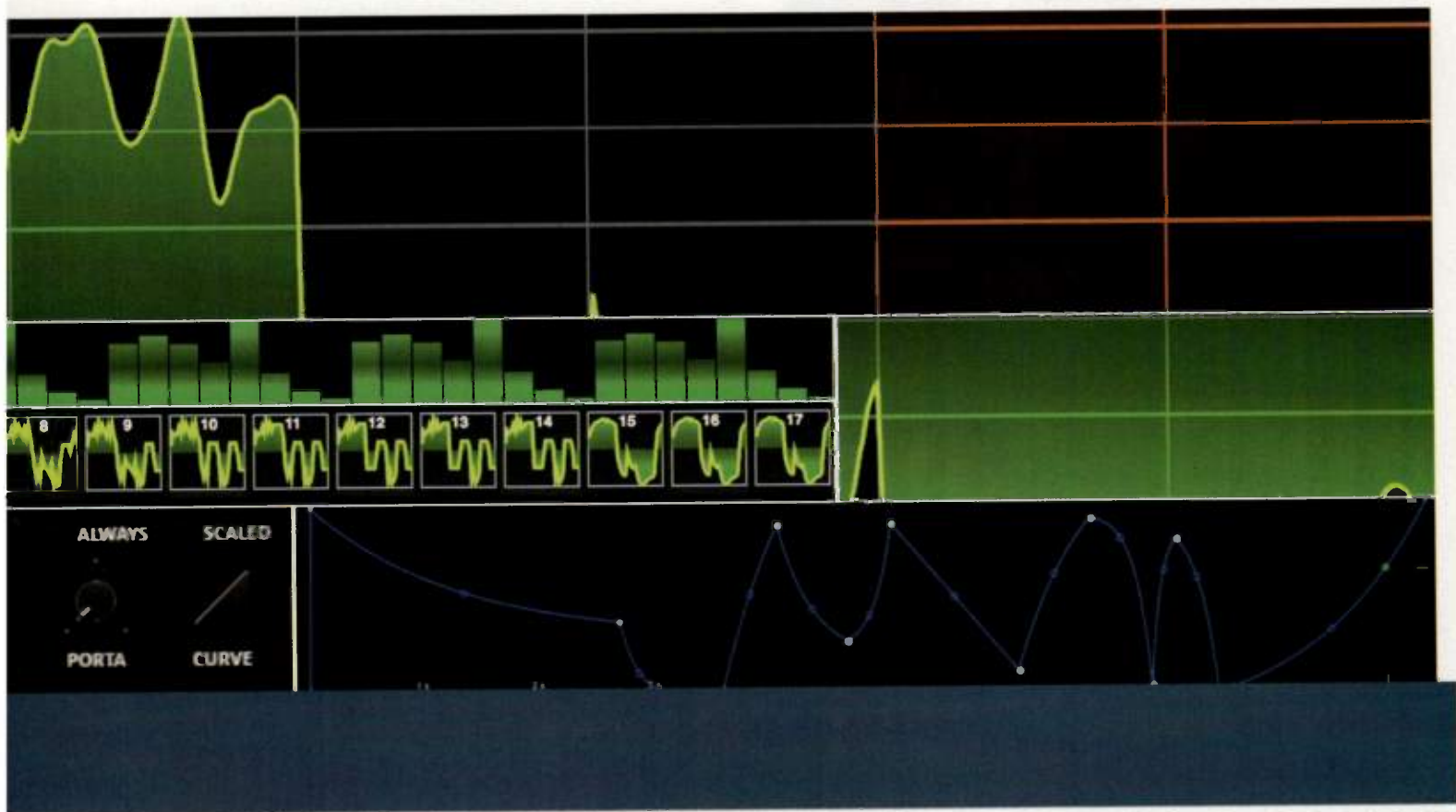


Xfer Serum

Conquer the feature set of this powerful soft synth

BY FRANCIS PREVE

In just over two years, Xfer's Serum has gone from clever indie softsynth to desert island must-have, thanks to its extremely intuitive design, massive array of synthesis features, and creator Steve Duda's commitment to insanely high audio quality. Originally designed as the ultimate wavetable synth with world-class filters, Serum's ever-expanding feature set has grown to include sample playback, image import, audio processing, and eight programmable LFOs that can serve double-duty as both multi-stage envelopes and step-sequencers.



Figs. 1-5, left to right: Create a PPG-style sound in Serum's wavetable editor.

Between Serum's features, ubiquitous user base, and the fact that you can now rent-to-own the software via the Splice.com network, it's high time we did a Master Class on making the most of this wünder synth.

'80S-STYLE WAVETABLES

Synth historians know that Wolfgang Palm's PPG Wave 2 started the wavetable phenomenon, so as an homage to Palm's original innovation, here's a quick way to recreate the general character of the PPG sound. The overall approach is to create a series of additive waves that become progressively more complex as the wavetable evolves.

1. Open the wavetable editor (in an initialized patch, sawtooth will be the default) and raise the volume of two lower-numbered harmonics. Here I selected the first and fourth bins (harmonics). See Figure 1.

2. You'll immediately see the results in the wave view and in the tiny lower window for the first index. Click on the plus sign to edit the second index (Figure 2). Note that this copies the first index to that slot for further manipulation.
3. In the second index, add a few additional lower-range harmonics. Here, I added bins 6 and 9, for some organ/bell character (see Figure 3).
4. Repeat this process a few more times, adding 2-3 additional harmonics for each successive index (figure 4).
5. By the time you reach 6-8 indices, you're ready to create your wavetable. The "morph" pull-down in the wavetable editor offers four modes, each subtly different in their technical properties (Figure 5). This type of wavetable works beautifully in the "crossfade" mode. Select that and the result will be a classic PPG-style wavetable.

IMPORTING AUDIO FOR WAVETABLES

Resampling your favorite digital synths for conversion to Serum wavables creates a rich source of new material—especially when combined with Serum's extensive modulation tools and effects. For example, creating a complex patch with an elaborate decay sweep in an FM synth is a great way to generate rich, animated tones for further processing. However, importing audio as a source for wavetables can be a tricky process with unpredictable results, unless you follow a few rules of thumb.

Unison, detuning, vibrato, and obvious noise in the source material can result in bizarre artifacts that don't represent the original sound. When sampling another synth for use in Serum, keep your sound to a single oscillator (or carrier, when sampling an FM synth), then add detuning and chorusing later via Serum's features.

Fig. 6. G#-1, expressed in the formula editor.

Lower-frequency notes give Serum a bit more “headroom” for calculating the wavetable. Steve Duda recommends G#-1 (26 Hz) as an ideal note to sample, when importing your own source audio.

The Formula editor in Serum’s wavetable panel can be used to create unique waveshapes if math is your specialty, but it also serves as a way to give Serum’s import tools a “heads up” for indexing the audio. If your sample is G#-1, just type “G#-1” (no quotes) into the formula editor and it will split the indexes in neat little slices of 1,699 samples each (see Figure 6).

As a hands-on example, find a cool unprocessed (no effects or detuning) FM patch in Ableton Operator or Native Instruments’ FM8, then record a single G#-1 note. Type G#-1 into the formula editor and drag/drop the sample into the window. Your FM patch will then be available as a wavetable within Serum, which can also be saved to your user wavetable library for later use.

If you want to finesse the results further, try experimenting with Serum’s various morph modes.

FM MADE EZ

Speaking of FM, Serum’s wave-warping modes make up a treasure chest of tools for mathematically mangling your wavetables. With these you can add “pulse-width modulation” to any waveform (along with square waves, of course), create hard sync effects, or flip/mirror your waves for more exotic results. Best of all, you can actually see the results of these processes reflected in real-time in the waveform displays.

Tucked away near the bottom of the menu is an FM option that allows you to use either oscillator as an FM source, depending on the oscillator you select. For example, the warp menu for oscillator A offers FM from oscillator B—and vice versa.

Thanks to the additive tools in Serum’s wavetable editor, DX-style two-operator patches are easy to create. Just remember that coarse tuning values in traditional FM synths correspond to the numbers of the harmonics. That is, if the carrier and modulator have a 1:3 ratio, the carrier is tuned to the first harmonic and the modulator is tuned to the third harmonic. You can accomplish exactly the same thing via Serum’s harmonic editors.

Start with an initialized patch and use oscillator 1’s wavetable editor to create a single sine wave at the first



Fig. 7. Initialized sine wave.

harmonic by raising its value to maximum. This will be reflected in both the waveshape and the first index of the wavetable (Figure 7).

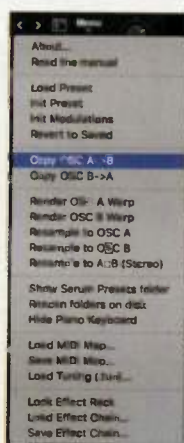


Fig. 8.

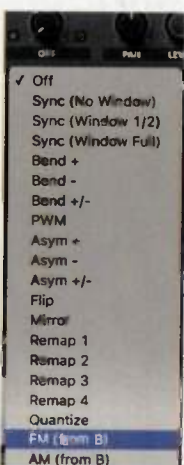


Fig. 9.



Figs. 10-11. Re-creating our 1:3 ratio.

PRO TIP: The Serumclavier

Now that you’ve got a handle on creating additive wavetables and FM synthesis within Serum, it’s time to dive deeper. EM subscribers may recall my October Synclavier Master Class (available at emusician.com/synclavier). One of the hallmarks of the Synclavier sound is its ability to use time-slicing to shift the harmonic values of both the carrier and modulator.

By combining Serum’s FM tools with its approach to smoothly morphing wavetables, you can recreate the Synclavier sound by using an envelope to modulate the index position of a simple additive wavetable on oscillator B, while applying a second envelope to the FM amount on oscillator A. For added authenticity, stick to the first 24 harmonics in the series; that’s the range of the original Synclavier.

IMAGE IMPORT

One of the easiest and most popular methods to create original wavetables is Serum’s recent addition of image importing. While the process is straightforward—just drop any PNG into the wavetable view, even without opening the editor—the results can be somewhat chaotic at times. Sure you can import old baby pictures, but do they sound good?

The trick to making the most of this feature is to view some of the wavetables that you find most useful and consider their visual properties. Often, the coolest wavetables look a lot like topographical maps, so... Google “topographical maps”.

Just glancing over the top hits, I found several maps that sounded fantastic as wavetables. And when you’ve exhausted the possibilities of topographical maps, try another obvious image type that yields results that are almost as good: Ocean waves.

NOISE GENERATOR AS SAMPLER

A hidden gem in Serum’s feature set is the ability to drag-and-drop any audio file in .WAV format directly onto its noise generator, instantly transforming it into a sampled audio source for layering it into your sound.

While you can’t edit the sample within Serum, the noise generator’s existing parameters make this feature an incredible way to add yet more complexity to your Serum patches. Here’s an easy reference for understanding how to manipulate your samples within Serum, as shown in Figure 12.



Fig. 12. Noise Generator panel.

→| icon: This toggles the sample between one-shot and looping mode. When active, the sample plays to the end and stops. When off, the sample reaches the end and starts over.

Piano icon: This toggles keyboard tracking, which is crucial when using pitched samples. When off, the sample will play whatever pitch it’s tuned to via the Pitch parameter, disregarding note information, which can be good for adding

clicks and drum transients to your sounds.

Pitch: At the time of this writing, the root key for a given sample can't be adjusted directly, so to tune your samples to the keyboard, you'll need to use a tuner plug-in or do it by ear. That said, when using samples with an original tuning of C3, setting this parameter to 36.00% often does the trick.

Phase: While you can't edit your samples directly, the Phase parameter allows you to adjust the sample start point, which is especially handy when working in one-shot mode.

Rand: This parameter randomly offsets the start point each time you hit a key. If you use a bright sweeping texture as your sample source, this is a cool way to get simulate sample-and-hold effects.

Pan and Volume: If you don't already understand these parameters, put the magazine down now.

SUB-OSCILLATOR TECHNO CHORDS

While Serum's sub-oscillator tuning is limited to octaves, it offers all of the standard subtractive waveforms including sine, triangle, saw, square, and pulse. These are great for traditional uses like adding low-end or reinforcing the fundamental in bright, buzzy patches; they're also useful for timeless techno chords.

For the classic version of this this patch, switch the sub-oscillator's wave to sawtooth and leave the tuning



Fig. 13. Route all three sources to the filter.

at the default, which will provide the tonic. Then, for a Detroit-friendly minor triad, tune the main oscillators to +3 (minor third) and +7 (fifth). Finally, make sure all three sources are routed to the filter, so they're processed identically (see Figure 13). From there, add some filter envelope and chorus; you're set.

SERUM'S FILTER

While most softsynths include classic options like lowpass, highpass, bandpass, notch (and sometimes comb and formant) with different roll-off slopes, Serum's filter includes *ninety* modes. While many of



Fig. 14. Serum's filters.

these are variations on those mentioned above, as well as 21 combination modes that are reminiscent of the original Oberheim Xpander, the "miscellaneous" group is of special note.

Here, you'll find a few filter types that aren't immediately obvious in their uses (See Figure 14). Granted, the EQs are rel-

atively self-explanatory, as are the ring mod options. But it's worth exploring the more esoteric modes below:

SamPHold: Works a lot like a bit-crusher, with low "cutoff" values dissolving the sound into a mass of digital grunge. Try applying this filter type to one of the white noise options and the result will be quite similar to vintage video game explosions. Bottom line: It's great for fans of the chiptune genre.

Reverb: At first listen, this mode doesn't seem to add a traditional reverb tail to the sound, unless you use extremely low cutoff values, resulting in a tight room reverb. At its core, the Reverb filter is actually a feedback delay network that can be used for hard-to-reproduce physical modeling effects when the cutoff is static. When the cutoff is modulated, all bets are off, as it sounds a bit like a flanger through a wormhole. For squeaky transients, modulate the cutoff quickly with an envelope. For full-on mayhem, use an LFO.

PRO TIP: All of Serum's filter types are also available in its end-of-chain Filter effect, so if you want to hear the Reverb mode (or any other) in a different context, audition the options in the effect device (see Figure 15).



Fig. 15. Algorithms are available in the Filter effect module.

Formant I, II and III: Each of these formant filters is optimized for different vowel transitions when adjusting the cutoff parameter. I've used these modes extensively for analog choir effects.

German LP and French LP: These lowpass filter modes are amazingly warm, with an analog-like depth, though being located in the "Misc" category means they're often overlooked. For the technically inclined, German is a "zero delay feedback" LPF, while French is a pair of LPFs cascading in series.

Watch those parameters. Many of the filter's parameters actually change, depending on the filter mode. The top row of parameters is always cutoff, resonance, and pan (which offsets the cutoff in stereo, with increasing widths). The bottom row includes drive and mix, which controls the wet/dry balance of the filtered signal. The center parameter on the bottom row is the wild card that you should always note when switching between types. For example, in EQ modes, it's a boost/cut parameter. In formant



Fig. 16.

modes, it allows further customization of vowel characteristics. In the multi modes, it governs filter morphing between the various slopes (see Figure 16).

PRO TIP: While you

can individually modulate the volume of each oscillator via velocity, it can be a bit of a chore to assign and scale velocity to all four sources separately. My shortcut? Assign velocity to filter drive instead. Here, a little goes a long way, but it's a more organic effect and is easier to manage as you finesse your sounds.

BEYOND LFOS

Serum's eight LFOs are so complex and flexible, they're worthy of their own guide for making the most of their features. Here's a handy cheat sheet for shortcuts and hacks.

Folder Icon: The first thing many users notice is that there are no LFO waveforms. Why? Because almost every aspect of the LFO is customizable. Instead of a waveform selector, there's a folder icon that leads to a menu of common waveshapes, sidechain bouncing effects, and a few more exotic shapes to use as starting points. Best of all, you can save your own creations to the user folder for repeated use.

PRO TIP: You can alt- (PC) or option- (Mac) click on the folder icon to advance through the preset shapes (or shift-alt-click for reverse direction).

Env: This little button switches any of the LFOs



Fig. 17. LFO with breakpoints.

to one-shot mode, thereby transforming it into a multi-stage envelope with Bezier curves and up to 64 breakpoints (see Figure 17).

So if you want to whip up a patch with 7 envelopes (there are also three dedicated ADSR generators) and 4 LFOs, go for it. You can even use Shift+Command+Click (Mac)/shift+Ctrl+Click (PC) to create nested loops within your one-shot LFOs, blurring the lines even further.

Tempo-Synced Everything: Switching any of Serum's LFOs to tempo-sync mode does more than just lock the rate to standard note divisions, including triplets and dotted values. It also allows you to sync the LFO fade-in (aka "rise") as well as sync the delay segment before the onset of the fade.

Copying LFOs: If you want to copy an LFO to another LFO slot to modify it for complementary modulation, just alt- (PC) or option- (Mac) drag its tab to the destination LFO. Everything is instantly duplicated and ready for further tweaks.

Step Sequencing: If you want to use an LFO as a step sequencer, hold the shift key and the drawing



Fig. 18

tool will allow you to quickly draw rectangular shapes that are quantized to the LFO grid size, which can be up to 16x16. ■

GET IN TOUCH WITH YOUR MOTU STUDIO

Get hands on with DP 9, the all-new UltraLite-mk4, virtual instruments, plug-ins and the very latest advanced studio technology.

Apple MacBook Pro® with Touch Bar® A touch of genius

It's faster and more powerful than before, yet remarkably thinner and lighter. It has the brightest, most colorful Mac notebook display ever. And it introduces the Touch Bar — a Multi-Touch enabled strip of glass built into the keyboard for instant access to the tools you want, right when you want them.

The new MacBook Pro is built on groundbreaking ideas.

And it's ready for your groundbreaking music.



MOTU UltraLite-mk4 Audio excellence personified

The latest in MOTU's best-selling, award-winning UltraLite interface series, the UltraLite-mk4 delivers even better analog audio performance, more DSP, more total I/O channels and astonishingly low round-trip host latency: 1.83 ms over USB at 96 kHz with a 32 sample buffer and a high-performance host such as Digital Performer.

Eventide Anthology X The best Eventide effects in one bundle

Seventeen mixing, mastering and multi-effect plug-ins based on 40 years of Eventide studio mainstays like the H910, H949, H3000 Factory, Band Delay, and Omnipressor. Includes future classics like UltraChannel, UltraReverb, Quadravox and Octavox. A true must-have for any size MOTU studio.



Value Added
Reseller
Professional Audio

MOTU

Zynaptiq ADAPTIVERB

Harmonic tracking re-synthesis reverb

Reverb, zynaptified. ADAPTIVERB adds perceived depth, harmonic richness, and butter-smooth tails — without obscuring the source. Using ray tracing, source separation, and advances in artificial intelligence, ADAPTIVERB conforms reverb tails to the tonality of the source — creating lush spaces, smooth drones, and far-out textures for sound design, mixing, and mastering.



Neumann TLM 103

Large-diaphragm cardioid microphone

The TLM 103 combines a capsule drawn from the legendary U87 with tried-and-true transformerless circuitry to deliver classic Neumann sound to any project studio, professional facility or performance venue. Incredibly low self-noise, robust feedback suppression and solid construction make the TLM 103 a must-have mic for any situation.

Focal Trio6 Be

450W 3-way studio reference monitor

The Trio6 Be was designed to meet the standards of the most demanding engineers. This dual monitor is the new reference in its price range owing to its extreme neutrality, its precise stereophonic imaging, and its ability to resolve the most minute sonic details, while its Class G amplifiers deliver SPL levels to suit all musical styles.



Sweetwater®

· Music Instruments & Pro Audio

(800) 222-4700
www.sweetwater.com

©2017 Sweetwater, Inc.



Sibilance Smackdown!

Use advanced monitoring and metering for ultra-precise de-essing

BY MICHAEL COOPER

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

When de-essing a vocal or other track, the key to obtaining transparent and effective results is applying pinpoint processing that avoids doing unnecessary damage. To do that, you need a de-esser that lets you clearly see and hear what it's doing.

In this article, we'll take a look at a standout performer: the Metric Halo Precision DeEsser. Of all the many de-esser plug-ins I've used over the years, Precision DeEsser has, by far, the most comprehensive and effective facilities for zeroing in on sibilance while retaining a vocal track's presence and air.

PROCESSING AND MONITORING

Precision DeEsser has all the controls you'd expect a compression-based de-esser to include: ratio, attack, release, and threshold controls; a gain-reduction meter; and a sidechain filter with adjustable center frequency and bandwidth (see Figure 1). In addition, a Sharpness control adjusts the sidechain filter's slope from moderate to cliff-like, letting you isolate sibilance from desired spectra with laser-like precision. To ensure your filter settings have cast a wide enough net to capture offending sibilance across the audio spectrum, choose the Out-of-Band Signal selection in the Listen To dropdown menu; this selection lets you monitor only that portion of the audio that's *not* being processed. If you still hear offending sibilance with Out-of-Band Signal selected, you know that you need to make changes to your filter settings.

Like other de-essers' key-listen functions, Precision DeEsser's Listen To selections also let you alternately hear the detector signal (the filtered sidechain signal before compression) and the plug-in's output signal after processing. But it's the plug-in's two remaining Listen To selections that dramatically help you confirm which frequencies are being removed and fine-tune the desired amount of processing: The Removed Material selection lets you hear only the peaks above

the detector threshold that are being removed by the compressor from the plug-in's output (only sibilant transients should be audible), whereas the Esses selection lets you hear the compressor's output (that is, both the compressed and uncompressed audio within the band you're treating). The Esses selection is especially powerful when using Precision DeEsser to tame a vocal track's honky midrange frequencies (instead of sibilance), as it lets you evaluate not just how much they are being attenuated but also how much energy they still have remaining post-processing—without the distraction of hearing out-of-band frequencies.

METER READER

In addition to its unparalleled monitoring facilities, Precision DeEsser also offers unrivalled metering. A Detection Level meter shows signal level in the sidechain with respect to your threshold setting, helping you fine-tune the threshold post-filter—a far more accurate tack compared to making adjustments based solely on a gain-reduction meter's response. In addition, a spectrograph at the top of the GUI—which uses Metric Halo's state-of-the-art SpectraFoo metering and analysis—analyzes the signal you're currently monitoring via your Listen To menu selection and lets you see either an instantaneous (white-color) or average (yellow) trace, or both. As sibilance is extremely short in duration and lightning-fast in onset, I use the instantaneous trace to identify in what frequency range its immediate peak level resides. This is by far the most accurate and helpful metering I've seen in a de-esser plug-in, and one more way in which Precision DeEsser lives up to its name. ■

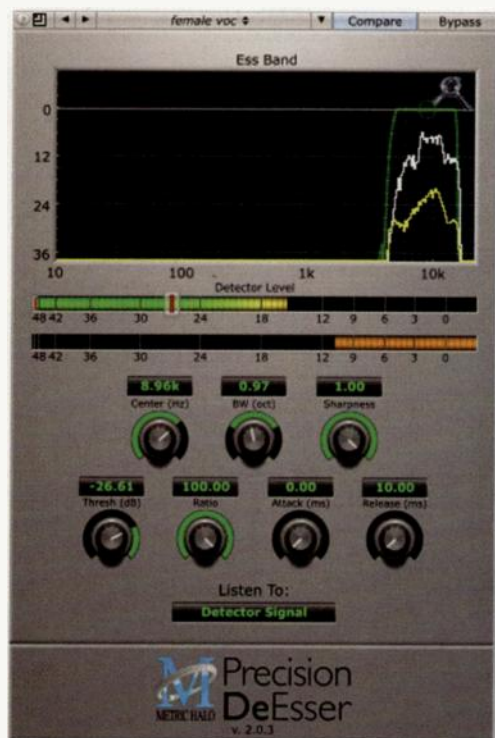


Fig. 1. The Listen To button at the bottom of Metric Halo Precision DeEsser's GUI lets you monitor five different signals in turn, while the spectrograph at the top of the GUI displays the corresponding signal's amplitude vs. frequency. The spectrograph's green line illustrates the sidechain filter's bandwidth and slope, while the white and yellow traces respectively show the filtered sidechain's instantaneous and average levels.

MIX[®]

PROFESSIONAL AUDIO AND MUSIC PRODUCTION

GAIN UNMATCHED ACCESS AT YOUR FINGERTIPS TO AUDIO'S
BEST IN THE STUDIO, LIVE, OR ON THE DUB STAGE

SPECIAL OFFER ALL ACCESS

SAVE OVER 50% ON SINGLE ISSUE PRICING

SUBSCRIBE & SAVE TODAY

Single Copy Price	Subscription Price
12 issues \$83.88	12 issues \$35.99

ALL ACCESS INCLUDES

PRINT + DIGITAL + iPad

SUBSCRIBE NOW AT:

WWW.MYMIXMAG.COM/MXVIP1



THE ULTIMATE PRO AUDIO GEAR EXHIBITION AND TECHNICAL SUMMIT

AES

CO-LOCATED WITH

NAB SHOW
NEW YORK

NEW YORK 2017

JAVITS CENTER, NEW YORK, NY

EXHIBITION: OCT. 18 – 20, 2017

PROGRAM: OCT. 18–21, 2017

www.aesshow.com



PRODUCT SPOTLIGHT



HV-32P and HV-35P Mic Preamps

Millennia
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
sales@mil-media.com
(530) 647-0750

MARKETPLACE

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



PRIMACOUSTIC
www.primacoustic.com/voxguard

HALO

studio desk



ARGOSY

www.halodesk.com



Photo: Julian Evans
www.julianevans.info

AcousticsFirst.com

Materials to Control Sound & Eliminate Noise.™

Toll-Free: **888-765-2900**



BE A RECORDING ENGINEER

ONLINE COURSE

BRAND NEW online practical training in Multi-track Recording. Join our successful working graduates or build your own studio. Career guidance. Diploma. Registered School.

FREE INFO:



ATA Audio Institute of America

www.audioinstitute.com



from San Francisco USA

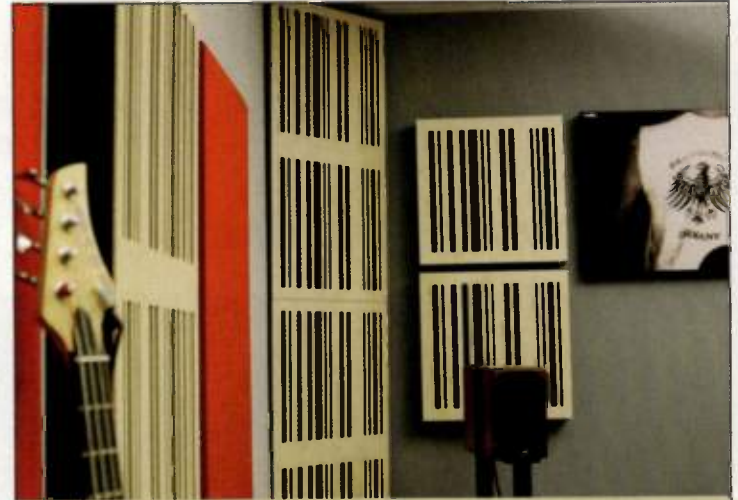
Sam Ash

BEST SELECTION
ONLINE

LOWEST PRICE
GUARANTEE

SPECIAL FINANCING
AVAILABLE

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



ALPHA WOOD SERIES

What you see and
what you hear is Beautiful

GIK Acoustics is changing the face of acoustic panels and bass traps. The Alpha Wood Series combines absorption with diffusion to enhance any room aesthetically and acoustically. With the Alpha Wood Series your room looks and sounds professional!

CONTACT US FOR FREE ACOUSTIC ADVICE: advice@gikacoustics.com



Acoustics
Solutions. Innovations. Quality.

www.gikacoustics.com

888-986-2789



Online Vacuum Tube Guitar Amplifier Correspondence Course

Learn What Makes Them Tick

kendrick-amplifiers.com

Ray Luzier

(KoRn, KXM & Army Of Anyone)



"Auralex really made my personal studio sound great...the **HoverDeck**™ is a must-have part of my drum set-up...we used it to track the new **KoRn** record."

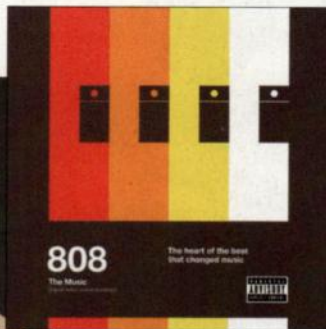
Alex Noyer

808: The Movie tells the story of the Roland TR-808 Rhythm Composer through music; the documentary's producer takes us inside this tribute to an iconic drum machine.

BY LILY MOAYERI



Alex Noyer, right, with *808* director Alexander Dunn



It is a well-known but hard-to-remember fact that the Roland TR-808 Rhythm Composer was only manufactured from 1980 to 1983. During this time, a scant 12,000 units were manufactured. From those, countless seminal records in every genre of music have been made. *808: The Movie* tells its story through carefully chosen songs—a selection of which are included on the film's soundtrack, available via Atlantic Records—and via interviews with almost 60 musicians, from Afrika Bambaataa to Pharrell Williams, the Beastie Boys to Phil Collins, Rick Rubin to Diplo, David Guetta to A-Trak. Producer Alex Noyer of You Know Films speaks about his cinematic ode to a drum machine.

The idea for the film came about over lunch with Arthur Baker?

Yes, we were discussing records, particularly the ones Arthur had produced, which quickly leads to the 808. Then we were talking about the sounds the machine created and how they were super hard to find. After mentioning a few

iconic records, it really got into my music fanboy core. I'm not technical at all, but I am all about the records. When I went back to the office I mentioned it to Alexander Dunn and his eyes lit up, which rarely happens, and he stepped up to direct it. That was in 2011. The first shoot was March 2012 in Miami during Music Week with Jellybean Benitez and the last shoot was with the Beastie Boys in November 2014. It was three years by the time we hit SXSW and five years for its release via Apple Music.

The film flows smoothly; did you have a scripted narrative or did the chronology of the songs dictate that?

We had a list of songs and a set of questions. We couldn't script the interviewees' experiences so we took the risk of letting their stories guide our narrative. It turned the film into a gargantuan task since we carried out 57 interviews altogether. There is a chronology to the story, but we also jump around. Sometimes that's due to the moment the tracks got heard or crossed over to certain countries, and sometimes it was about the way a track influenced another one at a different time. We couldn't do it year by year, but at the same time, it couldn't not be mindful of time, especially as the lifespan of the machine itself was very short.

How did you decide which artists and songs to include?

The simple answer is Arthur Baker. When he

came on the project, he kindly offered his support in reaching out to talent. We decided to lead with "Planet Rock" and then kept an open mind. The songs picked themselves as we spoke with the artists, and some stood out for their recognized influence. We couldn't get every artist we wanted; similarly, some tracks were impossible to clear, but the film had to be logical and work in 90 minutes.

There is a lot of amazing old footage in *808*, but even the current footage has a vintage feel. You used the same sleeve graphic for every record you featured, which worked as a unifying aesthetic. What was the thought process behind these choices?

We applied VHS-style filters to blend it together better. The interviews are generally clean, but we still wanted make sure it felt like it was all authentic, not just the archives. We needed an identity for the film and [Dunn] brought up this great idea of re-imagining the vinyl, which I love. Also, artwork is hard to clear and sometimes there was no artwork so it was a great solution all around. The consistency definitely helps show the harmony in the 808's reach and the various styles it influenced, and still influences. Also, it looks cool.

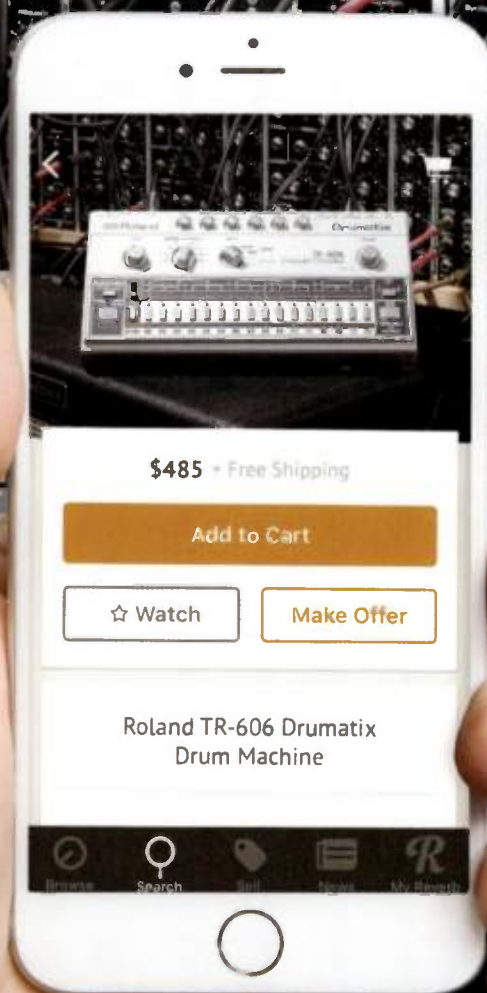
Your closing interview with Roland's Ikutaro Kakehashi, the creator of the 808, puts a very different spin on the whole story. Did you consider focusing more on the perspective of the 808's creation?

A lot of the fascination about the 808 is the perceived detachment between the company and how the machine ended up being used, as if it was never conceived to do what it did. A lot of artists feel they have a stake in the legacy of the 808 and the company stopped making the machine [the reason for which Mr. Kakehashi reveals during his interview]. We felt that his perspective was a great way to round out this artist-centric festival of experiences. There are so many more stories to tell about the 808, its genesis, as well as some of its lesser-known uses or the way the sound lives on in samples. We didn't want to make an encyclopedia or an odd playlist. We wanted to deliver a curated love letter to the machine that we are all obsessed about. ■

SELLING MADE EASY.

Sell gear fast. Keep more of your money.

Reverb.com



Introducing the **624 & 8A**

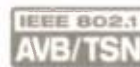
Thunderbolt® / USB3 / AVB Ethernet audio interfaces
with renowned ESS Sabre32™ DAC technology



Equipped with renowned ESS Sabre32™ DAC technology, the 624 and 8A deliver the same award-winning analog audio quality and proven performance as MOTU's flagship 1248 and 16A interfaces — in a mobile half-rack enclosure.

- The same superb audio quality as MOTU's flagship interfaces
- 123 dB dynamic range on balanced analog outputs
- Ultra-low latency and proven, high-performance MOTU drivers
- Thunderbolt and USB 3.0 support for both OS X and Windows
- 32 & 34 channels of I/O with DSP mixing and effects processing

motu.com/624



motu.com/8a