# electronic
# MUSICIAN

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## THE ROCK STAR GIFT GUIDE

## 35

**STUDIO AND STAGE GEAR PICKS FROM**

THE CRYSTAL METHOD

PHOENIX

CAGE THE ELEPHANT

KREWELLA

JORDAN RUDESS

VINCE CLARKE

AU REVOIR SIMONE

NERVO

JUSTIN MELDAL-JOHNSEN

TUCKER MARTINE

AND MORE!

one

APOGEE

Eventide
H9

## GARY NUMAN

## CUT COPY

## HEADPHONE SHOOTOUT

## CHOOSING THE BEST MONITORS FOR YOUR STUDIO

REVIEWS

QUNEXUS CONTROLLER

**KRK** ROKIT 8 G3 MONITORS

**ARTURIA** SPARKLE BEAT MAKER

# BEAT THESE.

© **MASCHINE** STUDIO is the all-new flagship groove production studio delivering definitive hands-on control and brilliant, hi-res color displays. Blistering MASCHINE 2.0 software brings a hit list of power improvements to the entire MASCHINE family. Hyper-intuitive workflow. Ultra-flexible sampling and slicing. Brand-new mixer and drum synths. Advanced KOMPLETE integration, and more. The ultimate groove arrives November 1, 2013. Find out how MASCHINE is changing the game ... again.

www.beat-these.com

**NATIVE INSTRUMENTS**

THE FUTURE OF SOUND

# electronic MUSICIAN

WRH

# 12.2013 contents

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# Clean up your room!

**The single most important thing you can do to improve the sound of your recordings is to address the acoustics in your room ... and Primacoustic makes it easy.**

Start with your choice of Broadway™ panels or one of our easy-to-install London room kits. Then add MaxTrap corner traps and Stratus ceiling clouds to suit. Primacoustic has all the tools you need to get your recording space up and working quickly and affordably — with uncompromising quality. Compared to foam, Primacoustic delivers nearly 500% greater absorption in the critical bass region. This delivers a balanced mix that translates properly when you play your recordings on other systems.

London™ 12 room kit

A Stratus™ ceiling clouds

B Broadway™ Broadband panels

C MaxTrap™ corner bass traps

D Easy-to-mount impaler system

E Broadway™ Control Columns

F Recoil™ Stabilizers

*Tests performed by Riverbank Labs on 3" Primacoustic Broadway panels and common acoustic foam. Both absorb high frequencies, but as sound shifts to bass, the foam stops working.*

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**Clean up your room... with Primacoustic!**

*"I am not a handy guy, believe me when I tell you how easy it is to install. Now my room sounds great."*

~ Rob Wells
*(Backstreet Boys, Cyndi Lauper, Mika, Justin Bieber, Selena Gomez)*

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# Shopping With the Stars

AS OUR December issue goes to press, it's 79 degrees here in San Francisco, and on this balmy October afternoon, the crush of the holiday shopping frenzy seems blissfully far away ... but those of us working in print media live in our own little time zones, so here we are, putting our Holiday Gift Guide to bed.

This year, we wanted a real-world-musician angle for our wish list, so we aimed high: We hit up gear-savvy artists from The Crystal Method to Phoenix to Cage The Elephant for their favorite gift ideas for musicians and engineers. (Grab a highlighter; the fun begins on page 20.)

The great news? Despite the fact that these musicians generally fall into the elusive "that someone who has everything" category, their suggestions are, for the most part, perfectly appropriate for the musician on a budget. Most products run a few hundred dollars, and a handful cost less than five bucks. (Okay, we threw in one $15,000 mic for the dreamers.) Once again, we're reminded that technology has become the great equalizer—these days, you really *can* afford to use many of the same tools as the artists who inspire you. It's all about how *you* use them. Happy shopping!

**SARAH JONES**
EDITOR
*sjones@musicplayer.com*

# COMMUNITY

"PEOPLE ARE LIKE, 'WITH TECHNOLOGY, IT'S ALL GOING TO BECOME ONE IN THE CLOUD AND ALL CREATIVITY IS GOING TO BECOME ONE THING, AND NO ONE IS GOING TO GET PAID AND IT'S THIS BIG, SUPER INTELLIGENT THING.' BULLSH*T."

Thom Yorke on Spotify and the notion of music gatekeepers online, on sopitas.com, October 2, 2013

The *Electronic Musician* Poll

# WHAT'S ON YOUR HOLIDAY WISH LIST?

MICS **8%**
MONITORS **14%**
SOFTWARE **15%**
OUTBOARD GEAR **12%**
INSTRUMENTS **20%**
ALL OF THE ABOVE! **31%**

This is my home studio in Pittsburgh, P.A. The main purpose of the studio is to make electronic dance music, mostly house, trance, and electro. I've been using MIDI to compose various styles of music since my freshman year of high school in 1994. I've always liked techno and even wrote a decent amount using presets from very non-analog-synth types of keyboards. Once I started working with a few people who really knew what they were doing, I started to compile the collection you see here. I've bought and sold tons of gear over the years to come up with my current setup, but I couldn't be happier with what I have now. A few of my favorites include the DSI Prophet 12 (of course), the Virus TI2 rack, The Nord Lead 3, and the XBASE 999 in the original white finish. Here's a complete list of the gear (left to right ... sort of):

Future Retro 777
Novation K-Station
Nord Lead 3
Novation Supernova II Pro-X
JoMoX XBASE 999
Access Virus TI2 Rack
Novation D-Station
E-MU Procussion
Roland R8M
Akai XE-8
Waldorf Rack Attack
Waldorf Micro-Q Phoenix Edition
Electrix Warp Factory
Electrix Filter Queen
Electrix EQ Killer

Macbook Pro W/ Thunderbolt
  Displays
Novation Nova Laptop
Arturia Origin
Electrix MO-Fx
Electrix Filter Factory
Yamaha FS1-R
Speck Xtramix
JoMoX JazBase 03
Dave Smith Instruments Prophet 12
Waldorf Q
Nord Electro 2 Rack
L.L. Electronics Rozzbox One V2
Yamaha S90ES
Doepfer Regelwerk

**JOSHUA SMITH, AKA THUMPTY JUMPTY**
**VIA EMAIL**

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## ask!

I RECENTLY WENT FROM MAC TO WINDOWS AND IT APPEARS THAT I CAN'T AGGREGATE ASIO INTERFACES THE SAME WAY I COULD AGGREGATE CORE AUDIO INTERFACES ON THE MAC. IS THERE ANY SOLUTION, SHORT OF BUYING A NEW AUDIO INTERFACE WITH MORE INPUTS?

**ROBBIE MCINTYRE**
**MILWAUKEE, WI**
**VIA EMAIL**



Although Echo and Roland make some ASIO interfaces that can be cascaded, you don't necessarily need a new interface. Windows itself can aggregate multiple interfaces if your software supports the WDM, WaveRT, or ASAPI driver models. (Most programs do.)

Referring to the screen shot, four interfaces are available simultaneously in Cakewalk Sonar's preferences (three external interfaces and the internal Realtek audio chip; you can also see the DI-G and G-Node control panels in the background). It's all quite transparent—just make sure you select a driver model in your software that all of your interface drivers support (in this case, it's WDM/KS), and that all of the interfaces are running at the same sample rate. It's also a good idea to set all interface driver buffers to the same size (*e.g.*, 512 samples). All inputs and outputs will be available to your software.
**THE EDITORS**

**An interface setup for recording bass, guitar, vocals, and drums using Windows. Bass is feeding the Line 6 TonePort DI-G interface, a Gibson guitar with hex outputs goes to the dedicated G-Node interface, and the Roland Octa-Capture is providing two mic inputs for vocals and six for drum mics.**

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

# My Weekend at
# Rock 'n' Roll Fantasy Camp

BY MIKE BARNES

Jeff Beck and Barnes

*Ever wonder what it would be like to meet your musical heroes, and learn from the masters? Mike Barnes kept a journal during a long weekend at the Las Vegas MGM Grand last April, when he joined Rock 'n' Roll Fantasy Camp and got the chance to meet some serious rockstars: guitar god Jeff Beck and the Beach Boys with Brian Wilson. Here are some highlights from Barnes' experience. His complete journal is online at emusician.com.*

**Arrival and Welcome** The RRFC HQ is located in an industrial estate not far from the strip and is fairly sedate-looking from the outside. Inside, the walls are decked with rock 'n' roll memorabilia, in a warren of rehearsal rooms, a recording studio and the sizeable live performance area with stage, backline, P.A., and multicamera recording system. Around 50 campers gathered with their instruments for de-briefing and camp counselor/band assignment in the main performance/ auditorium area. Welcome evening entertainment featured the camp counselors led by musical director Kip Winger turning in a kick-ass performance of rock classics.

**How RRFC Works** Each day, 10 A.M. to 10 P.M., was full of rehearsals and evening counselor jams, with catered lunch and beer included. Saturday and Sunday nights went later, with every band performing at the MGM Rouge bar.

The RRFC camp counselors/band leaders/ musical directors were universally awesome:

talented, humorous, musically gifted, with the patience of Job. They make the whole process easier by sending out setlists in advance for those who want to practice some songs so they arrive ready to play.

**The Gear** RRFC is primarily oriented for live performance and rehearsals. Rehearsal P.A., amps and keyboard backline, and headphone amps were mostly courtesy of Electro-Voice and Roland. Each rehearsal room was equipped with P.A., four mics/mic stands, drum kit, keyboard rig, and guitar and bass amp.

The recording room was basic but optimized for rapid live recording with a Roland electronic drum kit, pedalboards, and Roland M-48 live personal mixer/headphone distribution system.

The main performance area/auditorium is set up like a small club equipped with a raised stage, backline, and small-venue P.A./ amplification, along with live desk and multiple fixed cameras and live HD video mixing system.

**Saturday: Onstage With Jeff Beck**
Performance slots for the day were drawn and each band was allocated a time to perform with Jeff in the main auditorium and have it all captured in audio/video for posterity. We landed a perfect middle slot—time for Jeff to warm up and a couple of early bands to crash and burn in nervous idolatry. All that remained was to choose exactly which of the six songs we now had under our belts in varying degrees

of competence to actually play. We agreed on "Superstition" and "Rock Me Baby," since these seemed to be most unique to our band and had decent keyboard parts for me!

Jeff, of course, delivered an insanely religious set of uniquely Beck solo work and shredded in biblical proportions as we all banished stage nerves and relished the moment of musical glory.

**Sunday: Good Vibrations** Sunday afternoon was the VIP performance and a meet-and-greet with Brian Wilson and the Beach Boys. We were all very fortunate to get intimate performances that included "Good Vibrations," "I Get Around," "Surfer Girl," and "California Girls."

After the show, Brian generously posed for pictures with the camp attendees, and the posse all headed off to the MGM Rouge bar for good-bye drinks and to setup for the final RRFC band performances. Dave Fishof joined us briefly on stage for the final curtain call and to congratulate all the bands, and then it was finally time for a last cocktail and hit the sack . . . "Elvis had left the building."

Interested in jaming with superstars? Rock 'n' Roll Fantasy Camp and our sister magazine *Guitar Player* are teaming up with guitar legends Joe Perry, Steve Vai, and Eric Johnson, for an itinerary that includes two performances, recording sessions, and interactions with the *Guitar Player* editors. For more information, visit rockcamp.com.

## 1
UVI
**Sparkverb**
Reverb plug-in
**$199**

**HIGHLIGHTS** Decay Editor includes frequency-based spectrum-editing capabilities • tunable modulation • Mutate and Randomize functions • Freeze feature offers infinite decay • unique Preset Voyager displays presets arranged by category and similarity • supports AAX, RTAS, AU, MAS, and VST • 32- and 64-bit • no iLok required
**TARGET MARKET** Musicians, sound designers, and recording engineers
**ANALYSIS** Designed to provide excellent sound quality while remaining highly efficient, with low CPU demand.
**uvi.net**

## 2
iZotope
**Nectar 2**
Vocal processing plug-in
**$229**

**HIGHLIGHTS** Automatic and manual pitch correction • breath removal algorithm • modeled EMT 140-style plate reverb with saturation effect • automatic and manual harmonization features • new FX module includes seven new effects • works as VST, VST 3, Audio Units, RTAS/AudioSuite, and 64-bit AAX plug-in • more than 150 presets
**TARGET MARKET** Anyone who tracks and mixes vocals, whether that involves singing or dialog
**ANALYSIS** The second generation of this respected plug-in makes it even easier to transparently shape vocal recordings.
**izotope.com**

## 3
MOTU
8-channel audio/MIDI interface
**8pre USB**
**$549 street**

**HIGHLIGHTS** 16x12 Hi-speed USB 2.0 audio interface • 8 mic preamps on XLR/TRS combo jacks with individual phantom power and –20dB pad buttons • 24-bit, 96kHz resolution • ADAT optical I/O • MIDI I/O
**TARGET MARKET** Recordists looking for an affordable way to expand their rigs
**ANALYSIS** Previously a FireWire interface, the 8pre USB provides a cost-effective way to add 8 inputs to your system, whether direct to computer or with another audio interface using ADAT I/O.
**motu.com**

## 4
AEA
**N22**
Phantom-powered ribbon microphone
**$899 street**

**HIGHLIGHTS** Bi-directional pattern • frequency range of 20Hz to 20kHz • handles a maximum 141dB SPL above 200Hz • weighs only 12 ounces • comes with case, custom protective mic sleeve, and shockmounted mic clip • can be used onstage, thanks to its rugged construction and protected ribbon • Made in the USA • 8.8" x 1.6"
**TARGET MARKET** Singer-songwriters, musicians, engineers
**ANALYSIS** The N22 is rugged, easy to use, surprisingly affordable, and designed for professional, home-studio, and stage use.
**ribbonmics.com**

*All prices are MSRP except as noted*

**5**

Native Instruments

*Kinetic Metal*

Sound library

## $99

**HIGHLIGHTS** Sound design by Jeremiah Savage features unique and unusual metal objects • Kontakt 5 or Kontakt 5 Player (free) • more than 100 instruments, including pads, basses, and leads • customizable LFO • morph between sounds • built-in effects: color, distortion, movement, space • sample and effects presets can be linked and controlled simultaneously

**TARGET MARKET** Sound designers, composers, performers

**ANALYSIS** Despite its seemingly experimental approach, this is a remarkably musical-sounding instrument that offers plenty of high-level, realtime control.

**native-instruments.com**

**6**

Prism Sound

**Lyra 1**

USB audio interface

## $2,350

**HIGHLIGHTS** 2 analog inputs: instrument/line and mic/line with phantom power and –20dB pad • 2 analog outputs • S/PDIF digital I/O • master volume control • digital mixer for low-latency monitoring • SNS noise shaping on digital outputs • sample rate conversion

**TARGET MARKET** Musicians and project-studio owners

**ANALYSIS** With a signal path and clock circuitry based on its high-end Orpheus, Prism Sound has created a desktop USB interface with pro-level specs and build quality.

**prismsound.com**

**7**

Centrance

**HiFi-M8**

Portable USB D/A converter

## $599–$699

**HIGHLIGHTS** 8 models to choose from • various I/O configurations, including XLR, 1/4″, and TOSLINK connections • supports Mac/Win, iDevices, and Android • 16-bit/44.1kHz to 24-bit/192kHz resolution depending on model • Class A headphone amplifier • rechargeable battery • switches for output impedance, bass, and treble

**TARGET MARKET** Producers, musicians, and audiophiles who desire portability

**ANALYSIS** A soundcard and headphone amp together in a diminutive, battery-powered device that is designed to give you high-resolution playback anywhere.

**centrance.com**

**8**

Akai

**RPM500**

Active studio monitor
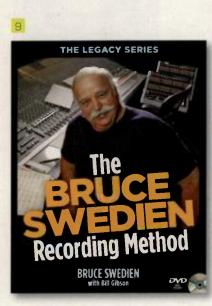
## $199/each street

**HIGHLIGHTS** 5.25″ woofer and 1/25″ tweeter • Class A/B with 50 watts for LF driver and 40 watts for HF driver • XLR, balanced 1/4″ TRS, and RCA audio inputs • frequency range 50Hz to 30kHz • isolation pad on cabinet bottom • HF, midrange, and LF controls

**TARGET MARKET** Personal studio, editing suites, educational facilities

**ANALYSIS** With its Kevlar cone and highly reinforced cabinet, this monitor was built to compete with others in its price class.

**akaipro.com**

*Continued*

**9**

**THE LEGACY SERIES**

**The BRUCE SWEDIEN Recording Method**

BRUCE SWEDIEN
with Bill Gibson

DVD

**10**

**11**

Pro Tools 101
An Introduction to Pro Tools 10

Frank D. Cook

Avid Learning Series

**12**

PRO

**iRig**

GAIN

IN

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**9**

Hal Leonard

**The Bruce Swedien Recording Method**
By Bruce Swedien

**$39.99**

**HIGHLIGHTS** Tips on mic selection and placement • explanations of his technical workflow as well as musical considerations • includes DVD with videos of Swedien recording and mixing • 334 pages
**TARGET MARKET** Professional and student engineers and musicians
**ANALYSIS** Swedien is a legend for his uncanny ability to get classic sounds while remaining innovative. Here's a chance to find out how he does it.
**halleonardbooks.com**

**10**

JBL

**LSR308**
Active studio monitor

**$325 each**

**HIGHLIGHTS** Bi-amped studio monitor with 8" woofer and 1" soft-dome tweeter • 56-watt Class D amps for each driver • 37Hz to 24kHz frequency range • includes Image Control Waveguide from the more expensive M2 system • XLR and balanced 1/4" TRS inputs • high-frequency and low-frequency trim controls • 5" version also available
**TARGET MARKET** Project studios, editing suites, educational institutions
**ANALYSIS** JBL brings many of its innovative, high-end designs into the price range of the musician and personal-studio owner.
**jblpro.com/3series**

**11**

Cengage

**Pro Tools 101: An Introduction to Pro Tools 11**
By Frank D. Cook

**$49.99**

**HIGHLIGHTS** Covers session setup and configuration for recording music in Pro Tools 11 • chapters on MIDI and virtual instrument tracks • detailed descriptions of automation, mixing, file backup, and burning songs to CD • includes DVD of hands-on projects, videos, and tutorials
**TARGET MARKET** Beginning and intermediate users
**ANALYSIS** While Pro Tools is not difficult to learn on your own, you will get farther when you know the fundamentals covered in this book.
**cengageptr.com**

**12**

IK Multimedia

**iRig Pro**
Audio/MIDI interface

**$149.99**

**HIGHLIGHTS** Works with Apple iPad, iPhone, iPod touch, and Mac computers • 24-bit resolution • battery powered • combo jack accepts 1/4" or XLR input • switchable phantom power • includes detachable iDevice (30-pin and Lightning) and USB cables • input gain control • bundled with numerous software apps
**TARGET MARKET** Instrumentalists and singers using an Apple mobile device or Mac computer
**ANALYSIS** A lightweight, portable interface that can be used with any audio source or external MIDI controller.
**ikmultimedia.com**

*All prices are MSRP except as noted*

# Expert Sleepers Eurorack Modules and Silent Way Plug-ins

## Uniting your synth and DAW

**BY GINO ROBAIR**

WHEN YOU'RE ready to fully integrate your modular with your DAW, check out what Expert Sleepers (expert-sleepers.co.uk) has to offer. No matter which module format you use, you can start with Silent Way (Mac/Win: $59), a suite of 19 plug-ins available in AU, VST, and AAX. A trial version is available online.

As you might expect, Silent Way has controller plug-ins, such as LFO, Step LFO, Quantizer, and DC that send a variety of host-synchronizable signals (CV, gate, trigger) to your instrument. However, the suite also includes plug-ins that track the pitch and envelope of audio input, that accept CVs and translate the input to MIDI or OSC messages, and that interface with specific hardware devices, such as the company's own modules and the Madrona Labs Soundplane controller. Expert Sleepers has even released a version of its Voice Controller plug-in as a Rack Extension for Propellerhead Reason.

**The Expert Sleepers ES-3 Mk3 is a Eurorack module that connects to your audio interface over ADAT Lightpipe so you can send CVs to your modular from your DAW.**

Silent Way requires a hardware audio interface based on one of these options: an interface with DC-coupled audio outputs (such as those from MOTU with TRS jacks; a full list of compatible interfaces is online); an interface with ADAT Lightpipe or S/PDIF I/O and the Expert Sleepers ES-3 ($325) or ES-4 ($295) module, respectively; or an audio interface with AC-balanced outputs combined with Silent Way's AC

Encoder plug-in (and TRS-to-TS cables) or the company's 8-channel ES-1 module ($195 with a DB25 sub input or $215 with eight 1/4-inch inputs).

You will get the best performance using the ES-3 Mk3, a new Eurorack module that accepts eight signals from software running on your DAW (Silent Way, Max, Reaktor, etc.) when connected to your interface's ADAT Lightpipe port. The ES-3 converts these signals into DC-coupled ±10V analog signals, which you connect to your modular using standard 3.5mm patch cables. (It can also output audio!) The 24-bit, 8-channel output has a sampling rate of 44.1 or 48kHz. If you choose 88.2 or 96kHz at your DAW, your outputs are reduced to four, until you use the Silent Way SMUX plug-in to restore the output count to eight. If your audio interface has S/PDIF I/O, the ES-4 will give you five CVs.

For gates and clock pulses, Expert Sleepers offers the ES-5 ($150) expansion module, which connects to the ES-3 circuit board with a ribbon cable to give you eight 5V gate signals (or 12V signals if you change an internal jumper). The ES-5 can be connected to the 8-channel EXS-8GT Gate Expander ($125) as well. The ES-5 uses the Silent Way ES-5 controller plug-in or the Max/MSP external available on the Expert Sleepers website. If you want to send MIDI or DIN sync from the ES-5, Expert Sleepers offers 3.5mm-to-DIN-connector cables.

Naturally, you will also want to send CVs to your DAW: The ES-6 ($175) accepts six analog inputs on 3.5mm jacks and sends them out the Lightpipe port to your DAW. The ES-6 can handle two additional analog inputs when you supplement it with the ES-7 ($120) expansion module. (To use the ES-6, you will need an ES-3, which supplies clock signals via a circuit board connection using a supplied ribbon connector.)

The Eurorack panels are drilled with oval mounting holes so that modules will fit into both Doepfer- and Analogue Systems-style racks. If your modular isn't a Eurorack but you still want to use Expert Sleepers' modules, I suggest you invest in a small, inexpensive case and power supply, such as the ones available from Tiptop Audio and Doepfer. The amount of control provided by the Expert Sleepers system is worth it. ■

**The Voice Controller plug-in within Silent Way.**

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H74606

**$199⁹⁹**
30" Studio Desk
H74597

**$139⁹⁹**
24" Sidecar
H74601

# *The Gift of*

**BY MARKKUS ROVITO**

ONCE AGAIN, 'tis the season when it's better to give than receive, so make sure to give your music gear wish list to anyone and everyone—early and often. Need ideas? Of course you don't, but you want them anyway. And there's no one better to fill your eggnog-and-cookie fueled mind with visions of studio delights than the professionals in the field.

We quizzed artists and producers for their best musical gift ideas, and they came back with dozens of hardware and software suggestions for the studio and the stage. There's something here for everyone—mostly within modest budgetary constraints. However, a few extravagancies also made the list in case you are extra-deserving this year, like if you happened to cure Lyme disease between recording sessions. Either way, there's enough here to keep you unwrapping until noon, and to keep your studio fresh long after your New Year's resolutions fizzle out.

# Gear }

*13* artists, *35* presents, one happy electronic musician (that's you)

**Au Revoir Simone** After 10 years and four studio albums, the ladies in Au Revoir Simone know their way around not only harmony-laced indie-pop melodies, but the studio as well. Heather D'Angelo, Annie Hart, and Erika Forster cut an iconic image onstage, standing in a horizontal line behind their carefully chosen keyboards and effects pedals. After co-producing their latest album, *Move in Spectrums*, these gear geeks in disguise want to make sure your holidays are just as chock full of musical goodies as their mesmerizing, synth-laden tunes.

**Heather D'Angelo:** "The band Air introduced me to the ARP Solina String Ensemble ($685–850, used) during our tour with them, and I fell in love with it mainly because it feels like the quintessential sound of their band. It's wistful, warm, and lilting, but also has a distinctively electronic sound. I appreciate how this vintage synth produces more of an interpretation of violins rather than an unabashed mimicry of them—like the sound of a robot weeping. Good luck finding one on Ebay!

"The little Roland SPD-SX ($799) is the great workhorse of many bands today, and the latest model improves greatly over the last one, now that it comes with wave editing software and doesn't require the crappy memory cards that no one even makes anymore. There are very few computers that can withstand nightly beatings with a stick and still perform like this does. I'm a little in awe of it.

"Yet another go-to keyboard for most touring bands, the Korg MicroKorg ($399) is a fun keyboard to bring, because it's small, light, well-built, and comes loaded with a bunch of bizarre, and fairly unusable preset techno sounds. I predict the Microkorg will enjoy a popular resurgence with kids of the future as a vintage novelty keyboard. In the meantime, the 3B Vintage preset packs the kind of sub-bass punch that can make an audience pee a little bit in their pants. We use it on several songs. Diapers not included."

**Annie Hart:** "I know all of you know this already, but the Shure SM7B ($349) is an unbelievably rich-sounding and affordable microphone. I remember when I used it for the first time when we recorded *Still Night Still Light*. I didn't know any mic from Adam and thought that the SM-7 sounded utterly fantastic. I never really liked the sound of my recorded voice until I tried it. You really get your money's worth.

"Why not surprise yourself and your gift recipient with a fun, vintage Casio or Yamaha keyboard from a garage sale or eBay? I try to stay away from the enormous hulking '90s models, but that's just personal preference. It's always a treat to click through the various sounds, since there's usually a lurking gem in there."

**Erika Forster:** "I use Algoriddim Djay ($19.99, Mac) for DJing professionally. It's incredibly user friendly and links up to your iTunes library, so it's worth getting even if you're just DJing a house party. You can also use it to record playlists to make mixes for friends or create soundtracks for events/videos.

"I did a ton of shopping around before buying my first sampler, the Roland SP-404SX ($499). It does so much, yet is really simple.

"Critter & Guitari is mostly known for its rad pocket pianos, but the Kaleidaloop ($300) is a great instrument. If you're willing to let go and use it as an improvisation tool, it adds amazing texture and unexpected layers to music. Because it's essentially recording what you're doing and playing it back out, it automatically fits into the existing soundscape, just adding lushness and unexpected character.

**Cage The Elephant** Lincoln Parish plays lead guitar for the ever-evolving Kentucky rock band Cage The Elephant, which just released its third studio album, *Melophobia*. "I think a great holiday gift for any musician would be a copy of Apple Logic Pro X ($199)," Parish said. "This is the same recording software I started on, and it is very intuitive for musicians and super easy to use. Also there is so much already built into Logic that it doesn't require a lot of extra software to make the music you want to make."

Logic Pro X helps to take the sting out of purchasing a full-fledged DAW. Its collection of samplers, synthesizers, effects, and loops could easily fetch $200 alone, but now you get the whole shebang for that price, including Logic Pro X's new Drummer, Flex Pitch, and Smart Controls features. Maybe Parish will even use Logic's Main Stage 3 live performance tools to create a virtual guitar rig when Cage the Elephant tours Ireland and the U.K. in February.

**Claude Kelly**

Claude Kelly has snuck his way onto the list of perennial Grammy nominees through the back door, primarily as a songwriter and now as an executive producer, as well. His work with Fantasia, Bruno Mars, Tamia, Christina Aguilera, Ke$ha, Miley Cyrus, Akon, and many others has garnered Kelly a string of chart hits and awards. Now with a seemingly endless parade of artists pouring into his Manhattan studio, Kelly aspires to be one of the next great Quincy Jones-style studio collaborators.

To make his hits, Kelly concentrates on capturing emotionally genuine vocals, being careful not to over-Auto-Tune anything. He also stresses production competence, so you can work quickly to record great vocals when the moment is right. "A great affordable gift for songwriters/producers is the Avid Mbox 3 with Pro Tools Express ($499)," he said. "It's a basic interface, and a great way to learn how to use Pro Tools (which is a studio standard). Also delivering great quality, it's an easy one-stop shop for creating a complete song."

If you've been really good this year—like stopping global warming—maybe you can even take Kelly's high-end suggestion. "If you're ready to splurge, go for a great microphone," he said. "As a singer/ songwriter and vocal producer to some of the best singers in the industry, I can truly say nothing brings a vocal to life better than a quality microphone. Grab a vintage tube Neumann U47! It'll cost you around 15K, but that's a small price to pay to sing on the same mic that Frank Sinatra and The Beatles used. Trust me, you'll hear and feel the difference. Happy holiday shopping."

Thanks, Claude. At press time, there was an original Neumann U47 on eBay for $11,000, so we're saving money already. Or as an alternative, you could always pick up a new Telefunken U47 for "just" $8,495. Your family doesn't need to eat in 2014, do they?

# HANS ZIMMER
## PERCUSSION

2013

SPITFIRE

**Greg Kurstin** Songwriter, performer, and producer Greg Kurstin doesn't care. He'll produce and write for indie-rock heroes just as soon as teeny-bopper Top 40 singers. Moving seamlessly from producing The Shins or Devo to writing for Ke$ha, P!nk, or Kelly Clarkson, the multi-Grammy nominee picked up his first win this year for his work on Clarkson's "Stronger." Somehow he also has time to lead his own prolific band, the tropicalia-influenced The Bird and the Bee.

It's no surprise then that Kurstin recommends you open up a gift box of portable musicality, so you can work on songs anywhere you go. The Critter & Guitari Pocket Piano ($175) mini-synth packs a lot of classic analog and vintage video game sound into a heavy-duty aluminum-and-hardwood case that's fit to travel. It runs on a 9V battery or optional power supply, and you can use its built-in speaker or 1/4-inch output. "The Pocket Piano is very small, but very effective," Kurstin said. "Sometimes it's the missing link/finishing touch you've been looking for on a track."

**Jordan Rudess** You have to give Jordan Rudess some credit. When we asked the composer/producer/entrepreneur and keyboardist extraordinaire for affordable gift ideas, he didn't recommend any of the $10 iOS apps from his Wizdom Music company, even though MorphWiz, SampleWiz, or Geo Synthesizer would all make fine additions to any iPad owners' collection. Instead, Rudess went down the path of one of his greatest passions: new synthesizers. "I'm very impressed with the Novation Ultranova ($699) keyboard," he said. "It's amazing how much synthesizer can be packed inside this small but mighty board!" The Ultranova builds upon the foundation of the classic Supernova II synth engine and adds new technology such as wavetable synthesis and the ability to play the synth from within a DAW using its software editor as a plug-in. An included gooseneck mic provides easy access to the Ultranova's 12-band vocoder, but stereo analog line inputs also let you process virtually any instrument you choose.

As an extra bonus, Rudess has the jump on next year's wish list as well. Although they won't be released until the fall of 2014, it's never too early to start behaving for a Roli Seaboard Grand Studio ($1,999) or Seaboard Grand Stage ($2,999). "Those who want to know about the evolution of the piano keyboard as we know it should immediately check out the Seaboard," Rudess said. "It is truly a next-generation musical instrument." The innovative Seaboard reinvents the keyboard as a soft, continuous surface including polyphonic pitchbend, vibrato, per-note dynamic changes, and glissando pitch ribbons along the top and bottom.

By the time you read this, Rudess' new project—funded entirely at Pledge Music (pledgemusic/jordanrudess)—should be nearing completion. It is a full orchestral recording of his composition "Explorations for Keyboard and Orchestra."

**Justin Meldal-Johnsen** As an in-demand bassist for Beck, Nine Inch Nails, and many others, and now also a producer for hot alt-rock bands such as The Naked and Famous, School of Seven Bells, and M83, Justin Meldal-Johnsen constantly lends out his talents to others. That's why when the holidays roll around, he wants to be sure there's some receiving mixed in with all the giving.

"Sometimes I read gift ideas in magazines and get slightly offended at the high-end suggestions," Meldal-Johnsen said. "As if one's girlfriend is going to spring for a pair of ATC SCM25 studio monitors (even if she has an amazing job and you do all the cleaning). Be real; these are "gifts" you buy for yourself (like I did) when you get your first decent royalty check or something."

Meldal-Johnsen's long holiday list includes mostly budget-friendly suggestions. But you know how it is; musical talent often leads to expensive taste in gear.

• Fingerlab DM1 ($4.99 iPad; $1.99 iPhone): "My favorite iOS drum machine."

• Moog Animoog ($29.99 iPad; $9.99 iPhone): "Cheap, interesting, and rich-sounding. If you have an iPad, it's a must, frankly."

• Snark Clip-on Chromatic tuners ($19–$39): "Tunes anything with strings, and does it well."

• ValhallaDSP plug-ins ($50 each): "They work with every DAW, and they are some of the finest-sounding I've heard or used. An incredible value."

• Keith McMillen QuNexus ($149): "I really like this thing. It's rugged and isn't just for soft synths on your laptop. It also works with iOS and talks via CV to modular synths."

• Korg Volca Bass, Volca Beats, and Volca Keys analog synths ($149 each): "I checked them out early, and they are really, really fun."

• Sennheiser HD25-1 II ($249): "Get yourself some decent headphones that you might actually be able to mix something on. These are the cheapest ones I've found that are viable for that purpose. They are really excellent."

• Eventide H9 Harmonizer multieffects pedal ($499): "Okay, I lied, but this thing is so incredibly innovative and useful for stage and studio, I think it's a worthy mention."

• Teenage Engineering OP1 portable synthesizer ($849): "Now I'm really violating my principles and suggesting something expensive. If you do have that rich girlfriend (or parents), do yourself a favor and ask for one of these. I know they are trendy, but that's because they are in fact enormously useful and functional. I use mine on every project I produce."

See if you can spot the OP1 on Meldal-Johnsen's next production, the forthcoming second album from Young the Giant.

**Krewella** EDM trio Krewella knows all about sharing. The group began its rise to prominence by sharing tracks such as "Life of the Party" on Soundcloud in 2011. When it comes to sharing studio knowledge and recommendations, Krewella doesn't hesitate to list Ableton Live 9 ($99–$749) and recommend "the necessary plug-ins" Native Instruments Massive (part of Komplete 9, $499), ReFX Nexus 2 ($299), and Lennar Digital Sylenth1 (139 euros), but also recommends the free plug-ins Audio Damage Fuzz Plus, IK Multimedia Sample Tank Free, King Dubby Dub Delay, Dash Signature Da Hornet, and Ohmforce Frohmage.

Like many other acts doing dance music, Krewella hits the road as a DJ crew, where they rely on Native Instruments Traktor software. "On stage, we love Traktor," Krewella stated as a group. "But if you don't want to buy CDJs and a mixer right away, go to your local music gear shop/studio and see if they rent out equipment for you to practice on."

**NERVO** Australian twins Miriam and Olivia Nervo began their lives in the spotlight as teenage models. However, the sisters moved their blonde ambition over to the world of pop production, and soon scored a Grammy win for co-writing the David Guetta and Kelly Rowland 2009 single "When Love Takes Over." Now the sisters, recording and DJing as NERVO, do most of their modeling for the covers of singles such as "We're All No One," "You're Gonna Love Again," and "Hold On."

Now working on a debut album while also doing shows, NERVO has the perfect holiday gift for other music producers living the vagabond lifestyle—if they're ever home to receive it. The Apogee One ($349) compact USB audio interface for Mac and iPad puts Apogee's famous studio-quality sound in the palm of your hand. "The Apogee One is great for us because we travel a lot, and has a great mic built-in," NERVO said. When not using the built-in omnidirectional condenser mic, you can plug an XLR mic or 1/4-inch instrument cable into the One's breakout adapter, and the interface works on USB bus power or two AA batteries.

**Nightmare and The Cat** When your old man fronted iconic '80s band Eurythmics, people may expect you to rebel by working in an anonymous government clerical job and going to bed by 9 P.M. every night. That's not how it panned out for the early twenty-somethings Sam and Django Stewart (sons of Dave); they decided to become rock stars. However, their form of rebellion could be the sound of their band Nightmare and the Cat. Nothing like their father's duo, the five-piece, L.A.-based Nightmare and the Cat crafts a unique blend of anthemic, baroque power-pop that sounds ready-made for the next Baz Luhrmann flick. The band's *Simple* EP on Capitol dropped earlier this year, as a teaser to their full-length debut due in 2014.

While Django's voice soars like a next-generation Matthew Bellamy or Thom Yorke, Sam holds down the guitar duties. If you're looking for something to assist your mobile recording this year, Sam put in another vote for one of his and his brother's favorite tools. "The Apogee One ($349) is a cool little interface that I use a lot for home demo recording," he said. "It's super easy to use, affordable, and very portable. It has 1/4-inch and XLR inputs, as well as an internal mic and connects to your computer with a USB. Just simple."

**Phoenix** French dance-rock band Phoenix may have hit the big time with 2009's *Wolfgang Amadeus Phoenix*, and kept flying high with this year's *Bankrupt!*, but there were a lot of lean years before the band rose from the ashes. Guitarist/keyboardist Laurent Brancowitz (a.k.a. Branco) first brushed shoulders with greatness way back in 1992, when he played in a short-lived band called Darlin' with Thomas Bangalter. While Darlin' went nowhere, Bangalter formed Daft Punk and went "Around the World." Meanwhile, it would take Brancowitz about another decade of struggle before tasting success with Phoenix.

So Brancowitz still feels in touch with his starving-artist roots, and he knows how you can stretch your precious gear dollars. Any musician on the gift list can have fun with the Yamaha PSS-390 vintage FM keyboard. Musicians like Brancowitz prize this cult-classic budget digital synth for its stylish FM sounds (100 onboard patches), set of eight control sliders (rare for the Portasound series) and optional battery power. Best of all, they are still in relatively plentiful supply, and you can find them in good condition on eBay or other second-hand markets for $50–$100.

**The Crystal Method** 2013 marks the 20-year anniversary of Ken Jordan and Scott Kirkland's founding of The Crystal Method, something that seems all the more unbelievable when you revisit their early singles and the trademark sound of filthy analog synths with thunderclap breakbeats still sounds fresh enough to stay on the shelves. The Crystal Method has always dispensed gear advice at will for electronic musicians, and in fact, the duo was one of the first to heartily recommend running analog and other synths through guitar effects pedals as a creative and low-cost way to come up with new sounds.

Some things never change, and why should they? If you're looking for a fun new toy for about a Benjamin, the Method suggest one of the Electro Harmonix Big Muffs ($80–$120), "a great effect pedal," they said. "Whether it is a guitar or a keyboard, you need something to make it sound dirty." Current Big Muffs come in several varieties: the basic Big Muff Pi, Bass Big Muff Pi, Big Muff Pi with Tone Wicker, and the Deluxe Bass Big Muff Pi. No doubt Jordan and Kirkland have at least one of each in every room of their studio, and are using them as you read this on their forthcoming self-titled album. The pair has also produced music for the Bad Robot series, *Almost Human*, now airing on Fox.

**Tucker Martine** If you were to look at Grammy-nominated producer/composer Tucker Martine, you may not think that the stylish young gentleman spent a huge chunk of his life determining which mic and preamp would make for the best sound for albums from the likes of Modest Mouse, Spoon, The Decemberists, My Morning Jacket, and others. But luckily for us, Martine has passed along some of the fruits of his studio tan for the record producer on your holiday shopping list.

For recordists who need to compare the merits of different mics, Martine suggests the Radial Engineering Gold Digger 4-channel mic selector ($349). "This thing makes it so much easier to compare different mics on a single source using the same preamp," he said. "Manley makes one too, but this one is a fraction of the price and very solidly built." And while he's at the time-saving soapbox, Martine also recommends the Radial Cherry Picker 4-channel preamp selector ($349), which is "just like the Gold Digger but for mic preamps," Martine said. "I often don't have the time or patience to compare four mic pres on a source when I'm in the flow of a session. But this thing makes it painless."

Tucker's final studio secret could ensure that the producer on your list has a happier New Year when it comes to recording. "The Cloud Microphones CL-Z ($299) makes it easy to change which impedance is being fed to your mic pre from your mic," Martine said. "You wouldn't believe how much better some mics sound with certain preamps once the impedances have been matched (or creatively mismatched)."

**Vince Clarke** After a legendary career that saw him passing through iconic bands Depeche Mode and Yazoo before settling into the Erasure hit machine, Vince Clarke came full circle by teaming up with Depeche Mode maestro Martin Gore for the 2012 chill, minimal techno album *Ssss*. Simply put, if you're a synthophile, when Clarke sounds off with gear advice, you'd best listen.

It should come as no surprise that one of the pioneers of synth pop would recommend a remake of an analog classic for musicians on the proverbial "nice" list. Clarke points to the current Korg MS20 Mini analog monophonic synth ($599), a reproduction of the circuitry of the early '80s classic MS-20. "It's a re-creation of a classic analog synth," Clarke said. "It sounds great, looks cool, and has lots of knobs to twiddle."

While still enthralled with good ol' analog sound, Clarke still embraces the ever-marching progress of music technology. So his second gift suggestion may be the best 200 bucks one could spend on enhancing a recording musician's life, Apple Logic Pro X ($199.99), or as Clarke calls it, "your very own complete recording studio." The latest version of this full-scale DAW adds a redesigned mixer, score editor, and new instruments and sounds while keeping the price at a level you have to double-check to believe.

Yes, Logic Pro X is a value, but to fully exploit it, Vince suggests you invest in one of those brand new, 12-core Mac Pro computers that still hadn't been released or priced at press time. While the price is still unknown, it's safe to say you may need to save Santa from a parachuting accident to deserve one. Otherwise, you could always treat yourself to Erasure's new holiday-themed album, *Snow Globe*. ■

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

# GARY NUMAN

*How the electronic pioneer made the best of metal, concrete, voices, and handheld recorders to create the dark theater of* Splinter (Songs From A Broken Mind)

**BY KEN MICALLEF**

"I HAVE Asberger Syndrome, so I'm particularly good at being focused and not listening to people!" Gary Numan reveals while discussing his 20th album, *Splinter (Songs From A Broken Mind)* (Machine Music). "Some people see it as a handicap, but for musicians Asberger is a godsend; it gives you a sense of focus and drive and determination. You need that kind of tunnel vision to fight your way through all the sh*t and negativity that can come at you."

Scoring a Top Ten hit with "Cars" during the feel-good, soft-rock 1970s, Gary Numan's music appeared like air-raid siren-synths with a Krautrock beat. He hit gold again with the 1980 album *Telekon*, and again in 2002, with the single "Rip." Early on, the waif-thin, sallow British singer was cajoled, criticized, and denounced, but his synth-heavy music took root, eventually influencing everyone from Nine Inch Nails (who covered Numan's "Cars" and "Metal") to Prince (who covered "Cars"). Numan's music has been sampled by J Dilla ("Trucks"), Basement Jaxx ("Where's Your Head At"), NIN ("Metal"), GZA ("Life Is A Movie"), and Armand Van Helden ("Koochy"), among others. *Splinter* . . . sheds the industrial menace of prior Numan albums to create an insular world of beautiful dread, a place where a listener can play, then disappear to never be seen again.

Numan onstage.

Numan co-produced *Splinter . . .* with longtime collaborator and producer Ade Fenton; the album also features guitar work from Nine Inch Nails' Robin Finck. *Splinter (Songs From A Broken Mind)* was recorded in England and completed at Numan's home studio in Los Angeles, following his move to the U.S. in 2012.

**Splinter (Songs from A Broken Mind) is an amazing-sounding record. At times the synths sound more human than not; the mood is cold, ominous, and menacing, yet beautiful. Did you prefer older or newer technology to record the album?**
I have very little to do with old technology. I'm almost ruthless with it. I still have the bass guitar I wrote "Cars" on. But that aside, I see synthesizers and electronics as screwdrivers, wrenches, and hammers. I don't have any great passion for them. I get what I can out of them with my limited abilities. If something newer comes along I get excited about that and stop using the other thing.

**Which older synths are you using on Splinter?**
The album is entirely software based. I don't have any of my old synths; I don't collect

them. I have two older synths; one is an Alesis Quadrasynth which I use as a controller keyboard and then an Access Virus. That's it for hardware.

When we moved to L.A. from England last October, as part of that move I was clearing out my garage. We had a small upstairs loft that was covered in creeping ivy. England is a very wet place, and things grow easily. I was hacking away at it to prepare the house, when I found a Minimoog underneath the creeping vine. I've had it repaired but I am afraid that is the shameful way I have treated all my old equipment. I had forgotten it was there and it became covered in vine. This is a classic synth! How disrespectful is that? So they come and go. On the new album I used the latest technology that I could find.

**Not for you is the current rage of using vintage analog synths. Is that because you used them in the '70s when they were new?**
Yes, I was there when they were the latest thing. I used them a lot then, and I think I got the best out of them. I just don't feel like going back to that. If I did, I don't think I would find them particularly exciting; it would feel like a step

backward. It might be a chip on my shoulder that I have about nostalgia and retro. I got into electronic music because it was so forward looking. It was all about creating sounds and noise. It was a different approach to making music. I was blown away by that and I considered it to be a technology-driven genre. So now I am looking at new technology, new software, how to do things differently. How can this be used to manipulate sounds or to generate new sounds? I still get excited about that.

**Aside from the soft synths, what kinds of sound sources are we hearing on the new record?**
I spend a great deal of time walking around with my hand recorder capturing banging things and scraping things and recording all kinds of noises. Then I put them into the computer to manipulate them to see what happens. That is still my fascination, recording sounds and twisting sounds. It's still high on my list as the reason for making albums. That is why I am into electronic music. Old synthesizers have been around long enough that they've created their own nostalgia.

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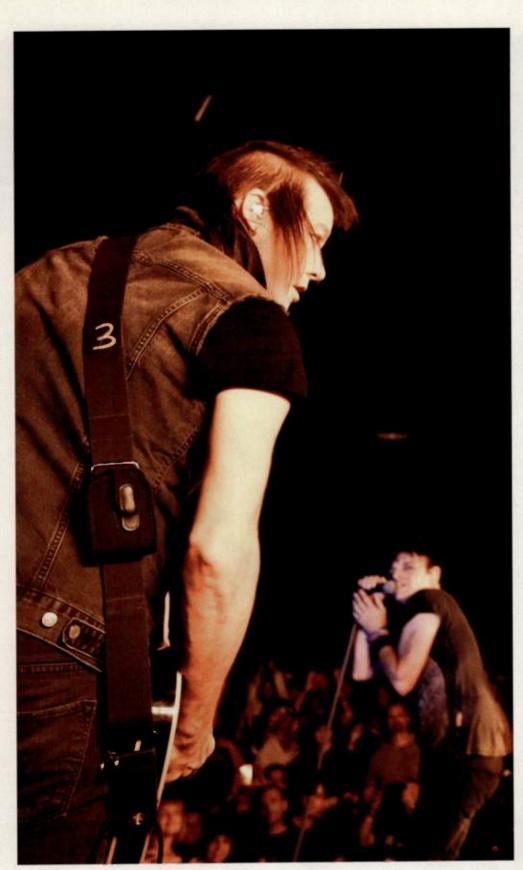We encourage you to choose by ear.

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# DYNAUDIO
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don't recall synths at all, but insects, ghosts, crying babies, monsters, gases, unidentified humanoid organisms—all these clanging, subterranean sounds.

Sometimes I will whisper or talk into a recorder then run that through various effects in Pro Tools. At the house we had some work done, and I found a long metal post with a bit of concrete on the end. I dragged that around on different surfaces and played it back and recorded it at different speeds. I would drag it fast or drag it slow, or drag it over a corrugated drain cover. It would go ch-ch-ch-ch-ch-ch-gggg! I made hundreds of different little samples of that.

One of the doors in the house has this really fantastic horror-house creak to it; it groans. I recorded that, detuned it and effected it in Pro Tools using reverbs or reversing it; that created a completely different character. So much of it is accidental. I will play with the computer and fiddle with knobs and wait to see what happens. It's a series of organized accidents, stumbling from one thing to the next. I find that really good fun. If I was more proficient, if I knew exactly what I was doing, I wouldn't have as much fun. The uncertainty factor creates excitement.

### How do you generally approach the song-writing process?

I start with melody and basic structure, usually on piano. Once the melody and chords and arrangement are set, then we add the noises. Occasionally a sound or even a word will start a song. But if I have a general practice, it's to sit down with a piano or a piano sound and come up with the melody.

### You suffered from depression from 2006 until recording this album. Does depression fuel the creative process in any way?

As a source of subject matter, it does. One thing about depression is, you don't have any desire to do anything. I didn't write any music for three years. I was locked in this horrible corner where everything went inward. It was rubbish. The album was written about that period, but not during that period when it was horrible in general. My wife and I had the most excellent marriage, the envy of all our friends. Then we lost a baby, and then had a baby (and two more), and I got paranoid about turning 50 and growing old and dying. I was struggling with being a parent, so I went into a depression and

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### Did you use any new pieces or plug-ins for the new record?

My favorite is Spectrasonics Omnisphere. During the course of recording, Native Instruments brought out updates, including the Rammfire plug-in [emulation software based on Rammstein's Richard Z. Kruspe guitar rig], which is great for guitar parts. We also used software from a German company called Best Direct; they make the Arabian plug-ins we used in the song "Splinter."

Sometimes the odder sounds on the album

started having panic attacks, and my wife had post-natal depression. It dragged on and on. Then we came through it. I had a new studio built, and half of the album was written within six months of moving to L.A. And a couple songs are from a science fiction graphic novel I am writing; "My Last Day" came from that. The rest were written recently.

### You work in Pro Tools?

I do, but my producer, Ade Fenton, works in Logic. We used Native Instruments Massive, Reactor, but I struggled with that. We also use Omnisphere. The danger with that software is, it's very popular and then you get sucked into using things everybody knows. It's difficult not to do, but it's fantastic software. So many things really work straight out of the box, you have to be careful of that. But as a rule we work hard to make sure we are creating new sounds.

### Your sounds are very human, or even alien! "The Calling" has a beautiful string arrangement, is that live or sampled?

Those are almost real strings. The strings are programmed, but the programming is phenomenal. I created the parts, then Ade spent a great deal of time programming the exact number of hand strokes needed to recreate the exact sound. Strings sound different when you draw back on a bow than when you push the bow. It's ridiculous, the amount of detail he goes to. I can come up with melodies all day long, but I don't have a lot of patience. I rely on accidents. I am too impatient to figure out what every little parameter does. I would rather drag something across the ground and sample it.

### Your vocals are very intimate sounding. What is your process for tracking vocals?

It's simple. In the past, Ade complained about me using too many effects. I had been kicking against that idea, but he kept sending all the tracks back. I don't have a lot of confidence in my voice, but on this album the vocals are very dry with very few effects—mostly a little reverb and delay, but it's essentially the most naked vocals I have ever released. But when I recorded them, I still did it the way I always would, piling on the effects. Then Ade would remove them. I got a new microphone, a Sontronics Saturn condenser. Its presence is ridiculous. I've used everything over the years, Neumanns, AKGs, the standard vocal mics. But after a while I stopped paying attention; I even did two albums with a Shure SM58 in the studio. People punch you in the face for that, but

I found a long metal post with a bit of concrete on the end. I dragged that around on different surfaces and played it back and recorded it at different speeds.

I put so many effects on it, it didn't matter how pure it was originally.

### You record alone in your studio?

Yes. Everything goes through a Pro Tools Control 24, phantom power at the back and I'm done. On older records, I always thought the vocals were too thin, so I would harmonize them or disguise them, like spraying a sh*tty old car or adding new tires. I did that with my voice. And yet, Ade is bullying me not to do that. "You should be happy with it," he said. It's alright and I am really glad we did it like that.

### Your synth counter-melodies are very dire and mournful sounding, the audio equivalent of night torches at a Nuremburg Rally. They're ominous, as in "A Shadow Fall on Me," "Everything Comes Down To This," and "Love Hurt Bleed."

That's natural for me. I lean toward a certain kind of sound. My music, except for "Cars," has always been heavy and somber. That leads you to certain sounds and perhaps certain sounds lead to a certain kind of melody or structure. I will never write a happy song, I know that for a fact. Somebody once called my music "Doomsteady"—that's quite cool!

### But beautiful, all these subterranean, spectral sounds.

I will write the tune the first day. By the afternoon I have all the melody and chords, and the rest of the week I am adding noises, textures, those little things that move the song forward. Then Ade adds more layers or he might remove all my stuff and rebuild the song based around a vocal. I get that back and then we argue! He will take the song into a different direction. But we can be brutally honest with each other.

### You have created a recognizable signature sound. What advice can you give on developing a signature sound?

It's a very difficult thing to do. I literally stumbled across a synth in the studio and that changed my life. I didn't have any interest in electronic music before that. There were so many people that tried to steer me away from that sound. Musicians tried to stop me. The record company tried to stop me, the musician's union tried to ban me. And the press was hostile at first. But if you find something that you genuinely believe in and enjoy, don't let anyone tell you otherwise. Do it. Stick with it. So many people try to write songs and tap into what's happening in the moment but they are already too late, they're already behind the bandwagon. If you really want to do something special, find something you love and stick with it. Don't let anyone swerve you away from it. I honestly thought through large parts of my life that everyone was wrong except me. I believed that no matter how many people told me they thought my music was rubbish. Asberger Syndrome helped me cut through everything, and right or wrong, and I followed my own path. ∎

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

# MAGIC FROM CHAOS:
## The *Free Your Mind* Sessions

"Early Chicago and Detroit house was made by people who had no idea what the rules were, let alone that they were breaking the rules," says Cut Copy keyboardist and vocalist Dan Whitford, extolling the virtues of musical ignorance. "They were making sounds that weren't supposed to be made with the gear they were using and that gave birth to a whole genre of electronic dance music. Sometimes it's good not to know what the rules are."

Creating trippy dance music liberally dosed with Bryan Ferry, My Bloody Valentine, and Spiritualized, Australia's Cut Copy are as likely to perform at a pounding rave as a "summer of love" style festival. Their fourth album, *Free Your Mind* (Loma Vista/Modular), pulses with Special K buzz, coiling disco bass guitar riffs, and swirling analog synthesizers bookended with spoken-word nonsense from party revelers ("there's a leader of the tribe on the horizon, I can see the future"). Found sounds and quasi-occultist field recordings are all part of Cut Copy's musical message in *Free Your Mind*.

"After we recorded a bunch of tracks, we realized there was a motif running through them," explains guitarist/sample jockey Tim Hoey. "The lyric 'Free your mind' appeared in three of the songs. We became fascinated with the idea of freeing your mind. We gave people a list of topics, and that was some of the magic we recorded from the conversations. ['I was above the city,' a woman coos; 'It's been a lonely road for you but that's gonna change,' intones a man.] We enjoy the sweaty masses of people going crazy at our shows, and we wondered if there were other ways of achieving that euphoric state. The state of freeing your mind."

The album was recorded in Melbourne's Adelphia Studio with engineer Mirko Vogel, producers Whitford and Cut Copy (including drummer Mitchell Scott and bassist Ben Browning),

and mixed by Dave Fridmann. *Free Your Mind* may sound like a perfect pill of Roland 808 and 909 endowed grooves (it is) with levitating melodies performed on vintage Sequential Circuits Prophet 8, Moog Prodigy, Yamaha CS-80, and Roland Jupiter-8 synths (it is) all conjured by Juan Atkins. But it's really the product of four musicians and one engineer working experimentally in a workshop environment, exploring sounds in separate spaces with Steinberg Cubase and Logic Audio (and guitar, keys, bass, and drums), and coming together to jam, trade files, and free their minds.

**God! Show Me Magic** *Free Your Mind* unfurls like a beautiful, house music-fortified concept record—female vocals darting around the mix like banshees, samples of '60s "Moon River" crooner Andy Williams deconstructed beyond recognition, and tribal drums, surging waves, the "Amen, Brother" break, handclaps, Taste of Honey disco bass riffs, strings, doves, and Whitford's dayglow vocals soaring through your mind and beyond.

"Our sessions are often 200 tracks," Hoey states. "After sifting through them we will loop a verse, chorus, or intro section, then keep adding layer upon layer upon layer. Our process is to throw the kitchen sink at it and then find the magic within the chaos we've just created."

*Free Your Mind* began at Whitford's home studio (CCHQ) with his arsenal of synths, drum machines, and microphones. "I wrote demos and recorded vocals and synths," Whitford recalls. "Roland 909s and 808s, Prophet 5, Jupiter-8, Moog Prodigy, and Yamaha CS-80, the granddaddy of polyphonic synths—I've been using a lot more digital FM synths; this record harkens back to that era of music making. I have a Yamaha DX7, Korg M1, which is a wave station module, and a synth from Synthesizers.com based on the old Moog modulars. I'm obsessed with finding out how old records were made and wanting to use those same machines they used."

Whitford works in Cubase exclusively and mostly prefers hardware effects to plug-ins, often replacing soft synths with the real thing. "Being able to move knobs and change things physically was more attractive, but I am not a purist," he says. "I don't think that records made on a laptop sound worse than records made in a studio. Using a soft synth, you might get a certain sound that, if you used the original synth, the

Cut Copy (left to right)—Dan Whitford, Mitchell Scott, Benjamin Browning, and Tim Hoey.

opportunities for manipulating that sound could change the end result. The Arturia Minimoog is one of my go-tos; I used that on every track multiple times."

**Adelphia Means Brotherhood** Each Cut Copier maintains a home studio where ideas sprout and develop. Whitford and Hoey filled their hard drives with sounds and samples, then joined Mitchell, Browning, and engineer Vogel at Adelphia.

"We recorded tracks and samples and sequenced parts there," Whitford says. "We went through everyone's files and chose what parts we liked and worked on it as a band. Sometimes we might have a beat looped up and a simple bass line and we'd play around that together, but usually the song ideas are fleshed out before the band hears it."

Vogel used Adelphia's old radio station baffles to create cubicles, fashioning a fertile workshop space where each musician worked individually and collectively.

"Basically, [we worked] the same way we recorded their last [Grammy-nominated]

album, *Zonoscope*," Vogel says. "The studio has 25-foot ceilings, movable walls, exposed brick, other walls covered in drapes. We created zones for everyone to work alone or together.

"Everything was being recorded 24/7," Vogel continues. "So no matter who wanted to record, everything could be inserted into the songs."

The band mixed in the box with instruments miked so as to facilitate free-form jamming and sample exploitation simultaneously. Vogel relied on an RME Fireface card, with a clutch of preamps from Aussie manufacturer Joe Malone's JLM line, and a trusty Presonus Digimax. Cut Copy mixed and matched loops, rhythms, samples, sounds, and vocals, adding live instrumentation as the spirit moved them.

"There were no scratch tracks in the studio," Vogel recalls. "They'd replace parts from Dan's demos, then maybe loop the new part. Everyone would jump on instruments and experiment with everything. Fifty percent of it was experimentation."

But before their collective unconscious merged and expanded, Whitford recorded vocals at CCHQ, using an Audio-Technica AE5400 large-diaphragm mic through a UAD 2-610, "like the Beach Boys-sounding preamp," Whitford says. "I also have a Roland RE-501 that I use as a basic tape echo on everything. I prefer that to reverb on vocals, just the spaciness of it."

Along with the virtual and analog synths recorded at Whitford's studio, Vogel tracked synths at Adelphia direct through a Radial active DI box. "We also set up a VOX AC 30 amp with a Shure 57," he explains, "so Dan could hear the band. They could all play without headphones while tracking. I did like the sound of the keys through the VOX AC 30, but eventually it broke because square waves don't go well through valve amps."

**Staying Innocent** Hoey's Fender Jazzmaster, Jaguar, and Telecaster guitars often sound like keyboards, or birds, or vocals. He experimented with a sampler in the studio, and ran his guitars though effects pedals as

well, including a Yamaha SBX90, Eventide PitchFactor Harmonizer, and Eventide Space Reverb, into a Fender Vibrolux and Vox AC 15.

"You can have just one of the Eventide pedals and find endless sounds. They're extensive and they sound fantastic. But I don't use any plug-ins for the guitars; it's all foot pedal-based."

A guitarist who triggers samples but only effects his instrument through foot pedals? It's all the more surprising, given the computer-based nature of Cut Copy's music, that Hoey's personal signal chain remains staunchly analog

## Session Gear

### Synths/Keys
Sequential Circuits Prophet 8 and Prophet 5, Moog Prodigy, Roland Jupiter-8, Prophet 5, Moog Prodigy, Yamaha CS-80, Yamaha DX7, Korg M1, Synthesizers.com modular, Arturia Minimoog, Hammond organ

### Platform
Apple Mac, Steinberg Cubase, Logic Audio, RME Fireface card, JLM Audio preamps, Presonus Digimax

### Vocals
Audio-Technica AE5400 large-diaphragm mic, UAD 2-610, Roland RE-501

### Guitar
Fender Jazzmaster, Jaguar, and Telecaster; Yamaha SBX90; Eventide PitchFactor Harmonizer and Space Reverb pedals; Fender Vibrolux, Vox AC 15 and AC 30 amplifiers; Shure SM7

### Drums
1970s Rogers kit, AKG D112 and SE300B, Electro-Voice RE20, Shure SM57 and Beta 57, Neumann KM184s, Røde K2 and NT4, Roland TR-808 and TR-909 drum machines

### Bass
Fender Precision bass, SansAmp DI, Radial DI.

"Usually when you get to this point in your career you've begun to master your instrument, but I am trying to stay completely naïve and just plug in a bunch of stuff and hope to find an interesting sound," Hoey says. "I've been listening to guitarist Rowland S. Howard [The Birthday Party] for his really ear-piercing guitar sounds. And I like the way Kevin Shields bends the tremolo arm. I try to replicate certain sounds and I won't come close, but I do find something new of my own."

Vogel miked Tim's VOX AC 15 with a Shure SM7 and a knockoff Chinese ribbon mic to create "different shades of light and dark," he says. "Using the SM7 as the brighter mic and the ribbon as the darker, fuzzier mic, we could turn the bass and treble up without physically doing it. It worked great on his guitar, since his playing is precise and noisy.

"For some of the guitar sounds Tim is playing through the AC15 then looped out of his pedals into a VOX AC 30 to get this crazy sound happening," Vogel continues. "We'd put an omni mic in the middle of the room to capture that crazy out-of-phase swirling thing. A lot of the sounds are actually mics that weren't being used just spilling into other instruments."

**Everybody Needs an 808** Scott's drums are the ephemeral element on *Free Your Mind*, sometimes sounding as rock-solid as '70s studio drummer Alan White, other times pulsing like a heartbeat, or a disco groove machine. Drum sounds are live, replaced, sequenced, and sourced either from one of Vogel's '70s-era kits or a Roland TR-808.

"Over Dan's Cubase demos we'd discuss drum sounds," Vogel recalls. "Whether a track needed more of a Giorgio Moroder kick drum mixed with a Flaming Lips snare drum sound. I had a bunch of kits to produce as many drum sounds as possible. Our main set was a '70s Rogers kit. And I used toms with top heads only, another standard element in '70s recordings."

For a "Giorgio Moroder" sound Vogel deadened the kick and changed the beater heads. He also changed mic positions: For a disco sound, Vogel placed a single EV RE20 mic inside the kick drum, and moved it around, depending on the desired effect. Shure SM7 and an AKG D112 were also used.

"We'd try to find mics that worked with the kick to create that initial punch, then the air or beater release," Vogel says. "I always record a condenser on the front kick head, mostly a Røde K2. For the snare, an SM57 on top and Beta 57 on the bottom head. Sometimes for the airier snare sounds, an RE20 as well, mixed with the Beta 57. We cut out a bunch of deadening rings

from old drum skins laid on the snare head to add different tonalities. And an AKG SE300B for hats; they sound good on acoustic guitars too."

Vogel also used RE20s on the toms, or for something "bombastic," Shure SM57s, or for lighter playing, Neumann KM184s. A Røde NT4 was the single overhead mic.

"Overheads needed to be really focused like a drum machine but real sounding," he says. "You can stick the Røde NT4 in the middle of the drums without it getting in the way. It created this tight focused stereo pickup, and because it's perfectly in phase it almost meant whoever would mix it could absolutely compress it without getting any phase problems. You can do so much with the NT4 without compromising the integrity of the overall drum sound."

When considering room mics, Vogel changed room parameters, moving baffles to add air, defeat echo, or give the impression of space. "Using the baffles, we built a little cubby house for the drums or removed all the baffling to make the drums sound more open. When we wanted that tight disco thing, we'd use a tiny bit of overhead mic and move the baffling around the drums to tune the drum sounds. The kick might sound good, but move the baffle closer and the condenser on the front head would pick up this whole other dimension."

Finally, Browning's Fender Precision bass was recorded using two DIs: a SansAmp programmable bass DI in front of his live cabinet into a JLM Neve 1073, "driving it to give more slap," and a clean sound from a Radial DI.

**Hit to Dance in the Future Head** After the party's over, and the revelers have taken their spiritual visions and nonsensical babbling home, *Free Your Mind* continues to give up its secrets. Repeated listens reveal unintelligible voices, strange sounds, and layer upon layer of instruments and noise.

"I've always loved records with a lot of detail, things that you can pick out on a tenth listen," Whitford says. "Having that level of detail to a recording is special, it gives the record longevity. My Bloody Valentine, Spiritualized, even some Beatles recordings having weird additional sounds and effects that pop out of the mix. The Beatles records are some of the most accessible records around but they still have weird things, just unconventional ideas." ∎
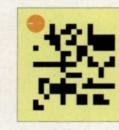
## Anoushka Shankar
### Traces of You
DEUTSCHE GRAMMOPHON

Sitarist Anoushka Shankar is a symbol of India's past and future, her intensely beautiful music grounded in Indian classical but encompassing dance, electronic, and pop styles. Her seventh album, *Traces of You*, includes guest vocals from half-sister Norah Jones, and reveals Shankar's increasingly mature composition and orchestration skills. If ever music reflected a nation's moment in time, *Traces of You's* soulful sitar, swelling orchestrations, and pulsing beats provide a contemporary soundtrack to a land and its people developing at breakneck speed.
**KEN MICALLEF**

### Bad Religion
### Christmas Songs
EPITAPH

You'll get that tree trimmed in record time with the help of Bad Religion's new Christmas CD. It's always good fun when chestnuts like "Come All Ye Faithful" and "Angels We Have Heard on High" are pumped up with rock drums and buzz-saw guitars, and these punk tunes have some nice choral vocal arrangements, too, in their snarky punk way. Rejoice! Bad Religion's Ramones-esque version of "White Christmas" will rock your holiday season.
**BARBARA SCHULTZ**

### autechre
### L-event
WARP

An extension of *Exai* (Rob Brown and Sean Booth's March full-length), this four-track EP mostly eschews the overt melodies and jeep beats that made for the duo's more listener-friendly, retro-modern moments. These latest 26 minutes are for the technicians, focusing on updating the patches with digital-delay feedback pulled from Karplus-Strong string synthesis techniques. In contrast, warbling bass lines, sounding like Clavia Nord Modular G2 synthesizer derivations, evoke classic FM-style autechre sound design, but patterns grind hard more than groove.
**TONY WARE**

### The Melodic
### Effra Parade
ANTI-

For a band in their early 20s, the Melodic's debut, *Effra Parade*, sounds aged and knowing. Recorded in a bedroom-turned-studio, *Effra Parade* features 18 instruments, highlighting stringed ones such as the Latin American charango and the African kora. Unexpectedly, these international instruments are what give *Effra Parade* its very British folk-pop flavor. Huw Williams and Lydia Samuels harmonize beautifully, their voices like tide and sand. They softly come to shore on "On My Way" and lapse smoothly back on "Roots."
**LILY MOAYERI**

### Erasure
### Snow Globe
MUTE

For nearly 30 years Andy Bell and Vince Clarke have bestowed the gift of starry-eyed, at times wistful synth-pop, including 2011's kick-drum-reinforced/sidechain-enriched *Tomorrow's World*. Now the duo applies its more nocturnal, soulful tendencies to Christmas-inspired original compositions and seasonal classics, wrapping bubbling melodies around choirboy vocals. The results range from music-box sparse to cathedral sparkling, trimmed with pirouetting synths, bass, and harmonies aplenty. The only disappointment is the lack of an actual commemorative snow globe.
**TONY WARE**

### King Khan and the Shrines
### Idle No More
MERGE

This brilliantly orchestrated '60s-style thrash pop injects psychedelia with the vintage sounds of early Stax, James Brown, and The Association. It's at once a fusion and a send-up of all the most awesome sounds of '60s radio: the cheerful harmonies, the proto-punk trash guitars, the Memphis Horns, the hip-shaking rhythms, the groovy feelings. But this is not a nostalgia trip. It's something different—kind of punk, very cool, almost too hip for anyone old enough to remember King Khan's influences.
**BARBARA SCHULTZ**

# Roundup

# Studio Reference Headphones

# GEAR

## A look at five mid-priced models designed for critical listening

**BY GINO ROBAIR**

WHEN WE record music, we typically choose mics that are suitable for the instrument we're tracking—for example, a dynamic mic for a snare drum, a ribbon mic for a trumpet, or a large-diaphragm tube mic for vocals. Yet when it comes to another important set of studio transducers—stereo headphones—we often use the same set for critical listening that our drummer uses for tracking and overdubbing.

Headphones are available at a wide range of price points, and it's not uncommon to find that the models engineered to reproduce sound in a balanced and accurate way are the most expensive. In this article, we examine a handful of mid-priced headphones, ranging in price from $199 to $499, that are designed for editing, mixing, mastering, and overall critical listening. All of the prices indicated are retail, unless otherwise noted.

All of the models in this roundup are circumaural, which means they surround the ear entirely, and the majority of them have closed-back designs, which provide isolation from external sound. Every

model has a 3.5mm plug at the end of the cable, so that each is compatible with consumer devices, but an attachable 1/4″ adapter is always included.

**Listen Before You Buy** I listened to a variety of musical styles as I tested the headphones. This included raw, unmixed vocal and instrumental tracks from sessions, as well as mixed and mastered files in various resolutions. It was not surprising that each set had its own sound, which was almost immediately identifiable.

Consequently, while materials, build quality, durability, and price of the headphones will be an important part of your final decision, much of what makes one set of headphones better than another is subjective. Your choice should be based on personal listening preferences, the type of music you work on, and how the product feels when it sits over your ears and head. Even if you don't plan to mix an entire record with them, you will occasionally wear the headphones for long periods of time, so it is important that they feel comfortable and are not fatiguing. The only way to find this out is to try the products that interest you in person.



**AIAIAI TMA-1 Studio: Young Guru Edition**

## AIAIAI TMA-1 Studio: Young Guru Edition
### $270
**AIAIAI.DK**

For its set of critical listening headphones, AIAIAI enlisted the feedback of Grammy-winning engineer/producer Young Guru to develop a product that not only works well for mixing and mastering, but are also suitable for more casual listening. The TMA-1 Studio has 40mm drivers and a frequency range of 20Hz to 20kHz. I have used other models of AIAIAI headphones and this pair is the most balanced sounding of the bunch. Still, they displayed a brighter top end, a bit more bass, and a sharper sound than the other models in this roundup, which the supplied frequency-response graph clearly demonstrates.

While some might find the frequency boosts fatiguing when working with the TMA-1 Studio for long periods of time, I found them to be very helpful when editing and processing files because the extra top end helped me identify unwanted artifacts (in a similar way that the lower cost Sony headphones often do). If I had to sum up the TMA-1 Studio in a sentence, I'd say they have a "contemporary" sound.

The TMA-1 Studio is also the lightest set of headphones in this roundup and they are very comfortable to wear. According to the manufacturer, the round ear-cups are made from Japanese memory foam, which allows you to shape them to fit around your ears for maximum isolation. Should they wear out, the cups are user-replaceable.

The package also includes two removable cables that lock securely into place with a clockwise turn. The standard cable, which is straight on both ends and coiled in the middle, is tightly wrapped with material and

has a 3.5mm plug with a spring cable-relief at the end. The other cable has a 3.5mm TRRS connector on one end, a built-in mic, and three buttons designed for controlling iOS products: That means you can use these for non-critical listening while taking calls from your manager and clients without removing your headphones—sweet!

## Audio-Technica ATH-M50
### $199
**AUDIO-TECHNICA.COM**

The ATH-M50 remains a popular model of mid-priced headphones, and for good reason: Although not as punchy or as loud as other models in this article, these headphones reproduce transients in a very natural way. This was particularly evident on acoustic

**Audio-Technica ATH-M50**

**Sennheiser HD 600 Avantgarde**

instruments, such as strummed guitar and metallic percussion.

The ATH-M50 uses 45mm neodymium drivers that yield a published frequency range of 15Hz to 28kHz. Remarkably, the high-end is smooth and doesn't have the modern-sounding brightness of the TMA-1 Studio or the Sony MDR-7520 headphones. In addition, the ATH-M50's low register feels solid, with plenty of definition, and there is good articulation in the midrange. Consequently, the ATH-M50 makes a nice complement to a pair of close-field monitors, which is good when you are looking for different perspectives during a mix.

Overall, the ATH-M50 feels well built, even down the plug at the end of the cable, which has a strain-relief spring. The headband is moderately padded, while the ear cups are slightly oval in shape and fit well around the ears to provide good isolation from external sounds. The cups are hinged at three points, making them easy to adjust into a comfortable

position on your head or collapse into a ball that fits into the included drawstring pouch. At 10 oz. without the cable, they feel remarkably light.

The ATH-M50 is available in black, white, and, for a limited time, red. The black model can be ordered with a coiled or a straight cable; red and white are only available with a coiled cable. Audio-Technica offers a 2-year limited warranty on this product.

## Sennheiser
## HD 600
## Avantgarde
**$399.95**
**SENNHEISER.COM**

Touted as audiophile headphones that work well for engineers recording classical music, the Sennheiser HD 600 is the only open-back

model in this roundup. Consequently, this model isn't a good choice if you're looking for something with a great deal of isolation, either internally (for you, the listener) or externally for those around you. However, if you're looking for headphones with a natural, un-hyped sound, you've come to the right place.

The open back is one aspect that helps give the HD 600 a smooth sound across the frequency spectrum, although this is an occasion where the printed specs don't tell the entire story: The manual gives a frequency range stretching from 16Hz to 30kHz with a −3dB tolerance, as well as a range of 12Hz to 39kHz with a −10dB tolerance at 1kHz. Yet a look at the frequency response chart reveals that this pair of headphones is surprisingly flat between 90Hz and 15kHz (±4dB).

Not surprisingly, playback also feels less intense. This is due in part to the HD 600's open back, which mitigates the claustrophobic feeling that some people experience while

**Shure SRH940**

**Sony MDR-7520**

wearing closed-back models for critical listening when they don't need sound isolation. This is definitely a pair of headphones you can comfortably wear for a long time.

The HD 600 has elliptical ear cups that are snug around the ear, and the velour material adds to the comfort. The adjustable headband fits tightly with additional padding on the underside. The pair weighs a total of 0.5 lbs. without the cable.

The HD 600 comes with a 9-foot straight cable that is detachable, and the velour ear pads are user replaceable. In fact, these headphones can be completely dismantled and repaired if you need to replace any of the parts. Unlike the other models in this roundup, however, the HD 600 does not include a storage bag or pouch but comes in a box with a hinged lid.

Another open-back model from Sennheiser is the HD 650, which reportedly has more

of the "smiley curve" frequency response in which the bass and treble frequencies are subtly enhanced. Its frequency range goes from 16Hz to 30kHz with a –3dB tolerance, and 10Hz to 39.5kHz taking into account a –10dB tolerance. The manual states that this model's transducers are selected as pairs with a ±1dB of tolerance between the two. The HD650 also has a detachable cable and user-replaceable ear pads.

# Shure
## SRH940
### $375
**SHURE.COM**

Shure designed its reference headphones, the SRH940, with slightly smaller neodymium drivers—40mm in diameter—than many of the

others here. The published frequency range is 5Hz to 30kHz. Remarkably, these headphones sound as if they lack any significant boosts at the extreme ends of the spectrum.
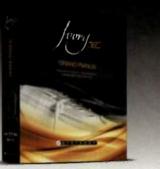
The SRH940 provided a noticeable amount of detail from every recording I played through them. They translated transients well, providing warm and realistic timbres from hand drums in a Latin recording, with just the slightest bit of extra brightness in higher-frequency sources such as shakers and hi-hats. The low-end response was exceptionally good, making it easy to differentiate between Moog bass, electric bass, and a low kick drum that were competing for space in a synth-pop tune. The midrange reproduction was equally nice, providing an uncluttered sound from the percussive and melodic instruments in this area. If I had to sum up the SRH940 in a word, it would be "smooth."
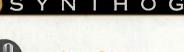
The SRH940 comes in a zippered, hardshell box that includes two removable cables—one is a 10-foot coiled cable and the other a nearly 9-foot straight cable. The ends lock into the ear cup with a clockwise twist. The soft velour ear pads are replaceable and the package includes a second set. The ear cups swivel 90 degrees in one direction and fold in towards the headband for compact storage. The four foam pads on the underside of the headband help makes this set of cans comfy on the head.

## Sony
## MDR-7520
### $499.99
### PRO.SONY.COM

The first thing you notice about the MDR-7520 is that the ear cups are an oblong shape, so they fit over the ear in a natural way. In addition, the cups are offset by about 20 degrees so that the headband is tilted slightly forward on the top of your head. Together with the lightweight design, the MDR-7520 are very easy to wear.

Sony describes the 50mm transducers as being "High-Definition", and they certainly sound that way: I felt that I could hear into recordings a bit farther with this pair than some of the other models in this roundup, even before I looked at the marketing copy. They reproduce bass and midrange frequencies in a very focused way, and I felt like the MDR-7520 revealed more background detail in the recordings I auditioned during the review period than all of the other headphones here. However, the MDR-7520 also exhibits the high-end crispness that I associate with other Sony headphones I've used over the years. The documentation states that the frequency response is 5Hz to 80kHz, although it doesn't show the tolerances.

Nonetheless, I wouldn't hesitate to use this pair for critical listening because they provide a sonic perspective that I didn't get from the other models or from my studio monitors. The MDR-7520 could help me hear the end of the reverb tails on an instrument within a mix or judge whether there is too much energy in the sibilance of a vocal part. On well-recorded material, the MDR-7520 is not fatiguing for long periods of listening. However, if you're listening to over-compressed and badly mixed music, these headphones will let you know immediately.

The MDR-7520 has a removable cable that screws securely into the left ear cup. The phones are not fully collapsible, but they do fit easily into the included drawstring pouch for storage. ∎

*Gino Robair is* Electronic Musician's *technical editor.*

**More Online**
Take a video tour of the headphones reviewed here.
Emusician.com/December2013

The third generation of the KRK Rokit 8 extends the monitor's frequency range and refines the overall shape of the cabinet to improve sound quality.

# KRK Rokit Powered 8 Generation 3

## Big new sound, same old price

**BY MARKKUS ROVITO**

### SUMMARY

**STRENGTHS** Wide sweet spot. Lots of power with consistent sound at high SPLs. Balanced sound across the frequency range. XLR, TRS, and RCA inputs. High quality for the price.

**LIMITATIONS** No input selector switch. Auto-mute sometimes takes a moment to disengage.

**$419/each MSRP;
$249/each street**
krksys.com

SEVERAL YEARS after it launched its personal-studio mainstay, the Rokit Powered Generation 2 monitors, KRK has introduced the Rokit G3 series, a modest update, but a worthy successor to one of the most ubiquitous sets of affordable powered monitors.

Among other behind-the-scenes enhancements, KRK redesigned the Rokit's curved edges and front baffle, as well as its medium-density fiberboard (MDF) low-resonance enclosure, all of which help to reduce playback distortion and coloration.

The Rokit 8 G3 has a peak SPL of 109dB and an extended frequency response that reaches from 35Hz to 35kHz. Its 100 watts of power distributes 25 watts to the 1-inch soft-dome tweeter for the high frequencies and 75 watts to the 8-inch glass-aramid-composite woofer for the mids and lows. At 24.6 lbs. per speaker, the Rokit 8 G3 has shaved 1.5 lbs. off the previous model.

Every model in the Rokit G3 series includes three analog inputs—XLR, balanced 1/4" TRS, and unbalanced RCA—and three back-panel controls: HF and LF Level Adjust and a notched volume knob with a range of –30dB to +6dB. The notched controls make it easier to accurately adjust multiple monitors from the front, without looking around back.

The contoured front-firing port reduces bass coupling off of studio walls behind the speaker, and the padded mat attached to the bottom further reduces distortion created when the monitors sit on hard surfaces. Along with the signature KRK yellow cone, the curved design of the Rokit 8 G3 looks as attractive as it is effective in producing accurate sound.

**Foxy, Not Boxy** I've used Rokit G2 monitors for years in my home studio and became very accustomed to their transparent, even-keeled sound. The G3 review pair exceeded the G2's legacy in every way. It maintains the larger-than-average sweet spot and excellent frequency separation. The Rokit 8 G3's extended frequency response makes a very subtle difference, but after listening to them for extended periods using a variety of media sources and audio resolutions, they do come across as having a clearer and more spacious sound than the previous generation, presenting crisp, accurate details across the mix of lows, mids, and highs.

Like before, the Rokit 8 G3 presents a balanced bass tone—neither anemic nor thumping. If you need bowel-rumbling bass, you will want to add a subwoofer to your system. Volume is not a problem, however. With a peak SPL of 109dB, the Rokit 8 G3 gave me plenty of headroom across my entire signal chain with the speaker's volume set at 0dB. The sound also stayed consistent at low and high levels. Home-based and small studios should have no problem blowing their clients' heads off with the Rokit 8 G3's volume.

For $500 a pair—less than half the price of KRK's top-tier VXT 8 monitor—the Rokit 8 G3 delivers a detailed, transparent sound, a wide sweet spot, and multiple inputs. They are a serious option for any small studio with price concerns. ∎

# moXF6/moXF8

## A New Universe of Sounds
## From a Decade of Motifs

YAMAHA

MOTIF XF8

Yamaha has updated the popular MOX Series with the latest Motif XF technology by adding the XF's sounds and effects and even a Flash Board option slot. Because it's compatible with Motif XF and MOX data, there is a huge collection of sound and sample libraries and optional software available right away. The MOXF has all the abilities you need—compatibility, expandability, portability, and affordability. It brings MOTIF XF music production power to a whole new generation of players and producers.

- The popular MOX updated with the sounds of the Motif XF
- 741 MB wave ROM, 3977 waveforms and 128 note poly
- Expanded to 8 insert effects
- Up to 1 GB of Flash board sample expansion
- Voice and Library Compatible with Motif XF, Motif XS, and MOX
- 16 Track Song and Pattern Sequencer with real time loop remix
- Built-in 4 channel USB audio/MIDI interfacing and extensive DAW /VST controls
- Portable and affordable
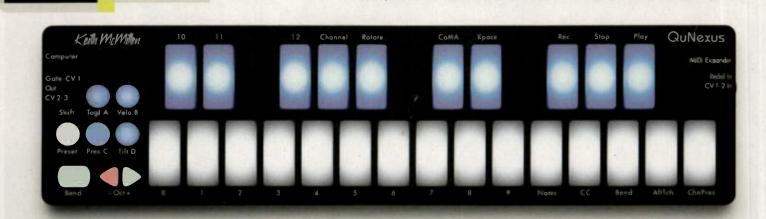
YAMAHA moXF8

Visit www.4wrd.it/mox68em3
or scan this QR code
for more information

⊛YAMAHA

**The QuNexus is a sturdy, yet lightweight controller that works with a DAW, external MIDI instruments, and analog synths with equal aplomb.**



# Keith McMillen Instruments QuNexus

## A compact controller for analog and digital performance

**BY MARKKUS ROVITO**

### SUMMARY

**STRENGTHS:** Velocity, Pressure, and Tilt. Small and lightweight. Robust design. CV I/O. Integrates with Ableton Live and Propellerhead Reason.

**LIMITATIONS:** Pricey if all you need is a basic, compact keyboard. Button-keys feel strange compared to traditional keys.

**$199.95 MSRP, $149 street**
keithmcmillen.com

FOR A compact MIDI/CV controller, the Keith McMillen Instruments (KMI) QuNexus reaches for superlatives both in build quality and flexibility. Decidedly not your average mini-keyboard, the QuNexus integrates with more gear before 6 A.M. than most MIDI products do all day: It can plug into an Android tablet or iPad (via the Camera Connection Kit), play analog gear that responds to control voltages (CV), go straight into a computer, operate MIDI hardware through the KMI MIDI Expander ($49.95), or integrate all of the above into one setup.

Connectivity is provided by a USB connection for your computer, a port for the MIDI Expander, and three mini-jacks for gate and CV I/O (two CV inputs for an expression pedal, three CV outputs, and one gate output). Use your own cables or purchase the QuNexus CV Cable Kit ($29.95), which supplies everything you need to take full advantage of its analog control capabilities. The QuNexus can be powered using a USB bus or AC.

With KMI's Smart Sensor technology, the 25 LED-backlit keys respond to Velocity, Pressure, and Tilt, the latter of which constitutes the forward and back movement of your finger on the key—imagine the action of a violinist's fingers on the neck. Each of those three factors can be mapped to any MIDI CC, allowing for very expressive performances. If you need more control, the Bend button provides pitch-bend. The octave buttons give the keyboard a range of seven octaves.

Another unusual feature on the QuNexus is Channel Rotation, which cycles through MIDI channels for each key you press. The first key sends to Channel 1, the second to Channel 2, and so on up to 16 channels. When the keys are released, the cycle begins again. This lets you play different Pressure, Velocity, and Tilt levels for each note. You can set up multiple instances of an instrument reading different channels in your DAW, or use different patches for each channel.

While it is as sturdy as a controller made of metal, the QuNexus' plastic case and silicone buttons add up to only 11.2 ounces in a footprint of 3.3" x 12.8". You'll barely notice it in a backpack, and yet it is strong enough not to crack or break under significant pressure while traveling.

**Editor and Templates** As you would expect, you can edit, save, and load presets between the QuNexus and a computer using the QuNexus Editor software. The keyboard comes loaded with four presets, including one that incorporates Tilt and Channel Rotation.

Ableton Live 8 and Live 9 users will enjoy the special integration script that turns the QuNexus into a clip launching control surface. It efficiently lets you launch as many clips from as many tracks as you want. There is also a preset for Propellerhead Reason, which worked great in version 7, for playing notes from the upper octave while controlling different synth parameters from the lower octave, depending on the active instrument.

**The Flat-Out Truth** There are many compact MIDI keyboards out there, and the QuNexus sits atop the price range of that field for good reason: It not only integrates analog and MIDI hardware within a computer-based studio, it has unique features such as Tilt and Channel Rotation to set it apart. Its flexibility to support iOS, Android, Linux, and OSC, as well as its impressive durability, also contribute to its value as a controller. And with its application-specific presets, Live and Reason users have extra incentive to consider adding this little dynamo to their setup. ∎



**The QuNexus editor/librarian lets you determine the behavior of each key and offers a wealth of control options.**
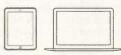
SparkLE is a diminutive controller designed for DJs and mobile beat making using Arturia's Spark software.

# Arturia SparkLE

## A compact pad controller for making beats wherever you go

**BY MARTY CUTLER**

### SUMMARY

**STRENGTHS:** Intuitive work surface. Expressive and intuitive controls. Well integrated with host as a drum-machine plug-in. Great sounds. Easy drag-and-drop.

**LIMITATIONS:** Controller cannot record events into host MIDI tracks. Accompanying documentation only covers installation and setup.

**$299**
arturia.com

WITH SPARKLE, Arturia offers an integrated beat-production system that combines a purpose-built hardware controller with a flexible software front end. The result is a musically satisfying instrument that stands apart from *à la carte* controller-and-software combos.

The main difference between SparkLE and the original Spark interface lies in the smaller footprint and pared-down design of the LE controller, which, among other things, abandons its sibling's 5-pin MIDI I/O in favor of a USB jack. The smaller hardware is better suited for mobile musicians and DJs than the larger controller. The Spark software, which hosts sample playback, physical modeling, and subtractive synthesis, is the same in both editions.

Measuring roughly 12" x 6", the SparkLE controller sat unobtrusively in front of my 17" MacBook Pro and nested comfortably atop my Novation 61SL MKII controller keyboard. The SparkLE's build is solid, hefty, and professional feeling, with all buttons and knobs firmly attached and offering a consistent and smooth feel.

The control surface is laid out in a familiar, easy-to-navigate drum-machine style. Record, Start, and Stop buttons grace the top left of the surface, with tempo and volume knobs flanking the center. (A knob that varies the amount of shuffle appears in the plug-in, but not on the hardware.) Below these are the Select switch, a toggle button that selects pads 1–8 or 9–16, and Mute and Solo buttons.

In conjunction with the Select switch, you can clear all mutes or solos at once. The eight velocity-sensitive pads suited my playing perfectly, offering just the right feel between cushiony and resistant: The dynamic response was sensitive, almost to a fault, but you can adjust the response for each pad if you need to.

Controller highlights include the touchscreen and adjacent buttons: The first column's Filter, Slicer, and Roller handle global processing, while the second column's Filter, Send 1/2, and Pan Level work on individual pads. For example, engaging the global Filter button allows the touchscreen to animate filter cutoff and resonance on the entire kit. Continue pressing the button to cycle through eight filter types. Using the touchscreen with the Pan Level engaged and the hi-hat pad selected lets you send your hats skittering around the soundstage. Divide and Move knobs let you whittle down a groove into shorter components and toy with rhythmic displacement, respectively.

The large rotary encoder handles multiple tasks gracefully. Pressing it opens a panel that lets you select an instrument, an entire kit, or a Project, which encompasses all song settings. Rotating the encoder scans the list of objects, and in the case of instruments, will optionally audition kit pieces. A second press confirms your choice and loads the object. The three knobs on the upper right can be assigned to any of 12 parameters encompassing pitch,

**The Spark software interface is intuitive to use and includes a dedicated Shuffle control.**

your own samples from the desktop into the plug-in couldn't be easier.

Complications arise when you want to record MIDI events from the LE controller's drum pads into a track on your host DAW and use them to trigger sounds from the Spark software. Currently, the LE controller remaps the notes to a different pitch while doubling them up with sounds from the lower bank of pads. Setting up tracks to respond properly is confusing, and I was never able to get it to work consistently. When I used my Novation keyboard to record events in my DAW in order to play Spark, everything worked fine. Arturia says it is working on the issue but suggests you record MIDI data into your DAW from the output of the plug-in.

In the meantime, as a standalone instrument and complete drum machine, the SparkLE package offers a streamlined and compelling system for groove creation that is worthy of your attention. ▪

*Marty Cutler likes playing drums with a five-string banjo neck and strings attached.*
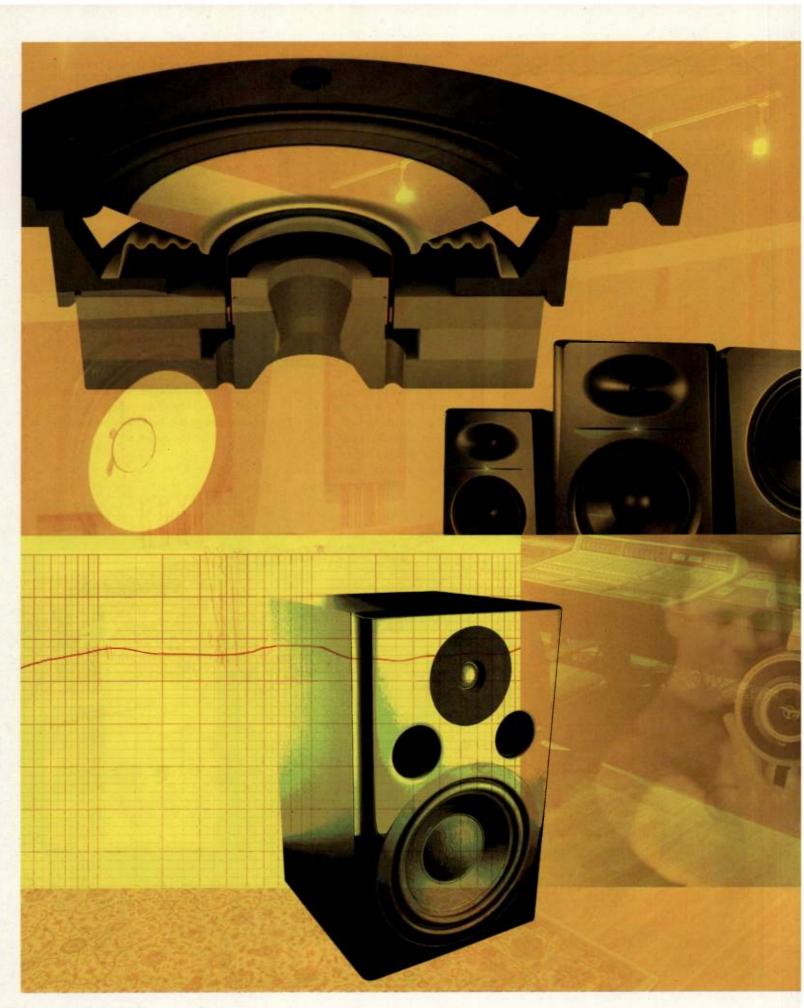
envelope, filter, and seven effects controls, allowing you to manipulate and record changes on the fly. Parameter values appear on the Spark software screen.

Pop, dance, and hip-hop sounds dominate the Spark library, with a mixture of analog modeling, physical modeling, and sample-based sources. I was impressed by the sample-like realism of some of the physically modeled sounds, particularly the snares, which served up plenty of punch and ringy overtones. Editing the sounds from the bottom pane of the Spark plug-in is not deep, but it is flexible enough to seed new sounds. And dropping

<span style="color:#d0021b">master class</span>

# Choosing Studio Monitors

## Outfitting your mixing room with the perfect speakers can change your life. Here's how to do it right.

**BY STEVE LA CERRA**

QUICK: WHAT is the only component in your studio through which every recorded and mixed sound will pass? Your monitors. The quality and performance of your studio monitors are crucial to your productions, yet it's amazing how many people will postpone purchasing good monitors while they go ahead and spend money on plug-ins, microphones, or outboard gear. The cold, hard truth is that if you really want to hear what's going on in your recordings and mixes, you need to choose the right monitors.

**Size Matters** The first step in picking the right loudspeakers is identifying the application and environment in which you'll be using them. Bedroom studios don't call for huge, "mains"-type monitors, and such speakers may actually be counterproductive in small rooms by (a) taking up too much space, (b) overpowering the room and exciting room resonances, and (c) pissing off your neighbors or spouse. A singer-songwriter who is recording acoustic music can prioritize sonic accuracy over high SPL and butt-thumping bottom. On the other

hand, if you're working with clients who like to listen loud and who produce music with a lot of bass, small monitors won't cut it. Laws of physics still apply: The only way to move a lot of air is with a large driver.

Most small studios are best outfitted with a nearfield monitor—a speaker intended to be heard at relatively close distance. "Nearfield" isn't defined by a specific distance, but the general idea is that you will be close enough to the speakers (three to six feet) that you hear a large percentage of direct sound from the speakers and a minimum of sound reflected from the room. This configuration is especially ideal when a listening environment is a spare room as opposed to one that has been designed with proper acoustics in mind, because it minimizes the effects of the room on what you are hearing.

**But Sometimes Less is More** Just because a speaker is made using three drivers (*e.g.*, woofer, midrange driver, and tweeter) does not necessarily make it better than a two-way design. In fact, an argument can be made for the reverse—that given the same price point for a two- or three-way speaker,

**Take your time with the audition. Make sure your ears are fresh. No auditions after a 12-hour mix session!**

more money can be allotted *per component* in the two-way design. Two-ways tend to have simpler crossovers with fewer components, and may therefore be less subject to phase shift in the crossover region.

**Passive Aggressive** One of the first decisions to make when shopping for monitors is whether you want active or passive loudspeakers. Active speakers feature onboard amplification, while passive speakers require an external power amp. Each type has pros and cons, and good and bad examples exist

## Speaker Placement
Nearfield monitors should be placed on high-quality stands. Placing them on top of a console or desk can cause unwanted reflections (and thus comb-filtering) and resonances, though sound transmission via contact can be reduced through use of an isolation pad such as the Auralex MoPAD. Speaker stands should be rigid and heavy so that the speakers are not allowed to move. Movement in the speaker compromises sound. Every time a woofer produces a kick, the cabinet has a tendency to move back, like the recoil from a gun. Primacoustics Recoil Stabilizers reduce this effect.

When placing your monitors, follow the manufacturer's guide, but here are some basic suggestions. Most nearfield cabinets should be roughly five or six feet apart, and the same distance from your ears. Each speaker should be the same distance from its respective side wall, or imaging will suffer. Tweeters should be at ear height. Don't assume that a vertically oriented speaker can be turned on its side and yield accurate results. In some cases, the tweeter must be removed and rotated 90 degrees; in other cases, the manufacturer will warn against alternate positions. Ditto for "toeing in" the speaker. Be aware of whether or not the speakers are intended to be close to a wall or not. Every time you place a speaker near a boundary, the low-frequency response will bump up. Keep the cabinets out of corners for the same reason.

for both. Don't underestimate the importance of the power amp you will need to run passive speakers, because the amp will make or break the sound of the monitors. (If you have any doubts, compare the sound of the same monitor powered with different amps.) A quality amp provides more headroom, lower noise, and a higher level of transparency and accuracy over a lesser amp. (Sorry, but Dad's hi-fi receiver from 1982 ain't gonna cut it.) When budgeting for passive monitors, allocate about one-third of your budget for the amp. If you're really tight on cash, start with an inexpensive amp and upgrade later. You'll also need quality speaker wire; I won't get into a discussion about spending $500 on a pair of speaker cables here, but I will say that Radio Shack sells 18-gauge, solid-core wire that has a good reputation among audiophiles and costs six bucks for 25 feet.

An active design guarantees proper matching between amplifier and speaker, and you won't have to deal with speaker cable. Some active monitors employ more than one amplifier— two in the case of a biamped monitor, three in the case of a triamped monitor. This is not a marketing gimmick; it enables a designer to increase efficiency, power handling, and acoustic output. (See "Biamplification" sidebar on page 62 for details.) Found under the "cons" column, active speakers are heavier than passive speakers, and if you blow an amp, the speaker is useless.

The drivers used in active and passive boxes can be constructed from just about every material you can think of, including paper, plastic, titanium, beryllium, Kevlar*, glass fiber, carbon fiber, and resin. The material of construction is not

# iOS RECORDING

## Record Anywhere, Anytime

From your couch to the studio to the stage, tablet technology makes high-quality music production incredibly portable and immensely powerful. Whether you're sketching out a new tune, crafting a beat, scoring a music cue or working on a tricky mix, our selection of flexible iOS-ready hardware and accessories helps you make music wherever you happen to be. From studio-quality mics that plug directly into your tablet to versatile audio and MIDI interfaces, you can take full advantage of the very best audio software iOS has to offer. Plus, a variety of stands, clips, and other accessories mean you can set up your tablet to work comfortably anywhere, so you're always ready to capture the moment when inspiration strikes, or when you just need to check that score or lyric sheet. Wherever you are, however you make music, iOS makes it easier—and Guitar Center is here to help you make the most of it.

## IK iKLIP STUDIO iPAD STAND

With the wide variety of available music software, both for creation and performance, an iPad has become an essential part of every musician's toolkit. IK's iKlip gives you a safe, secure way to mount your iPad to a mic stand, so it's there when and where you need it. *(IPIKLIPSTUDIOIN)*

## BLUE BLUEBIRD LARGE DIAPHRAGM RECORDING MIC

Designed for versatility, the Blue Bluebird large-diaphragm condenser is a perfect complement to your iOS recording setup. Equally at home recording vocals or instruments from delicate acoustic sound to loud guitar amps, Bluebird's fully discrete Class-A circuit and custom transformers make it an indispensable sonic tool. *(22200)*

## APPLE LIGHTNING TO 30-PIN ADAPTER

Apple's new Lightning connector is small, fast, and power efficient, but may leave many of your older iPad and iPhone accessories disconnected. This Lightning to 30-pin Adapter gives your accessories a new lease on life, enabling you to use them with the latest generation of iOS devices. *(MD823ZM/A)*

## APOGEE DUET 2 iOS-READY INTERFACE

Apogee's Duet audio/MIDI interface, with single-knob simplicity and their renowned converters, rapidly became a standard for mobile laptop recording. The latest generation of Duet adds iOS compatibility for even more record-anywhere versatility, with a feature set that stands apart from other iOS audio interfaces.
*LIMITED AVAILABILITY*
*(DUET IOS MAC)*

## APOGEE MiC

Once again, Apogee's dedication to impeccable audio quality shines through with MiC, a compact condenser mic with a direct connection to your iOS device. Once you hear the results, it will become an integral part of your mobile recording toolkit.
*(MIC)*
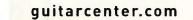
## APOGEE JAM AUDIO INTERFACE

One of the best-sounding ways to get guitar or bass into your iOS device, Jam uses Apogee's PureDIGITAL connection and renowned converters for the pristine sound quality you've come to expect. Best of all, it's completely plug-and-play with any CoreAudio compatible application.
*(JAM)*

## SENNHEISER HD280 PRO HEADPHONES

The Sennheiser HD280 Professional is designed to exceed the demands of the professional environment, with robust construction and extensive features that meet the requirements of today's most demanding applications.
*(HD280)*

For more info on iOS-based recording, go to:
guitarcenter.com/iOS
or scan the QR code

as important as the execution of the design.

Another thing to watch for: Frequency-response contour controls are found more often on active speakers, though they sometimes appear in passive models. A monitor's bass response changes when the cabinet is placed near a boundary, so the manufacturer may provide an adjustment to compensate for such placement. Some models offer a high-frequency Tilt control that lets you adjust the HF response up or down a few dB to compensate for bright or dead rooms.

**Understanding the Specs** When researching monitors, you'll encounter a lot of specifications, some of which are more meaningful than others. One spec that can

be taken with a grain of salt is frequency response—one, it doesn't tell you anything about the way the speaker sounds; and two, it can be subject to change based upon the speaker's placement in the listening environment (though frequency response does provide a general idea of low-frequency extension). Maximum SPL (sound pressure level), measured in decibels, gives you an idea of the speaker's peak volume capability, while long-term SPL indicates how loud the speaker can play over a long period of time. Keep in mind that if you are working an eight-hour day, to protect your hearing, you should be listening at SPLs in the mid-80s, and in most cases, these specs are *way* louder than that.

The Sensitivity spec describes a passive speaker's efficiency. Speaker sensitivity is defined as the SPL produced by the speaker when driven with one watt of power, measured one meter away. If a speaker has a sensitivity rating of 85dB, this means that one

watt of input produces an SPL of 85dB at one meter away. A 3dB increase in SPL requires doubling power, so our example speaker would produce 88dB with two watts, 91dB with four watts, 94dB with eight watts, 97dB with 16 watts, etc.—providing an idea of the type of power amplifier you'll need.

Another meaningful spec for passive speakers is impedance, or opposition to the flow of electricity. (Impedance is different from resistance, but that's a topic for another time.) Most passive speakers are rated for an impedance of 4 or 8 ohms; neither rating is considered better or worse. You may find that some power amps have the ability to deliver more power into a 4-ohm "load" (speaker), which is a good thing. If you are considering a speaker rated at an impedance of 2 ohms, be careful: In general, the lower the impedance, the more difficulty the power amp will have driving the load. Of course, exceptions exist: A Lab Gruppen FP10000Q power amp, for example, will have no difficulty driving a 2-ohm load, but at about $6,500, it's probably well out of the price range for most project-oriented studios. (See "How Much Power Is Enough?" sidebar on page 63.)

**The Audition** More than any other component in your studio, you're going to live with your monitors on a daily basis (probably for a very long time), so take your time with the audition. Make sure your ears are fresh. No auditions after a 12-hour mix session! Give your dealer the dimensions of your control room, an idea of the type of music you're working on, and the volume levels you work at. Listen to recordings that are familiar to you, whether they are commercial releases or projects that you have recorded and mixed. You need full-bandwidth, uncompressed files to make accurate judgments about dynamic range, frequency response, and distortion. Have an audition CD ready and narrow your choices to three or four monitors. Spend at least ten minutes listening to one pair of monitors before switching to another pair. Listening to really expensive speakers is a good idea, even if you can't afford them, because they'll provide a benchmark against which to judge less expensive speakers.

What should you listen for? Realism, naturalness, and transparency. Recordings of voice and acoustic instruments provide a useful reference against which to judge (especially when it comes to the human voice). If you play an instrument, bring a recording of it. Do you hear details that you've never noticed? This is a good thing, an indication of

> **When integrated properly, a subwoofer removes the burden of producing the lowest frequencies from the full-range speakers, thus increasing power handling and reducing distortion.**

## Biamplification

A biamped (or triamped) active loudspeaker uses separate amplifiers for each driver, and allocates the power where it is most needed—in the low-frequency region. It doesn't take much power to make a high-frequency driver (a.k.a. tweeter) loud, because HF drivers tend to be small and their diaphragms produce relatively small movements. On the other hand, a low-frequency driver must push a fair amount of air, and by nature requires more power. For example, a biamped speaker might have a 70-watt amp on the woofer and a 20-watt amp for the tweeter.

Biamping or triamping provides other benefits. The crossover in a passive speaker takes in high levels of electricity from the power amp, and sends high frequencies to the tweeter and low frequencies to the woofer. Since the woofer inevitably requires more power, the power that would otherwise make its way to the tweeter is dissipated as heat (*i.e.*, it's wasted). As a result, high-level crossover components are more subject to failure. The crossover in an active monitor is typically at line level (prior to amplification), which increases efficiency and increases the longevity of the crossover components. Multi-amp system techniques also reduce a type of distortion known as Intermodulation Distortion (IMD).

More monitors give you more options for evaluating your mix.

what I call the "ruthlessness factor"—but make sure that this phenomenon does not stem from an exaggerated emphasis on high frequencies, which will eventually cause listening fatigue. If your first instinct is "wow, what bass!" ask yourself whether you're responding that way because your old monitors lacked bass, or because the new monitors hype the bottom end. The goal is a clear window into the

## How Much Power Is Enough?

That's like asking how much horsepower you want in a car. As much as you can afford. Choose a power amp that delivers sufficient power to produce your desired volume level without pushing the amp hard. You'll get far better results using a high-powered amp driving small speakers than vice versa. Running a small amp full throttle into expensive speakers is a recipe for disaster: the amp can clip when you drive it hard, and clipping generates harmonics that can burn out your tweeters.

**Do you hear details that you've never noticed? Make sure that this phenomenon does not stem from an exaggerated emphasis on high frequencies.**

recording, not a rose-colored one. You want a monitor that accurately translates what is coming through the microphone. If there is a low-level hum or buzz on a guitar, or a squeaky kick drum pedal, you want to hear it before it's recorded and ruins a take.

Listen to the monitors at a variety of volume levels, including at the loudest levels you think you'll ever need. Make sure the monitors

maintain clarity at that level without sounding congested. Music with a wide dynamic range should not sound compressed. When you turn the volume down, your monitors should not sound thin and the stereo image should not shift. Active monitors are easier to use when the volume controls are on the front panel (particularly if you don't have a monitor controller), and some may feature a convenient Link function that enables one knob to control the level of both speakers. Adjusting the volume knob(s) should result in a smooth change in level without any mutes or drastic changes. Note the input connections on active speakers: Are they balanced or unbalanced? XLR, TRS, or RCA? Do they fit in with your current studio wiring scheme or will you need to make changes? For passive speakers, do the connectors securely hold the speaker wire?

Once you've narrowed your choices, compare no more than two pairs of speakers at a time. It's important to set the volume level of both pairs as close as possible, because your brain can fool you into thinking that the louder pair sounds better. For that reason it wouldn't be a bad idea to have an SPL meter and a test
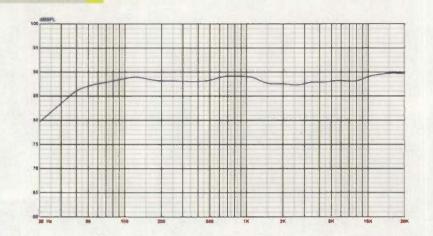
# One spec that can be taken with a grain of salt is frequency response.

signal (pink noise) with you.

Ask your dealer if an in-studio audition is a possibility. An alternative might be to borrow a pair of monitors from a friend. (This is easier said than done!) Get details on the vendor's return policy. Can you return the monitors if you don't like them? How much time do you have to make a decision? If so, who pays for the shipping? (Make sure you unpack them carefully and save the boxes.) What is the manufacturer's warranty?

**Scoping Out a Sub** There are two reasons to consider a subwoofer. The obvious reason is to extend the low-frequency response of your system. The not-so-obvious reason is that—when integrated properly—a subwoofer removes the burden of producing the lowest frequencies from the full-range speakers, thus increasing power handling and reducing distortion. Certain systems, such as the Blue Sky ProDesk MKIII are designed as "2.1 systems"—two speakers and a sub intended for use as an integrated system. Other manufacturers offer subs as an option that can be added later; for example, the CMS SUB from Focal Professional is engineered to integrate perfectly with the company's CMS 40/50/65 monitors, but you can purchase the CMS monitors first and add the sub when finances permit. Don't take this option lightly; you'll get *far* better results adding a subwoofer designed to complement specific full-range speakers than you will trying to "roll your own" 2.1 system. The goals of adding

a subwoofer must be met without causing peaks or dips in the overall system response, and manufacturers take great pains to ensure a seamless transition between the sub and the full-range cabs. One last thing to consider is, it's sometimes counterproductive to use a subwoofer in a small room because the subwoofer may excite room modes, creating resonances that skew frequency response.

**Reaping the Rewards** A few months ago, a friend of mine was talking about how much trouble he was having getting his mixes "right"—that is, to sound consistent on a variety of systems. When he told me what he was using for monitors, it became obvious where his problem was. I suggested a particular pair of monitors, which he then purchased. A few weeks later, he told me that his life had changed: His mixes were *way* improved, yet he was spending less time to get better results. That's exactly the point— you need to spend as much money as you possibly can afford on a pair of studio monitors, as soon as you can. The expense will be offset by the fact that you will save time and produce better work, because you'll be listening to accurate sound. Your life *will* change. ■

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

**Fig. 1.** The iZotope Ozone 5 Dynamics plug-in uses a Tilt internal sidechain filter to make kick drum and bass guitar thunder in a mix. The sloped frequency response of the filter is illustrated by the red line at the top of the GUI. The steepness of the slope at both ends of the spectrum can be increased to heighten the effect.

# How to Use Sidechains

## Unleash the hidden power of dynamics processors

**BY MICHAEL COOPER**

THE SIDECHAIN is perhaps a dynamics processor's most powerful feature. In this article, I'll show you three ways to use sidechains to better your productions. But first, let's do a quick review of how these hidden powerhouses work.

**Altered Perception** A sidechain is an ancillary signal path containing a detector circuit, whether based in hardware or software, which alters a dynamics processor's normal response to signal in its audio path. Signal routed to the sidechain is not heard in the audio path (unless you activate a *key listen* switch to audition it). The sidechain signal's sole purpose is to make its associated gate or compressor react to it, but the processing is imparted to the signal you feed into the audio path instead.

Here's an analogy: A dog approaches a motion sensor. The sensor reacts to the dog's presence by prompting a distant door to open, letting a cat through. The motion sensor (sidechain detector) saw the dog (sidechain signal), but processed the cat (signal input to the audio path) in response.

Most contemporary dynamics plug-ins provide access to their sidechain via a dropdown menu in the DAW host. When a signal unrelated to that which is in the audio path is routed via this DAW facility to the plug-in's sidechain, it's referred to as an *external sidechain* signal. Dynamics processors sometimes also provide user access to an *internal sidechain* that's fed by a mult (copy) of the audio input. The internal sidechain is furnished with filters you can adjust to equalize the mult so that the plug-in "hears" its audio input having a different timbre. Most single-band de-essers work this way; their internal sidechain's filter boosts high frequencies so that an attendant compressor reacts with heightened sensitivity to sibilant highs in the audio path. Which brings us to our first sidechain application: frequency-conscious compression.

**Tilt for More Bass** Because low frequencies contain more energy than highs for the same perceived volume, they generally will most readily trigger a compressor placed on your stereo mix bus. As a result, it can be difficult to compress your overall mix as much as you'd like without crushing the life out of kick-drum hits and bass guitar.

The solution is to adjust the mix-bus compressor's internal sidechain filter so that high frequencies are boosted and lows attenuated in the sidechain (see Figure 1). With the sidechain's sensitivity increased for high frequencies, bright portions of your mix
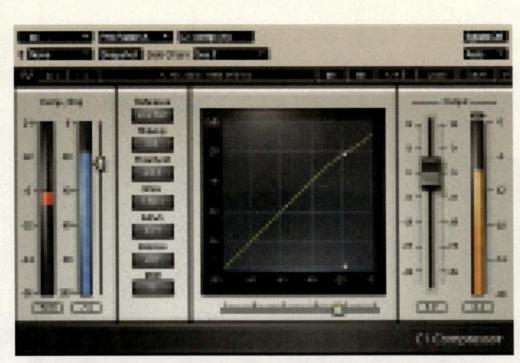
**Fig. 2.** A lead-vocal track is bused to the sidechain of a Waves C1 Compressor plug-in instantiated on a pedal-steel guitar track. Whenever the vocal level (shown in blue) exceeds the compressor's threshold, gain reduction (level is shown in red) is forced on the pedal-steel track.



**Fig. 3.** Kick-drum hits key a Waves C1 Gate placed on a bass guitar track, locking the two tracks' timing.

are more likely to trigger compression. If you set the compressor's threshold to be higher than the level of the kick and bass's attenuated signal levels in the sidechain, the compressor won't initiate gain reduction during fleeting moments of bottom-end bravado. The sonic result will be a thunderous and punchy mix.

**Duck out of the Way** At the end of a solo or when playing fills, a featured instrument can readily step on the lead vocal in your mix. You can dip the instrument's fader level every time the singer rejoins the mix, but doing that more than a few times quickly becomes tedious. Wouldn't it be nice to have the instrument dip

automatically whenever the vocalist sings?

You can do just that by *ducking* the instrument, using a compressor with a sidechain configured to be keyed by the lead vocal (see Figure 2). To set this up, instantiate a compressor plug-in on the instrument's track. Bus the lead vocal—via a send—to the compressor's sidechain. Set the compressor's threshold below the level of the signal in the sidechain so that the plug-in initiates gain reduction on the instrument's track whenever the vocalist sings. The compressor's ratio control will in large part determine how far the instrument will dip in level during vocal phrases. Use the compressor's attack and release controls to manage how quickly the instrument's level ducks and recovers, respectively.

**Key the Gate** Bass guitar generally sounds the punchiest when its notes voice on kick-drum hits. To that end, many bass players intentionally strip down their phrasing to mimic the kick's. The result, if the two players are tight, is a throbbing groove. But if the bass player pushes the beat relative to an in-the-pocket drummer, the feel will be wobbly and the two players' combined pulse will sound weak and diluted. In this case, you could microscopically shift the bass player's track later in time and then laboriously fine-tune each note's attack to line up with those for the kick-drum hits. Call me next year when you're done!

A better solution is to key the bass track with the kick, using a gate that offers external access to its sidechain. The Waves C1 Gate works better than most other plug-ins for this application (see Figure 3). Instantiate the C1 Gate on the bass guitar's track. Bus the kick drum—using a send—to the gate's sidechain. Set the plug-in's Gate Open value below the level of the kick in the plug-in's sidechain. Use super-fast attack and release times to open and close the gate in lickety-split fashion. Adjust the gate's hold time to sculpt each bass note's duration to taste. The Gate Close value should be set low enough that the gate doesn't chatter (that is, open and close indiscriminately). Plunge the gate's Floor parameter to "-Inf" to completely silence the bass guitar in between kick hits. Cue the disco lights—you're about to groove! ∎

*Michael Cooper is a recording, mix, mastering, and post-production engineer and the owner of Michael Cooper Recording in Sisters, Oregon (myspace.com/ michaelcooperrecording).*

To modify existing layouts or create your own, you'll need to install TouchOSC Editor on your computer.

# Remote MIDI Control

## Use Hexler TouchOSC to run gear from your tablet or smartphone

**BY GEARY YELTON**

TOUCHOSC (iOS/Android, $4.99) is an app that can remotely control music software and MIDI gear from your tablet or smartphone. It does that by sending MIDI and OSC (Open Sound Control) messages between hardware and software via wi-fi and MIDI connections.

In this article, I'll describe how I use TouchOSC with a Mac and an iPad on a wireless network, but the same techniques apply if you're using it with Windows or an Android, iPhone, or iPod touch. Because you're more likely to use MIDI than OSC in your studio—at least for now—I'll explain how to use TouchOSC to create your own control panels, called layouts, for controlling MIDI software and hardware. Watch this space, though; OSC could be the future of data communications for music, video, and other forms of media.

**It's a Setup** To get started, download TouchOSC Bridge (Mac/Win, free) from hexler.net. TouchOSC Bridge runs in the background, receives messages from TouchOSC via your wi-fi network, and sends them to MIDI-compatible apps and plug-ins on your computer. You'll need to run TouchOSC Bridge every time you want to use TouchOSC to control your computer software or MIDI hardware connected to your computer.

Open TouchOSC on your tablet to view its Configuration screen, select MIDI Bridge, and make sure Enabled is turned on. In the Host field, type your computer's IP address (look in your System Preferences' Network settings to find it). That's all you need to set up MIDI in TouchOSC. Setting up OSC connections is more complicated, but it isn't necessary for MIDI-only setups.

A TouchOSC layout comprises one or more pages containing onscreen controls such as knobs, sliders, buttons, and pads. Each control has associated settings for sending a specific type of data—for our purposes, MIDI messages. On TouchOSC's Configuration screen, select Layout to see a list of saved layouts, select one, and press Done. Check out a few layouts to get a feeling for how they look and how their controls work. To return to the Configuration screen, touch the small gray circle in the corner of any layout.

**Associate Editor** To make your own TouchOSC layouts, you'll need to download TouchOSC Editor (Mac/Win/Linux, free). The editor requires Java Runtime on your computer to work. The software supplies an assortment of control objects you can configure to suit the hardware or software you'll be controlling. The editor lets you choose and arrange controls according to your individual needs and preferences.

Instead of putting File and Edit menus in the menu bar like most computer software, TouchOSC Editor appears in a single window with a toolbar at the top. The Properties Panel is on the left, and the Editing View displays a preview of the layout on the right. In the toolbar, to the right of commands such as New, Open, Save, Cut, Paste, and so on, you'll see a menu to select the scale of your view and to enable a grid that makes objects in the preview snap to the grid lines whenever you move or resize them. When nothing is selected in the preview, you can adjust properties for the entire page.

You create layouts by choosing a size and orientation and then filling the page with faders, knobs, buttons, and other objects. Control-click (or right-click) on any blank spot in the preview and select one of the objects from the contextual menu that appears. Control-click directly on an object to copy and paste it, align it with other objects on the page, move it forward and back in layers, and so on. Just click and drag to move any object or resize it. If you're familiar with page-layout or vector-graphics software, many of the principles are the same.

To label your controls, you'll need to create labels separately. Click on a blank space to create a label and then, on the Properties



With TouchOSC, you can use your tablet or smartphone as a wireless control surface for any MIDI application on your computer. LiveControl (shown here) is just one of TouchOSC's several remote-control layouts.

Panel, type whatever you want it to say in the Text field, resizing it if necessary. With the text object selected, choose the Bring to Front command to assure it stays on the top layer.

When you select any control in a layout, the Properties Panel displays the control's characteristics and allows you to edit them. Most controls are capable of sending MIDI Control Changes (CCs), Program Changes, PitchBend, Aftertouch, and much more. Click on an object and select MIDI in the Properties Panel. Choose the message type, channel, note or controller number, and value range. If you want an onscreen keyboard to play MIDI Notes, I recommend copying it from another layout rather than creating your own.

How do you know which MIDI CCs to control? Some are obvious—volume, pan, modulation, and so on—and some software will display the MIDI CC when you click on an onscreen control. Others require a bit of investigation. Use MIDI Monitor for Mac OS X or MIDI-OX for Windows to identify commands sent by hardware. To identify messages sent by a plug-in, record its output in a DAW track and view the track's event list to see what kind of controller data was recorded.

**OSC, Clearly, Now** Create a layout on your computer in TouchOSC Editor and name it, and then go to TouchOSC's Configuration page on your tablet, choose Layout, and select Add. Click on the Sync button in TouchOSC Editor, and the computer's name should pop up on your tablet. Touch it to transfer the layout from your computer to your tablet. Find your new layout on your tablet and select it, and then return to the Configuration screen and press Done. Close the Layout Sync dialog on your computer, open the software you'll be controlling, and begin using the layout you've created. To control external hardware, assign a MIDI track to the hardware in your DAW and enable Record.

To find out more about what TouchOSC can do, download some layouts from the Web and modify them to suit your particular needs. You'll quickly discover that TouchOSC lets you do things you could scarcely imagine before you started using it. ∎

*In a previous life, Asheville-based writer and synthesist Geary Yelton was Electronic Musician's senior editor.*
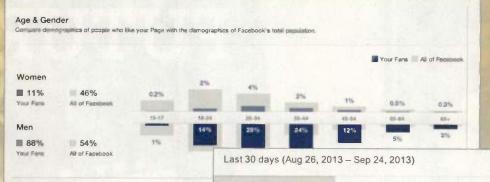
**Fig. 1.** The Facebook Page Insights tool maps your audience demographics and habits.

# Target (Your) Market

## How to find out who your fans are, what they listen to, and where they live

**BY RANDY CHERTKOW AND JASON FEEHAN**



**Fig. 2.** YouTube analytics provides audience demos, viewing stats, and other data.

IN THE past, only music labels, with their large marketing budgets and resources, were able to get the demographic information artists needed to understand their audience. They knew that by focusing on age groups, genders, and segments of fans, they could grow their artists' fanbase.

Today, this kind of information is now in your hands—and the best part is, most of this information is free and takes just a few minutes to pull up. You can find out your fans' ages, which other artists they listen to, where they hang out, what they do and like, and where they are located throughout the world. And all of this can help you get your music heard by more people, and win more fans.

Use the following six sources to check out the information you have on your current fans. Once you know more about them, you can adjust your efforts to find and target similar people and grow your fanbase.

**Facebook** Your Facebook (facebook.com) fan page captures statistics and demographics associated with the people who follow it. The Page Insights tool (see Figure 1) is the simplest way to find out where your audience



**Fig. 3.** Tweetsmap analyzes the location of your Twitter followers.

lives, their gender, their age, and more. These provide clues to the type of person your music and style appeals to—and where to find them.

**YouTube** Videos are still one of the best ways to get your music out into the world, in part

because videos are so easy to share on the web. But the best part is that sites like YouTube (youtube.com) capture a great set of statistics about who's watching and sharing videos on your channel. Check out your channel's analytics section at youtube.com/analytics

(see Figure 2 on page 72) for demographic information. It also offers detailed stats on your videos, including how long people watched, and where they came from. Want more data? Try out VidStatsX (vidstatsx.com) for additional detailed information.

**Last.FM** If you want to find out which other artists your fans are listening to, use Last.FM

(last.fm). The Last.FM Scrobbler is a service that people install on their computers and devices that automatically posts what they are listening to. As a side benefit, Last.FM has pages for every artist, the songs that were played, which user played them, and when. On your artist page, you can see the fans that listened to your music, get their demographic information, and learn who else they listen to.

This allows you to grow your audience not only by better understanding who your fans are, but also allowing you to develop new marketing campaigns by targeting the fans of similar artists.

**Reverbnation** Reverbnation (reverbnation.com) captures demographic information about the people who are listening to your music and viewing your page in their artist control panel. Plus, they allow you to pull information from various social networks—giving you more tools to analyze who your fans are and where they are on the web.

**Location-Based Stats** Beyond the location data you can get from Facebook and YouTube, sites like Eventful (eventful.com) has a "demand" widget that lets fans ask you to play in their town and captures demographic information about who's demanding you. This lets artists who build a fanbase online know where their fans want them to play, allowing them to plan out tours more effectively. Also, try Tweepsmap (tweepsmap.com) to analyze your Twitter followers and map out where they are located (see Figure 3 on page 72).

**SoundOut** Soundout (soundout.com) is a service that, for a fee, will play your music to an objective group of listeners so they can rate and review each song you submit. You receive a detailed report for each song you submit that breaks the data out by demographic group, so you can see which group likes your music the most (or least). This can give you some real insight as to the type of people that your songs will appeal to before you even release it to the world.

Once you have collected information about your fans, you'll know where to target your marketing efforts. Considering that most of these methods just take a few minutes to use and are free, it makes sense to get started right now. Once you do, try aiming your efforts at the single most promising age demographic, a particular city or region, and the fans of one similar artist. While it may seem, at first, to be limiting yourself by narrowing your focus, instead, you'll be *more* effective at conquering one segment of your potential listeners, and boost the word of mouth that grows you beyond your original fanbase. ■

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# Apple Logic Pro X

## Stack software instruments to play them simultaneously from your keyboard

**BY GEARY YELTON**

### OBJECTIVE

Use Logic's new Track Stacks feature to layer any number of software instruments and play them as if they were a single instrument.

### BACKGROUND

In the early days of MIDI, synthesists created new sounds simply by assigning two or more instruments to the same MIDI channel and playing them both from the same keyboard. Most DAWs don't make it difficult to do the same thing with software instruments, but Logic Pro X's Track Stacks makes it easier than ever to layer instruments and then save that configuration as a preset you can use in any project.

### TIPS

■ Step 4: To save screen space by hiding the individual instruments, collapse the stacked track by clicking on the triangle in its header. Any processors you insert in the stacked track will apply to all the instruments. To make individual track adjustments or to view any instrument's GUI, expand the track stack by clicking on the triangle again. Note that you can leave instrument GUIs open when you collapse the stacked track if you prefer.



**Step 1** Open a new file in Logic Pro X and create three software instrument tracks assigned to an instrument plug-in.

**Step 2** From the instrument list in the Library window, assign an electric piano, an organ, and synthesizer strings, respectively, to the three tracks. Pan the organ and strings hard left and right.

**Step 3** Shift-click on the three tracks' headers and select Create Track Stack from the Track menu in the menu bar.

**Step 4** Select a Summing Stack as the track type. Play your keyboard to hear the piano, organ, and strings layered together.

**Step 5** Click on the Save button in the Library window and give the track stack a name to store it as a Patch. Its name will appear in the Library window, allowing you to recall it for later use in any project.

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# Marketplace

# Five Insanely Great Marketing Phrases for Promoting Your Gigs

These days, everyone says marketing is as important as musicianship. But are you using outdated marketing lingo? Shame on you! Translate your dull statements into the latest messaging, and watch your marketing blast off!

BY CRAIG ANDERTON

## 1

People throw things at us when we're onstage.
**Translation:** We enable value-added *interactive engagement* with our fans.

## 2

We'll play anything— weddings, proms, funerals, wife-swapping parties. Really . . . *anything*.
**Translation:** We manage our flexible core competencies to bucketize win-win experiences for diverse, client-focused immersive experiences.

## 3

We ask people at our gigs to tell their friends about upcoming gigs.
**Translation:** Our leading-edge promotion is all about leveraging a synergistic aggregation of eyeballs for an optimized, end-to-end networking relationship. (Note: For best results, follow this with a really thoughtful look as you pretend to check messages on your iPhone. Make sure it has one of those *manly* OtterBox cases!)

## 4

We understand that the whole point of playing your club is to get people to drink a lot, so we do a ton of cover songs but we do play some originals . . . it depends on the crowd.
**Translation:** We *curate* vintage value propositions to fully realize your goal of snackable content, while focusing on proactive, 360-degree cross-media social commerce based on agile marketing.

## 5

We really can't come up with any convincing reasons as to why you should hire us, but please hire us anyway.
**Translation:** At the end of the day, we stretch the envelope to think outside the box, thus enabling a customer-directed change catalyst beyond positioning of second-screen ROI into a simple quality vector for viral gamification, combined with clickable earned media and ideation. Okay . . . I admit that doesn't make any sense. But neither do any of the other ones—which means you're catching on! *Congratulations*!

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