Essential Online Resources for Musicians

JUNE 2005

Electronic Musician®

PERSONAL STUDIO | RECORDING | PRODUCTION | SOUND DESIGN

The Lost World Rediscovered

8 virtual synths go head-to-head with analog classics

MAKE YOUR MIXES AS LOUD AS POSSIBLE

CREATING GUITAR EFFECTS WITH SOFT INSTRUMENTS

Tony Shepperd
Captures the Stars in His Garage

REVIEWS

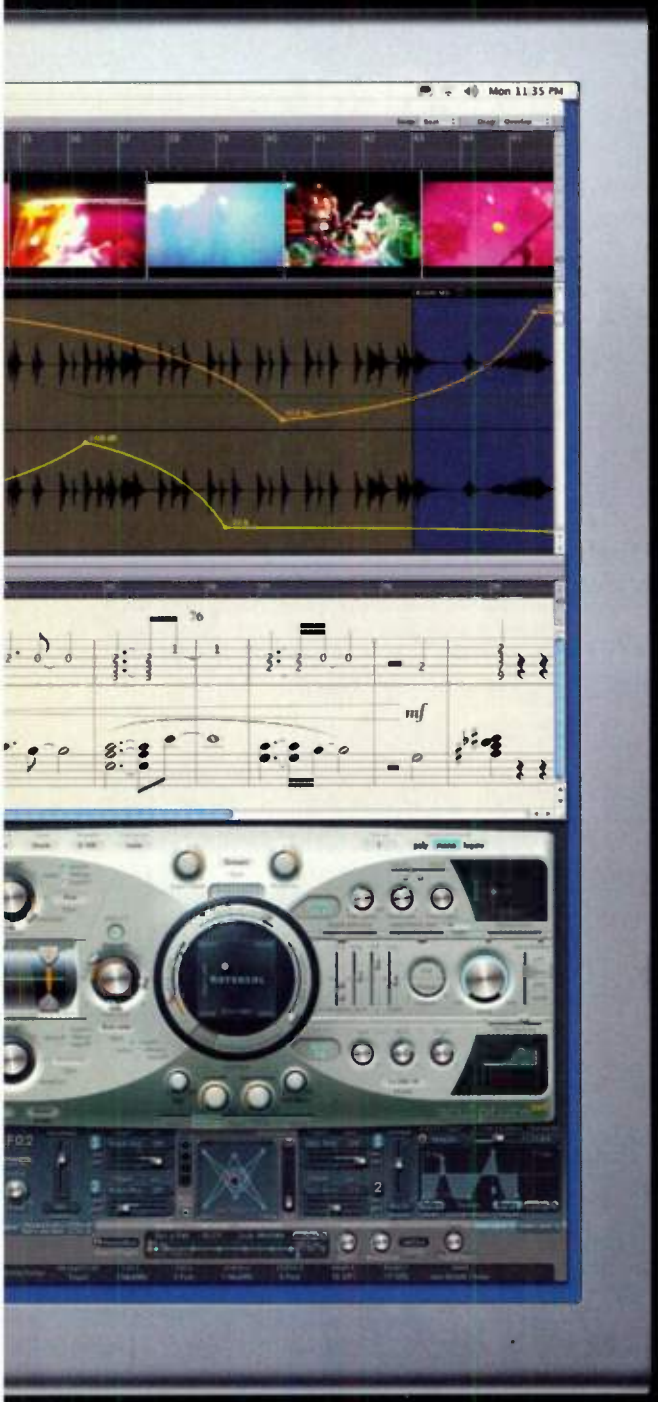
Tascam DP-01FX
Alesis Micron
Open Labs NeKo 64-220
Apple GarageBand 2
Image-Line FL Studio 5
and 7 more

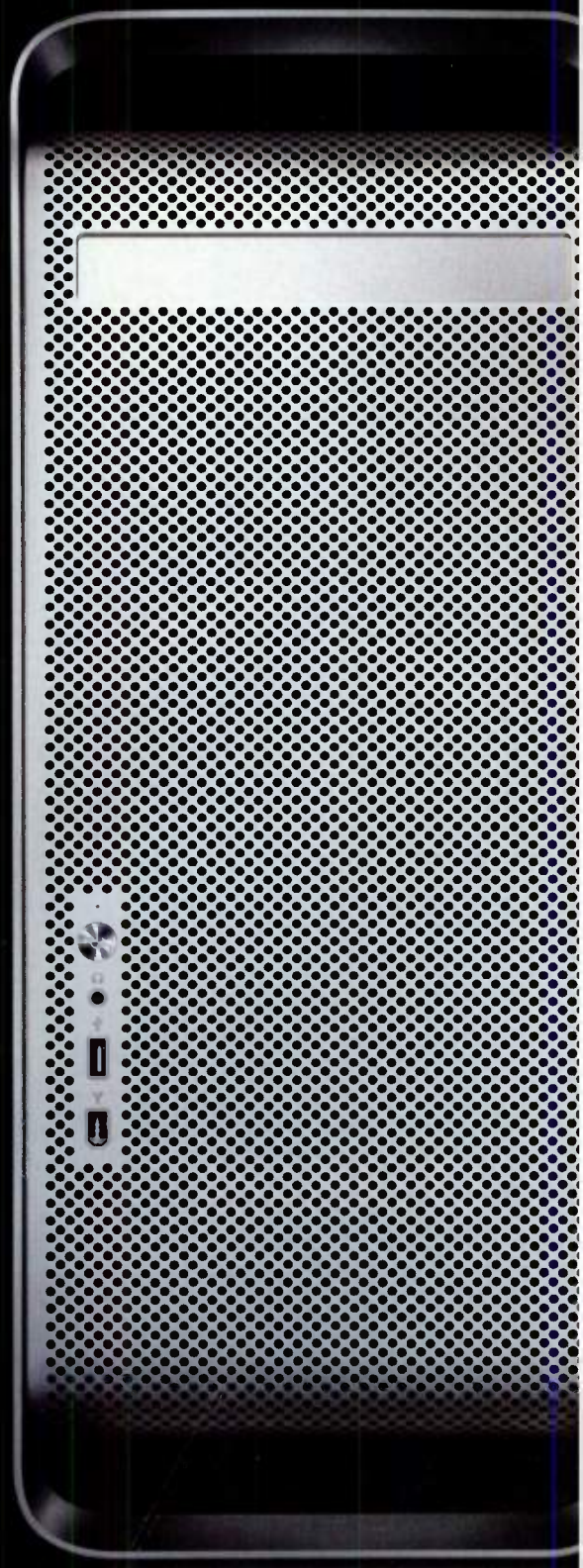
#CANMIXSF ******AUTO**3-DIGIT 109
#10987LNG616EG008# 169
GEORGE LANGBERG
616 EAGLE VALLEY RD
TUXEDO PARK NY 10987-4740
P8
48/9

A PRIMEDIA Publication
$6.99US $8.99CAN
06
0 09281 01816 2

WWW.EMUSICIAN.COM

Logic Pro 7
Half studio. Half instrument. Total creative freedom.
More of a suite than an application, Logic Pro 7 sets a new standard in music creation and audio production. New Apple
imaginable and Sculpture lets you synthesize anything naturally via component modeling. The 70 effect plug-ins, 34 software
Images are of the band Kid Galahad making the film Hello You. For more information, visit kidg.net. TM & ©2005 Apple Computer, Inc. All rights reserved. *SRP. For more information, visit





Loops let you produce instant sound beds, Ultrabeat delivers endless drum-machine permutations, Guitar Amp Pro models any tone instruments and expandable DSP processing power, thanks to Distributed Audio Processing, will make the $999* price tag music to your ears.

www.apple.com/logic.

When Virtual Gets Real

"The Motif ES series is the perfect companion in a virtual studio environment. For me, the smooth dynamic feel of Yamaha keyboards and the immediate availability of quality sounds and great features make it a staple in my studio."

Dave Kerzner
CEO and main sound designer for Sonic Reality, Inc.

Whether Dave Kerzner is at work in the studio developing new sounds for VST plug-ins like Halion or Sonik Synth™, producing legendary drummer Danny Gottlieb or setting up custom Sonic Reality samples for the Motif ES synths on Beyonce's concert tour with Alicia Keys and Missy Elliott, this virtual synth sound developer has only one choice in hardware, the Motif ES. If your company is called Sonic Reality, you demand the best in sound quality, the most flexibility in features and the tightest integration with your PC and virtual instruments. That's why Dave always keeps it real with his Motif ES music production synthesizers.

YAMAHA

www.yamahasynth.com www.motifator.com www.esoundz.com

© 2005 Yamaha Corporation of America. All rights reserved.

MOTIF ES
Music Production Synthesizer

The Motif ES is not just the best sounding synth workstation on the market, it also sets a new standard for computer integration. Use the ES for hands-on control of DAW parameters and simultaneously edit your ES directly inside your Steinberg software via Studio Connections compatible Voice and Multi-Part editors. For the ultimate in total computer integration, add the mLAN16e mLAN Firewire card and turn your ES into a multi-channel ASIO sound card.

Virtually Anything Is Possible

Creating music these days is all about making choices. Cubase SX3 gives you more freedom of choice than any other DAW platform.

Want to add loops of different tempos to your music? SX3's new Audio Warp feature lets you twist and stretch audio any way you want. Have friends who like working on a different OS than you do? No problem, SX3 is the only cross platform DAW on the market. So whether you choose XP, OS X or both, SX3 is right there with you. Want to add outboard gear into your virtual environment? SX3's new features for integrating external hardware—including FX return channels, advanced latency compensation and Studio Connections Recall—lets you decide what external studio gear you use and how.

Cubase SX3 features the same 32-bit VST 2.3 audio engine as Nuendo 3.0, so it's not only fully VST and 5.1 surround sound compatible, it sets a new standard for audio quality.

Cubase • SX 3

Music Creation & Production System

ASIO VST

Cubase SX3 takes music production to the next level by adding more than 70 new features that give you the freedom to be creative and the power to be productive. With seamless integration of external audio and MIDI hardware, Cubase SX3 re-defines virtual studio technology.

www.steinberg.net www.steinbergusers.com www.studioconnections.org

Steinberg, Cubase and VST are registered trademarks of Steinberg Media Technologies GmbH. Yamaha Corporation of America is the exclusive distributor for Steinberg in the United States. ©2005 Yamaha Corporation of America. All rights reserved.

steinberg

Creativity First

Fantom-X7: Workstation Keyboard

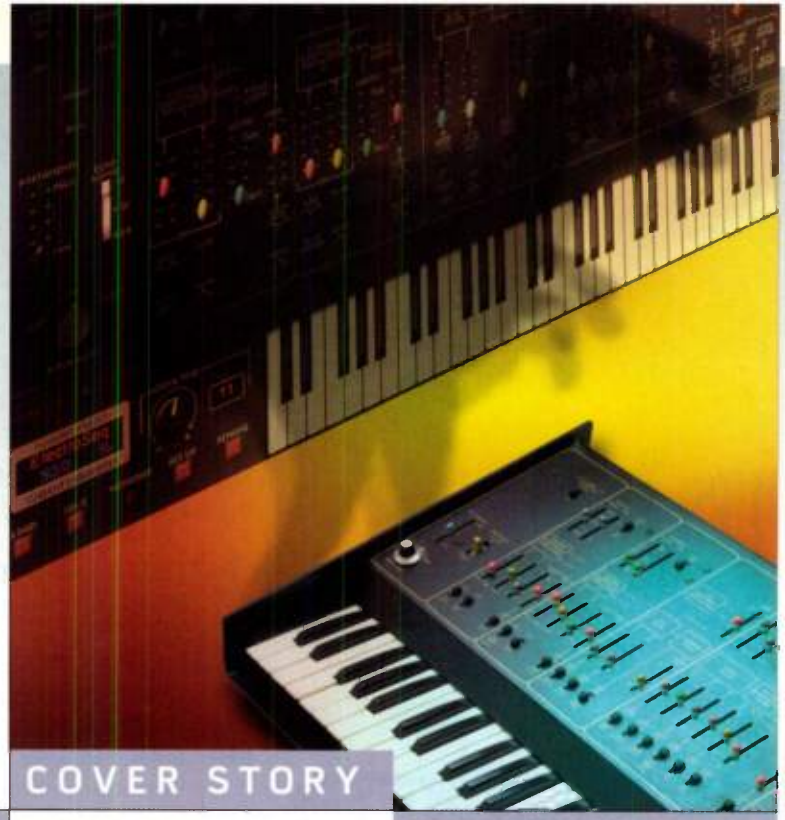
Roland®

www.rolandus.com

FLEXIBILITY

Electronic Musician
June 2005

INSIDE



BRUCE BROWN

FEATURES

COVER STORY

54 THE LOST WORLD REDISCOVERED

Can today's virtual synthesizers accurately re-create the sounds of the great analog synths of yesteryear? Our panel of synth experts pits seven vintage "dinosaur" synths against their software emulations in a blind test that's full of surprises. By Brian Smithers

39 NINE ESSENTIAL ONLINE RESOURCES

From Web sites to newsgroups, the knowledge that you need to create and record music using the latest technology is just a few mouse-clicks away. By Geary Yelton

73 PRODUCTION VALUES: GARAGE OF DREAMS

Engineer-producer Tony Shepperd, who has worked with artists such as Whitney Houston and the Backstreet Boys, designed and helped build Tonysound, one of the top personal studios in Los Angeles. Shepperd talks about the studio's design and his recording techniques. By Maureen Droney

Electronic Musician® (ISSN 0884-4720) is published monthly by PRIMEDIA Business Magazines & Media Inc., 9800 Metcalf Ave., Overland Park, KS 66212 (www.primediabusiness.com). This is Volume 21, Issue 6, June 2005. One-year (12 issues) subscription is $24. Canada is $30. All other international is $50. Prices subject to change. POSTMASTER: Send address changes to *Electronic Musician*, P.O. Box 640, Mt. Morris, IL 61054. Periodicals postage paid at Shawnee Mission, KS, and additional mailing offices. Canadian GST #129597951. Canada Post International Publications Mail Product (Canadian Distribution) Sales Agreement No. 40597023. Canada return address: DP Global Mail, 7496 Bath Road, Unit 2, Mississauga, ON L4T 1L2.

DEPARTMENTS

10 FIRST TAKE

14 LETTERS

18 EMUSICIAN.COM TABLE OF CONTENTS

22 WHAT'S NEW

141 AD INDEX

142 MARKETPLACE

146 CLASSIFIEDS

Electronic Musician
June 2005

34

INSIDE

COLUMNS

32 TECH PAGE: **Beating Superparamagnetism**
Hitachi puts an old technology to new uses.

34 PRO/FILE: **Group Dynamics**
Sound Tribe Sector 9 explores the art of collaboration for *Artifact*.

82 MAKING TRACKS: **Organize on the Fly**
Tips for using virtual takes in your DAW to create composite tracks.

86 SOUND DESIGN WORKSHOP: **Guitar Processors in Disguise**
Virtual instruments offer unusual DSP effects.

88 SQUARE ONE: **Some Like It Hot**
Learn the differences between normalizing and maximizing.

154 FINAL MIX: **Win, Lose, or Draw**
How you respond to success and failure says a lot about who you are.

94

REVIEWS

94 **TASCAM DP-01FX** portable digital studio

100 **ALESIS Micron** hardware synthesizer

104 **APPLE COMPUTER GarageBand 2** digital audio sequencer (Mac OS X)

108 **OPEN LABS OpenSynth neKo 64-220** keyboard workstation

114 **FOSTEX FR-2** portable digital recorder

120 **IMAGE-LINE FL Studio 5** digital audio sequencer (Win)

126 **MINDPRINT En-Voice MK II** analog channel strip

130 **SOUNDTREK Jammer Professional 5** auto-accompaniment software (Win)

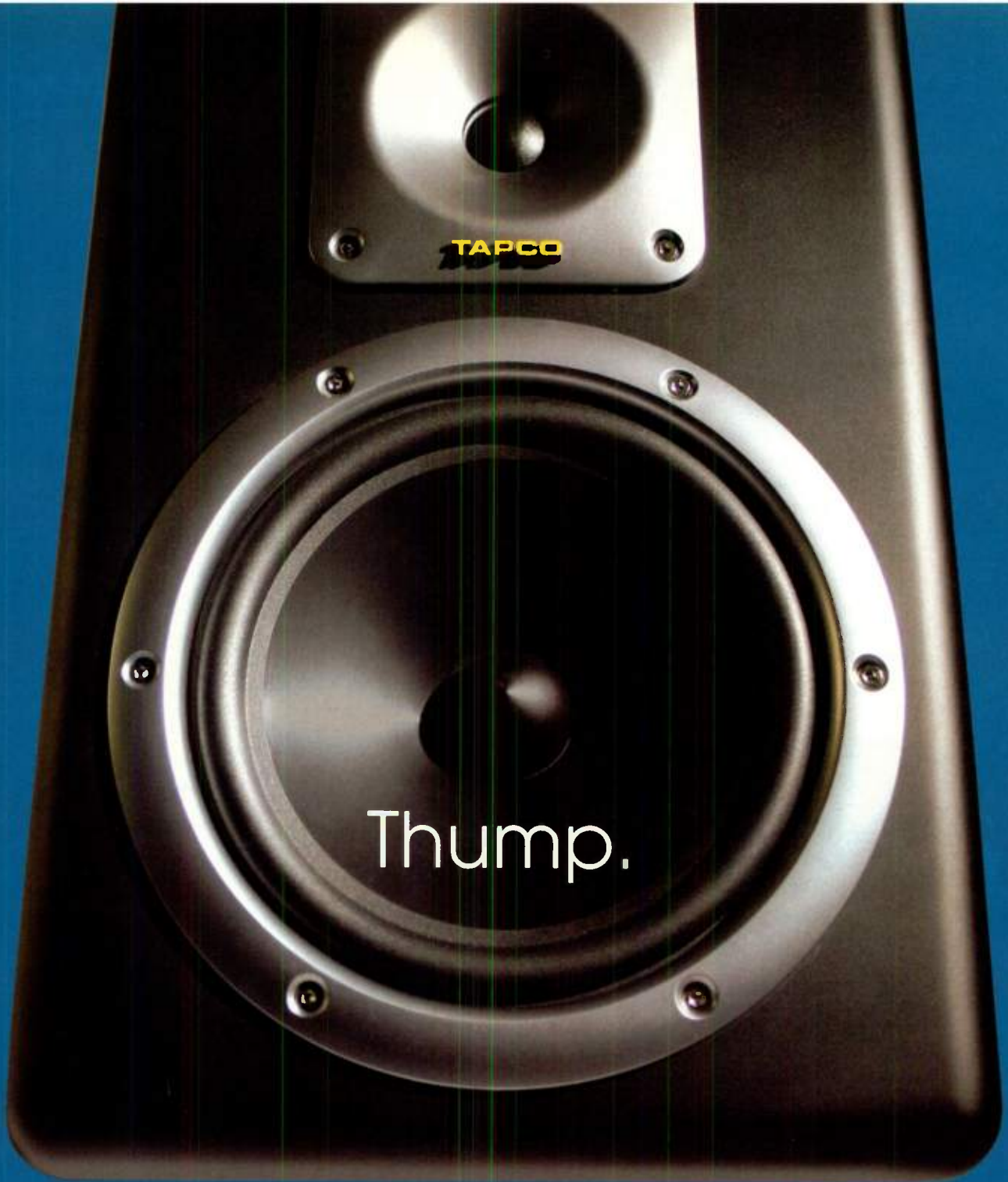
136 QUICK PICKS

SM Pro Audio M-Patch audio router

Electro-Harmonix POG envelope phaser

Edirol Audio Capture FA-101 FireWire audio interface

Propellerhead Software *Reason Drum Kits ReFill Collection* sound library (Mac/Win)



If you create or mix modern music, your studio monitors need to deliver full-range sound with precise, punchy low-end. That's why the experts at Mackie designed the TAPCO S•5 and the big new S•8 — professional studio monitors that bring you all the lows you need, without artificial EQ bumps like our competition. Better yet, the S•5 and S•8 come at a price that won't thump your wallet. Visit tapcogear.com to learn more.

TAPCO®

TOTAL AUDIO PRODUCTION

Now accepting visitors @ tapcogear.com.
U.S.: (877) TAPCO-69 • Outside the U.S.: (425) 892-6511

©2005 LOUD Technologies Inc. All rights reserved. "TAPCO" is a registered trademark of LOUD Technologies Inc.

Smoked Out

Recently, I had to get a room on short notice in a city in central California that shall remain nameless. I had my German shepherd with me, and the only room left at the only hotel in town that accepted large dogs turned out to be a smoking room. Normally, most hotels and motels air out smoking rooms reasonably well, but not this time; the stench was so heavy that I couldn't breathe, not to mention sleep. I finally gave up, in a mean mood, and I could not wait to see that town in my rearview mirror. But it got me thinking about how things have improved for working musicians when it comes to tobacco use.

When I first played in bands, most of my bandmates, including the lead singers, smoked cigarettes. (Many smoked the other weed, too, but that is a separate issue.) Usually, I was the only nonsmoker. In retrospect, I wonder how I managed to get through all those years of playing and singing in smoke-filled clubs and rehearsal rooms. At the time, I suppose, I just took secondhand smoke for granted. Still, I hated coming back to the hotel room after the gig with clothes reeking of tobacco, and I am even more sensitive to it now that I don't have to put up with it daily.

Gradually, the situation improved. The last two bands I toured with before I got off the road had only one tobacco smoker, and he had cut back considerably and had become more considerate of nonsmokers. Rehearsals were a lot more pleasant as a result. Incidentally, these bands were based in Nashville and in Arizona, not in, say, San Francisco, where one might expect less tolerance of public smoking. The air in many studios improved, too, because sessions included fewer human smokestacks.

JULIE BIRUM

To a large extent, that pattern reflected an overall change in our society's view of tobacco. But I think many musicians also realized that if you sing for your supper and you want to keep eating, you ought not poison your throat and lungs. It's about time we figured that out!

Now, as a survivor of the drug-infused rock scene of the late '60s and the early '70s, I admit that I am in a poor position to cast stones regarding drug use. I am well aware that quitting can be very difficult. And I certainly do not advocate outlawing tobacco, because I think people have to take responsibility for their own decisions. If they insist on killing themselves, I regard that as natural selection at work. But I deny anyone's right to poison the rest of us, and I support restricting tobacco use in public places, including bars. Fortunately, many smokers have become more considerate of nonsmokers when they decide where and when to light up.

As a result, you can actually go see a band—and gig with a band—and be able to breathe at the same time. I call that progress. For me, it seems, the next step is to convince the manager of a certain Best Western motel in the central San Joaquin Valley to air out his smoking rooms properly.

Steve Oppenheimer
Editor in Chief

Electronic Musician
WWW.EMUSICIAN.COM A PRIMEDIA PUBLICATION

EDITOR IN CHIEF
Steve Oppenheimer, soppenheimer@primediabusiness.com

MANAGING EDITOR
Patricia Hammond, phammond@primediabusiness.com

SENIOR EDITORS
Mike Levine, mlevine@primediabusiness.com
Gino Robair, grobair@primediabusiness.com

ASSOCIATE EDITORS
Rusty Cutchin, emeditorial@primediabusiness.com
Dennis Miller, emeditorial@primediabusiness.com
Len Sasso, emeditorial@primediabusiness.com
Geary Yelton, gyelton@primediabusiness.com

ASSISTANT EDITOR
Matt Gallagher, mgallagher@primediabusiness.com

COPY EDITOR
Lori Kennedy, lkennedy@primediabusiness.com

CONTRIBUTING EDITORS
Michael Cooper, Mary Cosola, Marty Cutler, Maureen Droney, Larry the O, George Petersen, David Rubin, Rob Shrock, Scott Wilkinson

DIRECTOR OF NEW MEDIA
Tami Needham, tneedham@primediabusiness.com

GROUP ART DIRECTOR
Dmitry Panich, dpanich@primediabusiness.com

ART DIRECTOR
Laura Williams, lwilliam@primediabusiness.com

ASSOCIATE ART DIRECTOR
Mike Cruz, mcruz@primediabusiness.com

INFORMATIONAL GRAPHICS
Chuck Dahmer

SENIOR VICE PRESIDENT
Peter May, pmay@primediabusiness.com

ADMINISTRATIVE ASSISTANT
Karen Carter, kcarter@primediabusiness.com

PUBLISHER
Dave Reik, dreik@primediabusiness.com

ASSOCIATE PUBLISHER
Joe Perry, jperry@primediabusiness.com

EAST COAST ADVERTISING MANAGER
Jeff Donnenwerth, jdonnenwerth@primediabusiness.com

NORTHWEST/MIDWEST ADVERTISING MANAGER
Greg Sutton, gsutton@primediabusiness.com

SOUTHWEST ADVERTISING MANAGER
Mari Deetz, mdeetz@primediabusiness.com

MARKETING AND EVENTS DIRECTOR
Christen Pocock, cpocock@primediabusiness.com

MARKETING COORDINATOR
Clarina Raydmanov, craydmanov@primediabusiness.com

MARKETING AND EVENTS COORDINATOR
Megan Koehn, mkoehn@primediabusiness.com

ONLINE SALES AND MARKETING MANAGER
Samantha Kahn, skahn@primediabusiness.com

CLASSIFIEDS/MARKETPLACE ADVERTISING DIRECTOR
Robin Boyce-Trubitt, rboyce@primediabusiness.com

WEST COAST CLASSIFIED SALES ASSOCIATE
Kevin Blackford, kblackford@primediabusiness.com

EAST COAST CLASSIFIED SALES ASSOCIATE
Jason Smith, jasmith@primediabusiness.com

CLASSIFIEDS PRODUCTION COORDINATOR
Jennifer Kneebone, jkneebone@primediabusiness.com

GROUP PRODUCTION MANAGER
Melissa Langstaff, mlangstaff@primediabusiness.com

ADVERTISING PRODUCTION COORDINATOR
Jennifer Hall, jhall@primediabusiness.com

GROUP AUDIENCE MARKETING DIRECTOR
John Rockwell, jrockwell@primediabusiness.com

DIRECTOR OF HUMAN RESOURCES
Julie Nave-Taylor, jnave-taylor@primediabusiness.com

OFFICE COORDINATOR/RECEPTIONIST
Lara Duchnick, lduchnick@primediabusiness.com

6 COMPLETE 48-track computer recording solutions!

Whether you're just starting out or an advanced user, we have a pro hardware/software package that turns your PC or Mac® into a 48-track recording studio. Each comes complete with Steinberg's superb Cubase LE digital audio workstation software*. Just add microphones and speakers to start capturing your art!

Record 2 tracks at once anywhere.

Cubase LE MAC® & PC

portable | USB | 2-in/2-out | 1-in/1-out MIDI

2 mic preamps with phantom power

Record 2 tracks at once anywhere.

Cubase LE MAC® & PC

portable | USB | 2-in/2-out | 1-in/1-out MIDI

2 mic preamps | DAW control | 5 faders

Record 4 tracks at once.

Cubase LE MAC® & PC

desktop | USB | 4-in/2-out | 2-in/2-out MIDI

2 mic preamps | DAW control | 9 faders

Record 10 tracks at once.

Cubase LE MAC® & PC

studio | FireWire® | 10-in/4-out | 2-in/2-out MIDI

DAW control | 9 touch-sensitive motorized 60mm faders

4 premium mic preamps with phantom power

Record 18 tracks at once.

Cubase LE MAC® & PC

studio | FireWire® | 18-in/18-out | 4-in/4-out MIDI

DAW control | 9 touch-sensitive motorized 100mm faders

8 premium mic preamps with phantom power

Record 18 tracks at once.

Cubase LE MAC® & PC

rackmount | FireWire® | 18-in/12-out | 2-in/4-out MIDI

4 premium mic preamps with phantom power

TASCAM

CONTRACTOR | www.tascam.com | DJ AND PRODUCER | PRO AUDIO

*Ha! You were expecting a footnote with some sort of limitations. Fooled ya. All six TASCAM audio/MIDI interfaces work with both Mac & PC and come with the cross platform Cubase LE. They also come with GigaStudio 3 LE, the world's most powerful software sampler (PC only) *and* a Nomad Factory™ VST tube emulation plug-in demo pack for Mac® & PC. ©2005, TASCAM, a division of TEAC America. All rights reserved.

WRH

PRIMEDIA
Business Magazines & Media

CHIEF OPERATING OFFICER
Jack Condon, jcondon@primediabusiness.com

EXECUTIVE VICE PRESIDENT
John French, jfrench@primediabusiness.com

PRIMEDIA INC.
745 Fifth Ave., New York, NY 10151

CHAIRMAN
Dean Nelson, dean.nelson@primedia.com

PRESIDENT AND CHIEF EXECUTIVE OFFICER
Kelly Conlin, kelly.conlin@primedia.com

VICE CHAIRMAN & GENERAL COUNSEL
Beverly Chell, beverly.chell@primedia.com

EDITORIAL, ADVERTISING, AND BUSINESS OFFICES:
6400 Hollis St., Suite 12, Emeryville, CA 94608, USA
(510) 653-3307.

SUBSCRIBER CUSTOMER SERVICE: To subscribe, change your address, or check on your current account status, go to www.emusician.com and click on Customer Service for fastest service. Or email ecmn@kable.com, call toll-free (800) 245-2737 or (815) 734-1216, or write to P.O. Box 640, Mt. Morris, IL 61054.

REPRINTS: Contact FosteReprints to purchase quality custom reprints or eprints of articles appearing in this publication at (866) 436-8366 ((219) 879-8366 outside the U.S. and Canada). Instant reprints and permissions may be purchased directly from our Web site; look for the RSiCopyright tag appended to the end of each article.

BACK ISSUES: Back issues are available for $10 each by calling (800) 245-2737 or (740) 382-3322.

LIST RENTAL: Please direct all inquiries to Marie Briganti at marie.briganti@walterkarl.infousa.com.

PHOTOCOPIES: Authorization to photocopy articles for internal corporate, personal, or instructional use may be obtained from the Copyright Clearance Center (CCC) at (978) 750-8400. Obtain further information at www.copyright.com.

ARCHIVES AND MICROFORM: This magazine is available for research and retrieval of selected archived articles from leading electronic databases and online search services, including Factiva, Lexis-Nexis, and ProQuest. For microform availability, contact ProQuest at (800) 521-0600 or (734) 761-4700, or search the Serials in Microform listings at www.proquest.com.

PRIVACY POLICY: Your privacy is a priority to us. For a detailed policy statement about privacy and information dissemination practices related to Primedia Business Magazines & Media products, please visit our Web site at primediabusiness.com.

CORPORATE OFFICE: PRIMEDIA Business Magazines & Media Inc., 9800 Metcalf, Overland Park, KS 66212 — (913) 341-1300 — primediabusiness.com

COPYRIGHT 2005

PRIMEDIA Business Magazines & Media Inc.

ALL RIGHTS RESERVED.

ABM

BPA WORLDWIDE

PRINTED IN THE USA.
ALSO PUBLISHERS OF MIX®, REMIX™, MUSIC EDUCATION TECHNOLOGY™, COMPUTER MUSIC PRODUCT GUIDE™, PERSONAL STUDIO BUYER'S GUIDE®, AND DIGITAL HOME KEYBOARD GUIDE™.

STYLUS RMX

REALTIME GROOVE MODULE

SPECTRASONICS

POWERED BY S.A.G.E.

SPECTRASONICS ADVANCED GROOVE ENGINE

Expand Stylus RMX with the

S.A.G.E. XPANDER

S E R I E S

W W W . S P E C T R A S O N I C S . N E T

PC VERSION

VSTi Instruments

Audio Units

RTAS Real-Time AudioSuite

800.747.4546 www.ilio.com

ILIO Exclusive distributors

LAURA WILLIAMS

Letters

Point of Clarification

Kurt Heiden's detailed and informative article "Experimenting with SoundFonts" (April 2005) contained an important error for Cakewalk Sonar users. Heiden asserts that Sonar 4 includes the DS864 software sampler. However, contrary to Heiden's assertion, no software sampler ships with Sonar 4.

Sonar, versions 1 and 2, shipped with LiveSynth, which is designed expressly for playing SoundFonts. Sonar 3 shipped with VSampler 3, which loads and plays SoundFonts. Sonar 4 users who upgraded from previous versions will have either or both of those software samplers at their disposal.

But Sonar 4 users who lack these software instruments have an option. You can use rgcAudio's excellent free VST SoundFont player, sfz, with Sonar via the Cakewalk VST Adapter, which ships with Sonar 4. Sfz can be downloaded from rgcAudio's site or from kvraudio.com.

Richard Hunter
via email

Richard—Thanks for your note. You are correct in that DS864 does not come with any version of Sonar. However, if you happen to be a Project5 user, as well, and have installed DS864, which comes with that bundle, then the sampler will be available while you are running Sonar.—Dennis Miller

Got QUALMS? Gotcha!

I'm writing with regard to the Tech Page column in the April 2005 issue. I read the article and, for five minutes of my life, I was more excited than I'd been about anything I can remember. I showed it to my roommate and he flipped out, too. I was just about to print copies and start posting them everywhere and handing them out to my friends.

Then I tried to find out more. Nothing. Fu Ling Yu, huh? Cruel. What's up with this?

Chris
via email

Chris—I have just two words for you: GOTCHA! (Okay, that's one word, but it's derived from two.) I often come up with ideas for my April Fools' Tech Page based on things I'd love to see, so I understand your sense of excitement. I got excited writing "Got QUALMS," even though I knew it was fake. I tried to give readers several clues as to the false nature of the piece, which you seemed to pick up on.—Scott Wilkinson

Sibling Rivalry

I was somewhat distracted when I first read your story on QUALMS (QuantumLinearModelingSynthesis; "Tech Page: Got QUALMS," April 2005). I was soon riveted, however, by the news of this stunning new technology emerging from China.

Not long afterward, I heard stories about Professor Fu's brother, who is on the faculty of Shanghai Technological-Neurological University (www.shtnu.edu). Both men were pursuing the same goal, but it was the Shanghai Professor Fu who published his findings first.

I was preparing to act on this information when it occurred to me that I was holding the April issue of EM in my hands. I sadly cancelled all my plans to email colleagues and post threads on the Steinberg forums. I imagine there are those at EM who will be disappointed that the news of this startling scientific breakthrough and the intense sibling rivalry that spawned it will not be discussed and debated throughout our professional community.

I, however, have no intention of telling how close Fu Ling Yu came to Fu Ling Mi.

Michael Jones
Coolhouse Media

Alternate Routes

Thank you for a great review of the Mackie Onyx 1620 (March 2005). However, it missed a key issue: you can't send EQ settings or inserts for your effects to your DAW through its FireWire I/O card or DB-25 connectors. Customers are complaining in droves about this on the Mackie forums. I find this suspicious.

Glenn
via email

Glenn—At first glance, it may appear that the FireWire card designed for Onyx-series mixers provides a postinsert and post-EQ pathway to a user's computer and digital audio application. It should be remembered, however, that the FireWire card is a convenience option for what is essentially an old-school analog mixer, albeit a modern one that sounds great

cakewalk

SONAR 4

"SONAR 4 Producer Edition is simply stunning. Surround is logically integrated in a way that keeps the creative flow and mixing moving fast. And SurroundBridge is brilliant!"

Rob King Producer and composer for TV, Video Games, Popular Music
Sony's Everquest series, Billboard-charting dance singles, Dawson's Creek, CBS, NBC

cutting edge environment

Version 4 transforms SONAR into a robust mixing environment, suitable for both surround and stereo, with exclusive features not found in any other applications. In addition, SONAR 4 delivers 32-bit floating point digital mixing and bussing technology with full delay compensation thorughout the signal path. Combined with its enhanced video support, you'll find SONAR 4 offers a superior solution for scoring and post production.

Learn more about SONAR 4's cutting-edge mix environment at **www.sonar4.com/mix**

Next Month in EM

COVER STORY

Build a Desktop Studio on Any Budget

Are you planning a new computer-based studio? EM's editors discuss which products we would choose to build well-integrated Mac- and PC-based studios on low, moderate, and generous budgets. We explain our choices in terms of studio goals, product features, integration, quality, and price.

FEATURES

EM's Guide to eBay
Advice and strategies for buying and selling gear online.

Recording the Drums of Bahia
Former EM associate editor Brian Knave discusses how he and other engineers recorded a 24-piece percussion ensemble for a CD by up-and-coming Brazilian percussion star Maceo.

COLUMNS

Making Tracks: Power Tips for Apple GarageBand 2
You'll be surprised at how much you can do with Apple's popular entry-level sequencer for the Mac.

Sound Design Workshop: Extreme Editing
Keep your listeners on edge (in a good way) by going for the extremes.

Square One: Sealed and Delivered
Creative use of synth envelopes can add life to your sounds.

...and much more!

Letters

and functions just about flawlessly. Many users will want to send unprocessed signals direct to their audio application for digital tweaking at a later time.

According to a Mackie spokesperson, the company considered adding a switch that would have allowed users to choose pre- or post-EQ for the FireWire and recording outputs. That was ultimately rejected because it would have resulted in increased cost, a longer signal pathway, and increased noise potential.

Fortunately, there are workarounds that would allow you to send signals that have utilized the built-in Perkins EQs or external processors to the computer via the FireWire card. Only the first eight channels have mic preamps and full EQs, so you could route those signals to stereo channels 9–10 through 15–16 via aux sends 1–4, and those channels would then be available in the computer's audio application.

Of course, a 16-channel analog mixer with mic preamps and Perkins EQ on every channel with digital conversion would be very attractive, and perhaps Mackie has one on the drawing board. It's unlikely, however, that we would be able to purchase one for the price of an Onyx 1620.—Rusty Cutchin

We Welcome Your Feedback

Address correspondence to:

Letters
Electronic Musician
6400 Hollis Street, Suite 12
Emeryville, CA, 94608
or email us at emeditorial@primediabusiness.com.

Published letters may be edited for space and clarity.

Current Musings

Thank you for the very positive review of the Muse Research Receptor hardware VST plug-in host in the February 2005 issue of *Electronic Musician*. I want to take this opportunity to point out some possible misconceptions that readers might conclude from the review, mostly due to the timing of its release. As you know, this review took place in October 2004, shortly after Receptor was released, and Receptor has gone through two software revisions and has changed greatly since your reviewer had a chance to look at the unit.

First of all, the review occurred with version 1.0 software. Receptor has been shipping with version 1.1 software for a couple of months now, and version 1.2, which adds significant new features, will be shipping by the time this letter is published. Next, the review was somewhat critical of the number of plug-ins that were available to run on Receptor. This changed drastically with the release of version 1.1 of Receptor software, which allows eight new premium plug-ins that ship preinstalled on Receptor. The review also pointed out that Receptor didn't run some popular VST plug-ins such as those from Spectrasonics; fortunately, owners of Stylus, Atmosphere, and Trilogy are now able to run those programs on Receptor.

We understand that the publishing business has a significant lead time involved in laying out and designing magazines, but we would encourage potential Receptor customers to visit the Muse Research Web site at www.museresearch.com and the Receptor support site at www.plugorama.com to ensure they have the latest information about the capabilities of this exciting new platform.

Bryan Lanser
Muse Research

Error Log

April 2005, "Sharing the Load," p. 36. The abbreviation TDM, relative to Digidesign's Pro Tools systems, stands for Time Division Multiplexing. Also, on p. 38, there is a typographical error: "44.1 Hz" should be "44.1 kHz."

Magic Wand

The cold, hard facts of room acoustics challenge every studio, large and small. JBL engineers thought it was time for a little magic. Introducing the LSR6300 Studio Monitors, the first reliable solution for tackling the real-world problems inherent in every room. Featuring the exclusive JBL RMC™ Room Mode Correction system, you can accurately measure boundary-induced low frequency modes with the included hand-held acoustic analyzer and then adjust each speaker's 1/10th octave parametric equalizer to correct problems in your room. Designed from the ground up, the LSR6300's uncompromising specs and features give you total control of your music production. See your JBL Dealer today and experience the power of LSR6300 Studio Monitors with RMC - magic you can really put your hands on.

LSR6300 Studio Monitors –

Mix Without Boundaries.

TEC 2004 WINNER

Learn more about the power of the LSR6300 Studio Monitors and RMC at www.jblpro.com/LSR

H A Harman International Company

@emusician.com

emarketplace | feedback | archives | buyer's guides

EMspotlight

Thinking inside the Box with Banco de Gaia.

Toby Marks (aka Banco de Gaia) has long relied on hardware synths and samplers to produce his music live and in the studio. With the arrival of powerful computers and software instruments in recent years, Marks has been inspired to rethink his production methods. By Assistant Editor Matt Gallagher.

emusician.com/em_spotlight

On the Home Page

EM Web Clips

A collection of supplemental audio, video, text, graphics, and MIDI files that provides examples of techniques and products discussed in the pages of *Electronic Musician*.

EM Guides Online

Get detailed specs on thousands of music-production products with our free online Computer Music Product Guide and Personal Studio Buyer's Guide.

Show Report

Frankfurt Musikmesse is the biggest annual musical-instrument expo in Europe. Visit emusician.com for Senior Editor Gino Robair's report on the exciting new recording gear, music software, and electronic musical instruments unveiled at this year's show.

editor's picks

Associate Editor Dennis Miller has chosen three EM articles that focus on desktop composition. The topics include a roundup of algorithmic composition programs for the PC, a how-to on using Macromedia Flash, and a group of editing techniques for beginners and pros.

emusician.com/editorspicks

EMnews

A weekly update on new hardware and software releases, manufacturer contests, and pertinent industry news.

emusician.com/news

EMnewsletter

Sign up for our free online newsletter, eMusician Xtra, for up-to-the-minute information about new products, software upgrades, and more.

emusician.com

INTRODUCING CME

THE NEXT GENERATION OF KEYBOARD CONTROLLERS

"..In a world of Plastic USB Controllers, this is a different animal...I'm going to buy this.. The UF8 is the right product, at the right time, for the right price."

-Craig Anderton, Keyboard Magazine

Everything that you have imagined

Imagine that somehow you were given the power to design the next generation of midi / usb keyboard controllers. You would probably want them in a durable aluminum case so they are roadworthy and appear professional.

You would want to include a full set of sequencer transport controls so you could do all your work from your keyboard without needing a mouse or separate controller. Throw in a breath controller and after-touch for added expressiveness for your virtual synths, and then make sure you can add a 24 bit / 192khz firewire audio expansion option, conveniently giving you extra performance and recording power. Of course, don't forget to put in 8 knobs and 9 sliders. For the 88 note version, you would want to put in the same hammer action assembly that is used on one of the most popular digital grand pianos. For the other models, put in a semi-weighted keyboard that is more robust than anything you would find in its price class.

There, you've done it..... you've created a series of fully professional, all powerful master keyboard controllers.

Actually we've done it .... and we've done it for a price much lower than you would expect.

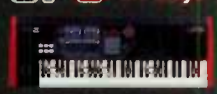
THE CME UF LINEUP

ALL MODELS FEATURE:

- Durable Aluminum Case
- Firewire Audio Expansion Port
- Breath Controller Port
- Aftertouch
- Midi Out Port
- 8 Assignable control knobs, 9 Assignable sliders
- Sustain Pedal and Controller Pedal Jacks
- USB Midi Port, Power Supplied Via USB
- Win 2000/XP, Mac OSX Compatible
- Full Sequencer Transport Controls, LED Data Display.
- Transpose, Octave, Channel Assignment, Keyboard Splitting

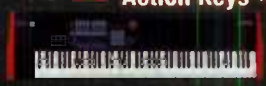
UF5 49 keys $199*

UF6 61 keys $299*



UF7 76 keys $399*

UF8 88 Hammer Action Keys $599*



UF-400e: Firewire Audio Interface Option: 2 Analog ins/outs, 24 bit 192 Khz, 1 Midi I/O, 1 co-axial digital I/O, 111 db, 1 mic input, 2 headphone outputs, mLAN Compatible *249

mLAN

Specifications and appearance subject to change without notice. All trademarks and registered trademarks are property of their respective owners.

*estimated selling price

CME

www.cme-pro.com

Distributed in North America by Kaysound

KAYSOUND

www.kaysound.com

514-633-8877

Available At:

Musician's Friend
www.musiciansfriend.com

samash.com
www.samash.com

Music123.com
www.music123.com

www.americanmusical.com

EXTREMELY

PACKED

Buy an Extreme, get a **FREE** Korg Legacy Collection.*

Sooner or later, it all comes down to sound, and no keyboard on the planet is loaded with as much sonic firepower as the jam-packed TRITON Extreme. With 160MB of samples and thousands of new and classic patches—including a breathtaking new piano—the Extreme overflows with an unprecedented depth and variety of sounds. But it's not just the quantity of sounds that makes Extreme...well, so extreme. It's the quality. Every sound is a gem that's sure to inspire. And our unique tube-driven Valve Force technology adds amazing analog character to each and every one.

The Extreme is also packed full of innovative features. With 120-note polyphony, dual USB ports, a powerful sequencer, our easy-to-use Open Sampling System, dual arpeggiators, cool Touchview interface and much more, it's everything TRITON taken to the Extreme!

TRITON LE | TRITON EXTREME | TRITON STUDIO

*see korg.com/extreme for details

Check out and buy TRITON accesories at www.korg.com

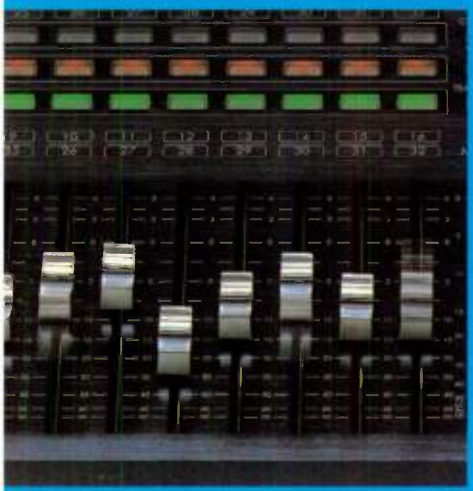
© 2005 Korg USA, 316 S. Service Road, Melville, NY 11747 • (631) 390-8737

KORG
www.korg.com

Register your TRITON Extreme warranty online at www.korg.com and get an extra year of coverage at no additional cost!

D1200MKII

D1600MKII



D32XD

One good idea. Five great recorders.

→ Uncompromising sound quality combined with intuitive ease-of-use has always been the signature of Korg digital recording studios.

→ From the palm-sized PXR4 to the D32XD with fully-automated flying faders, Korg's expanding family of digital recorders are all about creating great recordings in the most instinctive and musical manner. And they're packed with today's most desirable features like USB connectivity, digital I/O, generous hard drives, built-in CD-RWs and powerful editing capabilities.

→ The D16XD and D32XD go even further with performance enhancements that include dedicated EQ and control knobs, true analog compression, the ability to record eight tracks simultaneously (16 with optional board), 24/96 digital resolution and powerful expansion options.

→ So whether you're sketching out a new song or mastering a 32 track session, there's a Korg digital recorder that will get your good ideas down without getting in the way of your music.

KORG

www.korg.com

© 2005 Korg USA, 316 S. Service Road, Melville, NY 11747 • (631) 390-8737

D16XD

PXR4

By Geary Yelton

Digidesign Pro Tools M-Powered

Considering that Avid Technology already owns Digidesign (www.digidesign.com), its purchase of M-Audio was bound to bear some pretty interesting fruit. One recent outcome is Pro Tools M-Powered (Mac/Win, $349), a new version of Digidesign's multitrack audio software that works with selected M-Audio hardware. The ability to use Pro Tools with M-Audio's Audiophile 2496 means that recordists can now own a Pro Tools system for less than $500. The software is also compatible with the Audiophile 192 sound card, the FireWire 410 and FireWire 1814 audio/MIDI interfaces, and the Ozonic, which combines the functionality of a FireWire audio/MIDI interface and 37-note keyboard. Although some of the hardware supports audio rates as high as 192 kHz, the software supports a maximum 96 kHz.

Pro Tools M-Powered will record and play back as many as 32 16- or 24-bit audio tracks and 256 MIDI tracks simultaneously. It will also open sessions recorded in any other version of Pro Tools. RTAS and AudioSuite plug-in formats are supported, and the bundle provides 7 Bomb Factory and more than 30 DigiRack effects. Additional features include groove analysis and correction and support for ReWire and the Command|8 control surface.

M-Audio Black Box

The Black Box ($329.95) from M-Audio (www.m-audio.com) is EM's June favorite in the how-many-functions-can-you-stuff-into-one-product competition. Codeveloped with guitar-effects wizard Roger Linn, this 4-pound tabletop device combines amp modeling, effects processing, and a drum machine with a USB 1.1 audio interface. The Black Box has 24-bit S/PDIF I/O, balanced ¼-inch TRS outputs, ¼-inch headphone outputs, and separate preamps for the XLR mic and ¼-inch guitar inputs. WDM, ASIO, and Core Audio drivers are provided for Windows XP and Mac OS X.

Offering 100 factory presets and 100 user presets, the Black Box supplies 99 drum patterns and 43 effects that sync to a sequencer, to tap tempo, to external MIDI Clock, or to its own internal clock. In addition to such standbys as chorus and flanger, the Black Box furnishes beat-synced delay, random filters, tremolo sequences, and other effects. Two momentary footswitch inputs let you control functions such as preset selection and tap tempo, and you can program the expression pedal input to control amp gain, wah-wah, delay feedback, and other effects parameters. The Black Box features models of 12 classic guitar amps such as the Fender Deluxe, Vox AC30, Hiwatt DR-103, and Mesa Boogie Maverick.

Satisfaction in Every Box

"**FAST delivery!!** I have never had a backorder... You guys always have what I need in stock. Great sales support. Keep doing what you're doing. I won't buy from anyone else."
— Everett Davis

"...you guys have the **best service in the business.**"
— Stan Sykes

"It's always great to talk to **people who really know the gear!**"
— Larry Blackaby

"Website is awesome, **prices are great,** and service is excellent!"
— Jason Calderwood

HUGE SELECTION

EXPERT SALES STAFF

Sweetwater
music technology direct

FACTORY-AUTHORIZED REPAIR CENTER

AWARD-WINNING TECH SUPPORT

Only Sweetwater offers the best of everything: professional, knowledgeable advice, great selection, great prices, and outstanding tech support and service.

(800) 222-4700 | sweetwater.com

Native Instruments Guitar Combos

Drawing on the modeling technology developed for Guitar Rig, Native Instruments (www.nativeinstruments.de) has introduced three new virtual amps called Guitar Combos (Mac/Win; $79 each, $199 bundled). Twang Combo emulates the Fender Twin Reverb with a 2×12 cabinet and a Neumann CMV 563 mic. It has simulated spring reverb, stereo chorus, tremolo, and tube overdrive. Modeled after the Vox AC-30 with a 2×12 cabinet, AC Box Combo features a treble booster, tremolo, and spring reverb combined with a modeled Neumann U87. Plexi Combo is a virtual Marshall JMP50 paired with a 4×12 cabinet and a Shure SM57. Stereo chorus, distortion, fuzz, spring reverb, and reverse delay comprise its complement of software effects.

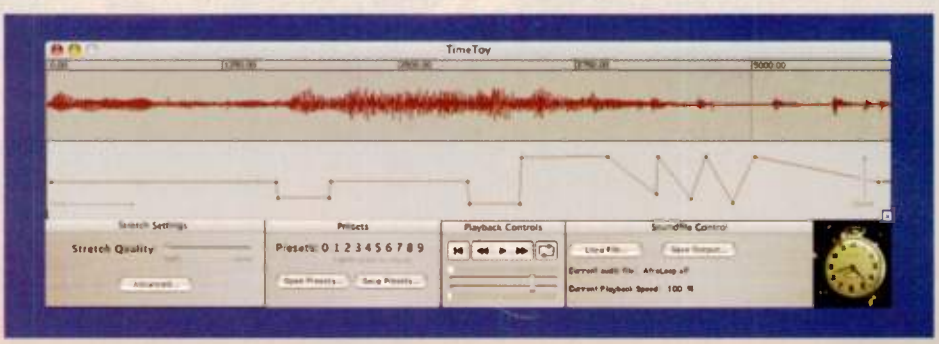
Each Guitar Combo has locations for 64 user-rewritable presets. MIDI control lets you switch presets and modify parameters using a MIDI footpedal or sequencer automation. In addition to a precision tuner, a noise gate, and a limiter, each Guitar Combo has a Demo Player with a collection of unprocessed guitar loops to make it easy to audition amp sounds. Guitar Combos operate standalone or as plug-ins in a variety of formats.

Download of the Month

TIMETOYPRO 2.0

TimeToyPro 2.0 (Mac, $17) is a standalone time-stretching application created with Max/MSP and based on granular DSP technology. Author Marcel Wierckx is well known for his Real Time Granular Synthesizer (RTGS), which has been completely revised for Mac OS X and is also worth checking out. Demos of both are available from his Web site (www.lownorth.nl).

The most unique aspects of TimeToyPro are its extreme range and its breakpoint-envelope control of time stretching. The range, given in terms of playback speed, is 1 to 200 percent. At the low end, that stretches an audio file to 100 times its original length (see Web Clip 1).



Setup is as simple as loading an audio file, clicking to create breakpoints on a graph that appears in the waveform display, and dragging the breakpoints to control playback speed at corresponding points in the audio file. When you're happy with the result, you can save the breakpoint envelope as a preset as well as save the time-warped audio file. TimeToyPro's memory holds ten presets at a time, but preset banks can also be saved to disk.

The free demo version of TimeToyPro is fully functional, but the registered version offers several advanced features. Advanced stretch settings allow you to control grain density, size, shape, and direction. Reversing the playback direction of the individual grains while moving forward through the file is an interesting effect even without any time stretching. Advanced playback controls allow you to set a region of the audio file for looped playback, apply real-time stretching to live audio input, or scrub through the time-stretched file, which is crucial for fine-tuning the breakpoint envelope. Grab this one—it's fast, easy, and fun.

EM WEB CLIPS

—Len Sasso

Who says all PCI cards are the same?

PowerCore PCI mkII is the latest member of the PowerCore family, TC's hardware powered plug-in platform. It is a potent processing solution for DAW's including 14 high-quality plug-ins from the onset, and the doors are opened for a wealth of top-quality plug-ins from 3rd party developers and TC Electronic. PowerCore PCI mkII features processing power similar to the renowned PowerCore FireWire, and it is the prime choice when internal processing is preferred. PowerCore PCI mkII integrates with virtually any VST, AU and RTAS* based digital audio workstation for Mac or PC.

* Via the VST to RTAS adapter from FXpansion (optional)

PowerCore
Superior plug-ins, tailor-made hardware

t.c. electronic
ULTIMATE SOUND MACHINES

TC ELECTRONIC A/S DENMARK ▸ ✆ +45 8742 7000
TC ELECTRONIC INC USA ▸ ✆ (818) 665 4900 ▸ MAIL: INFO@TCELECTRONIC.COM
WWW.TCELECTRONIC.COM

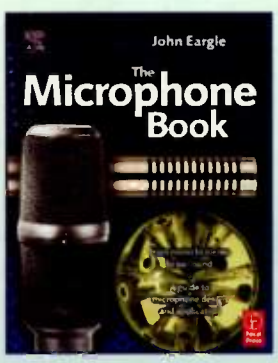
Scarbee Keyboard Gold Bundle

Soundware company Sonic Implants (www.sonicimplants.com) has begun shipping Scarbee's Vintage Keyboard Collection (VKC) (Mac/Win, $449) and Vintage Keyboard FX (Mac/Win, $229), sold together as the Scarbee Keyboard Gold Bundle (Mac/Win, $599). Scarbee Keyboard FX is an Audio Units and VST plug-in that delivers a virtual rack of eight vintage effects, including a compressor, a phase shifter, chorus, overdrive, an envelope filter, a tape delay, a tube amp, and an electric-piano preamp with stereo tremolo. Keyboard Gold Bundle also has D-6C Filter, a plug-in that simulates the Clavinet's EQ circuit.

Harnessing the sample-playback capabilities of Steinberg's HALion Player, the VKC furnishes detailed multisamples of four classic electromechanical instruments. RSP73 is a sampled 73-key Rhodes Stage Piano Mark I, and WEP is a Wurlitzer 200A electric piano; Scarbee has previously released both as individual sample libraries. N-HP is an entirely new sound set featuring a Hohner Pianet N. Another new sound set, D6-C, is a Hohner Clavinet D6 sampled at four pickup positions, with and without the mute bar switched on. VKC runs standalone, as a ReWire device, as a VST or Audio Units plug-in for Mac OS X, and as a VST or DirectX plug-in for Windows.

Get Smart

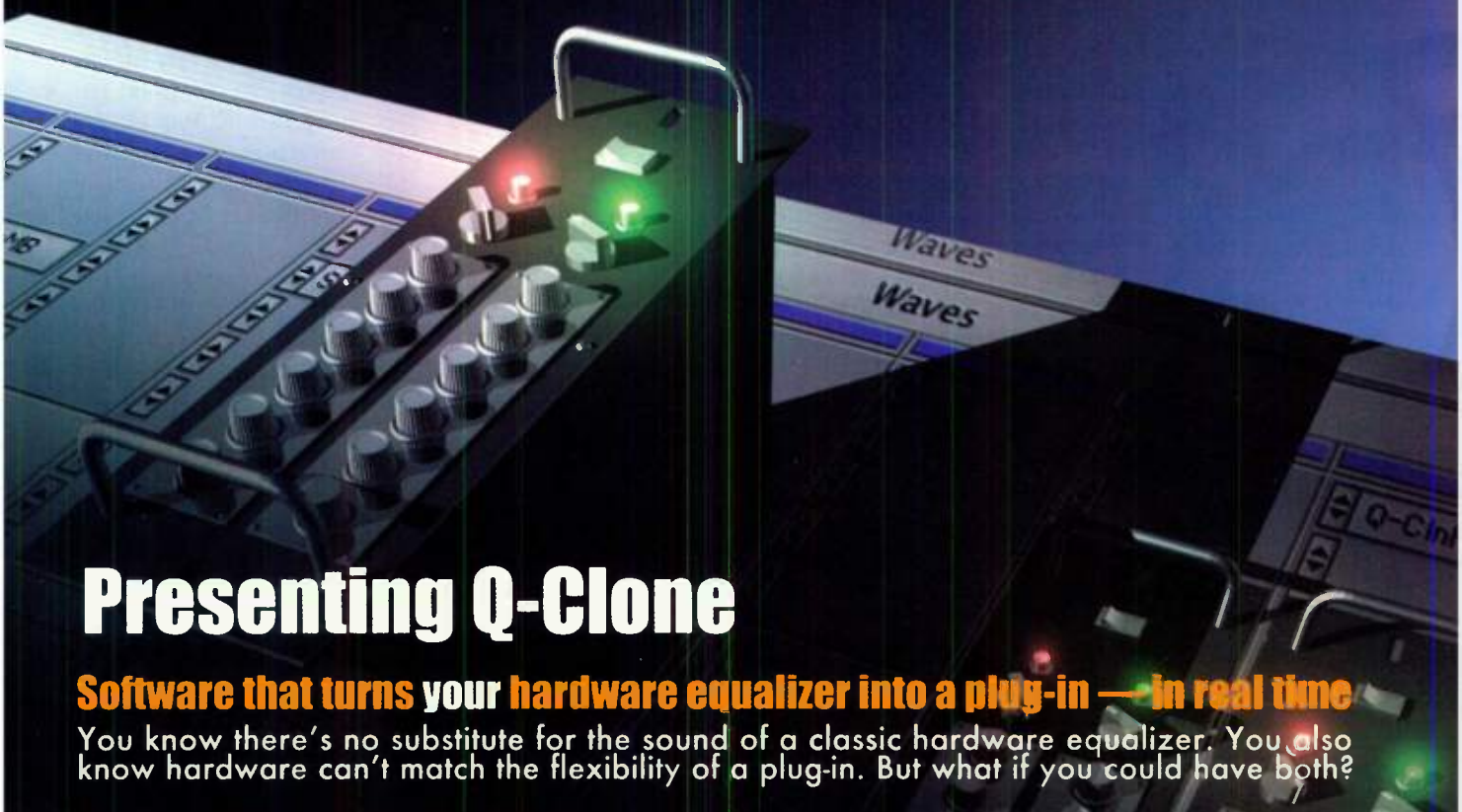
For recordists at any level of expertise, a thorough understanding of microphones is key to perfecting their craft. To aid in their quest for knowledge, the second edition of *The Microphone Book* ($44.95) is a comprehensive guide to mic technology written by Grammy Award–winning recording engineer John Eargle and published by Focal Press (www.focalpress.com). The 389-page text is brimming with technical diagrams and photos, and serves as a guide to mic technology and as a practical reference. Eargle focuses not so much on specific mics as on mic selection, providing detailed explanations of different types of mics and the applications for which they're best suited, with an emphasis on problem-solving tips and techniques.



If you are a collector of effects pedals, For Musicians Only Publishing (www.formusiciansonly.com) has a book that raises stompboxes to cult status. *Analog Man's Guide to Vintage Effects* ($39.95) is, according to author Tom Hughes, "the most complete and comprehensive resource for vintage effects to date." Indeed, every type of effects processor is discussed in detail, including such rarities as the EMS Synthi Hi-Fli, the Ampeg Scrambler, and the legendary Psychedelic Machine. Eighty pages are devoted to the history of stompboxes, followed by an in-depth explanation of effects technology. Brief descriptions of more than 150 manufacturers are followed by a look at today's makers of boutique effects. The book is profusely illustrated, with hundreds of photos and reproductions of some original print ads. It also features a very entertaining foreword by King Crimson guitarist Adrian Belew.

Hugo Pinksterboer's *Tipbook: Amplifiers & Effects* ($11.95) takes a different approach. Although it describes itself as a "basic book and reference guide, with nothing you don't want to know," the author tackles practical issues on a greater variety of gear than the title suggests. Chapters deal with product types and features, technical specifications, care and maintenance, and how to select and buy an amplifier and effects for guitar, bass, and keyboard. It also covers cables, mixers, mics, and pickups. Slim enough to fit in your back pocket or your instrument case, the 234-page book is available from the Hal Leonard Corporation (www.musicdispatch.com).

Put your outboard EQ inside your DAW



Presenting Q-Clone

Software that turns your hardware equalizer into a plug-in — in real time

You know there's no substitute for the sound of a classic hardware equalizer. You also know hardware can't match the flexibility of a plug-in. But what if you could have both?

Not an emulation—It's your EQ only better

Let's be clear: Q-Clone isn't an emulation. You tweak the knobs on your equalizer just like always. Q-Clone captures the exact sound of your equalizer as you adjust it.

Presets recall your hardware sound

Save your sounds as presets, and you can instantly A/B between them. Or get your signature hardware sound—without the hardware.

Add EQ on top of EQ

Once you've equalized a track, you can equalize that equalization—like chaining two of your EQs together! Or make your four-band EQ into an eight-band! There is no end to the possibilities. Finally, a way to get hardware "inside the box."

Put your outboard EQ on multiple tracks at different settings—simultaneously

Tweak one track, click Q-Clone's "Hold" button, and the sound stays just as you set it. Move on to equalize another track and another—as many as your computer can handle.

WAVES

(North & South America) 306 W. Depot Ave.
Suite 100, Knoxville, Tennessee 37917
Phone: 865-909-9200
Fax: 865-909-9245

7-Day Demo available at your Waves dealer and at www.Waves.com

Neumann BCM 705

Neumann (www.neumann.com) has a well-deserved reputation for making some of the most desirable microphones in the world, but the cost of the company's products often puts them beyond the reach of many personal recording studios. The BCM 705 ($799.99), in addition to being the most reasonably priced, is Neumann's first dynamic mic. Neumann has redesigned the capsule used in the Sennheiser MD 431 and housed it in a body identical to the BCM 104. By mechanically suspending the capsule to reduce its sensitivity to motion, surrounding it with a larger chamber than the one used with the MD 431, and acoustically coupling it to a rear entrance port, the result is a supercardioid directional pickup pattern and a wide frequency response that's tailored to reduce bass boost caused by proximity effect.

Although the BCM 705 is marketed primarily for voice-over work, it is also suitable for recording vocals, electric guitar and bass, kick drum, and other instruments. It has an elastically suspended mount and a removable pop screen with color-coded, quick-release head grilles for each user.

Focusrite Saffire

Veteran pro-gear maker Focusrite (www.focusrite.com) has introduced the Saffire ($499), a low-latency FireWire audio interface with multiport I/O and onboard DSP. The Saffire boasts 24-bit, 192 kHz A/D/A and two Focusrite preamps with XLR inputs. It also has two TRS inputs (switchable to high impedance), stereo S/PDIF I/O, MIDI I/O, and two independent ¼-inch stereo headphone outputs. And with eight balanced TRS outputs, the Saffire lets you mix 7.1 surround.

The Saffire's software front-end is SaffireControl, a Mac OS X and Windows XP application developed by the team responsible for LiquidControl and the Forte Suite. It controls all the ins and outs, allowing you to create as many as five separate stereo monitor mixes at the same time. The Saffire has a suite of hardware-powered plug-ins, with amp modeling, EQ, and compression to use on the input channels, as well as reverb for the headphone outputs. It also comes with Steinberg Cubase LE (Mac/Win) and all the same plug-ins for VST and Audio Units hosts.

Sound Advice

One of the latest titles from **Big Fish Audio** (www.bigfishaudio.com) is *London Solo Strings* ($399), a DVD-ROM with 3.75 GB of 24-bit violin, viola, cello, and bass multisamples. Available in either GigaStudio or Kontakt format, the collection features carefully sampled instruments with MIDI-controllable playback parameters. One highlight is a violin built in 1740. The Kontakt disc includes a custom version of Native Instruments Kontakt Player (Mac/Win), which runs standalone or as a VST, RTAS, DirectX, or Audio Units plug-in.

Each instrument offers articulations ranging from tremolo and trills to Bartok pizzicato. Keyswitch patches let you quickly select from arco, marcato, spiccato, or pizzicato. Marcato and martellato let you select up, down, or alternating (round-robin) strokes. Crescendos come in short, medium, and long varieties. Also offered are quartets with a choice of articulations, as well as string effects and ambient noises.

Chicago Fire: A Dance Music Anthology ($249.95), from Sony Pictures Digital (www.sony.com/mediasoftware), is a five-disc library of Acid loops and samples produced by Vince Lawrence, who had cofounded Trax Records by the time he was 18 years old. Every disc presents a different musical genre taken from Chicago's dance-club culture: Old School, Deep House, Progressive, Electro, and Drum 'n' Bass. Each disc contains royalty-free WAV-file construction kits for crafting complete songs in a particular style and has percussion and drum loops, basses, sound effects, synth stabs and arpeggios, and even vocal phrases and harmonies. Separate folders contain loops, licks and phrases, one-shots, and other rhythmic and thematic elements that allow you to build a complete multitrack groove that captures the Chicago sound.

FOR OVER 30 YEARS LEXICON HAS BEEN IN WORLD-CLASS RECORDING STUDIOS...

ΩMEGA™
DESKTOP RECORDING STUDIO

...NOW YOUR HOME CAN BE ONE OF THEM.

OMEGA DESKTOP RECORDING STUDIO™ INCLUDES:

Steinberg® Cubase LE® – Multi-Track Recording Software
Lexicon® Omega – 8 Input x 4 Bus x 2 Output USB I/O Mixer
Lexicon® Pantheon™ – World Class VST Reverb Plug-In

More than 30 years ago, when Lexicon invented digital reverb, most recording studios were multi-million dollar rooms occupied only by famous rock stars and big record labels. And while Lexicon still lives in that rarified air of stardom with the world's most sought-after reverbs, now you can find us a lot closer to home.

Now Lexicon brings you the Omega Desktop Recording Studio, a completely integrated recording system with everything you need to transform your computer into a full-on professional 24-bit digital studio, all in one box. In addition to Steinberg Cubase LE® recording and production software, you'll get an 8-input, 4-Bus, 2-output USB I/O mixer with inserts, instrument input, MIDI I/O and complete metering and monitoring functions. Record up to 4 tracks at once from 8 audio sources, and mix up to 48 audio and 64 MIDI tracks almost anywhere...with the lush, exquisitely rich reverbs that made Lexicon famous in a VST version of Lexicon's Pantheon® reverb plug-in.

Pick up an Omega Studio at your Lexicon Pro dealer today, and discover for yourself why that famed "Lexicon Sound" has been on the majority of hit recordings since 1971. Who knows? Maybe the next one will be yours.

Lexicon PRO

COMPLETE RECORDING SOLUTION

CONTAINS ALL THE COMPONENTS NECESSARY TO TRANSFORM YOUR COMPUTER INTO A PROFESSIONAL 24-BIT RECORDING STUDIO.

APPLE LOGIC PRO 7.1

The latest version of Apple's top-shelf audio sequencer, Logic Pro 7.1 (Mac, $999; upgrade from Logic 7, $19.95), features five new plug-ins, full native plug-in delay compensation, and more than 70 new key commands. The update also boasts significant improvements in the speed, efficiency, and stability of Logic Pro and Waveburner.

Once you've created an Apple Loop that uses software instruments, placing the loop in an Audio Instrument track will restore its original MIDI performance and channel-strip configuration. Now you can easily copy and rearrange channel-strip inserts and easily convert REX files to Apple Loops. By applying the new Follow Tempo parameter, audio regions will automatically adjust their length and pitch when you change the sequence's tempo or key.

Numerous plug-ins have been revamped in Logic Pro 7.1. Along with a more versatile rotary-speaker effect, EVB3 has better integration with drawbar controllers from Hammond Suzuki and Native Instruments. Drag-and-drop operations make Ultrabeat more flexible and easier to use. New instrument and effects plug-ins include two Hybrid Synths, Bass Amp, and Enhanced Timing. Further improvements have been made to EXS24, Sculpture, and other plug-ins. Logic Pro 7 also supports nine additional control surfaces from various manufacturers.

SONY SOUND FORGE 8

Hot on the heels of Acid Pro 5, Sony Pictures Digital (www.sony.com/mediasoftware) has released Sound Forge 8 (Win, $399.95; upgrade $149.95). The update offers support for VST plug-ins, XP themes, Flash import, and custom keyboard commands. Now you can use batch conversion to apply effects and processes to several files simultaneously. Application scripting lets you automate tasks and customize features; numerous scripts are provided. Quickly find audio events using the new scrub tool and JKL keyboard commands. For faster sorting and in-place editing, new features in the Regions List and Playlist windows let you edit regions by simply typing in new values. Low-latency ASIO driver support lets you use a greater variety of sound cards, too.

Sound Forge 8 comes with a full version of CD Architect

5.2 with updated driver support and a new level of integration between the two programs. CD Architect will automatically import Sound Forge regions as CD tracks, and it now reads and writes CD Text.

STEINBERG GROOVE AGENT 2

Steinberg (www.steinberg.net) has updated its virtual drum machine to Groove Agent 2 (Mac/Win, $249.99; upgrade $79.99). Groove Agent 2 contains nine new drum kits and more than 80 musical styles, each with 25 levels of complexity. Old Skool HipHop, Retro Rock, Punk, and Grunge are among the 27 new styles, which include patterns, fills, and half-tempo variations. The new studio kit is well suited to modern pop and rock genres, and the battery of percussion sounds has been enhanced.

If you prefer, now you can bypass Groove Agent's sample-playback engine and record its output to a MIDI track for triggering other drum machines and samples. You can also export its output as a Standard MIDI File. Eight stereo outputs are now available, and ReWire 2 is fully supported. Groove Agent 2 runs standalone and as a VST, DirectX, or Audio Units plug-in. Groove Agent 2 requires a Syncrosoft USB dongle called the Steinberg Key. If you don't already have one, you can purchase it separately for $29.95. EM

DRUM SAMPLING GETS REAL.

Finally, you can create sequenced drums that are indistinguishable from live performances. Because the new 24-bit *Larry Seyer Acoustic Drums* library contains more live drumming variations and nuances than anything that's come before. And because it harnesses the creative power of GigaStudio 3's new features like unlimited stacked instruments on the same MIDI channel and convolving GigaPulse™ reverberation.

Playing left to right on your keyboard triggers samples taken from left to right on the drum heads. GigaStudio 3 makes it possible.

Add those nuances that make live drumming live. Map *individual strike zones* from the surface of each instrument to individual keys. Choose from two styles of attack: ***Low Latency*** has drum attack edited very tight to the sample start for sequencer composing or live performance. ***Full Attack*** retains all the pre-attack (you can hear the "wind of the stick") for sequencer playback a hair behind the beat.

5 YEARS IN THE MAKING.

Larry Seyer

Grammy-winning engineer Larry Seyer and drummer Pat Mastelotto (*King Crimson, BOMO, XTC, Mr. Mister*) collected hundreds of vintage and current drums for this library.

Using up to 6 mics per drum, they recorded 8,330 stereo 24-bit samples and then configured them as 115 drum kits using 13 new GigaPulse™ rooms created specifically for this library. Each of the 115 kits comes in 12 versions for a total of 1,380 drum kits!

But it's not just the sheer numbers that makes *Larry Seyer Acoustic Drums* a ground-breaking advance in drum sampling. It's also what TASCAM GigaStudio™ 3 lets you do with them. Now, for the first time, you have total control over:

- **what drums make up a kit**
- **which of 13 acoustically modeled rooms the drum kit is placed in**
- ***where* in each room the drum kit is placed**
- **what kind of mics are used**
- **how hard and *where* each drum is struck**

GS3 MAKES IT WORK FOR YOU.

It takes the advanced features found only in GigaStudio 3 to unlock the stunning reality of this drum library.

Unlimited instrument stacking lets you build a custom drum kit by assigning individual drums to a different GigaStudio MIDI sub-channel. Submix their levels; add effects...and yet control overall kit muting, tuning and level through a single master MIDI channel.

Then use the *GigaPulse convolution interface*, included with all GS3 versions, to gain incredibly realistic control over mic and kit placement in each of the drum library's room environments including the soon-to-be-infamous "Trash Room" and "Dry Cleaner."

Demo the world's most powerful software sampler at your TASCAM dealer today.

***Larry Seyer Acoustic Drums*, exclusively for GigaStudio 3:**

- 7 GB with 115 complete drum kits, 8,330 samples and 1,638 unique impulses
- 12 separate versions of each drum kit including General MIDI and EX; Low & Full attack latency; 2, 5 & 7-channels
- 13 new GigaPulse™ rooms
- Stick, rod and mallet striker variations
- Loop library with 1,444 MIDI files for a total of 1,992,270 loops that don't degrade with tempo changes
- 24-bit samples using premium multiple microphones and preamps
- Exhaustive illustrated manual
- Expandable with future drum kits and rooms

GIGASTUDIO3.0

Hear samples from *Larry Seyer Acoustic Drums* at: http://www.globalfulfillment.net/gfsnet/giga/ioExpand.aspx?ProductCode=LSACDRUMS There you can also sample Larry's video tutorial. For more general GigaStudio information, visit www.tascamgiga.com ©2005 TASCAM, a division of TEAC America. All Rights Reserved. All specifications are subject to change without notice. GigaStudio and GigaPulse are trademarks of TASCAM/TEAC.

TASCAM
www.tascamgiga.com

Beating Superparamagnetism

By Scott Wilkinson

Hundred-year-old technology enlivens hard disks.

Musicians have an insatiable appetite for digital storage capacity; anything that allows more data to be stored in a given amount of physical space is welcome. Unfortunately, the laws of physics limit the density with which bits can be stuffed into that space.

Consider hard disks: individual bits of data are encoded in the orientation of tiny particles, or grains, that are laid out in concentric tracks on the surface of a circular platter. If a grain's magnetic field is oriented one way, it represents a zero; oriented the other way, it represents a one. A write head records data by orienting the grains with a variable magnetic field as the disk spins under the head. To recover the data, a read head senses the magnetic orientations of the grains.

With today's hard disks, the grains' magnetic fields are parallel to the disk's surface; this is called longitudinal recording (see **Fig. 1a**). The density of longitudinally recorded data has reached more than 100 gigabits per square inch (Gb/in^2), but this technology is fast approaching its limits. Within two product generations, many researchers believe that longitudinal recording will hit a wall called superparamagnetism. As the grains shrink below a certain size, they weaken and cannot resist the various factors that demagnetize them, such as stray magnetic fields and heat. As a result, over time the data they encode become corrupted, making the hard disk useless.

One solution to this problem is perpendicular recording, in which the grains are perpendicular to the disk surface (see **Fig. 1b**). In this case, the magnetic field of each grain is oriented up or down rather than right or left. Because the grains are vertical, many more can be squeezed into a given area before superparamagnetism begins to take its toll. Interestingly, perpendicular recording is more than 100 years old, with roots in the work of late 19th-century Danish scientist Valdemar Poulsen, who was the first person to record sound magnetically using this technique.

Recently, Hitachi Global Storage Technologies (www.hitachigst.com/hdd/research/recording_head/pr/index.html) has begun field tests of hard disks that use perpendicular recording. In addition, laboratory experiments have achieved the industry's highest data density of 230 Gb/in^2. As well as more closely packed, vertically aligned grains, the distance between the read/write head and disk surface must be decreased to accurately record and recover the data; in the Hitachi tests, that distance is 10 nanometers.

Testers worldwide have been using perpendicular-recording hard drives as part of their daily routine since December 2004 to evaluate the long-term performance and reliability of the technology. Among the testers is Professor Shun-ichi Iwasaki, president and chief director of Japan's Tohoku Institute of Technology, who is considered to be the father of modern perpendicular recording. "Around 1975, I began to feel that the vertical direction was the right way to go to attain high-density recording," he says, "and I began leading the activities to make perpendicular recording a practical technology. I am glad to see that the technology will come into use soon."

Hitachi expects commercially available hard disks with perpendicular recording to achieve a data density of 230 Gb/in^2 by 2007, which would allow 1-inch microdrives to offer capacities of 20 GB and 3.5-inch drives to provide 1 terabyte of storage. The company anticipates a tenfold increase in density over longitudinal recording in the next five to seven years, which would increase the capacity of 1-inch microdrives to 60 GB and 3.5-inch drives to 3 TB. That ought to keep electronic musicians happy for a while. EM

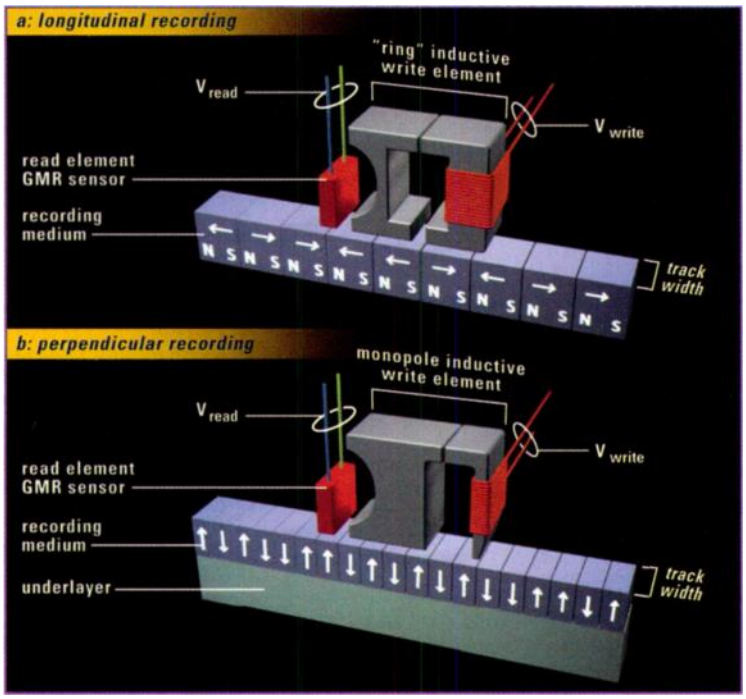
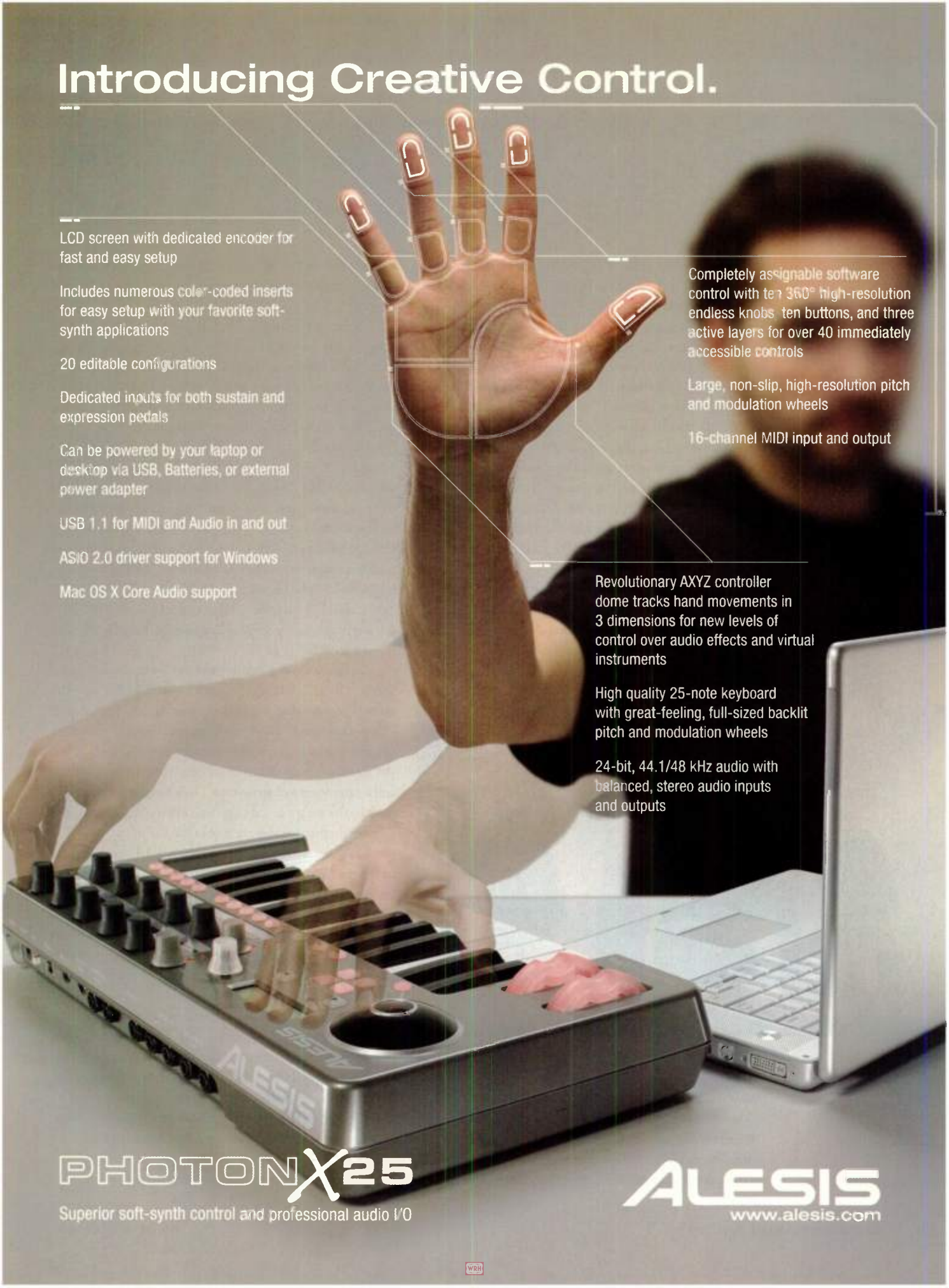


FIG. 1: Conventional hard disks use longitudinal recording, in which the magnetic grains are parallel to the disk surface (a). In perpendicular recording, the grains are vertically aligned, allowing higher densities before superparamagnetism sets in (b).

ADAPTED FROM GRAPHIC COURTESY OF HITACHI

Introducing Creative Control.



LCD screen with dedicated encoder for fast and easy setup

Includes numerous color-coded inserts for easy setup with your favorite soft-synth applications

20 editable configurations

Dedicated inputs for both sustain and expression pedals

Can be powered by your laptop or desktop via USB, Batteries, or external power adapter

USB 1.1 for MIDI and Audio in and out

ASIO 2.0 driver support for Windows

Mac OS X Core Audio support

Completely assignable software control with ten 360° high-resolution endless knobs, ten buttons, and three active layers for over 40 immediately accessible controls

Large, non-slip, high-resolution pitch and modulation wheels

16-channel MIDI input and output

Revolutionary AXYZ controller dome tracks hand movements in 3 dimensions for new levels of control over audio effects and virtual instruments

High quality 25-note keyboard with great-feeling, full-sized backlit pitch and modulation wheels

24-bit, 44.1/48 kHz audio with balanced, stereo audio inputs and outputs

PHOTON X25

Superior soft-synth control and professional audio I/O

ALESIS

www.alesis.com

Group Dynamics

By Matt Gallagher

STS9 creates studio magic as a team.

Sound Tribe Sector 9 (STS9) is one of the hardest-working improvisational bands in show business. Founded in Atlanta in 1997, STS9 quickly gained a loyal national following because of its energetic, spontaneous, interactive, three-hour long live shows. The band consists of Hunter Brown (guitar), David Murphy (bass), David Phipps (keyboards), Jeffree Lerner (percussion), and Zach Velmer (drums).

STS9's music—an eclectic stew of electro-acoustic pop, funk, drum 'n' bass, hip-hop, ambient, dub, and more—integrates rhythm-section instruments with samplers, drum machines, and soft synths. Each band member uses an array of electronic instruments, and four of the five band members tote Mac G4s in their touring rigs, all of which are loaded with Ableton Live and Digidesign Pro Tools LE. In addition, Brown, Phipps, and Lerner use Propellerhead Reason and Native Instruments Reaktor.

Artifact (1320 Records, 2005) is STS9's fifth release and the product of intense collaboration and revision. "We worked for a year and a half," Brown says. "We started by passing Reason files back and forth." Phipps adds, "We would create a sequence, bring it into Pro Tools, and let the drummer play [along] to it with slight inflections at the end of 16 bars or 32 bars. Then we'd edit the drums and loops, and add acoustic instruments and sound effects.

IAN MCFARLANE

Artifact/Sound Tribe Sector 9

"Most of the music I create becomes a whole new song in the hands of another band member," Phipps says. "I'd make recordings at home on the piano. Hunter could find the most perfect eight bars, loop them, put a drumbeat underneath them, and it's beautiful. I never feel like I'm the lone bedroom producer."

While on tour, the band tracked its ideas into Pro Tools LE on Phipps's PowerBook G4 through an Mbox audio interface. "We did all of the sound effects, most of the percussion, and a lot of guitar and bass parts in the moment," Brown says. "What we sacrificed was preamps and compressors." Most of Artifact was tracked in band members' homes and rehearsal spaces. "All the overdubs happened between our different houses," Brown says. "We have a 32-channel Midas console and a Digi 002. We were constantly moving our gear back and forth, and it wore us thin."

Compositionally, band members let the music guide them. "On a couple of songs, the overdubs became the essence, and we stripped away the foundation," Brown says. "'Trinocular' and 'Vibyl' are both examples of that. The original foundation came from experimenting with different rhythms using pieces of sounds from field recordings and a sample off a cassette tape. Once we started recording to that, the song started to go in a different direction. The counter rhythm became the feel of the track."

STS9 sometimes overwhelmed its DAW with its overdubs. "The final track count for 'Tokyo' was 101, and LE stops at 32," Phipps says. "We bounced whole sections of the song, almost by frequency range. The drums were bounced to two tracks, all the high-pitched synth effects to one track, and all of the Rhodes stuff to one track. After what we've learned, we could do a similar album in half the time."

"We won't stick to a certain process just for comfort," Brown says. "We always have to change something. We're not so eager to be portable." Phipps elaborates: "One idea is to strip back down to our original five instruments, record for a few days in someplace tropical, and then bring that stuff back here to edit and add new sounds, but [this time] knowing Pro Tools." EM

For more information, go to www.sts9.com.

INTRODUCING 64-BIT AUDIO PROCESSING

iZotope's 64-bit audio processors represent a new level of performance for effects and mastering compared to other software–and hardware. By integrating several effects into one processing system with pristine 64-bit fidelity, each iZotope plug-in replaces several competing tools, optimizes workflow, and maximizes signal quality. Most importantly, these incredible-sounding processors expand your creative palette with unique effects that simply aren't available anywhere else. These tools make it easy to bring your mixes that intangible professional quality that's hard to achieve. Download audio demos and trial versions of the ultimate in audio processing today.

ozone 3 64-bit Integrated Mastering System with Analog Modeling

Hear them now!
www.m-audio.com/izotope

spectron 64-bit Spectral Domain Effects Processing

trash Complete 64-bit Distortion Processor

developed by iZotope
an M-Audio partner

M-AUDIO

recording interfaces | USB keyboards | studio monitors | microphones | preamps | sound libraries | music software www.m-audio.com

ENHANCED MIDI PROGRAMMING

Tracktion 2 features a fully revamped MIDI editor with faster note entry, quicker editing, more intuitive keyboard control, and improved viewing of notes and controllers simultaneously.

EASIER RECORDING

Tracktion 2 lets you record your ideas as fast as they come. Just drag the audio or MIDI input icon to whatever track you like and click record.

DRAG-A-FILTER

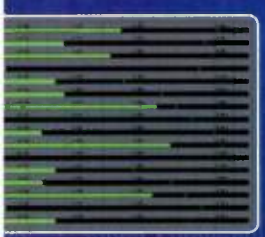
Wanna add a VST plug-in, pull up a VSTi instrument, route to an Aux send or add some EQ? Just drag a filter to the track you want to effect. It's really that simple.

OVER $500 OF BUNDLED PLUG-INS

T2 gives you all your basic music-making and mixing tools right out of the box — including Amplitube LE Sampletank SE the legendary LinPlug RMIV drum sampler and a full suite of Mackie Mixing and Mastering plug-ins.

INSTANT INFO

Tracktion follows your every move with its Properties Panel. Click on an audio clip and see its fade-out curve; click on a MIDI clip and quantise away; click on a reverb plug-in filter and fine-tune the pre-delay. The relevant info is always at your fingertips.



IMPROVED METERING

When setting levels, T2 can turn the full screen into a giant meter bridge with the press of a button.

QUICKTIME SUPPORT

Tracktion 2 supports Quicktime™ video playback. Select a movie and start composing music, add effects, replace your dialog, and win your Oscar™.

QuickTime

EXTERNAL SYNC

In addition to Tracktion's ReWire host functionality for use with applications like Reason, T2 supports MIDI Time Code (MTC) and MIDI Machine Control (MMC) input/output, plus MIDI Clock output.

use 64-bit math when mixing tracks

SUPERIOR 64-BIT, 192KHZ MIX ENGINE

Much has been made about the "summing bus" in DAW software. Tracktion 2 features a new high-definition 64-bit mixing engine for uncompromising sound.

800.898.3211 (Toll free within U.S.) **425.487.4333 (Outside U.S.)** **info@mackie.com**

© 2005 LOUD TECHNOLOGIES INC. ALL RIGHTS RESERVED. "MACKIE." AND THE "RUNNING MAN" FIGURE ARE REGISTERED TRADEMARKS OF LOUD TECHNOLOGIES INC. ALL OTHER TRADEMARKS ARE PROPERTY OF THEIR RESPECTIVE OWNERS. ALL SPECIFICATIONS SUBJECT TO CHANGE. THE TRUTH IS OUT THERE... LIKE, OH, WAY OUT THERE.

IF YOUR MUSIC SUCKS, IT WILL STILL SUCK.

YOU'LL JUST MAKE IT A WHOLE LOT FASTER.

If you enjoy clicking through layers of windows to create music, then Tracktion software is definitely not for you. It won't pretend to be a mixing console... It doesn't have cute 3D racks or patch cables... It doesn't contain a single instrument icon.

Instead, Tracktion lets you get right to the business of making music using a single screen for everything from audio recording and MIDI production, to mixing and mastering. It's simple-yet-powerful software, with thousands of fervent users and dozens of glowing reviews.

And now with Tracktion 2, we've added more than 100 new features and a full suite of high-quality plug-ins — while maintaining the original's legendary simplicity and a reasonable price.

Visit the left hand page, then visit mackie.com for your free Tracktion 2 demo. It won't make better music for you, but it will sure let you make it faster and easier.

SIMPLE. POWERFUL. REVOLUTIONARY. TRACKTION 2.

For a limited time, get a FREE artist website and 6 months of hosting from www.broadjam.com when you buy and register Tracktion 2.

MACKIE®

www.mackie.com

LETHAL COMBINATION

PADS | KNOBS | FADERS

TRIGGER FINGER

Trigger Finger's fusion of pads, knobs and faders delivers a lethal combination for expressive hands-on control of revolutionary music production software like Ableton Live. With its unbeatable feature set and unprecedented control, Trigger Finger has what you need to take your music to the next level.

- **16 velocity- and pressure-sensitive pads** > trigger loops, samples and video clips
- **individual assignable pressure on each pad** > unprecedented expression
- **8 MIDI-assignable knobs** > control filters, effects, pan and more
- **4 MIDI-assignable faders** > control channel/bus levels and more
- **pre-programmed maps for popular software** > easy to use
- **16 onboard presets plus Enigma librarian** > unlimited storage
- **powered via USB** > mobile operation

See it now!
www.m-audio.com/trigger

Where do you want to take your music?

M-AUDIO

audio/MIDI interfaces | USB MIDI controllers | studio monitors | microphones | preamps | sound libraries | music software www.m-audio.com

MIKE CRUZ

Nine Essential Online Resources

By Geary Yelton

The Internet has done more to advance the spread of information than any technological advance since the invention of the printing press. Electronic musicians and anyone else concerned with changing technologies have been the prime beneficiaries of online connectivity. Because our tools are always evolving and our work is so dependent on innovation, it pays to keep track of daily changes. Thanks to Web sites and discussion forums, the Internet enables us to learn about what's happening almost as soon as it happens.

The technical information you need is only a mouse-click away.

I want to share with you nine of my favorite sources for obtaining music information online. Some of them I visit several times a day, and others I visit whenever I need answers or I want to catch up on the latest news about a particular product or musician. In selecting resources for this article, I chose sites and newsgroups that aren't product specific or, at the very least, ones that concentrate on a type of product rather than on a single product from one manufacturer. Many sources allow access to information about a range of products or techniques, and it's up to you to narrow your focus to the resources that interest you.

Usenet

Usenet is a phenomenon that's been around longer than the worldwide Web. It grew out of the bulletin board systems (BBSs) that were once popular for exchanging messages among computer users who owned modems and were willing to pay outrageous fees for the privilege of being pioneers. I began using BBSs and Usenet in the 1980s, years before the Web made online communication

virtually universal. Although the Internet has made many BBSs obsolete, Usenet lives on.

Usenet is a massive collection of messages posted to literally thousands of discussion forums called newsgroups (see the **Web Clip** "Netiquette 101"). Messages are sent from one news server to another in service of the people who use those newsgroups. Nobody owns Usenet, just as nobody owns the Internet, but newsgroups owe their existence to the system administrators who preside over and operate the servers that host them. You can access Usenet using your Web browser, or you can use a software application called a newsreader (see the sidebar, "Nuts and Bolts: Newsreaders"). There are many Web-based pathways leading to Usenet, including Google (http://groups-beta.google.com).

Dozens of Usenet newsgroups are devoted to various aspects of music and audio. Many concern musical equipment and software, and many of those begin with the prefix rec.music. Rec.music.makers is a collection of discussion forums, with newsgroups about hand drums, songwriting, chamber music, guitar tablature, and 20 other topics. One forum is rec.music.makers.synth, in which participants discuss synthesizers, music software, and related topics, as well as offer synthesizers for sale and advertise in search of rare vintage instruments. Another place to buy and sell music gear is rec.music.makers.marketplace, in which you can find anything from Neve consoles and Soviet guitar amplifiers to parts for your antique Teac tape recorder. It might take some time to find the newsgroup that suits your interests, but when you find the right one, you'll know it.

Yahoo Groups

Another means to connect with newsgroups is by logging on to Yahoo Groups (http://groups.yahoo.com). Like Usenet, Yahoo has thousands of discussion forums. To find one that's right for you, go to the Yahoo Groups home page, click on Entertainment & Arts, and browse the selections under the heading Music or Audio and Visual Equipment. There you'll find lively discussions about virtually every piece of music hardware and software ever made. You might be surprised by how many others use the same gear as you do and want to talk about it. Most groups require that you register to read or post messages, but some let you browse without becoming a member. You can subscribe to XML feeds so that you receive updates in your newsreader. In addition, you can set up your subscription so that messages are sent to your email in box.

The number of Yahoo Groups might amaze you. When I followed Music > Instruments > Electronic > Synthesizers and Samplers, I found 584 related groups. I regularly visit more than a dozen Yahoo Groups, ranging from Korg Legacy Users and Moog Modular V to K5000 and OASYS PCI. The Logic Users Group (logic-users) currently has nearly 20,000 members and occasionally more than 4,000 messages a month. Yahoo Group users

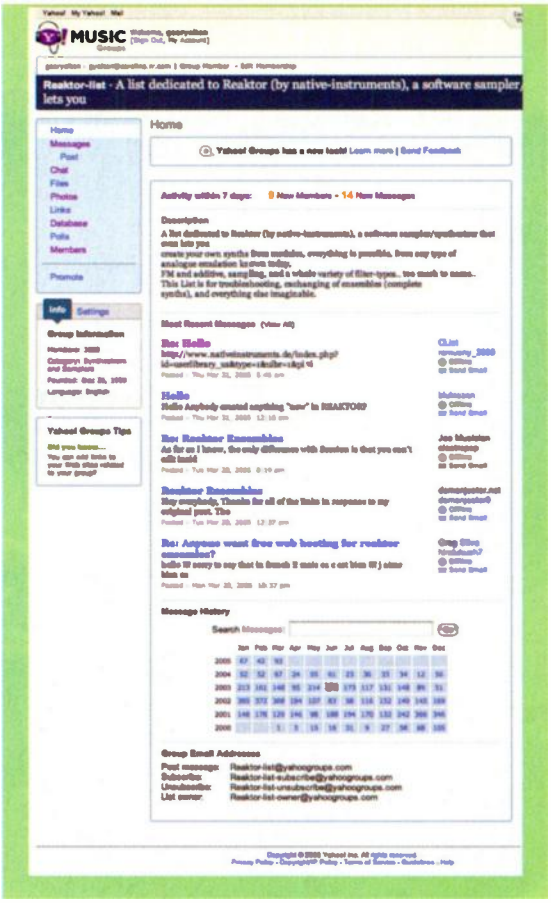


FIG. 1: Yahoo Groups offers an easy-to-navigate assortment of discussion forums on subjects ranging from electronic music production to bagpipe repair.

discuss technical problems and solutions, share rumors about new products, read about the latest updates, gripe about bugs, and suggest new features for the next update. Some groups are run entirely by independent users, and others are sanctioned by the product's manufacturer, who might have representatives available to answer your questions and take note of your concerns.

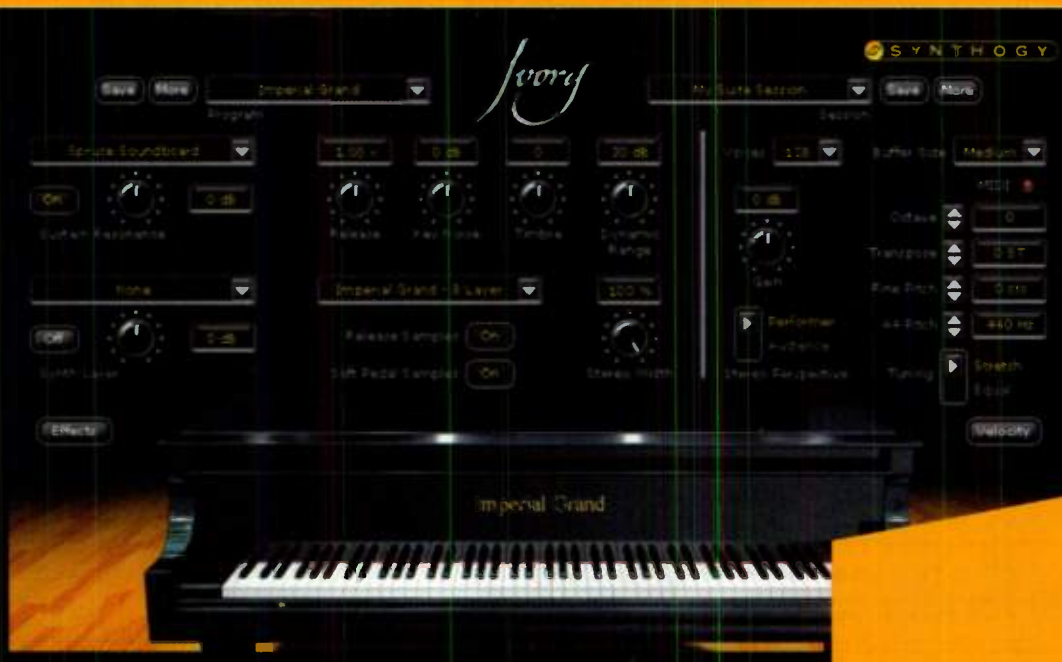
Finding your way around Yahoo Groups is easy. On any forum's home page, you'll see the group's description, links to the five most recent messages, and a grid that shows you how many messages were posted each month every year since the group began (see **Fig. 1**). Simply click on the grid to read any month's messages, or click on View All to read the most recent messages. On every page, you'll also see a menu that lets you post messages, enter real-time chat mode, look for files that other users have posted, see photos and Web links, participate in polls, and view a list of members. Because Yahoo Groups are supported by advertising, sometimes you'll need to get past a full-page ad before you can read a message. Sure, it's a minor inconvenience, but it's well worth your while to join the online community at Yahoo Groups.

Harmony Central

Every morning when I turn on my computer, one of the first Web sites I go to is Harmony Central (www

Ivory GRAND PIANOS

This groundbreaking sample-based Virtual Instrument was conceived and crafted to bring out the resonance, response and character of the world's finest Concert Grands. The largest piano plug-in ever.



"The playability of Ivory is breathtaking. We couldn't help getting utterly carried away with it... The sound is phenomenal, the dynamics are both natural and responsive, and the control parameters innovative. At present, nothing can touch it!"
—COMPUTER MUSIC.
winner CM Performance Award

Three Glorious Grands, One Custom-Built Piano Engine

- Bösendorfer® 290 Imperial Grand, German Steinway® D 9' Concert Grand, Yamaha® C7 Grand (Each piano can be installed separately).
- Over 30 GB of phase-perfect stereo samples in 32 bits!
- All 88 keys individually sampled in up to 8 dynamic levels (plus Bösendorfer extended low octave).
- Full length sustain samples, no loops.
- Real Release and Soft Pedal samples.
- World class digital FX including Real Ambience, Chorus and EQ.
- Optional synth pad layer for modern/pop combinations.
- Synthogy's exclusive, powerful 32 bit Sample Playback and DSP engine, engineered specifically for recreating the acoustic piano.
- Sympathetic String Resonance DSP for realistic Damper Pedal response.
- Incorporates sample interpolation technology used for ultra-smooth velocity and note transitions.
- Customizable with User controls for Timbre, Stereo Width and Perspective, Velocity Response, Mechanical Key Noise, Tuning and more.
- Dozens of user-adjustable presets.

RTAS · VSTi Instruments · AU Audio Units · Mac · X

$349

ILIO
Exclusive distributors

800.747.4546 www.ilio.com

SYNTHOGY
synthogy.com

All trademarks are property of their respective holders. All specifications subject to change without notice.

.harmony-central.com). Harmony Central is an excellent source of news, discussions, reviews, and other useful and timely information about the world of audio and music technology. According to site administrators, I'm not alone: Harmony Central claims 70,000 unique visitors every day and more than a million every month.

Foremost on the home page is HC News, a collection of headlines from individual press releases about new or updated products (see Fig. 2). Typically, there are links to more than a dozen of the most recent releases, most accompanied by photos or screen shots. Additional links lead to a couple months' worth of news about music software, soundware, instruments, and similar products. The information that you'll find there is nearly identical to the news releases that EM editors receive directly from product manufacturers and their press agents, often on the same day that we receive them.

FIG. 3: On KVR Audio, you'll find the latest news on audio plug-ins and hosts that support VST, DirectX, Audio Units, and LADSPA formats.

HC News is available in the form of RSS feeds that you can access with your newsreader program. You can specify whether you want to see all of today's news or limit it to only news about bass, computers, drums, effects, guitars, recording, or synths.

Harmony Central also offers extensive coverage of product-related trade shows. In the past year, Harmony Central has covered AES, Musikmesse, and both NAMM shows. You'll find all show-related news releases and links to streaming video demos and interviews all in one place.

In addition, the home page offers quick access to exclusive online columns and links to gear reviews, artist features, and instructional articles posted by *Electronic Musician*, *Mix*, and numerous other magazines and audio Web sites. Harmony Central's thousands of user reviews can be especially enlightening. It's not unusual to find more than a dozen reviews of a particular instrument or device, each rating it for factors such as features, sounds, reliability, and customer support. Additionally, you'll find links to online contests such as performance competitions and product giveaways.

The Services page is especially handy if you want to buy or sell used gear or if you're trying to hook up with other musicians. It offers free classified ads in 11 product categories. A typical week might feature 75 ads offering to buy and sell synthesizers, for example, and well over 200 ads for effects processors. I've seen some amazing deals and hard-to-find gear there.

FIG. 2: For product news, newsgroups, show reports, and user reviews, Harmony Central is an extensive source of up-to-date information.

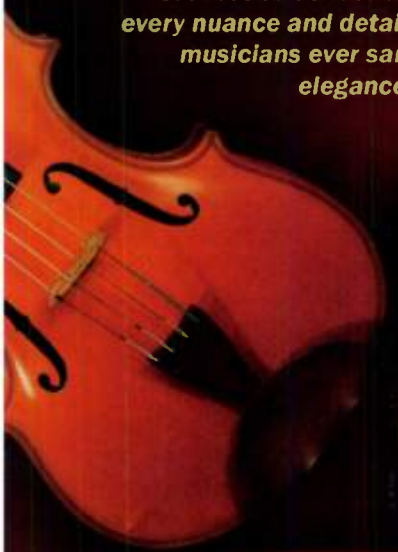
Sonic Implants®

SYMPHONIC COLLECTIONS

The New Complete Orchestral Solution

From gentle to powerful, intimate to enormous, the new Sonic Implants Complete Orchestral Collection allows you to incorperate every nuance and detail of the greatest orchestral musicians ever sampled, bringing unmatched elegance and beauty to your music.

- > 24bit clarity & definition
- > Natural Ambience
- > Sample round-robin, alternation & legato play
- > Integrated surround sound via GigaPulse
- > Engineered by Grammy & RIAA award winning team
- > Unsurpassed playability



Percussion

Timpani
Orchestral Snare - Snares on & off
Field Drum - Snares on & off
Concert Bass Drum
Concert Toms
Tambourines
Crash, Suspended, Finger, & China Cym.
4 Different Types of Gongs
Crotales
Triangles
Metal, Glass, Wood, & Bamboo Chimes
Bell Tree
Glockenspiel
Xylophone
Marimba
Vibes
Tubular Bells
Temple Blocks
4 Wood Blocks
Claves
5 Cowbells
Shakers
And Over 25 Additional Essentials ....

Available in:
GIGASTUDIO3 & GS2.5 Formats

Woodwinds

Solo C Flute
1st & 2nd chair C Flutes
Alto Flute

1st & 2nd chair Bb Clarinets
Solo Bb Clarinet
Solo Eb Clarinet
Bass Clarinet 1st & 2nd Chair

1st & 2nd chair Bassoons
Solo Bassoon
Contra Bassoon

1st & 2nd chair Oboes
Solo Oboe

1st & 2nd chair Piccolos
Solo Piccolo

1st & 2nd chair English Horns

Available in:
GIGASTUDIO3 & GS2.5 Formats

Brass

French Horns
Solo Melodic French Horn
1st & 2nd chair section
1st through 4th chair section
1st through 6th chair section (prog)

Trumpets
Solo Melodic Trumpet
1st chair
2nd & 3rd chair section
1st through 3rd chair section

Trombones
1st & 2nd chair Tenor Trombones
1st through 3rd chair Trombones
1st chair Baritone Trombone

Tuba
C Tuba
E Flat Tuba

Available in:
GIGASTUDIO3 & GS2.5 Formats

Strings

1st Violins
8 Violin section

2nd Violins
6 Violin section

Violas
6 Viola section

Cellos
5 Cello section

Basses
4 Bass section

Ensemble programs

Available in:
GIGASTUDIO3, GS2.5
EXS24 & KONTAKT
Formats

To Purchase or to find a Dealer near you contact Sonic Implants at >>>

888.769.3788
www.sonicimplants.com

Not surprisingly, some of the busiest portions of Harmony Central are the user forums. Forums are available for more than 20 topics ranging from the music business and guitar lessons to live sound and configuring your Windows PC. Several forums have more than 100,000 posts. All in all, Harmony Central is a versatile Web site with something to offer musicians of every persuasion.

FIG. 4: With thousands of users and more than 20 discussion forums, Recording.org concentrates on topics that interest audio professionals.

KVR Audio

Another Web site that I frequent is KVR Audio (www.kvraudio.com), formerly known as KVR-VST. In its mission statement, KVR defines itself as "a community and news site for open-standard audio plug-ins" for Linux, Windows, and the Mac OS. It further defines "open standard" by stating that "the software development kit (SDK) required to create them must be freely obtainable and available to all." That includes VST, DirectX, Audio Units, and LADSPA, and it excludes MAS, RTAS, HTDM, and a few other formats.

KVR is an invaluable source of news about audio software plug-ins and hosts—even freeware and shareware from companies you've never heard of. Like Harmony Central, KVR updates its news releases several times daily. The home page displays the ten most recent news items in their entirety, along with icons that indicate each product's computer platform and plug-in format (see Fig. 3). Each item also supplies four links: one to the developer's Web site, one to a KVR page devoted to that product, one to spread the news by email, and one to display the news item in a format that is suitable for printing. Below the news items on the home page are links to 20 less recent news items. As soon as KVR tells me that an update is available for software I use, I click on the developer's link, which usually takes me directly to the product's download page.

You can select the specific type of news that you want to view in your Web browser, either by doing a search or by simply clicking on the appropriate heading. You can view products by manufacturer, by type (instrument, effects, hosts, hardware, or development tool), platform, and so on. News headlines are available in RSS format as well, so that your newsreader can receive all news items or news only about instruments, effects, hosts, sounds, SynthEdit, or special offers. You can also subscribe to KVR's newsletter, which delivers the previous week's headlines to your email every Monday.

One page on KVR is dedicated exclusively to each product or family of products. The page on Steinberg Cubase, for example, covers all versions and offers specifications, user reviews, and related news items, as well as links to its support forum and KVR pages about related software such as Steinberg plug-ins. Another page lets you download banks, patches, and drum kits for a long list of instrument plug-ins.

KVR has a lively bunch of online forums. An extended FAQ and a list of rules is posted on the site, and membership is required if you want to post messages. In addition to topics such as instruments, effects, and hosts, you'll find the support forums for a number of developers, such as Wizoo and FXpansion.

KVR's user reviews are generally interesting and informative. Each product is rated for traits such as its sound, features, support, and stability. Each review has an icon that makes it easy to report to the sysop if you read something inappropriate. In general, KVR does an excellent job of deleting messages that are insulting, obscene, or far off-topic.

KVR is so extensive that it is almost hard to believe that it is operated by a single individual named Ben

NUTS AND BOLTS: NEWSREADERS

The most popular means of accessing online forums is by using a Web browser such as Microsoft Internet Explorer or Apple Safari. Web browsers have many advantages, including easy maneuverability and the ability to display full graphics. Another means to receive the latest news is by using a newsreader, an application in which you subscribe to an RSS (which stands for *rich site summary* or *really simple syndication*, depending on who you ask) feed. When you run or refresh your newsreader, it will download the most recent messages so that you're always up-to-date about the topic at hand.

Most of the online discussion groups discussed in this article make news available in a format understood by newsreaders. Popular newsreaders include NetNewsWire for the Mac, SharpReader for Windows, Straw for Linux, and AmphetaDesk for all three computer platforms. Whether you'd rather access newsgroups using a newsreader or a Web browser is a matter of personal preference.

New Loops & Sounds

Some sample companies will try to sell you 100 megs for $49. An average Big Fish Audio product contains over 600 megs of samples from today's award winning producers. Big Fish Audio products have won just about every industry award out there. Established in 1986, Big Fish Audio is the oldest and most critically acclaimed sample library company in the world.

Come browse over 600 titles on-line at www.bigfishaudio.com

Brain: One Stroke Done

$199.95
WAV (with ProTools/ OMF Sessions)

Bryan "Brain" Mantia has toured worldwide with bands like Primus, Guns&Roses, BT, Vanessa Carlton, and Tom Waits. Now, Brain offers a killer collection of drum performances in 24bit, multi-track, ProTools sessions. From Funk and Hip Hop, to Rock, Soul, Alternative and Underground, twenty years of his sweat and toil are all here for you in binary code. Over 8 Gb of material here in a wide range of tempos and styles, so if you need to add a unique drum part to your music, Brain's got you covered.

Neo Soul

$99.95
Audio/WAV

Reminiscent of 70's soul music combined with new millennium Hip Hop, Jazz & R&B, Neo-Soul has been conquering clubs the world over. Veteran producers, songwriters & artists heat up this simmering cauldron of construction kits, oozing Hip Hop & R&B at an ethereal level & celebrating soul music's resurgence. Enhance your library with just the right amount of sweat, longing and passion.

Complete Funk - Apple Loops Library

$49.95
AIFF/Apple Loops

Nasty! "Complete Funk" is ready to be loaded right into Logic 7, GarageBand etc. Whether you need to funk up your film or lay down some of that filthy, smelly funk, you need this collection! The construction kits are loaded with funky drum loops, slap bass, guitar, horns, organ, rhodes, percussion, and more, all tempo-matched and ready to loop perfectly. With all the incredible search functions of Apple Loops, you'll find exactly what you're lookin for. You gotta have this funk!

First Call Horns

$299.95
Kontakt Player/Plug-in

Finally, multi-sampled horns. No more having to rely on orchestral brass for your modern horn needs. Pop, Latin, jazz, big band, rock n' roll horns are all here with unprecedented sound quality and programming. Trumpets, soprano, alto, tenor & baritone saxes, trombones, flugelhorn & French horn are also here. Each instrument contains solo and section chromatic multi-samples, plus riffs, combinations & improvisations. Over 2 gigs of playable horns!

London Solo Strings

$399.95
Kontakt Player/Plug-in (VSTi/RTAS/AU/DXi2)

$399.95
GigaStudio

This is, hands down, the most playable string library available. Violin, Viola, Cello & the oft-omitted Double-Bass like you've never heard them before. 24 bit, multiple microphone positions, played by world class performers with top of the line instruments. Articulations include: arco, marcato, spiccato, sul tasto, ponticelli, pizzicato, harmonics, snap pizzicato, FX & more. This library delivers realism & flexibility packaged in the most creative programming to date.

Soundscapes for Cinema - Apple Loops Library

$99.95
AIFF/Apple Loops

Scoring a film with Soundtrack™ and Final Cut™? Need Apple Loop files to load into Logic7™, GarageBand or your favorite DAW? This two gigabyte library is full of acoustic oddities, pads, atmospheres, exotic percussion loops, mixed loops, one-shot effects, tonal loops, eerie soundscapes and more from our award-winning sound design library. "Soundscapes" strange noises and FX are perfect for your next film or music production. Add the missing organic and electronic bits to that alien sequence or hard-edged techno remix.

Funky House Producer

$69.95
NNXT/REX/WAV/ACID

Funky House Producer brings the sounds from the clubs of Ibiza, London, Paris and New York directly to your mix. Featuring the latest filtered funk loops, inspirational disco guitars, huge pumping beats, funky bass lines, dreamy Fx, killer keys and more. Whether you're looking to capture the blissed out sample production of Naked and Wave Records, or perhaps something deeper - you'll find that Funky House Producer delivers on every level.

FOUNDATION

$299.95

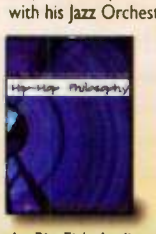
VSTi/AU/RTAS/Plug-in

Following the success of Smokers Delight, Foundation is your next Hip Hop hit waiting to be created. e-Lab products are an industry standard and the IGNITION series loop libraries are the biggest and best libraries to date. 11 Gigs of loops, sounds, construction kits and the IGNITION multitrack REX player. Kick, snare, hihat, bass, guitar, keys, etc. all on individual stereo tracks. Play and edit eight REX files simultaneously, creating millions of beats. And it doesn't stop there, Big Fish Audio has over 100 compatible REX libraries available for the IGNITION engine.

Greg Adams' Big Band Brass

$99.95
WAV/REX/AIFF/Apple Loops

Put the power of a Big Band Brass section to work in your music! Performance Loops® producer Stephen Sherrard teams up with legendary trumpeter, composer, and arranger Greg Adams (Rod Stewart, Elton John, Linda Ronstadt, Lyle Lovett) to bring you over 4600 Big Band Brass loops and samples, ready to bring a new level of realism to your production. Thousands of loops and samples from Greg's big band arrangements, recorded with his Jazz Orchestra featuring a 14 piece horn section.



Hip Hop Philosophy

$49.95
AIFF/Apple Loops/REX/WAV

At Big Fish Audio we've come up with a philosophy of our own, "Hip Hop Philosophy," our newest product for all you producers/composers looking for the newest in hip hop. Rooted in abstract hip hop, we've put together hot new construction kits with beats, bass lines, synth, fx and more. With over one Gig of the fresh stuff, these construction kits are ready to go, just load em' up and loop em' out. In addition we've included a drum loops section and a stabs section.

Hip Hop High

$49.95
AIFF/Apple Loops/REX/WAV

Fresh tracks, new sounds, and gettin' your head bobbin' is what "Hip Hop High" is all about. We've put together a new collection of hip hop construction kits for your mixing pleasure. Hip Hop High will take you back a little and then take you places you've never been before. So mix it up with construction kits ranging from 86-100 BPM. Everything is broken out including a full drum break out with kicks, hats, snares, cymbals, fx and more. Over one gig of fresh material.

800.717.3474 — **bigfishaudio.com**

Turl. It was recently purchased by Muse Research, makers of the Receptor VST plug-in player. KVR is an essential resource for electronic musicians, and one that you'd do well to visit often.

Recording Org

With more than 23,000 registered users and nearly 150,000 articles posted, RecordingOrg (www.recording.org) is one of the busiest discussion sites for musicians and audio enthusiasts and professionals. At RO's core are more than 20 forums devoted to subjects such as pro audio gear, recording studio techniques, the music business, home and project studios, and live sound. Each is independently moderated by individuals who take care of day-to-day maintenance. RO currently has 15 moderators, all music and audio professionals with a wide range of experience. Although RO generally allows anyone to read the forum, you need to register and log in if you want to post messages. If you'd prefer to use a newsreader, you can also subscribe to RO's forums.

FIG. 6: All Music Guide offers detailed information on virtually any recording artist and recording.

It's revealing to see which forums are the most popular, as determined by the number of posts and topics for each. Pro Audio Gear rates highest, probably because the topic is a catchall that covers almost any audio hardware-related subject (see Fig. 4). Other forums may cover some of the same products, but they're not limited to discussions of hardware. In the Audio Video Film forum, for example, you'll find posts about video cameras and recorders, video-editing software, dialog recording techniques, sound effects collections, DVD mastering, and so on.

FIG. 5: If you want to learn more about almost any synth on the planet, a visit to Vintage Synth Explorer is essential.

Other RO sections include free classified ads and product-specific forums. Classified ads are divided into job postings and used-equipment sales. I was surprised to see how many ads were from users wanting to buy gear. Predictably enough, the job posting section is primarily filled with ads written by members offering their services, but it also has ads from sound-design companies and major manufacturers looking for employees.

RO is one of the few musician-oriented sites that charge a membership fee for its premium services. For $20 a year, the RO Club offers benefits such as real-time chat, detailed statistics, and the ability to submit news and post announcements. But it doesn't cost a cent to participate in RO's online community. For timely information and lively discussions, Recording Org's forums offer something new every day.

Vintage Synth Explorer

For anyone interested in synthesizers, one of the very best resources is Vintage Synth Explorer (www

VINTAGE
COLLECTION

SPECIAL OFFER

$649 One month only
Limited quantity

Four legendary vintage synthesizers in a unique pack at a unique price. Give your music this special sound from the *Moog Modular V*, the *ARP 2600 V*, the *CS-80V* and the *minimoog V*. An upgrade path for Arturia customers owning one, two or even three of the synths is also available at www.arturia.com

includes SuperSonica

TAE

Arturia
www.arturia.com

.vintagesynth.com). VSE is basically an online storehouse of information on more than 500 synthesizers and samplers of every type: hardware and software, analog and digital, vintage and new. In fact, you'd be hard-pressed to think of a model that VSE doesn't feature in some detail.

A list of nearly 80 synth manufacturers appears on VSE's home page. Clicking on a manufacturer name reveals a list of every instrument (and sometimes a few other products) made by that company, arranged in alphabetical order. Clicking on Oberheim, for example, displays a list that has 15 synthesizers (from the SEM to the OB-12), the DX and DMX drum machines, the DPX1 sample player, the OB-Xk MIDI keyboard, the Prommer (a device for burning EPROM chips for drum machines), the DSX digital sequencer, the analog Mini Sequencer, and the Echoplex Digital Pro.

FIG. 7: Sweetwater's Web site proves that online stores can make tremendous contributions to the virtual music community.

Clicking on any instrument name opens a page that contains one or more photos or screen shots, a description, and detailed specifications that include the dates that the instrument was produced and the current estimated street value (see **Fig. 5**). You'll also find data on related and alternative gear and on the artists who used that product in their music. For software, there might even be a link to download a demo from its developer. Each page also lets you rate the product from 1 to 5 and displays the average rating given by other visitors.

One unique feature of VSE is the Synth Finder. It allows you to specify five parameters and then makes recommendations based on your selections. You begin by indicating the musical genre (electronic, pop/hip-hop, or other), synth format (analog, digital, or sampler), price range (over or under $500), features (modern or old school), and sound types (synth/pads/bass, acoustic reproduction, or drums/percussion). When you click on Find Synths, the online application will generate a list of instruments that fit your specifications.

VSE is more than a compendium of product information. It also has discussion forums on synth-related topics. In addition to discussions of samplers, soft synths, and synthesizers in general, you'll find an area in which you can solicit help with a technical problem. In another section, a timeline traces the development of synthesizers from 1970 to 2004. An archive section profiles a dozen recording artists, provides a MIDI setup guide, offers user-submitted technical tips, presents a synth FAQ, and gives you a glossary of electronic music terms. If synthesizers are your thing—especially learning about the history of electronic instruments since 1970—you'll find plenty of rich knowledge to explore at Vintage Synthesizer Explorer.

All Music Guide

For information on recording artists and their recordings, nothing beats All Music Guide (www.allmusic.com). AMG attempts to catalog nearly every CD and LP ever released, and although it inevitably falls short of that lofty goal, it comes impressively close. There you'll find descriptions and reviews of hundreds of thousands of recordings, along with facts and opinions about the musicians who recorded them, written by full-time editors and knowledgeable contributors. AMG can teach you a tremendous amount about all sorts of musical genres and tell you about music and musicians you never knew existed. It can also give you the skinny on artists that you listen to every day.

Anyone can search and browse AMG, which allows you to view the biographical details of more than 75,000 recording artists as well as track lists, cover images, and reviews of most if not all of their recordings. Pick a musician or band and type that name into AMG's search field, or enter the name of an album or a song title. Every artist

YES! AUDIO PC BLISS CAN BE YOURS!

AC-1 from only **$1159**

FREE! WITH EVERY MACHINE $0!

FIX
We dial into your machine & fix problems before your very eyes! This system in use daily for over 3 years now and really does work.

RESTORE
Every machine we supply has a hidden partition which can automatically restore your machine to its former glory should the worst happen.

HELP
A custom-written on-screen multi-page manual for your system stuffed full of hints and tips. Solutions buyers get even more bang for their buck!

SOUNDS
$569 worth of SampleLab sounds, including Luscious Grooves, Drum Fundamentals, Discography, Analogue Archive & Spatial Awareness.

KEYCAPS
A full set of custom keycaps are supplied for your primary software of choice. Colour coded and featuring all the time saving key combinations.

SUPPORT
No premium rates, no long hold times, just the best support in the business bar none (check us out on the forums), plus free access to our dedicated support website.

PICK ANY CORE PC SYSTEM...

AC-1 LE
New improved spec
- Intel P4/3.2GHz
- 120Gb SATA HD
- 512Mb DDR RAM
- DVDR/RW

only **$1159**

AC-1 LE+
- Intel P4/3.4GHz
- 120Gb SATA HD
- 1Gb DDR RAM
- DVDR/RW

NB: LEs do not have full silencing kit

only **$1399**

Core 1
New low price!
- Intel P4/3.0GHz
- 120Gb HD
- 1Gb DDR RAM
- DVDR/RW

only **$1399**

Core 2
- Intel P4/3.2GHz
- 80Gb & 200Gb SATA HD
- 1Gb DDR2 RAM
- DVDR/RW

only **$1899**

Core 3
- Intel P4/3.4GHz
- 80Gb HD & 400Gb SATA Raid
- 1Gb DDR RAM
- DVDR/RW

only **$2299**

Core 4
Now 1 Terrabyte system!
- Intel P4/3.6GHz
- 200Gb HD & 800Gb SATA Raid
- 2Gb DDR RAM
- DVDR/RW

only **$3299**

Dual Xeon Core 1
- Intel Xeon 3.0GHz x2
- 80Gb HD & 200Gb SATA Raid
- 1Gb DDR RAM
- DVDR/RW

only **$3299**

Dual Xeon Core 2
Now 1 Terrabyte system!
- Intel Xeon 3.4GHz x2
- 200Gb HD & 800Gb SATA Raid
- 2Gb DDR RAM
- DVDR/RW Drive

only **$5279**

See website for full specifications.

Tower Core 1
New improved spec!
- Intel P4/3.2GHz
- 120Gb Hard Drive
- 512Mb DDR RAM
- DVDR/RW

only **$1069**

Tower Core 2
- Intel P4/3.4GHz
- 80Gb & 120Gb SATA HD's
- 1Gb DDR2 RAM
- DVDR/RW

only **$1449**

Cube Core 1
New improved spec!
- Intel P4/3.2GHz
- 120Gb HD
- 512Mb DDR RAM
- DVDR/RW

only **$1149**

Cube Core 2
- Intel P4/3.4GHz
- 200Gb SATA HD
- 1Gb DDR2 RAM
- DVDR/RW

only **$1449**

Centrino 1 14.1"
- Intel Pentium M 1.8GHz
- 60Gb 7200rpm HD
- 512Mb DDR RAM
- CDRW/DVD

only **$1899**

Centrino 2 14.1"
- Intel Pentium M 2.1GHz
- 60Gb 7200rpm HD
- 1Gb DDR RAM
- DVDR/RW

only **$2399**

Desktop Replacement 1 15"
- Intel P4/3.0GHz
- 60Gb 7200rpm HD
- 512Mb DDR RAM
- CDRW/DVD

only **$1979**

Desktop Replacement 2 15"
- Intel P4/3.4GHz
- 60Gb 7200rpm HD
- 1Gb DDR RAM
- DVDR/RW

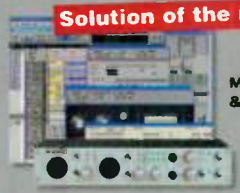
only **$2479**

See website for full specifications.

ADD ANY SOLUTION...

In an unprecedented move Digidesign and M-Audio have got together to produce 'Pro Tools M-Powered', a version of Pro Tools LE designed to work with a selection of M-Audio's popular interfaces. We have years of expertise with both, so it is completely natural for us to be able to recommend an M-Powered Pro Tools solution. The Firewire 410 is a superb and powerful box featuring twin mic preamps for input and 8 outputs. Combine that with AC3 capable SPDIF and MIDI in/out and you have a complete recording device. Pro Tools M-Powered gives you 32 audio tracks, 256 MIDI tracks, virtual instruments, plug-ins, effects mixing and editing in one intuitive interface. All sessions are compatible with Digidesign LE and HD systems.

Solution of the month!



M-Audio FW410 & Pro Tools LE

RRP ~~$999~~

only **$799**

Huge range of other Solutions available:

Ableton Live 4 and E-MU 1212m	$699
Cubase SE and E-MU 0404	$199
Cubase SL3 and E-MU 1820	$669
Cubase SX3 and Presonus Firepod	$1329
Cubase SX3 and MOTU Traveller	$1029
Cubase SX3, Groove Agent 2, Guitar Rig, Presonus Firepod	$1999
Cubase SX3 and Yamaha 01X	$2099
Cubase SX3 and RME Fireface	$2149
Digi002 Rack	$1399
Digi002 and Pro Tools LE	$2699
GigaStudio 3 Orchestra and RME HDSP9652	$1119
Nuendo 3 and RME HDSP9652	$2949
Sonar 4 Producer and E-MU Emulator X Studio	$999
Sonar 4 Studio and Behringer BCA2000	$529

Solution packages only available at these prices when you purchase a Carillon PC. All prices include VAT.

Due to the ever-changing nature of the personal computer industry, prices and specifications are subject to change without notice.

Please visit **www.carillonusa.com or call 866-4CARILL** for up-to-the-minute pricing and component info.

email: info@carillonusa.com Carillon Audio Systems 1141C Greenwood Lk Tpke Ringwood, NJ 07456

and band has a dedicated page telling you who they are, where they came from, and when they were active (see **Fig. 6**). You can even view a collection of each artist's photographs, see whose songs they've recorded, and read about similar artists.

If you want to access AMG's premium content, registration is free; all you need to do is provide minimal demographic information such as your zip code, but not your mailing address. Registration authorizes you to listen to music clips, view album credits, and explore by musical style or mood. Advanced search capabilities let you find information by specifying details such as birthplace or see how well a song might have done on the Billboard charts. For anyone interested in modern music and musicians, All Music Guide is without peer.

Sweetwater

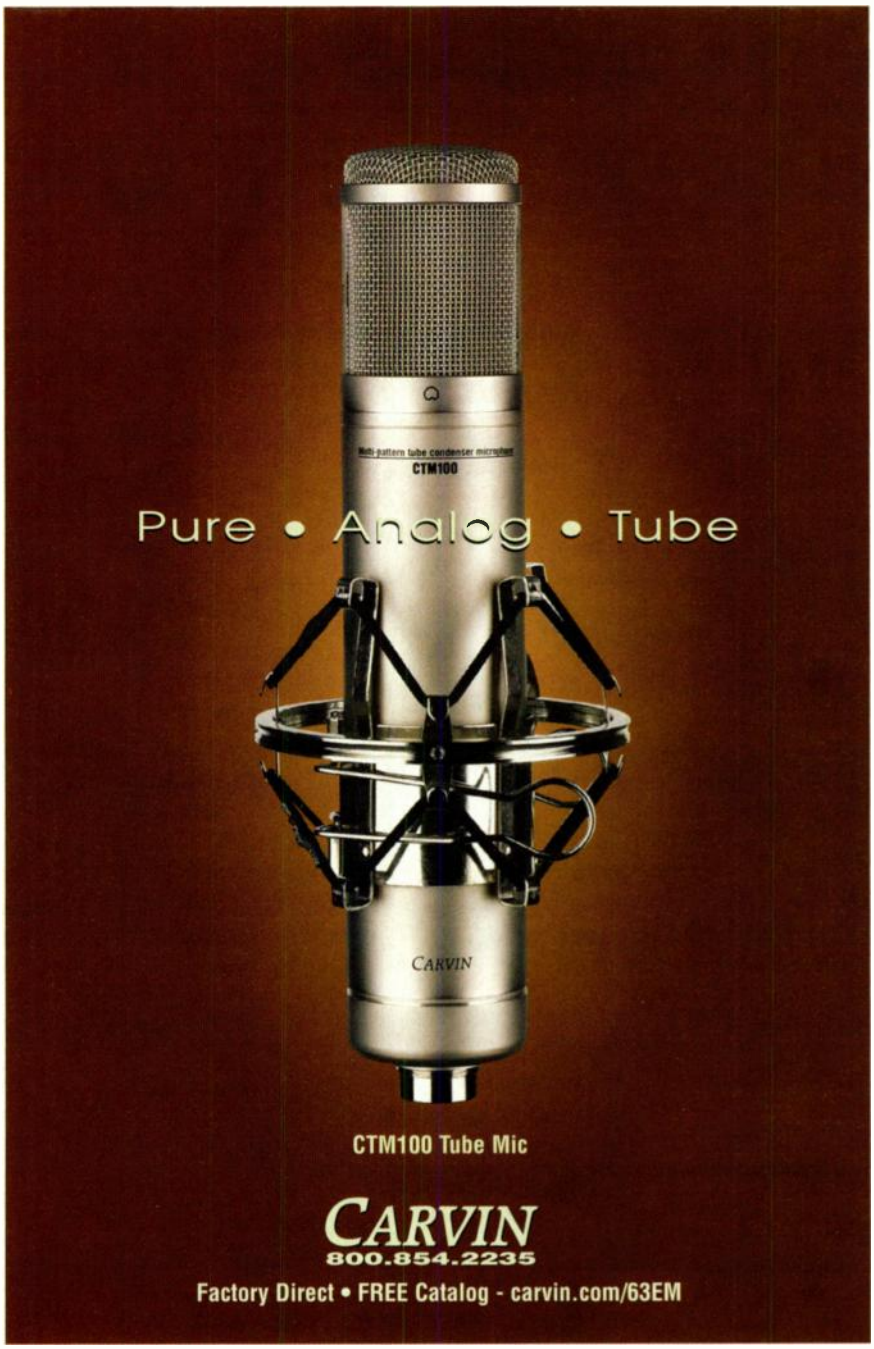
Quite a few music stores have an online presence, but none of them can match Sweetwater (www.sweetwater.com). Sweetwater's Web site is more than just a wealth of product information. In addition to the company's detailed online catalog, you'll find lots of good advice on using modern studio tools and techniques. inSync Daily News, for example, offers technical tips and terms of the day. The Sweetcare 24/7 Support page features a searchable knowledge base, an online technical reference library, and links to inSync Summits, in which audio professionals discuss subjects such as vocal recording techniques and the practical differences between –10 dBV and +4 dBu levels.

Like several other resources I've mentioned, Sweetwater has a good selection of discussion forums. Anyone can view messages, but you'll need to register if you want to post. Sweetwater forums are neatly divided by topics under headings such as pro audio, computers, and instruments (see **Fig. 7**). In the Manufacturer and Gear forum, a handful of groups discuss particular products such as the Korg OASYS and Tascam GigaStudio. In some groups, posts run into the thousands.

The Sweetwater site also gives you access to online publications such as The Complete K2000 (a useful resource for Kurzweil users) and Jim Miller's Tech Notes. You can download catalogs and newsletters and read reports from NAMM and AES shows going back to 1996. Another Sweetwater resource of which I'm particularly fond is the Trading Post. On several occasions, I have bought and sold mixers, synths, and other hardware on Sweetwater's Trading Post, and using it is absolutely free. You can view ads sequentially or search for a product by name, manufacturer, or category. The people at Sweetwater have done an admirable job of creating a Web site that contributes to the online community of musicians, regardless of whether you're one of their customers.

Native Instruments

Although many manufacturers have very fine sites, Native Instruments' Web site (www.nativeinstruments.de) is exceptional. There, you can quickly find product updates, software demos, audio examples, video clips, news releases, artist interviews, and more. NI's user forums offer more than 100,000 posts about virtual synths, samplers, and effects. Patch



libraries let registered users download presets created by other users—perhaps even the original software programmer. You can personalize NI's home page and see a quick overview of anything on the site that has changed in the past two weeks.

In addition to helpful beginner's guides, online tutorials guide you in exploring the depths of Reaktor, Kontakt, and other products (see **Fig. 8**). Granted, much of the site tries to persuade you to buy NI software, but the magnitude of product support and education you find there, combined with a thriving user community, make it well worth a visit for NI users and nonusers alike.

Online All the Time

Cyberspace is filled with resources that cover any aspect of producing music using modern technology. I've covered only a few of the many useful sources of knowledge and communication that you'll find online. Because I chose resources that were general in nature, I had to omit many Web sites and discussion groups that focus on individual products. At the risk of shameless self-promotion, I would be remiss if I didn't at least mention one more Web resource you shouldn't miss. If you enjoy the print version of EM, you'll certainly find plenty of fascinating news, knowledge, and advice on EM's Web site (www.emusician.com).

FIG. 8: In addition to product information, news, user groups, and downloads, Native Instruments' site furnishes detailed tutorials to help educate you about the company's software.

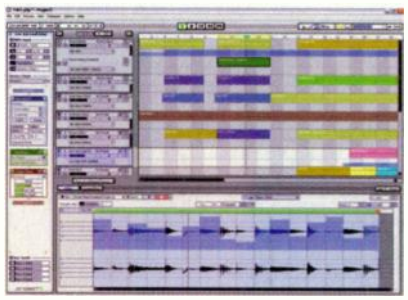
Although the term *information highway* has fallen into disfavor from overuse, it is bigger, better, and faster than ever. There's no doubt that the Internet offers quick access to the knowledge you need to make better music and better recordings. Visit some of the sites and newsgroups I've suggested and get involved in the virtual community of electronic musicians. EM

EM WEB CLIPS

Geary Yelton lives in Charlotte, North Carolina, with his lovely wife, Pam, and their amazing cat, Sadie.

Music.Inspired

Blur the boundary between studio and stage, and capture the moment as it happens with Project5 Version 2. Project5 is simply everything you need to create and perform today's music.

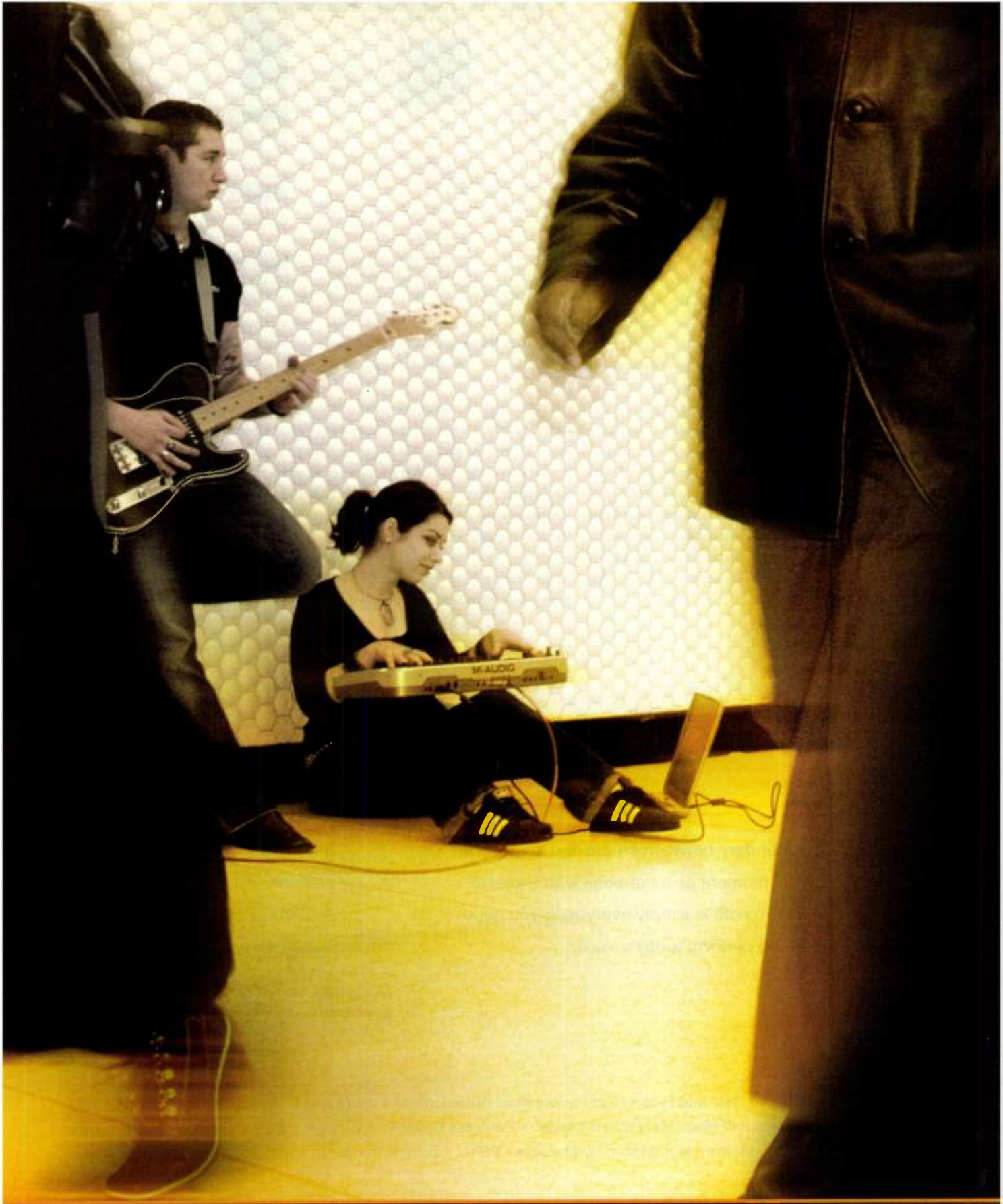


project5 VERSION 2

NEW

• Streamlined User Interface • High Performance Audio Engine • Integrated Multitrack Audio
• GrooveMatrix™ Real-time Pattern Trigger • Per-track Dynamic Arpeggiator • Loop Reconstruction
• Dimension Multimode Sampling Synthesizer • PSYN II Subtractive Synth • Much More

WWW.PROJECT5.COM



Where do you want to take your music?

ProTools. M-Audio. Compatible.

PRO TOOLS
M-POWERED

Pro Tools M-Powered software marks the beginning of a new era of compatibility between M-Audio and the world of Pro Tools. The groundbreaking combination of select M-Audio hardware and Pro Tools M-Powered software gives you more choices about your production tools–and that means more choices about where, when and how you work. Now you can customize an affordable desktop rig or the compact mobile multi-channel studio of your dreams, all while being compatible with countless Pro Tools-equipped project and professional studios around the world. Together, M-Audio hardware and Pro Tools M-Powered software deliver the seamless flow of moving sessions between home, studio, stage and road. Get M-Powered... Pro Tools M-Powered.

Download a free trial
www.m-audio.com/protools

Choice of 5 **M-Audio interfaces** now compatible with **Pro Tools M-Powered**

FireWire 410
FireWire 1814
Audiophile 192
Audiophile 2496
Ozonic

designed for compatibility with select M-Audio hardware
32 simultaneous tracks of high-fidelity audio up to 96k
fully integrated 256-track MIDI sequencing
includes over 30 Bomb Factory and DigiRack plug-ins
huge selection of optional plug-ins and applications available from Digidesign and Digidesign Development Partners and M-Audio
ReWire for further mixing and processing of apps like Ableton Live
unique Beat Detective LE automatic groove analysis/correction tool
cross-platform operation on Windows XP and Mac OS X systems

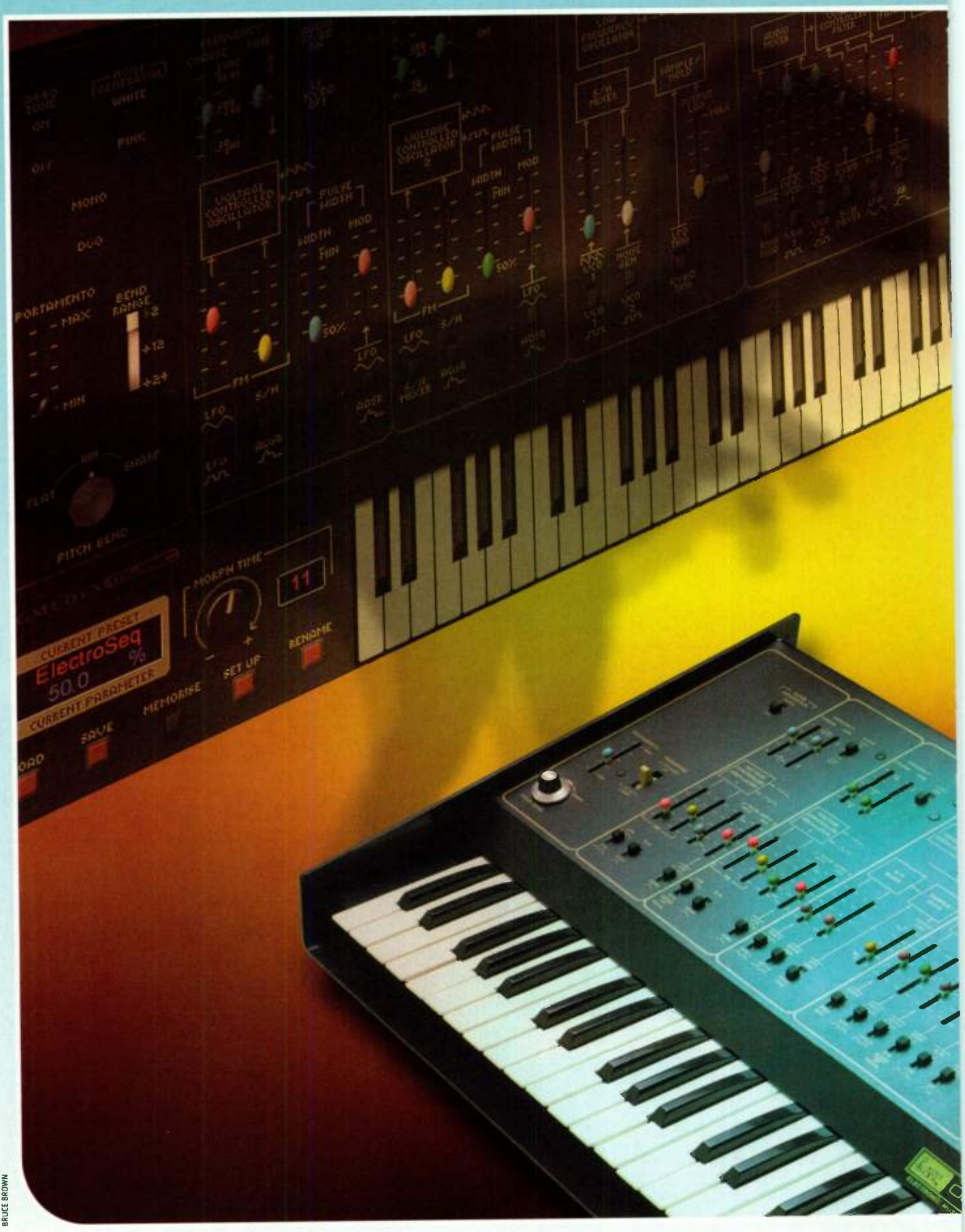
live
ReWire to Ableton Live 4 for real-time composition (Live Lite 4 included)

digidesign

M-AUDIO

recording interfaces | USB keyboards | studio monitors | microphones | preamps | sound libraries | music software

www.m-audio.com


VOLTAGE CONTROLLED OSCILLATOR 1
VOLTAGE CONTROLLED OSCILLATOR 2
PULSE WIDTH
WIDTH
MOD
MIN
50%
LFO
FM
S/H
ADSR
PORTAMENTO
MAX
MIN
BEND RANGE
+2
+12
+24
MONO
DUO
PINK
WHITE
FLAT
SHARP
PITCH BEND
MORPH TIME
11
CURRENT PRESET
ElectroSeq
50.0
%
CURRENT PARAMETER
SAVE
MEMORISE
SET UP
RENAME

BRUCE BROWN

We audition eight virtual synths to find out whether they re-create the sound of the dinosaurs.

THE LOST WORLD REDISCOVERED

By Brian Smithers

They say the more things change, the more they stay the same. When it comes to synthesis, that statement certainly seems to be true. Names such as Moog and ARP come up in conversation as often as they did 30 years ago. This time around, however, the discussion is tempered by decades of improvements and conveniences in synthesizer design, such as patch memory, MIDI controllers, and computer synthesis.

The era of software synthesizers is in full bloom. Although many original synthesizers are being built entirely in software, numerous others are intended to emulate classic instruments from days gone by. EM decided it was time to check the state of the art in synthesizer emulation, so I tucked a computer under my arm and headed off to the synthesizer retirement home (yeah, I live in Florida) to do some comparisons.

The retirement home in question is the Audio Playground Synthesizer Museum in Winter Park, Florida (www.keyboardmuseum.com). Founder and curator Joseph Rivers has assembled an awe-inspiring collection of synthesizers and drum machines, from the classics to the curiosities. In actuality, retirement home is an inadequate description because the museum is housed in a full-fledged modern recording studio and features many of the latest synthesizers right next to the oldies.

Matchmaker, Matchmaker

The matchups for our comparison consisted of an ARP 2600 with Arturia's 2600V and Way Out Ware's TimewARP 2600; a Minimoog with Arturia's Minimoog V (and a Minimoog Voyager just for fun); a Roland TB-303 with Muon's Tau Bassline Mk2; a Korg MS-20, a Polysix, and a Wavestation with their counterparts in the Korg Legacy Collection; and a Yamaha CS-80 with Arturia's CS-80V.

Our goal was to find how closely the virtual instruments sounded like their namesakes, therefore blind comparisons were in order. It was immediately apparent

that numerous challenges had to be addressed. Some older instruments clearly gave themselves away by the level of hum and other noise they produced even before I played a note. To minimize the prejudicial effect of that unavoidable reality, we kept the real instruments live while playing the virtual instruments, so the virtual ones were heard with the same background noise as the real ones.

One of the most challenging parts of the comparison process was trying to ensure that any bonus features of the virtual instruments didn't leave telltale signs. I played everything in mono, turned off all effects, watched for unison modes where none originally existed, and matched polyphony carefully. Some virtual instruments made that easier than others. For example, Arturia's documentation usually identifies virtual-only features clearly for those obsessed with veracity.

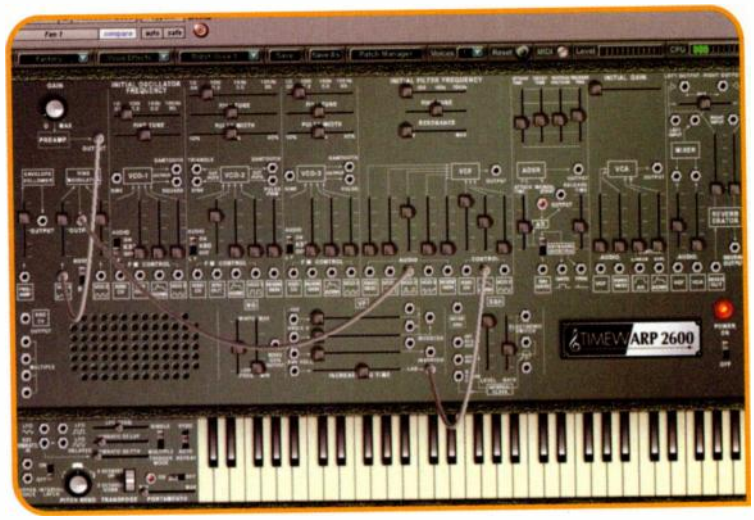


FIG. 2: The TimewARP 2600 from Way Out Ware is almost more real than the real thing. It stood out for the smoothness of its filter sweep.

Another noteworthy aspect of the testing was that the wilder the sounds got, the harder it was to make comparisons. For one thing, many of the (usually excellent) presets that ship with the virtual instruments under our microscope make a point of using built-in effects such as chorus and delay and using extra oscillators or modulation matrices. Turning those features off often robbed the patch of its essence, so it was often not useful to start a comparison from a preset. Because of that, in some cases the comparisons start with a single oscillator and build from there.

BRIAN SMITHERS

FIG. 1: Shown below is our panel of experts (from left to right): Lee Riley, Sam Zambito, Andy Hagerman, and Joseph Rivers.

Similarly, the range of certain controls was often quite different between the real and virtual instruments. That could be attributable to age-related drift in the real instruments or to shortcomings in the design of the virtual instruments. In some cases it was possible to match sounds closely by using different settings, such as a filter cutoff set significantly lower and with much less resonance on one instrument than on its counterpart.

The first round of comparisons, which included the 2600s, Minimoogs, TB-303s, and MS-20s, took place in Audio Playground's Studio B, which fittingly features more than 1,000 active MIDI channels connecting 80 or more keyboards and synth modules. Of course, given the vintage synths under examination, we used none of those channels.

I set up in the producer-performer area at the back of the room, and the esteemed panel of experts (see **Fig. 1**) sat at the console. An improvised screen shielded my activities from their eyes while allowing easy communication. Occasionally, panelists would ask to hear an example repeated or suggest a variation. The entire session was recorded in Pro Tools, and **Web Clips** are available online for most of the comparisons.

To keep the playing field as level as possible, all but one of the virtual instruments was played from the Open Labs OpenSynth neKo 64 keyboard workstation at 24-bit, 96 kHz resolution. The Way Out Ware TimewARP 2600 was available only as an RTAS plug-in at the time (AU and VST versions are in the works), so it was played through a Digidesign Mbox at 24-bit, 48 kHz resolution. Real and virtual instruments were patched to the console in mono and panned dead center. Levels were hand-matched carefully and often had to be changed from one patch to the next.

THE FUTURE OF MUSIC AND SOUND

Optional YBSP300 roller case.

Play. Speak. Sing. Travel. Repeat.

STAGEPAS 300...Great sound in a compact, affordable package.
Yamaha quality for smaller performances.

YAMAHA

©2005 Yamaha Corporation of America • www.yamaha.com/proaudio

The first round was besieged by a number of time-consuming difficulties with the vintage instruments (score one for the virtual instruments), so a second round had to be completed remotely. I returned to the museum to record the comparisons for the Wavestation, CS-80, and Polysix, and I posted uncompressed mono files online for the panelists to analyze.

As the operator, I have to confess an unbridled preference for the virtual instruments. In fact, after spending many hours wrestling with drifting oscillators, sticky sliders, noisy outputs, faded silkscreens, persnickety connectors, and other assorted electronic maladies, I felt the need to spend a good solid week playing my bamboo flutes barefoot high in a tree just for balance. Certainly enough time and money would make playing the vintage instruments less like playing Russian Roulette, but for me the cost-benefit analysis weighs heavily in favor of spending that money on a fast CPU and a low-latency audio interface so I can spend my time making music with the soft synths. Our priority here is the accuracy of the emulation, however, so let's see what the guys with the golden ears thought.

Be wary of drawing inferences of superiority based on descriptive terms such as warmer or brighter. We each had preferences here and there, but they were often based on analyses more complex than isolated timbral distinctions.

ARP 2600

The first synth under the microscope was the first synth to cause problems. Although the museum's ARP 2600 functioned pretty well, its companion keyboard didn't. To be fair, it wasn't clear whether the keyboard or the synth was at fault, but there was no way to get the two cooperating well enough to play musical phrases. The ever-resourceful Rivers brought out a MIDI keyboard with a MIDI-to-CV converter, and that was better, but still not up to the task. We had to resign ourselves to comparing the oscillators and filters more like scientists than musicians.

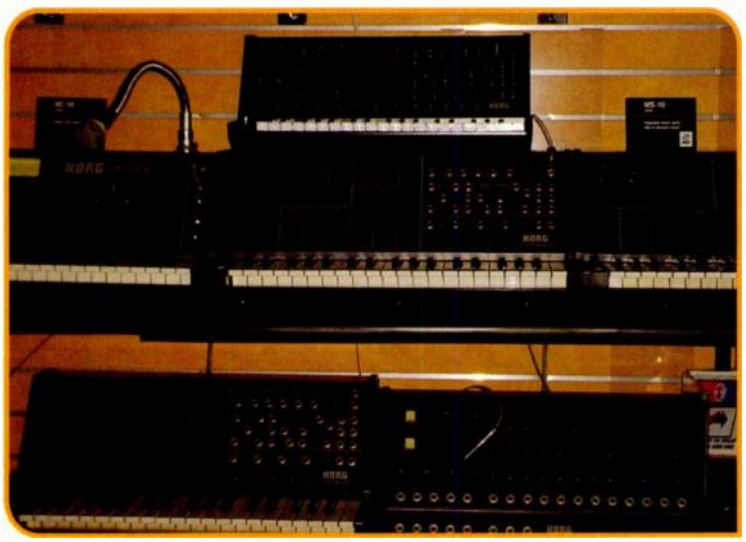


FIG. 3: The Korg MS-20 Controller is shown sitting atop its namesake and surrounded by its ancestors at the Audio Playground Synthesizer Museum.

After carefully matching output levels between the 2600 V (running on the neKo 64), the TimewARP 2600 (running on the Mbox), and the ARP itself, and doing everything possible to eliminate LFOs and filters as variables, I played raw waveforms for the panelists. Starting from silence, I ramped up the level to full volume, held it there for a few seconds, and pulled it back down. I immediately repeated the process with the other two instruments. Some differences revealed themselves immediately. I had expected that moving the onscreen control with my mouse would make the TimewARP (see **Fig. 2**) an obvious virtual, but in fact it was the ARP that gave itself away with a sticky slider. On subsequent examples, I was able to coax somewhat smoother behavior from the ARP.

In comparing sawtooth and pulse waves, the panelists had no trouble identifying the real 2600, although not necessarily for the reasons that one might expect. Bassist and composer Andrew Hagerman declared all three instruments "astonishingly alike except for some subtle color differences." The 2600 V's sawtooth was unanimously declared brighter than the others, with the TimewARP's sounding rounder, fuller, and more interesting. The 2600 V's pulse wave sounded fuller than its counterparts, which were described as nasal by comparison.

Interestingly, when I swept the 24 dB-per-octave lowpass filter on each instrument, the most satisfying result for all of the panelists was from the TimewARP, with the ARP exhibiting a much coarser behavior than the others. Based on that, three of four panelists felt the TimewARP sounded more real than the real ARP. The ARP's cutoff control was jittery enough to be described as bad digital stair-stepping. The 2600 V also sounded stepped to three panelists, albeit less so than the ARP.

The ARP's sticky pot made me wonder about the differences between the physical controls involved. The Arturia was being controlled from the neKo 64's touch screen, whereas the TimewARP was being controlled from my notebook's Accupoint pointing device. (Accupoint is Toshiba's term for the eraser-head-style pointing stick, which I have always preferred to the more common glide pad. Now I have one more reason to prefer it!) It is hard to gauge the extent to which the difference was attributable to the physical control, but it's important to note that the expected superiority of a physical control clearly diminishes when that control is 30 years old.

For the final 2600 example, I cranked up the resonance and swept the filters again. The resonance characteristics varied more widely than any other parameters

IS IT POSSIBLE to get the protection of a hard shell and the convenience of a soft shell in one case?

Cases and covers available for Keyboards, Cymbals, Bass, Mics, Accessories and more

All Body Glove instrument case products use water resistant, luggage grade nylon. Dual-sided high density plastic and heavy gauge zippers keep your instrument safe from the elements as well as the rigors of the road.

Proprietary Hybrid Hard/Soft shell case design for maximum protection and maximum convenience

Universal sizes available for all standard Acoustic, Bass, Classical, and Electric guitars

Oversized storage compartments

Four Point Backpack with lumbar support and waist anchor

Removable Amp Wallet: Take everything that you need on stage, or in the studio, with you! Mounts to the top of your amplifier.

Limited Lifetime Warranty

IT IS...
if it's a Body Glove case.

MORE INFO AT WWW.EBLITZAUDIOLABS.COM/BODYGLOVE

Distributed By

eBlitz AUDIO LABS

615 N. Nash St. Suite 206-B • El Segundo, CA 90245
310-322-3333 Phone • 310-322-3334 FAX • contact@eblitzaudiolabs.com

BODY GLOVE
PROTECT THE CORE

we tested, with the real ARP self-oscillating earlier in the control's range and more wildly than either virtual. That generated the only "yikes!" of the evening. The TimewARP again scored points for smoothness, with the Arturia displaying interesting artifacts, which were regarded positively by one panelist and negatively by another.

Korg MS-20

You would expect the instruments of Korg's Legacy Collection to be dead ringers for the originals, but the MS-20 was tough to match. Still, it managed to cause a bit of confusion. Two technical challenges, one analog and one digital, caused major delays in preparing the examples. The first real MS-20 we tried had such bad drift in the oscillators and in multiple components that by the time I got the virtual instrument matched, the sound of the real one had changed dramatically. Fortunately, the second unit was better behaved.

I had hoped to use the Legacy Collection's MS-20 Controller (see **Fig. 3**)—a USB device slightly smaller than the original MS-20 that reproduces its controls right down to the patch cables—to simplify the setup process. I quickly discovered, however, that settings on the controller don't always line up very well with the settings in the software. For example, raising a knob from a setting of 0 to 1.5 often failed to move the onscreen control at all, and higher settings were off by one or more values often enough to make the controller more hassle than it was worth in this context. (In performance, of course, you're usually not trying to match the settings of another MS-20 on the fly, so this is not an indictment of the controller when used for its intended purpose.)

FIG. 4: A vintage Minimoog shares the stand with its virtual counterpart, the Arturia Minimoog V, running on the Open Labs OpenSynth neKo 64 keyboard workstation.

One of the nice touches about the Korg Legacy Collection is the inclusion of the original manuals on the installation disc, including the *Setting Examples*, consisting of patch documents to be used as examples and blank patch sheets for user settings. I started with a couple of the example patches, first dialing them up on the real MS-20 and then matching the settings on the virtual instrument. Matching the knobs as carefully as possible did not result in a convincing sonic match. With a bit of imagination and effort, however, I was able to get the two to sound much closer.

The first patch was labeled Trumpet in the *Setting Examples*, and the drifting oscillators seemed to give the real instrument away. Despite its erratic pitch, it was described by synthesist and trumpet player Sam Zambito as "vibrant, rich, and detailed," with a "stronger character" than the virtual version. The rest of the panelists agreed, calling the real instrument "more substantial" and "beefier" and the virtual instrument "thin" and "too clean."

On the second patch, the comments ran along similar lines, so I decided to experiment with the virtual MS-20's Analog knob. Like some other designers, Korg has decided to allow users to determine how much old-school random behavior they want their soft synths to exhibit. I cranked the knob way up and reversed the order of the examples, and all of the panelists were convinced that the real MS-20 had simply gone further out of tune. Thus I scored the first and only successful deception of the evening.

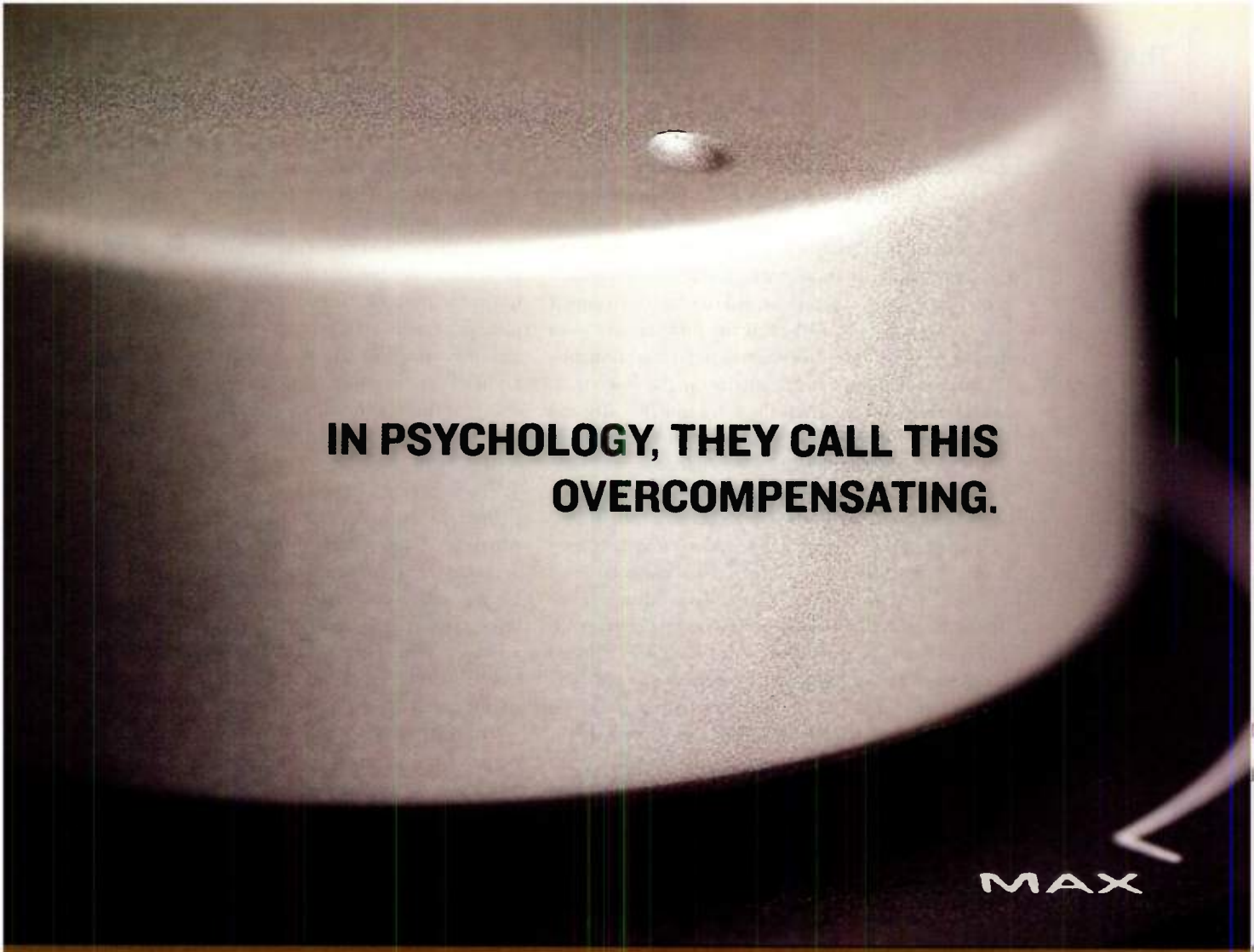
The real MS-20 generally sounded bigger and richer than its virtual cousin, but as Hagerman put it, "Do I really want to battle drifting oscillators to get a slightly more present sound?" It was difficult to get rid of a persistent ensemble sound in the virtual MS-20, a characteristic that was not disliked but was taken as a digital giveaway. The most convincing part of the emulation was the analog-misbehavior knob, a mixed blessing outside of our context.

Moog Minimoog

The Minimoog (see **Fig. 4**) was one of the highlights of the shootout, both for the relative good behavior of the real Moog and for the quality of Arturia's emulation. There was actually a split decision from the panel on which was which, validating the accuracy of the Minimoog V's sound.

I started with a one-oscillator patch, playing a few examples and varying the patch slightly as I went. Rivers used the term "rich" to describe the real Minimoog, while Zambito used the same word to describe Arturia's virtual version, demonstrating once again that musicians don't adhere to the same descriptive standards as scientists. Their description of the real Minimoog's high end was more revealing—one panelist said it sounded "more open," and another said it had a "thinner" sound.

Three panelists independently used the term "reedy" to describe the Minimoog's sound as I tweaked the filter a bit. I tried hard to emulate that quality in the virtual version, but I experienced only a limited amount of success. There was always a bit of grit in the Minimoog's filter that the virtual one couldn't quite replicate. On the other hand, our experts agreed that at times, Arturia's


IN PSYCHOLOGY, THEY CALL THIS
OVERCOMPENSATING.
MAX

If you've spent any time making music on a computer, you've probably noticed a few simple things you're missing. Like a big, convenient volume knob. And a monitor selector... and a talkback section... and a source selector... and some headphone control. To solve this problem, we created Big Knob: a simple tabletop level control/monitor switcher/source selector box with audiophile sound quality, robust Mackie construction, and a huge...um, knob. It's everything you need, right at your fingertips, ready to make up for what you lack on your PC. Go get the big picture at www.mackie.com.

MACKIE BIG KNOB: 3 SETS OF MONITORS, 4 SOURCES, 2 HEADPHONES & TALKBACK. PLUG IN TO CONVENIENCE.

www.mackie.com ☎ 425 487 4333 (Outside U.S.) ☎ 800 898 3211 (Toll free within U.S.)

MACKIE®

virtual version sounded "dense" compared with the real Minimoog. At least one patch was described as better able to cut through a mix than the real instrument.

I couldn't complete my comparison of the Minimoog without trying my hand at a bass patch, and I took the liberty of switching the order just to keep everybody honest. Everybody knew immediately that I had switched the order; not everybody, however, picked which instrument was which correctly. Although the instruments were distinguishable, the entire panel thought the Minimoog V captured the sound of the original well enough that, as Hagerman put it, "given the extra functionality and consistency of the software, I'd probably opt for the soft synth on practical grounds." Rivers added, "great software—I think they did the Moog justice."

The Museum counts within its collection a signature-edition Minimoog Voyager, and we couldn't resist matching it against the others, so I dialed in the bass patch as closely as I could. This test was not blind, and we had already discussed the other two in detail, but it was nonetheless interesting to hear. Composer-keyboardist Lee Riley described the Voyager as "analog by nature, but with a clean digital approach—like Sean Connery in an Armani suit." He went on to opine that the Minimoog V came closer to the Voyager than to the original Minimoog. Zambito felt the Voyager "seemed to deliver the best attributes of the [classic] Minimoog and virtual synth."

Roland TB-303

Muon's Tau Bassline Mk2 (see Fig. 5) models the synthesis, but not the sequencer, of the original TB-303, so I had to play both by hand. Given the tiny buttons that pass for keys on the 303, it took some doing to match the performances. Once I did, however, the differences between the real and virtual almost completely disappeared.

"Wow" appears in Hagerman's and Rivers' notes, with Zambito concurring, "great!" Riley and Zambito found the Tau "thicker" and "richer" than the original, but all agreed that the two could be made to sound almost identical. At one point I simply played alternating notes on the two, and it was difficult to tell that they weren't all coming from the same instrument.

Getting to the same place on both instruments took several minutes because the range of the cutoff and resonance controls on the two overlapped but did not completely coincide. As Hagerman put it, "The soft synth has a bit more range of expression and a bit more edge, but [at best] they are so close!" Score one for the fine art of doing one thing and doing it well.

FIG. 5: One look reveals that Muon's Tau Bassline Mk2 is a software emulation of the classic Roland TB-303. It's as much a sonic dead ringer as it is a visual match.

Korg Polysix

The Polysix (see Fig. 6) was well-behaved except for being slightly flat, even when tuned as high as it would go. The variability of its controls, however, made for some challenges in trying to match sounds. If you've ever tried to hang a picture and found that every time you tried to level it you over- or undercompensated, then you've got an idea of the difficulty that I had. (The original Polysix has 32 user memories and tape backup, and thank goodness it does!)

As with the MS-20, I started with some of the example patches from the original Polysix settings manual. A brass patch with a delayed pitch modulation sounded similar on the two, but there was a pop in the attack of the original instrument that I couldn't reproduce on the Legacy Collection virtual instrument. Conversely, there was a nuance in the virtual instrument's attack that didn't seem achievable in the vintage version. Ideally, I would have liked to get both attributes at the same time. Composer Riley noted the warm ensemble character of the virtual version, and indeed the real Polysix sounded timbrally flat by comparison, contrary to our biased expectations.

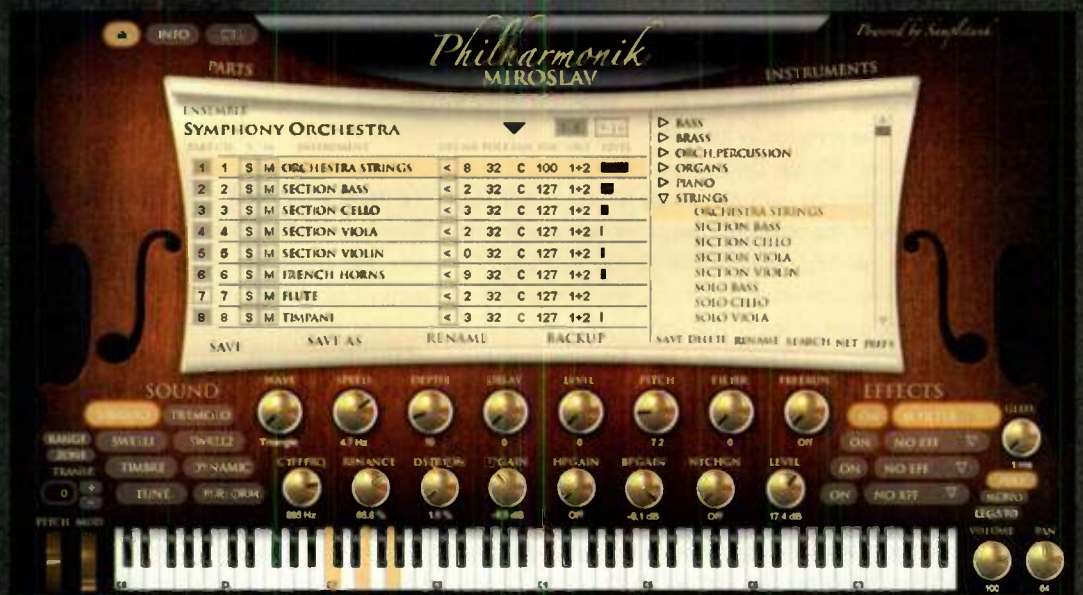
Next I took a preset from the soft synth and tried to match it on the hardware instrument, with mixed results. In this example, the software revealed itself by its consistency from phrase to phrase and from note to note. Hagerman felt that it had "a great core to the sound, and a constancy that makes me say that it's the plug-in." The hardware had a long-cycle modulation that took the heart out of the sound periodically despite my best efforts to remove all modulation sources from the equation. It sounded similar to the software at the brightest end of the cycle, but its variability was telling and frustrating.

In setting up a pizzicato bass patch, it turned out that getting a timbral match was not nearly as difficult as getting an articulation match. It felt as though the real instrument needed a fine-tune knob to go with each of its envelope controls because the smallest turn of the knob seemed to move from too short to too long. It seems almost sacrilegious to say that it was much

presenting

Philharmonik

MIROSLAV



Orchestra & Choir Module

A powerful integrated Orchestral Workstation combining the legendary Miroslav™ Orchestral and Choir sample collection masterpieces with a dedicated plug-in instrument specifically tailored toward classical sounds and arrangements.

• A workstation focused on orchestral instruments and ensembles. Solo Instruments, String Ensembles, Woodwinds and Brass Ensembles, Classical Percussion, Harp, Classical Choirs plus Cathedral Pipe Organ, Classical Guitar, Concert Piano and Harpsichord all together making up more than 5 Gigabytes of premium symphonic samples.

• Includes the complete Miroslav Vitous orchestra and choir library at a fraction of the price. A legendary, complete, orchestral and choir sound collection, available now for many times less than the original price.

• Hi-End samples with more realism. Special care has been made to preserve the original orchestra and choir collections to bring out their finest qualities and to add many samples to the collection that have never been released previously. Plus with IK's powerful STRETCH™ engine and effects, Philharmonik offers enhanced realism in your orchestral performances with real-time glissando, fluid pitch bends, performance-based time-stretching and more.

• Includes some of the most beautiful and playable sounds amongst any orchestral products. Miroslav™ orchestral samples have marked the atmosphere of hundreds of top class movies and productions. Beautifully recorded at the Dvorak Symphony Hall in Prague by Miroslav Vitous, these sounds have a texture, warmth, and beauty that is unrivalled in the sample world.

About Miroslav Vitous: Miroslav Vitous co-founded the band Weather Report with Joe Zawinal and Wayne Shorter. His orchestral samples are considered some of the most beautiful and playable amongst the symphonic sample sets in the market because of his vision to bring out the most emotional and moving sound of the orchestra in his acclaimed high-end sample collection.

Miroslav Philharmonik $499 MSRP

www.philharmonik.com

IK Multimedia. Musicians First.

www.ikmultimedia.com

easier to use the mouse than the real knob, but in this case that was true. Bass player Hagerman felt the soft synth lacked the weight of the hardware, sounding "a bit sterile." He concluded, "I'd choose the second device [the real Polysix] in a heartbeat, and layer it with another sound that can give me a little more attack; then I'd have the best of both worlds!"

To test the behavior of the filter, I experimented with a tinkly space-harpsichord until I got a near match. The Polysix was noticeably out of tune from octave to octave, so I was restricted to playing narrow-range examples. Even then, the real instrument was revealed by its drifting oscillators. Within that range, the basic timbre was reasonably easy to match, but the characteristic of the filter's resonance was quite different between the two instruments. The vintage instrument's resonance was more often dissonant, whereas getting a pleasing twang out of the virtual instrument's resonance was easier. Riley and Hagerman came down on opposite sides as to preference. Riley felt that the virtual "had trouble with the subtle nuances inherent" in the real instrument's sound, whereas Hagerman found the pitch problems distracting, preferring the "bit of extra shimmer" in the virtual instrument's timbre.

For the final Polysix example, I once again pushed the Analog knob on the virtual instrument to see what happened. In this case it took an organesque patch and grunged it up quite successfully. Ultimately, it made the soft synth sound older and more messed up than the old Polysix.

FIG. 6: The Korg Polysix is part of the Legacy Collection, along with the MS-20 and the Wavestation.

FIG. 7: With CS-80V, Arturia reduced the behemoth Yamaha CS-80 to laptop weight. As shown, the virtual version allows layering of as many as eight patches and a modulation matrix.

Yamaha CS-80

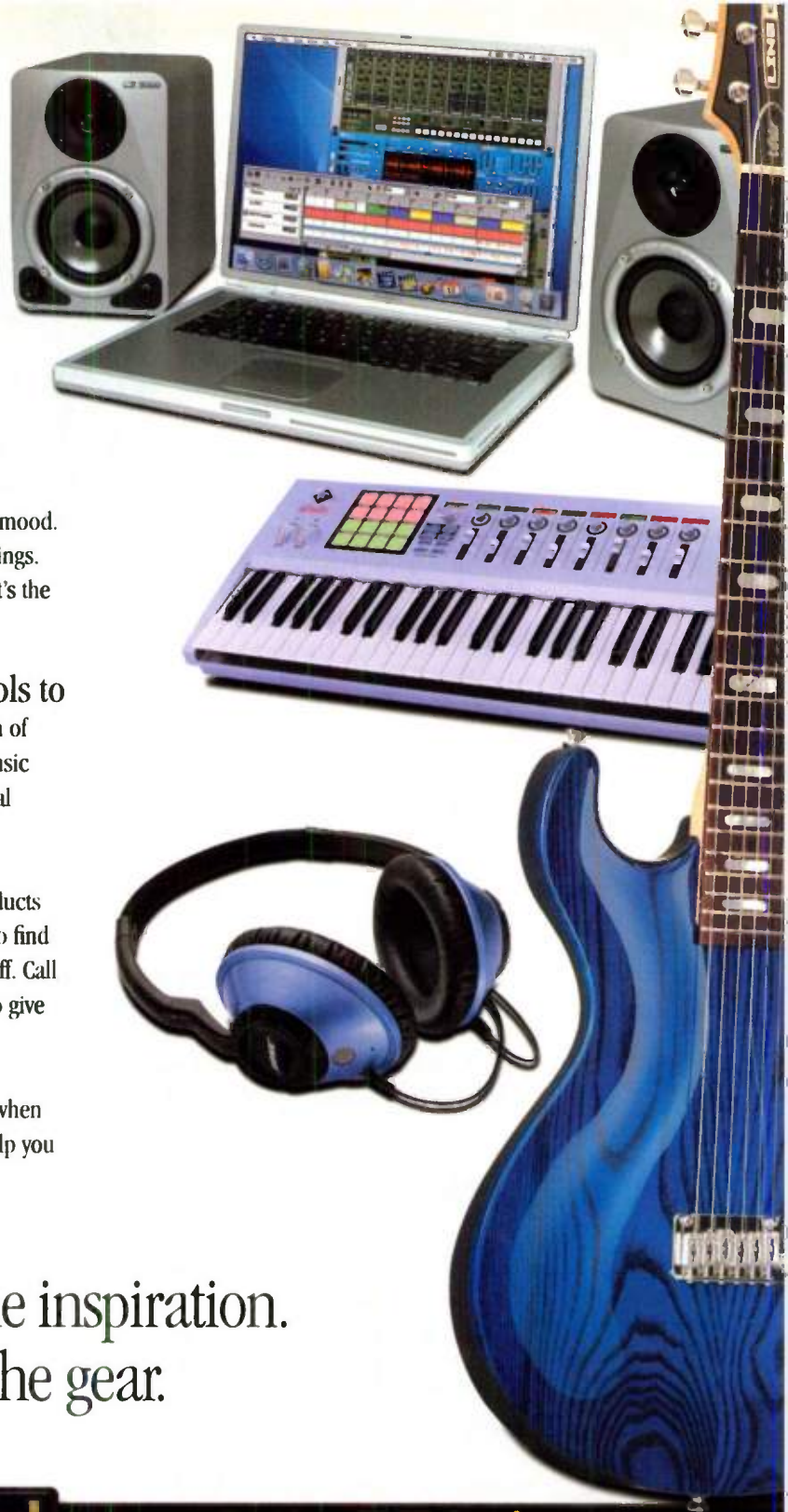
Yamaha's CS-80 features two layers of push-button presets, but those presets predate ROM-based memory, instead recalling settings stored on small sets of sliders that duplicate the main sound controls on the face of the instrument. That makes the presets stored in a vintage instrument unreliable as indicators of what the instrument's designers really had in mind; they still, however, provided a convenient point of reference for our comparison.

The CS-80 (see Fig. 7) proved to be one of the hardest instruments to match with its virtual counterpart. I spent a good deal of time trying simply to re-create a patch on one that sounded good on the other, and I came away frustrated every time. That is not to say that the virtual instrument doesn't sound like the original; it does, but not in the carbon-copy sense. Compared to this particular vintage CS-80, the CS-80V is more of a fraternal twin than an identical twin—they are clearly born of the same lineage, but not of the same DNA. After hearing several examples, Hagerman concluded, "This might not be the best example of a plug-in copying a vintage model, but it certainly captures the spirit."

That qualification is no small factor in a comparison such as the one we are doing for this article. It's impossible to tell how much a particular specimen sounds like it was intended to sound 30 years ago. If you fell in love with the sound of your friend's classic CS-80 and then found one of your own on eBay, could you realistically expect them to match each other perfectly?

Each of the examples started with the presets, most of them a 50/50 mix of a Part I preset and a Part II preset. From that point, I tried to eliminate variables and match filter settings for the best timbral affinity. In general, the real CS-80 enjoyed a deeper bass response and

©2005 Musician's Friend, Inc.



Create.

Finding that precise musical nuance to evoke your mood. Nailing the exact phrase that gives voice to your feelings. Searching for a tone that expresses your vision. That's the creative process. And it doesn't come easy.

At Musician's Friend we have the tools to fuel your creativity. Our enormous selection of instruments, recording gear, software, and other music tools offers the building blocks to bring your musical inspirations into reality.

Visit us online to discover over 30,000 creative products at the lowest prices anyplace, guaranteed. You'll also find countless product reviews, tips, articles, and fun stuff. Call us to receive our catalogs brimming with the gear to give voice to your ideas.

Find out what millions of musicians already know–when that moment of inspiration arrives, we're here to help you give it full expression.

You supply the inspiration. We'll supply the gear.

Musician's Friend
The World's Largest Music Gear Company

For Your FREE Catalogs
800-436-6976 • musiciansfriend.com/free
Source Code: EMEF

- Lowest Price Guarantee • Satisfaction Guarantee
- Free Shipping on Most Orders over $199* • Call or Click 24/7
- Huge Inventory of In-Stock Gear Ready for Immediate Delivery

Limited to stock on hand; prices subject to change; standard catalog shipping rates apply.
*Some exceptions apply, call or go online for details; limited time only.

meatier filter modulation than the Arturia version, although the range of timbres and amount of modulation control offered by the virtual instrument were impressive.

The Strings 1 and 2 presets for the virtual instrument didn't sound very close to those of the real instrument, but layering Strings 3 and 4 produced a better match after some filter tweaking. The low end of the real CS-80 had more of a core to the sound, but both instruments achieved the thick, sinewy texture that one would expect from a brass patch, despite the name. The panel heard a bit more "Aftertouch" in the virtual instrument, along with "a lot more of that traditional analog fuzz."

FIG. 8: Korg's virtual Wavestation, another part of the Legacy Collection, matched up extremely well with its namesake due to the digital nature of the waveforms.

Next up was the Flute patch, which exists only on Part I, so I mixed Part II out completely. The Arturia version of that patch was respectably flutelike, whereas the Yamaha version was more nasal and variable over the course of a phrase—an interesting but pretty strident effect, and less like a real flute.

There are two pairs of Funky presets on the CS-80, and both made for interesting comparisons. Funky 3 and 4 use a big, slow filter sweep that made for a dynamic fanfare. The real instrument again sounded a bit fuller on the bottom end, but the virtual achieved a more intense edge at the peak of the filter sweep, teetering on the brink of self-oscillation.

Funky 1 and 2 sounded like a bass line to me, so that's what I played. The Arturia had a nice touch wah sort of attack that wasn't present in the Yamaha, whereas the Yamaha almost sounded as though it had a subharmonic generator fattening the bottom end. Once again we turned to Hagerman, our resident bassist, who said, "Personally, I prefer the [Arturia], but based upon any given project's needs, I might choose either."

The final test of the CS-80 was an equal layering of Organ 1 with Organ 2, and the results were in line with the previous examples. The Arturia CS-80V was easily distinguished from the Yamaha CS-80 by its clarity and evenness. Nevertheless, all of the things that are interesting about the original—richness and variety of sound coupled with impressive modulation possibilities—are present in the emulation. Its additional modulation matrix, effects, and layering capabilities make it even more distinct from the original.

Meet the Golden Ears

Andrew Hagerman (www.singularityarts.com) is a bass player, composer, and author of *Pro Tools LE 6 Ignite!* (Muska & Lipman, 2003) and *Digital Music Making for Teens* (Muska & Lipman, 2004). He also coordinates Pro Tools training in the Asia-Pacific region for Digidesign Japan.

Lee Riley is a Pro Tools engineer, keyboard player/programmer, and film composer who has recently been involved in post-production stereo and surround-sound mixing. He is an associate course director of advanced audio workstations at Full Sail Real World Education.

Engineer, producer, and synthesizer authority Joseph Rivers operates the Audio Playground studio and its world-famous Synthesizer Museum. He has also worked as a consultant and sound designer for major synthesizer manufacturers.

Trumpeter Sam Zambito (www.samzam.com) is one of the first and most prominent proponents of Nyle Steiner's Electronic Valve Instrument. He has done sound design and programming for the likes of Michael Brecker and Bob Mintzer.

Korg Wavestation

The Wavestation (see Fig. 8) made for a particularly interesting comparison, pitting two digital devices against each other. Unsurprisingly, that made for some of the most perfect matches of the entire session. Still, some patches sounded different from real to virtual instrument.

The real instrument was the rackmount version, the Wavestation A/D, which slightly predates the Wavestation SR modeled in the Legacy Collection. The A/D's joystick controller, used to control the Wavestation's Advanced Vector Synthesis, is quite small, giving the neKo 64's touch screen or even a regular mouse a bit of an advantage for subtle timbral control. It was also convenient on the virtual instrument to be able to Ctrl + click to center the control or double-click on a corner to jump to that spot.

I paired up the first wave sequence that caught my ear, called The Wave Song. It was nearly impossible to

Hear the Difference

Version 1.6 Software now available! Includes E-MU Power FX hardware-accelerated VST effects

All audio interfaces are not created equal. Your microphones, outboard gear and software all affect your sound, but you ultimately depend on your audio interface to translate your music between the analog and digital realms with the greatest accuracy possible. E-MU's Digital Audio Systems have caused shockwaves in the music industry by offering converters and audio performance previously only found in the world's most expensive systems (the same converters as the premium ProTools HD192 Interface costing thousands of dollars) – at a fraction of the cost.

And that's just the half of it. E-MU's Digital Audio Systems also provide you with hardware-accelerated VST plug-ins (over 600 presets) and zero-latency monitoring for spot-on timing. Best of all, E-MU's Digital Audio Systems work with all of your favorite audio and sequencing programs from Steinberg, Cakewalk, and more. Hear for yourself why E-MU's Digital Audio Systems have won accolades from customers and press around the world.

The difference is clear.

$499.99*

$399.99*

$199.99*

192 kHz Drivers
free download now available at
www.emu.com

$99.99*

MUSIC RUN

computer music PERFORMANCE

computer music VALUE

CREATIVE PROFESSIONAL

24-bit/192kHz

Works with Windows 2000 & XP

POWER FX Hardware Accelerated VST Effects

E-MU

*Estimated Street Price

©2004 E-MU is a registered trademark of E-MU Systems, Inc. in the US and other countries. All other brand names are the property of their respective owners.

www.emu.com

Toll-free
877.742.6084

hear any difference between the real and virtual versions. Being a decade or so newer than most of the other synths that we heard and not being dependent on lots of knobs and sliders to create its sounds, the Wavestation produced the best emulation right from the start. Riley commented, "Wow, this is a toughie. These two samples are pretty much identical." There was no issue of excessively noisy output or oscillator drift, and the digital nature of the PCM waveforms and the patch information gave us a true apples-to-apples comparison.

Contact Information

Arturia, www.arturia.com
Muon, www.muon-software.com
Korg, www.korg.com
Way Out Ware, www.wayoutware.com

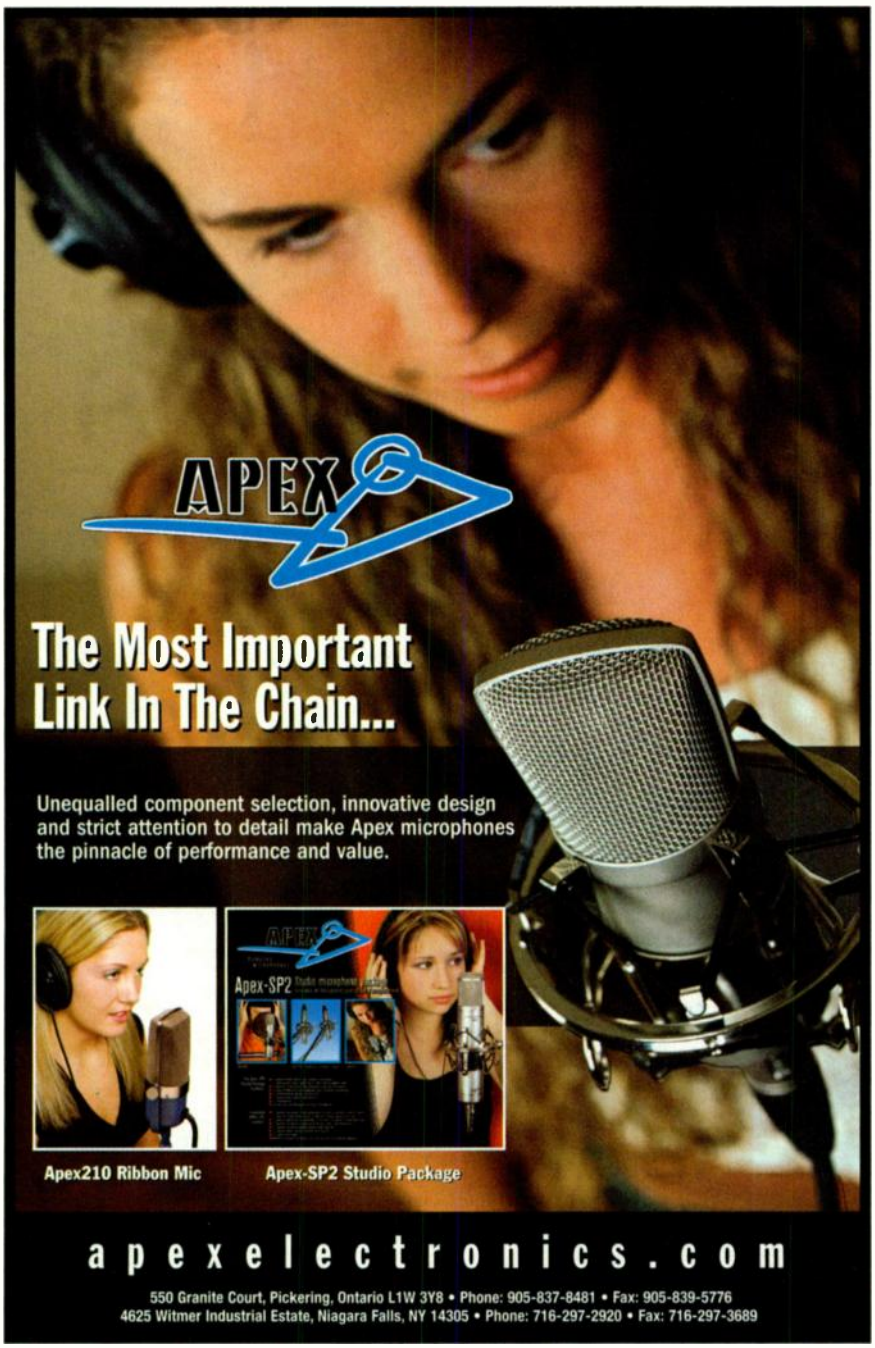
The second wave sequence, Deep Atmosphere, exhibited some subtle differences between real and virtual. The fundamental pitch seemed to blossom a bit more fully in the soft synth, and the wind noise was a bit more interesting. After a bit of hedging over the differences, however, we concluded "that any differences between the two are almost not worth mentioning."

On the third wave sequence, Sting Waves, the Legacy Collection's virtual Wavestation had a heavier metallic component, and its character was more dynamic right from the start of the note. Hagerman described it as "more intricate [with] a lot of internal detail and motion to it—definitely a more interesting sound." The real Wavestation was a bit mellower and delayed the onset of modulation slightly. The character of the soft synth excited our memories of how these synths sounded to us back when they were new, with Riley declaring, "It has that typical Korg 1990s M1, pre-Triton aura about it."

Next up was a searing lead sound called Mini Lead. Moving the vector controller changed the timbre by rebalancing the oscillators, which added life to the melodic line that I played. On the final note, I attempted a feedback-guitar effect, which was more effective on the real instrument than it was on the virtual one. The virtual instrument, however, had a percussive attack that wasn't present in the original, much like the attack that the virtual MS-20 sometimes exhibited. In Hagerman's estimation, it seemed to have "greater sensitivity to Velocity."

Guardians is a hybrid between glockenspiel, electric piano, and subtle angel voices, with an arpeggiated burbling sound overlaid. The hardware and software versions were almost identical, but the software burbling was a tiny bit more pronounced. Whether that is a good thing or a bad thing would depend entirely on the context.

When I heard Song Bells, I couldn't resist stacking fourths in tribute to a classic sci-fi theme. The virtual and real stars fell back into alignment, with the two instruments matching very closely. After demanding semiseriously, "Come on, these are both the same synth, right?", the panel observed "a bit more definition to the attack" in the virtual version.



To Emulate or Not

Make no mistake—our strong consensus was that the makers of the virtual instruments deserve our respect for the quality of the emulations and our thanks for giving us great sounds with the convenience of software. Still, all things being equal, in several cases there were still reasons to prefer the hardware for pure sonic quality. For example, in discussing the MS-20, Hagerman noted a certain "it" factor that distinguished the vintage instrument from its emulation. It's difficult to be less vague about the distinction, but we all heard it.

Musicians have had this sort of debate since before synthesizers ruled the earth. How many violin makers have tried unsuccessfully to copy a Stradivarius? Nothing else sounds the same, no matter what we try. But then, as age and accident take their toll, there are fewer and fewer such antiques available, and musicians must have instruments they can play.

For that matter, how much does a Stradivarius sound like it did when it was made? How much does one Minimoog sound like another? The vintage Minimoog and the Voyager are cut from the same cloth, but they didn't sound identical. The virtual versions generally came as close to their namesakes as the Minimoogs were to each other, and sometimes closer.

Software emulations keep getting better, and the vintage instruments they model keep getting older. Like the paleobiologists in *Jurassic Park*, manufacturers search for the essence of what made the great old synthesizers so great and then do their best to reproduce that in living, breathing instruments.

At the risk of kicking a good metaphor too hard, consider that the reproduced dinosaurs in the movie picked up where their ancestors left off and started evolving and adapting to their new surroundings. Our assembled brain trust found that aspect of the emulations most fascinating. Sure, we can do a good job of capturing the classics in a more convenient format, but where do we go from there? It turns out that we can go quite far, as became evident from all the evolved features I had to defeat to do fair comparisons. Eight-layer multis of a CS-80? 32-voice polyphony (or unison) from a Minimoog? To our panel of experts, that sounded like the basis for a new generation of classics. EM

EM WEB CLIPS

Brian Smithers is course director of Advanced Audio Workstations at Full Sail Real World Education and is the author of SONAR 4 Ignite! *(Muska & Lipman, 2004).*
Special thanks to Andy Hagerman, Sam Zambito, Lee Riley, and Joseph Rivers for their invaluable assistance.

FireWire

BIT 24192 kHz

X

PC COMPATIBLE

PLUG INS

Hardware-powered Software

Saffire combines state-of-the-art hardware with advanced integrated software control and hardware-powered plug-ins, taking you one giant step closer to the professional studio experience.

Focusrite

Saffire

Professional Mobile Firewire Audio Interface

ENGINEER BUILT-IN

One-click recording solutions guarantee uninterrupted creative flow

Hardware-powered Plug-ins for tracking: EQ, Compression, Reverb and Amp Modeling – Zero impact on your CPU

SaffireControl: The most comprehensive yet intuitive Input/Ouput control software to date

Saffire Plug-in Suite: VST and AU format (PC and Mac) plug-ins also included for use in the mix

Cubase LE: Includes Steinberg's award-winning Multi-Track recording/sequencing software

PLUGS IN

Software-powered Hardware

Four inputs and ten outputs (including stereo digital I/O up to 192kHz) with unrivalled monitoring options, ensure you have all that's required to easily navigate through a recording session.

Firewire: The ultimate audio/power interface guarantees true mobility and seamless audio communication

Two Focusrite Pre Amps: Class-leading pre amp quality from one of the most prestigious names in music recording

Multiple Outputs: Up to five unique stereo monitor mixes simultaneously

MIDI I/O:
MIDI in, MIDI out and MIDI Thru

2 independent headphones outputs: Providing two artists with two unique cue mixes

$399
MAP

Focusrite®

Take the Saffire tour at **www.focusrite.com/saffire**
or call AM&S toll free 866-FOCUSRITE

Great Ideas!
The Right Price!

SM PRO AUDIO

www.SMPROAUDIO.com

M-Patch

*$99

Now you can easily control your active monitors volume level directly from your desktop! A/B from two different inputs with separate volume controls, have 2 sets of speakers plugged in, MUTE, MONO/STEREO switch and a host of other features which will make monitoring your work and patching your speakers as simple as pressing a button! High tensile steal construction with included rack mount adaptors for 19" racks.
An affordable high-quality problem solver for mixerless DAW and nonlinear video production environments.

PR8

*$99

Get 8 channels of Balanced XLR Mic inputs into your recording system! Perfect for Vocals, Drums, Brass and any other multiple microphone setup where extra pre-amps are needed. An ideal solution for your multi I/O sound card and HD recording system. With a full range of gain control from -20dB to +40dB and Phantom power for every channel this single rack unit can now solve many of the connectivity issues which are raised in a large range of situations, whether in the Studio, home, club installation or other live sound applications. Enjoyed by thousands in the US!

PR8 MK2

*$199

Optional Adat Output *$99

The PR8MKII is a 2U 19" rack-mount preamplifier with a brand new design utilizing features never before possible at this price range! With eight discrete high-quality microphone preamps, Detented gain control, Combo connectors, Separate switches with LED indicators for Phase and Phantom, Insert points on every channel, XLR balanced and 1/4" Unbalanced outputs and with the addition of an optional ADAT™ light pipe output, the SM PR8 MKII seamlessly fits into many digital audio workstation configurations.

TB202

*$249

TB101 Single Channel Version *$149

The TB202 valve (12AX7) mic pre-amp is a twin channel valve mic preamplifier that features independent switchable phantom power, phase reverse, -20dB Pad, optical compressor, and fully functional EQ all housed together in a single 1U rack mount chassis. With a warm valve sound and the addition of an Optical Compressor the TB202 is a tool for those who want that SPECIAL sound this type of equipment can produce. With XLR inputs and 1/4" Inputs the unit can be used with microphones or instruments without the need for adaptors.

OC8

*$499

The Amazing OC8 is a rack-mount optical compressor. With eight discrete high-quality optical compressors. Optical compressors are sought after for the distinctive musicality they give to vocals, guitars and other instruments. The OC8 's adjustable ratio, attack, release and output controls are calibrated to generate a distinctive soft, rich character while providing magnificent control over dynamics. Fantastic for use as inserts on your multi-channel recording or live tracks.

PR4 value *$79

4 Channel Mic Preamp

HP4 value *$79

4 Channel Headphone Amp

DI8 *$99

8 Channel DI/MIXER

IN5 *$199

Multi IO Interface

Available at:

zZounds.com

Musician's Friend
www.musiciansfriend.com

www.americanmusical.com

Music123.com

Distributed by

KAYSOUND
www.Kaysound.com

*Estimated Selling Price

All specifications are subject to change without prior notice.

ED COLVER

Garage of Dreams

By Maureen Droney

Producer and engineer Tony Shepperd constructs his ultimate personal studio.

There's an old Los Angeles joke that goes like this: "What's the fastest way to the Valley?" The answer: "Marry a musician!" The joke refers to the San Fernando Valley—the area of Los Angeles over the hill from Hollywood, Beverly Hills, and Santa Monica that was made famous by Frank and Moon Unit Zappa's 1982 single, "Valley Girl."

The Valley has always been relatively affordable by Los Angeles standards and, as a result, is home to numerous musicians, producers, and engineers. It often seems as though every Valley home has a recording studio of some kind. Although there are a lot of personal studios in the Valley, Tony Shepperd's Tonysound has been referred to as one of the top ten home studios—not just in the Valley, but in all of Los Angeles.

Tonysound, like so many other L.A. studios, is located inside a converted garage. It's the fourth studio Shepperd has owned, and this time around he decided to make it as close to perfect as possible. He designed and helped build the studio, and the result has been a huge success—so much so that Shepperd is now in demand as a studio consultant and designer.

Shepperd's bread and butter, though, is his work as an engineer, a mixer, and a producer. His credits include superstars such as Take 6, the Backstreet Boys, Whitney Houston, and Kenny Loggins. He's also recorded commercials for Coca Cola, spots for the NBC Olympics with Neil Diamond and Melissa Etheridge, the Take 6 CD-ROM for Kurzweil (see Fig. 1), and the Yamaha C7 piano portion of the *Synthogy Ivory* sound library.

A music-business professional for almost 20 years, Shepperd is one of the most personable, practical, and adaptable people you'll meet. I had a chance to speak with him about the design and construction of his studio, the gear he's using, his work style, and more.

What were your goals in building this studio?

I have four kids. As an engineer, I was spending 13 to 15 hours a day away from home. With this studio, I can do almost all my projects here at home, where I can see my family at breakfast and dinner. That was the main goal. Beyond that, I wanted a room that was sonically accurate. I wanted a place where clients would be comfortable and where they could feel confident that the music they created sounded great—not just here, but anywhere they listened to it. That's something that definitely doesn't happen in a lot of studios.

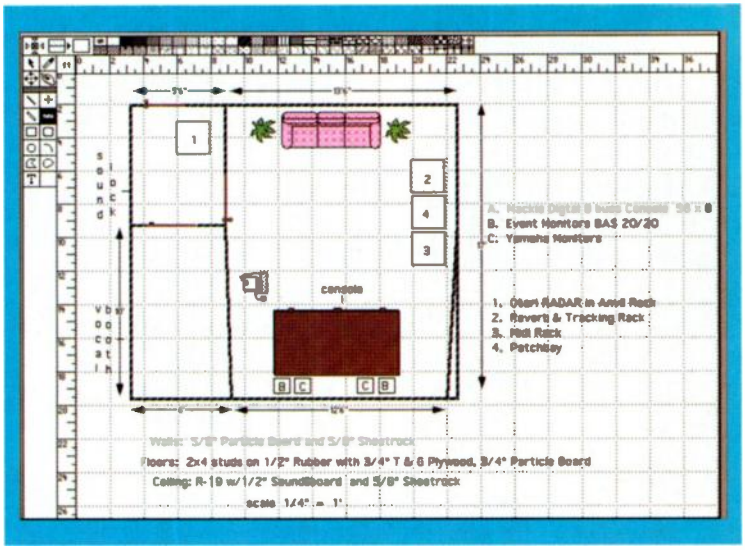


FIG. 2: Shepperd used an old Mac OS 9 interior-design program called Interiors 2.02 (Abracadata, Ltd.) to help configure the layout of Tonysound. This Interiors 2.02 screen shot shows the final plan that he ended up using.

Can you describe the studio for someone who hasn't seen it?

[Laughs] It's been described as a bat cave. It's a room within a room, based on a typical A-frame garage. It has high ceilings, the walls are covered in a fabric that feels like Ultrasuede, the colors are muted, and there are no windows. Some people like natural light in a studio, but I think it's distracting. For me, it's an advantage to have an environment that stays the same all the time. People can drive themselves crazy looking out the window thinking: "The day is going by, we've got to go!" I find it easier to concentrate, chill out, and let the music happen in a controlled environment where I can work until it sounds right without worrying about the time.

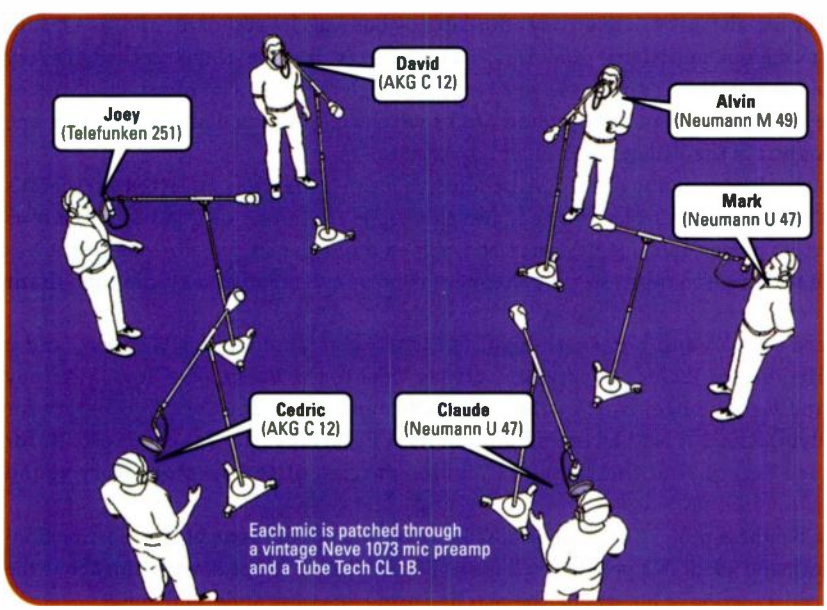


FIG. 1: Shepperd, who has engineered several Take 6 CDs, used the below configuration when recording the group for the Take 6 CD-ROM for Kurzweil at Emerald Studios in Nashville.

The ceilings are high and there are no parallel walls, although that's not immediately apparent because the angles are very slight. How did you work out the acoustic specifications?

I went for high ceilings because I don't like low compression-style studio ceilings. For one thing, I'm six foot one and I don't like feeling closed in! But also, I just don't like the sound that low ceilings produce. I like to have some air around me rather than surfaces that provide reflections. In my control room, the ceiling is 14 feet. In the iso room, the highest point is 10 feet.

I worked out all the specifications myself. It's the fourth studio I've built, so I've learned by doing. I've also been a connoisseur of other people's studios, so I know what works and what doesn't. And I've read a lot. One of the most useful books around is an old one, from the early '80s, by Jeff Cooper, called *Building a Recording Studio* [Artistpro.com, 1984]. It has all the fundamentals: things like STC [sound-transmission class] ratings, which is something I pay a lot of attention to.

If you have half an inch of Sheetrock between you and the other side of the wall, you'll have a poor STC rating. If you have two-by-fours with insulation, Sheetrock, and soundboard, you'll have a much higher STC rating. The higher the rating, the less sound transmission you have [through the wall]. Most home studios have only half-inch Sheetrock on the wall; if you tap on the wall, you'll hear it on the other side. That's an STC rating of 30 to 35, which is equivalent to the amount of decibels that it takes to penetrate the wall. If you add thicker materials, you

Look and sound like a million bucks. Pay only $990.

DISC MAKERS® CD AND DVD MANUFACTURING MADE EASY

Now get 1,000 CDs in full-color jackets for the remarkable price of

$990

This complete package includes our award-winning, three-color on-disc printing, and full-color jackets with high-gloss UV coating.

1,000 CDs in jackets for only $990.

You'll be thrilled with how incredible your CDs look and sound when you choose Disc Makers. You get 1,000 CDs in full-color jackets for the remarkable price of only $990. And you get them super quick. Complete your package by adding our affordable award-winning graphic design, mastering services, and promotional resources such as posters and postcards.

MUSIC FILM BUSINESS DO-IT-YOURSELF

GET OUR FREE FACTORY-DIRECT CATALOG

1-866-294-9013 • www.discmakers.com/em

FIG 4: Shepperd considers his Apogee Big Ben Digital Master Clock to be the most important piece of gear in his studio. He says that syncing his digital devices to it noticeably improves sound quality, especially for his digital reverbs.

can get the STC rating as high as 50 or 55. You want to raise that class as much as you can.

And the reason you want to raise that class is two-fold: to keep unwanted sound out of your studio and to keep the sound that you do want inside, away from your neighbors.

Exactly. You can just about blow your head off with volume in my control room, but [if you're standing] six feet away from the front of the garage you won't hear anything. I have double walls with ⅝-inch Sheetrock, half-inch soundboard and insulation on each layer of the wall, and a dead space air gap between the wall. Not everybody can do that, of course, but you do want to add as much mass as you can to the wall.

Did you do a lot of the construction yourself?

No *[laughs]*, ⅝-inch Sheetrock is really heavy! The guys who did the construction for me are animals, and they worked fast. Since all the plans were basically in my head, I had to be here all the time during the construction of the studio. I used a program called Interiors 2.02 (see **Fig. 2**) to organize my design ideas, but I had to physically lay out every wall with two-by-fours. I'd say, "Cut it at this angle, lay it on the floor, and let's look at it." Then they'd cut it, and I'd say, "Okay, it needs to go about two inches to the right."

FIG. 3: This photo of one of the racks at Tonysound shows several of Shepperd's favorite pieces of outboard gear. Top to bottom: two Brent Averill (Neve) 1073 Class A Equalizer/Preamp Modules, an Aphex 1100 mic pre, and a Tube Tech CL 1B compressor.

MAUREEN DRONEY

What are the wall treatments?

I was going to use [Owens Corning] 703 fiberglass, which is a standard acoustic treatment. But when I brought in a bunch and put it up, it sounded too dead. Instead, I found some fabric that's soft yet a bit more reflective. Behind it is padded material, like you would find in a couch. There's no padding in the ceiling, the front wall is wood, four-by-eight-foot sheets of stained oak. The floor is wood, and there's a wood panel in the back.

What did you do to the floor?

It has a sub floor. The floor is floated on half-inch neoprene, then on green plate—the technical term for it is pressure-treated sill plate; you'd know it if you saw it at Home Depot. It's treated wood that won't rot. Then there's ¾-inch particleboard, ¾-inch tongue-and-groove plywood, then the finished floor. The walls float from the floor, and the ceiling floats from the walls. In the control room, there's also sand in the floor, in between the studs, which provides very dense insulation. But in the iso, there's no sand in the floor. It's more hollow because when I have a drum kit in the iso, I want the kick to have some resonance from the floor. You need to know your purposes, then you think about the sonics. If you have the right materials in the room, it aids the sound.

Do you record a lot of instruments in the control room?

I don't, not a lot of live instruments anyway. If they're in the control room, most of the time they're playing direct.

So the acoustics of the control room were designed more for listening than for recording.

Yes. If it's a live instrument—drums, horns, acoustic guitar—it's in the iso room. The actual size of the iso is 6 × 6½ × 10 feet, and it varies from 10 feet high at the very top to 8 feet at its lowest. With room mics way up in the corner, it can sound like a much bigger room.

How do you mic drums in here?

Generally, I use a [Sennheiser] 421 on the kick and a Shure SM57 on the snare top. I don't do top and bottom on the snare in that room because of phase issues. I use the Marshall 600 series on the hi-hat and 421s on the toms. My overheads are CADs, which are really good yet inexpensive microphones. The floors in there are wood. For percussion I take out the rug, but for drums we'll have the kit on carpet.

THE PERFECT PAIR

Combine a Sweetwater Creation Station and Sony Sound Forge 8 for *Unsurpassed Audio Power*

Sweetwater Creation Station Series: Strong but Silent

No computer on the planet is a better match for Sound Forge® software than a Sweetwater Creation Station. Built from the ground up for recording studio applications, Creation Station computers are whisper-quiet and optimized for use with the most powerful audio applications available, from Sound Forge software and ACID® software to the latest multitrack DAWs, software synths and samplers. Sweetwater can even install all of the necessary hardware and software to create a custom turnkey audio solution.

A Creation Station PC offers:

- CPUs, motherboards, and chipsets selected by computer audio experts
- "Whisper Quiet" certification by Auralex
- Dual Glyph SATA hard drives
- Two FireWire, seven USB ports
- Up to five unoccupied PCI slots with card clips for extra reliability
- 7-in-1 media/memory card reader
- SweetCare™ Remote - Future Support Now!
- Rack, tower, and cube models available
- Certified by Digidesign, MOTU, Tascam and others

Sony Sound Forge 8: Pristine Audio Power

When Sweetwater customers are looking for a powerful, flexible, professional PC audio editing solution, they turn to Sound Forge software. For over a decade, Sound Forge software has been the tool of choice for serious audio editing. Combined with a super-powered Sweetwater Creation Station, Sound Forge 8 software has everything you need to record, edit, analyze, process, and master audio, and to burn your final files to compact disc.

Sound Forge 8 offers:

- VST plug-in support
- ACID loop creation tools
- ASIO driver support
- 24-bit/32-bit 192kHz support for pristine audio quality
- Audio restoration tools
- Application scripting
- Extensive video support
- Batch conversion
- Includes CD Architect™ 5.2 software free of charge!

Find out more about Sound Forge and Creation Station audio PCs at

www.sweetwater.com/perfectpair

All trademarks are property of their respective holders.

CALL SWEETWATER TODAY!

(800) 222-4700

www.sweetwater.com

Sweetwater
music technology direct™

When you worked with Kenny Loggins, you recorded a lot of acoustic guitar. How do you like to do that?

On acoustic guitar, especially on a rhythm track, the Marshall 603 works great. I used them on two acoustic guitarists on the track "Little Drummer Boy" for Whitney Houston's Christmas record. It was Paul Jackson Jr. on steel string, and Dean Parks on nylon. We used the Marshalls on both of them, with a Focusrite Red Series mic preamp and a dbx 160X compressor. We wanted them to sound similar, even though they had different strings, and it worked great. They're really naked and exposed at the front of the song, and they sound great.

You've got some expensive mics; do you generally use them on vocals?

I do. I have a Sony C800G and an AKG C12 VR. I have high-end microphones, and I believe in them. I want to buy more. But it doesn't stop me from doing great recordings with less expensive mics as well.

I think it's more important to have a great mic preamp than a great mic. That's where you should spend your money. People don't seem to get that. If you've got an [Electro-Voice] RE20 or a [Sennheiser] 421, which are great inexpensive mics, and if you run them through a Neve or an API, they'll sound terrific. If you run them through a piece-of-junk mic pre, they will sound like junk.

There are a lot of relatively inexpensive microphones out there now. The [Audio-Technica] AT 4033/CL is great, and it's only $300. We used that a lot on Kenny Loggins's record. We also used the Marshall MXL-603 microphone on his acoustic guitar. You can get a recording pack of two separate Marshall mics for $110. That's an amazing deal. The CAD mics I use cost $400 or $500. You can have a selection of different-toned, inexpensive mics, and if you put them through something good at the front end, they'll sound great.

SELECTED DISCOGRAPHY

Backstreet Boys, *Never Gone* (Jive, 2005); recorded

Whitney Houston, *One Wish: The Holiday Album* (Arista, 2003); recorded and mixed

Kenny Loggins, *It's About Time,* (All the Best, 2003); recorded and mixed

Lionel Richie, "Ball and Chain," from *Just for You* (Island/Def Jam, 2004); recorded

Ruben Studdard, selected cuts from *I Need an Angel* (J Records, 2004); recorded and mixed

Take 6, *Join the Band* (Warner Brothers, 1994); recorded

Vintage Neve mic pres are rare and pricey. What else do you like?

The Aphex 1100 [Thermionics Class A tube mic pre]. It has its own 24-bit A/D converters. It's got a mute button, a built-in mic limiter, and phantom power. It generates tone so you can check your signal flow. It also has polarity, a pad, and a low-cut filter. It's an amazing value. It's sonically great, and it has two channels—all for $1,800. It's a wonderful tool.

ED COLVER

Building Tonysound helped Shepperd get more work as a producer/engineer and as a studio designer.

The API, which is a one rackspace unit with four mic pres, is very cool. There's no EQ, but I'd rather have a great single-purpose mic pre than have one with EQ. Unless you know what you're doing with EQ, don't mess around with it. Keep the signal clean.

In general, you should get quality pieces that will last you. You want something that you'll be able to keep for a while so you can really get to know it.

How about compressors?

I love my [Tube Tech] CL 1B; it's a great tube compressor (see **Fig. 3**).

What are the most important pieces of equipment in your studio?

My [Apogee] Big Ben master clock (see **Fig. 4**) and my power backup, which has 30-minute backup time.

Why the Big Ben?

It's one of my biggest assets. For one thing, it makes reverbs sound so much better. You can hear the tail end on them like you've never heard it before. I've discovered that, by using a $1,200 clock, you can make any decent reverb sound like a $12,000 one. I use Reverb 1 a lot—the one that comes with Pro Tools. With the Big Ben clock, you hear it trail off and ease out of the picture instead of cutting off and truncating. It sounds so much better.

What else do you do to maximize your Pro Tools system?

Instead of routing all the tracks to output 1 and 2, I route all of the outputs to bus 31 and 32. Then I assign a new stereo audio track with an input of 31 and 32, and

BAND-IN-A-BOX®

Program for Windows® & Macintosh®

2005 FOR WINDOWS® IS HERE!

Electronic Musician EDITORS' CHOICE

Attention Macintosh Users Band in a Box 12 for OSX is HERE!

INTELLIGENT MUSIC SOFTWARE FOR YOUR PC OR MAC® IS HERE!

Band-in-a Box 2005 for Windows® is here—Automatic Accompaniment has arrived!

The award-winning Band-in-a-Box is so easy to use! Just type in the chords for any song using standard chord symbols (like C, Fm7 or C13b9), choose the style you'd like, and Band-in-a-Box does the rest... automatically generating a complete professional quality five instrument arrangement of piano, bass, drums, guitar and strings in a wide variety of popular styles.

NEW FEATURES IN BAND-IN-A-BOX 2005 FOR WINDOWS®

There's a new fully-featured **Piano Roll Window,** similar to the type found in many sequencer programs. This allows you to edit the Melody or Soloist tracks with greater ease and precision.

The Guitar window is enhanced, and now supports **Alternate Guitar tunings,** including DADGAD, Drop D, Double Drop D, Open G and 11 others, including Nashville High Strung tunings! Guitar bends now show up in real-time on the guitar fretboard.

New 3, 4, and 5-part Jazz Harmonies are added with voicing in Fourths.

"Auto Endings" are added for styles that don't have endings, such as styles made from MIDI files. **Synthesizer Patch file lists** (.PAT files) can now be made easily by converting PowerTracks or Cakewalk patch lists.

"Jazz Chord-Symbol Graphics" (triangles for major, circles for diminished and a circle with a slash for half-diminished) are now supported. A new **"Vocal Wizard"** displays and transposes to the best song keys for your vocal range.

Editing of the Audio Track is now **non-destructive**, so changes only become permanent if you save the file. The TC-Helicon Audio Harmonies have been enhanced with **Vocal Pitch-Styles** (automatic "Vibrato" and "Scooping") that can be added to the vocal harmony parts. **Multiple sound cards are supported**—you can now choose which sound card to use. **Full Stereo or Mono support** has been added for the Audio Track. There are now on-screen **VU meters** to monitor the Audio Track.

"...one of the few music products that sits in the 'must-have' category." Sound On Sound

"...repeatedly surprises and delights you." PC Magazine

Multiple lines of Lyrics are now supported on the Fake sheet and Printout. Chords and Lyrics can be displayed on separate lines on the Big Lyrics Window. A new **Play-Loop feature** allows you to select an area and play it in a repeated loop.

The SongPicker can display in subfolders, and you can add styles to the StylePicker. Karaoke files (.KAR) can now be read directly, including lyrics and analysis of chord symbols... **and much more.**

NEW! Styles Sets for Band-in-a-Box... only $29 (each)

NEW! Styles Set 44: Unplugged 2... only $29
Styles Set 44 includes twenty new styles featuring acoustic and electric guitars.

NEW! Styles Set 45: Southern Rock... only $29
This great new set features 20 brand new Styles based on the feels of the great Southern-Rock bands such as SteveE, Alab, LynrydS, AllmBro, Creedence, LosLob, LFeat, and more.

NEW! Styles Set 46: Requested 4... only $29
This set features more great styles suggested by our customers along with new fretboard styles that take advantage of the new Fretboard Tunings available with Band-in-a-Box 2005.

NEW! Styles Set 47: Contemporary Country 2... only $29
Features 20 great new crossover styles with live drums, live MIDI guitar, driving bass, and contemporary keyboard sounds. Includes: Country, Folk, Gospel, Soul, R&B and more.

"an incredible program" Jazz Education Journal

"4-Star Rating" MacWorld

"Editor's Choice" Electronic Musician

"Technical Excellence Finalist" PC Magazine

NEW! Soloist Sets for Band-in-a-Box... only $29 (each)

NEW! Soloist Set 16: Saxophone... only $29
Create an unlimited number of Swing and Modern solos specifically for the nuances of the saxophone.

NEW! Soloist Set 17: Trombone... only $29
Older Swing and Modern trombone soloing. Instantly generate a Trombone solo in the style of the 30s and 40s players or choose a contemporary Jazz approach with some inside-outside playing.

BAND-IN-A-BOX PACKAGES...

***Band-in-a-Box Pro* ONLY $88**
The latest version of Band-in-a-Box, includes 150 Styles, Soloist Set 1, and Melodist Set 1.

SPECIAL VALUE PAKS...

***Band-in-a-Box MegaPAK* ONLY $249**
This is "the works," a premium value Band-in-a-Box package!
Includes the latest version of Band-in-a-Box **PLUS** Styles Sets 0–47, Soloist Sets 1–11, 16 & 17, Melodist Sets 1–5, and The Band-in-a-Box Video Tutorial PAK.

Video Guitar Lessons—"PLAY LIKE THE PROS"... only $19 (each)

Each volume of this series features hours of video instruction by master guitarists. Each program includes on-screen video guitar fretboard, transcribed notation, tab and complete printout. Lessons include riffs, songs, tips, techniques and guitar settings—everything you need to learn to play like the pros.

- ✔ **NEW! Essential Blues Guitar Vol. 1: 101 Riffs** 5 hrs. video
- ✔ **NEW! Essential Blues Guitar Vol. 2: 20 Tunes** 2 hrs. video
- ✔ **NEW! Essential Rock Guitar Vol. 1: 101 Riffs** 5 hrs. video
- ✔ **NEW! Essential Rock Guitar Vol. 2: 20 Tunes** 2 hrs. video
- ✔ **NEW! Essential Jazz Guitar Vol. 3: 20 Tunes (Comping)** 2 hrs. video

Other Add-ons for Band-in-a-Box

- ✔ **Styles Set 4–43: Various** ..... only $29 (each)
- ✔ **Soloist Sets 2–11** ..... only $29 (each)
- ✔ **"Artist" Soloist Sets** ..... only $29 (each)
- ✔ **Melodist Sets 2 & 3** ..... only $29 (each)
- ✔ **NEW! Video Guitar Lesson Series: Various** ..... only $19 (each)
- ✔ **101 Essential Phrases for Band-in-a-Box: Various** ..... only $19
- ✔ **Band-in-a-Box Video Tutorial PAK** ..... only $29

Features listed are for Windows® version. Macintosh® users: for a full list of features, please visit **www.pgmusic.com/band.htm**

PG music

PG Music Inc. • www.pgmusic.com

29 Cadillac Ave.,Victoria, BC V8Z 1T3 CANADA
Phone (250) 475-2874 • (800) 268-6272
(888) PG MUSIC
www.pgmusic.com • sales@pgmusic.com
Fax (250) 475-2937 • (888) 475-1444

DOWNLOAD IT NOW !!!

an output of the analog out 1 and 2. Instead of bouncing to disk, I then record to disk. Because of the superior sonics of the internal structure of Pro Tools, I actually like the sound of it better.

You have your workstation off to the side of the room, instead of in the middle of the speakers.

I use a Gefen Extend system, which is basically an amplification system. On the one end I plug in my Mac, and it pumps up the USB for the keyboard, the video, and the mouse, allowing it to run on an Ethernet cable, 60 to 70 feet if I want, off of a single Cat-5 cable. That way, I have anything that makes noise in my entryway behind a door, instead of in the control room. I also use it like an umbilical cord in the control room. If I'm mixing, I roll my keyboard to the middle of the room. But when the producer comes in, I just slide off to the side, and he sits in the sweet spot.

What do you monitor on, and why?

Yamaha NS10s without a subwoofer. But some producers want to hear a lot more bottom, so I also have Yamaha MSP10s, with a Yamaha SW10 powered subwoofer. At the end of the night, if I'm getting tired, I crank that up. When that bottom hits you're definitely fully awake.

"I think it's more important to have a great mic preamp than a great mic."

Working out of your home can be isolating. And, you work a lot. Your time is at a premium. How do you keep up with new products and technologies?

There's a group of people that I get together with—engineers, producers, and artists—at least once a month for what we call tech breakfasts. There are anywhere from 10 to 20 people, and we just talk tech. The sense of community that you get from working at commercial studios is gone now, for most people. I can count on both hands the amount of commercial studios I've been in in the past year and still have some digits left over, so getting together specifically to talk tech fills a need.

Give us an idea of a how a typical project works for you these days.

Lately, a large amount of what I do is mixing. For example, I got a call the other day from Eric Dawkins, who was producing Ruben Studdard from *American Idol*. I was at lunch when I answered the phone, and he told me he had two songs that needed mixing. They absolutely had to be done that day, but he said rough mixes would be fine.

Since he was working at a studio near where I was having lunch, I went over and picked up a DVD of the two songs. I started mixing; he came by around 9 p.m. to check the mixes out. After he left, I finished them up and put them up in AIFF format on [Apple] iDisk, where I have a gigabyte of storage. I gave him my password. The next morning he downloaded the mixes, checked them out, then sent them on to Clive Davis at J Records who was waiting to hear them.

I didn't hear back from him for almost two weeks, so I gave him a call and said, "Whatever happened to those mixes—do we need to tweak them?" And he said, "Oh, one of them is going on the record." I was surprised that we didn't need to change anything. It went straight to mastering for the record.

As it turned out, they had me do two more songs. When I sent those out, they asked for some small changes on one of them: to take Ruben and the choir down a decibel, so that it would sit more in the groove, which, now that I'm mixing in the box, was easy to do.

The funny thing is, they were surprised at how fast I could turn things around. Especially fixes. When they called and I said I could have it done and back to them in 30 minutes, they didn't believe it. At major labels, I guess they're still working with engineers who are using big consoles—recalls take more time on those.

You use the server on Apple's iDisk for your clients to get references.

Having an iDisk has made my life so much easier. When you're having a conversation with somebody, you don't have to second-guess. You can just say, I'll send it to you.

I go to my public folder on my iDisk account, where I just drag-and-drop the file. It loads in the background while I'm working on other stuff. A 50 MB file takes only ten minutes. You can use any format that you want, and it's only $60 a year for the initial amount of space, although I pay an extra $40 for 512 MB.

A lot of composers and songwriter-producers come to you to mix their work.

Yes. Sometimes they just want me to get it in a rough kind of order so they can present it to people. They'll say to me, "Can you just throw something together?" But I don't do that. I don't just throw things together. I work fast, but I'm always doing a real mix. For example, I did a mix on a theme for *General Hospital* for a friend of mine. Again, I didn't hear from him for a while, then he called to say that they were at a local commercial studio and were having trouble matching my mix. They wanted me to come over and finish it off.

I said, "Okay, but all I really need is two faders." Because I'd mixed it in Pro Tools, I just needed to bring over my drive and play it back for them. Some of the

people from the show were there, and some of them had requests for changes, which I was able to do on the fly. They were knocked out. Everything they asked for, I was able to do really quickly. When we started listening locked to picture, I had some ideas for adding reverse cymbals as the graphics were going by, which was easy to do because I bring an arsenal of my own sounds with me wherever I go. I just popped them in, did a pan, and they said, "This is great!"

So you bring a lot of your sounds around with you.

I've started keeping a template with previous mixes that I've done, so if someone says, "You know that song you did with so and so, and that effect you were using? Can you do that on this song?" I say, "Sure," and just import session data off those mixes. I keep storing all my mixes. I have some on the desktop, and I have the full mixes archived on DVD. So it's easy to steal from myself if I want to.

What's some studio-designer advice you can offer to other people with home studios?

Use your ears. If it doesn't sound right, it probably isn't. People will be doubtful, and they'll kind of come to me for reassurance. "It sounds okay, doesn't it?" Well, no, it doesn't. If your initial reaction was that it didn't sound good, go with that feeling and make it better. I walk into a lot of people's rooms that don't sound good. And they just sit down and start working. Turning knobs. But you need to make your room workable first.

Take a CD; take a lot of CDs. Take a day, or a week. Listen to projects that you like and ones that you don't. Don't work, just listen. Then move the furniture and get some drapes for the back wall or gobos if you need them. I see people go into any room and just throw their gear in. They can't trust what they hear in there; but they start EQing based on what they're hearing in the room. Let's first make sure what we're hearing is accurate. EM

Maureen Droney's engineering credits include Carlos Santana, Aretha Franklin, Kenny G, and Tower of Power, among many others. Currently she is Los Angeles editor for Mix *magazine and general manager of House of Blues Studios.*

Organize on the Fly

By Dave Darlington

Using playlists for easy comping.

Because most desktop audio applications offer an unlimited number of virtual tracks, recordists can keep every take of an artist's performance. All the parts, from rehearsals and warm-up passes to the final "magic" take, can be stored, edited, and then cobbled together into a perfect composite take. Virtual tracks, called playlists in Pro Tools, facilitate the job of organizing those takes. Whether you like to keep a clean track list with multiple takes hidden underneath the main audio track, or you prefer to use what I call the WYSIWYG method—keeping subsequent takes visible and lined up vertically in their own tracks—a number of techniques can make the job of comping easier.

Two Setups

Before you start recording, set up your session to facilitate a smooth workflow. That will help you move quickly between takes for recording and playback, and cause the least amount of distraction to the artist you're recording. If you prefer the "clean" type of track organization, this is relatively easy. Once your input track is set up with the proper recording level (and any chosen dynamics or effects processing), it becomes the repository for all new recording and the sole playback track for a given part. After recording Take 1, you simply add a new virtual track for Take 2. Take 1 will reside in either the Playlist or the Takes menu (depending on your audio application), and Take 2 will be ready to record with the same settings as Take 1. Subsequent takes will also reside in the window, underneath the current playback take in chronological order (see Fig. 1). One advantage of this method is that you can audition different takes in a particular section by flipping between virtual tracks without navigating to the Play Enable and Mute buttons. The disadvantage is that the artist's mic will be "off the air" during playback, because the playback audio track is also the input track. When punching in on an existing take, duplicate a playlist so that the previous material isn't lost underneath the new recording.

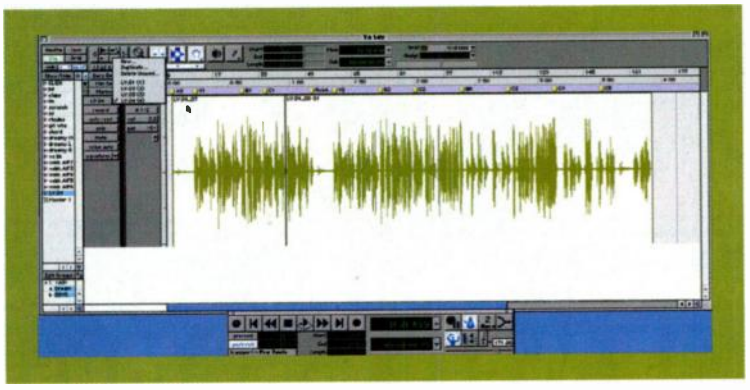


FIG. 1: In Pro Tools, a pop-up playlist menu shows the virtual tracks that are assigned to the main playback track for the part being recorded. Clicking on a take in the menu assigns that playlist to the main track.

Using the WYSIWYG method, with all takes lined up vertically, is more involved but allows for a smooth workflow once you get rolling. I set up 12 to 16 audio tracks, all bused to one aux track; that lets the aux track provide my "master" fader for all takes. I mute all the audio tracks except the topmost one in the window, making it my input/record track. The other audio tracks are for playback only. As a take is recorded, it is dragged down to the next available (muted) audio track in chronological order, ready to be auditioned by unmuting. There is no need to disable Record on one track or enable Record on another, which helps keep your session moving. All takes will have a similar playback sound because they are being routed through the same aux fader, and you can easily identify takes by their position in the Tracks window (see Fig. 2). As you listen to a playback, the artist stays "on-the air," because the record track stays in input mode. Problems can occur when two tracks are left unmuted simultaneously (impossible with the other method). Also, if you're not careful when dragging, audio can get shifted in time accidentally. (Hint: in Pro Tools, holding the Control button while dragging keeps audio correctly time aligned.) That method keeps artists and producers happy; because they can see the work accruing, they can work quickly yet feel confident that nothing important is getting lost.

Major Labels

As with all digital audio files, file naming is crucial and should be addressed before recording. Labeling for the virtual track method is straightforward, because most sequencers label new takes with the name of the previous take followed by a numeric suffix. Usually when you ask for a new take, a dialog box appears asking you to name it. On a vocal session, I name my first take Vocal.01; therefore, when I ask for a new take, the DAW automatically names it Vocal.02, and I can dismiss the dialog box by pressing the Enter key. That makes for a faster workflow and avoids making a producer or singer wait around while you type in a name. Each take of audio

sound line
dj line
sampling line
effects line
synths line
guitar line

CREATE THE UNHEARD

Includes over 15 GB of professional samples

KONTAKT 2 – transforms the usual into the extraordinary. From subtle sound enhancements to profound sonic twisting, this truly versatile sampler meets all the demands made by any modern stage or studio. Its innovative technology is balanced by a clear, new and intuitive user-interface. The modular architecture guarantees near limitless possibilities. Whether multi-format surround sound, state of the art effects or highly advanced script processing, KONTAKT 2 sets new standards in quality, flexibility and performance. Believe your ears!

CONNECT TO SAMPLING www.ni-kontakt.com

„KONTAKT is in a class by itself – an undeniably powerful instrument."
Keyboard, USA, November 2004

„KONTAKT has rewritten the rulebook in many ways and still leads the pack."
Future Music, UK, February 2003

Remix USA, 12/2002 | Keyboard USA, 11/2004 | EQ Magazine USA, 03/2002 | Future Music UK, 12/2002 | Future Music UK, 02/2004 | Electronic Musician USA, 01/2003 | Future Publishing UK, 12/2002 | MIPA Award 2003

NATIVE INSTRUMENTS
SOFTWARE SYNTHESIS

GENERATE THE FUTURE OF SOUND

will get its label from the track name, enabling you to keep tabs on it once the comping begins.

Labeling for the WYSIWYG method is slightly less elegant and more time-consuming, since you must type names for each audio track. I name the input track as before, then name the first playback track Vocal Take 1. Before closing the naming dialog box, I copy that text (without the numeral 1) so that I can quickly paste it (using keyboard shortcuts) into the next dialog box without retyping. Often, after the audio is recorded and placed on the appropriate playback track, I will rename the audio file to correspond with its playback number, Vocal_01, Vocal_02, and so on. That becomes helpful later in the comping process when assembling audio.

Cut, Copy, Comp

With the clean method, cobbling a final comp track from virtual tracks involves highlighting takes, copying them, selecting a new comp track, and pasting. One disadvantage, however, is that you can't know if the takes line up rhythmically until after they have been pasted. Unless the timing of the performances is identical, you may have to slide takes around until they line up. You can always edge-edit a clip until the performance makes sense. With the WYSIWYG method, however, you would be able to see timing discrepancies before pasting. Another advantage to the WYSIWYG method is that it is easier to trace the origins of the audio on your comp track. By separating an audio region before copying it to a comp track, you can create a visual reference to that audio, clearly indicating that one piece of audio came from Take 1, another came from Take 5, and so on, by seeing the separation of the regions (see Fig. 3). Of course, good labeling of the audio files can provide the same function in both methods and is ultimately more accurate, although the files may be more difficult to reference quickly because the fonts are often small and hard to read.

Working with a grid or tempo map is advantageous when moving musical material from one point in the song to another. Copying a certain number of bars and pasting them later in a tune is easy, but what if your region doesn't begin on the bar line? Most sequencers allow you to view the region definition or "spot" of the original audio. By "spotting" the audio to a similar point in another bar, you can be certain that the timing will be accurate. For example, if I separate a region at bar 33|1|233, I can the paste it to bar 41|1|233 and know that it will feel right. In Pro Tools, you can always click on the audio in Spot mode to get a dialog box telling you where the region is now and where it originated. (Be sure to deselect Autospot Regions in the menu or the audio will jump to its original spot.) If your sequencer doesn't have that time-stamp feature, copy and paste the audio by bar line, and then edge-edit it to fit.

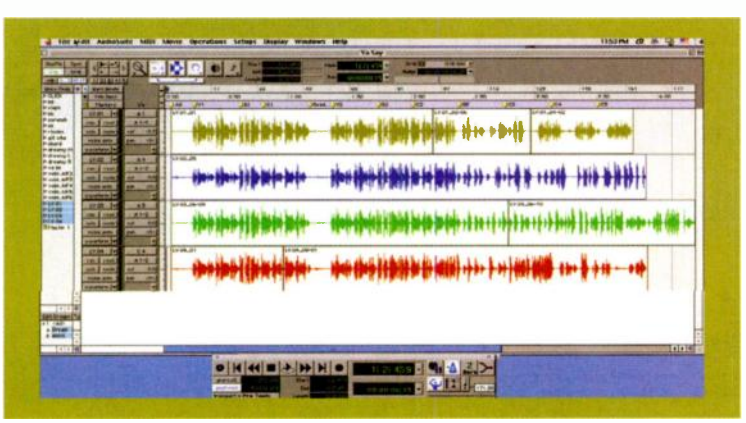


FIG. 2: Consecutive tracks are displayed in descending order using the method of immediately dragging newly recorded audio to its own track. The audio file's name and appended number are derived from the original track name, which makes it easy to keep track of takes.

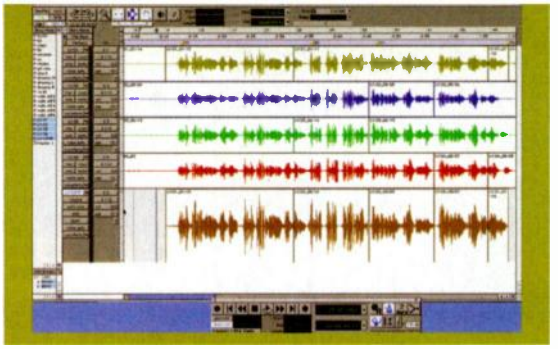


FIG. 3: Shown above is a comped vocal track (the expanded track at the bottom of the list) made from various takes. The numbering conventions built into Pro Tools have helped give the regions clearly identifiable labels that indicate the take's origination.

Fade Out

The final frontier of creating a decent comp track is crossfading between the individual regions. Use as small an area as possible to crossfade, so as not to interrupt the performance or create a region that sounds doubled. I use an "equal gain" or linear crossfade whenever possible to avoid that doubling. Be conscious of breaths and lip noises, and listen often in Solo mode to ensure that the comp track sounds like one performance, not a patchwork of takes. Usually, the breath before a phrase should come from the audio that follows it, but sometimes you need to use the breath from the preceding phrase. I have even pasted breaths from completely different phrases (or takes) to make a vocal sound natural. If you need to alter a piece of audio (its tuning or gain for example), select a region that's slightly larger than the target audio that needs altering, so that you will have ample room to create crossfades to and from the unaltered region.

Ultimately, we all learn to use our DAWs in a somewhat customized mode. But with unlimited virtual tracks and a few audio tricks, making a "supercomp" track can be easy for everyone. EM

Dave Darlington was the composer for HBO's series Oz. *He won a Grammy Award for Best Instrumental Jazz Album, 2003, for his mixing on Wayne Shorter's* Alegria. *His new solo LP,* D>Tour, *is available from Templar Records. For more information, visit davedarlington.com.*

INTEGRATED

Pro Audio Solutions

Desktop Audio • Live Sound/PA • Pro Recording • Broadcast/ENG • Electronic Field Production

420 Ninth Ave., NYC 10001
www.bhproaudio.com

800-947-5509
We Ship Worldwide

B&H
PHOTO - VIDEO - PRO AUDIO

Guitar Processors in Disguise

By Orren Merton

Creating guitar effects with software instruments.

A growing number of software synthesizers offer audio inputs, which opens up entire new vistas for effects processing. Here, I'll discuss using virtual-instrument plug-ins for processing recorded guitar tracks. You can, of course, use standalone virtual instruments, and you can process real-time input, although you may experience some latency.

Setting up a virtual instrument for effects processing depends on the design of the instrument and the plug-in host application. The instrument must support audio input, and how it allows that input to be routed determines what kind of processing is possible. The instrument and host must have either a sidechain input to route external audio from an audio track to the plug-in or a special "FX" version of the instrument for insertion in effects-plug-in slots. The latter is frequently the case.

Virtual instruments' envelopes usually need to be triggered by MIDI note messages to process external audio, just as they do to play notes. For hosts such as Logic that don't route MIDI note messages to effects plug-ins, you need to use the sidechain approach or limit yourself to virtual instruments that can lock their envelopes on. For the examples here, I'll use Native Instruments' Pro-53 synthesizer, which comes with an FX version and an envelope-hold switch.

Echo of the Past

Modeled after the classic Prophet 5, the Pro-53 has a typical analog-synth signal path: oscillators and a noise generator followed by a multimode filter, an enveloped amplifier, and a feedback-delay effect. External audio enters the signal path at the same point as the oscillator-noise mix and can, therefore, be subject to all the aforementioned processing. Virtual instruments following other paradigms often make other kinds of processing available—examples include frequency and ring modulation, analysis resynthesis, granular effects, and extended multi-effects chains.

FIG. 1: Native Instruments' Pro-53 allows external audio to be processed by its filter and delay effect, and offers numerous modulation possibilities.

The simplest Pro-53 processing is to use its delay effect. To do so, turn all mixer controls to Minimum; set the filter cutoff to Maximum, making sure that the HPF button is off; ensure that the amplifier-envelope's sustain is set at Maximum; and click the amplifier's Hold button on. After routing audio into the Pro-53, use the Ext In knob to adjust the level, turn the delay effect on, and play with its controls.

Delay times can be set from 1 millisecond to 1 second, and there's a built-in LFO for delay-time modulation. Use the left half of the time range together with moderate to high feedback and depth settings for flange, phase, and chorus effects; use the right half of the time range with minimum depth (no modulation) for echo effects. Turning on the Sync button will sync the echoes to tempo.

Good Filtrations

Next, bring the filter into play by reducing the cutoff and adjusting resonance to taste; the filter is often the best feature of classic synth emulations. At this point, you can play a MIDI keyboard or route a MIDI sequence into the Pro-53 and turn off the amplifier's Hold button. The incoming MIDI notes will then control the filter and the loudness contour according to their ADSR envelope settings.

Alternatively, you can leave Hold on and use the LFO to retrigger the envelopes by turning on its Trig and MIDI buttons (for tempo sync). No waveform is necessary for that, but you can also route the LFO to filter cutoff, in which case you'll need to route Wheel-Mod to the filter and turn the Mod Wheel up. Try that with the triangle waveshape and with LFO triggering still on. Adjust the filter's Env Amt knob to control the relative influence of the envelope and triangle wave.

Finally, you can take a walk on the ugly side by using the Poly-Mod section to route Osc B to modulate filter cutoff. That produces an effect similar to frequency modulation, which you can control using Osc B's tuning and waveshape. **Fig. 1** shows the full setup, and **Web Clip 1** gives an audio example of each stage in the process. EM

EM WEB CLIPS

Orren Merton is the author of Logic Pro 7 Power! *(Muska & Lipman, 2004) and* Logic 7 Ignite! *(Muska & Lipman, 2005).*

www.mindprint.com
Plug In–Sound Pro
All Essential Studio Recording Features In One Box:
Class A Mic Pre
Analog Compressor
Analog Vocal EQ
Hughes & Kettner® Instrument Input
Compact Mixer
Dual Headphone Amp
Mixer Master Section
24/96 Digital Interface

T.R.I.O.
TOTAL RECORDING SOLUTION
Hughes & Kettner Inc., Mt. Prospect/USA
Phone: (847) 439-6771
www.guitaramps.com
mm music marketing, Toronto/CA
Phone: (416) 646-0900
www.musicmarketing.ca
MindPrint
ADVANCED RECORDING DEVICES
© by Music & Sales, Germany 2005. All rights reserved

Some Like It Hot

By Mark Ballora

Achieve the most gain with the least pain.

Mastering has become a critical step in producing a CD or DVD—almost as important as tracking and mixing. Much of this final step involves tweaking various loudness levels, a process called dynamics control. Two of the most common types of dynamics controls are *normalizing* and *maximizing*. Here, we'll look at their similarities, their differences, and why they are important components of a mastering engineer's toolbox.

What Floats Your Boat?

Imagine that you control a harbor's water supply and that you can make the boats go up or down at will. Now imagine that all the boats are under a bridge and that you can raise the boats only until the tallest mast brushes the underside of the bridge. If you must raise the boats further, you can shorten the tallest masts, but if you raise them too high you risk causing a flood.

The harbor scenario described above—all boats are raised until the tallest mast hits the bridge—is the basic concept behind normalizing and maximizing. A normalizing algorithm scans an audio file and finds the highest sample level. It calculates the percentage that that sample needs to be raised in order to hit 0 dB Full Scale (0 dBFS), and then it raises every sample by that percentage. Many normalizers allow you to choose what your maximum level should be, whether it's 0 dBFS or some percentage (with 0 dBFS being 100 percent of the maximum possible level). **Fig. 1** shows a sine wave with two amplitude peaks: one before normalizing and one after.

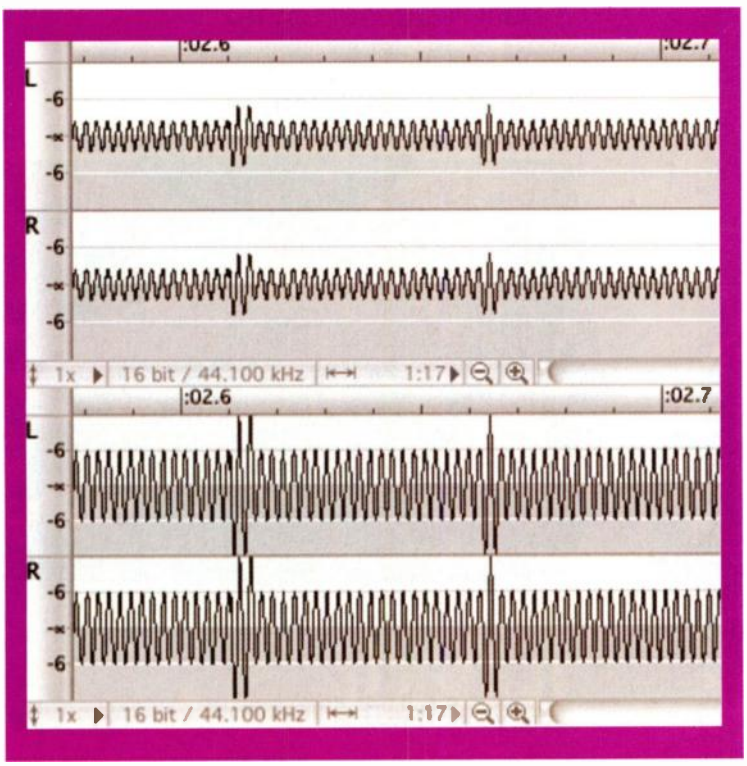


FIG. 1: The sine wave pictured below has two small amplitude peaks: one before normalization (top) and one after normalization (bottom).

Normalizing is useful when the lowest levels in an audio file are a bit too low. It's also fairly easy computationally, which is why just about any audio editor can do it. Normalizing can also be useful when transferring samples from a computer to a device such as a Kurzweil sampler, which adds a great deal of dynamic headroom. Normalizing in the Kurzweil allows the samples to play at optimum levels.

Normalizing is commonly used when mixes are assembled into an album. Often, different tracks have been recorded and mixed at different times and places. Each sounds fine in isolation, but when they're put together there can be overarching differences among tracks, such as overall EQ and volume levels. Normalizing allows you to set the volume context of your album, with carefully adjusted volume balances among the tracks.

Normalizing, however, works only if you have the headroom for it. The top panel in **Fig. 2** shows a sine wave with a peak close to maximum. As the middle panel shows, normalizing accomplishes next to nothing. In real life, an occasional peak from a plucked string or snare drum can defeat normalizing. Adding insult to injury, that peak might not make much difference in volume, because the ear doesn't judge loudness by occasional peak levels; rather, it judges loudness by RMS levels. (RMS is a mathematical method of measuring the effective power of an AC signal. When an AC signal is an audio signal, its RMS value is closely tied to its perceived loudness. For sine waves, the RMS value is 0.707 times the peak amplitude level.) If those occasional peaks have little effect on the overall RMS level, they'll likely have little effect on peak loudness.

Max Headroom

Maximizing is an attempt to inject your tracks with digital steroids, increasing the overall RMS level of a

Still waiting for that other company to call you back?
Next time, call the pros.
800.356.5844
Request your FREE catalog
¡Expertos que hablan español disponibles en x1178 y x1342.
FULL COMPASS
WHERE THE PROS ARE.
www.fullcompass.com

file without clipping it. The audio is first compressed, lowering the tallest peaks. With the added headroom, the track can be normalized, allowing all peaks to be raised. The bottom part of Fig. 2 shows a maximized sine wave.

Maximizing depends on the quality of the compression, and some software gives you lots of control over the process. The Normalize feature in Sony's Sound Forge, for example, has an option called Normalize Using Average RMS power and includes settings for the compressor's attack and release times. Sound Forge has the ability to apply varying amounts of normalization to different frequency ranges within a file. You can also keep extremely quiet and silent sections from being processed by setting the appropriate threshold in the Ignore Below option.

The Waves L1 Ultramaximizer plug-in has a proprietary look-ahead technique that anticipates upcoming amplitude peaks in the file and trims them down before it's time for them to go into the DAC. It's like an ultracompressor, lowering peaks with zero attack and release times.

Loud . . . Louder . . .

While maximizing can be a beautiful thing, it's also possible to get carried away. And our ears can fool us: because of the way our brain processes sound, when the same material is played at different volume levels, the louder one often sounds more present (at least in the short term). That increased presence adds impact, especially when broadcast over the radio, which leads many producers to adopt an "ours goes to 11" approach to audio levels. (I even heard an audio producer at a seminar describe mastering as intended primarily to raise the album to the loudest possible level.)

Maximizing raises a file's RMS level, but it does so at the expense of dynamic range. Look again at the bottom of Fig. 2 and notice how squashed everything has become. Too much maximizing can result in music with little dynamic range and a distorted sound. A great deal more wisdom on this subject can be found on mastering engineer Bob Katz's Web site at http://digido.com.

It's also possible to be fooled into thinking that a DSP operation has improved things, when in truth all it's done is made things louder. To address that pitfall, TC Electronic's Finalizer Express Studio Mastering Processor has a matched-compare feature that adjusts the gain following processing to match the preprocessing volume level. Processed and unprocessed versions can be compared at the same apparent volume levels so that users aren't misled by a volume increase.

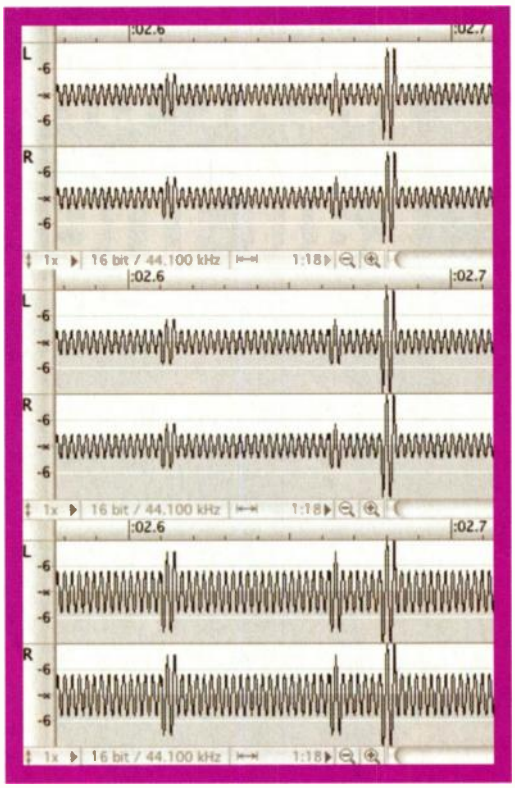


FIG. 2: Normalizing works best when there's dynamic headroom in the file to support it. In the top figure, the large peak limits the effect of the normalization, as shown in the middle image. Maximization is more effective (bottom), but the price is a loss of dynamic range.

All in a Dither

Contrary to occasional appearances, however, maximizers do not perform miracles, and their results come at a price. Like any DSP operation, normalizing and maximizing inevitably exacerbate that Achilles heel of digital audio, quantization error (see "Square One: What's in a Word?" in the May 2005 issue of EM). Maximizing, like many processing operations, bumps up a file's word size while it does its work. Eventually, those words have to be pared back down, and maximizers make that trimming part of their standard procedure. That is one of the selling points of the Waves L1 Maximizer plug-in, whose proprietary Increased Digital Resolution (IDR) is optimized for trimming samples back down to the target word size (24-, 16-, or even 8 bit) following maximization. Ideally, maximization is a last-step procedure, particularly if its redithering involves noise shaping. It's meant to be a final coat of polish, not something that gets done over and over.

Effective normalizing and maximizing are subtle, fine arts that are learned over time. Used properly, they can add a touch of class to your album, giving it that final coat of polish and making every track sound as though it belongs with all the others. EM

Mark Ballora is trying to master teaching music technology at Penn State University.

"A Dozen Labels and Publishers Came To Our Showcase Because We Joined TAXI"

Sugardaddy Superstar – www.sugardaddysuperstar.com

We stopped by TAXI's office to pose for this photo because we wanted to thank them for all the great things they've done for us.

If you've ever dreamed of landing a major label deal and having a hit record, then you'll understand why we're so grateful.

We're from Columbia, South Carolina. It's not the kind of town where you meet A&R people, or have them come to your gigs. We knew we needed to do something to get our music heard by the right people. After carefully researching our options, we decided that TAXI was the best choice.

We had really high expectations when we joined. And we're happy to report that TAXI has exceeded all of them.

TAXI sent our CD to several top A&R people, and the response was very positive. Piggy-backing on that, they sent our CD to more than 40 other high-level A&R people at companies like A&M, RCA, Warner Bros, Columbia, Interscope, Dreamworks, MCA, Arista, Virgin, Capitol, Atlantic, Elektra, Epic, Hollywood, Maverick, and many more.

All the sudden, we found ourselves in need of a music attorney. TAXI's president made one phone call and got us a meeting with one of the top music attorneys in the business.

He signed on to represent us, and with our attorney and TAXI spearheading the effort, we began to build a buzz. That lead to an industry showcase in Los Angeles with A&R people from more than a dozen labels in attendance.

Now, we're on our way to New York to do a round of showcases there.

Can TAXI do that for *every* member? That's up to you and your music. If you're really, really good, TAXI can deliver.

Will we get a record deal? That's totally up to us and *our* music. But, because we joined TAXI, we're getting serious attention from people in the music business we had little chance of meeting on our own.

And TAXI has given us much more than just great opportunities and helpful feedback from their A&R staff. We've also learned a lot about the music business from their monthly newsletter, and had an incredible time at the Road Rally – TAXI's FREE convention for members and their guests.

The convention alone is worth much more than what we invested to become members.

Would we recommend that you join TAXI? Without hesitation. It's the best thing we've ever done for our career.

If you're an artist, band, or songwriter, call for TAXI's free information kit, and let them help you get your music to record labels, publishers, and film & TV music supervisors. TAXI rocks!

TAXI®

The Independent A&R Leader

1-800-458-2111

Mbox

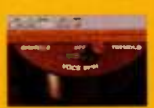
Digi 002 Rack

Digi 002

Sound Advice

When the band Run Don't Walk decided they were ready to move up to Pro Tools® to produce their album, they smartly chose the experts at Sweetwater to help guide their purchase decisions. They didn't know that all Pro Tools LE systems — Mbox,™ Digi 002,™ and Digi 002™ Rack — include over 30 free plug-ins and applications. Richard particularly looked forward to creating cool backing tracks with Reason Adapted, Live Digidesign Edition, and SampleTank 2 SE.

However, their friendly and informative Sweetwater Sales Engineer also told them that by investing just a little more money, they could upgrade to the Pro Tools LE Factory bundles — providing them with a plethora of additional plug-ins from Bomb Factory and Digidesign.® They jumped at the opportunity. Green loves how the BF-3A makes her vocals sound. Tiffany can't get enough of the Tel-Ray Variable Delay on her guitars. Run Don't Walk has never sounded better.



© 1/05. Bomb Factory, Digi 002, Digi 002 Rack, Digidesign, Mbox and Pro Tools are trademarks or registered trademarks of Avid Technology, Inc, or its subsidiaries or divisions. All other trademarks are the property of their respective holders. Run Don't Walk is a fictitious band.

digidesign

www.digidesign.com

Green demonstrates the air scratch

Mixmaster Tiff in da house

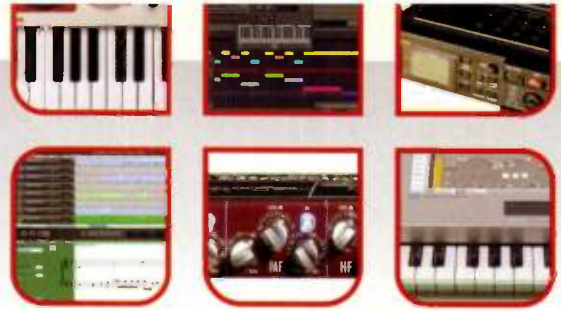
Sweetwater

music technology direct

(800) 222-4700

www.sweetwater.com

Fax (260) 432-1758 • 5335 Bass Rd, Fort Wayne, IN 46808



TASCAM DP-01FX

An 8-track Portastudio continues a proud tradition.

By Rich Wells

Home recordists gravitate toward convenient and portable devices that let them get their ideas down quickly and easily. Although the glory days of the cassette 4-track recorder are over, the concept is still going strong in the form of the portable digital studio (PDS). Tascam (and Teac before it) has long contributed to the evolution of the portable studio, and it continues its track record with the introduction of the DP-01 and DP-01FX.

FIG. 1: Dedicated controls for essential functions makes the DP-01FX easier to use than other personal digital studios.

Both units are 8-track hard-disk-based digital Portastudios (the same name the company used for its original cassette machines), each with an internal 40 GB hard drive, easy-to-use controls, and computer connectivity via USB 2.0. The DP-01FX, which I will focus on in this review, offers two phantom-powered XLR inputs (the DP-01 has ¼-inch mic/line inputs only) and a basic but well-stocked effects section. That's just the beginning. Although there are a few quirky elements to the design, these units are well equipped for a variety of uses but are user-friendly and inexpensive.

Updating a Classic

Aside from a pronounced price difference, what sets the DP-01FX apart from the many other portable digital studios are its plentiful and dedicated single-function knobs and buttons (see **Fig. 1**). This is a welcome throwback to the time of the cassette 4-track recorder, well before the portable studio user was expected to memorize a labyrinthine-layered menu. That's not to say the DP-01FX doesn't use a menu system, or that there are no buttons with multiple functions; its menu layers just aren't as deep or unintuitive as those on competing devices. The buttons that do double duty are clearly

A DIFFERENT KIND OF DESK JOB

training for a career in the audio industry

Individual Lab Time
Hands-on Training
Over 40 Schools Worldwide
Full and Part Time Courses
Job Placement Assistance for All Graduates
Financial Assistance for Those Who Qualify

SAE INSTITUTE

digidesign | SPONSORED SCHOOL

Solid State Logic - Approved Training

New York City*
1293 Broadway, 9th Floor
New York, NY 10001
212-944-9121

Los Angeles
6565 Sunset Blvd., Suite 100
Los Angeles, CA 90028
323-466-6323

Miami
16051 West Dixie Highway
Suite 200
North Miami Beach, FL 33160
305-944-7494

NashvilleΔ
7 Music Circle North
Nashville, TN 37203
615-244-5848

Every new student enrolling in our Audio Technology Program at SAE Institute in the US receives their own Apple iBook and Pro Tools LE digital recording system!
Subject to change without notice; terms and restrictions apply.

1-877-27-AUDIO • www.sae.edu

* accredited by the Accrediting Commission of Career Schools and Colleges of Technology (ACCSCT) - Δ accredited by ACCSCT, federal financial aid for those who qualify

marked with blue screen printing, and their second function is just a shift-click away.

The inputs are primarily on the front edge of the DP-01FX, facing the user. The two main inputs are available simultaneously. Input A is the more extensive of the two, with a balanced XLR mic input and unbalanced ¼-inch input. A switch next to the ¼-inch input allows you to select either mic/line level or instrument level. Input B is similar, but the ¼-inch input is mic/line only. Each input has a gain knob and an LED overload indicator. To the right of the inputs are a ¼-inch headphone jack with accompanying level pot, and another ¼-inch jack that allows you to connect a momentary footswitch for punch-in recording. There are also two switches: one applies phantom power to both XLR inputs, and the other, called Input mode, toggles between dual-mono and stereo input operation. These are used for monitoring while tracking only.

FIG. 2: The DP-01FX has USB 2.0 connectivity, so you can transfer your files to a computer workstation.

On the rear panel are the power switch, a DC power input, MIDI Out, a stereo optical S/PDIF digital output, a USB 2.0 jack, ¼-inch jacks for a mono effects send and a stereo return, stereo line outputs on RCA jacks, and two ¼-inch mix inputs (see Fig. 2). The stereo mix inputs are largely intended for mixing in the audio signal of a machine linked by MIDI to the DP-01FX. The signal going into the stereo mix inputs is available at the analog line outputs, but not the digital outputs.

Below the front panel's main channel strip section are track assign buttons for the A and B inputs. Used in combination with a given track arm button, you can direct the signal from either input to any desired track. The track assign buttons can be secondarily used to activate or disable their respective inputs. When an input is activated, its signal can be heard through the main analog line outputs, the digital outputs, and the headphone outputs, regardless of whether a track is armed.

On the DP-01FX, input signals aren't tied to any particular track: you can direct the signal to a track, and then arm the track for recording. But the track's EQ and pan pots do nothing—they function on playback only. When you record two mono signals, switching Input mode to dual mono pans both signals to the center. When you have a stereo pair of inputs, switching the Input mode again lets you hear the stereo spread, as it will sound during playback.

The DP-01FX has eight channel strips, each with a dedicated fader, and individual pots for pan, effects send, and low- and high-frequency EQ adjustment. Each strip also has a record-arming button, which doubles as a track mute. To the right of the channel strips is the master fader, Master and Source buttons, and a master Effect Return knob. The master Effect knob controls the amount of onboard reverb returned to each channel and the amount of effect returned by any outboard gear connected to the rear-panel send and return jacks.

In the lower-right section of the control surface are standard transport controls, buttons for setting and working with location points and punch-in recording, and controls for the multi-effects section and the reverb. The onboard multi-effects can be applied to one of the inputs while tracking, but cannot be used on a track

DP-01FX SPECIFICATIONS

Analog Inputs	(2) XLR; (2) ¼"; (2) ¼" mix inputs
Analog Outputs	(2) RCA; (1) ¼" headphone
Additional Analog I/O	(1) ¼" send; (2) ¼" return; (1) ¼" footswitch input
Digital Output	(1) S/PDIF optical
Data Transfer	USB 2.0
MIDI Ports	Out
Channels	8
Faders	(8) channel; (1) master
Simultaneously Recordable Tracks	2
Simultaneously Playable Tracks	8
Virtual Tracks	0
Bit Rate	16-bit
Sampling Rate	44.1 kHz
Hard-Disk Capacity	40 GB
Frequency Response	20 Hz to 20 kHz, +1/–3 dB
Signal-to-Noise Ratio	>85 dB (A-weighting, 22 kHz LPF)
Total Harmonic Distortion	<0.05% (1 kHz, –10 dBV, 22 kHz LPF, master fader at nominal)
Dimensions	17.8" (W) × 4.3" (H) × 12.1" (D)
Weight	9 lbs.

Independent artists: Showcase, make industry contacts, and win $35,000 in prizes.

DISC MAKERS

independent MUSIC WORLD SERIES 2005

Be judged the best in the Southeast by the best in the business.

Currently in its 10th year, Disc Makers' Independent Music World Series uncovers the best unsigned talent in the country. First, TAXI, the nation's leading independent A&R company, judges all entries and selects 100 semi-finalists from the Southeast. Next, the editors of Billboard magazine choose six finalists to perform an industry showcase at **The Velvet Underground at Hard Rock Café Atlanta on August 18th.** At the event, participants get to network with the industry VIPs and A&R reps who will judge their performances for the $35,000 grand prize.

Win your showcase – walk away with $35,000 in gear and prizes.

Networking with industry honchos alone could prove invaluable, but grand-prize winners also receive one of the most valuable packages ever assembled for independent musicians. Gear from top manufacturers includes studio equipment, microphones, guitar and bass amps, a drum kit with heads and cymbals, and more. You also win a deluxe Disc Makers CD package – complete with professional graphic design, post production, posters and a one-year membership to TAXI.

Register online for a chance at a Fender Strat, and get free stuff just for entering.

Only a select few get a chance to perform, but anyone who registers online gets a chance to win a Fender Stratocaster. All entrants will receive a free copy of *Billboard Musician's Guide to Touring and Promotion* and an issue of *Electronic Musician* magazine – a $23 value.

The IMWS is open to any and all musical styles.
Enter by June 10, 2005.
Register now at www.discmakers.com/ws05em.

CAN'T GET ONLINE? CALL 1-888-800-5796 TO REGISTER.
For advance tickets: www.ticketalternative.com

DISC MAKERS®

"The night of our Disc Makers IMWS win was unforgettable and has launched our career tenfold. The exposure, connections, and opportunities available to us now as a result of our win are just as amazing as the awesome prizes are."

Amber de Laurentis & Sarah Blue,
Grand Prize Winner, 2002 Northeast IMWS

"It didn't seem like a contest. It seemed like a festival. The bands were so good – I didn't think we were going to win. It didn't matter because I was having such a good time."

Orbert Davis,
Grand Prize Winner, 2003 Midwest IMWS

"The IMWS created a ton of hits on our website and got us a lot of press, a mention in Guitar World and Billboard, and a lot of emails and telephone calls."

Patrock (Dirty Power),
Grand Prize Winner, 2003 West IMWS

IK MULTIMEDIA · Fender www.fender.com · Billboard · ALIENWARE HIGH-PERFORMANCE SYSTEMS · sonicbids · dw · Electronic Musician · SABIAN · broadjam · TAXI · Dean Markley · SHURE · creative loafing · REMO

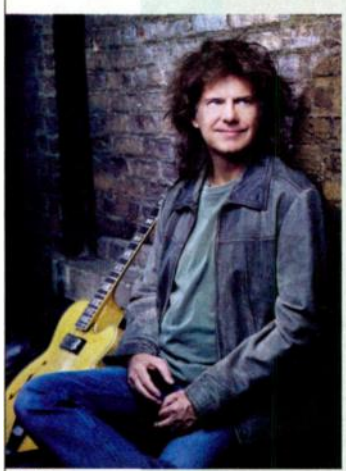
that has already been recorded. The reverb, accessible by the individual track effects sends, can be used only by recorded tracks.

On Display

In the display's regular, nonmenu view, the LCD shows the elapsed time for the song at the top of the screen, either as minutes and seconds or as bars and beats (if you're working with the onboard metronome or with an external MIDI device). Below that appears the A and B input levels, the levels of all eight tracks, and the stereo output levels.

To delve into the menu system, just push the Dedicated button. That is where you create, name, load, edit, and delete songs; manage the disk drive; make final-mix files; and perform backups. Navigating the system is simple using the Enter and Exit buttons, the cursor arrows, and the data wheel. In addition to the song- and disk-management capabilities, the menu lets you do other things, such as change the center frequencies of the high- and low-frequency EQs for each channel, set in and out points and pre- and post-roll during punch-in recording, use the onboard guitar tuner, and change the nature of the built-in noise gate.

CAN YOU IMAGINE...



Composing a 68-minute score, then allowing millions to view and play it over the Internet?

The Pat Metheny Group's "The Way Up" and Sibelius

In order to have the Pat Metheny Group rehearse and perform the continuous 68-minute album release: The Way Up in full, Co-Writers Metheny and Lyle Mays, with editing by bassist and fellow producer Steve Rodby, created the score with Sibelius 3 software. Pat realized that through the Sibelius Scorch plug-in, fellow musicians and fans could view and listen to the MIDI playback over the web.

"We used Sibelius to make parts for the band throughout the recording. We found out about Scorch and it seemed like a natural choice to offer the "Scorched" version of the score on our website." -*Pat Metheny*

Photo by Jimmy Katz, courtesy of www.patmethenygroup.com

The Scorch version of The Way Up score is available at www.patmethenygroup.com

PAT METHENY GROUP on tour now! www.patmethenygroup.com/travels.cfm

For information about Sibelius 3 and Scorch, please visit: www.Sibelius.com

Sibelius

Up and Running

Getting started with the DP-01FX is easy: it took only a few minutes of referring to the manual and poking around the menu to get a feel for the various procedures and to begin recording tracks. Navigating the menu to perform fundamental actions, such as creating and loading songs, was intuitive, and if I couldn't figure it out immediately, a quick flip through the manual answered my question. For example, I was able to set up MIDI control over a drum machine and use it as a metronome in a short period of time. Having worked on other portable digital studios in the past, the DP-01FX was noticeably easier, and it didn't crash once during the test period.

All aspects of punch-in recording were straightforward, and I was even able to begin using the DP-01FX's extensive track-editing capabilities without much fuss. You can isolate sections to edit by setting In and Out points, either during playback or through the menu system. You can perform an edit on an individual track, on adjoining odd/even pairs of tracks, or on all eight tracks.

The edit itself can consist of copying a section and pasting it in another part of the song, or simply moving the section to a new place. In both cases, you insert the copy at the designated "to" point. You can also choose to either force the rest of the song to slide later in time (to accommodate the time taken by the new material), or overwrite material previously existing in the time taken by the copied section. For material that has been moved, you can choose whether to leave the gap open or to close it by pushing the rest of the tracks back in time. Although loop-based editing is easier to do in a dedicated software

editor, you can certainly do it on the DP-01FX.

You can also selectively undo and redo almost any action by using the dedicated Undo/Redo button and moving through a list of past actions. The DP-01FX can perform digital bounces and make 16-bit WAV-file masters of your completed songs (using the Master and Source buttons above the master fader). When you're done, you can transfer the finished pieces or individual files to your computer via USB for further work.

Sound Judgment

Although the DP-01FX is a 16-bit machine, it sounds very good overall. The effects include four reverbs, each with a single decay parameter. The sound of the reverb is fine in small amounts.

The multi-effects are abundant and dominated by distortion sounds, which are the most useful of the effects offered—they're especially good on drum machines. The various types of distortion include versions with echo, flanging, and so on. However, I found the other multi-effects that involve chorus, delay, and flanging to be a bit cheesy.

On a practical level, the implementation of the effects is a bit strange. For example, you can use only one of the multi-effects while tracking, so that whatever you record is printed with the effect. In addition, you can use only the reverb on recorded tracks and not while tracking. Both types of effects can be turned on simultaneously, so these limitations don't seem to be for memory reasons. Nonetheless, Tascam crammed a lot of effects into the DP-01FX, and they serve as helpful guides while tracking demos.

Each effect has one editable parameter, and the nature of that parameter changes according to the effect. Neither the device, nor the manual, describes what the parameter will be for any given effect. For example, with effects that include delay, the editable parameter is either delay time (for longer delays) or decay rate (for shorter slapback-type delays), as you might expect.

A more critical problem is that you can record only two tracks simultaneously with the DP-01FX. On many cassette multitracks, and even with the original Roland VS-880, which started the portable digital studio revolution, you could record four tracks at a time. Having owned two Tascam Portastudios and a VS-880 in the past, I usually recorded more than two tracks at a time, especially when making band demos for myself or for friends.

Done Deal

There are other quirks with the DP-01FX, but they are meaningless when you think about all the things this machine *can* do. And although there are benefits to having onboard effects, a more compelling reason to pony up the extra money for the DP-01FX is for the XLR inputs and phantom power. Overall, the DP-01FX performs well and is great for quick and portable recording.

PRODUCT SUMMARY

TASCAM DP-01FX

portable digital studio
$649
DP-01: $499
OVERALL RATING [1 THROUGH 5]: 3.5
PROS: Inexpensive, versatile, easy to use.
CONS: Records only two tracks simultaneously. Only 16-bit capable. Implementation of effects is awkward.

MANUFACTURER
Tascam
www.tascam.com

Rich Wells oversees the Supreme Reality, a recording studio and band in Portland, Oregon.

APOGEE USERS

Joe Chiccarelli

"I was instantly impressed by the presence and transient response of the Mini-MP micpre. Acoustic guitars sounded fast and forward and alive, percussion is crystal clear with sharp natural undistorted attacks and the sound of an acoustic piano is very alive and 'outside the speakers'. It's a good compliment to vintage preamps for any studio's selection."

Producer/Engineer/Mixing
Recent Projects:
Tori Amos, Beck,
Elton John, U2

Mini-MP

• Superb two-channel microphone preamplifier with phantom power and HI-Z instrument inputs
• Low distortion pre-amps with 75dB of gain
• 80Hz Hi Pass filter
• Ultra-linear gain control

read more at:
www.apogeedigital.com

Apogee
Sound Amazing

© Copyright, 2005, Apogee Electronics. All rights reserved. All trademarks herein are property of their respective holders.

FIG. 1: The Alesis Micron's streamlined user interface includes an inconveniently placed Pitch Bend wheel.

ALESIS Micron

An analog modeling synth in a pint-size frame.

By Doug Eisengrein

uilding on the technology in its other instruments, Alesis has released the Micron, a compact digital analog-modeling synthesizer with a simplified feature set that is easy to use yet doesn't sacrifice sound quality (see Fig. 1). The Micron comes with basic I/O, but doesn't have USB, FireWire, a disk drive, and other workstation amenities. The rear panel has two unbalanced ¼-inch inputs, two balanced ¼-inch outputs, a ¼-inch headphone output, jacks for an expression pedal and a pedal switch, and MIDI In, Out, and Thru (see Fig. 2).

The user interface is uncluttered: the Micron's sound engine and styling are based on its sibling, the Ion, with a brushed-silver chassis, fire-engine red side panels and volume knob, two sliders (labeled m1 and m2), three rubberized knobs (X, Y, and Z), and a transparent Pitch Bend wheel. The Micron can load an Ion's program data through MIDI using the SysEx Dump function.

> The Drums are original and thick, but very electronic sounding.

The Micron can play eight voices, each with three oscillators, two multimode filters, three envelope generators, two LFOs, and a sample and hold. The voices can be configured in a variety ways, from 8-layered monophonic operation to single-voice 8-note polyphony and Unison mode. The Micron's 37-key bed feels strong, and the instrument is small enough to fit on a crowded desktop. The instrument's apparent simplicity tempts you to start playing it as soon as it's unpacked (although Reference and Quick Start manuals are provided if you need them).

Keeping It Simple

The Micron's four playing modes are Programs, which houses the basic preset synth sounds; Patterns, which contains melodic sequences and arpeggios; Rhythms, which has patterns of drum programs; and Setups, which combines all of the aforementioned modes. The Micron's 575 preset Programs are conveniently grouped into categories. The first group, Recent, automatically remembers the last ten Programs played, and the second, Faves, bookmarks user favorites. The other categories include Bass, Lead, Pad, String, Brass, Key, Comp, Drum, and SFX. You can scroll through all of the Programs sequentially or jump to a group with the press of a button and a key. The All group lists all Programs alphabetically.

MICRON SPECIFICATIONS

Sound Engine	modeled analog
Audio Inputs	(2) ¼" TRS
Audio Outputs	(2) ¼" TRS; (1) ¼" TRS headphone jack
MIDI Connectors	In, Out, Thru
Keyboard	37 keys, with Velocity and Release Velocity sensitivity
Polyphony	8 notes
Multitimbral Parts	32
Program Memory	(500) preset; (400) user
Oscillators	(3) per voice, with continuously variable wave shapes, sync, and FM
Filters	(2) per voice
Envelope Generators	(3) per voice
LFOs	(2) per voice
Effects	voice effects; drive output effects; 40-band vocoder, reverb, delay
Pedal Inputs	(1) expression pedal; (1) sustain pedal
Dimensions	22.2" (W) × 2.75" (H) × 8" (D)
Weight	8 lbs.

As soon as you make a change to any Program with the sliders or knobs, the Store LED lights and you have the option to overwrite any preset in its current location. If you scroll off of a Program and then return to it, the Program will be just as you left it. The default assignment of the two sliders depends on the preset, but most often they affect vibrato amount and filter frequency (see **Web Clip 1**). The Micron's keys are touch-sensitive, and with some of the presets, the sensitivity appears to be linked to envelope attack or resonance, lending a good amount of expressiveness to the sound (see **Web Clip 2**).

The Model for Modeling

The 44 bass tones in Programs are overwhelmingly monophonic. The selection is surprisingly good, ranging from dirty, growling Oberheim-esque basses to quirky ones reminiscent of a Sequential Circuits Six-Trak or Roland Juno.

The 43-preset Leads category also contains many monophonic sounds, ranging from sweeping windy tones to rich harmonic fifths. The Leads category showcases plenty of warm sounds, yet some presets have digital delay built in, giving away the fact that these are indeed only emulations of an analog synth. On the other hand, many of the patches have convincing analog-like properties, showcasing Micron's diversity (see **Web Clip 3**). The Pads category leans more toward polyphonic patches, ranging from warm tones with long filter sweeps to ghostly environments and pulsating, panning timbres. The smaller Strings and Brass categories, which are almost exclusively polyphonic, include 18 String and 26 Brass Programs. With both categories, I didn't experience the wide variety as with the other categories, and these two were the most digital sounding that I came across. They are undoubtedly not just a pile of samples, and while they aren't bad, they are fairly straightforward.

The Keyboard programs focus on classics, such as Wurlitzers, Clavinovas, harpsichords, and a nice assortment of organs. Though not overwhelmingly original, many are interesting and have a full sound. The Comp category also has a lot of variety, with convincing analog-like tones ranging from panning and delayed whistles to strange staccato sounds and pure weirdness.

The Drum category has 118 individual percussive sounds, such as gongs, ride cymbals, hi-hats, Kraftwerk-esque blips, laser zaps, and 29 killer bass drums (including emulations of classics such as the Roland TR-808 and TR-909 kicks). Overall, the drum sounds are original and thick, but they are electronic sounding: there aren't any acoustic drums here (see **Web Clip 4**).

The 50 Programs in the SFX category cover everything from plane flybys to infinitely morphing sonic experiments. I found myself spending a lot of time in that category.

Return of the Classics

After listening to the Micron's first ten Patterns, I was sold. They are very rhythmic and expertly programmed, and they sound excellent. The first subsection, Analog Style, is aptly named. There are patches appropriately named after classic synths (Arp) and artists (Moroder), and there is enough variety in there to keep everyone from Joe Zawinul to Erasure happy. The patches, which alternate between monophonic and polyphonic setups, span the squarest of waves to the glassiest of tones and just about everything in between (see **Web Clip 5**).

I am usually skeptical about preset drum patterns in any piece of gear, but Micron's Rhythms are chock full of goodies for the electro and techno crowds. Like the

Drums, the Rhythms are strictly an electronica affair, but they are well programmed and sound good. One key press anywhere on the keyboard plays the same rhythm in one pitch, and the patches are reminiscent of analog sequences and old-school drum machines (see **Web Clip 6**).

Some Rhythms are usable as main grooves, while others are better suited for breaks or bridges. As a bonus, the individual sounds used with each Rhythm are mapped across the keyboard above the trigger keys, allowing you to jam on top in real time. The m1 and m2 sliders, along with the Pitch Bend wheel, allow you to morph the sequences.

The Setups section, which contains the heart of Rhythms and Patterns rolled into one, is great for those who just want to press a button and let some live music fly. As with all else on the Micron, each of the setups are analog-electronic sounding and contain a variety of percussion sequences under percolating pads and basses. They are all user-programmable, and the X, Y, and Z knobs affect the sound of the arpeggios but not of the drums (see **Web Clip 7**).

At the Controls

The Micron's controls have a comfortable rubberized feel and are fun to play because of their visual feedback. The spring-loaded Pitch Bend wheel, which can raise or lower the pitch by one octave, progressively glows brighter red as you push it more toward either side. Unfortunately, it's inconveniently located above the keyboard, forcing the player's left hand into a slightly awkward position when using it. The Octave +/– buttons allow you to transpose the keyboard up and down three octaves, and with each press the buttons glow progressively brighter red while a miniature keyboard in the display highlights the key span.

The latch button substitutes as a sustain pedal and, when lit, sustains the current Rhythm, Pattern, Setup, or Program. The backlit Tap button pulsates in time with the current tempo and can be used as a tap tempo or in conjunction with the Control knob to manually set the global tempo in tenths of a beat per minute. The Phrase button allows you to record a riff and then play it back by holding down any key. Riffs

PRODUCT SUMMARY

ALESIS Micron

analog modeling synthesizer
$699

OVERALL RATING [1 THROUGH 5]: **4**

PROS: Great sounds. Simple to use. Well built. Small and light. Attractive price tag.

CONS: Spotty reference manual. No direct computer connectivity other than MIDI. Pitch Bend wheel awkwardly placed.

MANUFACTURER
Alesis
www.alesis.com

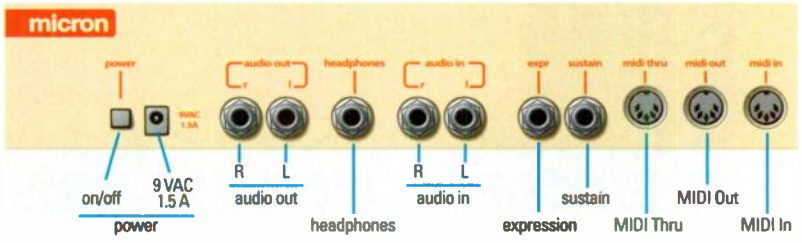


FIG. 2: The Micron's no-nonsense rear panel includes a pair of analog inputs and MIDI In, Out, and Thru.

are automatically transposed up and down according to the key pressed: they work across presets and are saved when you power down.

The Accomp button works along with Setups and, when lit (its default), it triggers patterns and rhythms. When Accomp is not lit, setups become like Programs and sound only the notes you play. The three assignable knobs— X, Y, and Z—are preset to alter different parameters depending on the patch. Typical parameter mappings include Filter Frequency, Pan, Noise, Attack, and Ring Mod (see **Web Clip 8**). As soon as you turn one of them, the green display shows its assigned parameter and value. A simple two-button operation maps any parameter to any knob.

The Control Knob Circle on the right has a master Control surrounded by a Config button and buttons for selecting Programs, Setups, Patterns, and Rhythms. The Control knob sweeps through Micron's presets or changes the value of the currently selected parameter, allowing you to, for example, edit each oscillator's waveform and waveshape or pan the filters. The Config button is for editing global settings such as tuning, transposition, Velocity sensitivity, MIDI, and SysEx.

Good Things in a Small Package

The Micron is impressive. It sounds great, the presets are well programmed, and it is a breeze to use. The documentation is somewhat spotty, and a few of the instrument's features can be cumbersome to use. But those are small issues in light of the Micron's sound quality and overall value.

EM WEB CLIPS

Doug Eisengrein is an electronic-music composer and software developer living in the San Francisco Bay Area.

FIG. 1: Apple enhanced its entry-level audio sequencer GarageBand 2 by adding 8-track audio recording, MIDI file import, notation display, and the ability to correct pitch and timing errors. Now you can import a wider range of audio formats and roll your own Apple Loops, too.

APPLE COMPUTER GarageBand 2

The Mac's most popular sequencer is yours for a song.

By Geary Yelton

When Apple updated iLife in January 2004, it introduced GarageBand, an audio sequencer and software instrument collection at no extra charge. Immediately, GarageBand was a hit with casual Mac users and pro musicians alike. A few months later, GarageBand 1.1 (reviewed in the July 2004 issue of EM, available online at www.emusician.com) was released, offering numerous enhancements such as ReWire connectivity and better Audio Units support. Now Apple has updated its creativity suite to iLife '05 (Mac, $79). New GarageBand features include MIDI file import, multitrack recording, real-time notation display, and lots of other goodies.

Like the previous versions, GarageBand 2's minimum system requirements call for a minimum 600 MHz G-series CPU, a DVD drive, and 256 MB of RAM. You'll need a Mac G4 or G5, because a G3 can't handle GarageBand's software instruments. The new version also requires 3.5 GB of disk space and Mac OS X 10.3.4. I installed iLife '05 on my dual-processor Power Mac G4/1 GHz with 1.5 GB of RAM and Mac OS X 10.3.8. My audio interface was a MOTU 2408mkII with a PCI-424 card.

Installation was straightforward: I ran the installer from DVD-ROM, clicked on a few buttons to agree with the defaults, and waited patiently while the program finished its business. In addition to GarageBand 2 and its samples and presets, the disc installed iPhoto 5, iDVD 5, iMovie HD, and iTunes 4.7.1 at the same time, placing everything on my startup drive, with no option for storing presets or sample content elsewhere.

New and Improved

The most anticipated new feature in GarageBand 2 is its ability to import multitrack Standard MIDI Files (SMFs). Simply drag an SMF from the Finder to the Timeline, and GarageBand will automatically assign a software instrument to each track (see **Fig. 1**). For the most part, SMFs imported flawlessly, with tracks assigned to instruments as expected. Occasionally, when I tried to import an SMF without an extension in its name, it failed to import at all. After I added an SMF or MID extension and dragged it to the Timeline, GarageBand recognized the file even if I later deleted the extension. GarageBand still doesn't export MIDI files, but

A new software-instrument category called Synth Textures includes some of the finest electronic timbres that GarageBand offers.

24-bit 96K 6x8 FireWire (IEEE1394) interface • 2 PreSonus mic/instrument preamplifiers • FireWire bus-powered or external power
Cubase LE recording software included • Estimate street price in US $399

Musician's Friend
The World's Largest Music Gear Company

For Your FREE Catalogs
800-436-6976 • musiciansfriend.com/free

Source Code: EMEFPS

• Lowest Price Guarantee • Satisfaction Guarantee
• Free Shipping on Most Orders over $199* • Call or Click 24/7
• Huge Inventory of In-Stock Gear Ready for Immediate Delivery

Limited to stock on hand; prices subject to change; standard catalog shipping rates apply.
*Some exceptions apply, call or go online for details; limited time only WRH

Apple Logic Express and Logic Pro 7 can import GarageBand files directly. Additionally, GarageBand 2 can't play external MIDI instruments, another desirable feature that most sequencers offer.

GarageBand 2 lets you record as many as eight audio tracks and one software-instrument track simultaneously. You can capture a band's entire live performance or record a drum set with individual mics on each drum. You'll need an audio interface with multiple inputs, as well as enough microphones or direct instrument sources for multitrack recording.

FIG. 2: GarageBand 2's Musical Typing feature lets you play software instrumentswith your computer keyboard. You can even control MIDI Velocity, Pitch Bend, Sustain, and Modulation. At the top of the window, a tiny keyboard shows the active pitch range.

Using an algorithm borrowed from Logic, GarageBand can now display software-instrument tracks in traditional musical notation as you play. To make editing as easy as possible, selecting a note plays it and also displays it in piano-roll form. Although Notation view occasionally had a hard time interpreting triplets (especially if I played with any degree of swing), tracks always played back exactly as I had recorded them. Notation view is a handy feature, although it would be even handier if GarageBand could print musical scores, but that might be asking too much from an entry-level program.

GarageBand 2 can convert MIDI or audio recordings to Apple Loops. When you select a region and drag it to the Loop Browser, a dialog box appears in which you can specify instrument, genre, mood, major or minor scale, and whether it will follow tempo changes. I appreciated this new feature, but I wish you could add your own descriptors. Curiously, when I saved a MIDI loop and changed the key signature from C to G, the track transposed up a fifth while the loop transposed down a fourth.

GarageBand now imports audio files from various formats such as Acidized WAV, MP3, unprotected AAC, and Apple Lossless. Just drag the file from the Finder to the Timeline. Unlike Apple Loops, imported files are unaffected when you change key or tempo. To convert audio to an Apple Loop, drag it from the Timeline to the Loop Browser.

Two new features enhance the tuning and timing of audio tracks, effectively pitch correcting and quantizing them. For pitch correction, move the Enhance Tuning slider from minimum to maximum; at high settings, you'll hear Cher-effect artifacts. You can also select Limit to Key to keep pitches within the Master Track's current scale. The Enhance Timing slider is accompanied by a quantization grid with four duration settings. When I tried it, the highest settings produced some bizarre results. Nonetheless, you might be hard-pressed to find any other such inexpensive software with such advanced capabilities.

But Wait, There's More!

When you select Musical Typing from GarageBand's Window menu, you can play software instruments using your computer keyboard—a practical feature when you're sitting in an airport with your PowerBook, I suppose. Eighteen keys on the top two letter rows are used to play notes (see **Fig. 2**). Other keys let you shift octaves, enable sustain, control Velocity, and apply vibrato and Pitch Bend. You can even play six-note chords with a different Velocity for each note. GarageBand's implementation of computer-keyboard note entry is the most comprehensive I've seen.

GarageBand 2 introduces several new software instruments and effects. Vocal Transformer, for example, lets you change a male voice to a female voice or a cartoon falsetto. Vocal Transformer also transposes tracks as much as a fourth up or down, enabling you to sing harmony with yourself using only one recorded take. For guitarists, three new amp-simulation presets are available: Big Wheels, English Channel, and Thick Jazz. Among the new software instruments is a category called Synth Textures, which includes some of the finest electronic timbres that GarageBand offers.

PRODUCT SUMMARY

APPLE COMPUTER GarageBand 2

digital audio sequencer
$79 (iLife '05)

OVERALL RATING [1 THROUGH 5]: 4.5

PROS: Intuitive user interface. Impressive value. Imports Standard MIDI Files. Records eight simultaneous audio tracks. Converts several audio formats to Apple Loops. New effects and additional high-quality content. More fun than ever.

CONS: Stiff CPU requirements. Still doesn't support external MIDI sound sources.

MANUFACTURER
Apple Computer
www.apple.com

GarageBand 2 features several additional enhancements. You can lock tracks to conserve CPU cycles—a function called Freeze in Logic. Just as you've always been able to specify volume changes graphically, now you can draw Pan changes for any track. You can scale your MIDI keyboard's Velocity, too, and GarageBand 2's onscreen keyboard is resizable. For people who have Apple Jam Packs installed, GarageBand 2 gives you the ability to show only loops and instruments from the standard GarageBand complement, from individual Jam Packs, or from any third-party add-ons.

Problem Solved

My only real complaint about GarageBand 2 is that it still requires you to store its content on your startup disk. The 80 GB drive that came standard in my Mac G4 (like the 80 GB drives that come standard in most PowerBook G4s and iMac G5s) already demands constant housekeeping just so you can find enough space for additional new programs, updated system files, new audio plug-ins, and all the other data necessary for living the digital lifestyle that Apple encourages. I could reformat a larger drive and make it my startup disk, but when you own as much copy-protected software as I do, that's a major hassle.

Fortunately, I discovered a little-known work-around. After you install GarageBand's content (including any Jam Packs) to your startup drive, copy the Apple Loops folder to another drive, and then delete it from your startup drive. Open GarageBand and drag the folder from its new location to GarageBand's Loop Browser. From within the dialog box that appears, select Current Location. That will create a *symlink* (symbolic link), which is the Unix equivalent of an alias in the Mac OS or a shortcut in Windows. I understand that Apple wants to keep installation simple, but it should spotlight this work-around for more advanced users.

Studio on a Budget

When Apple released iLife '05, its price increased by $30. Is it still a bargain? Absolutely. Where else can you get so much creative functionality and sample content for so little? Without a doubt, GarageBand is still the best deal in the world of computer music. If you're one of the thousands of amateur and pro musicians who use and love GarageBand, GarageBand 2 is an essential upgrade.

EM associate editor Geary Yelton lives in Charlotte, North Carolina, with his lovely wife Pam and their amazing cat Sadie.

The JP MODS by ADK – Euro-Mods with Pristine Curves!

European Components and Design.
A Full Year of Rigorous Beta and R&D.

Vienna LE
Hamburg LE

"I have become a huge fan of ADK Mics lately. After hearing the ADK TT, I was not surprised that Ray Charles and Johnny Matthis selected two of the TT tube mics for their vocals. The fact that the TL Decca-Tree set-up works well on Grand Piano was a nice bonus. But what surprised us the most was how many uses we found for the original model A-51s. Tracking Guitars for James Taylor to Drums and Horns, ADK Mics were everywhere at our 80 piece live orchestra sessions!"

~Terry Howard, Recording Engineer (Ray Charles, James Taylor, Michael McDonald, Willie Nelson, Pancho Sanchez, Ellis Hall)

ADK MICROPHONES

800 NE TENNEY ROAD SUITE 110-215
VANCOUVER WA 98685-2832 U.S.A.
TELEPHONE: 1-360-566-9400
FACSIMILE: 1-360-566-1282
www.ADKMIC.com Info@ADKMIC.com

First in Affordable Retro-Sonics. sm

FIG. 1: The OpenSynth neKo 64 combines a powerful Windows XP computer running virtual instruments or your favorite audio applications with a gig-worthy keyboard and numerous MIDI controls for real-time tweaking.

OPEN LABS OpenSynth neKo 64-220

Computer, DAW, keyboard, and virtual-instrument host.

By Brian Smithers

The OpenSynth neKo 64 from Open Labs might just be too flexible for its own good. Put simply, it's a music keyboard built around a computer. It also functions as a DAW that hosts virtual instruments, and it has plenty of MIDI knobs, buttons, and faders for controlling the aforementioned keyboard/DAW. The neKo 64 is capable of so many things that it's difficult to concisely assess it. It represents a complete music-production system squeezed into one box.

Inside and Outside the Box

When you place an order for a neKo 64, you can configure it to suit your needs. The model I received for review was a top-of-the-line neKo 64-220 ($9,871), running Windows XP Professional. It had dual 2 GHz AMD Opteron 64 processors; 2 GB of RAM; and an 80 GB, 7,200 RPM hard drive (see **Fig. 1**). Four RAM slots, five drive bays, and five full-length PCI slots are available for expansion. A DVD +/–R/RW drive is supplied for burning reference discs and backups. The instrument also has a Gigabit Ethernet port, two FireWire ports, and four USB 2.0 ports.

You could use any Windows XP–compatible audio interface with the neKo 64, but the M-Audio Delta 1010LT is standard equipment. It supports as many as ten simultaneous 24-bit, 96 kHz input and output streams. Open Labs has customized and panel-mounted the I/O jacks, providing eight inputs and eight outputs on unbalanced ¼-inch connectors, with two inputs and two outputs on balanced XLRs (see **Fig. 2**). XLR inputs 1 and 2 have microphone preamps, but no phantom power. One MIDI In, one MIDI Thru, and two MIDI Out ports are available, as well as coaxial S/PDIF and word-clock I/O.

The neKo 64's alphanumeric keyboard has a compact configuration similar to a notebook computer's, as well as a touchpad-style pointing device. Most of the time, however, I found myself reaching for the 15-inch color LCD touch screen.

The neKo 64 also has a 61-key synth-action keyboard with heavy-duty pitch and mod wheels. Assorted MIDI control panels surround the touch screen. One has 16 faders with two rows of 16 illuminated buttons, and another has two rows of 12 rotary controls with corresponding buttons. The third panel features transport controls, a numeric keypad, an LED screen, an eight-position joystick/rotary control, and various other buttons.

All of the neKo 64's resources come with a blank slate for whatever Windows-compatible software you want to run, and that software is responsible for a large part of the neKo 64's personality. The neKo 64 comes with a good software bundle, but you'll probably appreciate it more once you start installing your favorite programs.

The bundle includes Tracktion, a lean and mean digital audio sequencer from Raw Material Software; and Orion Pro, a loop-manipulation environment from Synapse Audio. Karsyn is a VST/DirectX host that turns your soft synths and plug-in effects into a virtual rack. To use neKo 64 as a performance keyboard, you would most likely use Karsyn to call up preset configurations, just as you would call up multis or combinations on a more traditional hardware synth.

Several virtual instruments are provided with the neKo 64, ranging from Green Oak Crystal to IK Multimedia SampleTank 2 LE. It's a reasonable lineup of respectable soft synths, albeit a bit short on star power.

The Essence of neKo

The neKo 64 has an impressive list of hardware and software, and it worked for me as advertised. The essence of the neKo 64, however, lies in two factors. The first is its vast array of MIDI controls and the software that determines how those controls are applied to the task at hand. The second is Karsyn.

An application called mFusion lets you manage the neKo 64's assignable MIDI controls (see Fig. 3). You can freely assign the various rotary encoders, faders, and buttons to MIDI notes, continuous controllers, and program changes. You can also assign them to computer keystrokes, musical keyboard transposition, or Windows application shortcuts. The direction of faders and rotary encoders can be inverted. Rotary-encoder behavior can be relative or absolute (like a knob), and you can adjust the sensitivity for finer control.

mFusion was released while I was writing this review, and it's a big step forward in the neKo 64's MIDI implementation. For example, it immediately solved one of my major frustrations: the fact that the neKo 64's keyboard has no octave shift controls. Every time I wanted to play bass lines, I had to go into the edit page of the individual synthesizer application or assign a pitch offset in my sequencer. With mFusion, I was able to change octaves either directly from the mFusion application window or by assigning buttons to transpose up and down by octaves.

mFusion organizes its reassignments into maps, and a collection of maps makes up a preset. A map can consist of as little as one control assignment, allowing you to develop a modular system of partial maps that can be combined into purpose-specific presets. For example, I created a map that assigned the last two buttons in the fader module's top row to shifting the keyboard down and up an octave, respectively. I then included that map in every preset I created, giving me consistent octave-shift controls without having to re-create the assignment every time I created a preset for a different circumstance.

Regardless of what message an individual control sends natively, a host application (such as your DAW) recognizes mFusion's output. If your host application doesn't allow reassignment of MIDI Control Change messages (or if it makes the process difficult), you can create an mFusion preset that produces just the right messages to make life easier. If your host application allows reassignment and if it features a learn mode, you can use mFusion to define the behavior of the controls—relative or absolute, normal or inverted, and so forth.

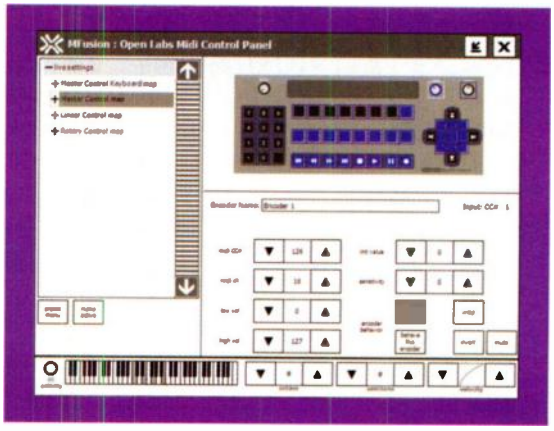


FIG. 3: mFusion provides centralized control over all attached MIDI control devices, including the neKo 64's modules and any other devices that you connect through MIDI or USB.

FIG. 2: The neKo 64's rear-panel module has ¼-inch and XLR audio, S/PDIF, MIDI, and other connectors.

The Host with the Most

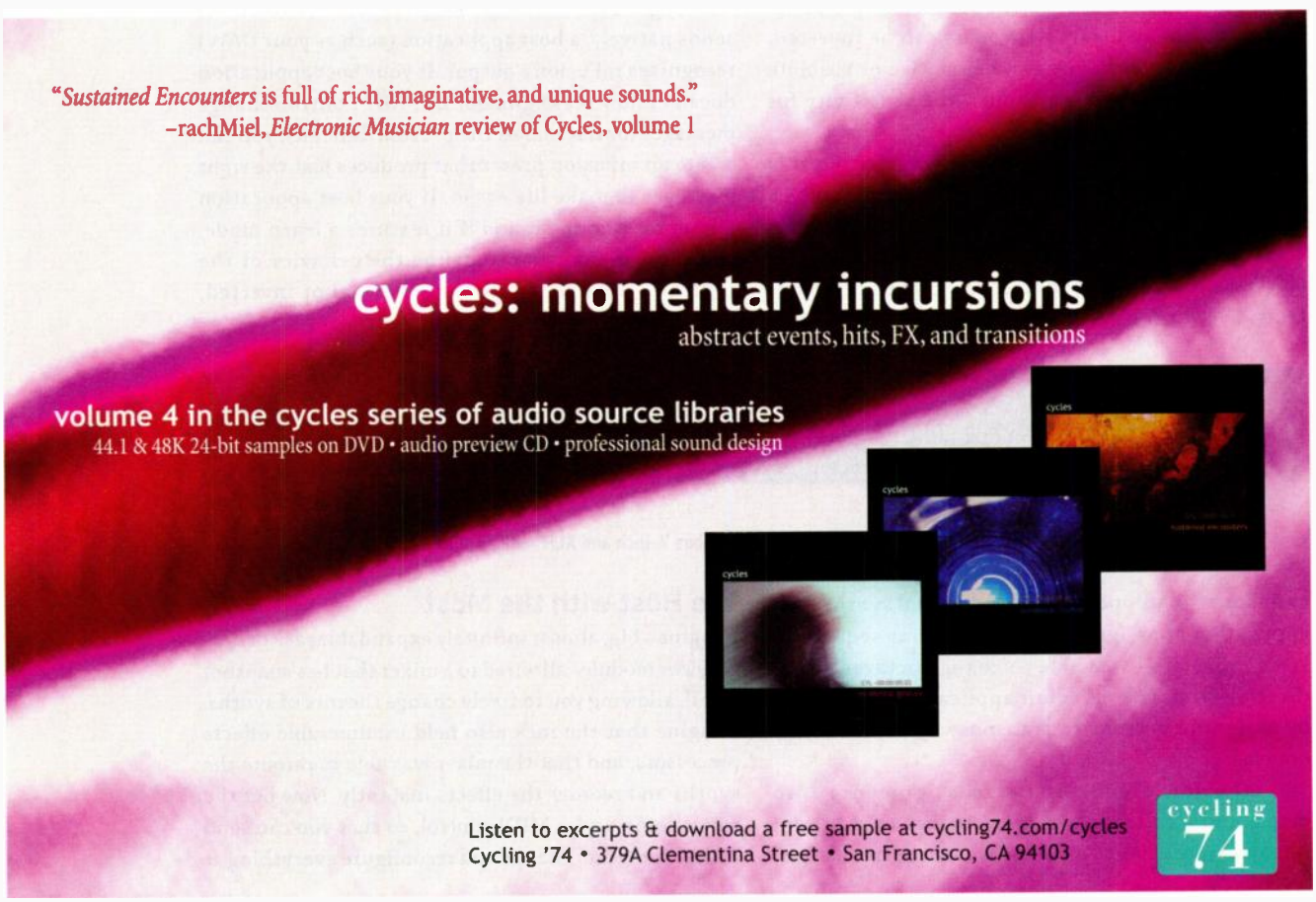
Imagine a big, almost infinitely expandable rack of synthesizer modules all wired to a mixer that has snapshot recall, allowing you to freely change the mix of synths. Imagine that the rack also held innumerable effects processors, and that the mixer was able to reroute the synths and reorder the effects instantly. Now put the whole setup under MIDI control, so that you can send a single program change and reconfigure everything at

NEKO 64 SPECIFICATIONS

CPU	(1) or (2) 64-bit AMD Opteron
RAM	512 MB, expandable to 8 GB
Disk Drives	(1) 80 GB, 7,200 RPM hard disk; (1) DVD-ROM/CD-RW optical
Expansion Slots	(5) PCI (4 available); (5) drive bays (3 available)
Analog Audio Inputs	(8) unbalanced ¼" TS; (2) balanced XLR mic/line
Analog Audio Outputs	(8) unbalanced ¼" TS; (2) balanced XLR; (1) ¼" stereo headphones
S/PDIF I/O	(2) stereo coaxial
Maximum Sampling Rate	96 kHz
Word Clock	(1) BNC in; (1) BNC out
MIDI I/O	(1) In; (2) Out; (1) Thru
Additional I/O	(6) USB 2.0; (2) FireWire; (1) 10/1,000 Base-T Ethernet; (1) ¼" footswitch
Keyboard	61-key semiweighted synth-action, Velocity and Aftertouch
Standard Modules	alpha control; rotary control; linear control; QWERTY keyboard
MIDI Controls	Pitch-Bend wheel; mod wheel; 8-position joystick; (16) faders; (24) rotary controls; (56) assignable buttons; (16) application buttons; transport controls; numeric keypad
Additional Features	15" color LCD touch screen; 2-button trackpad; DVD +/– R/RW drive
Dimensions	45" (W) × 7" (H) × 19" (D)
Weight	49 lbs.

once. That's essentially what Karsyn does (see Fig. 4).

Karsyn is Open Labs' version of Brainspawn Forte, a virtual live-performance workstation that enables users to load any number of VST or DirectX instruments and effects and configure them individually or in combination. The interface resembles a



rack of synth modules. Each module holds an instrument and optionally one or more insert effects and is assigned to an output bus. Each output bus may contain its own insert effects and is used to route the output of one or more synth modules to a physical output. Multiple synth modules can feed the same bus, and multiple buses can feed the same physical output.

From the main interface, you can open each instrument's edit window for control and editing. Karsyn also lets you remap program changes or channel numbers, split the keyboard, and assign MIDI controls from the neKo 64's various control modules. In combination with mFusion, that process can be easy if you have access to the synthesizer's controller mappings. Check your software instrument's documentation for details.

Karsyn's Scenes are what pull it all together. A Scene can be viewed as a multi (or combi) program insofar as it allows you to combine different individual patches. When you save a Scene, you are saving virtually every current Karsyn parameter, including the all-instrument and effects parameters (whether they're saved as presets or not), bus assignments, keyboard splits, channel mapping, and controller mapping.

You can set up your favorite virtual organ so that hardware faders represent drawbars. Additionally, with a simple Scene change, you can switch to your favorite analog synth emulation with the faders controlling the synth's onscreen controls. The next Scene could layer (or split) your favorite virtual electric piano and clavinet plug-ins and run them through a virtual amp for some tasteful distortion, with the distortion parameters controlled by the neKo 64's rotary controls.

In Practice

The possibilities are staggering, which brings us back to where we started: it's a challenge to wrap your brain around what the neKo 64 can do. It takes some digging to figure out how to configure things, and it takes a bit of planning to find the best way to do it. Once you have everything set up, you'd better have it documented so that in performance, you can remember which knob controls which function. You may find yourself putting console tape below the control modules to assist your memory.

It would have been helpful if Open Labs had provided documentation, at least in the form of PDFs, for all of the soft synths and effects. Karsyn's PDF is there, and Open Labs offers a few printed documents that help you get started; the documentation, however, falls short of what I had hoped for such a sophisticated and expensive instrument.

The neKo 64's power would be more obvious to the beginning (or prospective) user if the included presets took better advantage of its possibilities. I found myself wiggling faders and knobs on Scene after Scene hoping for some cool results, but to no avail. The Scenes do demonstrate the layer and split capabilities, although using the Mute button to indicate which synth modules

are active in a given scene is counterintuitive.

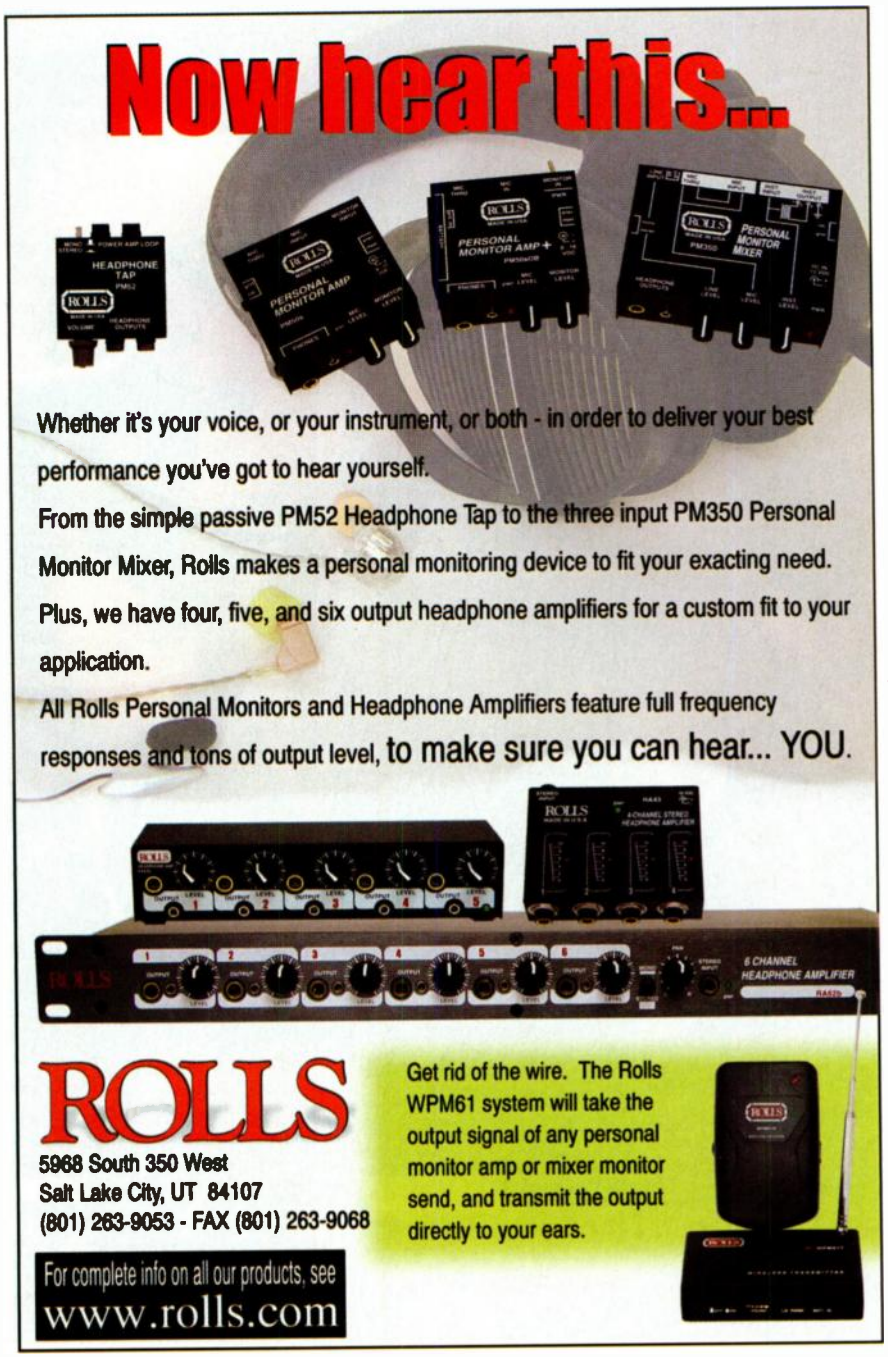
If you were to put the neKo 64 next to the most popular keyboards available, you would be underwhelmed by its sounds. Although there are some decent soft synths, they are not utilized to their potential in the default Scenes. More to the point, such a comparison is a bit off target. The neKo 64 sounds only as good as whatever virtual instruments are installed—better, in fact, because it makes it so convenient to combine your favorite soft synths.

The neKo 64 is a heavy keyboard (49 pounds), but it isn't as heavy as some. It's noisy for a keyboard, but not noisy for a computer. Its keyboard action felt good to me, and it drew praise from some of my colleagues who are better keyboard players than I. Its pitch wheel tended to stick around its null point, occasionally failing to return to zero when I eased it back gently. Open Labs reports it had received a bad batch of pitch wheels and will replace them under warranty.

In an effort to offer the most stable environment possible, Open Labs has gone to the unusual length of replacing the Windows XP Professional shell with its own. The Open Labs shell is said to bypass many of the general-purpose compromises inherent in the standard GUI, stripping it down to the functions essential for music production. In practice it works well, but it's difficult to quantify just how successful its architects were. It's certainly not crash-proof, but it crashed only once during my testing.

The Final Analysis

I like what Open Labs has done with the neKo 64. I used it for everything from sequencing to composing and recording, and it rose to each challenge admirably. The more time I spent tweaking its MIDI configuration, the more I liked it. Most of the time, I absolutely loved the touch screen. It felt so natural to be able to grab a control onscreen and adjust it directly. Sometimes, however, it was a bit difficult



PRODUCT SUMMARY

OPEN LABS OpenSynth neKo 64-220

keyboard workstation
$9,871 (as reviewed)
$5,455 (base price)

OVERALL RATING [1 THROUGH 5]: 3

PROS: Powerful computer with dual 64-bit CPUs. Keyboard, audio I/O, computer interface, and MIDI controls tightly integrated. Responsive 61-key synth-action keyboard. Touch screen interface. Extremely configurable MIDI implementation and virtual instrument host.

CONS: Expensive. Insufficient documentation. Default sounds are not great. No phantom power on mic preamps.

MANUFACTURER
Open Labs
www.openlabs.com

FIG. 4: Karsyn is neKo 64's virtual instrument and effects host. It presents an extensive virtual rack that can be completely reconfigured with a single button, keystroke, or program change.

to make fine adjustments or grab small controls. Open Labs suggests using your fingernail rather than your fingertip, and that's a useful suggestion, but an even better solution would be using a stylus that is similar to those used with a PDA.

Would I spend almost $10,000 on the neKo 64-220? That's a tough question, largely because it duplicates a lot of gear that I already own. The ability to put my computer and my keyboard controller into a single unit is appealing, and having MIDI knobs and faders built in is a great asset. Without options, the neKo 64's base price is $5,455, but if the price is still too high, less expensive models are available. Open Labs recently introduced the neKo GS and the neKo LE, more modest versions priced as low as $2,295.

If you were to judge the neKo 64 purely on its hardware components, you would probably consider it too pricey. By the time you calculate the value of its optimized configuration, integrated design, and customizable interface, however, you would come to appreciate its value.

Brian Smithers is Course Director of Audio Workstations at Full Sail Real World Education and is the author of SONAR 4 Ignite! *(Muska & Lipman, 2004).*

Turn Your Mic Locker into a "Meek Locker"

All the quality you'd expect in a condenser microphone from the company you've come to know and trust for making your music sound right!

Joemeek Meekrophones.

Hear them for yourself at your local Joemeek dealer.

JM 472 Combo

JM 27 Pac

JOEMEEK
If it sounds right, it IS right!

PMI Audio Group 1845 W 169th Street Gardena, CA 90247 Voice: 877-563-6335 Fax: 310-323-9051
Email: sales@pmiaudio.com Web: www.joemeek.com Joemeek is a registered trademark of PMI Audio Group

FIG. 1: For the recordist on the go, the Fostex FR-2 field memory recorder is packed with professional features such as 16- or 24-bit audio resolution at sampling rates as high as 192 kHz. Powered by eight AA batteries or a DC adapter, it records direct to flash memory—either CompactFlash or a PC Card.

FOSTEX FR-2

A field recorder makes the cut without breaking the bank.

By Rudy Trubitt

I've found a replacement for my aging portable DAT recorder: the FR-2 from Fostex. The FR-2 is a little larger than the DAT, but it's lighter than it looks. The control layout makes sense. Slide your right hand down the strap; the first thing your finger hits is the Record button, which is accessible but well protected from unintended bumping. The dual-concentric input-level knobs are right under your thumb, exactly where you'd want them. When you're ready to start recording, there's no session to create or files to name. Just turn a rotary switch to choose the sampling rate (from 22 to 192 kHz), flip a switch for 16- or 24 bit and another for mono or stereo, then press Record.

Each new recording ends up as a Broadcast WAV file on your choice of a PC Card hard drive or a CompactFlash card (not included) (see the sidebar "Media Matters"). After recording, pop the media out of the FR-2 and stick it in your computer (with the requisite card reader or PC Card slot). Drag your recording to your hard drive, and it's ready for editing or CD burning.

Show Me

The FR-2 is about the size of an 800-page hardcover book. You can slip it into a bag or hang it from its sturdy strap; in either case, the long edge of the unit will face up. The front panel (imagine the spine of a hardcover book) is where you find the controls you'll need to access most often (see Fig. 1). The top panel (our imaginary book's front cover) contains the controls that you'll use less frequently. You can easily access both surfaces when using the shoulder strap, but if you slip an FR-2 into a bag alongside other equipment, the top-panel controls are less accessible.

Critical front-panel controls include a big, red positive-acting Record button and a smaller Record

FR-2 SPECIFICATIONS

Recording Tracks	stereo/mono
Recording Format	Broadcast WAV
Recording Medium	CompactFlash, PC Card
16-Bit Sampling Rates	22.05-, 44.1-, 48 kHz
24-Bit Sampling Rates	44.1-, 48-, 88.2-, 96-, 176.4-, 192 kHz
Analog Inputs	(2) balanced XLR with 48V phantom power
Analog Outputs	(2) unbalanced RCA; (1) ¼" stereo headphones
Digital I/O	(1) XLR input (software-switchable); (1) XLR output (software-switchable); formats: S/PDIF, AES-EBU (176.4-, 192 kHz not supported)
USB 1.1	(1) Type A; (1) Type B connector
Locate Memory	99 cue points
Power	12V DC; (8) AA batteries
Dimensions	9.84" (W) × 8.66" (D) × 3.03" (H)
Weight	3.31 lbs. (without batteries)

Standby button, which lets you monitor live input; it also pauses a recording in progress. Those critical buttons are well protected from inadvertent bumping. The front panel also has record and headphone levels, as well as a button to drop locate markers and skip between them.

A 1-by-2-inch dot-matrix monochrome LCD shows a number of details, including recording level, sampling rate, bit depth, mono or stereo selection, time remaining, and file-name information. Although that's a lot of data, it's efficiently displayed. A switchable backlight and an adjustable contrast for the display keep it readable in nearly all situations. A small click-and-turn menu knob selects various menu options and settings, which allow you to set the time and date clock, set the default file name for new recordings, and rename and delete existing files, among other options.

The larger top panel contains most of the set-and-forget controls using tactile, recessed toggle switches (one per function) and rotary controls. Sampling rate can be set to 22.05-, 44.1-, 48-, 88.2-, 96-, 176.4-, or 192 kHz, at 16- or 24 bits. Two flush-mounted trim controls with a 34 dB range let you adjust the gain of the mic preamps. Even with such a wide range of gain, the mic pre is somewhat noisy when it's wide open. The switchable peak limiter works well, and 100 Hz low-cut filters are independently selectable for each channel. There's also a small loudspeaker for playback, which I found surprisingly useful. It's nice not having to slip on headphones every time you want to hear a quick bit of a recording.

Play, Fast-Forward, and Rewind buttons are also located on the top panel. Holding down the Play and Fast-Forward buttons simultaneously results in double-speed audio, whereas holding down the Rewind and Play buttons gives you single-speed backward playback—a cool feature. Note that the Stop button doesn't stop a recording in progress; use the Rec Standby for that purpose.

See the Other Sides

Analog and digital connections are on the right and left side panels, respectively. In the analog section are a pair of XLR mic/line inputs, a single +48V phantom-power switch, and RCA line outs (see Fig. 2). The power

MEDIA MATTERS

For this review, I tested a 5 GB PC Card hard drive (model MK5002MPL, $199) from Toshiba and a 4 GB CompactFlash card ($399) from SanDisk. As the FR-2 does not include any storage, don't forget to factor media cost into your budget.

You can have either or both cards installed simultaneously, but you may record to only one at a time. After recording, pop the card out and stick in your computer's CompactFlash card reader or PC Card slot. It will show up on your desktop as a standard FAT32 volume so you can copy recordings to your computer's hard drive. You also can connect the FR-2 to your computer using USB 1.1 (recording and playback are not possible when the FR-2 is in USB transfer mode).

On my Windows XP computer, I read from the CompactFlash card using a USB card reader. My Apple PowerBook G4 (running Mac OS X 10.3) couldn't mount the card until I reformatted it on the Mac (use Apple's Disk Utility and check the OS 9 driver compatibility option to enable DOS formatting). From that point on, the CompactFlash card worked well everywhere. The Toshiba drive worked in my Mac right out of the box without reformatting.

Which media type is best for you? The spinning hard drive is much less expensive. I heard from two different sound recordists using FR-2s (with non-Toshiba PC Card drives), however, who encountered disk-write errors in extremely noisy acoustical environments (one was a low-altitude jet flyover, and the other was trackside at a NASCAR event). I suspect the massive low-frequency vibrations were enough to bounce the heads temporarily out of position. Though I didn't encounter any such acoustical extremes in my testing, the Toshiba drive I used worked 100 percent. Note that the drive did make an extremely quiet whirring sound during operation, similar to the noise from a MiniDisc recorder, but that isn't an issue except in the most quiet of recording situations.

CompactFlash cards lose out in a cost comparison, but they draw significantly less power, which translates into more recording time between battery changes. Additionally, I suspect that a CompactFlash card would be less sensitive to extreme vibration, as it contains no moving parts.

Both drives are fast enough to record at the FR-2's maximum data rate, 24-bit stereo at 192 kHz, which works out to about 9 Mbps. When you move your recordings over to the computer, be aware that your transfer times may vary. I recorded a 100 MB file onto both my PC Card drive and CompactFlash card (100 MB = 1.5 minutes @ 24-bit/192 kHz stereo, or 6 minutes @ 24-bit/48 kHz stereo). I timed the transfer of file to my PowerBook using several different methods (see the table "Transfer Times for 100 MB Audio File"). A rough rule of thumb is that recording at maximum FR-2 resolution will result in file-transfer times of roughly 1× real time. At normal resolution (24-bit, 48 kHz), you can expect a transfer speed of anywhere from 2.5× to 6×.

switch is there, too. It's small and partially hidden by the removable strap's buckle, making it nearly impossible to turn off by accident.

The digital-connection side panel furnishes two USB connectors—one to transfer files to a computer, and the other to attach a keyboard for typing in file names. Fostex warns that a keyboard with built-in USB hubs may not work, and I couldn't get my Mac keyboard to talk with the FR-2. While I appreciate the option of using an external keyboard, the Menu knob was adequate for entering text.

The left panel furnishes digital I/O on XLR jacks; you can select between AES/EBU and S/PDIF format in a menu. Note that the digital input supports sampling rates only as high as 96 kHz. You must use the analog inputs to record at 176- or 192 kHz. I ran into a few issues when recording through the digital inputs (see the sidebar, "High-Sampling-Rate Issues").

The FR-2's DC input is also on the left, using a slightly beefier-than-usual (but not latching) consumer coaxial power connector. (You can find a male version of that connector at well-stocked electronics supply stores.) For strain relief, you can thread your external power cable through a conveniently placed plastic hook.

FIG. 2: The FR-2's left side panel provides digital audio ins and outs, including two USB ports and XLR I/O that can be configured as S/PDIF or AES/EBU. The BCN connectors are for the time-code option.

The Powers That Be

The FR-2's battery implementation is adequate, but not inspired. Eight AA cells fit in a well-latched compartment on the back panel. Because there's no battery sled, you can count on spending a full minute swapping eight individual batteries and placing the spent ones away in your pack. Using the latest generation rechargeables, expect from

HIGH-SAMPLING-RATE ISSUES

I initially had trouble making 88.2- or 96 kHz recordings when patching my Grace Lunatec V3's digital out into the FR-2's digital in. The resulting files played back at the wrong pitch and speed, indicating an incorrect sampling rate in the file's headers. While sorting out the problem, I learned something that applies to the V3 and FR-2, as well as other high-sampling-rate devices.

You'd think that a digital audio recorder would know the sampling rate of an incoming signal, either by reading a hidden flag in the data stream or by measuring the time between samples. And you'd be right most of the time, but not always.

Although there is a flag indicating a digital audio stream's sampling rate, the information it conveys is surprisingly limited. The S/PDIF format (IEC958) mandates a subcode flag identifying the current sampling rate as either 32-, 44.1-, or 48 kHz. What happens when a S/PDIF device outputs an 88.2- or 96 kHz audio stream? One of the three sampling-rate flags must still be indicated, even if it is wrong (for example, inserting a 44.1 flag into an 88.2 data stream).

In the AES/EBU format, things are a little better. It has a fourth possible subcode flag called "sampling rate not indicated." That should be used when the actual sampling rate is not 32-, 44.1-, or 48 kHz. (An additional set of subcode bits in the AES3 spec can properly flag other sampling rates, but it's not clear how many manufacturers use this potentially more useful but optional flag.)

Essentially, S/PDIF may have the wrong flag in the subcode, and AES/EBU may be thinking, "I don't know what the sampling rate is!" What should the recording device do?

Regardless of the subcode flag, a recording device should derive its word clock from the incoming sample data (and the FR-2 does). But the FR-2 will attach any sampling-rate flag (even if it's incorrect) to the header of the recorded file. With the V3/FR-2 combination, then, the solution is to perform the following steps:

1. Set the V3 internal jumper to Professional mode, or use AES/EBU output 2, both of which allow the "sampling rate not indicated" flag when appropriate.

2. Manually set the FR-2's rotary sampling-rate selector knob to match the V3's output.

Some manufacturers work around this problem by adding hardware (at some additional cost). It's possible to design a circuit that measures the timing from sample to sample, thereby deducing the actual sampling rate, but the FR-2 doesn't do that kind of autoset. If you do end up with a file containing an incorrect sampling rate, you can change the header information with most sample-editing programs.

INTEGRATION

Desktop Audio & Pro Recording Solutions

Desktop Audio • Live Sound/PA • Pro Recording • Broadcast/ENG • Electronic Field Production

420 Ninth Ave., NYC 10001
www.bhproaudio.com
800-947-5509

B&H
PHOTO - VIDEO - PRO AUDIO

one to three hours of operation between battery changes. Considering the physical size of the FR-2, I would have preferred an option for an internal rechargeable battery.

I often use an external EcoCharge system, which can power the FR-2 alone or the deck and other gear (such as my Grace mic preamp). Although the external battery adds considerable bulk and weight, I can run for many hours without ever thinking about power. One benefit of keeping a set of internal batteries is that if your external power goes down for any reason, the batteries will automatically kick in, and your recording will continue uninterrupted.

I ran a number of current consumption tests (see the table "Current Consumption"). Note that using a spinning hard drive draws about 20 percent more current than using a solid-state CompactFlash card.

CURRENT CONSUMPTION

Condition	Current Draw (milliamps)
FR-2 power on, no media	215
5 GB PC Card, record standby	580
5 GB PC Card, recording	645
4 GB CompactFlash, record standby	508
4 GB CompactFlash, recording	510
LCD backlight on	9
Phantom power on (with 2 Neumann KM140 mics)	10

What's My Name?

Although the FR-2 is almost as simple to use as a tape recorder, each of your recordings does need a unique file name. With a little forethought, you can come home from a day's field work with all your files sensibly labeled. I love this, as it speeds my workflow and improves record keeping.

Each recording creates a new file. All files go into a single directory called bwff. You can rename or delete files from the FR-2, but you can't split or join them as you can with a MiniDisc recorder, nor can you create subdirectories to groups files together.

There are two ways to name files. The first is a thorough time- and date-based name, such as B13h43m24s02Dec2004y. I prefer the second option, which Fostex calls its Scene/Take scheme. Using that method, you select a name from a user-defined list (by default, named Scene1, Scene2, and so on). Each subsequent recording inherits that Scene name with an incrementing take number appended to it.

I changed the Scene names to descriptions such as CREATURE, SCRAPE, and VOICE_OVER. That resulted in file names such as CREATURE_001 and SCRAPE _001 through SCRAPE _005. One minor problem was that the WAV files have a time-date stamp, but that information is stored in the last-modified rather than the date-created field. That means when you edit and save the file later, you lose the reference to the actual time of the original recording. I use the Mac OS X command-line utility SetFile to add the correct creation date as needed.

While recording, you can drop markers to use as locator points when listening back in the field. The markers are stored in the Broadcast WAV metadata, but I haven't found any Mac or PC programs that can read them. Instead, I find a pile of stray markers on the first sample when opening FR-2 recordings.

Further Impressions

There's a lot to like about the FR-2. It's easy to use, and dedicated switches determine all the critical settings. The menu system offers many additional features, but you can explore those at your convenience; you don't have to dip into the menu while recording. The FR-2 has professional connectors and solid, easy-to-operate controls, and it makes fine-sounding recordings. You can even get an optional SPMTE timecode board, although my review unit didn't come with one.

Not to say that the unit's perfect: it is a little large and feels somewhat plastic. The battery implementation is adequate, but I'm not crazy about it. And the FR-2 lacks an onboard M/S decoder, which means that if you're using an M/S mic pair for single-point stereo, you'll have to wait until post-production to hear your recordings played back in left-right stereo.

But my few complaints are easily outweighed by the benefits of the FR-2, which I've now used for about four months in all sorts of situations. I've done a lot of recordings for the upcoming CD *Field Recording All-Stars* (www.dielectricrecords.com)—mostly in urban environments. I took the recorder into the field with a team from Wild Sanctuary (www.wildsanctuary.com) to record the ultrasonic calls of Townsend's bats, pairing the FR-2's top sampling rate of 192 kHz with the 50 kHz bandwidth of a Sennheiser MKH800 microphone.

The FR-2 is also a fine choice for recording music. I recorded an ambient drone band at a San Francisco club and a saxophone quartet on a street corner in Berkeley. I even used it to capture voice-over work. I chose the Fostex FR-2 instead of recording straight into my computer not because

PRODUCT SUMMARY

FOSTEX FR-2

portable digital recorder
$1,499

OVERALL RATING (1 THROUGH 5): 4

PROS: Great sound and features at a reasonable price. Surprisingly easy to use. Clever file-naming system speeds workflow.

CONS: No M/S decoder. So-so battery implementation.

MANUFACTURER
Fostex America
Web: www.fostex.com

of its portability, but because of the feeling of confidence that it gives. The FR-2 has never crashed on me, and its input section has an analog limiter, which is a nice safety net.

I have yet to miss a recording, thanks to the FR-2's prerecord buffer. When enabled, the FR-2 is constantly capturing sound to a RAM buffer, even though you are not in record mode. When the buffer fills, the earliest recorded audio is discarded to make room for new sounds. When you push Record, the contents of the buffer are written to disk, followed by the rest of the take. In other words, the FR-2 is a time machine that takes you back a few seconds to the moment that you wish you had started recording, but didn't. That is fantastic when recording unpredictable sources. Animal calls, crowd reactions, train whistles—the list is endless. Rather than risk missing the beginning of a great sound or recording minutes of nothing, you can simply hang out in Rec Standby mode, secure in the knowledge that when something cool happens, you already recorded it. Of course, the deck needs to be powered on for that feature to work; it takes about 18 seconds from powering on to the start of recording.

We Have a Winner

I certainly haven't described every feature of the FR-2 here. For instance, an optional alert beeps if the battery is low, if you're clipping the A/D, or if you're running out of storage space. You can change the length of the prerecord buffer, control the metering's peak-hold time, and more. But what really sold me on this deck is its simplicity of operation. I'm sure I could strap an FR-2 over your shoulder, give you a five-minute orientation, and send you out to record, confident that you'd come back with the goods.

Rather than send my review unit back to Fostex, I bought it. The FR-2 is a highly functional and (so far) perfectly reliable recorder. I look forward to spending more time in the field recording great sounds.

Author Rudy Trubitt thanks Michael Grace, Toshiba, SanDisk, Bernie and Kat Krause, Bill Rainey, Charles Maynes, Scott Gershin, Bruce Koball, and Drew Webster for their participation in this review process.

TRANSFER TIMES FOR 100 MB AUDIO FILE

Transfer Method	Time (minutes:seconds)
FR-2 reading PC Card over USB 1.1	2:34
FR-2 reading CompactFlash over USB 1.1	2:37
PC Card in laptop slot	1:07
CompactFlash in USB 1.1 reader (FireWire card reader unavailable for testing)	2:01

FIG. 1: Image-Line Software FL Studio's window-intensive interface has (clockwise from left) a drag-and-drop browser, a step sequencer, a channel settings window, a mixer, a playlist, an effects editor pop-up box, a piano-roll editor, and a pop-up note properties box.

IMAGE-LINE SOFTWARE FL Studio 5 (Win)

Fun features and exotic synthesis in a sequencer.

By Jim Aikin

With each new release, the program now known as FL Studio has become incrementally more powerful. It started life as a modest pattern sequencer with a couple of built-in soft synths, suitable for producing beat-oriented music. With the addition of stereo audio tracks and a video window, version 5 leapfrogs past other virtual workstations, and seems poised to take on the major sequencers as a tool for serious music production.

FL Studio 5 has a lot more to offer than just audio tracks and a video window. Audio time stretching is supported, as are clip-based envelopes for audio-level and pan automation. Beats can be automatically split apart (in the same fashion as with Propellerhead's ReCycle) for tempo changes, and a simple wave editor is provided, as well as several new synthesizers. Some of the new synthesizers are available in the XXL version; they are available only as optional add-ons, however, for the less expensive versions (see the sidebar "With Six You Get Elderberry"). Other features include highly configurable wave scratching, a built-in speech synthesizer that can read ordinary English spelling, pattern triggering in live performance, 64 mixer channels, the ability to read MP3 files, a non-real-time arpeggio creator in the piano-roll window, and a huge library of sampled percussion.

FL Studio, version 3.5, was reviewed in the November 2002 issue of EM (at that time, FL Studio was known as FruityLoops). In this review, I'll focus on the new features in version 5; for the benefit of those who aren't familiar with the program, however, here's a brief recap.

FIG. 2: The 6-operator Sytrus synth has multisegment envelopes (lower left). FM and RM amounts are programmed in the knob matrix at right.

Apples and Oranges

The core of FL Studio is a pattern sequencer. Individual patterns can contain notes played by many different

Generators. For instance, one pattern may contain notes for six or eight drum samples playing a 2-bar loop; another may contain an 8-bar bass line and chord comp; and so forth. Patterns are arranged into a song in the Playlist window.

The graphical user interface (GUI) for creating patterns and a Playlist is so friendly that one is tempted to call it cute. You can make a drumbeat, for instance, by clicking on buttons in a 16th-note grid, and the beat can then be customized by giving each note its own Velocity, filter cutoff, and so on. On the whole, though, FL Studio is rather window intensive, as shown in **Fig. 1**.

For standard musical chores, FL Studio's Generators include sample playback, analog-style synthesis, two simple plucked-sound synths, and a MIDI output device for driving external hardware. Resonant multimode filters, envelopes, and LFOs are offered in many of the Generators, as are arpeggiators and other handy widgets. There is also an additive synthesizer that derives timbre information from graphics files, a granular synth, and a speech synth. New and noteworthy are Wave Traveller, Sytrus, and Fruity Pad Controller.

FL Studio hosts third-party DX and VST soft synths and effects. Going in the other direction, you can use FL Studio as a VST or DXi plug-in in another program. FL Studio can also work as a ReWire slave or ReWire host. The FL Studio mixer has a good suite of effects, including all of the expected types.

Automation of just about every parameter is supported. After recording automation in real time by using the mouse to move a knob, you can edit the data graphically. Complex mathematical processes can be used to massage the controller data. While there's no event list, double-clicking on any note in the piano-roll editor opens a pop-up box in which you can change the note's start and end times, Velocity, filter cutoff, and so on.

Overall, FL Studio's GUI is well designed and packed with amenities. Among the new features are nameable time markers for the Playlist window. Double-click on a marker, and the region between it and the next marker is selected for loop playback. Version 5.0.2 adds multiple context-sensitive settings for the Snap grid, a welcome new feature.

You can solo one or more Generator channels, which is useful when you're developing a mix. Unsoloing, however, unmutes all audio and MIDI Generators, not just those that were unmuted before you soloed one of them. With songs that contain more than a few channels, that can be annoying.

Hark! The Lark!

FL Studio 5's implementation of audio tracks is musically usable—I didn't have any problems overdubbing external instrument tracks. Recording without monitoring through FL Studio requires a little subterfuge, but it can be done. Each audio clip has its own pop-up menu, with which you can split the clip into beats, add various kinds of rhythmic stuttering effects, or create a volume or panning envelope. The curves of the envelope segments can be concave, convex, or S-shaped.

Unfortunately, the GUI for audio suffers from the fact that the audio tracks have been grafted onto a pattern-oriented sequencer. All of the sounds in FL Studio, including the sounds in audio tracks, come from Generators, and Generator channels are objects that live in the Step

WITH SIX YOU GET ELDERBERRY

FL Studio is available in seven different versions. Full details can be found on the Image-Line Software Web site, but here is a quick overview. Most versions are available either boxed or by download, with slight differences in price. To make things more interesting, Image-Line Software gives more than one name to some of the packages. Lifetime free updates are offered with the download versions, but cost $29 if you buy the box. Purchasers of slimmed-down versions can upgrade by adding specific synths, whose cost varies from $19 for Fruity DX-10 (a simple FM synth) and $29 for Wasp (an analog-style synth) to a whopping $179 for Sytrus.

The XXL Edition ($299) comes with everything except for the Wasp and DreamStation synths.

The Producer Edition ($149) strips off SimSynth, DrumSynth, DX-10, VideoPlayer, Sytrus, and SoundFont Player.

The Fruity Edition ($99) eliminates audio tracks, WaveEditor, parametric channel EQ in the mixer, and some effects routing possibilities.

The Express Edition ($49), available only by download, is missing so many key features (including parameter automation, the piano-roll editor, and the bundled sound library), that I honestly can't recommend it.

FIG. 3: The Fruity Pad Controller serves up 16 Velocity-cross-switchable percussion pads. The tabs at the top of the window bring up other editing pages.

Sequencer window, not in the Playlist window. Yet the audio waveform data is displayed in the Playlist, which corresponds more or less to the Track window in a linear sequencer. As a result, audio tracks have no names in the Playlist window, nor can they be muted and unmuted there, because the mute and solo buttons are in the Step Sequencer window. To make matters worse, you can't mute or unmute an audio track during playback; you can do it only when the transport is stopped.

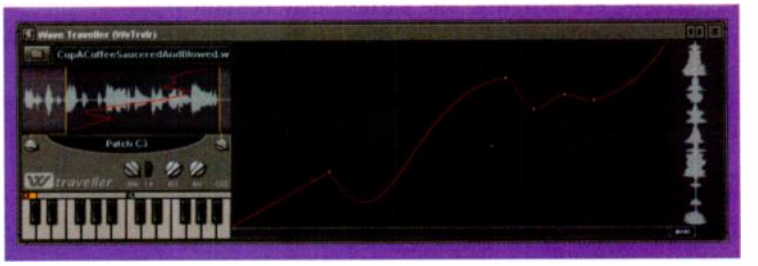


FIG. 4: Design your own scratches in Wave Traveller. The red curve shows the speed at which the sample will be played back.

If you've recorded six or eight vocal takes and you want to create a composite track containing the best phrases from each, you may be dismayed to learn that each take is being played by a different Generator. After you've clipped apart the phrases, the only way to create a single linear audio track containing the final vocal is to bounce it to disk.

To select and move several audio clips at once, you have to change mouse tools three times, because you can't select clips when the pencil tool is active, and you can't move clips when the selection tool is active. Once you've moved them, an extra step is required to deselect them, because you can't do that simply by clicking on one of them with the pencil tool, the way you would in some other audio multitrack programs.

Care is advised when dragging chunks of audio. If you click on a point that is too close to the right end of an audio clip, dragging it will lengthen the clip rather than move it. That time-stretch operation affects all of the clips derived from the same file, and the undo command can't be applied to it. It is an easy way to make a mess of a carefully crafted audio track.

Although audio tracks are displayed in the Playlist window as monaural waveforms, all audio recordings made in FL Studio 5 are stereo. Mono recording isn't supported, but mono files recorded in other programs can be used, and a stereo recording can be collapsed to mono in the WaveEditor.

The WaveEditor window has a few basic utilities, such as cut, copy, paste, normalize, reverse, fade in, and fade out. You can also adjust the start and end points of a looped sample. At present, though, the manufacturers of standalone wave editors have no reason to fear losing customers to FL Studio. You can't reduce the level of a region, draw out a pop with a pencil tool, or even zoom in vertically to examine a low-level waveform. If the past history of FL Studio is a reliable guide, however, WaveEditor will probably turn into a great feature in the next version .

PRODUCT SUMMARY

IMAGE-LINE SOFTWARE FL Studio 5

pattern-oriented virtual workstation
$299
OVERALL RATING [1 THROUGH 5]: 3.5

PROS: Great synths and effects. Audio automation and time stretching. Good starter sound library included. Supports VST, DX, and ReWire.

CONS: Audio tracks are not well integrated with pattern-oriented sequencing.

MANUFACTURER
Image-Line Software
www.flstudio.com

Fruit of the Loop

The Sytrus FM synth (see **Fig. 2**) is a major addition to FL Studio. It provides access to a vast range of timbres that the analog-style Generators can't produce. Sytrus is a hybrid subtractive and 6-operator FM synthesizer with a mouth-watering array of features: three resonant filters with wave shapers; ring modulation; plucked-string synthesis; customizable waveforms; chorus, delay, and reverb effects; more than 50 syncable multisegment envelopes; more than 50 syncable LFOs; and an assortment of modulation mapping curves for things such as keyboard and Velocity tracking.

Sytrus comes with approximately 250 factory presets. It will also load DX7 patches in SysEx format. Such files are readily available on the Internet, which greatly expands the universe of Sytrus sounds. (I grabbed a bunch from Dave Benson's DX7 Page, www.math.uga.edu/~djb/html/dx7.html.) Image-Line Software doesn't claim that the imported patches will be completely accurate, but algorithm and operator tuning information and envelope shapes are handled well. One difference, for example, is that Sytrus doesn't produce nearly as much aliasing in the upper octaves as a real DX.

As I worked with Sytrus, I spotted some frustrating omissions from its feature set. First, it doesn't respond to MIDI sustain pedal messages. (Slayer is the only FL Studio synth that does.) Second, key Velocity can't be used to control envelope attack or decay times. Third, operator amplitude is always controlled by Velocity, even when you don't want it to be. That is especially irksome, because there are certain types of growly synth basses that you'd like to keep at a uniform volume while controlling filter cutoff from Velocity. Despite its flaws, I love Sytrus!

Beat and Scratch

The Fruity Pad Controller (see **Fig. 3**) is a sample playback Generator designed to play drum kits. FL Studio

the ultimate hook-up.

EUREKA

Professional Recording Channel

Class A transformer coupled
microphone/instrument/line preamp
Selectable input impedance and
"saturate" tube warmth control
Fully variable ultra fast compressor
w/ separate make up gain
3 band parametric EQ
with bandwidth "Q" control
$499

Electronic Musician 2005 EDITORS CHOICE

AD192

Optional Digital Output Card for the Eureka

24 bit resolution up to 192K sample rate
Simultaneous SPDIF and AES outputs
Analog line input enables one AD192 for two Eurekas
$199

Hook-up two Eurekas to your FIREPOD via AD192 SPDIF output for the ultimate signal path. Hook-up your FIREPOD to your computer via standard IEEE1394 FireWire connection and use the eight onboard Class A preamps for recording drums, guitar cabs, pianos, ensembles, etc., for the ultimate FireWire computer interface. Need more inputs? Hook-up a second FIREPOD for eight additional microphone preamps. Finally, hook-up your Central Station to your FIREPOD for ultimate communication and monitoring control.

FIREPOD

24Bit/96k 10x10 FireWire Recording System

Eight PreSonus microphone preamplifiers
Two instrument inputs, eight analog line outputs
SPDIF and MIDI input / output
Cubase LE 48 track recording software
$599

Mix CERTIFIED hit

CENTRAL STATION

Studio Control Center

Flexible stereo input/output
switching & routing
Talkback, mute, dim, mono;
separate cue and main outputs
24 bit/192K D to A converters
(SPDIF and Toslink)
Passive signal path (no op amps)
for ultimate stereo imaging and depth
$499

CSR-1

Optional Remote Control for the Central Station

Main volume, input/output switching, dim, mute, mono
Talkback microphone on remote
Rack your Central Station with your gear
$149

GET THE ULTIMATE HOOK-UP ON PRESONUS GEAR FROM SWEETWATER!

Sweetwater
music technology direct™
800-222-4700
www.sweetwater.com

PreSonus
WHERE ARTISTS CREATE AND TECHNOLOGY PERFORMS

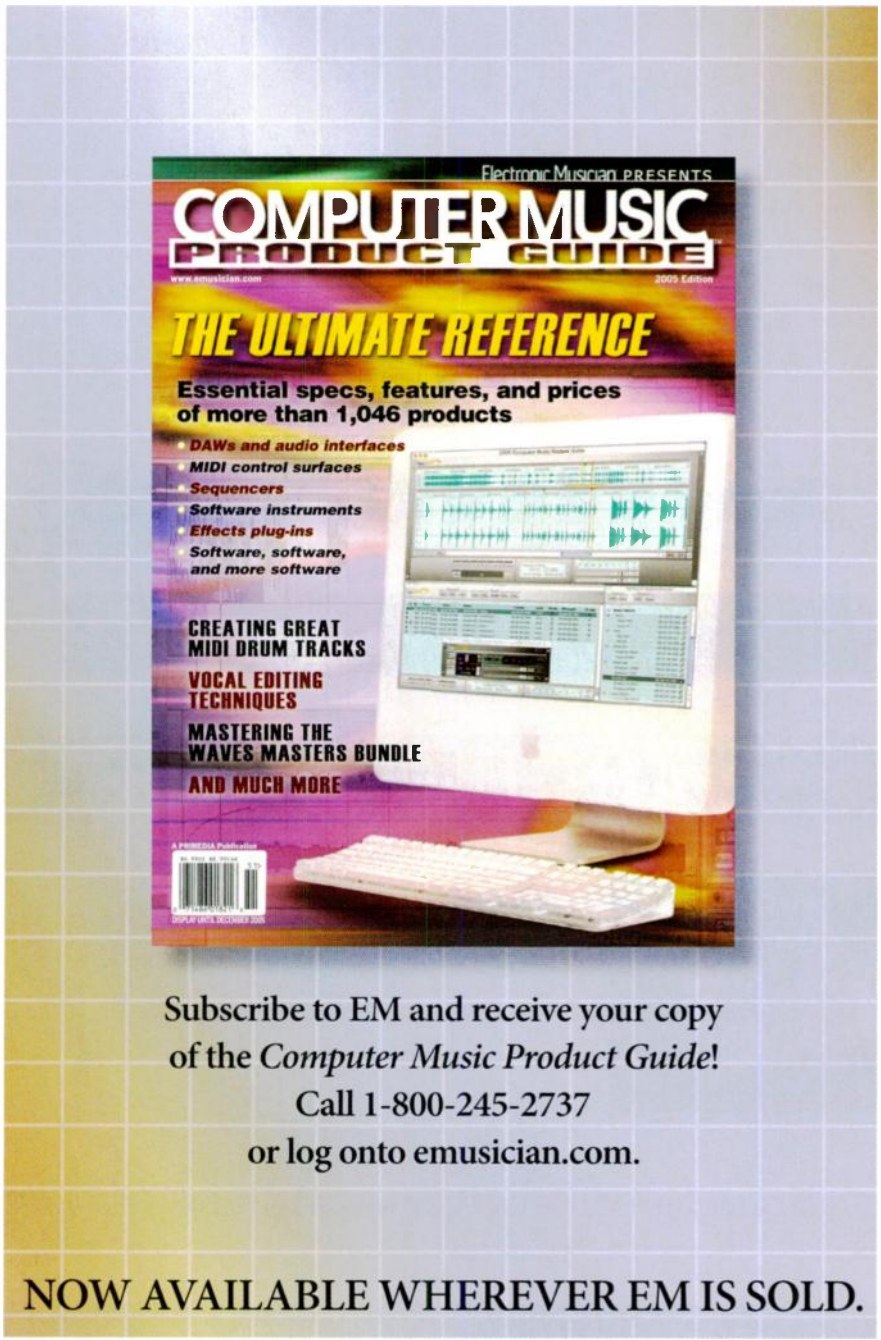
has been able to trigger percussion samples using its Sampler Generator for a long time, so what's special about the Fruity Pad Controller? First, it lets you load 16 different drum sounds into one Generator slot, which can eliminate some of the clutter in the Pattern grid. Second, each of its sounds can be Velocity multisampled, using any combination of Velocity splits and layers per pad. Two acoustic kits are supplied. The Fruity Pad Controller also supports hi-hat mute groups, and a selection of 39 one-measure drum patterns (or the MIDI file of your choice) can be loaded from the Fruity Pad Controller panel. Those features help make up for the fact that, unlike some older Generators, the Fruity Pad Controller has no filter, envelopes, or LFOs.

Say you have an audio file that contains some rap music, and you'd like to add a few scratches—or maybe a lot of scratches. No need to press vinyl, simply create a Wave Traveller (see **Fig. 4**) and load the file into it. Every key on a MIDI keyboard can scratch the file using a different curve, and you can define each curve by creating as many envelope points as you need. A volume envelope for each key can be created the same way. For each envelope segment, you can choose from among several curve types (one of which is Bezier curves). It's not real-time scratching (you can't do it from a mod wheel, for example), but once you've set up the scratches in a programming session, you can trigger them onstage to create stuttering effects and so forth (see **Web Clip 1**).

Drum Synth is similar in some ways to Waldorf Attack, which was a great percussion VSTi that's no longer available. Like Attack, DrumSynth lets you program a different percussive tone for each MIDI key. (It has 120 programmable keys, as opposed to Attack's 24.) A few sampled waveforms of the TB-808 and TB-909 persuasion are offered, or you can go with straight analog-type oscillators or noise sources. DrumSynth's parameters are somewhat odd; clicking on the noise switch in one of the oscillators, for instance, provides a slider for moving from Sine through Band to White. The best way to program your own sounds may be to click on and drag things until you hear something that you like. Ring modulation, overdrive, hi-hat mute groups, and effects sends are provided, and morphing from one sound to another with the mod wheel is supported.

Squawk and Talk

For thick, meaty analog-type synth pads, the 3-oscillator SimSynth Generator is a cut above FL Studio's older 3xOSC Generator. The resonant filter can crossfade between lowpass and bandpass or highpass outputs. Each SimSynth oscillator has a detune-double button (called Warm), and there's also a built-in chorus. While that makes fat sounds easy to produce, pointed one-oscillator sounds are not perfectly in tune, because alternate voices are always slightly higher or lower in pitch. That may be a feature or a bug. Because the tuning imperfections are not



lower in pitch. That may be a feature or a bug. Because the tuning imperfections are not large, dance music producers may like them or never even notice.

FL Studio's speech synthesizer is a great tool for those robotic speech phrases beloved by techno music fans the world over. After typing a phrase, you can choose a personality (male, female, child, munchkin, martian, troll, nerd, fly, choirboy, and so on) and play with a few other parameters, such as pitch and speed. The results are usually quite understandable. When you like what you hear, FL Studio will render it as a sliced-up sample file, whose individual slices can be triggered in any rhythm you choose, live or sequenced (see **Web Clip 2**).

The Juice

Every time I use FL Studio, I'm amazed by its power and by how much fun it is. Unlike a standard sequencer, FL Studio is a production tool with an attitude. It definitely does things that no other software tool can do, and it usually takes only a few quick mouse-clicks. On the other hand, certain tasks, especially audio recording, are more difficult than they ought to be.

Although the release of version 5 brings FL Studio to a whole new level, making it more than competitive with loop-oriented applications such as Propellerhead Reason and Ableton Live, it's still not quite up to the standard of Steinberg Cubase and Cakewalk Sonar as a high-end production tool. The audio tracks are fully functional, but their user interface still needs work. If you're already using a sequencer that speaks VST or ReWire, you may prefer to use FL Studio as a plug-in sound source. Or you may prefer to sequence in FL Studio and use your other applications to handle the audio-recording chores. But if a novice in the world of music software asked me what single PC program he or she should buy to get started, I wouldn't hesitate for a moment: FL Studio is an unbeatable choice.

FL Studio seems poised to take on the major sequencers as a tool for serious music production.

EM WEB CLIPS

Jim Aikin writes about music technology, plays cello, and teaches in Northern California. He's also putting the finishing touches on a fantasy novel. For more on Jim's varied activities, you can visit him online at www.musicwords.net.

FIG. 1: The MindPrint En-Voice MK II's front panel includes sections for mic pre controls; LF, MF, and HF EQ controls; a compressor section with low-pass filter; and true tube saturation.

MINDPRINT En-Voice MK II

A channel strip with tube compression and a USB interface.

By Rusty Cutchin

MindPrint had a winner with its original En-Voice channel strip. So what did the company do? Redesign the product, of course. Fans wishing to add another En-Voice to their racks needn't fret, however. The En-Voice MK II is a step up in sound quality, functionality, and even looks. With true tube saturation and a choice of digital interfaces, the new En-Voice is a top contender in a field of audio "front ends" that offer expanding features and shrinking footprints.

On the Strip

The new En-Voice packs all the essentials into a sleek, slim package with all controls except for a ground lift button on the front panel. The 1U En-Voice is an ergonomic triumph; although its front is jam packed with controls, the ends of the 14 long knobs are easy to grasp, allowing just enough room for large fingers like mine to handle them without affecting adjacent controls. An added bonus is the design of the clear plastic function switches, which glow a bright blue when depressed. These buttons, like the knobs, are nicely spaced and are unlikely to interfere with the status of other controls when pressed. Three mini toggle switches are easily reached on the front panel, and there's room left over for a large power switch and tube window.

The front panel is marked off in sections (from left to right): Input, LF, MF, HF, Dynamics, and Output (see **Fig. 1**). The input section handles mic or line level signals entering the XLR and ¼-inch TRS rear-panel connections or a high-impedance instrument input on the front panel. A mini toggle switch selects between Mic, Line/Inst., or Digital (if one of two MindPrint digital modules is installed in the rear-panel slot). A 12-stage LED can display input or output, depending on the position of the adjacent Meter Assign button. A Low Cut button, separate Line Gain and Mic Gain pots, mini toggles for 48V phantom power, and a –20 dB pad complete the input section.

> The En-Voice MK II is a great-sounding, ultraconvenient front end.

The three EQ sections each have parametric controls and an On button. The MF section adds a Q knob that sets the bell curve's bandwidth within a range of 3 (one-third octave) to 0.15 (six octaves). All Frequency

FIG. 2: The En-Voice MK II's rear panel hosts the unit's input connectors and a slot that accepts one of MindPrint's digital interface modules, such as the DI-Mod USB.

controls are variable and provide generous overlap from section to section, with a 15 dB boost or cut available on each of the three bands. Each level knob has a detent at the 0 position.

The dynamics section is an interesting combination of preset and variable controls. An 8-position Compression mode knob dials up one of eight preset Attack/Release combinations, which you then fine-tune with the variable Threshold, Ratio, and Tube Saturation pots. The compression modes feature helpful names such as V1 (vocals), G1 (guitar), B1 (bass), and P (percussion); the well-written En-Voice manual makes it clear, however, that these are just starting points for your own tweaking. The manual also has a table of suggested settings for various sonic goals, such as "gritty bass" and "fat vocals."

The dynamics section's Tube Saturation knob applies overtones generated by the unit's 12AX7A triode and is marked in percentages from 0 to 100. The section also has its own Low Cut filter (6 dB per octave at 300 Hz) in a sidechain path, allowing the circuit to compress mids and highs without compromising bass energy in a signal. The Tube Sat LED next to the circular tube window changes color depending on the level of distortion being produced—green for negligible effect, yellow for audible overtones, and red for audible distortion.

Modular Addition

The En-Voice's rear panel (see Fig. 2) has balanced XLR and TRS connectors for line in and out, an XLR mic connector, and ¼-inch insert send and return jacks. A plate covers a slot designed to accept either of MindPrint's 1U digital interface cards, the DI-Mod 24/96, which has S/PDIF only, or the DI-Mod USB (which came installed in the review unit that I received).

The DI-Mod (see Fig. 3) enables 16- or 24-bit conversion of the En-Voice input signal for transfer to your recording software while accepting a stereo return from the computer over USB. The computer's output is available from the DI-Mod's ¼-inch TRS jack, which can be switched to an analog insert jack by the adjacent Mode toggle switch. That allows digital conversion of an external mono analog signal independent of the En-Voice's processing. A useful example would be using two En-Voices to convert a stereo analog signal with only one DI-Mod installed. The module sends the native signal out of the USB port as channel 1 and the inserted signal as channel 2.

The current word length and sampling rate can be changed only by software (usually through your audio application). If you want to take the En-Voice somewhere to work as a converter on a project with a different sampling rate than the one previously selected, you'll need

EN-VOICE MK II SPECIFICATIONS

Preamp	
Analog Inputs	(1) balanced XLR mic; (1) balanced TRS line; (1) balanced XLR line, (1) TRS insert return
Analog Outputs	(1) balanced XLR; (1) balanced TRS; (1) TRS insert send
Input Impedances	Mic: 10 kΩ; Line: 44 kΩ; Inst.: 470 kΩ
Preamp Gain	Mic: 25 dB to 70 dB; Line/Inst.: ∞ to 22.5 dB
Maximum Input Level	Mic: +25 dBu; Line: +20.5 dBu; Inst.: +23.5 dBu
Low-Cut Filter	12 dB/octave (80 Hz)
Compressor	
Tube Saturation	0–100%
Threshold	–28 to +2 dBu (variable)
Ratio	1:1 to ∞:1
Attack/Release Times	(8) switchable presets
Low-Cut Filter	6 dB/octave (300 Hz)
Equalizer	
LF Frequency	20–300 Hz, adjustable
MID Frequency	100 Hz–11 kHz, adjustable
HF Frequency	1.6–22 kHz, adjustable
EQ Boost and Cut	±15 dB
General	
Output Impedance	220Ω
Max. Output Level	+19 dBu
Gain	∞ to +6 dB
Dimensions	1U × 9.4" (D)
Weight	7.6 lbs.

the driver and a computer at the session. The module also has a S/PDIF output.

FIG. 3: The DI-Mod USB module enables monitoring of a stereo mix from a digital audio application, as well as independent digital conversion of an external mono source.

MindPrinting to Disk

I tested the En-Voice MK II with Digital Performer (DP) on a dual 2 GHz Mac G5 running OS X (10.3.7). I connected several microphones, comparing the channel strip's mic pre to my similarly priced tube unit and the mic pres in my console. I also tested the En-Voice with bass, guitar, and full-mix mono signals. I was surprised and impressed with the En-Voice's flexibility and sonic character.

Used as a standalone channel strip, the En-Voice sounded clean and quiet. One of the first applications I tried was an electric guitar plugged in to the front-panel Instrument In jack. The compression circuit and tube-saturation feature were welcome additions, giving a smoothness and (in tandem with some EQ adjustments) a nice bite that allowed my Strat to be recorded without further processing. Although the unit offers helpful presets such as G1 and G2 for users with guitars, the En-Voice is no guitar processor; it's a studio-quality piece of gear that adds subtle refinements to analog signals.

A utilitarian Danelectro bass benefited greatly from the En-Voice's B1 and B2 presets, and the clean EQ introduced no additional noise to the sound. Using the sidechain lowpass filter, I could pop strings all day on a funk groove without losing the bottom end or "pinging the red" in DP.

Most people will be using the En-Voice primarily as a mic pre, and the unit is an excellent choice here as well. A female vocal matched to a large diaphragm condenser—a combination that I have recorded many times—sounded as good as it ever had with the V2 preset and just a hint of tube saturation. Similarly, a deep male spoken-word part that was recorded with a mic designed for broadcast applications was fine—the clean, crisp En-Voice gave a new twist on the speaker's rich baritone, which I have usually chosen to match with the somewhat warmer tube pre.

The only application that didn't suit me compared with what I had on hand was using the En-Voice with a dynamic mic on a guitar amp. It was a little too clean for my taste. In that situation, even with the amp providing the tube sound, I preferred the added warmth of the tube pre and the solid-state mixer mic preamp. In all other applications, however, the En-Voice was a solid, reliable, and rich-sounding performer.

PRODUCT SUMMARY

MINDPRINT En-Voice MK II

analog channel strip
$ 799.00
DI-Mod USB interface
$ 249.99

OVERALL EM RATING (1 THROUGH 5): 4

PROS: Great control layout and design. Ample overlap on EQ bands. Tube saturation and low-cut filter in compressor circuit. Very clean and quiet. May be used as outboard converter with DI-Mod installed.

CONS: Presets instead of variable attack and release controls in compressor section.

MANUFACTURER
MindPrint
www.mindprint.com

En-Digital

The DI-Mod worked well as a basic interface, and behaved exactly as described in the manual. After loading the driver into my Mac, the module became visible in DP's Studio Configuration window and provided a clean mix from DPs stereo bus to the module's monitor outputs. Vocal mic and guitar signals that I set up transferred to DP without a glitch. The USB implementation in the DI-Mod seems expertly achieved and makes the unit a handy all-in-one playback product as well as a pro-quality analog signal source, especially for laptops.

It's still best, however, to use the digitally equipped En-Voice with a mixer when monitoring computer output because there's no way to control the analog output from the DI-Mod when it's connected directly to powered monitors. Although a master volume slider in an audio app works fine, other types of computer audio (as well as audio clips from DP's Soundbites window) can suddenly hit your monitors at full blast. (Other basic USB audio interfaces we've reviewed work the same way. If you use them for all of your computer's audio output, you'll need to choose your powered monitors' gain pot settings carefully.)

That very minor heads-up aside, the En-Voice MK II is a great-sounding, ultraconvenient front end for digital recording when equipped with a DI-Mod. At just under $1,050 list price for the tandem, it's not the least expensive channel strip/digital interface on the market, but the En-Voice's quality, convenience, and great sound make it a wise investment for many studios.

Rusty Cutchin is an associate editor of EM. He can be contacted at rcutchin@comcast.net.

"Slammin'!"

Anthony Roberts, Monitors - Tower of Power

"I'm in the studio with P.O.D and lovin' the i-5 on guitar cabs. Great punch in the upper mids and perfect for heavy guitars that need that special drive. Also fantastic on snare – it can sure handle some serious SPL's!"
Travis Wyrick, Producer, Engineer, Mixer - P.O.D., Charlie Daniels, Pillar

"So how does it sound? In a word, impressive. ...and on snare drum, it rocked hard. Overall, there's a clarity and openness to this mic that you don't hear from a lot of dynamics..."
Phil O'Keefe, EQ Magazine

"On the road I use it with The Dead and Phil Lesh and Friends. At home, I use it at the Phoenix Theatre in Petaluma with every act imaginable. From the top to the bottom, the i-5 sets a new standard!"
Ian DuBois, Monitors - Phil Lesh and Friends, The Dead

"Audix really delivers with the i-5. Performing well in about every application on which I tried it, the i-5 does justice to many sources both on stage and in the studio."
Karen Stackpole, Electronic Musician

"During our recent tour, I was very pleased with the results using the i-5 on guitar cabs. The sound was smooth and clear with great presence in the mix. The i-5 is rugged and solid. It qualifies as THE all-purpose dynamic workhorse in any mic collection."
Gary Hartung, FOH - Crosby, Stills & Nash

"The i-5 is an awesome utility mic—it is much tougher and sounds better than the 'old faithful' I am now able to replace."
Dave Rat, Rat Sound

"I've used the same mic on snare drum for recording and live sound applications for 30 years. I've tried other mics from time to time but always returned to the old favorite. Recently, I tried the Audix i-5. No matter what style of music, the i-5 sounds great and now has become my new choice for snare drum."
Tom Edmonds, Engineer - Lenny Kravitz

"WE WANTED TO COMMEND YOU ON YOUR NEW I-5 MICROPHONE. IT PROVED BE THE CREW'S FAVORITE FOR THE YOUNG SCIENTIST MUSIC CHALLENGE, CONSTANTLY ADAPTING TO ANYTHING WE COULD THROW AT IT. WE USED IT IN A VARIETY OF SITUATIONS - RECORDING VOCALS, OVERHEAD MIKING OF DRUMS, TO REINFORCING THE THEREMIN AMPLIFIER. WE FOUND THAT IT PROVIDED US WITH A VERY CLEAN SOUND IN EVERY SITUATION DESPITE THE DIFFICULTY OF RECORDING IN A VERY NOISY ENVIRONMENT. OVERALL, THE I-5 IS AN EXCELLENT ALL PURPOSE MICROPHONE THAT WE'LL BE USING IN FUTURE PROJECTS."
WILLIAM WHITE, PROJECT COORDINATOR - THE DISCOVERY CHANNEL

"I have dreamed of this day—I can now retire the last of my SM57's. Now that I've been exposed to the future, why would I want to live in the past?"
Eugene "Gino" Mulcahy, Lead Audio Engineer - Mohegan Sun

"This mic is slammin'! And if you're tired of having the cap of your snare mic being blown into pieces from a heavy stick hit—you'll love the i-5!"
Anthony Roberts, Monitors - Tower of Power

"On guitar amps the i-5, compared to the 57, was less hyped in the high mids, but had a fuller overall tone...I'm really digging using the i-5 and will be buying the review mics I was sent, if that tells you anything."
Larry Crane, Tape-Op Magazine

"The i-5 is very impressive as a bass mic. It handles the SPL's and captures the clarity of the notes while still maintaining the warmth of the low end. It's a great new tool."
Deanne Franklin, FOH - Tom Waits

"With the i-5 on my snare drum, there's just no going back. I've just started using it on guitar with very good results there too. The i-5; it's my new little weapon."
Neil Citron, Head Engineer - The Mothership

"The i-5 is truly a multi-purpose microphone. It sounds great on a wide variety of sources, but it particularly shines on snare drums and toms...Sounds like a winner in my book."
Mark Parsons, Modern Drummer

"The i-5 is more than an impressive upgrade to my usual snare and guitar cab mic—it's a big leap forward."
Ed Tree, Studio Engineer - The Spencer Davis Group

"Who needs a condenser when you can get this sound out of a dynamic. Audix has again come up with a winning microphone."
John Gatski, Pro Audio Review

"The best thing to happen to snare drum since Charlie Watts!"
Paul Hagar, FOH - American Hi-Fi

"qualifies as THE all-purpose dynamic workhorse in any mic collection."

Gary Hartung, FOH - Crosby, Stills & Nash

AUDIX
PERFORMANCE IS EVERYTHING

FOR A DEALER NEAR YOU CALL: 800-966-8261

TEL: 503-682-6933 FAX: 503-682-7114 www.audixusa.com

Audix Corporation, PO Box 4010, Wilsonville, OR 97070

In Canada, C-Tec, Tel 604-942-1001, Fax 604-942-1010

®Audix Corp 2005 All rights reserved. Audix and the Audix logo are trademarks of Audix Corporation.

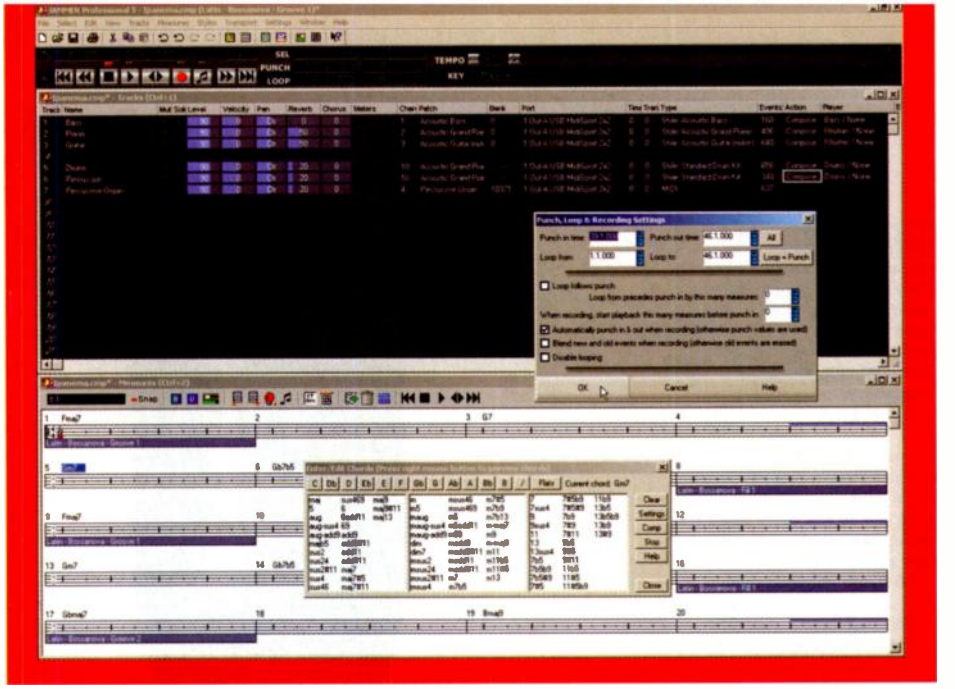


FIG. 1: Shown here is SoundTrek Jammer Professional 5's Tracks window (top) and Measures window (bottom). The upper dialog window is for setting loop and punch points, and the lower pop-up box is for entering chords.

SOUNDTREK Jammer Professional 5 (Win)

An auto-accompaniment program packed with features.

By Jim Aikin

oundTrek's Jammer Professional has been growing in power and depth for more than a decade. Version 5 of the program, which automatically composes and arranges music based on your choice of style and chord progression, is loaded with features. Jammer Pro can create backing tracks powerfully and quickly; half an hour after installing the program and without laying a finger on a MIDI keyboard, I had slapped together a recognizable version of "The Girl from Ipanema," complete with bass, piano, guitar, drums, and percussion.

Learning the program fully, however, requires some effort. Despite Jammer Pro's certain similarities with conventional sequencers (its Piano-Roll Editor window, for instance), it is in some ways more like the auto-accompaniment section of a home keyboard, providing factory styles that include intros, fills, and endings. But the program goes far beyond the typical home keyboard in letting you edit styles and create your own.

The Jam What Am

Jammer Pro 5's primary tools are the Tracks window and the Measures window (see **Fig. 1**). The simplest way to use the program is to enter a chord progression of your choice in the Measures window, and then insert style elements such as an intro, grooves, fills, and an ending in the appropriate measures. You can add a few drum fills, make sure the Punch In and Punch Out points are set to the beginning and end of your chord progression, and then click on the Compose button. Jammer Pro will load the instruments needed for the styles that you've selected into the Tracks window and compose stylistically appropriate parts using your chord progression. It understands numerous types of major, minor, and dominant chord symbols, and you can enter a new chord on any 16th-note.

Playback starts immediately after composing is completed. (On a modern computer, the composing process is practically instantaneous.) But although the factory styles are fine for rough songwriter demos, you may find that Jammer Pro's arrangement doesn't quite meet your needs. The program offers several ways to zero in on the musical result that you're seeking.

First, you can recompose selected measures and instruments. Because Jammer Pro uses intelligent algorithms that include some randomization, it may come up with something better on a subsequent pass. Second, you can open any of the tracks that the program has created in a conventional piano-roll or MIDI event list editor. There, you can fiddle with the voice leading, fix funny-sounding voicings or bass lines, get rid of those

MUSIC MAKING MADE EASY.

If you enjoy clicking through layers of windows to create music, then Tracktion software is definitely not for you. It won't pretend to be a mixing console... It doesn't have cute 3D racks or patch cables... It doesn't contain a single instrument icon.

Instead, Tracktion lets you get right to the business of making music using a single screen for everything from audio recording and MIDI production, to mixing and mastering. Tracktion is a simple-yet-powerful application, with thousands of fervent users and dozens of glowing reviews.

And now with Tracktion 2, we've added more than 100 new features and a full suite of high-quality plug-ins — while maintaining the original's legendary simplicity and a reasonable price.

Visit www.mackie.com to learn more about Tracktion. Then call your friendly Sweetwater salesperson at 800.222.4700 to order your copy of Tracktion 2.

It won't make better music for you, but it sure lets you make it faster and easier.

SIMPLE. POWERFUL. REVOLUTIONARY. TRACKTION 2.

For a limited time, get a FREE artist website and 6 months of hosting from www.broadjam.com when you buy and register Tractkion 2.

www.sweetwater.com 800-222-4700 Sweetwater

MACKIE.
www.mackie.com

© 2005 LOUD TECHNOLOGIES INC. ALL RIGHTS RESERVED. "MACKIE." AND THE "RUNNING MAN" FIGURE ARE REGISTERED TRADEMARKS OF LOUD TECHNOLOGIES INC. ALL OTHER TRADEMARKS ARE PROPERTY OF THEIR RESPECTIVE OWNERS. ALL SPECIFICATIONS SUBJECT TO CHANGE. THE TRUTH IS OUT THERE... LIKE OH, WAY OUT THERE.

annoying crash cymbals at the end of drum fills, and so on. Third, you can recompose the same progression using a different style. Fourth, if you're feeling really creative and have a bit of patience, you can customize the style itself to your heart's content or create an entirely new style from scratch before recomposing. You can even design custom chord voicings for Jammer Pro to use.

Another option is to overdub your own MIDI tracks. That feature is useful if, for example, you want to add a harmony line to a song. On one occasion when I was overdubbing, Jammer Pro stopped recording MIDI Note Off messages halfway through, resulting in lots of long notes; that was an isolated problem, though, not something I was able to reproduce. Conversely, you can let Jammer Pro compose a chord progression or melody for you at the same time it's creating the backing tracks. The progression composer creates some odd progressions, but it may also produce phrases that get your creative juices flowing.

Jammer Pro's user interface is somewhat eccentric. For example, it took me a while to figure out when I needed to double-click on items as opposed to right-clicking on them. The main window works best in the maximized position; it doesn't have scrollbars if you make it smaller. Some operations are buried deep in elaborate dialog boxes. In addition, the PDF manual needs more graphics, a better index, and page numbers in the spots where it cross-references other sections. I highly recommend going through the excellent tutorials at the beginning of the manual.

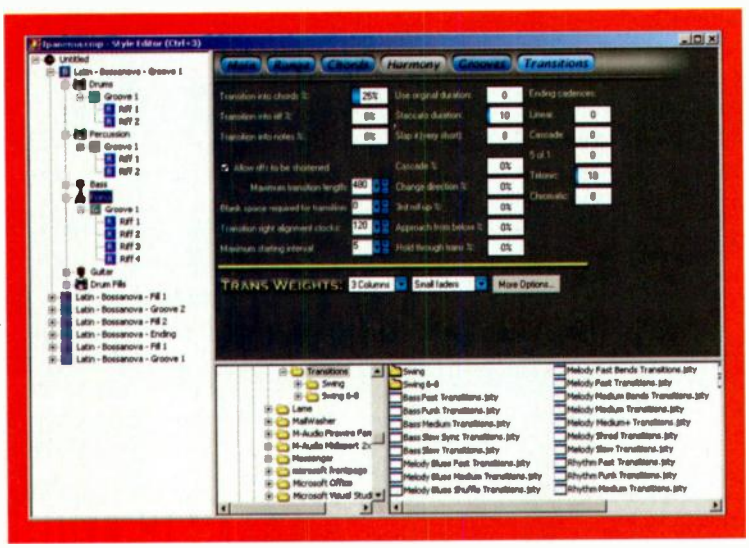


FIG. 2: One of the numerous data entry windows in Jammer Pro's Style Editor. The parameters shown here are for Transitions (the button in the upper-right side) made by the Piano instrument (highlighted in the tree at left). The file browser along the bottom is for dragging additional elements into the style.

Spreadin' the Jam

Jammer Pro is strictly a MIDI program; it doesn't host VST or DirectX soft synths, nor does it offer audio tracks. There are, however, several viable workarounds. If you don't own a hardware synth, you can direct Jammer Pro to use the Microsoft GS Wavetable synth as an output device. That synth is installed as part of Windows XP, but unfortunately it can't use a low-latency audio driver such as ASIO. You'll hear a time lag if you try to play it in real time from a MIDI keyboard, which you might want to do while recording a MIDI solo into Jammer Pro as an overdub.

If you have a general-purpose software DAW, you can easily export Jammer Pro's creations as MIDI files, import them into the DAW, and then add audio tracks, loops, soft synths, or whatever you need to create a finished production. It's also possible to send Jammer Pro's MIDI output to an ASIO-compatible soft synth running on the same computer by using a MIDI utility such as Hubi's Loopback Device. SoundTrek recommends MIDI Yoke NT from MIDI Ox (www.midiox.com) for NT, 2000, and XP users.

Jammer Pro is set up to use General MIDI (GM) out of the box, which will be convenient for many users. GM program changes, effects depth controls, and drum maps are all loaded and active by default. Because the styles in Jammer Pro primarily make use of standard types of sounds, such as acoustic bass, Hammond organ, and steel-string guitar, GM makes the program and its styles highly portable. I used Jammer Pro with a Yamaha Motif 6 and was satisfied with the results.

Jammer allows you to override the GM program changes if you're using a non-GM synth, but doing that requires donning your scuba gear and diving into the program's deeper grottoes. If Jammer Pro "knows" about the factory presets in your synth, you can indeed set up the program to use those patches in your arrangements with no more than a little poking around in dialog boxes. The list of known devices is long, but some important newer synths, such as the Yamaha Motif and Roland Fantom, are not included. If you understand MIDI Bank Select messages, however, and are willing to spend a little time, you can tell Jammer Pro where to find your preferred acoustic piano, upright bass, drum kit, and so on. While this gives you some added flexibility, it also means that the reverb and chorus depth parameters in Jammer Pro's Tracks window won't be functional for those instruments, as those MIDI Control Change messages are defined only for GM modules.

Stylin' the Jam

Jammer Pro does a respectable job on Latin, country, and pop styles. (The GM soundset is not ideal for creating hip-hop tracks.) The output inevitably sounds a bit prefabricated and wouldn't be suitable for a major-label production, but for lounge work and songwriter demos, it's kind of a kick to hear what the computer comes up with.

By my count, Jammer Pro ships with 394 style files. Since that number includes intros, fills, endings, and so on, however, the actual number of discrete musical styles is 48. The factory styles include groups such as Bluegrass (Quick Pickin', Upbeat), Blues (Slow, Upbeat), Country (12/8 ballad, Strumming Ballad, Swing), Dance (Club Beat, Synthetic '70s, Upbeat), Funk (B3 Funk Rock, Medium), Hip Hop (Street Vibe), House (Power House), and Jazz (Easy Swing, Piano Ballad, and Swing Upbeat).

Many rock variations are provided, and genres from Waltz to Tex-Mex are also represented. Four additional packs of styles are available from SoundTrek for $30 each. Jammer Pro is also available for $69 in a Songmaker edition that has fewer styles. SoundTrek's Web page gives the number as 116, but that includes intros and other elements as separate styles, so the real number for Songmaker is about 15 styles.

Explaining Jammer Pro's style creation features in detail would take many pages. For example, after entering each note in a chord riff (in Jammer Pro a riff is a component of a groove, which is a component of an instrument, which is a component of a style) you have to "compile" the note. There are 39 different compile options, which have obscure names such as "Wild-card transition note using pool scale" and "Chord-based fix-up note." An easier way to work is to use factory riffs and define a style by changing the relative randomization weightings of the riffs. Chord-to-chord transitions can also be given weights (see Fig. 2). I wouldn't guess that many Jammer Pro users will want to delve into these capabilities, but it's great to know they're there if you need them.

Jammer Time

Jammer Pro is an excellent tool that should appeal to at least four types of musicians: lounge players who need to put together a large supply of backing tracks for gigs, songwriters who want to demo their songs easily, beginning or advanced students who would like an endless source of fresh accompaniments over which to practice soloing, and educators who are serving those students. (Note that Jammer Professional is designed strictly to generate tracks offline and then play them back. For real-time interactive accompaniment, SoundTrek offers Jammer Live.)

With version 5, Jammer Pro has matured into a sophisticated and unique program. There's nothing else like it. Beginners will appreciate its ability to create credible arrangements based on lead sheets—no knowledge of music theory or arranging is required. More advanced users will be able to take advantage of the program's almost endless array of esoteric features. Although the user interface is a bit quirky, if you need to compose usable MIDI arrangements quickly, Jammer Pro is the tool for the job.

Jim Aikin writes, teaches, and plays music in Northern California. He has a maniacal gleam in his eyes because he's working on a new novel. Details are at www.musicwords.net.

PRODUCT SUMMARY

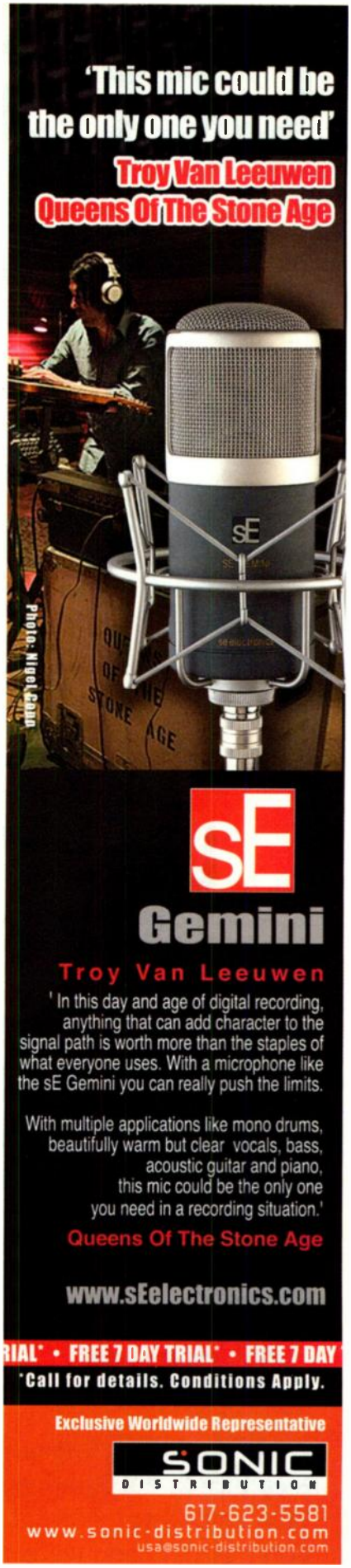
SOUNDTREK Jammer Professional 5

algorithmic MIDI accompaniment generator
$129
upgrade from version 4, $59.95
OVERALL RATING [1 THROUGH 5]: 3.5

PROS: Lots of tools for crafting arrangements and styles. Compatible with a wide variety of synths, as well as General MIDI.

CONS: User interface has awkward elements. Creating new styles from scratch is complicated.

MANUFACTURER
SoundTrek
www.soundtrek.com



Get Serious.

Logic® Pro 7. Serious tools

34 software instruments. 70 studio quality effects. Total edi

GET YOUR INSPIRATION INTO LOGIC WITH THIS SERIOUS USB/MIDI CONTROLLER.

ALESIS

Photon X25

Making music is all about control. The new Alesis Photon keyboard controllers give Logic users unprecedented control! And thanks to onboard USB, the Photon X25 can be connected directly to your computer — no MIDI interface required!

- Revolutionary "AXYZ" infrared dome 3D controller
- 10 rotary encoders, 10 buttons
- Over 40 immediately accessible MIDI controls
- 20 editable, storable configurations
- LCD screen with dedicated encoder
- Template inserts for easy setup with your favorite soft synth

When musicians, engineers and producers want to get serious about computer recording, they turn to the company that has put together more computer-based recording systems than any other — Sweetwater. Our digital audio experts can help you design the perfect Logic system and we can even configure a turnkey system for you. Want to know more?

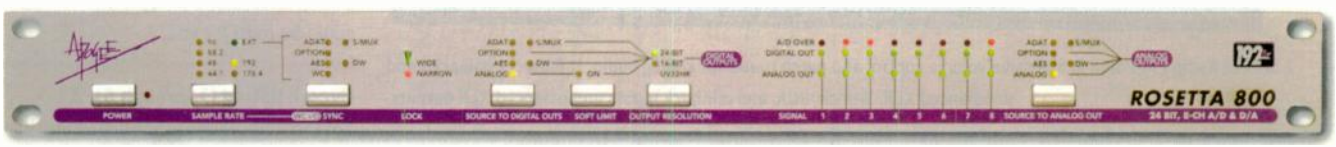
Call us today at (800) 222-4700.

Authorized Reseller

for creative professionals.

ng flexibility. Synchronized video playback. Expandable DSP.

MAKE LOGIC SOUND AMAZING WITH THIS SERIOUS AUDIO INTERFACE.



Rosetta 800

Serious professionals have chosen the sound of Apogee converters for years. The Rosetta 800 faithfully captures your audio with warmth, punch and accuracy, and delivers that audio to Logic Pro 7 with a single firewire cable thanks to the optional X-FireWire card.

APOGEE SOUND AMAZING

- 8 channels of balanced analog I/O
- 8-channel Digital I/O via AES/EBU & ADAT/SMUX
- Up to 24-bit/192kHz resolution
- Ultralow jitter Intelliclock
- SoftLimit clip protection
- Industry-leading UV22HR word length reduction

CALL SWEETWATER TODAY!
(800) 222-4700
www.sweetwater.com

Sweetwater®
music technology direct™

QUICK PICKS

SM PRO AUDIO

M-Patch

By Rich Wells

SM Pro Audio's M-Patch ($179) is a passive volume control that works as a patch-control device for routing audio signals from two stereo sources to two stereo destinations. The M-Patch is intended to fill the needs of video and computer recordists, especially those who want to avoid using a mixer.

The metal casing is one rackspace high and slightly less than eight inches wide. You can place it on a tabletop or mount it using the supplied rack ears. The package comes with rubber feet and a pair of short female-XLR-to-female-TRS adapter cables.

All inputs and outputs are on the rear panel. The input labeled Stereo is balanced and has two combination XLR and TRS jacks. The input labeled Aux is unbalanced and has a stereo minijack and two RCA jacks. Two pairs of balanced outputs are on XLRs. The front panel has a switch to select the input source and another to mute the inputs. Two additional switches let you select the output and choose from mono or stereo output. Two attenuator knobs, calibrated in decibels, control the Stereo and Aux input levels.

SM Pro Audio's M-Patch is a passive volume control and patch router for analog audio. It features balanced and unbalanced XLR, ¼-inch, RCA, and minijack inputs and balanced XLR outputs.

A Switch in Time

For use as a simple stereo input and monitor switcher, the M-Patch is handy. You can connect two pairs of speakers for comparison purposes; you can also switch between speakers and a stereo line-level device or use the M-Patch purely for routing line-level sources. The two sets of inputs were perfect for listening to mixes from my recording rig (on the balanced XLR inputs) and to music from my home-stereo unit (on the unbalanced inputs). Although I use a hardware mixer for recording, I like having an alternate way to route audio to my monitors; when I just want to listen to a CD, I don't have to turn on the mixer.

As with many SM Pro Audio products, the M-Patch is aimed at the mixerless computer-based recording rig. Theoretically, such a rig lacks a method to reduce volume in the analog domain, and the user therefore has to either turn down faders in the digital domain or run the monitors at full tilt. The M-Patch provides the means to attenuate audio coming from the computer. Because many monitoring systems already have a way to control volume, however, that solution is useful mainly for owners of standalone active monitors.

The M-Patch's two input attenuators let you easily set comfortable listening levels. With no output attenuation, though, you can't adjust the comparative levels of two sets of monitors. Consequently, you might find yourself frequently adjusting the input-level pots as you switch between speaker sets. Although you might be able to set comparable levels between monitor pairs if your monitors or power amps have level-adjustment capabilities, how badly do you need a separate attenuator device if you can do that already?

The best monitor mixers offer the opposite of what the M-Patch provides: rather than input attenuation, they incorporate output-level trim controls for the individual speaker sets as well as a master output-level control. For a stripped-down box, a more logical and useful design might be to have the unit accept a line-level signal as is, and then offer attenuation at the outputs.

The sound of such a device is another crucial issue; the prime directive should be the complete absence of signal degradation. I set up a comparison test with one active monitor connected directly to my mixer and the other monitor connected to the mixer through the M-Patch (both of them balanced connections), and then sent a mono mix of a sustained loop through both channels. The M-Patch matched the direct signal pretty closely, but I did hear minor differences that wouldn't be obvious in anything other than a sustained A/B comparison. The differences, although extremely minor, were a slight reduction in bass and a slight change in high frequencies. I didn't hear any differences when using the unbalanced input.

Making the Switch

A useful monitor switcher lets you control input and output levels. There are other products that offer more control than the M-Patch, but they cost considerably more. That makes the M-Patch a viable choice for very specific recording setups, such as a system that has monitors with no level-adjustment capability, a system in which you need to switch between two stereo sources and two speaker pairs, or a system in which you need outboard mono summing. If you own one of those setups, the M-Patch could be right for you.

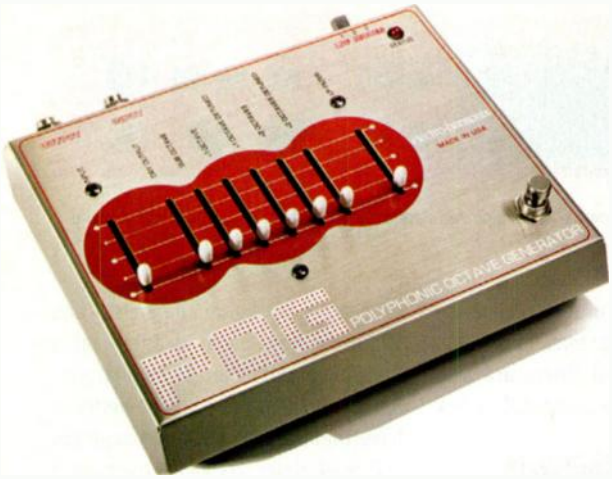
Overall Rating (1 through 5): 3
SM Pro Audio/Kaysound (distributor)
www.smproaudio.com

ELECTRO-HARMONIX

POG

By Orren Merton

In the world of guitar pedals, Electro-Harmonix has a reputation for creating unique modern effects and solid reproductions of classic pedals. The Polyphonic Octave Generator ($698) is the company's



The Electro-Harmonix POG can generate signals one octave below, one octave above, and two octaves above the input signal as well as additional detuned versions of the higher octaves.

modern take on the classic '60s analog octave pedal made famous by Jimi Hendrix. Octave pedals re-create an input signal an octave higher or lower in pitch, allowing guitarists to create thick, synthetic-sounding tones. Octave pedals aren't just for guitarists; Ike Turner was known for experimenting with them to create a suboctave harmony for his voice.

The Electro-Harmonix POG can generate polyphonic signals one octave below, one octave above, and two octaves above the input signal. In fact, for each higher octave, the POG offers two voices: one voice that is precisely the chosen interval, and a second detuned version of the generated octave. The unit also provides a variable Low Pass Filter (LPF) with three modes that help refine the unit's sound.

The POG is a large pedal; its brushed-aluminum case is about as tall as a normal guitar pedal, but it's slightly longer and more than twice as wide. The mono ¼-inch TS input and output jacks are on the back of the unit, as is the AC jack (the unit cannot be battery powered) and the 3-position LPF Modes switch. Eight sliders and the toggle button (or footswitch) are on top of the unit. The toggle button is placed at the bottom right away from the sliders, which guitarists will appreciate. I tested the POG by connecting it between my guitar (a Patrick Eggle Berlin Pro V) and my amp (a Soldano Avenger). I never accidentally stepped on the sliders while toggling the effect.

Slip Slidin' an Octave

The POG is straightforward to operate. The first slider on the left, situated farther from the next six sliders, is the Input slider, which adjusts the gain of the input signal before the A/D stage. The next slider controls the output volume for the Dry Output signal, and can be used as a dry/mix control. The Sub Octave slider adjusts the output level of the suboctave, which is one octave below (half the frequency of) the input signal.

Next, the +1 Octave slider adjusts the output volume of the voice that is generated one octave above (twice the frequency of) the input signal. The +1 Octave Detuned slider controls the output level of another voice, which is a modulated, detuned version of the +1 Octave signal. To the right of those two sliders are +2 Octave and +2 Octave Detuned sliders, respectively, offering output volume controls of the voice that is generated two octaves above (four times the frequency of) the input signal. The frequencies of the detuned octaves are modulated at a fixed rate above and below the input signal. You can use all four octave sliders simultaneously, which can generate thick and rich walls of sound.

The final slider to the right is the LP Filter slider, which controls the cutoff frequency of the lowpass filter. All of the generated octaves go through the lowpass filter. The dry signal bypasses the lowpass filter if the LPF Modes switch is in position 1, but in positions 2 and 3, the dry signal passes through the lowpass filter as well. The LPF Modes switch sets the Q to either 1 (modes 1 and 2) or 2 (mode 3). In actual use, I couldn't see a significant difference between any of those Q settings. (According to Electro-Harmonix, the slider ranges are significantly different, and the effect offers many distinct tonal possibilities, especially when recording.) A status LED on the top of the unit near the LPF switch indicates whether the POG is engaged. In Bypass mode, the input jack is connected directly to the output jack, bypassing the AD/DA stages.

Compensation Station

All of these octaves and level sliders provide extensive creative control in blending your dry signal with as many as three additional octaves. The POG itself is not transparent; it seems to thin out any input signal to some degree. You can compensate for that by using the various sliders to thicken your signal without creating an audible effect. The included instruction sheet offers suggestions on achieving 12-string-guitar-like tones, a bass sound, and an organlike sound, but the most effective use of the pedal will come from experimenting on your own.

Although the POG is not the least expensive way to generate octaves, because of its polyphony and filter implementation, the unit offers a level of creative control lacking in most other octave pedals. Musicians looking for a modern pedal to use for experimenting with octave effects should definitely give the POG a look.

Overall Rating (1 through 5): 3
Electro-Harmonix/New Sensor Corporation
www.ehx.com

EDIROL

Audio Capture FA-101

By Kerry Rose

The Edirol Audio Capture FA-101 ($625) is a half-rack-width FireWire audio and MIDI interface capable of 24-bit, 192 kHz recording. It has ten audio inputs and outputs (eight analog and two digital) and one MIDI port. The FA-101 is housed in a sporty red anodized aluminum chassis with a

block diagram silkscreened on the top, and it can be powered from the FireWire bus or from an included lump-in-the-line DC power supply. The minimum system requirements are a 900 MHz Pentium or Celeron processor running Windows XP, or an 800 MHz Mac G3 running OS X 10.3.3. Using the higher sampling rates will also require lots of fast storage.

The Edirol Audio Capture FA-101 is a powerful, affordable, portable, high-resolution audio and MIDI interface.

Gozinta, Gozouta

The front panel has two mic-line inputs, one of which doubles as a high-impedance instrument input, served by Neutrik combo connectors. Both inputs have a gain control. There are also inputs and outputs with optical Toslink connectors for digital channels 9 and 10, whose front-panel location makes them best suited for occasional use. Space permitting, it would be better to have them on the back. A 4-segment LED level meter sits above the optical I/O, but strangely, it does not function at 192 kHz.

The front panel also has a switch to select external sync for the digital inputs, along with a sampling-rate-select switch that gives you most standard sampling rates between 44.1- and 192 kHz. In what seems like a glaring omission, 176.4 kHz is not offered, even though it is a multiple of the Red Book CD audio standard 44.1 kHz. There is a small monitor section with a mix control for main outputs and inputs, a switch that allows the user to enable software control of output and input mixing if using ASIO 2.0 on Windows, and a Mono button to collapse the stereo image. A ¼-inch headphone jack with volume control and power and FireWire LED indicators round out the front panel.

Back of the Rack

The rear panel has a 48V phantom-power switch, main L-R (channels 1 and 2) outputs, and I/O for channels 3 through 8. All rear-panel I/O uses ¼-inch TRS connectors, which support balanced and unbalanced cables. Inputs 7 and 8 have a sensitivity knob for interfacing with lower output gear. A power switch, located next to the DC input allows you to select between bus and external power. Finally, there are MIDI input and output jacks and two 6-pin FireWire connectors.

I tested the FA-101 using Logic 6.3.3 on a 550 MHz Mac G4 running OS X 10.3.6. My G4 processor speed is slightly under the FA-101's minimum requirements, which can affect issues

such as monitoring latency. The FA-101 is one of the few (if not the only) audio interfaces to use Apple's driver, which is integrated into OS X. That means that there are no drivers to install—just plug and play. (If you use OS X 10.3.3, you will need to update the FireWire audio driver.) The documentation is clear, brief, and nicely laid out, and gives some basic setups for those just getting started.

Let's Rol, Edi

The mic preamps have decent gain and are fairly clean, with a neutral, uncolored sound quality. At the upper end of the gain range, however, the level seems to jump suddenly, and the unit exhibits some noise. I would suggest using a higher output microphone when recording quieter material. There was some zipper noise when I adjusted the monitor mix knob, but because that is a set-and-forget control and doesn't affect the recorded signal, I could tolerate it.

I missed having insert jacks, particularly for recording bass guitar and vocals. There was the typical delay between input and software return when recording, but it was manageable and would be even less of a problem on a faster computer. There is also a direct-monitor option that allows you to monitor the input (although not the processed signal) without latency.

One to Go, Please

Despite its anomalies, the overall sound quality is good for recording and monitoring, and the unit is easy to use. I was particularly impressed by the number of inputs and outputs, as well as the high recording resolutions offered in a portable package at this price.

The inclusion of a basic MIDI interface makes the FA-101 a complete portable studio solution suitable for a range of users. Its feature set definitely earns it a place in the growing field of mobile audio and MIDI portable interfaces.

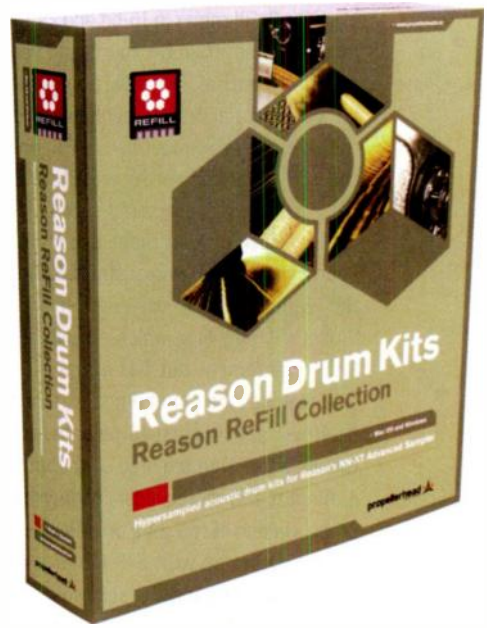
Overall Rating (1 through 5): 3
Roland Corporation U.S. (distributor)
www.edirol.com

PROPELLERHEAD SOFTWARE

Reason Drum Kits ReFill Collection (Mac/Win)

By Doug Eisengrein

Reason Drum Kits ReFill Collection ($129) is the latest ReFill product from Propellerhead. ReFills are sound banks that have myriad samples and patches for Reason Instruments, and this latest release features goodies for several



Propellerhead's *Reason Drum Kits ReFill Collection* contains thousands of individual snare and cymbal samples and employs extensive multisampling, with dozens of samples assigned to individual keys.

Instruments, with an emphasis on the NN-XT sampler. There are 17 custom-tailored acoustic drum kits for NN-XT suitable for vintage soul and funk, indie-pop, and rock styles. You also get 70 ready-to-use ReDrum patches, 8 reverb patches for RV7000, 23 distortion and compression patches for Scream 4, and assorted MIDI files, song templates, and raw samples. A keymap, manual, and studio log (which documents how each kit was created) are provided in printed and PDF formats.

The drum samples are all original and were individually recorded using top-notch mics (such as Neumann

Electronic Musician's weekly e-newsletter delivers the latest news direct to your inbox!
eMusician EXTRA
Subscribe today at www.emusician.com
Don't miss another issue!

Thinking about MIDI guitar?

GHOST®

MODULAR PICKUP SYSTEM

MIDI guitar that *really* works!

The GHOST® Modular Pickup System from Graph Tech Guitar Labs sets the industry standard in ease of installation, expandability and tracking performance.

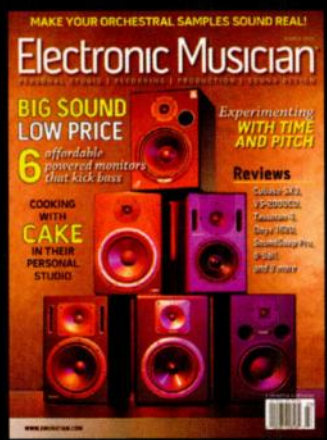
To receive a **FREE INFORMATION BUNDLE** on the GHOST Pickup System, visit **www.graphtech.com/requests** and enter promo code **3E5.**

Graph Tech GUITAR LABS

THE GUITAR INDUSTRY'S NUT & SADDLE EXPERTS

Graph Tech Guitar Labs
Phone: (604) 940-5353
eMail: sales@graphtech.com
www.ghostinside.com

SUBSCRIBE TO



Visit
www.emusician.com
or call
800-245-2737

U87s) and vintage outboard gear at Stockholm's Atlantis Studio, a facility that has been in operation since the 1960s. A wide selection of drums is represented, including DW, Yamaha, and Gretsch, as well as Meinl, Paiste, and Zildjian cymbals.

Installation requires you to drag-and-drop the content (which is extensive) from the DVD to your preferred drive. The minimum system requirements are 512 MB of RAM on either a Pentium III/1 GHz PC or a G4/550 MHz Mac. The ReFill comes in 16-bit and 24-bit formats; other than bit count, the versions are identical. Either version puts a fairly substantial dent in your hard drive: the 24-bit version requires 1.9 GB, and the 16-bit version consumes 612 MB. The Instrument presets and songs also require different load times depending upon which version you're using. Loading the 16-bit version of the example song "Robotic" on my Mac, which exceeds the RAM requirement but has a processor that matches the minimum spec, took a healthy 2 minutes and 15 seconds, and the 24-bit version required a whopping 4 minutes and 15 seconds. Loading the 24-bit version of the song on a Pentium 4/2.4 GHz laptop with 512 MB of RAM took 2 minutes and 20 seconds. The songs and patches were usable on both machines; in both cases, however, I had to kick up the buffer in Reason to handle the 24-bit versions.

The drums and presets in this ReFill collection sound very good—the high quality is apparent. The samples themselves are not large, but in the case of the NN-XT patches, Velocity switching is used, and many samples are loaded on each key. For example, in one patch I counted 56 samples on a single key. In addition, the collection uses a feature that Propellerhead calls Hypersampling, which randomly selects a different sample, mic position, and dynamic level when you repeat a note (a snare-drum fill, for example).

Sample This

I browsed through most of the sample songs (from which several of my Web Clips are derived) with delight. From rock ballads to funk, the songs showcase the collection's excellent potential, especially when using the NN-XT (see **Web Clips 1–12**). The downside is the sample songs' extremely long load times—most songs, though less than 32 bars, take several minutes to load. The same is true of the NN-XT patches—but like the songs, they're worth loading. I tried out all 17 kits, and each has its own nuances, flavor, and surprises, including muted and extra "live" drums, hand claps, finger snaps, drum rolls, and a variety of hats, cymbals, snares, and toms. There are even dedicated brush and mallet kits, though the brush kit unfortunately did not have much brushed-snare work. The sample songs take advantage of NN-XT's multiple outputs, which are used for the separate routing of different drums and mic angles. (Using the outputs with your own tracks makes for an unusually satisfying sample experience.)

I also cruised through many of the ReDrum patches, and although they are much less sophisticated than the NN-XT patches, they are fun in their own right. The ReDrum patches use the same sample library as the NN-XT patches, and the sounds are fat. But because there aren't any layered samples, the patches lack the subtle dynamics of NN-XT. (They require, however, a fraction of the load time.) For urban styles such as Hip-Hop or R&B, the ReDrum patches are the ticket.

Although I can't cover all the goodies here, I especially like the array of mic positions used and the natural mic bleed that comes through in the samples. The Reverb and Distortion presets also deserve a mention. Suffice it to say, there's plenty of quality all around. On the downside, you'll need a powerful computer to make proper use of all this juiciness, and the raw samples cannot be used outside of Reason. Overall, *Reason Drum Kits ReFill Collection* is an excellent selection of samples and plug-and-play presets. I recommend it. EM

EM WEB CLIPS

Overall Rating (1 through 5): 4
Propellerhead Software
www.propellerheads.se

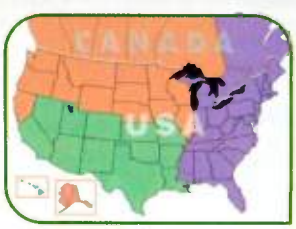
ADVERTISER INDEX

ADVERTISER	INTERNET	PAGE
ADK Microphones	www.adkmic.com	107
Alesis	www.alesis.com	33
Apex	www.apexelectronics.com	68
Apogee	www.apogeedigital.com	99
Apple Computer	www.apple.com	2-3
Arturia	www.arturia.com	47
Audix	www.audixusa.com	129
Auralex	www.auralex.com	12
B&H Photo-Video (Integrated)	www.bhphotovideo.com	85
B&H Photo-Video (Integration)	www.bhphotovideo.com	117
Berklee Music	www.berkleemusic.com	12
BIAS	www.bias-inc.com	69
Big Fish Audio	www.bigfishaudio.com	45
Cakewalk (Project5)	www.cakewalk.com	51
Cakewalk (Sonar 4)	www.cakewalk.com	15
Carillon	www.carillonusa.com	49
Carvin	www.carvin.com	50
Cycling '74	www.cycling74.com	110
Digidesign	www.digidesign.com	35
Disc Makers	www.discmakers.com	75
eBlitz Audio Labs	www.eblitzaudiolabs.com	59
Echo Digital Audio	www.echoaudio.com	155
E-mu Systems	www.emu.com	67
Focusrite	www.focusrite.com	70–71
Frontier Design Group	www.frontierdesign.com	103
Full Compass Systems	www.fullcompass.com	89
Full Sail	www.fullsail.com	102
Graph Tech Guitar Labs	www.graphtech.com	140
IK Multimedia	www.sampletank.com	63
Ilio (Stylus RMX)	www.ilio.com	13
Ilio (Synthogy, Ivory Grand Pianos)	www.ilio.com	41
Independent Music World Series	www.discmakers.com/imws	97
Institute of Audio Research	www.audioschool.com	81
JBL Professional	www.jblpro.com	17
Joemeek	www.joemeek.com	113
Kay Sound (CME)	www.Kaysound.com	19
Kay Sound (SM Pro Audio)	www.Kaysound.com	72
Korg (Digital Recorders)	www.korg.com	21
Korg (Triton Extreme)	www.korg.com	20
Lexicon	www.lexicon.com	29
Mackie (Big Knob)	www.mackie.com	61
Mackie (TAPCO)	www.mackie.com	9
Mackie (Tracktion 2)	www.mackie.com	36–37
Mark of the Unicorn	www.motu.com	156
M-Audio (Pro Tools)	www.m-audio.com	52–53
M-Audio (Trigger Finger)	www.m-audio.com	38
Music & Sales (MindPrint)	www.mindprint.com	87
Musician's Friend	www.musiciansfriend.com	65
Musician's Friend (PreSonus)	www.musiciansfriend.com	105
Musicians Institute	www.mi.edu	138
Native Instruments	www.ni-absynth.com	83
Neumann USA	www.neumannusa.com	111
PG Music	www.pgmusic.com	79
Remix Hotel NYC	www.remixhotel.com	119
Roland	www.rolandus.com	6
Rolls Corp.	www.rolls.com	112
SAE Institute	www.sae.edu	95
Sibelius Software	www.sibelius.com	98
Sonic Distribution	www.sonic-distribution.com	133
Sonic Implants	www.sonicimplants.com	43
Sweetwater Sound	www.sweetwater.com	23
Sweetwater Sound (Apple, Emagic)	www.sweetwater.com	134–135
Sweetwater Sound (Creation Station Series)	www.sweetwatersound.com/perfectpair	77
Sweetwater Sound (Digidesign)	www.sweetwater.com	92–93
Sweetwater Sound (Mackie)	www.sweetwater.com	131
Sweetwater Sound (MOTU Studio)	www.sweetwater.com	150–151
Sweetwater Sound (MOTU Studio)	www.sweetwater.com	152–153
Sweetwater Sound (PreSonus)	www.sweetwater.com	123
Tascam (FW Family)	www.tascam.com	11
Tascam (GigaStudio 3.0)	www.tascam.com	31
Taxi	www.taxi.com	91
TC Electronic	www.tcelectronic.com	25
Waves	www.waves.com	27
West LA Music	www.westlamusic.com	81
Woodwind & Brasswind	www.wwbw.com	125
Yamaha (Motif ES, Cubase SX 3)	www.yamaha.com	4–5
Yamaha (STAGEPAS 300)	www.yamaha.com	57

ELECTRONIC MUSICIAN MARKETPLACE ADS

AEA	www.ribbonmics.com	145
Bayview Pro Audio	www.bayviewproaudio.com	143
Cascade Microphones	www.cascademicrophones.com	145
Crystal Clear Sound	www.crystalclearcds.com	142
ELS Productions	www.elsproductions.com	142
Emulation Media	www.emulationmedia.com	144
Florida Music	www.floridamusicco.com	142
Lonely Records	www.lonelyrecords.com	145
Media Services	www.mediaomaha.com	145
Omnirax	www.omnirax.com	144
Paramount Technology	daw.ptipc.com	142
Phonic	www.phonic.com	144
Play-It Productions	www.play-itproductions.net	142

Electronic Musician's Advertiser Sales and Representatives



Associate Publisher: Joe Perry (770) 343-9978 jperry@primediabusiness.com

NORTHWEST
Greg Sutton
(847) 968-2390
gsutton@primediabusiness.com

SOUTHWEST
Mari Deetz
(818) 567-4907
mdeetz@primediabusiness.com

EAST COAST/EUROPE
Jeff Donnenwerth
(770) 643-1425
jdonnenwerth@primediabusiness.com

CLASSIFIEDS
Kevin Blackford (West Coast)
Jason Smith (East Coast)
(800) 544-5530 or (510) 653-3307
emclass@primediabusiness.com

EM Marketplace

ELS PRODUCTIONS

CD & DVD Duplication - Lowest prices, shipped in 2 days!

100 Full Color RETAIL READY CDs just $240.00

Free Bar Code with purchase! Mention this ad.

1-800-927-3472

visit us on the web www.elsproductions.com

$1099.00 1000 pcs.

Complete Minijacket Package

INCLUDES COLOR PRINTING

ASK ABOUT OUR FREE BARCODE

CDs • DVDs Graphics • Printing Mastering and More!

TOLL FREE:1 800 815-3444 or 212-695-6530

WWW.PLAY-ITPRODUCTIONS.NET

PLAY-IT PRODUCTIONS

CD • DVD • CD-ROM • SHAPED CD • CASSETTE • PACKAGING

NEED CDs?

the choice is

CRYSTALCLEAR DISC & TAPE

Trusted experience for over 30 years

SPECIALS!

1000 CDs • $999! (Complete! Retail Ready)

1000 Promo CD Pack • $599!

1000 DVDs • $1899! (Complete! Retail Ready)

BANDS! GET 72 T-SHIRTS ONLY $899

1-800-880-0073

www.crystalclearcds.com

paramounttechnology Est. 1994

Professional Digital Audio Workstation

* CPU: Intel P4 3.2 800MHz FSB 1MB L2 Cache
* Motherboard: ASUS P5GD2-Deluxe
* HD1: SATA150 120GB 7,200RPM Hard Drive for OS and Applications
* HD2: SATA150 74GB 10,000RPM Hard Drive for Dedicated Audio/Video Data
* Optical Writer: DVD+RW Dual Layer 16x12x40x
* Optical Reader: DVD-ROM 16x48x
* Video: PCI-X ATI X600Pro 256MB VGA w/ Dual Heads (VGA+DVI)
* Monitors: (2) PTI Ultra-Vision 17" LCD
* Memory: 1GB 533MHz DDR2 PC2-4200 DIMM
* PSU: Antec True Power ultra quiet 550Watts
* Case: Lian Li Silver Aluminum ATX Mid Tower
* Keyboard/Mouse:Logitech MX Duo Cordless
* Ports: (2) IEEE 1394 FIREWIRE,(8) USB2.0
* OS: Microsoft Windows XP Home configured and optimized for audio application
* 3 Years Parts/Labor Warranty

WE CAN CUSTOMIZE YOUR PC! $2195

http://DAW.PTIPC.COM

925.825.4046

daw@paramounttechnology.com

M-AUDIO

Where do you want to take your music?

M-Audio Trigger Finger

16-Pad Midi Drum Control Surface

Available From

Floridamusicco.com

1-800-378-7599

Bayview Pro Audio

FREE HEADPHONES!

"America's #1 Pro Audio Internet Dealer"

Purchase any of the items below from Bayview Pro Audio and receive a FREE pair of Sennheiser HD280 Pro headphones! That's a $199 retail value. This limited time offer is available from May 15, 2005 to June 30, 2005.

RME Fireface 800

The Fireface 800 is the world's most powerful FireWire audio interface ever developed. Up to 56 channels record/playback, up to 192 kHz sample rate, and true FireWire 800 sum up to an unsurpassed high-end, high performance and high speed FireWire audio interface. Analog 8 x TRS, 4 x XLR I/O. Digital 2 x ADAT, SPDIF.

RETAIL: $1799 SALE PRICE: $1449

ALSO INCLUDES FREE CASCADE M35 MICROPHONE! ($279 RETAIL VALUE)

We are also an authorized dealer for these manufacturers & many more!

lucid · samplitude · ADAM · MACKIE. · marantz · audio-technica · DRAWMER · WAVES · AVALON DESIGN · Blue · Earthworks · TASCAM · dynaudio acoustics · ALLEN&HEATH · PreSonus · Focusrite · RØDE · AKG · digidesign · KRK · GENELEC · GRACE · t.c. electronic · dbx · Millennia · AEA

ECHO AUDIOFIRE 8

AudioFire8 has 2 universal inputs with mic preamps, phantom power, channel inserts, and trim knobs. It also comes with 6 balanced analog inputs, 8 balanced analog outputs, a stereo headphone output, 2 FireWire ports, S/PDIF I/O, MIDI I/O, word clock, & 10 channels of full duplex 24-bit / 96kHz recording and playback.

RETAIL: $749 SALE PRICE: $599

LynxTWO incorporates the latest generation converter technology to create a device capable of precision never before achieved in a PCI audio card. With performance that exceeds stand-alone converters, LynxTWO sets new standards. Optional ADAT & multiple AES/EBU.

LYNXTWO-A **PLEASE CALL FOR PRICING**
- 4 analog input / 4 analog output configuration

LYNXTWO-B
- 2 analog input / 6 analog output configuration

LYNXTWO-C
- 6 analog input / 2 analog output configuration

Lynx STUDIO TECHNOLOGY LynxTWO

Channel G *The Complete Console*

McDSP Channel G, a console strip featuring an expander/gate, compressor/limiter, equalizer, & filters. Additionally, Channel G includes a powerful surround compressor/limiter configuration consisting of LR, C, LsRs, & LFE compressor sets. Each compressor /limiter can key from any of the 'comp sets' and may be linked in a variety of ways to suit surround applications.

RETAIL: $995 SALE PRICE: $849

CASCADE MICROPHONES V55

The Cascade Valve 55 (V55) is a large tube condenser microphone with a 1.38" diaphragm. It features a specially selected Mullard 12AT7WA / CV4024 tube, vintage style power supply, high quality shockmount, & aluminum case.

REVIEWER'S PICK

RETAIL: $669 SALE PRICE: $499

www.bayviewproaudio.com

Toll free: (888) 718-0300 - Fax: (360) 867-1793

3720 Gravelly Beach Loop NW - Olympia, WA - 98502

WIRELESS EVOLUTION

Go completely wireless from mixer to speaker, speaker to speaker, microphone to speaker.

PHONIC

WWW.PHONIC.COM 800.430.7222

PERFORMER

WIRELESS

•Wireless modules eliminate need to lay speaker cable - making setup faster and easier •Wide dispersion horns give wide audience coverage for highs and lows •Speaker protection circuitry and transducer-matched HF and LF amps drive speakers at maximum levels without burning them out •Works in all sound reinforcement applications and as a floor monitor •Durable, lightweight, impact-resistant plastic enclosure •Active speaker technology means higher sound quality with lower distortion

CD & DVD MANUFACTURING

INDIE ARTIST ONE STOP!
Great Prices! No Hidden Charges!
Superior Service! Superior Results!
Glass Mastering • Retail Ready • Graphic Design
Direct-to-Plate Printing • Short & Long Runs
Quick Turn Times • Posters • Mastering • Web Stores

emulationmedia

1-800-791-0063
www.emulationmedia.com

Monthly Specials!

OMNIRAX

Supporting Creativity with Innovation and Style

Synergy XL Series professional console furniture

Synergy S6DXB XL

The Synergy XL series is designed to provide beautiful and ergonomic console housings for all the popular mixers, providing you with optimum functionality to accommodate these mixers and associated peripherals. Synergy's surprising affordability gives you the opportunity to add "WOW FACTOR!" to your studio right now.

pictured with optional solid mahogany "cheeks"

Custom Omnirax Sonix C24

Palomino Studio, Madison, Wisconsin

P.O. Box 1792 Sausalito, CA 94966 800.332.3393 415.332.3392 FAX 415.332.2607
www.omnirax.com info@omnirax.com

In a fast-changing and challenging industry, millimeter anticipates the future. To advertise in millimeter classifieds contact your sales representative today!

Philip Boyok
(800) 544-5530
mmclass@primediabusiness.com

millimeter
The Professional Resource for Production and Post

YOUR FIRST IMPRESSION IS THE MOST IMPORTANT.

You already sound professional . . . now look professional!

$1190

1,000 RETAIL READY CDs

Package includes 3 color on disk print, 4 panel print with assembly, wrap and upc.

We at Media Services look forward to providing you with outstanding service and quality. You can trust us to take your CD/DVD project to the next level. Call us today on pricing for all standard and custom packages. We also offer great deals on promotional products such as posters and postcards.

MEDIA SERVICES

CD AND DVD MANUFACTURING

(888) 891-9091

www.mediaservices.com

CASCADE MICROPHONES

WWW.CASCADEMICROPHONES.COM

Lonely RECORDS

Get a FREE Catalog

1.800.409.8513

www.lonelyrecords.com

National Price Guarantee

GRAPHIC DESIGN, MASTERING, POSTERS, DVD, CARDBOARD, BARCODES AND MORE.

500 PRESSED

Retail Ready CDs

$799

RIBBONMICS.COM PRESENTS:

IT CAME FROM AEA...

AEA Scientists agree that Object R92 poses no threat to Earth... OR DOES IT???

LANDING SOON AT A DEALER NEAR YOU!

Electronic Musician®

Stand out and get noticed in the MarketPlace section of Electronic Musician.

MarketPlace is a cost-effective, high-profile buyer's section offering advertisements to enhance your company's products and services, websites, product catalogs and ancillary products.

MOVE PRODUCTS FAST

Contact your sales representative today!

Jason Smith, East Coast Sales (510) 985-3276

Kevin Blackford, West Coast Sales (510) 985-3259

Order Line: (800) 544-5530 or

Email: emclass@primediabusiness.com

EM Classifieds

ELECTRONIC MUSICIAN CLASSIFIED ADS are the easiest and most economical means of reaching a buyer for your product or service. The classified pages of EM supply our readers with a valuable shopping marketplace. We suggest you buy wisely; mail-order consumers have rights, and sellers must comply with the Federal Trade Commission as well as various state laws. EM shall not be liable for the contents of advertisements. For complete information on prices and deadlines, call (800) 544-5530.

ACOUSTIC PRODUCTS

WhisperRoom INC
SOUND ISOLATION ENCLOSURES
Celebrating over 14 years of reducing sound to a Whisper!
Recording, Broadcasting, Practicing

MDL 102126S (8.5 X10.5)
19 Sizes and 2 Levels of Isolation Available
New! SoundWave Deflection System
(Change parallel walls to non-parallel)
Immediate Shipping!
www.whisperroom.com
PH: 423-585-5827 FX: 423-585-5831

Over 10,000 Studios Served
Total Sound Control
Auralex acoustics
www.auralex.com
What About *Your* Room?

SILENT Source
58 Nonotuck St., Northampton, MA 01062
Info: (413) 584-7944 Fax: (413) 584-2377
ORDER: 800-583-7174
Acoustifoam Fabric Panels
Sound Barrier • Isolation Hangers
Tube Traps • Silence Wallcovering
WhisperWedge • ProFoam • Clearsonic
• Hushfoam • R.P.G. Diffusors •
Sonex • Sound Quilt • More
www.silentsource.com
info@silentsource.com
QUALITY • PRICED RIGHT • INTEGRITY

AcousticsFirst™
Toll Free 888-765-2900
Full product line for sound control and noise elimination.
Web: http://www.acousticsfirst.com

VIBRANT TECHNOLOGIES

DIFFUSER PANELS
WAVE-FORMS™ ACOUSTIC PANELS
800-449-0845
www.vibrantech.com

VocalBooth.com
MODULAR SOUND REDUCTION SYSTEMS

Listen to your dreams.
Follow your heart.
Don't ever stop.
- Calvin Mann
541-330-6045
www.vocalbooth.com

www.SoundSuckers.com
Be Professional, Buy the Best!
Soundproofing Products
Sound Isolation Booths
Custom Projects & Free Advice
TOLL FREE 1-888-833-1554 (OR) 541-947-2602

RPG DIFFUSOR SYSTEMS, INC.
Absorption, Diffusion and Total Room Solutions.

www.rpginc.com

REALTRAPS®
MINITRAPS—Affordable Acoustic Treatment
Rave Reviews From Top Pros

"Our control room at Le Crib Studios needed serious help. After installing MiniTraps the room sounds better than we believed possible, with clear, round bottom and vastly improved imaging. Fantastic product, great company."
—Nile Rodgers

"MiniTraps really made a difference in my studio. I previously had foam corner bass traps, but they really seemed to have no affect. It wasn't until I added the MiniTraps that my low end evened out."
—Charles Dye
(Ricky Martin, Jon Bon Jovi, Shakira, Lauryn Hill, Gloria Estefan)
Toll-Free: 866-732-5872
www.REALTRAPS.com

SILENCE CASES
Record. Edit. Mix. Master...

THINK in PEACE.
Attenuation cases keep your PC gear QUIET and COOL
Multiple designs available starting at $429
510-655-3440
www.silencecases.com

www.emusician.com

ANALOG SYNTHS

MODULARSYNTH.COM
REAL ANALOG MODULAR
OVER 350 MODULES
15 COMPANIES
www.modularsynth.com
☐ BLACET ☐ METASONIX ☐ OAKLEY
☐ CYNDUSTRIES ☐ MODCAN ☐ WIARD
☐ DOEPFER ☐ MOTM ☐ SYNTHESIZERS.COM

Synthesizers.....
made of TUBES??
(....WHY NOT?)
METASONIX
WWW.METASONIX.COM
PMB 109, 881 11th St
Lakeport CA 95453 USA

Electronic Musician Classifieds

To find out how you can place your classified ad in Electronic Musician, please contact your sales associate.

East Coast - Jason Smith
(510) 985-3250

West Coast - Kevin Blackford
(510) 985-3259

or call toll free at (800) 544-5530
or email: EMCLASS@primediabusiness.com

CASES

Case Specialists
discount-distributors.com
We Will Beat ANY Price!
800-346-4638

Audio production seminars on demand are an exciting new medium for experiencing new products, applications and techniques. Log on to learn.
mixonline.com • emusician.com
remixmag.com

EMPLOYMENT

Picture yourself at Sweetwater

- **Position at Sweetwater:** Sales Engineer
- **Education:** A music or music technology degree is always good, but we also appreciate the value of real-world experience in the music biz.
- **Why did you apply for a job here?** For the ability to make good money in the field you love — an opportunity for security in an ever-changing audio industry, where the one constant is that Sweetwater continues to grow every year, remaining leaders in music and music technology.
- **Technical strengths:** You've covered all the technological bases — MIDI, microphones, samplers, software, and everything in between. You're the one people rely on to get their systems up and running. And you love talking about the latest gear.
- **Instruments you play:** Anything and everything! Most of us are keyboard or guitar players, and our CEO plays a mean sax.
- **Gear you own:** Most of our employees have home studios from modest to Pro Tools HD.
- **Family info:** Sweetwater's all about family. That's why we've chosen to stay in Fort Wayne, where it all started. Fort Wayne has great job opportunities for your spouse, an excellent school system, and one of the best salary to cost-of-living ratios in the country. Plus, Sweetwater's health insurance plan is family-friendly!
- **How would your boss describe you?** Hardworking. Resourceful. Willing to do what it takes to succeed, yet easygoing and fun to be around.

If you see yourself in this picture, **apply online at www.sweetwater.com/careers or send your cover letter and resume to careers@sweetwater.com**

800-222-4700 ext.1050
5335 Bass Road, Fort Wayne, IN 46808 • FAX 260-432-1758

Sweetwater
music technology direct™

EQUIPMENT FOR SALE

BAYVIEW PRO AUDIO
"America's #1 Online Professional Audio Dealer"
www.bayviewproaudio.com
888.718.0300

NEW!
STEDMAN
888-629-5960
www.stedmancorp.com
ADVANCED DESIGN
EXTENDED CLAMP
6" DIA SCREEN
Made In USA
PROSCREEN XL

MIX
For the lastest news and technology check out Mix at
www.mixonline.com
Professional Audio and Music Production

FURNITURE

technical furniture
argosyconsole.com
800.315.0878
ARGOSY

THE ORIGINAL
RACKMOUNT YOUR G5 · WWW.ISO-BOX.COM

ORDER TOLL-FREE: 888.580.9188
Sound Construction & Supply Inc.

OMNIRAX
STUDIO FURNITURE

CODA D8
with Sidecars

OMNIRAX 800.332.3393 415.332.3392
FAX 415.332.2607
www.omnirax.com

INDIE MUSIC CD'S

1. Tango
2. Jive/Swing
3. English Waltz
4. Chacha
5. Fox Trot
6. Viennese Waltz
7. Mambo/Salsa
8. Merengue
9. Polka
10. Quick Step
11. English Waltz
12. Rumba - Bolero
13. Samba
14. Chacha

Helmut Lotti
Baltimore Dances #11
Fox Trot, Tango, Salsa, Merengue, Waltz, etc.
$14.00
www.ballroommusic.com

INSTRUCTION & SCHOOLS

BE A RECORDING ENGINEER
★ TRAIN AT HOME
Easy Home-Study practical training in Multi-track Recording. Join our successful working graduates or build your own studio. Career guidance / Diploma / Registered School.
FREE INFORMATION:
Audio Institute of America
414 46th Ave, Suite F, San Francisco, CA 94121
Or visit us at www.audioinstitute.com

If you can write a 60 second song, you can make $5,000 a month! For free information call
1-888-244-1686
or visit
http://em.advertisingjingle.net

MASTERING & PRODUCTION

MASTERING
Guaranteed to give you that "Big Label" sound.
$475 Complete Album Analog & Digital Mastering!
New York's Premiere Mastering Studio
Check Out Our Website...
www.musichousemastering.com
1-800-692-1210
Located in NY, Serving the US ... Since 1989

Lions Den inc
Mixing / Mastering
Analog / Digital
waves plug-ins
platinum
diamond
Manley - Massive Passive
Focus Rite pro pack
ISA430MK2
Mackie-DSB
Final Mix
Roland VS2480
Nuendo 2.2
High Quality Low Cost
708-848-6105
Lionsdeninc.com

PARTS & ACCESSORIES

HOTWIRED!
Your Custom Cable House Founded BY a recording professional, FOR recording professionals.
MOGAMI AND NEUTRIK
Custom Cable Assemblies
info@hotwiredcables.com
1-877-67WIRED!

VIDEOSYSTEMS
For the lastest news and technology check out VideoSystems at
www.videosystem.com
SHOOT • EDIT • DISPLAY • INTEGRATE

Subscribe to SVC online at www.svconline.com

RECORDING SERVICES

LITTLE HOLLYWOOD STUDIO Nashville
Sweeten your tracks with world class studio musicians.
Any instrument, all styles, average $100 per song.
Details: 615-871-4419, littlehollywoodstudio.com.

RECORDS, TAPES, CDS

Lonely RECORDS
Get a FREE Catalog
1.800.409.8513
www.lonelyrecords.com
Retail Ready CD Packages 99¢

For the best price in CD Replication ....
there is only one number you'll need!
1.888.891.9091
MEDIA services WWW.MEDIAOMAHA.COM

www.yourmusiconcd.com
100 BULK CDRS $59
Includes cdr, and duplication
100 BASIC CDRS $99
Includes cdr, on cd print, and jewelcase
100 FULL COLOR CDR PACKAGE $199
Includes cdr, on cd print, color cover(4/1) & tray card(4/0) assembly, jewel case, and shrinkwrap, from your artfiles
Special 10 Free Cds with 100 or more package
300 FULL COLOR PACKAGE $549
500 FULL COLOR PACKAGE $824
1000 FULL COLOR PACKAGE $1174
SNS DIGITAL INC ATLANTA 678-442-0933
TOLL FREE 1-877-442-0933

1,000 CDs
in full-color jackets for just
$990!
Call for a FREE catalog and jacket sample at 1-800-468-9353
Or visit our website at
www.discmakers.com/remix
DISC MAKERS

Lowest Price Period!
CD Audio / CD Rom / DVD Replication
Video Duplication / Graphic Design
Printing / Packaging / Pre-Press
BALL MEDIA
888.256.3472
www.ballmedia.com

Odds On
CD & DVD MANUFACTURING
Odds On Save BIG!!
100 CDs $299
250 CDs $499
500 CDs $699
1,000 CDS $1,299
2,500 CDS $1,999
5,000 CDS $3,799
Order Today!
877-ODDS ON 1
www.OddsOnRecording.com

WE BEAT ANY PRICE!
• Highest Quality
• Reliable Service
• CD's Cassettes Video Posters, etc.
NO BULL
TOTAL TAPE SERVICES
(727) 446-8273
www.totaltapeservices.com

1000 Store Ready CDs $899
INCLUDES 100 FULL COLOR POSTERS
1000 Bulk CDs $490
www.TrackmasterAV.com
Toll Free: 888-374-8877
Your 1-stop shop for CD, AUDIO & VIDEO cassette projects!

PRICE Quality SERVICE
PRICE: It's important, but go too low and you may REALLY pay!
QUALITY: Compromise quality...kiss your future good-bye!
SERVICE: You want it?? We've got it! 20 YEARS proves it!
CD • CD ROM • DVD • DESIGN • PRINT • PACKAGING • & LOTS MORE
Eastcoast Multimedia
www.eastcoastmultimedia.com
1-800-365-8273
Since 1985

KLARITY MULTIMEDIA INC
888-387-8273
CDs, CDROM, Cassettes, Vinyl, Mini Discs, VHS
Our Customers have trusted us with their projects for over 15 Years! We care and work with you to create your project the way you want it.
Total Fulfillment, Graphic Design, Illustration
Digital Mastering, Complete Packaging, Mailing Services
Warehousing, Package Pricing, Custom Pricing
Online Music Store, Free Barcode
Quality Service • Personal Attention • Quality Products
www.Klarity.com www.KlarityMusic.com

CD • DVD • CD-ROM • SHAPED CD • CASSETTE • PACKAGING
CRYSTALCLEAR
DISC & TAPE
Trusted experience for over 30 years.
1-800-880-0073
www.crystalclearcds.com

CD, CASSETTE, CDR and CD-ROM
Complete Packages!
DDAI
DIGITAL DYNAMICS AUDIO INC.
1-800-444-DDAI
www.dddai.com
CD/CASS MASTERING
CD/CASS REPLICATION
CEDAR RESTORATION
GRAPHIC DESIGN
FILMS AND PRINTING
CD-ROM AUTHORING

You should care who makes your CD.
WE DO.
•the best customer service in the business*
•instant online quote
•inhouse mastering, design & multimedia
•quality finished CDs, DVDs & vinyl
MUSIC MANUFACTURING SERVICES
www.musicmanufacturing.com
US: 1-800-293-2075
Canada: 1-800-667-4237
New York • Toronto • Montreal • St. Johns
*Read our client survey results to find out more.

ELS PRODUCTIONS
100 Full Color Retail Ready CDs $240.00!
1-800-927-3472
www.elsproductions.com

Whitewater Studios
MASTERING CDs TAPES
Complete CD Mastering $375.00
FREE BAR CODE! 500 Bulk CDs $349 FREE BAR CODE!
1000 CDs complete $999
Short-Run CD packages • Real-Time cassettes
We give you the best in service & price!
828-274-0956 9 Busbee View Rd Asheville NC 28803
www.whitewaterrecording.com

HEY LOOK! WE'RE ON THE WEB!
Toll Free: 800-538-2336
NRS National Recording Supplies Inc.
All Formats! Best Prices!
www.tapes.com

SOFTWARE, MIDI FILES, SOUND

BEGINNERS WELCOME!
Name-brand Software and Hardware to set up your computer for music recording and printing.
Free articles and online catalog!
www.musicmall.com/cmp

Music Tools Blowout!
10 Years of Great Deals
Digital Audio Hardware, Interfaces, Samples, Software, Cables, MIDIs
Over 1300 Classic Guitar MIDIs
Shop for 20,000+ products at
www.midi-classics.com
Call 800-787-6434 NOW!
MIDI Classics, Dept E, Box 311, Wantagh CT 06089

WORLD CLASS MIDI FILES
the WORKS Music Productions
For Free Catalog & Demo Disk
call (800) 531-5868 or visit
our Web site:
www.worksmidi.com
Popular styles, General MIDI-compatible, e-mail delivery avail.
Box 22681, Milwaukie, OR 97269

Sounds for your sampler!
Roland - Ensoniq - Akai - Wave
MPC | S-1000 CD Roms | Audio CD's
Hip Hop | House | Synths | Drums
MIDI MARK MidiMark.com
Natural printing NaturalPrinting.com

The Patch King
QUALITY SOUNDS for SYNTHS and SAMPLERS SINCE 1984
(246) 420-4504
WWW.KIDNEPRO.COM

BAND-IN-A-BOX IMPROVEMENT PRODUCTS***
You can put a Better-Band-In-Your-Box.
Norton Music (since 1990)
www.nortonmusic.com

TALENT

Do you have good music that's collecting dust?
We place music in Feature Films and Prime-time TV
Submit 3 songs with your name and number printed on a CD
Akorn studios
10 Jackson St, Suite 111C
Los Gatos, CA 95030
Techno - R&B - Contemporary Hard Rock - Jazz - Acoustic

Remix
For the lastest news and technology check out Remix at
www.remixmag.com
ELECTRONIC URBAN PRODUCTION PERFORMANCE

Want the ultimate studio-to-go?

Apple 17-inch PowerBook G4™

The most powerful PowerBook ever

More power. More speed. More Digital Performer. As in more tracks, more plug-ins and more virtual instruments. The breathtaking 17-inch PowerBook has just been speed-bumped. Again. To a blazing 1.67GHz. The PowerBook is the ideal platform for DP, the all-new Traveler, and a host of third-party plug-ins and add-ons.

MOTU Traveler™

Bus-powered high definition FireWire audio

The first bus-powered FireWire audio interface to offer four mic inputs and exceptionally high-quality high definition analog recording and playback. Just plug in the FireWire cable and power everything off the battery in your computer — you can operate your studio anywhere! Slides easily into your knapsack or bag, next to your PowerBook.

Alesis Photon™ X25

Portable 25-Key USB MIDI Controller / Audio Interface

Looking for the ultimate compact keyboard controller for your MOTU studio-to-go? The Photon X25 delivers the revolutionary Alesis Axyz controller dome and ten 360-degree rotary knobs, giving you powerful hands-on MIDI control of your Digital Performer studio and software plug-ins. Advanced features include 24-Bit 44.1/48 kHz USB audio I/O with balanced stereo audio inputs and outputs, 25 key, velocity sensitive keyboard, full-size pitch and modulation wheels, and an LCD screen with dedicated encoder for fast and easy set-up.

©2005 Sweetwater, Inc.

Call the DP 4.5 and MOTU experts.

Waves IR Convolution Reverb Series

Stunningly realistic acoustic environment simulation

The new Waves IR convolution reverb series brings unprecedented realism to your MOTU studio, while also offering the flexibility of traditional parameter control not found in other convolution reverb systems. IR-L lets you start with exact reproductions of well over 50 acoustic environments, and then tweak things like pre-delay and reverb time while maintaining the character of the original space. IR-1 V2 adds even more parameter control, plus the ability to sample your own acoustic spaces. No matter where you track, Waves can put you in control of your aural environment!

Native Instruments Komplete™ 2

Software Bundle with 11 Standalone or Plug-in Instruments / Effects

For DP4 users who want it all: the legendary sound of the B4, the endless possibilities of REAKTOR, the award winning sample engine of KONTAKT, the incredibly unique ABSYNTH — KOMPLETE 2 delivers an infinite universe of sound, uniting every essential type of instrument and effect in a 22GB sonic workstation for your DP4 studio. But it doesn't end there: explore even more sonic territory with the 8 sound libraries bundled in KOMPLETE SOUND: 15 ground breaking REAKTOR instruments, more than 4500 inspiring drum samples for BATTERY and KONTAKT, a total of 512 exciting new presets for the FM7, 256 outstanding patches for ABSYNTH and an additional 11 tone wheel sets for the B4. KOMPLETE SOUND is an inspiring parallel universe of sounds, samples and presets for KOMPLETE 2. Expand your Digital Performer studio today!

Spectrasonics Stylus™ RMX

The power of groove production

Stylus RMX is the first product to offer the combined power of Groove Control™ with Spectrasonics Advanced Groove Engine (S.A.G.E.™) giving you dramatic new control over groove production. Dozens of new features include a completely redesigned interface, a new 7.4 GB core library of cutting edge grooves and sounds produced by Eric Persing, and the ground-breaking, always changing Chaos Designer™. Expand Stylus RMX with 9 new S.A.G.E. Xpanders, featuring live drums, percussion, remix elements, and more. The ultimate real-time groove module for DP!

IK Multimedia Sonik Synth™ 2.0

Synth Workstation Plug-in with 8.5GB Sample Library

Imagine creating new and unique sounds from a combination of traditional instruments, one-of-a-kind acoustic textures and classic synth sounds, all in a plug-in. Sonic Synth 2 gives you thousands of samples from its 8.5GB sound set developed by Sonic Reality which is powered by the flexible synthesis and effects capabilities of IK Multimedia's SampleTank engine. Includes orchestral soundscapes, ethereal vocal layers and wine glasses, plus traditional keyboards, guitars, drums and ethnic instruments and a comprehensive selection of analog and digital synth sounds. Sonik Synth is the perfect way to bring sound of a powerful synth workstation to your Digital Performer desktop.

(800) 222-4700

www.sweetwater.com

Authorized Reseller

Sweetwater

music technology direct™

Want to expand your MOTU studio?

BIAS Peak™ 4.1

Mastering and Restoration Edition

Peak 4.1 plus SoundSoap Pro and SuperFreq. Imagine the world's most popular stereo audio editing, processing, and CD mastering program for the Mac, combined with unparalleled noise reduction and restoration technology — all at a jaw dropping low price. You get Peak 4.1 (including ImpulseVerb, Sqweez, Vbox SE, Jam 6, SFX Machine LT, and more), SoundSoap Pro (combines four state of the art restoration and noise reduction tools in a single plug-in), and the SuperFreq suite of mastering EQs all in one great package. Launch Peak directly from DP4 for more editing and processing power. Run SoundSoap Pro within DP4 or in Peak as an AU plug-in. For the very best in sample editing, batch processing, file conversions, loop creation, sound design, restoration, and Redbook CD mastering on OS X, pick up the Peak 4.1 Mastering and Restoration Edition today — the perfect mastering and restoration companion for DP4!

Glyph GT 051™

High Performance Desktop Hot Swap FireWire Hard Drive

Perfect storage for a PowerBook/Traveler-based studio, the GT 051 tabletop chassis works with highly portable, Seagate 7200 RPM-equipped GT Key hot-swappable drives, available in capacities up to 400GB. Using Integrity™, Glyph's proprietary FireWire hot-swap technology, you can swap drives without rebooting your computer or restarting drives. GT Keys are housed in sound-dampening metal for ultra quite operation. With a stainless steel fan-cooled enclosure, the GT 051 has a built-in power supply and is rack-mountable. The GT 051 comes standard with a three-year warranty, while GT Keys carry an additional overnight advance replacement warranty for the first year.

PreSonus Central Station™

A Console Master Section Without the Console!

The PreSonus Central Station is the missing link between your MOTU recording interface, studio monitors, input sources and the artist. Featuring 5 sets of stereo inputs (3 analog and 2 digital with 192kHz D/A conversion), the Central Station allows you to switch between 3 different sets of studio monitor outputs while maintaining a purely passive signal path. The main audio path uses no amplifier stages including op amps, active IC's or chips. This eliminates coloration, noise and distortion, enabling you to hear your mixes more clearly and minimize ear fatigue. In addition, the Central Station features a complete studio communication solution with built-in condenser talkback microphone, MUTE, DIM, two separate headphone outputs plus a cue output to enhance the creative process. A fast-acting 30 segment LED is also supplied for flawless visual metering of levels both in dBu and dBfs mode. Communicate with the artist via talkback. Send a headphone mix to the artist while listening to the main mix in the control room and more. The Central Station brings all of your inputs and outputs together to work in harmony to enhance the creative process and ease mixing and music production.

Gator GRC-Studio-2-Go™

Road-worthy case for your MOTU gear

The GRC-Studio-2-Go is a road ready, ATA style 2U rack case constructed of rugged Polyethylene with an extra, plush adjustable laptop compartment with web strap tie-downs for extra protection. Permanently connect your PowerBook, Traveler and rack gear through an accessory hole between compartments — convenient!

Apple AppleCare™

Extend the life of your PowerBook

Of course, the tech support wizards at Sweetwater can help you with any operational issues you might encounter, but if you want complete peace of mind, the AppleCare Protection Plan is the perfect insurance policy. No matter what dangers may meet your portable rig on the road, with AppleCare, you're totally protected.

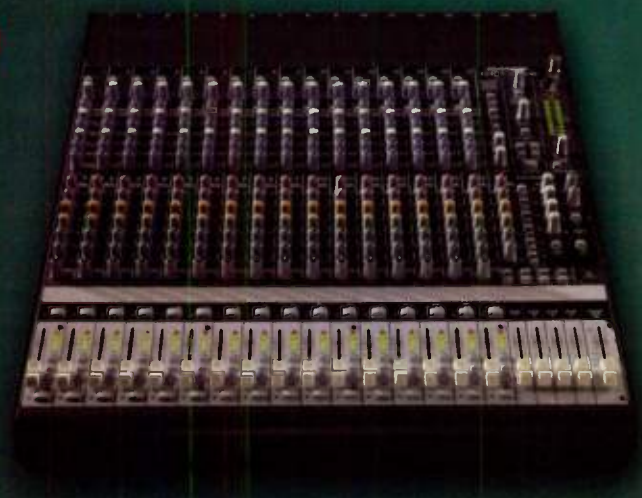
©2005 Sweetwater, Inc.

Call the DP 4.5 and MOTU experts.

Mackie Onyx Mixers with Optional Firewire Interface

High-quality compact mixers with direct connection to your studio

When you're on the road and looking to record a full band, the Onyx series of mixers from Mackie is the perfect complement to your MOTU Traveler. Whisper quiet and built like a tank, Onyx mixers feature an all-new mic preamp design capable of handling virtually any microphone. With the optional Firewire card, you can connect an Onyx mixer to your laptop with a single Firewire cable and have all the extra mic preamps and line inputs you need to capture every drum mic, vocal mic, individual synth output and DI the band throws at you. Since Digital Performer works seamlessly with multiple Core Audio devices, configuring a Traveler/Onyx system is a snap.



Mackie HR-series Active Studio Monitors

Nearfield monitors for your MOTU studio

Mackie's HR-Series Active Studio Monitors are considered some of the most loved and trusted nearfield studio monitors of all time, and with good reason. These award-winning bi-amplified monitors offer a performance that rivals monitors costing two or three times their price. Namely, a stereo field that's wide, deep and incredibly detailed. Low frequencies that are no more or less than what you've recorded. High and mid-range frequencies that are clean and articulated. Plus the sweetest of sweet spots. Whether it's the 6-inch HR-624, 8-inch HR-824 or dual 6-inch 626, there's an HR Series monitor that will tell you the truth, the whole truth, and nothing but the truth.

Mackie Control Universal and Extender

Automated hands-on control for the DP studio

Imagine the feeling of touch-sensitive, automated Penny & Giles faders under your hands, and the fine-tuned twist of a V-Pot™ between your fingers. You adjust plug-in settings, automate filter sweeps in real-time, and trim individual track levels. Your hands fly over responsive controls, perfecting your mix — free from the solitary confinement of your mouse. Mackie Control delivers all this in an expandable, compact, desktop-style design forged by the combined talents of Mackie manufacturing and the MOTU Digital Performer engineering team. Mackie Control brings large-console, Studio A prowess to your Digital Performer desktop studio, with a wide range of customized control features that go well beyond mixing. It's like putting your hands on Digital Performer itself.

Authorized Reseller

Your personal Sweetwater Sales Engineer offers much more than just a great price. They do the research, day in and day out, to ensure that you'll fine-tune your system to fit your exact needs.

FREE SHIPPING!

NO MINIMUM PURCHASE! NEARLY EVERY ITEM QUALIFIES

FedEx Ground

Sweetwater

music technology direct™

Fax (260) 432-1758 • 5335 Bass Road, Fort Wayne, IN 46808

(800) 222-4700

www.sweetwater.com

Win, Lose, or Draw

By Larry the O

As each of us travels through life—writing and playing music, editing and mixing sound, recording, designing, having relationships with people, and so forth—we accumulate victories and defeats. From a professional standpoint, this accumulation constitutes a track record that often serves as the basis for people judging our success. But the numbers do not tell the whole story. Each outcome of a particular situation carries its own richer tale, the details of which convey a larger picture of what transpired and who we are.

That is even more true from a personal standpoint. How we handle triumph and setbacks is more important to who we are than the simple fact that a situation is resolved in a way that is viewed as a win or a loss. Most significant is the way one responds to a rout or disappointment, much of which comes from one's inner sense of identity, strength of character, and self-confidence.

I admire those who, unaffected when their efforts do not bear fruit, pause only to absorb the lessons gained from the experience before embarking on another attempt. In contrast, I am affected when life knocks me down but usually have the strength to pick myself up and start moving forward again. As long as I have at least occasional victories to replenish my internal reservoir of belief and energy, that works. When that reservoir has been depleted by a succession of blows, it gets tougher for people like me to shake off defeat, as that situation challenges the essence of self-image. In the face of such fundamental questioning, my best response may simply be to keep putting one foot in front of the other out of faith that, eventually, clarity will prevail and inner strength will return.

Each outcome carries its own rich tale, the details of which convey a larger picture of who we are.

Still, while persistence in the face of adversity is a key to success, there are times when it is most sensible, and sometimes is the better choice, to admit defeat and close the book on a given enterprise. As W.C. Fields famously said: "If at first you don't succeed; try, try again . . . then quit. No use being a damn fool about it."

Yet bouncing back from defeat is not the full description of character in the realm of endeavor. How success is embraced is also important. For most, success brings confidence and strength, propelling a person forward with increased momentum. But there is every bit as much danger to the soul in success as in defeat, perhaps even more. Some people accept success almost as a birthright, something inherently theirs that places them above others who have not (yet) attained the same level of accomplishment. Such an attitude can be insufferable and have greater personal than professional consequences. Others can be intimidated by the pressures success can bring to continue a "streak" or a "meteoric rise." Staying on top can become an obsession that leads to poor decisions, professionally and personally. For those who are so driven by internal demons that the achievement of victory after victory is never sufficient to convince them of their worth, success is hollow.

As usual in life, the balance between accepting the validation and momentum of success and allowing oneself the pride of a job well done, while exhibiting grace that reflects the retention of some humility, is hard to attain. Beyond success and defeat, however, there are situations that cannot be defined clearly as either. In fact, these "no decisions" often include some aspects of both. Outcomes like that can be puzzling, leaving a person straining to determine what the real meaning was.

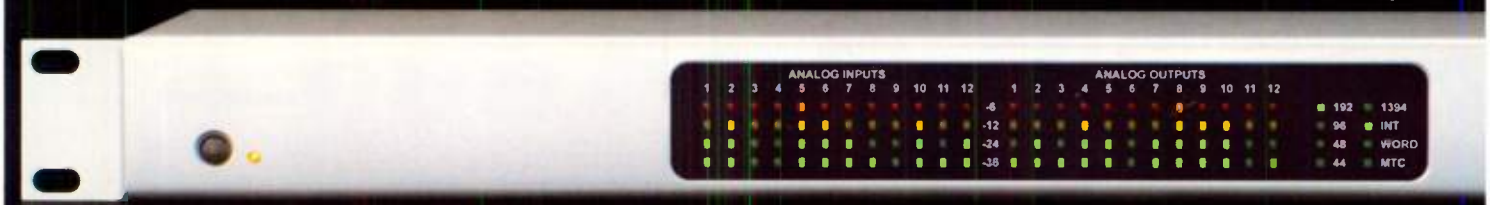
In the end, the way that people deal with wins, losses, and draws is not only vital to their own frame of reference, but it can be visible to others, who frequently respond as much to other people's attitudes as they do to their track records. This, however, is as it should be: the manner in which a person responds to the ups and downs of life says a great deal about his or her depth of character, and that is a very good basis on which to choose one's friends and colleagues. EM

AUDIOFIRE™

FIREWIRE RECORDING

AUDIOFIRE12

• 12 +4dBu Inputs • 12 +4dBu Outputs • 24BIT 192kHz Sampling • MIDI INPUT/OUTPUT • Word Clock Sync



AUDIOFIRE8

• 2 Universal Inputs with mic preamps, meters, trim, and channel inserts • MIDI input/output • Headphone Output
• 6 +4dBu Inputs • 8 +4dBu Analog Outputs • S/PDIF input/output • Word Clock Sync

ECHO

DIGITAL AUDIO

ECHOAUDIO.COM

6309 Carpinteria Ave. Carpinteria, CA 93013 Phone: 805.684.4593

TRAVELER™

BUS-POWERED HIGH-DEFINITION FIREWIRE AUDIO INTERFACE

Try not to get sand in your hard drive

MOTU

motu.com