

Hot Tips for GarageBand's Latest Features

JULY 2005

Electronic Musician®

PERSONAL STUDIO | RECORDING | PRODUCTION | SOUND DESIGN

BUILD A DESKTOP STUDIO *On Any Budget*

6 Computer-based
Dream Setups
from \$5K to \$25K

EM Guide to
eBay

RECORDING
THE DRUMS
OF BRAZIL

Extreme
SOUND DESIGN

REVIEWS

Lexicon Omega
Røde NT2-A
NI Absynth 3
Sony Acid Pro 5
and 5 more



A PRIMEDIA Publication

\$6.99US \$8.99CAN

07>



0 09281 01816 2

WWW.EMUSICIAN.COM

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.



www.yamahasyth.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



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

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 VSTi instrument, 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, Samplitude SE, the legendary LinPlug RMV drum sampler and a full suite of Mackie Mixing and Mastering plug-ins.



INSTANT INFO

Tracktion follows you *all* 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®.



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

© 2003 LOUD TECHNOLOGIES INC. ALL RIGHTS RESERVED. "MACKIE" AND THE "HUMAN 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... LIVE, OR 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 Traktion 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, Traktion 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 Traktion 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 Traktion 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 Traktion 2.

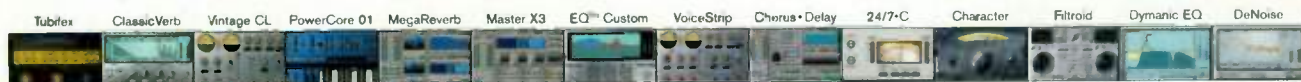
MACKIE®
www.mackie.com



POWERCORE PCI MKII

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

INSIDE

FEATURES

35 EM'S GUIDE TO EBAY

eBay has changed the way that individuals conduct business. Musicians especially have a lot to gain from learning the ins and outs of eBay's brand of personal e-commerce. EM's resident eBay expert offers advice and strategies for buying and selling your gear online. **By Geary Yelton**

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 7, July 2005. One year (12 issues) subscription is \$24. Canada is \$30. All other international is \$50. Prices subject to change. 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. POSTMASTER: Send address changes to *Electronic Musician*, P.O. Box 640, Mt. Morris, IL, 61054 USA.

COVER STORY

48 BUILD A DESKTOP STUDIO ON ANY BUDGET

Given a limited budget with which to assemble a computer-based studio, which products would you choose? Five EM editors met this challenge, specifying the hardware and software they'd buy if they were creating Mac- and PC-based studios at three different price levels, ranging from \$5,000 to \$25,000. **By the EM Staff**

87 RECORDING THE DRUMS OF SALVADOR

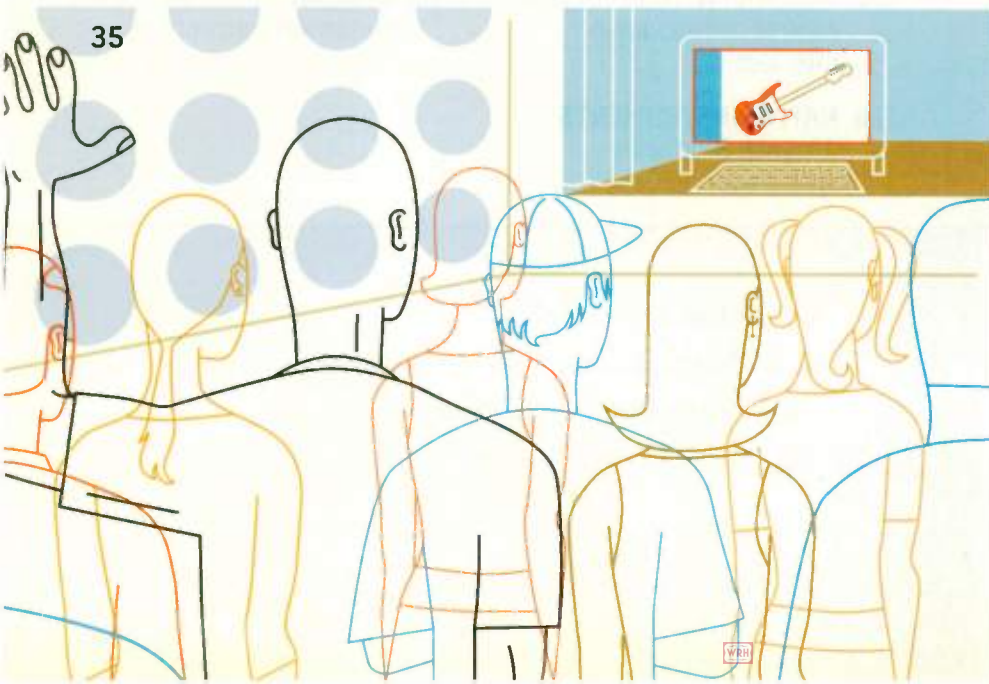
Join former EM associate editor Brian Knave for an inside look at a challenging recording session in Salvador de Bahia, Brazil. The project: an album release by Brazilian percussionist and recording star Márcio Victor. **By Brian Knave**



DMITRY PANICH

DEPARTMENTS

- 10 FIRST TAKE
- 14 LETTERS
- 18 EMUSICIAN.COM TABLE OF CONTENTS
- 22 WHAT'S NEW
- 141 AD INDEX
- 142 MARKETPLACE
- 146 CLASSIFIEDS





COLUMNS

INSIDE



122

- 30 **TECH PAGE NanoRAM**
A new form of memory could exceed the limits of conventional RAM.
- 32 **PRO/FILE Six-String Symphony**
Tim Brady records a symphony for electric guitar, sampler, and orchestra.
- 100 **MAKING TRACKS Doing More with GarageBand**
Using the powerful new features in Apple's GarageBand 2.
- 102 **SOUND DESIGN WORKSHOP Extreme Editing**
Supercharge your music with radical audio and MIDI editing techniques.
- 104 **SQUARE ONE Sealed and Delivered**
Learn how your synthesizer's envelopes shape and control sounds.
- 106 **WORKING MUSICIAN Got You Covered**
Getting press coverage for your music.
- 154 **FINAL MIX Trying to Accomplish Something**
The role of rules and rule breaking in the creative arts.

REVIEWS

- 110 **LEXICON Omega** desktop recording system (Mac/Win)
- 116 **SONY Acid Pro 5** loop sequencer (Win)
- 122 **TASCAM FW-1082** FireWire control surface/audio interface
- 126 **NATIVE INSTRUMENTS Absynth 3** software synthesizer (Mac/Win)
- 132 **RØDE NT2-A** multipattern condenser microphone

136 QUICK PICKS

- Nady Systems RSM-2 ribbon mic
- DiscoDSP Legacy Bundle software instrument plug-in bundle (Win)
- Line 6 Variax Bass 700 modeling bass guitar
- Korg TP-2 mic preamp/compressor

V-Synth XT: Elastic Audio Synthesizer

Roland[®]
www.rolandus.com



INDIVIDUALITY

Little Things That Matter

In this month's cover story, "Build A Desktop Studio on Any Budget" (p. 48), we expended a lot of ink discussing which products we would buy if we were putting together or retooling our PC- and Mac-based studios. If you follow our lead but take into consideration your specific studio needs and goals, you can build a terrific rig. But there are many computer-related considerations that we didn't discuss in the story. You already know most of them, but based on the reader emails we receive, some of you tend to overlook them. So I'm going to do you a favor and remind you!

For starters, if you can afford to dedicate a computer to studio applications, do it. A friend of mine has long dedicated a computer to his DAW and plug-ins. Other than the operating system and music-production tools, there is no other software on the machine, which is why it's speedy, reliable, and never crashes. I'd add backup software and a Web browser for downloading and registering updates, but my friend rarely updates his software, since his current system does the job.

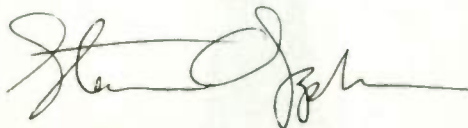
We've written before about installing a stripped-down version of OS X (see "Tracking the Big Cats" in the September 2004 issue), and many preconfigured, Windows-based music computers are based on optimized versions of XP. These modifications, if properly done, increase system stability and optimize your system for music production, but you need to know the OS pretty well to pull it off.

Some of us can't afford more than one computer, and many of us lack the confidence and knowledge to optimize the OS. But we can disable applications that process in the background and periodically interrupt the CPU, such as antivirus and fax software, software firewalls, and some specialized utilities. If you disable firewall and antivirus software, you should physically disconnect your computer from the Internet (especially with broadband connections), and then reenable the security products if you go online to download updates or register new software.

If you are using Mac OS X, avoid Classic; it adds to your CPU load and potentially detracts from stability. I recently replaced my last pre-OS X app on both of my computers, and good riddance.

Back up your files daily to a local hard drive for immediate use, and to DVD-R+W or a portable hard drive that you can store off-site or in a fireproof box. Backup programs such as Dantz Retrospect create compressed archives or a set of duplicate files, but the latter slowly overwrites the entire backup set. I prefer file synchronization that creates uncompressed, immediately usable copies and overwrites only files that have changed. I'm delighted with Econ Technologies' ChronoSync for OS X (www.econtechologies.com), which is fast, flexible, and meets all of my criteria. I can't make Windows recommendations; I know the OS has backup features, but you might want more. Windows experts should feel free to write us at emeditorial@primediabusiness.com with suggestions.

Enough reminders—we've got a great issue this month, so enjoy!



Steve Oppenheimer
Editor in Chief

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, llwilliam@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

ONLINE SALES AND MARKETING MANAGER

Samantha Kahn, skahn@primediabusiness.com

LIST RENTAL

Marie Briganti, (845) 732-7054, marie.briganti@walterkarl.infousa.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

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-Laurie, 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



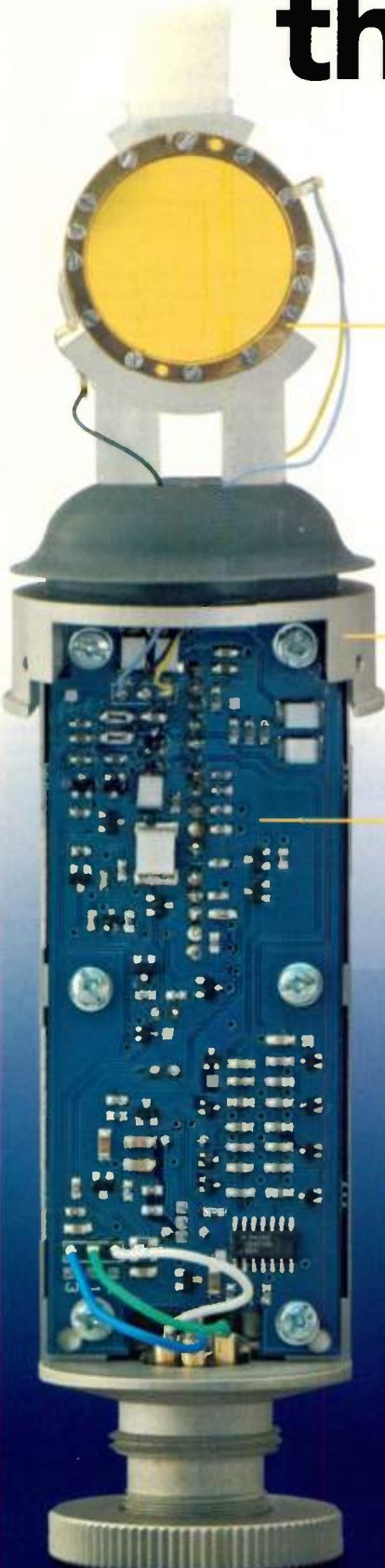
JULIE BIRUM

Beauty is more than skin deep.

The new RØDE NT2-A delivers where others fail.

While on the surface they may appear similar, no other microphone delivers the same combination of structural, electronic and acoustical engineering excellence at anywhere near its asking price.


The RØDE NT2-A...
the sound of true beauty.



The HF-1 Capsule
- from the award winning K2 Tube Mic.

Computer modeled non-resonant substructure.

Surface mount technology: ensuring unsurpassed signal purity and industry recognized lowest self noise.



Variable Polar, Pad & High Pass Filter



Proudly designed and manufactured in Australia
www.rodemic.com

RØDE
MICROPHONES

Great gear and great tracks...**BUT...**
your mix doesn't sound the same in the car?

Tune Your Room!

Citywalk Studios • Branson, MO



If you think it's the gear, think again.
Your sound is only as good as the
acoustics in your room!

Visit Auralex.com or call
1-800-95-WEDGE for your
FREE Room Analysis.

After 25 years and over 10,000 studios,
we're the experts at helping you achieve
TOTAL SOUND CONTROL™.

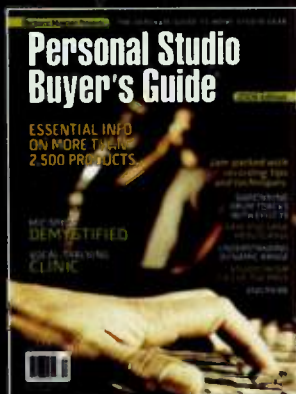


GET YOUR COPY OF THE ULTIMATE GUIDE TO HOME STUDIO GEAR

The equipment resource for musi-
cians building and supplying their
personal studios.

Find the Personal Studio Buyer's
Guide on newsstands wherever
Electronic Musician is sold,
or call 800-245-2737.

FREE for EM subscribers!
www.emusician.com



PRIMEDIA

Business Magazines & Media

PRESIDENT

John French, jfrench@primediabusiness.com

CHIEF OPERATING OFFICER

Andrea Goldschlager, agoldschlager@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 RSCopyright tag appended to the end of each article.

BACK ISSUES: Back issues are available for \$10 each by calling (800) 245-2737 or (815) 734-1216.

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.



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™.

WWW.EMUSICIAN.COM

Accessible. Professional. Compatible.

project studios

Record with the professional software standard using a variety of affordable M-Audio interfaces.

professional studios

Take your Pro Tools M-Powered sessions to any professional Pro Tools studio around the world.

M-AUDIO®

PRO TOOLS

▶ M-POWERED

mobile studio

Bring your work home with you or take it on the road—record anywhere, anytime.

stage

Add the power of Ableton Live, play your tracks on stage and capture performances for studio editing.

Pro Tools M-Powered and M-Audio FireWire and Delta PCI interfaces* work together in a new era of compatibility—and can seamlessly exchange sessions with other professional Pro Tools systems. This groundbreaking collaboration gives you more choices about your production tools—and that means more options about where, when and how you work. Get M-Powered... Pro Tools M-Powered.

M-Audio Compatible Products

Delta PCI interfaces

Audiophile 2496
Audiophile 192
Delta 1010-LT
Delta 1010
Delta 66
Delta 44

FireWire interfaces

FireWire Audiophile
M-Audio Ozonic
FireWire Solo
FireWire 1814
FireWire 410

* Compatible only with current Delta models listed above.

Avid, Digidesign, M-Audio, Audiophile, Delta, Ozonic, Pro Tools, Pro Tools and Pro Tools M-Powered are either trademarks or registered trademarks of Avid Technology, Inc., in the United States and/or other countries. All other trademarks contained herein are the property of their respective owners.

M-AUDIO

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

WRM



Letters

Pro Tools Prose

After using Digidesign's Pro Tools LE system for about 95 percent of the music placement in the film *What the Bleep Do We Know*, I wanted to thank Senior Editor Gino Robair for his article about Pro Tools LE 6.7 ("Master Class: Pro Tips for Pro Tools LE," April 2005). Gino's article offers many helpful tips that a person can use daily.

Tim Bomba
via email

Doing Windows

David Rubin's review of Tascam's GigaStudio 3 Orchestra software sampler (see the May 2005 issue) states, "All of the GigaStudio versions support only Windows XP with Service Pack 1." However, I own GigaStudio 3 (GS3), and it runs just fine with Service Pack 2.

Every month I find several interesting articles to read.

Gary Smith
via email

Gary—I'm very glad that you enjoyed the review. In order to get some clarification on the Service Pack issue, I spoke with a representative from Tascam. According to Tascam, GS3 works with Windows XP Service Pack 1, and with a little tweaking, you can also use it with Service Pack 2. (The print and online documentation refer only to Service Pack 1.) If you do use Service Pack 2, Tascam recommends turning off any antivirus software and disabling the Service Pack 2 firewall feature in order to avoid problems.

All Service Pack issues aside, you still need to run Windows XP, which, as I pointed out in the review itself, might be a drawback for some

48 kHz Users, Unite!

I have just been informed by Zero-G that the problems that I have been experiencing with my recently purchased Zero-G products (*Sounds of Polynesia* and *The Operating Table*) are a result of the Native Instruments Intakt sample-playback engine's incompatibility with the 48 kHz sampling rate. According to Zero-G, Native Instruments has only recently confirmed to them that this is a known problem, with no fix that is currently available.

Many new sample libraries from various developers incorporate Intakt as their software engines. If you visit user forums discussing Native Instruments products, you will see that 48 kHz issues have been a known problem for at least a year now, which makes Native Instruments' slow

“Quite a few soundtrack composers compose at 48 kHz so that we won't have to convert the sampling rate later.”

—Rob Braynton

I think that Mr. Rubin missed the fact that Tascam has released updates that allow GS3 to run with other versions of Windows. After I bought the program, I waited until several bugs had been worked out before I even attempted to install it. And then I installed it on a new system.

I enjoyed the GigaStudio 3 review, and I love your magazine.

users. Tascam also recommends that you upgrade GS3 to the most recent version, which is 3.04 as of this writing.

To obtain more information about working with Windows XP and GS3, you should take a look at Tascam's optimization guide, located at www.tascamgiga.com/TASCAM_GigaStudio3XPOptimization.html. —David Rubin

response to this problem quite mystifying.

The problem is with Intakt's Beat Machine mode: if your system is set to 48 kHz (which is the preferred delivery format for professional film and television soundtracks), sound libraries that rely on Beat Machine mode will yield glitchy audio and will not loop correctly. It has been reported that



REASON

It has arrived.

Reason 3.0 is here. With one-step loading of complex, customizable instruments and effect setups, a new expanded soundbank, instant integration with hardware control surfaces, a new intuitive file browser and a set of class A mastering devices, this upgrade is extra loud, extra large and extra live-friendly.



More Reason 3.0 info at
www.propellerheads.se

New in Reason 3.0:

■ The Combinator

The Combinator lets you create and save combinations of multiple Reason devices, allowing you to load up huge chains of instruments and effects in one single click.

Create instruments splits and layers. Build intricate instrument and effect combinations. Create complex routings with CV control over any parameter. Then save it all as an instantly loadable, playable Combinator patch. Only with the Combinator. Only in Reason 3.0.

■ MClass Mastering Suite

MClass – a suite of expensive sounding, professional mastering tools – adds punch, sheen, width and volume to your mixes. The MClass package includes:

- **MClass Equalizer** – a parametric mastering EQ for surgically precise frequency adjustments
- **MClass Stereo Imager** – for fully controlling the stereo width of your mix
- **MClass Compressor** – gives your tracks bite and definition
- **MClass Maximizer** – a high-quality loudness maximizer designed to make your Reason tracks sound as loud as you intended them to.

■ **Remote** – Thanks to the Remote technology, Reason now integrates even more seamlessly with external MIDI controllers, with full support for motorized faders and control surface displays – right out of the box, no configuration needed.

■ **The Reason 3.0 Sound Bank** – the new sound bank adds a huge selection of multi-sampled instruments as well as fresh synth patches, loops, samples, and combinator patches to Reason's already massive library. ■ **The Reason 3.0 Browser** – surf through Reason's massive soundbank in new intuitive ways; easily locate, audition and organize sounds and patches from all over the library. ■ **Line Mixer 6:2** – 6-channel stereo line mixer for easy sub-mixing. Use with the Combinator or insert anywhere in Reason. ■ **Record automation on multiple tracks.**

■ **Warp speed sample loading.**

Ready to upgrade?

If you already own a previous version of Reason, go to www.propellerheads.se/get3 for more info on how to get this massive upgrade at a ridiculously low price.



EMspotlight

Pioneers in Sampling

Decades before the advent of digital sampling, the appropriation of real-world sounds was done with turntables and magnetic tape. In this exclusive interview from the EM archives, Pierre Schaeffer and Pierre Henry discuss their pioneering work in the field of musique concrète. By John Diliberto.

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*.

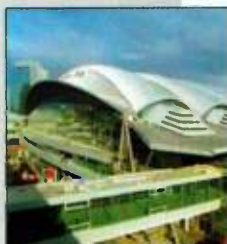


EM Guides Online

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

Senior Editor Mike Levine has selected his favorite EM articles about recording electric guitar. The topics include using plug-ins that model amplifiers, and how to get great tone from your tube amp at a low volume.



emusician.com/editorspicks

EM news

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

emusician.com/news

EM newsletter

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



emusician.com

cakewalk

SONAR4

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 throughout 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



OPEN THE NE



©2005 Korg USA, 316 S. Service Road, Melville, NY 11747 • (631) 390-8737 • www.korg.com
KARMA® (Kay Algorithmic Realtime Music Architecture) and the KARMA Logo are registered trademarks
representing patented technology licensed from Stephen Kay, Karma Lab LLC. www.karma-lab.com





NEXT CHAPTER

OASYS

Open Architecture Synthesis Studio

For over 40 years Korg has written the book on groundbreaking, great-sounding instruments. Now we're proud to introduce the revolutionary OASYS Open Architecture Synthesis Studio, the newest chapter in this legacy of expertise and innovation.

OASYS seamlessly unites three state-of-the-art synth engines, powerful and expressive controllers, 16 tracks of hard-disk recording, MIDI sequencing, plus inspiring second-generation KARMA technology.

Our unique Open Architecture allows your OASYS to continually integrate the latest Korg technologies, backed by uncompromising hardware integrity. The color TouchView display and intuitive interface harness all this power to make creating music easier and more exciting than ever. OASYS is the next chapter in your musical journey.

Experience OASYS today – online at www.korg.com/OASYS and at an exclusive OASYS retailer.

KORG

THE FUTURE IS OPEN

BIAS Peak Pro XT 5

Berkley Integrated Audio Systems (www.bias-inc.com) has gathered together most of its product line in a new bundle called Peak Pro XT 5 (Mac, \$1,199). It incorporates the latest version of

Peak Pro 5 (Mac, \$599; upgrades available) is a major upgrade that greatly enhances Peak's CD mastering functionality. It offers replication-ready CD burning with support for advanced features of the full Red Book specification, including ISRC and PQ subcodes. In addition to a new waveform view that lets you adjust your tracks and crossfades graphically, the Playlist features unlimited undo and redo and the ability to use your keyboard for auditioning and nudging.

Peak Pro 5's plug-in-routing window VBox supports AU as well as VST instruments and effects. BIAS improved many Peak DSP algorithms and added new DSP commands such as Auto-Define Regions and Envelope from Audio. ImpulseVerb lets you control the gain of the source and impulse response. Other enhancements are tape-style scrubbing in Core Audio, automatic track definition, SMPTE HD display, audio file recovery, and lots more.

Several of the suite's plug-ins are based on advanced linear-phase algorithms. Reveal combines seven audio-analysis tools, and PitchCraft gives you advanced pitch-correction and transposition capabilities. Sqweez-3 and -5 are multiband compressor/limiters. RepliQ can flexibly match the EQ profile of a source and apply it to a target signal. GateEx selectively removes signals below a threshold as a downward expander reduces unwanted residual content. SuperFreq 4-, 6-, 8-, and 10-band parametric EQ has an improved user interface as well as metering and text-entry features.

BIAS's flagship stereo audio editor with a processing suite comprising SoundSoap, SoundSoap Pro, SuperFreq EQ, and five new plug-ins: GateEx, PitchCraft, Repli-Q, Reveal, and Sqweez.



Download of the Month

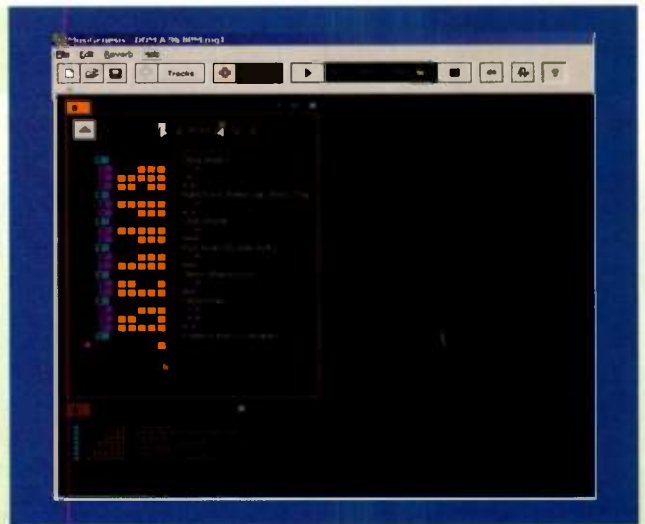
MUSIGENESIS (WIN)

If you've got a PC, stop reading and go get this download. MusiGenesis (\$19.95) by Kenneth Adams is an algorithmic music generator that's as much fun as it is easy to use. Will it write your next hit song? Probably not, but it will provide an endless stream of useful ideas.

MusiGenesis operates in two modes: Tracks and Mixes. In Tracks mode, you create tracks that you associate with built-in sampled instruments. The program provides more than 150 tuned instruments and 180 percussion instruments, and you can load your own samples.

Each track can contain as many as eight 16th-note patterns, each of which is from one to four bars long. MusiGenesis automatically creates and adds notes to patterns, giving you the option to reject each change. You can also manually add and remove notes as well as adjust their volume, pan position, and length (for sustaining instruments).

Mixes, as you might guess, are songs composed of patterns. As with tracks, MusiGenesis automatically creates and adds to mixes, allowing you to reject changes and manually modify them as you go. You can have multiple mixes in a project, but naturally, only one plays at a time (see Web Clip 1).



In addition to saving its own project files, MusiGenesis will export your tracks and mixes as audio files in WAV or MP3 format. It will also export your tracks as Standard MIDI Files. That allows you to extend MusiGenesis compositions in your favorite audio and MIDI applications. You can purchase the full version or download a free save- and export-disabled version of MusiGenesis from www.musigenesis.com.



—Len Sasso

UNIVERSAL AUDIO

Tube & Solid State Class A Mic Pres • Channel Strips • Classic Compressors • 192K A/D & D/A • DSP & Plug-Ins



- ◆ 610 Mic Pre/EQ
- ◆ LA-2A based T4 Compressor
- ◆ Breakthrough Price

NEW! LA-610 Classic Tube Recording Channel



- ◆ Discrete Class A – Dual Gain Stages
- ◆ Modern/Vintage/Saturate modes
- ◆ 4 channel 4110 available

NEW! 8110 Precision 8 Channel Microphone Preamplifier



UAD-1 DSP Card Project PAK, Studio PAK, & NEW Ultra PAK

Included Plug-Ins	Project PAK	Studio PAK	Ultra PAK
1176LN	•	•	•
1176SE	•	•	•
Buss CE-1	•	•	•
Cambridge EQ	•	•	•
CS-1 (3 modules)	•	•	•
DreamVerb	•	•	•
Fairchild 670	•	•	•
LA-2A	•	•	•
Neve (8 modules)	•	•	•
Plate 140	•	•	•
Precision EQ	•	•	•
Precision Limiter	•	•	•
Pultec EQP-1A	•	•	•
Pultec Pro	•	•	•
RealVerb Pro	•	•	•
Roland Dimension D	•	•	•



analog ears | digital minds

www.uaudio.com/newgear • toll-free: 1-866-UAD-1176

©2005 Universal Audio, Inc. • Santa Cruz, CA • 95060-2101 • USA • voice: 831-466-3232 • fax: 831-466-3275 • info@uaudio.com • #2005 Universal Audio, Inc. All rights reserved. Universal Audio, the Universal Audio logo, Telemanor, LA-2A, LA-610, and "Analog Ears Digital Minds" are trademarks or registered trademarks of Universal Audio, Inc. All features and specifications subject to change without notice.

Camel Audio Multi-Effects

Camel Audio (www.camelaudio.com), makers of the Cameleon 5000 additive synthesizer, is shipping two new VST and Audio Units plug-ins: CamelSpace (Mac/Win, \$85) and CamelPhat 3 (Mac/Win, \$85). Each is a complex multi-effects processor that includes 128 presets and features an intelligent randomize function for exploring new sounds. Either plug-in lets you use all its effects simultaneously, and you can control any two parameters using a graphical x-y pad. Both are available as a bundle for \$149. Visit Camel's Web site to hear audio examples and download demo versions.

CamelSpace is a unique effect that turns any timbre into an evolving rhythmic texture. Its 128-step Trance Gate sequencer can modulate filter depth, cutoff frequency, volume, and panning, with envelope parameters that affect each step. Major features include eight LFO waveshapes, ten resonant fil-



ter modes, an enhancer effect, soft saturation, reverb, stereo delay, a full-function flanger, and host synchronization.

CamelPhat 3 is the newest version of a processor designed specifically for guitar, bass, and drums. By combining four distortion modules, three resonant filters, two LFOs, compression, flanging, EQ, and an envelope follower, CamelPhat 3 can add warmth, punch, and presence to your sequencer tracks.

Wusik The Second Wave and Vox'd

Soft-synth developer Wusik (www.wusik.com) is shipping two new VST instruments, The Second Wave (Win, \$79.95) and Vox'd (Win, \$79.95). Both are sound sets that include WusikEngine, the SSE-optimized software framework that powers the sample-playback synthesizer Wusikstation. Current Wusikstation owners can download either sound set for \$39.95.

Like Wusikstation, The Second Wave plays evolving timbres reminiscent of the Korg Wavestation, but with all-new acoustic, electric, and electronic instrumental sounds. Offering one-shot samples and multisamples, The Second Wave supplies 420 MB of original content.

Featuring 96 presets by Tim Conrardy, Vox'd comprises 500 MB of sampled and synthesized voices. It comes with classical solo voices, real choirs, electronic vocalists and choirs, human percussion, vocoder sounds, and vocal atmospheres and effects.



Key Changes

Moog Music is staging the Ether Music 2005 Conference, A Celebration of the Theremin (www.ethermusic2005.com), beginning August 4 in Asheville, North Carolina. The three-day festival will feature keynote speaker Albert Glinsky, panel discussions moderated by Jason Barile, and classes and concerts by renowned thereminists such as Lydia Kavina, Pamela Kurstin, Barbara Buchholz, and Armen Ra. Most of the events will be held at the Orange Peel, a concert venue that will serve as cosponsor. In addition, Moog Music is accepting applications for a contest in which five original compositions will be selected for presentation. The winners will receive free registration for the conference (normally \$395), and one will win \$1,000 in cash . . . Cycling '74 (www.cycling74.com) has lowered

the price of its plug-in suite Mode to \$99, and it is now available for the Windows OS as well as the Mac OS. In addition, you can download a free subset of Pluggo (currently at version 3.5.1) called Pluggo Junior . . . The Grand 2 is an update to the concert piano plug-in from Steinberg (www.steinberg.net). It adds a new sampled piano and greater CPU efficiency. In cooperation with Sony, Steinberg also recently released version 2.1 of the Audio Stream Input Output (ASIO) protocol. It offers support for the Direct Stream Digital (DSD) standard, on which the Super Audio Compact Disc (SACD) format is based . . . To ensure compatibility with Mac OS X 10.4 (Tiger), Korg (www.korg.com) has updated the Legacy Collection to version 1.1.4. Registered users can download it for free.

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

Sweetwater
music technology direct™



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.

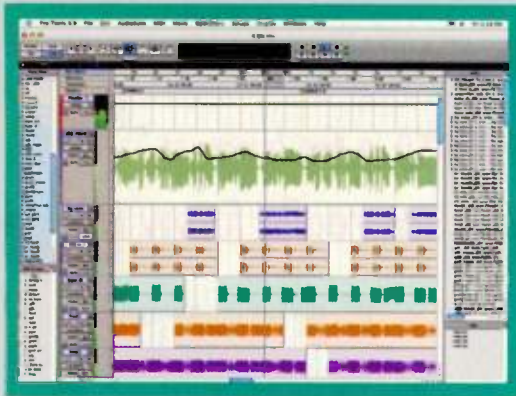
(800) 222-4700 | **sweetwater.com**

NO MINIMUM PURCHASE
FREE SHIPPING
SPEEDY FEDEX DELIVERY
MOST ORDERS SHIP SAME DAY

PRO AUDIO • MICROPHONES • PROCESSORS • MONITORS • GUITARS • KEYBOARDS • MIXERS

828

Rev Up



DIGIDESIGN PRO TOOLS 6.9

Audio hardware and software heavyweight Digidesign (www.Digidesign.com) is shipping Pro Tools 6.9 (Mac/Win), offering numerous enhancements that focus on updated audio mixing and post-production capabilities. It includes EQ III, a high-resolution equalizer plug-in, and the ability to arrange plug-ins by manufacturer and type. It also delivers improved integration with third-party sound libraries and with the DigiDelivery high-speed file-transfer system. Pro Tools 6.9 software is a free upgrade for current owners of Pro Tools TDM 6.4, Pro Tools LE 6.7, and later systems.

For anyone familiar with traditional mixing consoles, the new version introduces features that streamline mixing, such as inline console emulation, new automation capabilities, and AFL/PFL Solo. It adds support for Digidesign's Icon D-Control work-surface and expands support for Avid video peripherals such as the Avid Mojo, Digidesign AVoption|V10, and the companion software Avid Media Station|PT. Combined with integrated mixing controls and better integration with a wider range of file standards, Pro Tools 6.9 is the heart of a well-orchestrated audio-for-video system.

VIRSYN CUBE 2

A new version of the groundbreaking additive soft synth from VirSyn (www.virsyn.com) is available. Cube

2 (Mac/Win, \$319) builds on its Editors' Choice Award-winning predecessor by analyzing the spectra of sound and furnishing new and musically useful ways to alter it. An improved spectral analyzer offers numerous algorithms—each optimized for a different type of sound—to reconstruct harmonic, inharmonic, and noise-based timbres.

The graphical editor lets you directly manipulate a sound's spectral and spatial structure by drawing in data that affects Cube's synthesis parameters.

Cube's morphing algorithm has been



improved, giving you the ability to specify the morph modulation range and turn off the morph envelopes for manual control. Volume envelopes are now independent of the morph envelopes, too. A new residual-noise generator can create evolving noise spectra, resulting in more lifelike sounds. Cube 2 also features a MIDI controller assignment editor, and you can use MIDI Breath and Expression controllers as modulation sources.

An upgrade from the previous version is \$99. If you bought a copy in 2005, or if you own all three VirSyn products (Cube, Tera, and Cantor), an upgrade is only \$19.

NATIVE INSTRUMENTS REAKTOR 5

Never a company to rest of its accolades, Native Instruments (www.nativeinstruments.de) has unveiled Reaktor 5 (Mac/Win, \$579; upgrade, \$169). Like previous versions, Reaktor 5 is a modular software environment for building virtual instruments. It comes with hundreds of ready-made soft synths, samplers, drum machines, sequencers, and effects processors. There are more than 20 new instruments, including Skrewell, a soundscape generator; Splitter, a grain sampler; and Aerobic, a drum machine.

Reaktor 5 introduces Reaktor Core Technology, a layer of functionality that enables low-level signal-processing design, offers 64-bit resolution, and incorporates a run-time compiler. A manual about Reaktor Core Technology comes with the program.

In addition, Reaktor 5 has a revised user interface, new voice routing and MIDI capabilities, and an updated macro collection. You can apply skins to all Reaktor modules, customizing the appearance of knobs, buttons, faders, and meters. Create tabbed panel interfaces using the new Micro Stack feature. The extended display functionality lets you create piano-roll and other new sequencer layouts, and configurable Panel Sets optimize workflow. Multistage envelopes feature tempo grids, slope controls, and looping functions. **EM**



The String is the Thing

Presenting an Amazing New String Modeling Synthesizer
from the Creators of Ultra Analog, Tassman, and Lounge Lizard.

A | A | S

APPLIED ACOUSTICS SYSTEMS



String Studio

Get creative! AAS, the company that *Electronic Musician* recently called "the leader in the field of physical modeling on the desktop," has created a NEW kind of synthesizer. At the core of this powerful plug-in are cutting-edge String Models complete with picks, bows, hammers, fingers, frets, dampers, and soundboards. Check out the fabulous presets, or use String Studio's innovative tools to craft earthy, organic timbres and other-worldly instruments. With just a few intuitive parameters you can span a remarkable range of sounds with all of the smooth, transparent fidelity Applied Acoustics has become famous for.

Go to www.ilio.com and click hot spot to hear some amazing String Studio demos.



(MAC Only)

Stand-alone version too!

Contact ILIO for specific format information and system requirements.

\$249

ILIO
Exclusive distributors

800.747.4546

www.ilio.com

NanoRAM

By Scott Wilkinson

Nanotechnology brings new life to RAM.

Storage capacity is critical for electronic musicians; the more, the better. This is particularly true of random access memory (RAM), which is used to hold data being actively processed. As the resolution of digital audio continues to increase, so must the amount of available RAM. But as I've written many times, conventional semiconductor RAM is fast approaching the limits of its capacity, so other approaches must be found if our ever-growing appetite for storage is to be satiated.

One solution could come from the field of nanotechnology, which is concerned with constructing the smallest imaginable objects. Among the first such objects to be built were carbon nanotubes—which are cylindrical structures made from hexagonal rings of individual carbon atoms. With a diameter of about 1 nanometer (a billionth of a meter), nanotubes look like rolls of chicken wire, and they exhibit extraordinary strength and electrical

properties, making them ideal for a variety of applications.

For example, an unexpected application is a novel form of electromechanical RAM. Originally

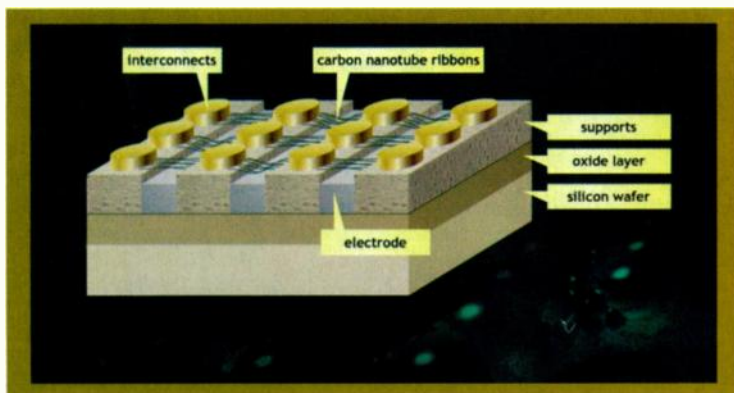
(see Fig. 1). The strands are about 13 nm above the floor of the gaps, which are about 130 nm wide. The gaps contain electrodes on top of transistors, which produce electric fields. When a transistor's field is oriented in one way, the nanotubes above it are drawn downward until they touch the electrode. When the field is oriented the other way, the nanotubes remain suspended above the electrode. Those two states represent 1 and 0, respectively, which is highly reminiscent of the mechanical relays in the antique computers that originally inspired Rueckes's idea. Amazingly, the nanotubes stay in position even when the power is removed, allowing them to retain their data like flash memory.

Despite the simplicity of the concept, there were several practical hurdles to surmount. One was the high iron content of commercially available nanotubes. Nantero devoted much of its early work to developing a special filtration process that brought the iron content down to the parts-per-billion range. Then came the challenge of depositing the nanotubes on CMOS (Complementary Metal Oxide Semiconductor) wafers. Gas-vapor deposition requires temperatures that destroy the ancillary circuitry, and a suitable conventional solvent to use in spin coating is too toxic, so Nantero came up with a proprietary, nontoxic spin-coating solvent.

Once those obstacles were overcome, it was time to look for a manufacturing partner. In 2003, LSI Logic agreed to try making NRAM in its Gresham, Oregon, plant, and nine months later, the company had a working prototype. Now the trick is to increase the yield to the point of economic feasibility. LSI wants to use the technology as a replacement for the static RAM embedded in ASICs (Application Specific Integrated Circuits), because NRAM has the potential to be much smaller while consuming less power.

Ultimately, Nantero's goal is to match the speed of static RAM, the data density of dynamic RAM, and the nonvolatility of flash memory. In the short term, the company expects to meet two of those criteria, with data density lagging behind. Current prototypes have capacities in the megabit range, though chips with up to a terabit of storage should be possible eventually. In addition, NRAM consumes less power than other forms of RAM, while remaining more resistant to temperature extremes and electromagnetic fields. What more could electronic musicians ask of their memory? **EM**

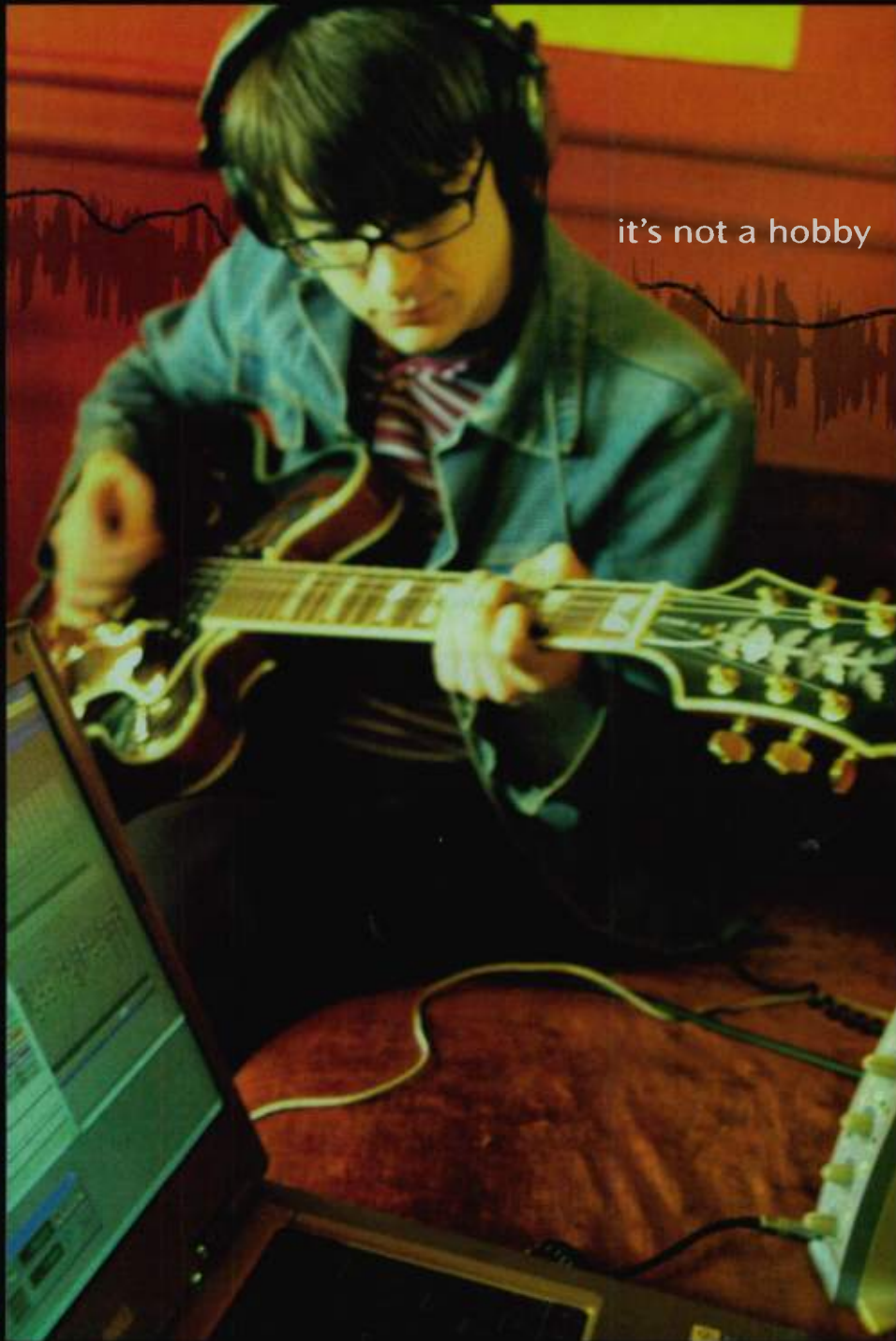
FIG. 1: NRAM stores bits by flexing carbon nanotubes suspended over electrode gaps. If an electrode causes the corresponding nanotubes to sag, that represents a 1; if not, it represents a 0.



COURTESY NANTERO

conceived by Thomas Rueckes, then a graduate student at Harvard University, the new type of RAM is now being developed by a company called Nantero (www.nantero.com), which was founded by Rueckes, Greg Schmergel, and Brent Segal in 2001. The result of their efforts is called nanotube RAM, or NRAM.

The basic idea is that strands of nanotubes are suspended over tiny gaps etched into a semiconductor chip



it's not a hobby



MBOX PRO TOOLS LE

HARDWARE + two focusrite mic pres . zero-latency monitoring . usb-powered . s/pdif digital i/o . windows & mac
SOFTWARE + industry-standard recording, editing & mixing . integrated midi . beat detective le . 40 plug-ins & instruments . rewire support

www.digidesign.com © 2005 Avid Technology, Inc. All rights reserved. Avid, Digidesign, Beat Detective, MBox, and Pro Tools LE are either trademarks or registered trademarks of Avid Technology, Inc. in the United States and/or other countries. All other trademarks contained herein are the property of their respective owners. Product features, specifications, and system requirements are subject to change without notice.



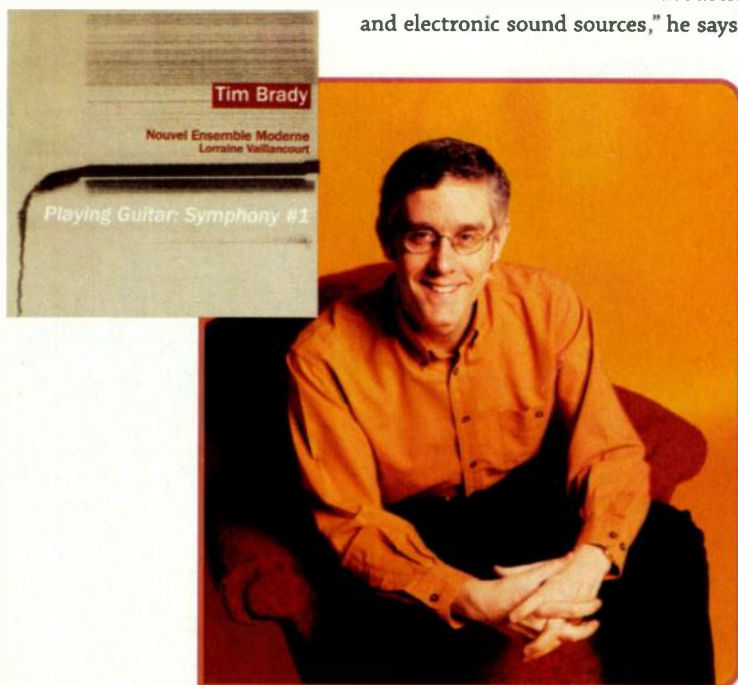
Six-String Symphony

By Matt Gallagher

Tim Brady unites guitar, orchestra, and electronics.

For 25 years, Tim Brady has been carving a niche for the electric guitar within classical music. *Playing Guitar: Symphony #1* (Ambiances Magnetiques, 2004) is Brady's tenth album. Composed largely on electric guitar, it presents his contemporary classical score in five movements for a 15-piece acoustic chamber orchestra.

Brady and coproducer Morris Apelbaum sought to combine the guitar and orchestra with Brady's guitar samples and textures. "My music is somewhat unusual in its combination of acoustic and electronic sound sources," he says.



Playing Guitar: Symphony #1/Tim Brady

"I compose on the guitar, on the piano, by singing, writing directly onto score paper, or using a sequencer or multitrack recorder. The choice of composing medium depends on what I'm trying to get at."

Apelbaum and four assistant engineers recorded the Nouvel Ensemble Moderne, conducted by Lorraine Vaillancourt, in Oscar Peterson Concert Hall at Concordia University in Montreal. "We didn't have to fix the room sound," Brady says. "The hall is used frequently for recording in Montreal." Apelbaum recorded the orchestra onto 24 tracks through a number of mic preamps and Apogee AD-16 converters into an Alesis HD24 hard-disk recorder.

The engineers miked each musician individually. "That allowed me to create the final balance in the studio, rather than rely on the conductor's balance," Brady says. "Balancing the tone of the electric guitar and sampler with the orchestra was a question of subtle timbral decisions. Even in a live space with no isolation, [multiple mics] give one a lot more control than a stereo pair." In addition, the engineers placed each mic 18 to 24 inches from an instrument's sound source.

Brady brought the orchestra tracks into his personal studio, which includes a dual-processor Mac G4 running MOTU Digital Performer 3.1 and a MOTU 2408 audio interface. "I played untreated guitar lines live with the orchestra, and then added the processed stuff later," he says. "I replaced a few live parts with overdubs. Sometimes I didn't like the mix of the original guitar tone with the ensemble. EQ can do only so much; sometimes you have to change pick-ups or even guitars to get the sound that you want.

"All the guitar parts were edited and then reamped in my studio using the speaker simulator on my Koch Twintone tube amp," Brady says. "That added warmth, depth, and subtle tube compression. Tubes offer acoustic attack and decay characteristics, so they blend better with classical instruments."

Brady recorded and processed guitar samples in his Yamaha A4000 sampler, which he later added to the existing tracks. His TC Electronic Fireworx effects processor also played a key role. "I used just two bands of EQ to bring out the character of an instrument in the mix," Brady says. "With good mics, good preamps, a good room, and great players, you don't need tons of EQ. I added some reverb and I used DP's volume curves for subtle volume changes."

The album concludes with "Frame 1—Resonance," Brady's piece for electric guitar and acoustic piano. "[It features] quite a bit of digital processing, using primarily an old Boss SE-70 effects processor," Brady says. "The SE-70 has a crude 16-bit sound, but it has some amazing algorithms. The piano plays a dreamlike fantasia part, and the guitar acts like an electroacoustic sustain pedal, taking ideas from the piano and transforming them into an ongoing musical dialogue. I plan on composing more works that explore the electric guitar in a small, intimate chamber-music context—if all goes according to plan." **EM**

For more information, go to www.timbrady.ca or www.actuellecd.com.

"Slammin'!"

Anthony Roberts, Monitors - Tower of Power



SEE US AT
NAMM
BOOTH #1210

"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 SMS7's. Now that I've been exposed to the future, why would I want to live in the past?"

Eugene "Gene" 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 tippy 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 Getski, 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.



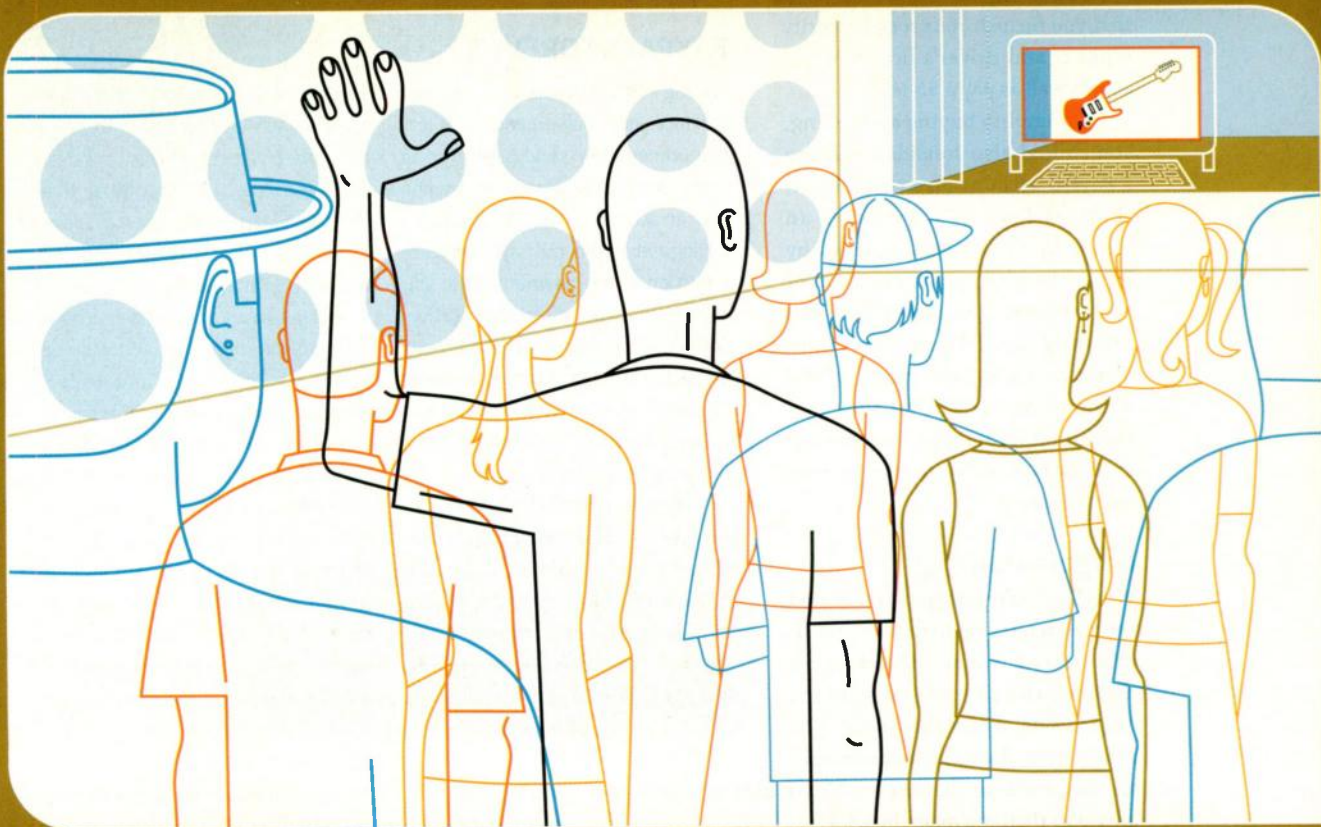
Flat out lethal.

Studiophile BX5a

Studiophile reference monitors have earned a great reputation with recording professionals around the world. The new 70-watt biamped **Studiophile BX5a** refines our highly acclaimed BX5 near-fields, already renowned for packing a lot of punch for their size. Get a reality check at your **M-Audio** dealer today.

- new 5" low-frequency Kevlar driver cones > resilient and durable
- high-temperature tolerant voice coils > longevity
- damped rubber surrounds > fidelity
- 1" drivers with natural silk domes > crisp, accurate, gentle on the ears
- integral cabinet and circuitry > extremely flat response
- rear-ported cabinet > enhanced low frequencies
- custom crossover and biamped design > optimal performance

M-AUDIO



EM's Guide to eBay

By Geary Yelton

How to
make your
e-commerce
experience
successful and
trouble-free.

Musicians and audio engineers have a rich history of buying and selling used instruments and equipment. Historically, such transactions have taken place between individuals who knew each other or who scoured classified ads in local newspapers and other publications. Before the Internet came along and connected everyone, the pool of potential buyers was mostly limited to the seller's geographical area. Selling your gear was often more trouble than it was worth, and opportunities to receive a fair price were usually limited by local demand.

Like the Internet itself, eBay (www.ebay.com) has drastically changed the way that individuals conduct business. Since its advent, sellers have had a worldwide audience of potential buyers at their fingertips. Musicians in particular have much to gain from learning the ins and outs of eBay's brand of personal e-commerce. Listing an auction on eBay puts your merchandise in front of millions of other musicians who are willing to compete for the chance to buy your used guitar, hard-disk recorder, keyboard stand, or music book.

Get Registered

Before you can buy or sell, you'll need to register as an eBay user. Clicking on eBay's Register link opens the registration page, in which you type your personal data and accept or decline the terms of the user agreement. You'll then be asked to supply a user name and password. Because eBay has literally millions of users, selecting a unique user name can be more difficult than it sounds. Be careful that you don't select something frivolous just to see if it's already been taken; you will be stuck with it for at least 30 days.

After you complete registration by responding to an email sent by eBay, you can bid on any auction you like. To create your own auctions, though, you'll need to create a seller's account and either provide your credit-card data or complete a process called ID Verify. ID Verify requires

that you furnish your social security number and driver's license number, as well as pay a \$5 fee.

To simplify buying and selling, you should also consider opening a PayPal account (see the sidebar, "PayPals Forever"). PayPal is an online financial service owned by eBay. In exchange for a portion of each transaction, PayPal lets you instantly pay and get paid for completed auctions. Buying and selling without PayPal can be slow and troublesome, and the convenience it affords usually makes it well worth joining.

Bargain Hunting

Whether you're shopping for a used synthesizer, trying to find an out-of-print service manual, or looking for the best price on the latest software, eBay is one of the first places you should turn. Browsing and searching are easy, and if you haven't tried it yet, bidding and buying are easier than you might imagine.

Shopping on eBay begins with going to almost any page and clicking on the Buy button, located at the top

PAYPALS FOREVER

Joining PayPal (www.paypal.com) can enhance your eBay experience; it lets you immediately send payments to and receive payments from anyone with an account. There's no charge for paying with PayPal, but PayPal will take a portion of any payments that you receive. In exchange for that portion, you gain the ability to accept payment by credit card and to make payments directly from your bank account. You also get a maximum of \$1,000 in free buyer protection coverage.

PayPal offers three types of accounts. A Personal account is suitable if you are strictly a buyer and have no need to accept credit-card payments. A Premier account is suitable for most sellers; in addition to providing the means to accept credit

cards, it simplifies checkout for your buyers and makes it easier to manage your postauction transactions. A Business account is similar to a Premier account and is best if you're operating under a business name rather than as an individual.

All it takes to open an account is to provide your name, address, and other basic information. To make payments using your Personal account, you'll first need to provide credit-card information. To enjoy the benefits of a Premier or Business account, you must provide information about your checking or savings account so that PayPal can withdraw and deposit money, but only when you authorize it. The convenience of a PayPal account makes it well worth the cost.

of the page. You'll be presented with a list of categories to browse, one of which is Musical Instruments. Each category is divided into dozens of subcategories, and many of those are categorized even further. Musical Instruments, for instance, is divided into Guitars, Electronic, Pro Audio, and many others (see Fig. 1). You'll find condenser mics listed under Musical Instruments > Pro Audio > Microphones > Wired Microphones > Recording, Condenser.

On most pages, a search field lets you enter the name of whatever you're hoping to find. When searching, be as specific or as general as you like: if you want to browse all Moog synths, type "moog" (searching is not case-sensitive). If you're trying to find a Minimoog, type "minimoog" and "mini moog" (try it both ways, because searching will return only the results that include all your search terms). If you want to search for all Moogs except the Minimoog, type "moog -minimoog -mini." Placing a minus symbol at the beginning of a search term excludes that word from your search results.

eBay can sort your search results according to parameters such as price (lowest or highest first), time (when an auction began or ends), or distance (from your location). Such information tells you whether an item suits your desires and how quickly you will need to act. Sometimes viewing search results using different parameters will help you spot something that you might have missed otherwise, especially when the list is several pages long.

Once a list of results is displayed, you can narrow down your search even more by examining the list of Matching Categories on the left side of the screen.

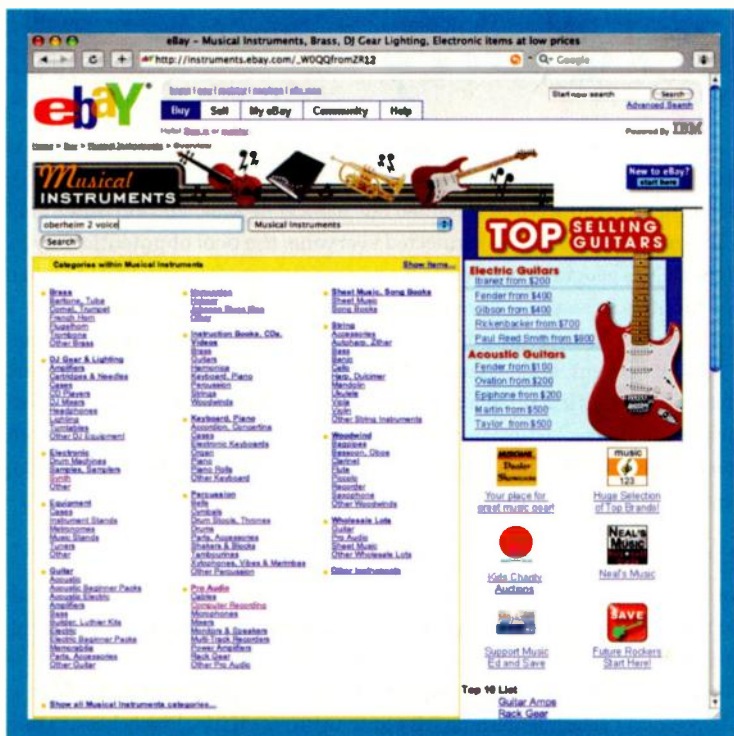


FIG. 1: Dozens of subcategories are located within each eBay category. For example, one of the Musical Instruments categories is Pro Audio, which is divided into Cables, Computer Recording, Microphones, Mixers, and other subcategories.

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

"I could not stop playing it - seriously.
Feels like a real grand piano.
Best action that I have ever seen..."

- Grant Nicholas (T-Bone, Yolanda Adams, Mya, El De Barge, Toni Braxton)

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.



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

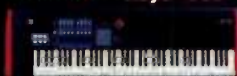
UF5 49 weighted keys \$199*



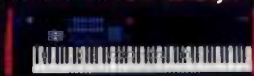
UF6 61 weighted keys \$299*



UF7 76 weighted 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

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.

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



www.kaysound.com

514-633-8877

Musician's Friend
www.musiciansfriend.com

samash.com
www.samash.com

Music123.com
www.music123.com

AMERICAN MUSICAL
www.americanmusical.com

Available At:

A search for "moog" may produce categories such as Musical Instruments (Electronic, Piano/Keyboard, and Guitar), Music (Records and CDs), and eBay Motors (Parts & Accessories). If you're not interested in Moog auto parts or albums, the Musical Instruments category is your best bet. Still, there's no guarantee that you won't have to wade through Moog baseball caps, refrigerator magnets, and framed magazine ads.

If you're trying to find something specific, such as an Ampeg SVT-AV bass amplifier, you should search for "ampeg amp" and "svt bass" in All Categories, and not just in the Musical Instruments > Guitar > Amplifiers category. If the seller left out any keywords or placed the amp in the Equipment or Pro Audio category rather than where you'd expect to find it, you might find a deal that has eluded other bidders. In fact, amplifiers are often found in the DJ Gear & Lighting category simply because it has an Amplifier subcategory.

When you find something that you might want to buy, read its description carefully. Does it state the item's condition? Is it in good working order? Does the seller offer any sort of guarantee? Are you sure it's exactly the one you want to buy? Is the shipping cost reasonable? Does the seller have a good feedback rating? If you have

any questions, do not hesitate to email the seller and ask. If the seller doesn't respond, don't make assumptions and bid anyway. You might end up with something you don't want and may not be able to return.

Bid High, Buy Low

Auctions are held in a variety of formats, such as multiple-item auctions (aka Dutch auctions), reserve-price auctions, and fixed-price (Buy It Now) auctions. The most common, however, is an auction in which the highest bidder wins. Although your best strategy is to bid the highest price you are willing to pay, you could very well pay less than the amount that you bid.

When you place a bid, you're pledging to pay as much as the amount you've bid; in other words, it's your maximum bid. eBay uses a technique called proxy bidding, in which it will automatically raise your bid only enough to beat competing bids, but no higher than your maximum bid. eBay always displays the auction's current bid, which is only whatever it takes to beat the previous maximum bid (or the starting bid if there are no previous bids). Maximum bids are held in secret and are revealed only when someone exceeds that bid.

Let's say an item's current bid is \$50 and you bid \$100. If the previous highest bidder's maximum bid were \$75, your bid would be entered as \$76. (The increment above the current bid depends on the bid amount; see eBay's Help Topic on Bid Increments for details.) If someone came along and bid \$80, the current bid would advance to \$81, and you would still be the highest bidder. If, however, the previous bidder also had bid a maximum of \$100, the current bid will advance to \$100 and he or she will be listed as the current high bidder, because you were not the first to bid that amount. The advantage of proxy bidding is that you will pay no more than whatever it takes to beat the next highest bidder.

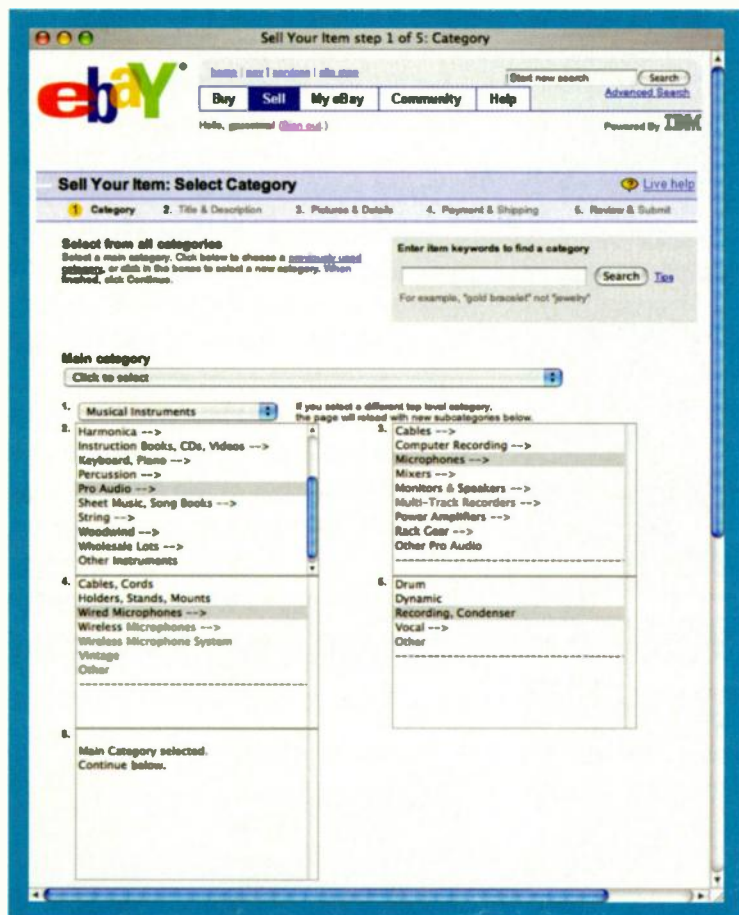
When you place a bid, you are entering into a contract to pay as much as your maximum bid, plus shipping costs, if you win. If you change your mind and back out after winning an item, you risk receiving negative feedback and you jeopardize your eBay membership. eBay charges sellers a portion of the final selling price, as well as listing fees, as soon as an auction is complete. If a buyer were allowed to back out of a deal, either the seller or eBay would incur a loss, and another auction would be necessary.

Note that the posted time that an auction ends is Pacific Time, so unless you're on the West Coast, you'll need to calculate your local time if you want to be present at its conclusion. When the auction is complete, if yours is the highest bid, congratulations, you've won! Now all you need to do is pay the seller and await the item's delivery.

Variations on a Theme

In a reserve-price auction, the highest bid doesn't win unless it exceeds a threshold set by the seller. A reserve price is the minimum it would take to win the auction. A

FIG. 2: The first step in listing an auction is to select a classification from eBay's hierarchical list of categories. You can also type in keywords, and eBay will suggest an appropriate category.



Empower Your Laptop

\$499.99*

MASTERING GRADE
24-bit/192kHz
120dB SNR-measured
A/D & D/A Converters



E-MU's new 1616M is the only laptop audio interface to offer mastering-grade 24/192 converters, zero-latency monitoring and hardware-accelerated effects – at any price. E-MU's CardBus card plugs straight into your laptop's PCMCIA slot, offering you all the DSP power of E-MU's award-winning PCI Digital Audio Systems in a mobile interface. You can use the CardBus card alone for its hardware-accelerated effects and premium stereo headphone/line output, or plug in the MicroDock for complete analog and digital I/O flexibility.

- ▶ 2 Mic/Line/Hi-Z preamps
- ▶ 4 TRS line inputs
- ▶ Turntable input
- ▶ 6 TRS line outputs
- ▶ 5.1 speaker outputs
- ▶ ADAT I/O
- ▶ S/PDIF I/O
- ▶ Headphone/Line output (x2)
- ▶ MIDI I/O (x2)

**You don't have to compromise
performance for mobility anymore.**



MicroDock M back

E-MU Production Tools Software Bundle included:

SONAR LE

T-Racks EQ

live lite 4

WAVELAB lite

WAVELAB lite

SA machine

Proteus X LE

Cubase • LE

AmpliTube 2

* Estimated Street Price. E-MU 1616 Laptop Digital Audio System (with 112dB SNR converters) also available for \$399.99

CREATIVE PROFESSIONAL

Works with
Windows 2000 & XP

POWER FX
Hardware Accelerated
VST Effects

E-MU

© 2005 E-MU Systems, Inc. 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

VR

low current price might entice you to bid, but you won't know whether your bid exceeds the threshold until after you place it.

Buy It Now is a means of purchasing an item at a fixed price. When you select Buy It Now, the item is yours and the auction ends immediately. If someone bids lower than the Buy It Now price, however, the Buy It Now option will disappear and the auction will run its entire length. Using Buy It Now is very much like ordering something from a non-eBay online store.

Immediate Pay listings require that you pay right away using PayPal. That ensures that the seller will be paid and the auction doesn't end because of a nonpaying bidder.

Perils and Pitfalls

Although the easiest strategy is to decide on a maximum bid and stick with it, you might want an item badly enough to increase your bid whenever someone outbids you. Beware of getting into a bidding war; I've seen bidders pay much more than the going price just to beat a competitor.

Bidding can be at its fastest and most furious in the seconds before an auction ends. A strategy you should watch out for, and one you may occasionally need to employ if you want to win, is called sniping.

Snipers will wait until the last possible moment to place bids, so that unless your maximum bid is higher, they will win before you have a chance to place a higher bid. The best way to protect yourself from snipers is to keep hitting your browser's Refresh button as the auction draws to a close. There's nothing more frustrating than someone else winning an item that you really wanted by

paying just a dollar more than your high bid during the final five seconds of an auction.

A related strategy is to wait until the last hour or so to place your first bid. If you bid too early, competitors will have a chance to consider how badly they want an item and bid higher. Such a strategy has its risks, though. If an auction has no bids, the seller can raise the starting price, raise the Buy It Now price, or end the auction anytime up until 12 hours before it is scheduled to end.

More serious problems can occur after the item is delivered. What if it doesn't live up to your expectations? Unless the seller has been fraudulent and the item is indisputably different from what was described, your avenues of recourse are limited. You could try reasoning with the seller or leave bad feedback for the seller (more about that later), but there's not much point in filing a complaint with eBay except in cases of out-and-out fraud. Even then, unless any laws were broken and you want to hire an attorney, eBay can't do much other than threaten to cancel the seller's membership.

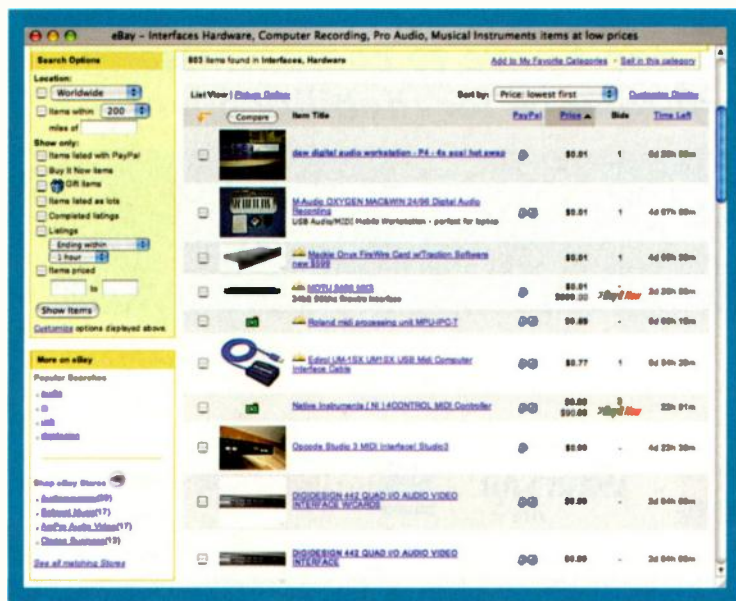
A Seller's Market

Somewhere in the world is someone who wants your old stompboxes, sound-effects records, and audio-equipment catalogs. I should know; I've sold all of them on eBay for more than I would have thought possible. I sold a music book for \$75, a synth catalog for \$60, and two LPs for more than \$100—all items that I had held onto since the 1970s. A few months later, I sold a pair of tattered, hand-embroidered jeans I used to wear onstage for \$160. When eBay enthusiasts say there are treasures in your attic, they could be right on target.

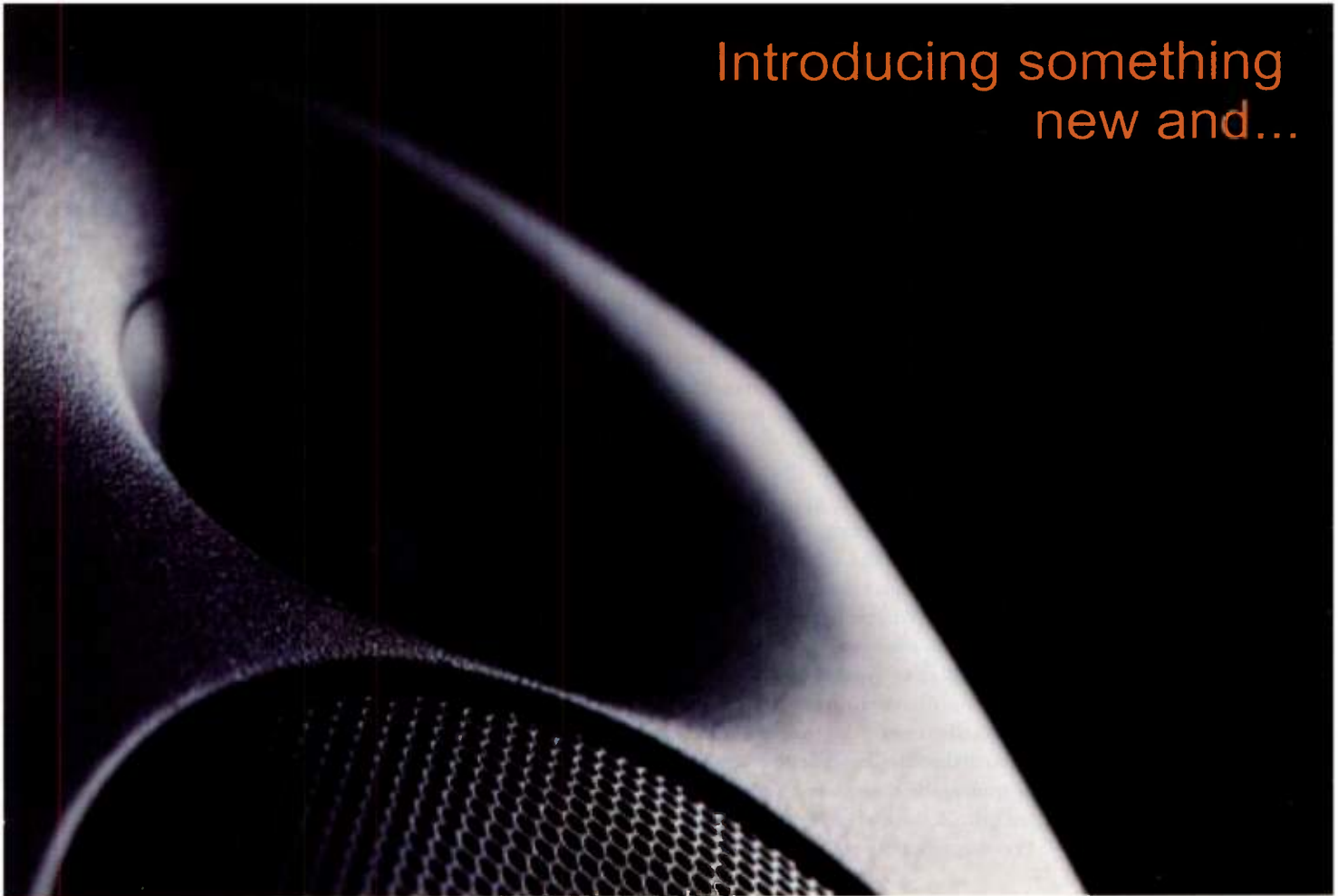
If you want to find a buyer for a synth module that you no longer use or for a computer that you've just replaced, eBay offers the largest marketplace. You can find other auction sites and online ad sites, some of which don't charge a penny to use, but none have eBay's mass appeal. It might be more convenient to run a classified ad in a local newspaper, especially if you're selling a large item such as a sound-reinforcement system or a Hammond organ, but listing with eBay will expose your listing to the greatest number of people. And compared to local advertising, eBay is often a good bargain.

In exchange for the services it provides, eBay charges a number of fees. Initially, you pay an insertion fee whenever you list an item for auction. The insertion fee varies depending on your starting or reserve price and currently ranges from 25 cents (for items under \$1) to \$4.80 (for items \$500 or more). You can pay additional fees for optional features—some of which are inexpensive and recommended—such as a gallery photo or Buy It Now. Unless e-commerce is a commercial enterprise, though, you'll probably want to avoid incurring large listing fees.

FIG. 3: Gallery photos, shown here in a list of search results, will draw attention to your listings. According to eBay, investing in a gallery photo can significantly increase your final bid.



Introducing something
new and...



STIMULATING

Introducing the Genelec 8020A - the newest model in the Genelec 8000 MDE™ Series. This 4" bi-amplified monitor offers all the genuine Genelec quality you've come to expect in packages that fit into the smallest space and budget.

The new 8020A monitor draws upon 27 years of Genelec engineering excellence to introduce a brand new category of playback monitor. Genelec's revolutionary all aluminum Minimum Diffraction Enclosure™ technology provides pinpoint imaging and the lowest distortion levels, with a frequency response extending to a remarkable 65 Hz.

Genelec also proudly introduces the new 7050B 8" Active LSE™ 5.1 channel subwoofer. Combined with the 8020A this system offers an astonishing 25Hz - 21kHz experience with packages to accurately stimulate your stereo and multi-channel workflow.

Go ahead, get off the decaf. You need some serious sound in your audio suite - and the choice is clear. It's Genelec.

www.genelecusa.com

International inquiries: Genelec Oy, Olvitie 5, FIN-74100, Iisalmi, Finland
T +358-17-83881, F +358-17-812267 Email genelec@genelec.com
In the USA: T 508.652.0900, F 508.652.0909 Email genelec.usa@genelec.com
In China: T +86 10 8580 2180, F +86 10 8580 2181 Email genelec.china@genelec.com

8000 Series



8020A.LSE SurroundPak

GENELEC®

eBay prohibits you from selling certain items, such as copied software, illegal counterfeits, or promo recordings. You can sell used software only if the manufacturer allows you to transfer the license. If you list a prohibited item, you will receive a warning, and at eBay's discretion, you could be suspended. If you list a questionable item—such as a sample library—and you are not an authorized dealer, you may invoke a notice from eBay's Verified Rights Owner (VeRO) program, at which time your listing will be deleted. If you try to sell it again, you run the risk of being suspended forever.

Selling Like a Pro

Before you post an auction, you have several decisions to make. What will your listing say? What category is most appropriate? What's the minimum price you'd accept? How much is enough to end the auction? When is the best time to sell? What will you charge for shipping? Are you willing to ship overseas?

A good place to begin is by examining listings for similar items. Be sure to search for completed listings as well as active ones. Read the descriptions and notice keywords in the titles, how the items are classified, their ending times, and their starting and ending prices (or current price, if the auction is ongoing).

Creating a listing begins when you click on the Sell button on any page. You'll be asked to specify a category. Clicking on a main category usually leads to a choice of subcategories (see Fig. 2). You can also choose a second category, but be aware that it will double the cost of your listing.

FIG. 4: Just before you submit your listing, you'll have a chance to review its contents, its duration, the options you've selected, and the amount you'll be charged.



Titles are limited to 55 characters, including spaces. Because searches are most often based on classification and title, you'll want to pack as much information into the title as possible. Be sure to mention the brand name and any other descriptive keywords. If 55 characters aren't enough, you can add a 55-character subtitle for 50¢ extra, but it won't appear in most search results.

For the item description, be as complete and accurate as possible. Tell prospective buyers about the item's condition,

desirable features, the original or retail price—whatever seems most appropriate. Don't forget to mention any flaws as well. Unlike a classified ad, for which you may be charged according to the number of words, the cost of an eBay listing has nothing to do with its length. Still, don't provide so much information that it's difficult for buyers to find key information buried in a mountain of text. Use bullets to highlight important points.



FIG. 5: eBay offers plenty of opportunities to learn how to buy and sell successfully. Some resources, such as eBay University, require that you pay for your e-commerce education, but most are free if you take the time to find them.

After you enter a title and description, you'll be asked for a starting price and, if applicable, a reserve price and a Buy It Now price. Take special note of the insertion fee increments when deciding on a starting price. It costs twice as much to list an item for \$50 as it does to list it for \$49.99.

Because a high starting price might discourage potential bidders, a reserve-price auction can stimulate bidding by attracting the attention of potential buyers. eBay refunds the reserve-price auction fee unless the item does not sell, in which case it will cost you \$1, \$2, or 1 percent of the reserve price.

Because a high starting price might discourage potential bidders, a reserve-price auction can stimulate bidding by attracting the attention of potential buyers. eBay refunds the reserve-price auction fee unless the item does not sell, in which case it will cost you \$1, \$2, or 1 percent of the reserve price.

STYLUS

RMX

REALTIME GROOVE MODULE



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



WWW.SPECTRASONICS.NET



800.747.4546

www.ilio.com

ILIO
Exclusive distributors

Buy It Now is useful if you just want to sell something at a fixed price, but you'll need a minimum feedback rating of 10 to use that option. Buy It Now fees range from 5¢ to 25¢. If you combine a reserve auction with Buy It Now, the Buy It Now option will remain available until someone bids the reserve price.

An eBay auction can have a duration of one, three, seven, or ten days. Seven days is typical, and a ten-day listing costs 40¢ extra. You can schedule a precise start time for 10¢ or begin an auction at the moment you submit it. I've noticed that it helps to end your auction just as the clock strikes the minute. It's a lot easier to remember that an auction ends at 07:15:00 rather than at 07:14:41.

If working musicians are your most likely buyers, consider that they are at home surfing the Web on Sunday nights more often than any other time, so that's a good time to sell pro audio gear. I've also noticed that sales are brisk when buyers have money in their pockets, such as around the time they receive tax refunds.

eBay offers several options for including photos in your listing. It's important to remember the old adage that one picture is worth a thousand words; you should therefore supply the best possible image. The insertion fee includes the cost of one picture as large as 400 × 300 pixels. Extra photos are 15¢ each, or you can buy a Picture Pack to display 6 for \$1 or 12 for \$1.50.

Picture Packs include a gallery photo, which displays a small version of your first picture alongside search results (see Fig. 3). Because they draw attention to your listing, gallery photos are well worth the 35¢ that they normally cost. Other options are supersize photos and hosting your photos on a Web site other than eBay.

Your listing should specify payment and shipping details. Potential buyers are more likely to bid if they know whether you can accept credit cards (you can if you have a PayPal account) and how much shipping will cost. Your audience will be much larger and may bring higher bids if you're willing to sell worldwide and ship overseas.

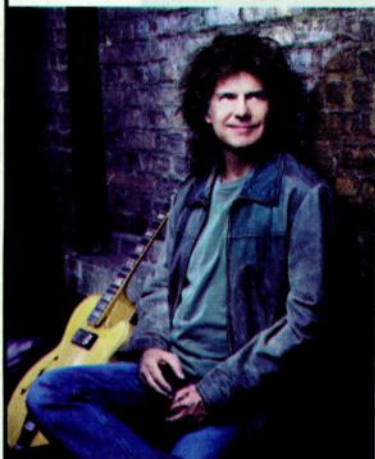
Before you submit your listing, you'll have a chance to preview it and review all the details and fees (see Fig. 4). Once an auction is underway, eBay discourages sellers from ending it early without good reason.

An Auction's Aftermath

What if you list an item and it doesn't sell? Unless you want to give up and keep it, you could reassess your strategy and list it again. If you select Relist within 90 days and the item sells, you won't have to pay the insertion fee a second time unless you raise the starting price. You will, however, have to pay for any options, such as a gallery photo. When relisting an item, you might want to consider rewriting the title and description or lowering its starting price. Note that you won't receive a credit if you simply list an identical auction; you need to click on the Relist link.

If you do succeed in finding a buyer, you'll have to deal with shipping what you've sold. As soon as the auction is complete, email an invoice stating the total charges, which may differ according to the buyer's location and whether he or she wants you to insure the shipment. If the buyer wins

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

The Scorch version of The Way Up score is available at www.patmethenygroup.com
For information about Sibelius 3 and Scorch, please visit: www.Sibelius.com



additional items that you can ship at the same time, it's a good policy to offer a discount to reflect the money you'll save on shipping.

Select whatever carrier you or your buyer prefers. UPS, FedEx, and the U.S. Postal Service all handle domestic and international shipments up to a certain size and weight. Their respective Web sites can help you to determine your exact costs and to schedule pickup and delivery. For larger or heavier items, you'll need to hire a freight service to deliver your package. eBay provides some excellent resources in its Shipping Center section, including a rate calculator and label printing.

You'll certainly want to be paid as quickly as possible. Your auction should specify payment options, such as PayPal, personal checks, cashier's checks, money orders, wire transfers, COD (cash on delivery), or credit cards. Because most individuals aren't set up to accept credit cards, PayPal is probably the best option for quick payment. PayPal will take a share of the total selling price, including shipping charges, but its fees are reasonable when compared with the cost of a traditional merchant account. The disadvantage of checks and money orders is that they take longer and they might bounce (a buyer can

stop payment on either). Wire transfers are reliable, but they're expensive for the buyer, and you have to either go somewhere to pick up your payment or wait for a check to arrive. COD is the least attractive solution of all; not only do you have to wait for a check, but the buyer has the option of refusing delivery.

Feedback Control

When an auction is complete, the buyer and seller have the opportunity to leave positive or negative comments about the transaction. I can't stress the importance of maintaining a good feedback score, especially if you are a seller. A high feedback score is a valuable asset, and having 100 percent positive feedback is like having money in the bank. It is good form to always leave feedback at the completion of a successful transaction.

Sometimes, however, you'll need to leave neutral or negative feedback. Negative feedback is appropriate when a buyer backs out or pays with a rubber check, or when a seller takes a month to ship the item or fails to disclose that an item is nonfunctional. Unfortunately, leaving negative feedback is risky. Although it's against eBay policy, nothing prevents someone from leaving

four words that change everything

PROGRAMMABLE MULTI-TOUCH CONTROL SURFACE

THE LEMUR

Design an interface visually on your computer, then experience it come to life as you control it with all your fingers. The JazzMutant Lemur turns this fantasy into reality. Visit cycling74.com/lemur to learn more about this amazing new LCD touchscreen controller for advanced software applications.



JazzMutant
+33 (0)556 46 03 44
info@jazzmutant.com

distributed in the U.S. by



Cycling '74
415-974-1818
info@cycling74.com

when you need the warmth of a classic compressor but with modern options...

MaxxBCL delivers.

Renaissance Compressor offers two classic analog flavors: vintage Opto and transparent Electro, plus Auto Release Control (ARC). Just one of the three brilliant processors in the MaxxBCL.



The New
Waves MaxxBCL

MaxxBass Enhancer
Renaissance Compressor

L2 Ultramaximizer Peak Limiter

Visit your dealer or
www.waves.com



The Professional Standard

negative feedback for you in retaliation for negative feedback left by you. You'll have a chance to leave a comment about the feedback you receive, but any negative feedback permanently affects your score.

Another very important point to consider is that as a buyer, you should examine a seller's feedback before you bid, especially if you want to avoid an unpleasant experience. If he or she has left a long line of dissatisfied customers, nothing prevents you from becoming one of them if you choose to bid anyway. I have won auctions for items I never received, and later wished I had heeded the negative comments.

eBay for Everybody

eBay is so vast that I've only scratched the surface here. Fortunately, its Help page is a pathway to learning everything that you could ever want to know about buying and selling. Clicking on Help Topics will display basic information about using eBay, and you can do a search if you have a certain topic in mind. For a fee, you can even take online courses at eBay University (see Fig. 5). If you want more personalized instruction, the Education Specialist Program lets you search for classes or instructors in your geographic area.

eBay provides plenty of free resources for you to explore almost every aspect of buying and selling. Animated Audio Tours such as "My eBay Tour" and "How to Sell Tour" guide you through the steps needed for successful transactions.

Although the eBay experience isn't perfect, it's a lot more efficient and fun than classified ads, and it beats most other methods of buying and selling musical instruments and audio gear online. Joining the ranks of eBay users is a smart move. Once you get started, you'll wonder what took you so long.

EM associate editor Geary Yelton has been an active eBay member since the late 20th century.

THE PERFECT STORM

STORM

MUSIC STUDIO

3.0



"This is the kind of software people need: an open and transparent interface, instruments that can be made to do all sorts of stuff (quickly!), and a set up time that would make the folks over at Jiffy Lube green with envy. Fast, easy and totally flexible, the Storm Music Studio has quickly become my editing suite of choice."

DJ Spooky That Subliminal Kid



BUILD A DESKTOP STUDIO ON ANY BUDGET

By the EM Staff

Every few years, we throw caution to the wind and publish an article in which EM's editors specify the products that we would buy for our dream studios. Sure, we know that we'll catch heat from readers (and manufacturers) whose favorite products were left out, no matter which products we choose, but we think you'll enjoy the story and will learn more about products that can help you produce better recordings.

Our most recent story of this sort, "Build a Personal Studio on Any Budget," was published in the July 2002 issue of EM. That article described a wide variety of studio rigs—some with computers, some without. This time, we're going to focus entirely on computer-based studios, something we haven't done since "The Complete Desktop Studio" in the July 1999 issue.

In "The Complete Desktop Studio," we were so focused on computer software that we did not specify mics, speakers, preamps, and MIDI controllers. We also didn't budget money for a computer. This time around, we included computers, mics, speakers, preamps, and MIDI controllers, bringing us closer to a real-world price estimate.

We still didn't include every possible product type found in a computer-based studio, though, because the story would have gotten out of hand. So you won't read about cables, stands, adapters, and other such ancillary hardware in this story. We left out acoustical materials as well because we can't specify them without making broad assumptions about your room. But then, all the prices we quote are MSRP or the equivalent, and you can find deals on most of these products. With

the money that you save, you can at least buy stands, cables, and adapters.

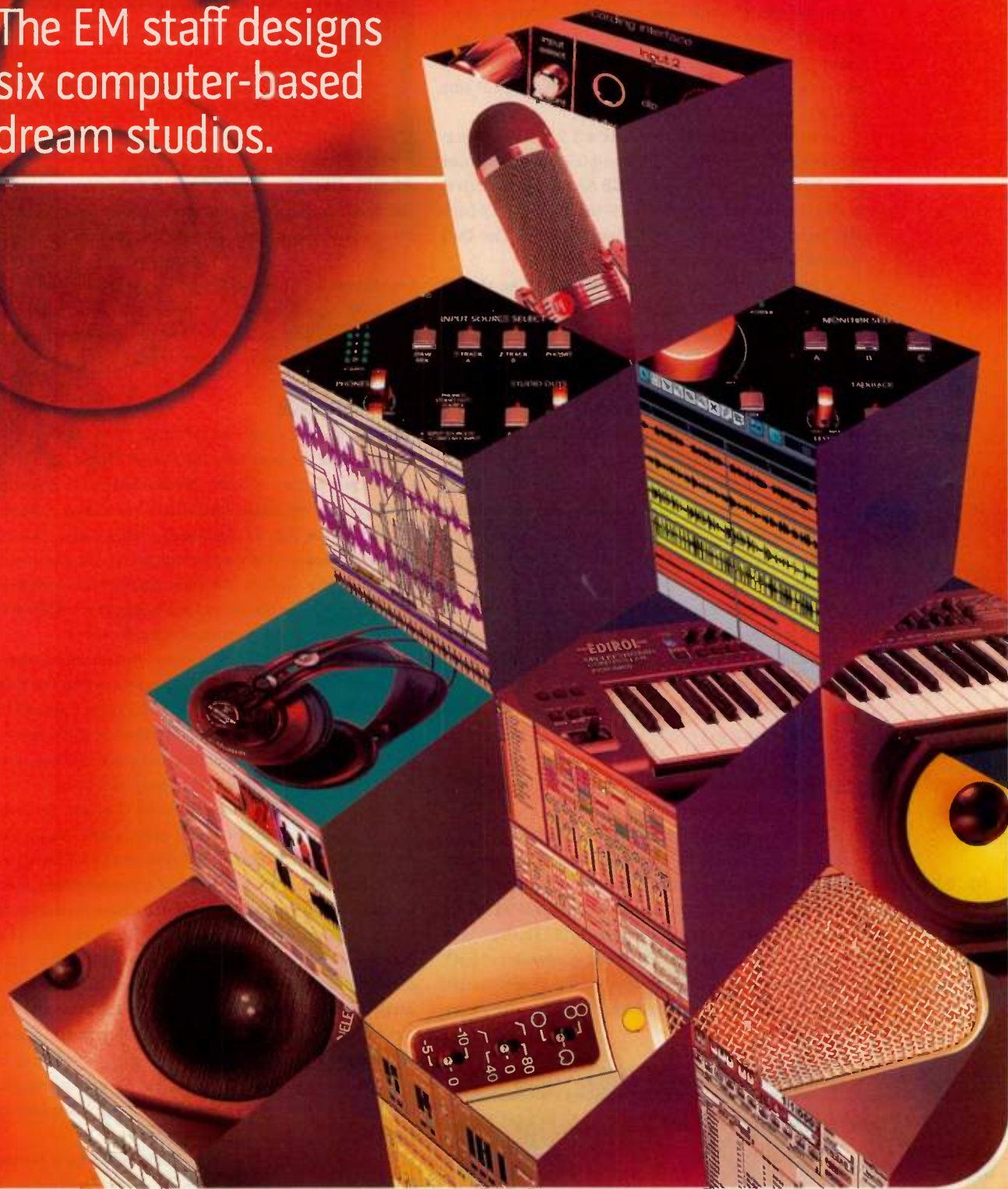
We limited ourselves to currently available (new) products that satisfy our demand for quality, are affordable by EM standards, offer complementary features, and integrate well into a coherent system. We work within specific budgets, as we would if we were actually building these studios. Obviously, working within limited budgets means leaving many cool products out, although we tried to cover a lot of territory. But if you are building or upgrading your studio, those are the types of decisions that you face.

Each editor had considerable freedom of choice, so the products chosen reflect our various personalities and musical objectives. Of course, your point of view will differ from all of ours at times. So I recommend that you read the whole article, not just the sections that reflect your budget and computer platform of choice, because the information you need might be found in unexpected places. So without further ado, here are our six dream desktop studios!

—Steve O

ILLUSTRATION BY DMITRY PANICH

The EM staff designs
six computer-based
dream studios.





The Lower-Price Windows Studio

By Dennis Miller

My entry-level Windows system allows me to create music for lots of situations, including electronic-music production and sound design for games, theater, and more. I am not concerned about recording acoustic and electroacoustic instruments in this studio, which is why I didn't buy a lot of mics and preamps.

At the heart of my studio is a 3.2 GHz Pentium 4 processor. I needed \$2,000 to pick up a computer that has 1 GB of RAM, a 160 GB SATA system drive, a 400 GB SATA data drive, a 19-inch CRT or 17-inch flat-panel display, and Windows XP SP 2. The Dell Precision Workstation 370 met that spec.

Another option is to purchase a machine that is designed specifically for music production. Sweetwater's Creation Station Pro 3.2 (www.sweetwater.com), for example, costs about the same and uses silent fans and other noise-reducing components. Among its other benefits are a DVD-RW, dual SATA drives from Glyph, and seven USB 2.0 and two FireWire 400 ports. Digidesign also recommends this system for use with Pro Tools, although we aren't specifying Pro Tools for this studio. You'll spend extra for a monitor, but you can probably make some of that up by pressing your sales rep for a break on an accompanying software bundle (but don't tell them I told you so).

Cabled to the computer is an M-Audio FireWire Solo audio interface (see Fig. 1), which provides drivers (including ASIO2, WDM, and GSIF2) for a variety of production environments, S/PDIF digital I/O, 24-bit/96 kHz audio support, and flexible software-controlled routing. I can send the headphone outs to a video deck or other peripheral device when needed, and the separate level controls for the two inputs (XLR mic/line) add to the unit's flexibility.

I chose to pipe the FireWire Solo's output to a pair of M-Audio BX8 powered monitors, which are sharp-looking and a good value. The BX8s provide excellent frequency response (37 Hz to 20 kHz) with their 8-inch woofers and 1-inch tweeters and should be well suited for most tasks. Monitors are a mat-

FIG. 1: The compact M-Audio FireWire Solo bus-powered audio interface routes 24-bit, 96 kHz digital audio to a PC or a Mac and sports a guitar input, XLR mic input, dual line inputs, S/PDIF digital I/O, and headphone output.

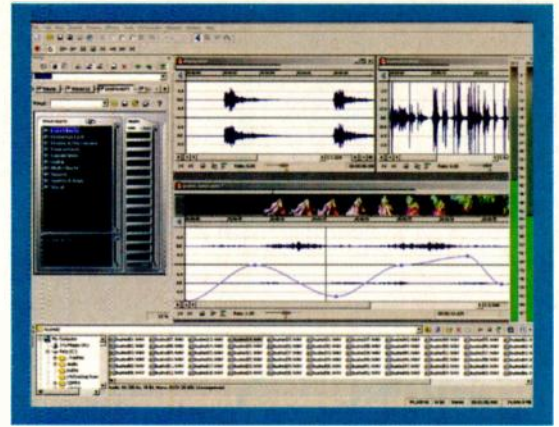


FIG. 2: Sony Media Software's Sound Forge 8 offers numerous native effects and processing plug-ins and also supports VST effects. The new Scrub tool makes locating any spot in a file a breeze.

ter of personal taste, so feel free to substitute others if you have a preference. For those late-night moments when inspiration strikes, I chose to have a set of Sony MDR-7505 headphones on hand.

The Soft Side

Owning a wide range of software ensures that you always have the best tool for the job. Heading up my software choices is Sony Media Software's Sound Forge 8, a stereo audio editor that has a large number of effects (see Fig. 2). Although I have audio-editing options in some of my other software, you can't beat Sound Forge's tool set. The new capabilities in version 8, which include a Scrub tool and support for ASIO and VST plug-ins, make it an invaluable resource.

For MIDI sequencing, I chose Steinberg's Cubase SL3, which has many of the same features that the flagship Cubase SX3 does, but it costs \$300 less. Cubase SL3 has 32 VST slots, an unlimited number of MIDI tracks, three modes of time stretching and pitch shifting, and many other high-end features to keep you busy.

For my sample library, I chose *Garritan Personal Orchestra* (GPO), which works standalone, using the Native Instruments Kontakt Player, or as a VST plug-in. The library offers a wide range of great-sounding solo-instrument samples and a comprehensive collection of string bowings, such as pizzicato and marcato. The percussion section is robust and includes all the standard orchestral instruments, as well as a wind machine and a variety of percussive toys. Woodwinds and brass are also out in full force. GPO has been smartly programmed to produce numerous realistic playing techniques in response to real-time MIDI Control Change messages. Without too much effort, you can become a one-person band simply by using a MIDI keyboard.

I selected Native's Instruments' Reaktor 4 for my studio environment (see Fig. 3). Reaktor ships with



SONIC IMPLANTS®

WORLD'S FINEST SAMPLE LIBRARIES AND VIRTUAL INSTRUMENTS

NEW



Sonic Implants COMPLETE SYMPHONIC COLLECTION

Sonic Implants, expanding on the huge success of its Symphonic Strings and Brass Collections presents the Sonic Implants Complete Symphonic Collection, four volumes and over 60 gigabytes of Orchestral Strings, Brass, Woodwinds and Percussion. No other orchestral product comes close to the beautiful rich sound, extensive set of articulations and playability of this library. Give your music the power and beauty it deserves. Visit us at www.sonicimplants.com for a free demonstration.

POWERED BY GIGASTUDIO 3.0

NEW

Scarbee VINTAGE KEYBOARD GOLD BUNDLE

Scarbee products are famous in Europe for their incredible feel and sound, so we were very excited to offer their latest creations to North America. Four brand new Virtual Instruments dedicated to capturing the depth and soul of a Rhodes Stage Piano MKI, '73. Wurlitzer 200A Electric Piano, Hohner Clavinet D6, and Hohner Planet N Electric Piano. Extensively multi-sampled and programmed, these VIs put the sound and feel of these retro keyboards under your fingertips. Scarbee Vintage Keyboard Collection, Scarbee Vintage Keyboard FX, and Scarbee Vintage Keyboard Gold Bundle, so retro you will need a new hairstyle. Visit us at www.sonicimplants.com for a free demonstration.



Powered by HALION

NEW

Fable Sounds BROADWAY BIG BAND

COMING SOON... It's rare when a new Virtual Instrument arrives that could be described as "revolutionary". But that's exactly what the Fable Sounds Broadway Big Band Series is, a huge collection of stunning big band brass, winds, drums, basses and more. Sampled in three mic positions, multiple articulations and phrases, legato samples, multi-dynamic layers, and more, and including Fable's Intelligent MIDI software application that lets you un-harness all this power without losing your creative flow. Your Big Band, Pop, Latin, Funk & R&B tracks deserve this new state of the art virtual instrument. Visit us at www.sonicimplants.com for a free demonstration.



Powered by HALION

To Purchase or find a dealer near you, contact WWW.SONICIMPLANTS.COM 888.769.3788



an extensive instrument collection, much of which is documented in its Reaktor Library Instrument Guide. Additionally, the vast number of free downloadable user-contributed patches (nearly 2,000 at last count) will satisfy your every need.

Reaktor's excellent sampling features, though no match for a dedicated sampler such as Tascam's GigaSampler 3 or Steinberg's Halion, are more than adequate for my purposes, and its vast set of sound-design modules provide the raw materials for those wanting to create custom instruments or effects. Incidentally, if Reaktor is more toolkit than you need, a good alternative is Plogue Bidule 0.8 (\$75, www.plogue.com), a modular synthesis and processing system. Bidule (which means "gadget" in French) is an open-ended application that has a large number of building blocks for constructing sonic networks of all varieties.

Freeware and shareware programs can enhance a software collection without blowing the budget. It never hurts to have a wealth of reverbs, so I picked up a copy of Christian Knufinke's free SIR impulse-response processor. SIR can be used to apply the room ambience of any acoustic space onto a sound file of your choosing. Want to make your drum tracks sound like they were recorded in a car's trunk? SIR can do the job. But since you can use any arbitrary WAV file as an impulse, you can create sonic crossings inspired by your wildest dreams—ocean wave meets hi-hat, lion meets Harley-Davidson, you name it! With SIR



FIG. 3: Native Instruments' Reaktor 4 is a modular toolkit with enough sound-producing and -generating prototypes to keep even the most hyperactive tweaker busy. The instrument shown above is from the Electronic Instruments II collection.

installed, I visited NoiseVault (www.noisevault.com) to pick up free impulses extracted from high-end effects units by Eventide, Kurzweil, Lexicon, and Quantec, to name a few.

To add some plucked-string sounds to my arsenal, I grabbed a copy of Ugo's free String Theory 1.5, which runs as a VST plug-in and has oscillator, filter, and effects sections, as well as a flexible arpeggiator. The Pick Noise and Bow parameters can be adjusted to add (or avoid) realism. And for experimenting with alternate types of control surfaces, I downloaded the JoyMachine soft sampler (currently freeware but soon to be shareware) from the AcousModules Web site. JoyMachine puts 128 samples under the control of a joystick, a graphics tablet, or a mouse and offers a number of other unusual triggering options. At the same site, you'll find a multiplicity of programs that explore surround and other spatial techniques, something that is certain to become an important part of many studios before long.

Take Command

To control this jam-packed rig, I chose an Edirol PCR-M50 keyboard controller/interface. The unit is loaded with programmable sliders, buttons, and knobs (27 in all), and its action is quieter than that of its predecessor, the PCR-50, though I like the old silver color better than the new gray-black. The Pitch-Bend and Mod wheels on the new model also have a better feel.

The Lower-Price Windows Studio

ITEMS

PRICE

Acousmodules JoyMachine soft sampler	Free
Audio Technica AT-822 stereo small-diaphragm condenser mic	\$419
Christian Knufinke SIR 1.8 convolution software	Free
Dell Precision Workstation 370 computer	\$2,000
Edirol PCR-M50 keyboard controller/interface	\$285
Garritan Personal Orchestra sample library	\$279
M-Audio BX8 powered monitors	\$399
M-Audio FireWire Solo audio interface	\$249
Native Instruments Reaktor 4 soft-synth toolkit	\$559
Sony MDR-7505 headphones	\$79
Sony Media Software Sound Forge 8 stereo audio editor	\$299
Steinberg Cubase SL3 digital audio sequencer	\$499
Ugo String Theory 1.5 soft-string synth	Free
TOTAL	\$5,067

FW Series

Firewire audio/MIDI Interfaces

Grande, vente or rackiatto...how do you want your FW interface?

FW-1884. Designed for large home or project studios, our flagship FW-1884 is perfect for serious DAW users or anyone who needs lots of microphone inputs and/or high productivity via editing shortcuts. Expandable via FE-8 sidecars as your studio needs grow. Includes Cubase™ LE with 48-track recording capability at 95k-Hz (versus Pro Tools® LE with just 32 tracks at 48kHz) and the LE version of GigaStudio™ 3, world's most powerful software sampler.

FW-1082 Why pay far more for a Yamaha® 01x, Digidesign® Command | 8™ or 002? Why pay more and give up I/O with a Mackie® Control™? The new

FW-1802 is designed for the home studio who wants an affordable control surface with touch-sensitive moving faders and the simplicity of a 1-cable FireWire interface. All in a compact, portable unit that doesn't take up an acre of space. Four pristine mic preamps with phantom power, 4 bal. TRS line inputs and S/PDIF digital I/O give you everything you need to build a hit in the privacy of your own home. Cubase™ LE and GigaStudio™ LE included.

FW-1804 If you use a dedicated mixer or already have a control surface, you can still take advantage of TASCAM's superb sound quality and FireWire interface. Four phantom-powered mic preamps, 4 bal. TRS inputs, S/PDIF and ADAT® I/O, inserts on 4 chs., bal. monitor outputs and headphone output. Plus GigaStudio™ LE and Steinberg® Cubase™ LE software!

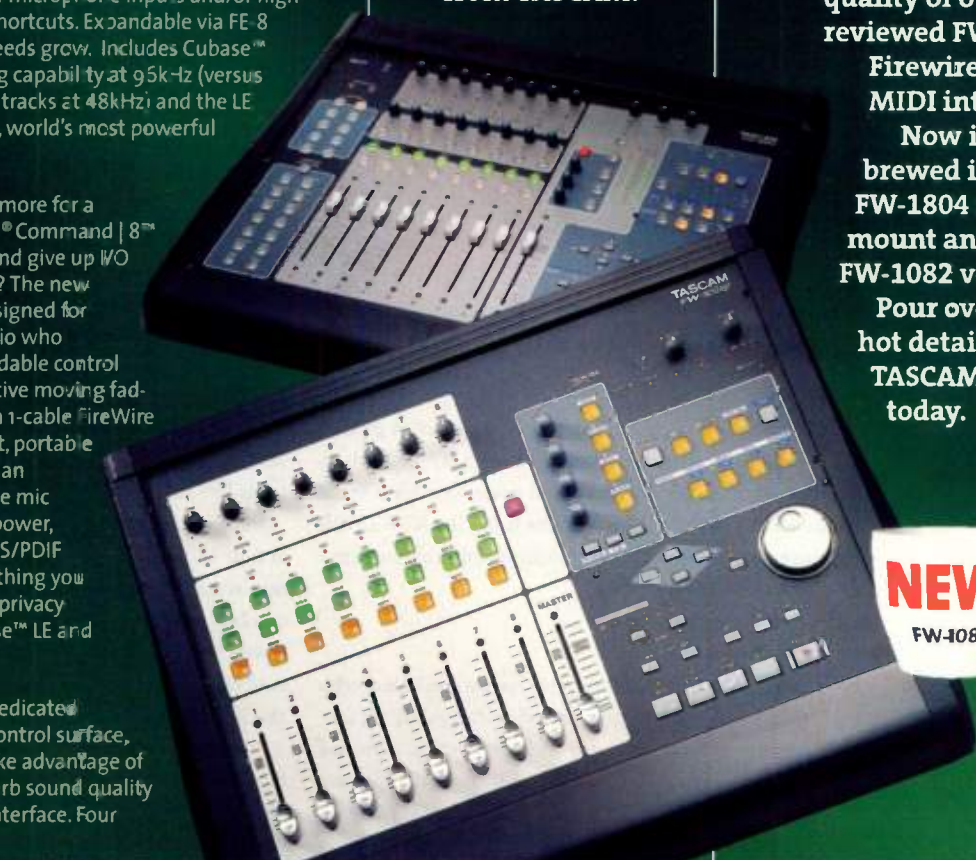
Two new FireWire® audio/MIDI interfaces from TASCAM!

Wake up to the stimulating sound quality of our rave-reviewed FW-1884

Firewire audio/MIDI interface.

Now it's also brewed in new FW-1804 rack-mount and low-fat FW-1082 versions.

Pour over the hot details at your TASCAM dealer today.



	I/O @ 48kHz	I/O @ 96kHz	MIDI I/O	XLR Mic inputs	Digital I/O	Motorized Faders	Encoders
NEW! FW-1804	18 in / 2 out	14 in / 8 out	2 in / 4 out	4	S/PDIF & ADAT	9 • 60mm	pan, aux & EQ
NEW! FW-1082	10 in / 4 out	10 in / 4 out	2 in / 2 out	4	S/PDIF	9 • 60mm	pan, aux & EQ
FW-1884	18 in / 2 out	14 in / 14 out	4 in / 4 out	8	S/PDIF & ADAT	9 • 100mm	pan, aux & EQ

CO-DEVELOPED WITH
FRONTIER
DESIGN GROUP



TASCAM

©2005 TASCAM a division of TEAC America, Inc. All Rights Reserved. All specifications are subject to change without notice. All trademarks are the property of their respective holders. The caffeinated folks at TASCAM apologize for the mocha-tinged ad theme. A new Starbucks® just opened across the street from our building in Sunny Montebello.



CONTRACTOR

www.tascam.com



DJ AND PRODUCER



PERSONAL CREATIVITY



The PCR-M50 comes with a software editor that allows you to select from 12 Velocity curves and can store more than a dozen setups. Like most keyboards in its class, the unit can be powered by a USB or an AC adapter.



FIG. 4: Ableton Live's Session view allows you to trigger clips or rows of clips from a MIDI or computer keyboard.

Although audio recording won't be the main goal of this studio, the versatile Audio-Technica AT-822 mic is a smart addition for an occasional voiceover, for a vocal sound effect, or for sampling in the field. The AT-822 will be more than adequate for recording solo instruments or a small ensemble as well.

Future Earnings

For comparatively little money, we have a credible studio that's built with expansion in mind: it can easily accommodate more sample libraries and soft synths, a second display, or external hard drives. I'll have computing power to burn and plenty of good software. Let's fire up the rig and get busy!

The Lower-Price Mac Studio

By Len Sasso

Given \$5,000, I've designed a studio for creating electronic music and doing sound design completely inside the computer. Sound design is an integral part of electronic-music composition, but it also has broader applications, including music for games, video scoring, and sound-effects production. Staying inside the box and not recording acoustic or electroacoustic sounds implies some reliance on prerecorded content, and to stay within my budget, I've chosen software applications that include large and varied content libraries.

I took a somewhat nonstandard approach in designing my studio and ignored the wisdom that a serious sequencing and sound-design studio must be built

around one of the major digital audio sequencers. That is a fine approach, and you will find it well represented in this article, but the prevalence of loops, samples, and virtual instruments in today's desktop music makes my approach equally valid.

One advantage of my approach is that the applications around which it is based—Propellerhead Software's Reason, Ableton's Live, and Apple's GarageBand—are relatively easy to learn and will allow beginners to start making music quickly. Another advantage is that those programs come bundled with loads of content covering a variety of genres. If you're starting from scratch, that is a big bonus. Furthermore, much of the software is widely used and cross-platform, which facilitates collaboration with other desktop musicians.

What's Not Included

You won't find tools for score editing and printing in this studio, because scoring in standard notation is not among my goals. The MIDI editing tools are also less full-featured than you'll find in high-end digital audio sequencers such as Apple Logic, Steinberg Cubase, and Mark of the Unicorn (MOTU) Digital Performer, but the tools I've selected are adequate for my purposes.

Another thing you won't find is a full-size, weighted-action MIDI keyboard; if you're a keyboard player, you may want to forgo some of the specialty software in favor of a better keyboard. In that case, you might opt for a different MIDI and audio interface and add a dedicated MIDI control surface, such as the Evolution UC-33e or one of the Behringer 2000 series.

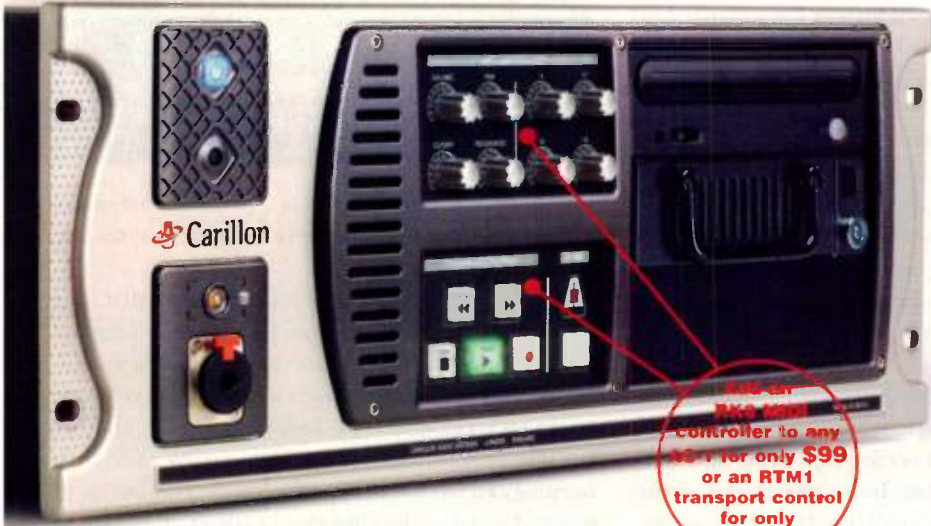
Finally, as noted, I've taken a completely inside-the-computer approach to music making and have not devoted any of my budget to live recording or field sampling. The necessary software tools for live recording are there, and the audio interface even has a phantom-powered mic input, but if you want to use those tools, some of the specialty-software budget will have to go toward mics.

The Box to Put It In

In a \$5,000 Macintosh studio, Apple is clearly going to take a big bite out of the budget. The computer, however, is no place to skimp, and the \$1,899 I've budgeted for a 1.8 GHz G5 iMac with a gigabyte of additional memory puts me in good shape. I've spent a little more for the model with a 160 GB hard drive and a 20-inch screen, because when making music, you can never have too much storage and screen real estate.

For getting MIDI and audio in and out of the computer I've chosen an M-Audio Ozonic FireWire audio and MIDI interface with a built-in 3-octave keyboard and control surface. It is by no means high end, but it will do the job. The Ozonic features four channels of 24-bit, 96 kHz audio I/O; a set of MIDI I/O ports; a 3-octave,

YES! AUDIO PC BLISS CAN BE YOURS!



AC-1 from only **\$1159**

FREE! WITH EVERY MACHINE \$0!

fix **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 **HELP**
A custom written on-screen multi-page manual for your system stuffed full of hints and tips. Solution 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
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 Terabyte 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 Terabyte 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 experience 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 B outputs. Combine that with AC3 capable SPDIF and MIDI input 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 accounts are compatible with Digidesign LE and HD systems.

Solution of the month!
M-Audio FW410 & Pro Tools LE
RRP \$909
only **\$799**

Huge range of other Solutions available:

Ableton Live 4 and E-MU 1212m	\$699
Cubase SE and E-MU 1404	\$199
Cubase SL3 and E-MU 1820	\$669
Cubase SX3 and PreSonus Fireport	\$1329
Cubase SX3 and MOTU Traveller	\$1829
Cubase SX3, Groove Agent 2, Guitar Rig, PreSonus Fireport	\$1999
Cubase SX3 and Yamaha 01X	\$2099
Cubase SX3 and RME Fireface	\$2149
Dig002 Rack	\$1399
Dig002 and Pro Tools LE	\$2699
GigaStudio 3 Orchestra and RME HDSP9652	\$1119
Ntendo 3 and RME HDSP9652	\$2949
Sonar 4 Producer and E-MU Emulator X Studio	\$999
Sonar 4 Studio and Behringer BCA2000	\$339

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



Velocity-sensitive keyboard; and 40 programmable MIDI sliders, knobs, and buttons.

To hear the results, I've chosen a pair of Fostex PM2 powered monitors and Sony MDR-V600 headphones. The Fostex monitors scored high in EM's March 2005 survey of budget powered monitors, and the MDR-V600s are excellent headphones for the price.

Essential Software

Four programs make up the core of my studio: Ableton Live, Apple GarageBand, Propellerhead Reason, and i3 DSP-Quattro. Live and GarageBand offer MIDI and audio recording and sequencing, but their strengths and feature sets differ significantly. Reason also offers MIDI sequencing, but I have included it for its distinctive collection of instruments and effects and the step-sequencing tools that accompany them. DSP-Quattro provides a full complement of sample-editing functions.

Live has traditional track-based audio and MIDI recording and sequencing, hosts effects and virtual instruments in Audio Units (AU) and VST formats, provides track- and clip-based automation, and will render your songs to disk as audio files. Live also offers an



FIG. 5: Propellerhead Reason includes a large variety of instruments and effects that can be loaded into its virtual rack.

alternative way of working with audio and MIDI clips (see Fig. 4), in which clips can be triggered individually or in groups using MIDI or the computer keyboard. Furthermore, clip triggering can be recorded to create tracks for traditional track-based sequencing. Another key Live feature is its flexible, high-quality audio time warping and pitch shifting, which makes it possible to mix and match audio clips that wouldn't otherwise be compatible.

Don't ignore GarageBand just because it's free with all new Macs and incredibly inexpensive as part of Apple's iLife package. It has traditional track-based audio and MIDI recording and sequencing, hosts AU plug-ins, and comes with a large collection of virtual instruments and effects. It also offers basic score editing and display of MIDI data. But GarageBand's real claim to fame is its handling of Apple Loops, which are Apple's answer to Acid loops. (GarageBand can handle Acid loops as well). GarageBand includes a large collection of Apple Loops, and additional reasonably priced Jam Pack loop collections are available from Apple and other vendors. You can even use GarageBand to create your own Apple Loops.

The Reasonable Alternative

Propellerhead Reason provides a user-configurable rack of instruments and effects (see Fig. 5) that can be played live, controlled by its built-in sequencer, or integrated with other software (including Live and GarageBand) using Propellerhead Software's ReWire protocol. Reason's complement of instruments includes two samplers (basic and complex), two synthesizers (subtractive and Grintable), a sample-based drum machine, and a REX-file player. REX files are presliced audio files. They offer an alternative approach to time warping, and in addition, you can rearrange and process the individual slices on the fly. Like Live and GarageBand, Reason comes with a large library of samples, REX files, and presets for all of its

The Lower-Price Mac Studio

ITEMS

PRICE

Ableton Live 4 digital audio sequencer	\$499
Apple GarageBand 2 digital audio sequencer	Free with Mac
Apple iMac G5 1.8 GHz computer	\$1,899
Cycling '74 Soundflower audio-routing software	Free
Fostex PM2 powered monitors	\$599
Glaresoft iDrum soft drum machine	\$69
Green Oak Crystal soft synth	Free
i3 Software DSP-Quattro stereo audio editor	\$149
Iced Audio AudioFinder audio-file manager	\$59
M-Audio Ozonic FireWire MIDI keyboard/audio interface	\$599
Memory Solutions 1 GB RAM upgrade	\$119
Native Instruments Electronic Instruments 2XT soft-synth bundle	\$119
Propellerhead Software Reason 3.0 soft-synth workstation	\$499
Propellerhead Software ReCycle 2.1 loop editor	\$249
Seventh String Transcribe 7 music analyzer	\$49
Snoize MIDI Monitor data viewer	Free
Sony MDR-V600 headphones	\$99
TOTAL	\$5,007

Xboard



Feel the Difference

E-MU's new Xboard USB/MIDI controllers for Mac and PC deliver true professional action in a portable keyboard package. No short throw, cheap keys here – the Xboards provide you with full-size, high-quality keys with aftertouch that simply feel great to play. E-MU has upped the ante by adding real-time performance and editing features that allow you to instantly recall patches, latch keys and tweak filters and effects using a host of buttons and programmable real-time control knobs, plus effortlessly program templates for instant recall with E-MU's Xboard Control™ editing software. The Xboards also ship with the Proteus X LE Desktop Sound Module for Windows with over 1000 sounds included – you can even expand Proteus X LE with many of E-MU's legendary soundsets like Mo'Phatt, Planet Earth and more.



Xboard 25 \$149.99*



Xboard 49 \$169.99*

Get your hands on the new Xboard controllers at your local dealer and feel the difference.



*Estimated Street Price



www.emu.com

E-MU

© 2005 E-MU Systems, Inc. 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.

Toll-free
877-742-6084





instruments and effects. Additional free and commercial content is available from Propellerhead Software and other vendors.

Beyond their individual features, what makes Live, GarageBand, and Reason a powerful combination is their interconnectivity using ReWire. With ReWire, one application acts as the master, sending MIDI and receiving audio. All other running ReWire applications act as slaves, receiving MIDI from and

FIG. 6: i3 Software DSP-Quattro works well with hardware and software samplers and supports a wide variety of file formats, including Akai, Kurzweil, Roland, and Yamaha.



sending audio to the master application. In addition, the master application controls tempo and transport functions. Reason can be only a ReWire slave, GarageBand can be only a ReWire master, and Live can be either. Therefore, when you want to use all three programs together, GarageBand must be the master (see [Web Clip 1](#)).

DSP-Quattro, from i3 Software, performs a variety of essential functions (see [Fig. 6](#)). It offers full-featured sample editing, including loop, region, and marker management; digital signal processing; and destructive or nondestructive processing with AU and VST plug-in effects. It also hosts virtual instruments and has playlist management with CD burning, audio file-format conversion (including bit depth and sampling rate), and batch processing. When you need to clean up your audio files or burn your next hit CD, turn to DSP-Quattro.

In Case That Isn't Enough

With a slightly more than \$500 left in the budget, things started to get personal, and price was a primary consideration. I chose three virtual instruments (one of which is free) and five utilities (two of which are free).

Native Instruments' Electronic Instruments 2XT bundle includes five unusual virtual instruments and three effects. It can be used standalone or as an AU or

a VST plug-in. Green Oak's Crystal (free) is another interesting virtual instrument. It combines subtractive and FM synthesis and offers extensive modulation routing. Glaresoft's iDrum AU plug-in is an easy-to-use beatbox that has a lot of content and a user interface that is much like that of GarageBand.

The most expensive utility in the budget is Propellerhead Software's ReCycle 2.1. ReCycle allows you to slice up any audio file and export it in the REX 2 file format used by Reason's Dr.Rex instrument, among other programs. Although you can buy a lot of REX files off the shelf, it is such a flexible format that it seems well worth the expense to be able to slice your own.

What Was That?

Iced Audio's AudioFinder is an indispensable tool for any Mac studio. It takes the pain out of finding, auditioning, moving, copying, renaming, and otherwise managing your audio files. In addition, it provides some basic DSP and will manage your libraries of AU and VST plug-ins.

Seventh String Software's Transcribe 7 is a little-known tool designed for notating and learning recorded audio material. I've included it here because of its usefulness in analyzing chords and melodies—a task that you're bound to run up against when trying to mix content from your collection of sound libraries.

Finally, I chose two free utilities: Snoize Software's MIDI Monitor, which allows you to view the MIDI messages flowing through your computer; and Cycling '74's Soundflower, which lets you route audio between different applications. If you can't figure out why Reason is not responding to one of your MIDI controllers or you want to capture GarageBand's output in Live or DSP-Quattro, those utilities will help you out.

When more money rolls in, there are a number of ways in which you can spend it. More content and more plug-ins, however, should be high on the list. Until that happy time, there's a lot here to keep you busy.

The Midprice Windows Studio

By Dennis Miller

My midprice Windows studio is a production powerhouse. I selected software for composition, real-time interactive performance, sound design, audio for video, mixing, mastering, and a host of other music applications. Top-quality components are located throughout the system, as well as options for delivering music in multiple media. EM pinchpenny-in-chief Steve O allocated \$10,000 for this studio, but I'm spending closer to \$12,500. So far, he has not asked me where I got the extra money, and I'm not telling!

**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®

The sweetest

Sweetwater and PreSonus have teamed up to bring you the most powerful and affordable professional computer recording system ever—complete with Sweetwater's Creation Station audio computer and up to three PreSonus FIREPOD FireWire interfaces for 24 simultaneous inputs/outputs with 24 professional quality microphone preamplifiers. Call your Sweetwater Sales Engineer today at 800-222-4700 and get the SWEETEST RECORDING RIG of all time!



presonus FIREPOD

The FIREPOD is the most affordable professional FireWire recording interface on the planet, with eight pedigree Class A PreSonus microphone preamplifiers, eight balanced outputs, MIDI/SPDIF I/O, and free Cubase LE 48-track audio production software. **Up to three FIREPOD's** can be daisy-chained to deliver 24 simultaneous microphone/line inputs for professional multi-track recording applications. The FIREPOD has been tested and approved by Sweetwater for use with the Sweetwater Creation Station line of computers so that you can be confident your recording system will work flawlessly and efficiently from day one!



sweetwater CREATION STATION

When Sweetwater set out to build the perfect audio PC, we put our 25 years of experience with computer audio to work, and developed a series of machines that are unmatched in audio performance, reliability and value. Whether you're composing music in your home studio, recording your next live album on the road, or scoring to picture at a major post facility, there's a Creation Station for you. Starting at under \$1000, the Creation Station machines are whisper quiet and built to withstand the demands of professional audio production, through the use of components like Auralex acoustic treatment and Glyph hard drives. Available in tower, cube, and the rackmount configuration shown here, the Creation Station is sure to be the centerpiece of your PC studio for years to come.

recording rig.

steinberg CUBASE SX3



Upgrade your recording rig to the professional's choice for PC music production! Cubase SX3 takes music production to an entirely new level. SX3 adds more than 70 new features including Audio Warp high-quality real-time, Time Stretching and Pitch Shifting algorithm that automatically adopts a project's tempo. Also new in SX3 is External FX Plugins. This function allows for direct integration of external hardware effects processors into the VST audio mixer just like software! The first step in the Steinberg/Yamaha collaboration is called Studio Connections "Total Recall". This modular editing system builds a powerful bridge between the virtual and physical studio. Opening a project can not only recall an entire studio setup within seconds but allow full graphic editing right inside Cubase SX3. Since 1991 the name Cubase has always been synonymous with innovation, and SX3 delivers on features that place creativity first.

audio-technica AT4040



A marriage of technical precision and artistic inspiration, the AT4040 microphone features an advanced large diaphragm, tensioned specifically to provide smooth, natural sonic characteristics. Designed as a multipurpose performer, this externally polarized true condenser microphone offers exceptionally low noise, wide dynamic range and high-SPL capability. Held to the highest standards of consistency and reliability, the AT4040 may be used with confidence in a wide variety of miking applications in today's modern digital studio.

novation XSTATION



XStation is the most unique MIDI controller available combining the industry's best feeling semi-weighted keyboard with after-touch, the famous Novation KS 8-voice synth engine, 2 phantom powered mic preamps and instrument inputs, MIDI remote controller functionality, transport controls, a 6x2 multi-effects processor and more. The XStation can be powered conventionally, via its USB port and even batteries. Novation stands for innovative sound and music production tools.

Sweetwater
music technology direct™

800-222-4700

www.sweetwater.com

PreSonus
freedom to record.

WRN



I devoted \$5,500 to a top-of-the-line computer with dual 3.6 GHz processors, 2 GB of RAM, a pair of 250 SATA internal drives, a 19-inch LCD monitor, a DVD+R/W drive with an authoring bundle, and a workstation-level video card. Using Dell as a benchmark again, the Precision Workstation 670 with the required components fit my budget. It's well suited for tasks that employ multi-threading, such as video editing and rendering. With a three-year on-site warranty, I'll be in good shape if I encounter any problems down the road.

Had I wanted to focus on only music production and not needed the horsepower for video work, the Rain Recording Labs Element (www.rainrecording.com) would have been a good alternative. For around \$500 less than the Dell, you can boost the processor to a hyperthreaded 3.8 GHz Pentium 4 chip, though you would lose the second CPU and get slightly smaller drives. That's not a bad trade-off, though, because the Element includes several components that I had to add to the Dell. I'll cover those as we move through the rest of the configuration.

Sounds Good

The audio interface is a top-of-the-line E-mu 1820m, purchased as part of the Emulator X Studio 1.5 bundle (see Fig. 7). (The Rain system price includes the E-mu 1212m, which has the same high-quality converters but fewer I/O options.) The system has a breakout box for cabling that attaches to an internal PCI interface card. Its DSP-powered effects, which you can use with any VST host, let the CPU focus on other tasks.



FIG. 7: The E-mu Emulator X Studio bundle combines high-quality audio hardware with a powerful sampling application. Several sample libraries and a file-format converter are included.

The 1820m offers six balanced ins and eight outs on ¼-inch connectors, two mic/line/high-impedance preamps, a turntable input, four stereo ¼-inch outs for surround sound, and a variety of digital inputs and outputs, including 24/192 switchable ADAT-S/PDIF optical and S/PDIF connectors. There are two sets of MIDI ports, a headphone out, and a FireWire 400 interface. The 1820m's mixing software allows me to design and store presets for the various routing and monitoring configurations that I'll need.

I dedicated two of the 1820m's inputs to the output of a Kurzweil KME61 keyboard synth, which also serves as my master keyboard controller. The KME61 has 32 voices of polyphony, 256 presets (based on samples from Kurzweil's PC2R tone module), several dozen effects, and two pedals and two wheels for real-time control. It's housed in a durable case, which makes it suitable for live performance, and its internal sounds complement the sound set that comes with the 1820m. Though I would prefer a heavier action, the KME61 sounds great (particularly strings and voices) and is just right for my studio.

The Emulator X bundle also includes powerful sampling software that is based on E-mu's Emulator hardware. The sampler offers most of the features of its hardware brethren, such as E-mu's world-famous Z-Plane morphing filters, and various tools that make it easy to create patches from raw sample data. Emulator X functions as a standalone application and as a VST plug-in, which allows it to integrate with the software I'll cover next. Its included sound libraries are a great addition.

The Midprice Windows Studio

ITEM	PRICE
Applied Acoustics Tassman 4 soft synth	\$289
Cycling '74 Max/MSP/Jitter 4.5 programming environment	\$850
Dell Precision Workstation 670	\$5,500
E-mu Emulator X Studio 1.5 audio interface/soft-sampler bundle	\$699
KRK Systems V8 powered monitors	\$900
Kurzweil KME61 MIDI keyboard	\$849
Native Instruments Reaktor 4 soft-synth toolkit	\$559
Røde NT4 stereo small-diaphragm condenser mic	\$899
Cakewalk Sonar 4 Producer Edition digital audio sequencer	\$959
Sony MDR-7506 headphones	\$99
Sony Media Software Sound Forge 8 stereo audio editor	\$299
Sony Vegas 6 multitrack audio editor with DVD Architect Production bundle	\$674
TOTAL	\$12,576

Keep It Soft

The first product in my software bundle is Sonar 4 Producer Edition, Cakewalk's top-of-the-line sequencer (see Fig. 8). Sonar has developed into a high-end audio-production environment and now includes extensive surround capabilities, a video track, sophisticated looping tools, and Lexicon's highly rated Pantheon surround reverb. Sonar's new Folder Track feature helps you keep large, multitrack productions organized, and the numerous configurable metering options let you view your audio whichever way that best suits your needs. The Track Freeze function helps you get better performance by reducing the demands on your CPU, and the included sound modules, such as the TTS-1 DXi Rhythm Module, give you a versatile synth rack right out of the box.

I chose Cycling '74's Max/MSP 4.5 for my programming environment. Max is focused on MIDI, and MSP is directed toward audio processing. Together, they are a powerful duo for creating self-playing sound gadgets, interactive programs that listen to a performer's input and react on demand, custom control surfaces for a variety of gear (CD players, lighting systems, and the like), and much more. Jitter, which is included in the Cycling '74 bundle that I selected, can synthesize images using data extracted from live audio or files on disk and can process video in innumerable ways. New user-contributed Jitter patches appear regularly at the company's Web site, as they do for Max and MSP, and a large number of examples and excellent documentation will help get you up to speed.

With all the video projects that I have in mind for my studio, Sony Media Software's Vegas 6 and DVD Architect video-editing and DVD-authoring combo will come in handy. Vegas lets you mix an unlimited number of audio and video tracks using an intuitive interface and supports a large number of output file formats. The powerful features of DVD Architect allow me to easily make DVDs containing music and video. State-of-the-art high-definition video and surround-audio support put this studio on the forefront of media production.

FIG. 8: Cakewalk Sonar 4 Producer Edition features a streamlined interface and adds several performance enhancements and important features to an already powerful tool set, including surround support and Folder Tracks.

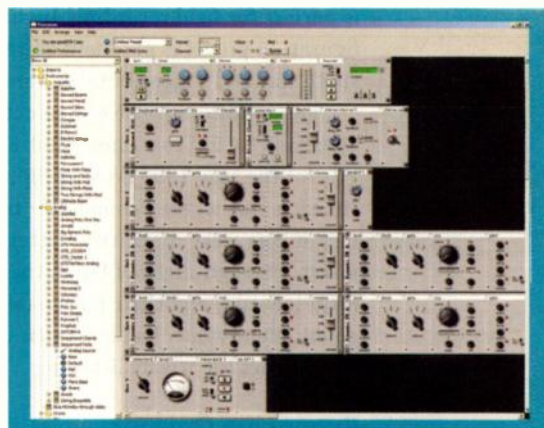


FIG. 9: Applied Acoustics Tassman 4 offers numerous modules for building physically modeled synths. Any type of exciter can be matched with nearly any resonator.

For a dedicated audio editor, I chose Sony's Sound Forge 8, although Steinberg WaveLab 5 is also well worth considering. WaveLab brings users deep into the world of DVD-Audio authoring, and its multitrack Montage interface is a pleasure to use. But for hardcore audio editing and processing, Sound Forge gets the nod.

Now Hear This

Because I am relying so heavily on the PC for audio resources, I added several synthesis applications to the toolkit. As with the lower-price Windows system, I selected Native Instruments Reaktor 4 and then immediately headed to Native Instruments' Web site to see what new sound-mangling gadgets Reaktor users uploaded.

Even with all its power, though, there's one area that Reaktor hasn't fully exploited: physical modeling. For that, I opted for Applied Acoustics Tassman 4 (see Fig. 9), a modular toolkit for building virtual instruments that can change their characteristics in real time. Wonder what the sound of a cello changing size as it plays might sound like? Tassman lets you find out. How about playing a marimba with a mallet that gets softer with each note? That's also easy to do with Tassman. Using its new Audio In module, you can use your voice or an audio file to excite any type of resonator (a pipe, a beam, or a flute body, for example). With its greatly expanded examples library, Tassman 4 offers a working prototype for almost any sound-design application that you can imagine. Long-overdue support for MIDI Program Changes makes Tassman 4 even more useful as a plug-in synth.

Control Booth

Although my sonic arsenal is extensive, there will be times when I need to sample a sound for some custom sound-design situation. For that, I chose a RØde NT4 stereo condenser microphone. The NT4 has XLR and mini connectors and can run off a 9V battery, which



is perfect for field recording. Its fixed x-y stereo configuration provides excellent stereo imaging, and its small size and rugged build enhance its portability.

For studio monitors, I selected a pair of KRK Systems V8s. EM contributor Rob Shrock reviewed the V8s for the May 1999 issue of EM, in which he wrote, "in each case where I completely trusted the V8s, the new mixes were distinctly better than the original mixes." Though slight of build, the V8s deliver a powerful low end, and their reasonable price make them an excellent value. I added a pair of Sony MDR-7506 headphones for private listening.

Expansive Options

My midprice Windows system is a production powerhouse, but looking ahead, there are a few things I'd love to have. I am a huge fan of the Symbolic Sound Kyma System, which I consider the ultimate sound-design, composition, and performance environment. Another dream item would be a pair of Genelec 1031As, which are some of the best-sounding monitors on the market.

But until I win the lottery or get my first call from a major Hollywood producer, I'll stick with this system. There's no doubt that it includes more than enough tools to tackle whatever music projects come along.

preamps, and headphones, leaving me with less money for software than some of the other studios detailed in this article. The studio, which can also be used for jingle projects, is self-contained, with the capability to handle tracking, mixing, and editing.

It Does Compute

The new Apple Mac G5 dual G5/2.3 GHz model was an easy choice for my CPU. Although it's not the fastest Mac, it's plenty peppy, and with the Memory Solutions 1 GB of RAM upgrade, it's ready to rock and roll. I added an internal Maxtor 300 GB hard drive with a 16 MB buffer for use as a recording drive.

Although I would have loved to buy an Apple Cinema Display to go with the G5, even the 20-inch model would blow my budget. Instead, I chose the less-expensive Planar PX191, which is not as aesthetically pleasing or as cool, but it offers a nice, crisp image and a 19-inch workspace.

Finding the Logic

Deciding on a digital audio sequencer was not easy. I like Mark of the Unicorn (MOTU) Digital Performer's combination of straightforward user interface and powerful features. When I started totaling up the cost of all the soft instruments and plug-ins that I wanted to supplement it with (Antares Auto-Tune, Native Instruments Guitar Rig, Waves Musician Bundle II, the MOTU Mach Five Sampler, and Propellerhead Reason), however, I didn't have a lot left over for some of the other items that I needed.

I decided to go with Apple Logic Pro 7.1 (see Fig. 10). Although Logic Pro, in my opinion, isn't as user-friendly as Digital Performer, it is competitive in terms of audio and MIDI recording and editing features and has a much larger plug-in selection. Logic Pro costs a couple of hundred dollars more than Digital Performer, but it's much more economical when you factor in how many quality plug-ins and soft instruments it contains. You get a boatload of excellent synth plug-ins; the EXS-24, a highly regarded sampler; Space Designer, a quality convolution reverb; Pitch Correction, a useful pitch-correction plug-in (although not as full-featured as Antares Auto-Tune); Guitar Amp Pro, a solid amp modeler; and all of Logic's reverbs, EQs, and dynamic effects.

Logic offers plenty of other extras, including an entire collection of Apple Loops and countless channel strips, which give you good starting points for instrument and effects settings. It also comes with WaveBurner software, so making CDs from your mixes is easy. The version 7.1 update adds automatic delay compensation, which Logic lacked in past versions.

Digidesign's Pro Tools digital audio sequencer is ubiquitous in the pop-music recording world, so some clients will probably bring in a Pro Tools project. To accommodate them, I wanted to have Pro Tools LE in addition to Logic. Because the Digi 002 Rack perfectly fit the bill for

The Midprice Mac Studio

By Mike Levine

FIG. 10: Logic Pro 7.1 is a great choice for its comprehensive audio and MIDI recording, editing, and mixing features, as well as its wide selection of soft instruments and effects plug-ins.

My midprice studio is designed primarily for CD production, so I wanted the ability to record live basic tracks, including drums. As a result, I had to allocate a sizeable amount of my \$10,000 budget to mics, mic



Just exactly what is a Guitar Workstation?



"Truly, this do-it-all box beckons with enough loot to convince even old-school dudes to modernize their rigs."

- Shawn Hammond of Guitar World¹



THE GNX4 GUITAR WORKSTATION™



Built-in Jam Man™ Looper



Built-in Guitar Tuner



Built-in Expression Pedal



Built-in 8 x 8 x 4 Mixer



Built-in GeNetX™ Multi-Modeling Processor creates unlimited amp and cabinet models



Built-in Direct Box with Active Speaker Compensation



Ten Classic Distortion Stompboxes

Save a small fortune in cables



Save a small fortune in cables



Built-in 8-Track Digital Recorder (up to 6 hours using an optional 2 GB CF card)



Professional Multi-Track Recording and Editing Software, Lexicon® Pantheon™ Reverb Plug-in, Cakewalk® Pyro Express™ CD burning software; DigiTech® X-Edit™ Editor/Librarian



Built-in USB Computer Audio/MIDI Interface with 24-bit A/D/A Converters



Built-in USB Compact Flash Card Reader



Built-in MP3 Player



Built-in General MIDI Drum Machine



Built-in dbx® Mic Preamp with true 48V Phantom Power

Optional GNXFC Foot Controller adds dedicated control of recorder functions while the GNX4 footswitches can select presets or control stompboxes.



What is a Guitar Workstation™? It's a seamlessly integrated guitar processor that combines everything you need to perform, practice, create and record. Because the Guitar Workstation works the way a guitarist thinks, it makes accessing advanced digital technology as simple as stepping on a pedal.

Perform: With quick, Hands-Free™ access to stomp box effects, guitar modeling and backing tracks. Interface with the PA system via a built-in direct box, dbx® mic preamp and built-in mixer.

Practice: By recording and playing back guitar, drum and vocal line note-for-note with endless looping. Record your whole band practice. Download lessons from guitar magazines and play along.

Create: With the ultimate guitar sketch pad. Any time inspiration strikes, you can record the moment directly onto digital media with one tap of your foot. You'll never lose that elusive lick again.

Record: Your own CD without a room full of complicated gear. Lay down eight tracks by tapping a pedal. Or stream your music directly to a computer and process it with sophisticated ProTracks Plus™ Digital Audio Workstation software.

Once you've used a guitar workstation you'll ask yourself how did I ever get along without it? Visit our website or call for your free Guitar Workstation Application Guide or head to your nearest DigiTech dealer for the ultimate music making tool.



Built-in 8-Track Digital Recorder (up to 6 hours using an optional 2 GB CF card)



Professional Multi-Track Recording and Editing Software, Lexicon® Pantheon™ Reverb Plug-in, Cakewalk® Pyro Express™ CD burning software; DigiTech® X-Edit™ Editor/Librarian



Built-in USB Computer Audio/MIDI Interface with 24-bit A/D/A Converters



Built-in USB Compact Flash Card Reader



Built-in MP3 Player



Built-in General MIDI Drum Machine



Built-in dbx® Mic Preamp with true 48V Phantom Power

Optional GNXFC Foot Controller adds dedicated control of recorder functions while the GNX4 footswitches can select presets or control stompboxes.



¹(Guitar World - February 2005 "Soundcheck" p.192-193)



the type of FireWire audio interface that I wanted, and it comes bundled with Pro Tools LE, choosing it was a no-brainer (see Fig. 11). I get Pro Tools without spending significantly more than I would have had I purchased a comparable interface from another manufacturer.

In an attempt to save money for other necessities, I decided not to spring for BIAS Peak, one of the most popular Mac 2-track editors, although it would have been my top choice had budget not been a consideration. I opted instead for the less expensive but still robust i3 DSP-Quattro (a 2005 EM Editors' Choice Award winner).

I chose Edirol's PCR-M80 (see Fig. 12) for playing and controlling the many instruments in Logic Pro or Pro Tools. I also chose the PCR-M80 because it gives me the ability to control some of the onscreen mixing with faders. The PCR-M80 is a 61-key synth-action control-



FIG. 11: The Digidesign Digi 002 Rack is a quality FireWire audio interface with good-sounding mic preamps, instrument inputs, and line inputs. It comes bundled with Pro Tools LE software.

ler with a variety of programmable MIDI controllers, including eight knobs, eight sliders, and nine switches.

Following Signals

The aforementioned Digi 002 Rack gives my studio A/D/A conversion, four good-sounding mic/line/instrument preamps, four additional line inputs, and more. To record a band doing basic tracks, however, I need more than four mic preamps, so I added a couple of ART Tube MP Studio mic preamp/DI boxes, which bring my mic-pre count to six. I'd use four mics on the drums and one mic for the guitar amp during basics. The bass will go direct, and I can use one of the Tube MP Studios for that.

Although most of my dynamics processing is going to be done using plug-ins during mixdown, I want a hardware compressor that I can place at the inputs. For the money, it's hard to beat the FMR Really Nice Compressor (RNC), a half-rack unit that gives you excellent quality mono or stereo compression.

I don't need a lot of patching capabilities, but having some is convenient. Therefore, I bought the DBX PB-48 patch bay, which features 48 ¼-inch patch points that can be set for normaled or denormaled operation. That provides flexibility when patching the Digi 002 Rack's line inputs, the FMR RNC's I/O, and some of the Mackie Big Knob's many inputs and outputs.

Patterns of Excellence

Choosing mics is tough because there are so many good options. First, I needed a large-diaphragm condenser to use as a vocal mic and for critical instrument-miking applications. I chose the Røde NT2-A, because it offers an excellent combination of sound quality and versatility. It has multiple patterns, an adjustable pad, and a 3-way highpass filter.

I also needed a stereo pair of small-diaphragm condenser mics to use as drum overheads and for instrument miking (such as on acoustic guitars). I went with Audio-Technica's popular AT4041s, which are versatile, good sounding, and reasonably priced.

I needed a mic for kick drum that could also be used on a bass amp and other low-end sources. For that, I chose the tried-and-true AKG D112. The Audix D6 and Shure Beta 52 would also be good choices, but they are a little more expensive.

To round out my mic collection, I selected a pair of Shure SM57s. Those classic mics, which are found in virtually every

The Midprice Mac Studio

ITEMS

PRICE

AKG D112 dynamic kick-drum mic	\$298
AKG K240 DF headphones	\$268
Apple Logic Pro 7.1 sequencer	\$999
Apple Power Mac Dual 2.3 GHz G5 computer	\$2,499
ART Tube MP Studio mic preamp/DI (2)	\$178
Audio-Technica AT4041 small-diaphragm condenser mic (2)	\$790
dbx PB-48 patch bay	\$149
Digidesign Digi 002 Rack FireWire interface	\$1,295
Edirol PCR-M80 USB MIDI keyboard controller	\$375
Event Tuned Reference 8XL active studio monitors (pair)	\$699
FMR Really Nice Compressor	\$199
i3 DSP-Quattro stereo audio editor	\$149
Mackie Big Knob audio controller	\$384
M-Audio DX4 active monitors (pair)	\$199
Maxtor L01S250 300 GB Ultra16 SATA/150 hard drive	\$250
Memory Solutions 1 GB RAM	\$101
Planar PX191 19" LCD monitor	\$529
Røde NT2-A large-diaphragm condenser mic	\$699
Rolls HA43 headphone amp	\$70
Shure SM57 dynamic mics (2)	\$292
Yamaha RH2B headphones (4)	\$399
TOTAL	\$10,821

- Sound line
- line
- sampling line
- ffects line
- ynths line
- uitar 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

- | | | | | | | | |
|--|---|---|---|---|---|---|---|
|  |  |  |  |  |  |  |  |
| 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 |

Awards and press statements in reference to KONTAKT

NI NATIVE INSTRUMENTS
SOFTWARE SYNTHESIS

GENERATE THE FUTURE OF SOUND





commercial studio, are excellent for snare, guitar-cabinet, and various other instrument-miking applications.

Listen Up

I chose Event Tuned Reference 8XLs as my primary monitors because they have 8-inch drivers (important for hearing the bottom end of mixes). The 8XLs were also the hit of EM's recent powered-monitor roundup (see the March 2005 issue of EM), in which they were described as having a smooth sound and a full-frequency response. I like to have a second set of speakers for comparison during mixdown, and for that I selected a pair of M-Audio MX4 active monitors, which have 4-inch drivers and didn't do a lot of damage to my budget.

Even though I'll be mixing "in the box," I still needed the equivalent of a mixer's monitoring section, and for that I chose the Mackie Big Knob. It's useful for talk-back, switching between sources (in my case, the output of the Digi 002 Rack and the output from the G5), and switching between my Event and Audix speakers.

For my primary headphones, I picked AKG K 240 DFs, which are noted for their flat-frequency response. Because my studio was designed for recording a band doing basic tracks, I needed four additional pairs of headphones for the band. For those, I went with a more economical model, selecting four pairs of the closed-back Yamaha RH2Bs. I also took the economic route for my headphone amp, opting for the solid but simple Rolls HA43, which has one stereo TRS input and four stereo TRS outputs, each with individual volume controls.

Make a Wish

If more money were to become available for my studio, I'd get a higher-end mic preamp for recording vocals and other critical elements. I'd also like to get another quality large-diaphragm condenser mic to have some options for different vocalists. And although we haven't discussed cables in this story, I'd want to buy a mic snake so that I could more easily put the instruments in a distant room when tracking. But even without those additional items, my studio is well equipped to make some serious music. Bring on the bands!

The Higher-Price Windows Studio

By Gino Robair

My goal with this studio is to do pro-level multitrack recording, editing, mixing, and mastering. It also includes basic MIDI sequencing capabilities, but my main focus is on quality transducers as well as system adaptability: I needed to cover nearly any project that comes through the door, from demo work to indie soundtrack projects.



FIG. 12: The Edirol PCR-M80 has a 5-octave keyboard and a nice selection of programmable knobs, buttons, and sliders.

A Win-Win Situation

To head off the potential effects of Moore's Law on my bank account, my first task was to get a computer that I can live with for several years. The good news is that since I built a Windows-based studio, it didn't cost me an arm and a leg to get a tricked-out machine. After some preliminary budgeting, I allocated \$5,000—almost a quarter of my studio budget—for the computer.

As Dennis Miller points out in the lower-price Windows studio section, there are two options. The first is to go with an off-the-shelf computer and get as much bang for the buck in computing power as you can. Then you can assemble the software palette that best fits your needs, but you have to configure and troubleshoot it yourself. The second option is to go with a company that specializes in building DAWs for music, such as Alienware, Carillon, Rain, Spectral Computers, Truespec Systems, and Zealot Pro, to name a few. Those systems include audio software and an appropriate interface, as well as studio-friendly computer components that run quieter and cooler than the typical small-business machine. You can, however, expect to pay a premium for a preconfigured system. I chose to go with the first option, since I don't mind configuring my own system. If the computer is too noisy, I can shove it into the equipment closet.

The first stop for my credit card was Dell.com. I chose the Precision Workstation 670, with an Intel Pentium 4 Xeon 3.6 GHz processor, Windows XP Professional Edition, 4 GB of RAM, 400 GB and 160 GB hard drives, a DVD-R writer that covers all the major formats, an nVidia Quadro video card, a 19-inch flat CRT display, a three-year on-site service plan, and all the other trimmings you'd expect (including eight USB 2.0 ports and two FireWire ports). My total came to \$4,684, which left me with \$316 in my computer budget.

Heart and Soul

My digital multitrack audio editor of choice is Magix Samplitude 8 Professional (see Fig. 13). Over the years, Samplitude has gone from an austere product to one that is powerful and easy to use. Out of the box, it comes with an astounding set of tools, including built-in CD burning capabilities, DVD-Audio support, two types of convolution processors, automatic audio-file cutting and looping capabilities, a MIDI drum editor, POW-r dithering, and ASIO, VST, and ReWire support.

ONE OF A KIND

- sound line
- dj line
- sampling line
- effects line
- synth line
- guitar line



REAKTOR 5 delivers originality every time. The fifth generation of the award winning sound studio will inspire your creativity with a massive collection of pioneering sound generators and cutting-edge effects. Its unique adaptability allows you to modify any instrument or build new ones from scratch. The new REAKTOR Core Technology™ delves deeper into modular construction than ever before, breaking new ground in versatility and audio quality. Sound synthesis and signal processing have never been so powerful.

THE FUTURE OF SOUND

www.ni-reaktor.com

"Top-of-the-line sound quality and flexibility. Excellent array of instruments. You can truly make almost anything you can imagine with REAKTOR."

Remix, USA, November 2003



Awards and press statements in reference to REAKTOR 4

NI NATIVE INSTRUMENTS
SOFTWARE SYNTHESIS

GENERATE THE FUTURE OF SOUND



I considered going with Samplitude 8 Classic because I don't need the 5.1 surround features in Professional, and buying Classic would cut the cost of my purchase in half. The Professional version, however, offers many goodies that I couldn't pass up, including Elastic Audio, for real-time pitch change and correction; the Analog Modeling Suite of effects, which includes a compressor and a transient designer; real-time convolution reverb; numerous simultaneous plug-ins (including VST instruments) per insert; Robota Pro, an 8-voice virtual-analog synth with step sequencer; and 999 stereo or mono tracks (as opposed to 64 in Classic). It also allows me to do fancy things such as draw filter curves and apply effects on an object-by-object basis.

Samplitude 8's MIDI features aren't deep compared to those in Sonar or Cubase SX, but they're sufficient for my basic needs. Overall, Samplitude 8 is a powerful, stable, and mature digital multitrack audio editor that will serve me well as the core of my recording system.

I also needed a dedicated 2-track editor, so I allocated money to purchase Sony Sound Forge 8, which supports almost two dozen audio file formats, allowing me to work with just about any project that crosses my desk. In addition to offering restoration plug-ins, spectral analysis, and support for DV, the latest version works with VST effects, offers scripting and batch conversion, and comes with Sony CD Architect 5 for disc burning.

Having high-quality plug-ins and processing power is important to me. To get the best of both worlds, I added a TC Electronic PowerCore FireWire to my system (see Fig. 14). This hardware DSP host comes bundled with 14 plug-ins that cover

FIG. 13: Although more expensive than the Classic version, Magix Samplitude 8 Professional offers a wealth of features—including real-time pitch shifting and convolution—that makes it worth the extra money.

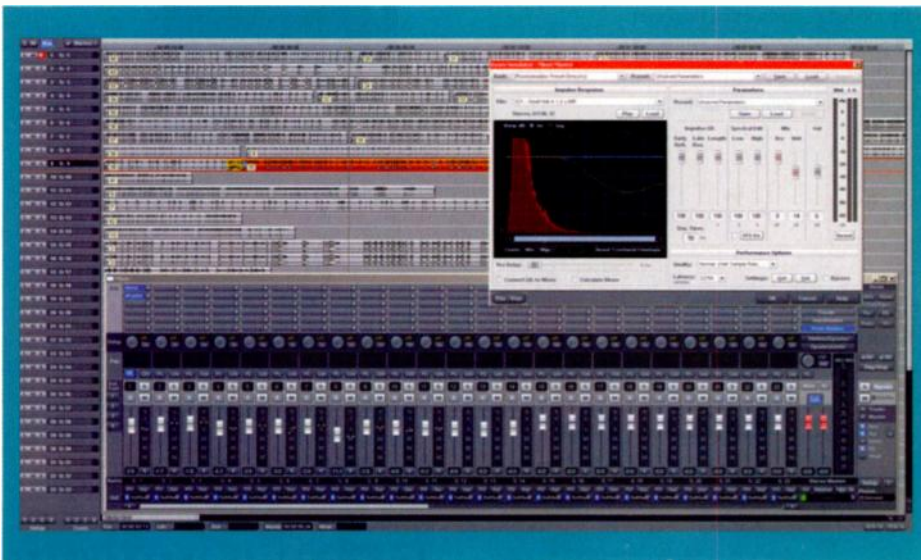


FIG. 14: With a floating-point PowerPC chip and four Motorola DSP chips, the TC Electronic PowerCore FireWire packs a lot of processing punch, and the bundled plug-ins are outstanding.

synthesis, compression, EQ, reverb, and mastering. It also has a virtual TC Finalizer and Character, which is a plug-in that combines compression and filtering. And because you can never have too many processors, I also sprung for Waves Native Power Pack. Although there will be some duplication of tools with the PowerCore FireWire bundle, I particularly wanted the Waves L1 Ultramaximizer, the Q10 Paragraphic Equalizer, and the C1 Parametric Compressor in my toolkit, not to mention another killer reverb.

One last item in my dream studio is Digidesign Pro Tools LE with a Digi 002 Rack FireWire interface. I have Samplitude for audio editing and sequencing, but it's difficult to stay competitive in the studio biz without having some sort of Pro Tools compatibility. The Digi 002 Rack gives me eight channels of balanced analog I/O (four inputs have phantom-powered XLR jacks), eight channels of ADAT Lightpipe I/O, stereo S/PDIF I/O, 16 MIDI channels in, and 32 MIDI channels out. With 18 channels of audio I/O, I can accept clients that prefer to work in the Pro Tools environment.

No desktop studio is complete without a MIDI controller, and I wanted one with a midsize keyboard and at least a dozen assignable controllers. For my money, the Korg Kontrol49 fit the bill. It has a 49-note, full-size, Velocity-sensitive keyboard; pitch and modulation wheels; eight assignable sliders and knobs; and 16 Velocity-sensitive trigger pads that can be assigned as transport controls or used for programming drums. It also has two MIDI Out ports and USB 1.1 connectivity.



Mix and Match

Although my budget seems substantial, it will quickly disappear once I begin assembling the necessary hardware needed for a studio that is focused on audio recording, such as mic preamps and A/D/A converters. The best value lies in a digital mixer that offers all of those features, as well as EQ, dynamics processing, and a control surface. For that reason, I chose the Tascam DM-3200 digital console (see Fig. 15). I haven't had a chance to test the DM-3200 (except at a trade show), which I realize poses a bit of a risk. Normally, if I haven't tested a product, I would wait for the EM



sweetwater
creation
station series

SONY

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





review to fill me in on the details. I feel pretty confident about this mixer, however, based on my past experience with other Tascam digital consoles, such as the DM-24.

The DM-3200 is a 48-channel (32 inputs and 16 auxiliary returns), 16-bus console that can handle 24-bit, 96 kHz audio at full track count. The mixer offers 16 analog inputs, each with an insert and a 20 dB pad, and you can choose between a phantom-powered XLR jack and a balanced 1/4-inch jack on every channel. It also has a range of digital I/O (which allows me to interface with nearly every recording system available), including 24 channels of TDIF I/O, eight channels of ADAT Lightpipe I/O, two sets of S/PDIF I/O, and two sets of AES/EBU I/O. MIDI In, Out, and Thru and USB 1.1 ports are standard equipment. Two additional I/O card slots are available, so I added the IF-FW/DM FireWire card to the system. I will purchase the optional MU-1000 meter bridge at a later date.

Each of the mixer's 32 channels has a dynamics processor and 4-band parametric EQ. Two stereo multi-effects processors, which offer a TC Works reverb and other effects, are available through the aux sends. The



FIG. 15: The Tascam DM-3200 48-channel digital mixer has a wealth of inputs and outputs, motorized faders, plenty of signal processing, support for 6.1 surround mixing, and much more.

control surface has transport buttons, a shuttle wheel, a talkback mic, and two headphone outputs. You can use its 17 motorized faders to control channels 1 through 16 or 17 through 32, 16 buses, 16 returns, 8 auxes, or your sequencer. The DM-3200 also lets you automate fader levels, aux and bus levels, EQ and dynamics settings, panning, and muting. Other features include 6.1 surround support and Mackie HUI emulation. All in all, the DM-3200 covers a lot of my studio needs, and it gives me more than enough I/O to start with. For the price, the DM-3200 is a heck of a bargain.

To reward myself for keeping a close rein on the money spent on mixing and processing, I splurged for at least two channels of high-quality tube-based mic preamplification. The Universal Audio 2-610 houses a pair of 610-style preamps, with variable control over input impedance, high- and low-shelving EQ, DI inputs, and balanced line-level inputs. That means you can use it to create vintage magic for miked sources, electric guitar and bass, or keyboards and drum machines. The 2-610 sounds great with high-end condensers, and it works wonders with ribbon mics and bread-and-butter dynamic mics. It's a rugged workhorse that is perfect for doing vocal and instrument overdubs.

Capturing

Because recording is the main focus of my studio, I didn't want to skimp

The Higher-Price Windows Studio

ITEMS

PRICE

Audio Engineering Associates R84 ribbon mic	\$1,100
Audio-Technica ATH-M40fs headphones (3)	\$450
Audix DP5 dynamic-mic package	\$1,149
Dell Precision Workstation 670 computer	\$4,684
Digidesign Digi 002 Rack audio interface	\$1,295
Event Studio Precision 8 active monitors (pair)	\$1,499
Furman HA-6 headphone amp	\$399
Grado SR125 headphones	\$150
Josephson Series Four C42 small-diaphragm condenser mics (matched pair)	\$1,060
Korg Kontrol49 USB MIDI controller	\$500
Magix Samplitude 8 Professional digital audio sequencer	\$1,249
Neumann TLM-103 large-diaphragm condenser mic	\$995
Sony Media Software Sound Forge 8 stereo audio editor	\$299
Tascam DM-3200 digital mixer	\$3,700
Tascam IF-FW/DM 24-channel FireWire card	\$499
TC Electronic PowerCore FireWire DSP host/plugin bundle	\$1,795
Universal Audio 2-610 tube mic preamp	\$2,295
Waves Native Power Pack plugin bundle	\$500
TOTAL	\$23,618



REMIX HOTEL LOS ANGELES

THE NEW SAE INSTITUTE ON SUNSET • AUGUST 5-7

Remix magazine and partners present three FREE days of technology master classes, panels, demos and clinics about music production and performance for electronic- and urban-music producers, engineers, musicians and DJs. The Remix Hotel offers exposure to and training on the hottest products available for the production and performance markets.

remixhotel.com



on transducers. I needed an array of microphones that will cover a variety of sessions, from vocals and horns to a full drum set. Drum recording requires the largest number of mics, so I approached my new mic cabinet from that point of view, keeping in mind that each mic will do double duty on other instruments.

I wanted at least eight microphones for recording a drum set: one for each drum of a 5-piece kit, two overheads, and a room mic. For that purpose, I picked up the Audix DP5 drum pack, which has five dynamic mics: a D6 for the bass drum, a D4 for the floor tom, a pair of D2s for the rack toms, and a D1 for the snare. The collection includes clips that mount the mics to the drum rims (if you don't mind that style of mounting) and an aluminum carrying case. The D6's high- and low-end boost sounds fabulous on kick drum. The D6 should be in everyone's mic cabinet for recording low-frequency sources. The Audix dynamics sound great on nearly all percussion, and the mics are rugged and well built, making them perfect for stage and studio use.

I needed a matched stereo pair of small-diaphragm condenser mics for use as drum overheads and general-purpose recording. The Josephson Series Four C42 is my first choice (see Fig. 16). They have an excellent transient response, dimensionality, and high-end clarity, making them great for stereo recording. These American-made mics are available in matched pairs and ship with shock-mounts and a protective Pelican case. The C42s sound like they cost twice as much, and they will get plenty of use in my studio.

I also wanted a large-diaphragm condenser mic for tracking vocals and acoustic instruments. I chose the Neumann TLM-103, a studio standard. It gives a round-but-accurate representation of whatever you're miking, and it works well as a room mic for drums or electric guitar.

To complete my mic collection, I selected an Audio Engineering Associates R84, which is a great-sounding ribbon mic at an amazing price. I'm especially excited about the prospect of using it with the Universal Audio 2-610 preamp. Whether I'm recording a crooner, a cornetist, a shredder, or a saxophonist, I know the R84 will yield excellent results.

Listening

With such a kick-ass collection of mics and preamps, I wasn't about to skimp on monitors. The Event Studio Precision 8 Active (ASP8) is a powered monitor with 1-inch and 8-inch drivers, XLR and balanced ¼-inch inputs, continuously variable high- and low-frequency trim controls for tuning the monitor to your

room, and a highpass filter for use with a subwoofer. But forget those stats; these speakers are extremely revealing, which is exactly what you want in a close-field monitor. Their

flat overall frequency response, excellent imaging, and transparency let you hear deep into your mix. I've been using a pair of ASP8s for months, and they have definitely changed the quality of my work.

For critical listening, I chose the open-backed Grado SR125 headphones. The SR125s have a balanced, accurate sound and are comfortable to wear—a must when you spend hours in an editing session. I also needed headphones for musicians, so I selected three pairs of Audio-Technica ATH-M40fs closed-back headphones, which are fairly robust and powerful, and a Furman HA-6 headphone amp to power them. That setup will cover basic rhythm-section tracking sessions, even in high-volume situations. And with all that, I still spent less than Geary Yelton did on his higher-price Mac studio!

The Higher-Price Mac Studio

By Geary Yelton

With \$25,000 in hand (thanks to the generosity of EM philanthropist-in-chief Steve O), I can build a versatile desktop studio that will handle anything that clients throw at it, whether it's tracking, mixing, preproduction, post-production, or mastering. My studio should be capable of recording rock bands, drum kits, chamber groups, vocal ensembles, scoring sessions, voice-overs, and practically anything short of the Mormon Tabernacle Choir. But why limit myself? Because it's a desktop studio, I could even throw all the equipment in a van and offer on-site recording services.

A generous budget affords tremendous leeway in selecting the software and hardware that make such a studio possible. Still, there's a reason that million-dollar studios cost a million dollars, and even \$25,000 has its limits.

Make Me a Monster

Because my budget accommodates Apple's finest desktop computer, that's exactly what I chose. Apple's newest off-the-shelf, top-of-the-line Power Mac G5 has dual 2.7 GHz PowerPC G5 processors, 512 MB of DDR400 RAM, a 250 GB serial ATA drive, a 16× double-layer SuperDrive, 256 MB of DDR video RAM, and three PCI-X slots. With 64-bit processing, 128-bit memory, a 1.35 GHz front-side bus, and 512K of L2 cache, this baby is built for speed. In case I decide to buy a second monitor later (handy for a desktop studio), my video card supports dual displays. Software-wise, a new G5 includes iLife '05 (with GarageBand 2) and the new Mac OS X 10.4, aka Tiger.

I needed more memory, and because my Mac has eight RAM slots, I added four 512 MB DIMMs to bring the total to 2.5 GB, leaving two slots open for future expansion. To maintain full 128-bit data width, DIMMs must



FIG. 16: Josephson Engineering tests the overall frequency response of each Series Four C42 mic before assigning production serial numbers and selecting matched pairs.

A DIFFERENT KIND OF DESK JOB



training for a career in the audio industry

OPEN HOUSE August 6th. Los Angeles, Miami, Nashville
August 7th: New York City

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



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

Nashville^Δ

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



the whole Peak Pro XT 5 bundle (\$1,199), which includes SoundSoap Pro and many EQ, pitch-correction, dynamics-processing, and audio-analysis plug-ins.

My other audio editor is a 24-track program that can run as a plug-in within Digital Performer. Nothing beats Celemony Melodyne Studio Edition for pitch and timing correction (see Fig. 18). It lets you edit monophonic audio data as if it were MIDI data, easily transposing pitch and quantizing rhythm. If a singer is off-key on just one note or throughout an entire song, Melodyne can fix it. If you need to transpose an entire track to a different key, Melodyne will come closest to retaining the original sound. It even lets you play back audio using a MIDI controller to control pitch, phrasing, vibrato, and dynamics.

Performance Enhancers

A high-definition audio system requires a multiport interface that can handle 24-bit, 192 kHz audio. With 12 analog inputs, 12 analog outputs, and low-noise, low-distortion A/D conversion, the MOTU HD192 fits the bill perfectly. Two channels of 96 kHz AES/EBU I/O

with automatic sampling-rate conversion and word-clock I/O deliver the flexibility needed to interface with other pro digital audio gear. Features such as 19-segment level meters and balanced XLR I/O throughout offer functionality that's essential in a mixerless

FIG. 18: Celemony Melodyne Studio Edition lets you manipulate audio as if it were MIDI data, making it indispensable for altering melodies, creating harmonies, and correcting pitch and tempo. The current version also hosts VST and Audio Units instruments and effects.

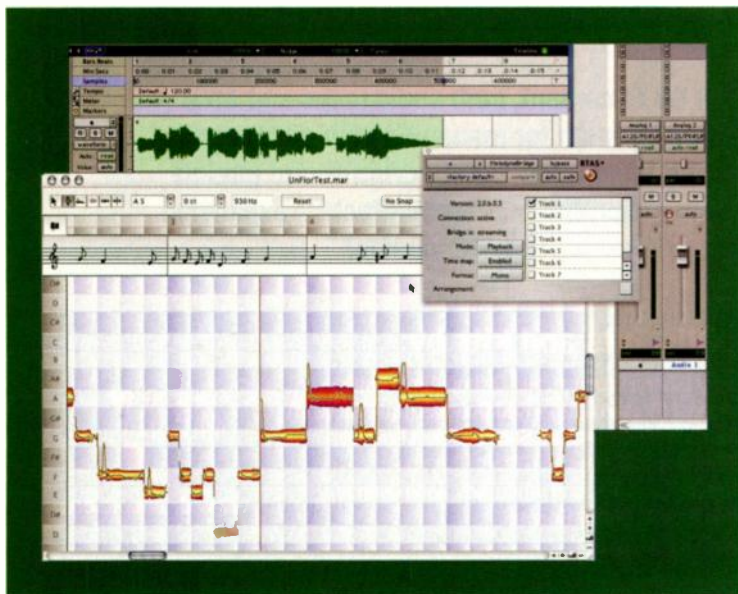


FIG. 19: The Mackie Big Knob audio router takes care of talkback, output-switching, and monitor-routing functions that usually require a mixing console, making it ideal for mixerless desktop studios.

studio. And because the HD192 uses MOTU's PCI-424 expansion card, I can add easily another audio interface for more audio channels in the future.

I admire Grace Design preamps, and the Lunatec V3 is perfect for the applications that I have in mind. In addition to a transparent-sounding preamp with 2-channel balanced XLR I/O, the Lunatec V3 is a 24-bit, 192 kHz A/D converter with two AES/EBU digital outputs. It's a perfect match for the HD192, and it provides an alternative to the HD192's internal preamps and dithering. It also has an M-S decoder, making it ideal for recording stereo sources.

The Mackie Big Knob (see Fig. 19) is a multipurpose device that fulfills several desktop studio needs. It has two headphone outputs and two outputs for a separate headphone amp (should I ever need one). It has a built-in talkback mic that takes care of communication between the control room and the recording booth. It lets you select monitor sources by switching among three stereo inputs, which can be balanced or unbalanced. When I can afford additional monitor speakers, it will also switch among three stereo outputs. The Big Knob isn't a floor wax or a dessert topping, but it takes care of numerous functions that might otherwise be missing because my studio lacks a mixing console.

I needed at least two dedicated direct boxes, and I selected the Tech 21 SansAmp XDI. The XDI is a straightforward, clean-sounding DI with normal and bright instrument inputs, an unbalanced 1/4-inch output, and a balanced XLR output. It accepts phantom power, or you can power it with a DC adapter or a 9V battery.

Top-Notch Transducers

As soon as I was assigned the high-end Mac studio, I knew that I wanted a pair of new Genelecs for my close-field monitor speakers. I prefer powered monitors rather than a separate amplifier and speakers because the audio components in a good powered system are closely matched. I considered a pair of Genelec 8030As, but I wanted the increased power and extended frequency range of the biamplified 8040As (see Fig. 20).

MUSIC MAKING MADE EASY.



If you enjoy clicking through layers of windows to create music, then Traktion 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, Traktion 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. Traktion is a simple-yet-powerful application, with thousands of fervent users and dozens of glowing reviews.

And now with Traktion 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 Traktion. Then call your friendly Sweetwater salesperson at 800.222.4700 to order your copy of Traktion 2.

It won't make better music for you, but it sure lets you make it faster and easier.

SIMPLE. POWERFUL. REVOLUTIONARY. TRAKTION 2.

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

www.sweetwater.com 800-222-4700

Sweetwater
music technology lifestyle

MACKIE[®]
www.mackie.com

© 2008 LUND TECHNOLOGIES INC. ALL RIGHTS RESERVED. "MACKIE," AND THE "WINKING MAN" FIGURE ARE REGISTERED TRADEMARKS OF LUND TECHNOLOGIES INC. ALL OTHER TRADEMARKS ARE PROPERTY OF THEIR RESPECTIVE OWNERS. ALL SPECIFICATIONS SUBJECT TO CHANGE. THE TRUTH IS OUT THERE... LIKE UN, WAY OUT THERE.

MEDIA



The amps drive the top and bottom with 90W (peak, into 8Ω) each. The 8040A is quite flat down to 48 Hz, according to Genelec's specs, and room-response controls let me tailor its output to my studio environment. The included IsoPod mounting stands provide plenty of flexibility in positioning the cabinets.

I also needed at least three pairs of headphones for the engineer and the musicians. For years, my favorite studio headphones have been the Fostex T20-RP; they're lightweight, comfortable, and durable, and they reproduce sound accurately. If a cable breaks, replacement is literally a snap.

A first-rate studio needs a nice assortment of quality microphones that can handle a variety of tasks. To make my mic cabinet as flexible as possible, I allotted almost 25 percent of my entire budget for mics, with models ranging from dynamic cardioids to a high-output ribbon mic, and some respectable condensers in between.

The Røde NT2000 is probably the most versatile large-diaphragm condenser mic you'll find for the money. In January 2005, EM gave the NT2000 an Editors' Choice award for Best Microphone, and with good reason: in addition to excellent sound, it gives you continuously variable control over its polar pattern, smoothly changing from omnidirectional and cardioid to figure-8. The NT2000 is ideal for so many recording tasks—from vocals and acoustic guitars to orchestral instruments—that I wanted two of them. Having two good condenser mics also gives me the option of recording in stereo.

I've always admired Royer mics, and my budget allowed me to purchase the one I'd most like to own. The Royer R-122 is a ribbon mic with active circuitry that has the output level of a condenser mic, yet it's extremely quiet. For miking acoustic and electric guitars, woodwinds, brass, or stringed instruments, the R-122 has a crisp, well-defined sound. In many situations, it would be ideal to have a choice between the NT2000 and the R-122 to determine which is best for

FIG. 20: The 8040A is the midsize member of the Genelec 8000 MDE series and has replaced the popular 1030A. Its rounded aluminum enclosure is designed to reduce cabinet-edge diffraction. Room-response controls let you tailor its output to your environment.



FIG. 21: VirSyn Tera 2 is a virtual modular synth that supports six types of synthesis. It features live audio processing, a powerful step sequencer, and a huge library of usable presets.

the job at hand. Put simply, the R-122 is a great mic with loads of applications.

For recording drums, Earthworks' DrumKit System DK25/R is an excellent choice. Rather than the conventional practice of using one mic for each drum, the Earthworks system comprises only three dynamic mics: two TC25 omnis for overhead stereo and an SR25 cardioid for kick drum. The system also includes a KickPad, which optimizes the SR25's output for kick drum. In addition to sounding great on drums, the DK25/R gives me three high-quality mics that I can use for recording in general. The SR25 is exceptionally fine for almost any instrument (or even vocals), and the TC25s are outstanding for recording piano, vocal groups, or instrumental ensembles. In fact, you can use the TC25s any time that you need a pair of omnidirectional mics.

Because every studio needs at least a couple of basic dynamic mics for recording instruments, I chose a pair of Audix i5s. I generally favor Audix dynamic mics over Shures, and I prefer the i5 to the more popular SM57. Audix mics are tough and dependable, and you never know when you'll need a pair of them.

Chaos and Control

Compared to using real knobs and faders, mixing with a mouse is slow and tedious. When I began shopping for a control surface, I considered several models before settling on the tried-and-true Mackie Control Universal (MCU). Each of the MCU's eight channel strips has a 100 mm touch-sensitive motorized fader, an assignable rotary controller, and buttons to control functions such as mute, solo, and track arming. In

YOU ROCK. WE HOST.

Host your website at
Broadjam:

YOUR OWN WORLD-CLASS WEBSITE

You provide music, photos and info, we build it.

KILLER WEBSITE TEMPLATES

You choose them, you change them, we design them.

USE YOUR OWN DOMAIN NAME

You register it, we launch it.

UP TO 250 SONGS HOSTED

You make the music, we unleash it.

50 PHOTOS AND 30 ALBUMS

You post, we host.

NEWS, EVENTS, GUESTBOOKS, LINKS

You create the content, we provide the technology.

BROADJAM'S PRIMO MEMBERSHIP

You host at Broadjam, we give you VIP treatment.

24/7 ACCESS TO CHANGE YOUR WEBSITE

You want a web makeover, we give you power to do it.

TRANSMIT YOUR MUSIC TO ANYONE, ANYTIME

You decide the who, when and where, we send it.

It doesn't get any easier than this.

broadjam

WEB HOSTING FOR MUSICIANS

ALL FOR ONLY

\$19.95

A MONTH!

PAY FOR ONE YEAR UPFRONT AND SAVE \$40!
NO WEB BUILDING OR GRAPHIC DESIGN EXPERIENCE NEEDED!

GOT QUESTIONS?

You call, we answer.

608-271-3633

www.broadjam.com

customerservice@broadjam.com



In addition to transport controls, the MCU has a bank of buttons that perform software-specific functions, and the 55-character LCD displays selected parameters and values. I doubled the number of channels by adding the MCU XT, an 8-channel extension unit without the master section. And because the MCU uses MIDI to communicate with the computer, I added the MOTU FastLane, a basic 2x2 MIDI interface.

I also needed a keyboard for controlling software instruments and any sound modules that clients bring into my studio. I once owned and loved an 88-note hammer-action keyboard, and I recognize that many keyboardists would expect to find such a controller in a high-end studio. The price of 88-note controllers has fallen in the past year or so, and at the same time, newer keyboards offer the array of

knobs and sliders that I want to control my software-based instruments.

I was intrigued by the promise of a new keyboard controller that appears to suit my needs, the CME UF8. Unfortunately, CME keyboards are so new in this country that I haven't had a chance to try one out yet, and I wanted to select something that I knew I could depend on. The M-Audio Keystation Pro 88 fits the bill just fine. In addition to an 88-note hammer action, it has a large graphic LCD, 24 knobs, 9 faders, and 22 buttons. Combined with the mod wheel, two footswitch jacks, and an expression-pedal jack, that's a total of 59 MIDI controllers that you can assign to control any software instrument or MIDI module. It also serves as a MIDI interface for external instruments and hardware, and the price is nice.

Contact Information

Below is a list of URLs for the manufacturers mentioned in this article:

Ableton Software: www.ableton.com

AcousModules: http://acousmodules.free.fr/index_en.htm

AKG Acoustics, U.S.: www.akgusa.com

Apple Computer: www.apple.com

Applied Acoustics Systems: www.applied-acoustics.com

ART (Applied Research and Technology): www.artproaudio.com

Audio Engineering Associates (AEA): www.wesdooley.com

Audio-Technica: www.audio-technica.com

Audix: www.audixusa.com

BIAS (Berkley Integrated Audio Software): www.bias-inc.com

Cakewalk: www.cakewalk.com

Celemony: Software www.Celemony.com

Christian Knufinke: www.knufinke.de/sir/index_en.html

Cycling '74: www.cycling74.com

dbx Professional Products (Harman): www.dbxpro.com

Dell Computer: www.dell.com

Digidesign: www.digidesign.com

Earthworks Audio Products: www.earthworksaudio.com

Edirol: www.edirol.com

E-mu Systems: www.emu.com

Event Electronics: www.event1.com

FMR Audio: <http://fmraudio.com>

Fostex: www.fostex.com

Furman Sound: www.furmansound.com

Garritan: www.garritan.com

Genelec: www.genelecusa.com

Glaresoft: www.glaresoft.com

Grace Design: www.gracedesign.com

Grado Labs: www.gradolabs.com

Green Oak: www.greenoak.com

Hewlett-Packard: www.hp.com

i3 Software: www.i3net.it

Iced Audio: www.icedaudio.com

Josephson Engineering: www.josephson.com

Kingmax Semiconductor: www.kingmax.com

Korg USA: www.korg.com

KRK Systems: www.krksys.com/

Kurzweil Music Systems: www.kurzweilmusicsystems.com

Loud Technologies, Inc./Mackie: www.mackie.com

M-Audio: www.m-audio.com

Magix Entertainment: www.magix.net

Maxtor: www.maxtor.com

Memory Solutions: www.memorysolutions.com

MOTU: www.motu.com

Native Instruments: www.native-instruments.com

Neumann USA: www.neumannusa.com

Planar Systems Inc.: www.planar.com

Propellerhead Software: www.propellerhead.se

Røde Microphones: www.rodemic.com

Rolls Music Corp./Bellari: www.rolls.com

Royer Labs: www.royerlabs.com

Seventh String Software: www.seventhstring.com

Shure Incorporated: www.shure.com

Snoize Software: www.snoize.com

Sony Corp. of America: www.sony.com

Sony Media Software: <http://mediasoftware.sonypictures.com/>

Steinberg: www.steinberg.net

Tascam: www.tascam.com

TC Electronic: www.tcelectronic.com

Tech 21: www.tech21nyc.com

Ugo: www.cortidesign.com/ugo

Universal Audio: www.uaudio.com

VirSyn Software Synthesizer: www.virsyn.com

Waves: www.waves.com

Yamaha Corporation of America: www.yamaha.com

INTEGRATED

Pro Audio Solutions



Logic Pro 7

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





Synths and Sampler

Picking a soft sampler was simple: Native Instruments Kontakt 2 is powerful, versatile, and easy to use. Half of the included 15 GB sample library furnishes 30 orchestral instruments from the *Vienna Symphonic Libraries*. Kontakt 2 can load banks of 128 instruments and imports most sampler formats. Its modular architecture and script processing let you customize its operation to suit almost any situation or need. Kontakt 2's suite of surround-capable

effects includes convolution reverb, and the software ships with more than 300 impulse responses.

Because soft synths are essential for the kind of work I do, selecting only the basics was difficult. The sheer number of great synth algorithms in Applied Acoustics Tassman 4, combined with its prodigious effects processing, made it impossible to omit. Tassman is a virtual modular synth that uses physical modeling to emulate dozens of modules and effects that range from commonplace to esoteric. You can use Tassman as a processor for other audio sources, too, offering effects such as octave division, speaker modeling, and synchronized tremolo.

The other synth I wouldn't want to do without is VirSyn Tera 2 (see Fig. 21). Like Tassman 4, Tera is a virtual modular synth with a comprehensive timbral palette. Virtual analog, FM, additive, and other forms of synthesis make optimum use of Tera's assortment of oscillators, filters, modulators, and other modular functions. Tera can process external audio signals, and it offers a powerful step sequencer in the classic analog mold. It takes you as deep as you want to go, and its wonderful collection of presets lets you find great sounds quickly. For acoustic emulations, bleeding-edge sound design, and anything in between, Tassman 4 and Tera 2 have plenty to offer.

The Higher-Price Mac Studio

ITEMS	PRICE
Apple Power Mac Dual 2.7 GHz G5 computer	\$2,999
Applied Acoustics Tassman 4 soft synth	\$349
Audix i5 dynamic mics (2)	\$358
BIAS Peak Pro 5 stereo audio editor	\$599
BIAS SoundSoap 2 noise-reduction plug-in	\$99
Celemony Melodyne Studio Edition multitrack audio editor	\$599
Earthworks DrumKit System dynamic mics	\$2,100
Fostex T20-RP headphones (3)	\$357
Genelec 8040A monitors (2)	\$2,390
Grace Design Lunatec V3 preamp	\$1,695
Hewlett-Packard L2335 video display	\$1,399
Kingmax 2x512 MB DDR400 SDRAM (2)	\$144
Mackie Big Knob audio controller	\$384
Mackie Control Universal control surface	\$1,299
Mackie Control Universal XT control extension	\$1,099
M-Audio Keystation Pro 88 USB/MIDI keyboard	\$600
Maxtor L01S250 300GB Ultra16 SATA/150 hard drive	\$250
MOTU Digital Performer 4.52 digital audio sequencer	\$795
MOTU FastLane MIDI interface	\$79
MOTU HD192 audio interface	\$1,895
Native Instruments Kontakt 2 soft sampler	\$579
Røde NT2000 large-diaphragm condenser mics (2)	\$1,798
Royer R-122 ribbon mic	\$1,695
Tech 21 SansAmp XDI direct box (2)	\$180
Universal Audio UAD-1 Ultra Pak DSP host/plug-in bundle	\$1,495
VirSyn Tera soft synth	\$339
TOTAL	\$25,575

Into the Future

One advantage of a computer-based studio is that new functionality is only a software package away. As funds became available, I would certainly invest in soundware to take advantage of Kontakt 2's capabilities and to provide fodder for loop sequencing. Sample-based virtual instruments, a software drum machine, and emulations of classic keyboards are also high on my list of upgrades. A broad selection of pianos, organs, and orchestral instruments would be most useful. Additional effects plug-ins would make my clients and me very happy. A premium convolution reverb would top the wish list.

On the hardware front, I could definitely use a couple more direct boxes. A full 8 GB of RAM would help with running all that new software, and it's inevitable that I'll eventually need some additional hard drives. A MOTU 24 I/O would give me a lot more TRS inputs, and it wouldn't require an additional PCI-424 card. A Mackie Control C4 would be very nice for hands-on software control. A few more mics and a tube preamp couldn't hurt, either. While we're throwing money around, I'd like a second 23-inch monitor. Once I could afford it, I would also invest in a 5.1 surround system, preferably with five Genelec 8030As and a 7060A subwoofer. And, incidentally, **EMWEB GLOPS** I'd finally buy a pair of Auratones. **EM**

EM senior editors Gino Robair and Mike Levine and associate editors Dennis Miller, Geary Yelton, and Len Sasso had to work hard for the thousands of dollars in play money that editor-in-chief Steve O dealt for this article.

studio b

GPS: 41:02:50:665N 80:39:45:606W



sinister
feel it?

... something is wrong here
could it be the 237 CDRs with stolen software?

software is the heart of commercial activity in studio b
yet it's the one part of the studio they won't pay for

do the right thing
buy the software you use

reputable
feels better



The International Music Software Trade Association
PO Box 250813, New York, NY 10025 USA

www.imsta.org



Now available in the U.S. from *Mix*, *Electronic Musician* and *Remix*

emusician.com/embookshelf | remixmag.com/remixbookshelf | mixonline.com/mixbookshelf

DJ? PROMOTER? PRODUCER?

...accept no other resource, the new International Edition MIM 2005/6 is *the* reference book for the global music production and dance scenes, and is now available in the United States.

This International Edition contains the original U.K. content and is loaded with U.S. and Worldwide listings. Now distributed in the United States by *Mix*, *Electronic Musician* and *Remix*.

This easy-to-use guide features 90 indexed sections packed full of thousands of contacts — everybody who's anybody in the professional music industry is (or should be!) listed here.



- Nearly 900 pages of
- Record Stores
- Equipment Dealers
- Recording Facilities
- Music Production
- Promoters
- Club Venues
- Brand Sponsors
- Agencies
- Record Labels
- Event Services
- Conferences
- Sound and Lighting

ORDER NOW
\$39.95

and many more must-have references for the world's dance music and production scene.

Special pricing for readers of *Mix*, *Electronic Musician* and *Remix* just \$39.95 (plus S&H).

Order yours online at mixonline.com/mixbookshelf, emusician.com/embookshelf or remixmag.com/remixbookshelf or call **800-262-1954!**

Item # MIM05-06



PERCIN, LAURA WILLIAMS, PHOTOS COURTESY OF LATIN PERCUSSION

Recording the Drums of Salvador

By Brian Knave

Inside
a Brazilian
tracking
session.

Life is sweet for Marcio Victor. At age 25, the heavy-hitting Brazilian percussionist has already worked with some of that country's biggest music stars, including Carlinhos Brown, Daniela Mercury, Milton Nascimento, Caetano Veloso, Gilberto Gil, and Marisa Monte. He has also been building an international reputation by laying down tracks for artists such as Gloria Estefan, Simply Red, Arto Lindsay, and even Luciano Pavarotti.

But it is his own band, the wildly popular Psirico (pronounced "pee-see-REE-ko"), based in Salvador, in the Brazilian state of Bahia, that catapulted Victor into the spotlight more than ten years ago, and which remains the fertile ground for his musical roots and innovations. A 14-piece vortex of talent, Psirico has injected fresh life and musicality into Salvador's *pagode* music. (See the sidebar "Cultural References" for a definition of *pagode*.) As the group's leader, lead singer, principle songwriter-arranger, and chief percussionist, Victor is clearly on top of his game.

I met Victor at Groove Studio in Salvador, Bahia, where he was working on tracks for Psirico's upcoming release, *Macumba Popular Brasileiro*. (The title is a wordplay on "musica popular Brasileiro," or MPB. *Macumba*, a Yoruban word, is slang in Salvador for, roughly, "black magic.")

Groove Studio (www.groovestudio.com.br), owned by Brazilian *axé* music star Durval Lelys (see the section on *axé* in the "Cultural References" sidebar), is one of only a handful of top-notch commercial recording studios in Salvador. Behind the board was Groove's chief engineer,

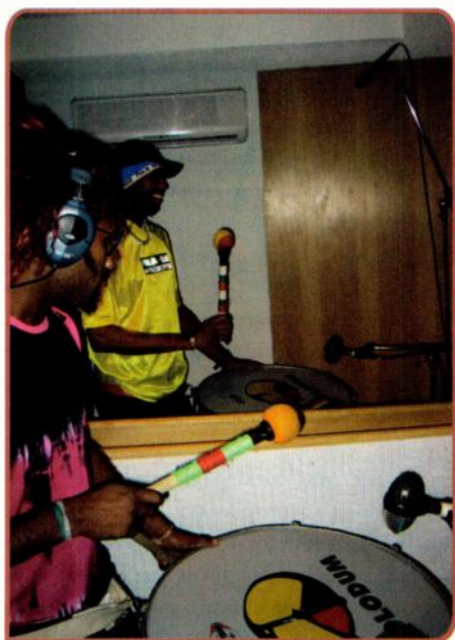
Daniel Reis, one of the city's finest young engineers. Reis had kindly invited me to play assistant engineer so that I could check out the studio and especially how he mics the many different percussion instruments commonly played here.

I was particularly keen on the day's agenda; Victor had invited two of Salvador's most renowned drum groups, Banda Olodum and Filhos de Gandhi (see the sidebar "The Drums of Salvador"), to make guest appearances on Psirico's new CD. As someone who learned his art in the streets in the intensely communal style of drumming that so defines this tropical city, Victor is clearly happy to spread the fruits of his success—giving back to those who share his love for the music, drums, and distinctive rhythms of Salvador.

Opening Salvo

The day started early at Groove Studio. By the time Reis and I arrived midmorning, the covered walkway outside the studio was stacked high from end to end with a huge assortment of exotic—for me at least—drums and percussion instruments. Other than at a music mega store or a NAMM show, I had never seen so many drums in one place.

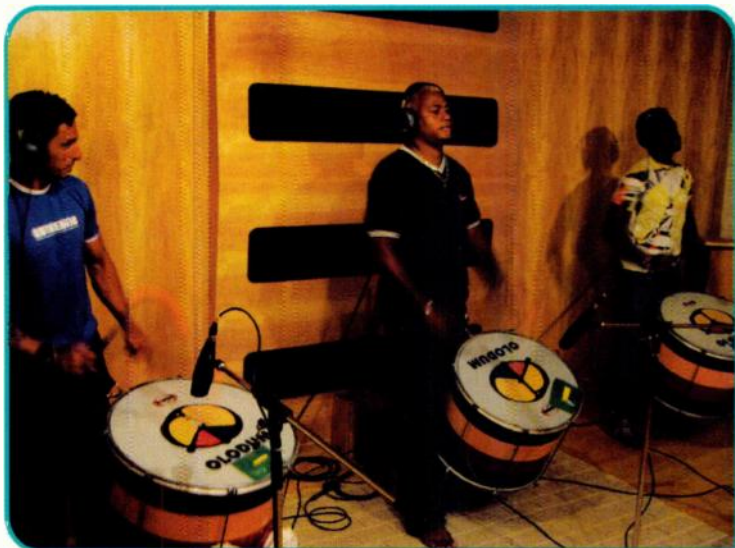
FIG. 1: The *surdos de pontas* were close-miked with AKG D112s. A spaced pair of Sennheiser MD 421s served as room mics.



BRIAN KNAYE

Groove comprises two separate but interconnected studios. Studio A features a spacious control room (outfitted with a Digidesign Control 24 mixer and Pro Tools HD3 with 192 kHz I/Os); two recording spaces (one small, one medium-size); and a *sala de vip* (VIP room) behind the control room, which, in a pinch, can be used as a third recording space.

Studio B has a smaller control room (based around an automated Soundcraft DC2020 analog mixer) and one fairly large recording space. Both control rooms are set up to record digitally (Studio B has a Pro Tools TDM system), on analog (using 2-inch, 24-track



BRIAN KNAYE

FIG. 2: The *surdos de meios* were close-miked with Sennheiser MD 421s. The room mic was a single BPM CR-73 II condenser mic, set to omni pattern and positioned above the middle surdo player.

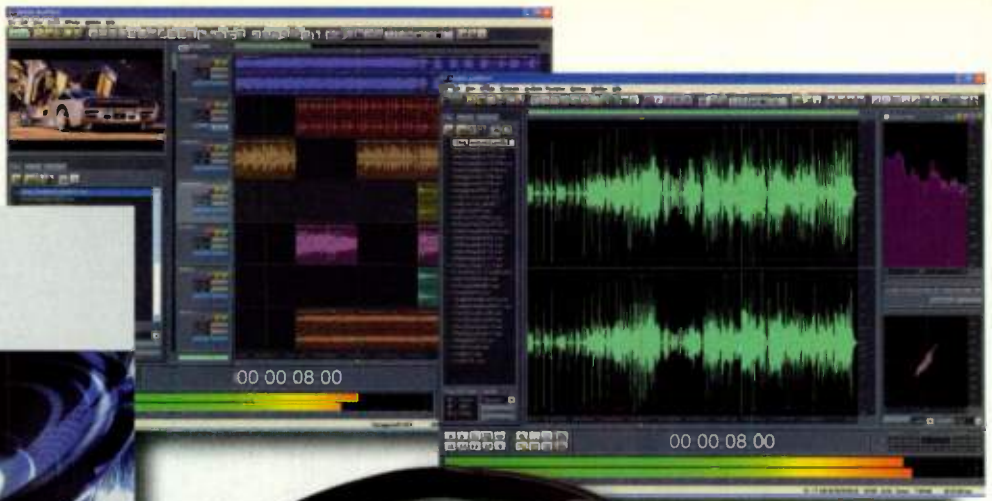
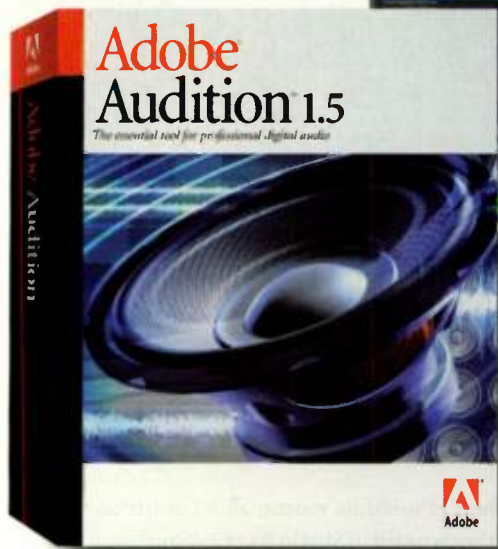
tape machines—a Studer A827 Gold Edition in Studio A, and an Otari MTR-90 MkIII in Studio B), or both.

Reis had recorded and mixed Banda Olodum's most recent album, *25 Años de Samba-Reggae* (RE Music, 2005), and everyone had been thrilled with the huge, in-your-face drum that sound he got. So it only made sense to start with the same setup. Banda Olodum typically consists of 13 musicians: 9 drummers and 4 singers. For the Psirico track we were working on, Victor had specified just one singer, Lucas Di Fiori, whom Reis set up in the back of the control room with a handheld Neumann KMS 105.

As he had done when recording *25 Años de Samba-Reggae*, Reis split the nine drummers into three groups, isolating each in its own recording space. He put the two musicians playing *surdos de pontas* (the largest drums, which produce the alternating low notes on downbeats 1 and 2 and are traditionally positioned on either side of the group) in Studio A's smaller recording space, and separated them by a waist-high gobo. The two drums were close-miked with AKG D 112s and far-miked by a spaced pair of Sennheiser MD 421s positioned high in the room's corners on either side (see Fig. 1).

Reis put the three drummers playing *surdos de meios* (medium-size surdos, traditionally positioned in the middle of the group) in Studio A's larger recording space, where he close-miked each drum from the top with an MD 421 (see Fig. 2). In addition, he positioned a large-diaphragm condenser mic (a BPM CR-73 II in omni mode) as an overhead a few feet above the middle drummer, who was the drum leader for the band.

The remaining drummers—three *repique* players, and a fourth person on *tarol* (a snare drum played with a distinctive buzz-tap-tap-tap ostinato) were set up in



Your Ultimate Source for Music Gear!

Whether you're a professional, a weekend warrior, or just starting out, we've got what you need in one place. With the world's largest selection of gear, the fastest and friendliest service, and the best guarantees in the business, it's no surprise we are your #1 source for music gear.

- 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



©2005 Musician's Friend, Inc.

FREE Catalog Subscription!



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

Source Code: EMEG

Call 1-800-436-6976

Visit www.musiciansfriend.com/free

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.



the meeting room behind Studio A's control room. Reis positioned an AKG The Tube large-diaphragm condenser mic—set to omni—a couple of feet above the repiques (see Fig. 3). He miked the tarol with a Shure Beta 98H/C, a small clip-on cardioid condenser, attached to the rim of the drum.

For the monitor mix, Reis panned the two close mics on the surdos de pontas to approximately 9:30 and 2:30, with the lower drum on the right and the two overhead mics panned hard-left and -right. For the surdos de meios, the two outer drums were panned hard-left and -right, the center drum (belonging to the drum leader) to 11 o'clock, and the single overhead mic to 1 o'clock. Reis panned the three repiques just right of dead center and the tarol to around 10 o'clock.

To refine the recorded sound, Reis applied a highpass filter (set at 120 Hz) to the track of the overhead condenser positioned above the three surdos de meios. That got rid of the low "boom," allowing him to raise the level of the overhead mic so as to sharpen the attack picked up from the drum heads. (The close mics were sufficient for representing low end from the drums.) Reis also employed a neat trick to fill out the low end: he added low harmonics to the surdos de pontas tracks using a Waves Renaissance Bass plug-in (we were recording to Pro Tools), fattening the low notes from the two drums and balancing their sustains.

FIG. 3: Three repiques, miked with an AKG The Tube condenser mic.



BRIAN KNAVE

Impressively, Reis's drum mix—pretty much the identical setup he had used when recording and mixing 25 *Años de Samba-Reggae*—sounded huge, even without further processing (such as EQ, compression, or reverb). The only thing missing was for the producer, Victor, to okay the sound.

Big Challenge

Also on the day's agenda was getting a sound in Studio B for Filhos de Gandhi, a 22-piece *bloco de afoxé*, or a drum/vocal parade group (see the sidebar "The Drums of Salvador"). This time around, Reis wouldn't have



BRIAN KNAVE

FIG. 4: Groove Studio's AKG D112s get lots of use on drum sessions. Here are two D112s positioned to capture the sound from the tops of the rums.

the luxury of multiple rooms; all 22 musicians would have to be recorded in Studio B's one recording space. To get a big sound (comparable to Banda Olodum), a combination of close- and far mics would have to be used, which could be a challenge when miking 22 players in one space.

That particular day, the Gandhys had 16 percussionists and 6 people playing *clarins* (bugles). The percussion section consisted of 9 hand drummers, 4 *agogô* bell players, and 3 shekere players. The hand drums included one *djembe*, a set of three *congas*, five *atabaques*, and two *rums*. (The last two are ceremonial drums used in Candomblé. See the sidebar "Cultural References.")

Not surprisingly, Reis selected dynamic cardioid mics for close-miking duties: an AKG D 440 on the *djembe*, a spaced pair of MD 421s on the three *congas* (positioned so that each mic was equidistant between two drums), and clip-on Sennheiser E 604s on the five *atabaques*. (The players strap the drums to their waists and move around a bit while playing, so the clip-ons are ideal.)

For the *rums* (the two bigger drums that produce the music's bass notes), Reis put two mics on each drum—one positioned near the head, the other looking into the bottom of the drum—and reversed the polarity on the bottom mics. He used AKG D112s on the tops of the *rums* (see Fig. 4). For the bottoms, he miked the bigger drum with an Audix D6 and the smaller one with an AKG D 550 (both are cardioid dynamics designed for low-end duties).

It wasn't necessary to close-mic the *agogô* and shekere players, who were lined up on either side of the drummers (see Fig. 5), or the bugle players, who were positioned along the back wall (as far from everyone else as possible). Their sounds carried just fine over the

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 7 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.

• Meet Miroslav Vitous. Miroslav Vitous co-founded the band Weather Report with Joe Zawinul 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 USD**

SR
SONIC REALITY

www.philharmonik.com

POWERED BY
SAMPLETANK

IK Multimedia. Musicians First.

www.ikmultimedia.com



thump of drums in the room. A well-placed room mic or two or a stereo pair would be sufficient.

Reis covered his bases by using three different stereo-miking setups. He positioned a spaced (and mismatched) pair of large-diaphragm tube mics (a Neumann M 149 Tube and an AKG The Tube) high in

the corners at the front of the room. He put up a Crown SASS-P MK-II (stereo PZM mic) in the center-front of the room, a foot or so above the heads of the musicians and angled down a bit. Finally, he set up an XY-coincident pair of AKG C 414 B/ULS condensers (in cardioid mode) directly below the SASS-P (see Fig. 6).

CULTURAL REFERENCES

Here is further explanation of some of the key Brazilian musical and religious terms mentioned in this story.

Pagode

Pagode (pronounced "pa-GO-djee") means different things in different parts of Brazil. Usually, though, it refers to a party with food, drinks, upbeat live music, and uninhibited dancing. The movement began in the suburban backyards of Rio de Janeiro with traditional samba musicians who were having difficulty finding commercial outlets for their "old-style" music. Like most musical movements, as its popularity and record sales grew, pagode became increasingly commercialized, taking on elements of pop and rock—and eventually alienating many who loved original pagode.

In Salvador, pagode music is perhaps less identifiable as a form of samba than as an offshoot of axé and samba-reggae. It is heavy on drums and percussion, and strongly influenced by African rhythms and vocal stylings. Four instruments form the nucleus of a pagode group: voice, cavaquinho (a small, four-stringed guitar), *surdo*, and *pandeiro* (Brazilian tambourine). But in the local taverns and dives where you're likely to find pagode, any number of other percussion instruments—such as *repinique*, *tamborim*, and shakers—are likely to get thrown into the mix, along with group singing, lewd dancing, and general rowdiness.

Axé

Originally more a marketing term than a distinct musical style, the word *axé* (pronounced "ah-SHAY") is a Candomblé greeting meaning "positive power" or "good vibration." It was first applied derogatorily by a journalist referring to the aggressive, Afro-influenced dance music coming out of Salvador's Carnival. But eventually, the musicians embraced the term, and the labels used it to market the music.

Axé might be described as what happens when electric guitar and its rock-and-roll brethren of bass, drums, and

keyboards meet the ABCs of traditional drumming (African, Brazilian, and Caribbean) on top of a triple-deck 18-wheeler with speakers wrapped all around and the volume turned up to 11, far past distortion. (I'm referring to the *trio elétricos*—humongous rolling soundstages that people dance around on the streets of Salvador during Carnival. Not all trio electrico music is axé—just most of it.) A fertile gumbo of grooves, axé mixes rhythms such as *ijexá* (African, same as *afoxé*), *maracatu* and *samba* (Brazilian), and *merengue* and *reggae* (Caribbean), with elements of pop, rock, and electronica. The result is high-voltage, good-time party music with driving, sensual rhythms.



Psirico's first album, *O Furacão Da Bahia* ("The Hurricane of Bahia"), combined elements of axé music with pagode, creating a distinctive Salvador-flavored sound.

Candomblé

Candomblé (pronounced "khan-dome-BLAY") is an African-American religion practiced in Brazil and some adjacent countries. It is especially common in Salvador, a natural port city that was a primary destination for the Portuguese slave trade. Descended from the Yoruban religion (the Yoruba live in present-day Nigeria and Benin), Candomblé has much in common with Santería, a religion practiced in Cuba. In Yoruban, Candomblé, and Santería religions, followers worship both a single "god of all gods" (Olódumaré or Olorun) and dozens of "lesser gods" (known as *orixás* in Brazil) in the form of personified aspects of nature and spirit.

The Yoruban slaves were able to preserve their religion by syncretizing the *orixás* with Catholic saints and deities. For example, Oxalá was merged with Jesus (or Senhor do Bonfim in Salvador), and *Iansã* became Saint Barbara.

One key feature the three religions share is ritual music ceremonies involving complex, polyrhythmic drumming. Each *orixá* has a corresponding rhythm; to attract the *orixá's* attention, percussionists play the rhythm while swirling participants sing the appropriate call-and-response songs (typically in archaic Yoruban). When the ritual peaks, the *orixá* descends and possesses the bodies of those who have been initiated as priests and priestesses.

SOMETHING MISSING in your buying experience? Then you should speak to the pros.

The pros at Full Compass offer the best buying experience in the audio industry. Serving our customers for 28 years, we offer knowledge, loyalty and long-term service. Our honest personal consultants reveal

your options and capabilities using the most competitive pricing available. Serving the audio and video industry for 28 years, Full Compass is proud to offer the most extensive selection of products and services in the nation.

Services we offer:

- > Rentals
- > Integration
- > Authorized Service and Parts
- > Online Product Info
- > Leasing



The most comprehensive catalog in the audio industry.

Request your free copy: FULLCOMPASS.COM



Full Service Consultation



WHERE THE PROS ARE.

800-356-5844
or 608-831-7330 locally
Monday-Friday 9-5:30 CST

¡Expertos que hablan español disponibles en x1178 y 1342!

Extended hours-Quick answers



800-476-9886

M-F 8-8 Sat 10-4 CST

Change of Direction

By early afternoon everything was set. We were getting a great sound in both studios, and the drummers were ready to roll (and to be photographed—a film crew was on hand to shoot footage for a documentary about the making of the CD). When Victor showed up, though, he listened for a few minutes, then surprised everyone by saying he didn't like the drum sound we were getting. For him, all the close mics were bringing too much focus to individual elements, resulting in an unnatural quality. He wanted the drum groups to sound as they do when you hear them in real life—playing in the streets. So he

nixed both recording setups, and soon we were tearing down the many close mics we had so carefully set.

Fortunately, we had recorded some of Olodum rehearsing the song before Victor showed up and had us abandon the multiroom, close-mic setup (see Web Clips 1a and 1b).

To get the “street” sound Victor was after meant recording the nine Olodum drummers together in one space. Reis put them in the larger of the two Studio A rooms. It was a tight fit, but they managed to set up more or less the way they do on stage: the repiques in front, the surdos de meios in the middle, and the surdos de

THE DRUMS OF SALVADOR

In Salvador, drums aren't frowned upon, or complained about, or quickly hurried off to wherever they can't be heard—basements, practice rooms, nightclubs—as is usually the case in the United States. In Salvador, Bahia, Brazil's oldest city and original capital, drums are a part of life. Salvador, after all, is the locus of Brazil's African Diaspora—the place where countless slaves were shipped, sold, and often tortured or killed, and where the music and intricate rhythms they brought with them took root and gave sustenance through the ages. It is a place where drums have a spiritual as well as physical presence.

And so in Salvador, drums are celebrated.

They are played loudly in the streets, in great numbers, and their rousing rhythms echo through the hills and alleyways, providing a spirited soundtrack for the city, and perhaps helping to account for the friendliness and alegria (happiness) for which Salvador is famous. In Salvador, people don't flip you the bird—they flip you a thumbs-up. Maybe all that drumming has some ameliorative effect?

One of the city's oldest and largest drum groups is Filhos de Gandhi (“Sons of Gandhi”), a bloco de afoxé (drum/vocal parade group that plays the afoxé rhythm) founded in 1949. The group got its inspiration from Mahatma Gandhi and his teachings of peace and nonviolence. Instantly recognizable in their white robes, terry-cloth turbans, and blue accessories (beads, broaches, and sashes), the Gandhys parade in a sea of white—always playing the same syncopated rhythm, and always attracting admiring crowds and legions of dancing followers. Several famous Bahians have donned Filhos de Gandhi outfits to parade with the group, among them Gilberto Gil (now Minister of Culture for the state of Bahia), Caetano Veloso, and Jorge Amado (a novelist).

Salvador's most famous drum group is Banda Olodum (pronounced “oh-lo-DOON”), which took its



BRIAN KWAVE

The colorful drum group Didá Banda Feminina (Didá All-girl Band) performs in Pelourinho several times a week.

name from Olóðumaré, the supreme deity in Candomblé. If you've heard the drums of Salvador, you've probably heard Olodum. In addition to 14 of its own albums released since 1987, the band has worked with an impressive roster of international talent, including Paul Simon (on the CD *The Rhythm of the Saints* and on the video *The Obvious Child*), Herbie Hancock and Wayne Shorter (on the CD *Bahia Black: Ritual Beating System*), Michael Jackson and Spike Lee (on the video *They Don't Really Care About Us*), Billy Paul (American-born international blues-jazz star), Linton Kwesi Johnson (British reggae dub poet), and Mutabaruka (Jamaican Rastafarian dub poet).

Olodum was established in 1979 as a *bloco afro*, (drum/vocal parade group consisting primarily of African-descended Brazilians). In the early days, the group successfully combined Brazilian and Jamaican rhythms with elements of funk. But it was the invention of the samba-reggae rhythm that led to international recognition for Olodum, and put them foremost among the blocos afros of Bahia.

pontas on either end. Reis selected four mics for the job: again the Neumann M 149 and AKG's The Tube, positioned high in opposite corners as a spaced pair, and two Sennheiser MD 421s, also set as a spaced pair, but along the floor, beneath the Neumann and AKG mics.

The change in setups did the trick: Banda Olodum now sounded plausibly as though it could be playing in the cobblestone streets of Pelourinho, in the heart of old Salvador towering over the bay (see **Web Clips 2a** and **2b**). The drummers were playing better, too—putting them together in one room made a difference not only in the sound of the track, but also in the feel of the music.

Hearing Isn't Believing

Of course, capturing a street sound doesn't necessarily exclude close-miking, multitracking, or any of the other options afforded by studio recording. The trick, as always, is to make it sound the way you want—no matter what happens in the studio.

After a few unsatisfactory attempts at getting a great sound on all 22 Gandhys playing and singing at one time, Victor and Reis finally pulled the bugles, quieted the singers, and focused on recording just the percussion. They could overdub the vocals and horns later.



BRIAN KRAVE

FIG. 5: The *agogôs* produce the distinctive two-pitch bell part for the *afoxé* rhythm played by Filhos de Gandhi. The musician on the left is playing a shekere.

Reis used five mics (in the positions described previously) to capture the sound of the 16 percussionists: the Crown SASS-P stereo mic, the XY pair of AKG C 414s, and the spaced pair of the Neumann M 149 and the AKG The Tube. Much of the success of the

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

JOEME EK
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

TRIAL • FREE 7 DAY TRIAL • FREE 7 DAY

25600a



Z5600a

The Z5600 has won many awards and thousands of fans with its ultra clean and detailed valve sound, nine polar patterns and great performance enhancing looks. This excellent mic delivers a superb vocal recording, with natural warmth and incredible detail, and is an incredibly versatile mic, use it on anything from live drums to a choir. With 9 graded steps between three main capsule patterns, omni, cardioid and figure of eight, the Z5600A finds uses in a huge number of applications.

Complete with full aluminium flight case, shock mount and a power supply with pattern switching and cables.

TRIAL • FREE 7 DAY TRIAL • FREE 7 DAY

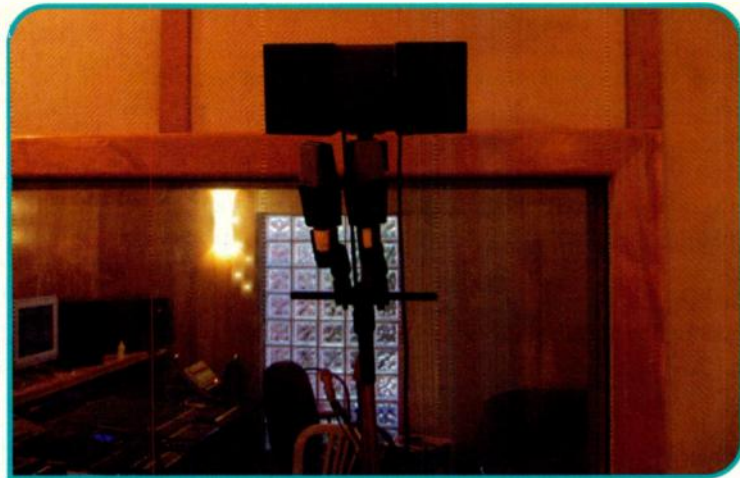
Exclusive Worldwide Representative



617-623-5581

www.sonic-distribution.com
usa@sonic-distribution.com

Recording the Drums of Salvador



BRIAN KNAVE

FIG. 6: These two stereo room-miking setups—a Crown SASS-P (stereo boundary mic) on top and an XY-coincident pair of AKG C 414 condensers (in cardioid mode) beneath—captured very different sounds.

recording (tracked to 2-inch tape on the Otari MTR-90) was due to how well Reis mixed the sound in the room before starting to record (see Web Clip 3a). Standing in the “conductor’s spot,” with his head just beneath the SASS-P, he positioned the various percussionists in the room as they played, in effect balancing the instrument levels and their positions in the stereo field.

After the Gandhys’ percussion track was nailed, Reis cleared the room, set up an XY-coincident pair of AKG C 451s, and overdubbed the bugles. To fill up the stereo field, he arranged the six *clarinheiros* in a semicircle around the pair of mics, with each player standing about 15 feet back from the mics. After that came a pass for two musicians playing the *apitos* (whistles), again recorded with the pair of 451s.

Reis recorded the group vocals the following day in the same room. He set up the Neumann M 149 Tube in omni mode and had the musicians form a circle around the mic. The singers recorded six passes, which made for a sweetly chorused sound (see Web Clip 3b).

In Its Spell

Whether you’re talking drum sets or drum groups, getting a huge, mod-

ern, in-your-face drum sound is a goal worth striving for, and there’s a lot to be learned from taking that approach. Throw everything you have at it, making each element sound as big and detailed as possible. After all, you can always scale things back in the mix later, if need be. Right?

Well, not exactly. As this session showed, the isolate-and-close-mic-everything approach is not always in the best interests of the song, particularly when the goal is sonic realism. In this case, in order to obtain the sound of a drum group playing in the city streets, a more ambient approach, using stereo miking, is just what the doctor ordered.

I hope you will check out *Macumba Popular Brasileiro* when it hits the streets later this year so that you can hear for yourself what the good doctor has been up to. His name is Márcio Victor, and he and his group Psirico are eager to work some macumba on all who listen. **EM**



Former EM senior associate editor Brian Knave recently opened the doors to his new project studio in Salvador, Bahia, Brazil. Special thanks to Daniel Reis, Márcio Victor, Banda Olodum, Filhos de Gandhi, and everyone at Groove Studio.

Great Ideas! The Right Price!



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 steel construction with included rack mount adaptors for 19" racks. An affordable high-quality problem solver for mixerless DAW and nonlinear video production environments.

PRB

*\$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!

PRB MK2

*\$199

Optional Adat Output *\$99

The PRB MKII 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 PRB 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 I/O Interface

Available at:



Distributed by
www.Kaysound.com

*Estimated Selling Price

All specifications are subject to change without prior notice.





Mbox



Digi 002 Rack



Digi 002



Take it from the top... again



This song rules!

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.





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

Doing More with GarageBand

By Roger Adler

Tips for using the latest features in Apple's sequencer.

Apple's GarageBand audio recording application has recently been upgraded to version 2, and the program offers several welcome improvements. GarageBand can now import MIDI files, automate panning, tune your guitar, and view your MIDI tracks as music notation, among other features. The new version also provides pitch correction, making GarageBand a more powerful creative tool and a more worthy alternative to higher-priced applications.

Since its initial release, GarageBand, which is included with new Macs, has offered a surprising number of useful features. The capabilities that have been added, such as the ability to import Standard MIDI files and multitrack recording, are familiar to regular users of more-established digital audio applications. As the following examples show, certain tasks can be accomplished with relative ease in GarageBand (in the original and in the newer versions). For many Mac users, this built-in audio application is all they will ever need.

Backing into the Garage

I wanted to use GarageBand's automation feature to simulate a backward-guitar effect. I began by recording a short solo guitar lick (see Web Clip 1). You can load the clip into GarageBand by dragging it onto the Timeline of

backward, the notes would fade in and abruptly end with a strong peak.

If you click on the volume automation arrow on the track, a new window will drop down. You will see a horizontal line extending the length of the track (see Fig. 1). That line represents the playback volume of the track. If you click on that line, an automation point (which resembles a small ball) will appear. By holding down the left

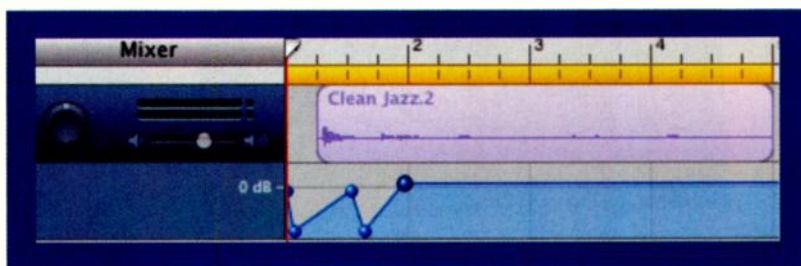


FIG. 1: GarageBand tracks provide volume line and automation points that enable you to create volume effects in individual tracks.

mouse button, you can move the ball and the line up or down. At the beginning of the clip, where the first note starts, click on and drag the volume line down. To create another automation point, place your cursor slightly to the right of the line, then click on and drag the volume line back up as that note continues. Just before the next note sounds, click on and drag the volume line straight down so that the first note ends abruptly. You can then fade up on the next note and end it abruptly as well.

Some experimentation is necessary to achieve the effect that you want. I prefer to listen to the track while creating new automation points and volume levels. Those points along the track can be moved right or left and up or down. I worked my way across the guitar track to create a final volume graph

Another big improvement in GarageBand 2 is the new guitar/bass tuner.

a new song in GarageBand's Track view. Name the track something simple, such as Backward Gtr. Listen to the part and notice that the notes generally have the typical volume envelope of a recorded guitar. Each note starts out with a prominent attack, sustains briefly, and then gradually fades out. If you could hear that performance

for my backward effect (see Fig. 2). GarageBand makes it easy to apply amp simulations and effects to the guitar track. I added some multiple delays to further process the track, creating even more interesting sounds. When I was finished, the guitar track sounded backward without playing backward (see Web Clip 2).

Right Where It Belongs

Another feature new to GarageBand is the ability to import Standard MIDI Files. You can easily test that capability by downloading one of the thousands of MIDI files available on the Internet. Some of those files are free while others are available for a nominal fee per song. (Be careful to use only MIDI files from reputable sources that pay applicable royalties to the copyright owners. Even so, the files are generally licensed for use with live performance only.) Available MIDI files cover most every style, from Beethoven to classic rock and contemporary hits. To use those files in GarageBand, drag a MIDI file onto the Timeline of a new song. The program will create new tracks, and you can choose software instruments to play them. You can also change the tempo and even view the track as music notation.

In the original version of GarageBand, the only way you could import a MIDI file was by using third-party software such as Dent Du Midi (homepage.mac.com/beryinaldo/ddm/). That is still a useful freeware application for those using GarageBand 1.0, and the utility has some nice features, including the ability to split a MIDI file into separate tracks for each instrument. In addition, it can remap drum kit sounds from MIDI files to more easily match the drum kits in GarageBand.

I purchased a MIDI file online for the song "Hey Joe," arranged in the style of the recording by Jimi Hendrix. I dragged the file from my desktop onto the Timeline of a new song in GarageBand 2, and its channels were split into individual tracks with instruments assigned to each (see Fig. 3). There was, however, one small problem. My relatively slow Titanium PowerBook couldn't play all of the tracks simultaneously, because the processor couldn't keep up. Some editing was in order.

First I deleted the melody track, which sounded cheesy when played by the assigned MIDI sax. Then I took advantage of another new GarageBand 2 feature called Track Locking. Locking a track renders the track and its effects to an audio file, freeing up processor resources. I locked all of the song's remaining tracks and was able to play the song back with nary a hiccup. Now I can add my own guitar and vocal.

You can add effects, panning, new instrument sounds, and so on until the song's arrangement suits your needs. That is typically the way to create a backing track for live or Karaoke use. Because someone spent a lot of time getting this particular MIDI file to resemble the original recording (including programming

FIG. 2: This automation curve was created to give a short guitar passage a simulated backward effect. Each note of the phrase fades in and stops abruptly as though the sample had been reversed.



FIG. 3: Dropping a Standard MIDI File onto GarageBand's Timeline in the Tracks view creates a multitrack setup with an individual track for each channel of information.

an ambitious drum track with lots of fills in the style of Mitch Mitchell), purchasing and importing it saves you countless hours of work. Bear in mind that some commercial MIDI files sound better than others, so whenever possible, you should audition files before buying them.

The Fix Is In

GarageBand 2 now makes it possible to quantize real instrument performances using the Fix Timing feature. That tool lets you apply a varying amount of fix with a simple slider. It also allows you to record as many as eight tracks and one virtual instrument at one time, a big improvement over GarageBand 1.0, which allowed recording of only one track at a time. That capability requires an audio interface with multiple inputs, and recording all eight tracks would require a FireWire or other high-speed audio interface.

Another big improvement in GarageBand 2 is the new guitar/bass tuner built-in to the transport bar. That is especially convenient for users who want to play along with some of the thousands of loops available. You also can now tune a real-instrument track after it's been recorded in GarageBand 2.

An Open Door

GarageBand may not be ready for a headlining gig in the music-production world, but its new capabilities make it a solid opening act for those eager to produce an entertaining show with some top-shelf tracks. **EMWEB CLIPS** EM

Roger Adler is an Emmy-nominated composer/producer/performer whose album (made entirely with GarageBand) is available at www.thegaragealbum.com.

Extreme Editing

By rachMiel

Over-the-top effects take your music in new directions.

Extrême forms of audio and MIDI editing can pull listeners in, and the resulting techniques often become a vital part of the ongoing evolution of electronic music. Fortunately, extreme editing doesn't require extreme tools; you can use whatever you've got—Acid, Logic, Pro Tools, FL Studio, Reason, and virtual-instrument and effects plug-ins—anything that enables you to mangle your audio and MIDI beyond recognition. I used two of my favorites, Sonar and Reaktor, for the examples given in this article.

I approach extreme editing from the standpoint of four basic parameters: rhythm, pitch, timbre, and space (reverb and panning). I'll begin with radical tempo changes to affect rhythm, and then I'll use octave displacement to alter pitch, apply some custom Reaktor effects to mangle the timbre, and use reverse reverb and Leslie-style panning for spatial manipulation.

FIG. 1: Shown here is the melody used in the article examples, with original pitches (top) and octave-shifted pitches (bottom).

Rhythm

Using Indian drumming as my inspiration, I repeatedly doubled and halved the tempo of an original melody (see Fig. 1), thus increasing and decreasing its speed (see Web Clip 1). Multiplying or dividing the tempo by a power of two (2, 4, 8, 16, and so on) produces results that are



rhythmically compatible with the original, but you don't need to limit yourself to that. For example, dividing by three after multiplying by a power of two will give you a triplet feel that is also compatible with the original.

Notice that with extreme tempo changes, the character of the melodic passage can change radically. At high tempos, the melody sounds like a single gesture rather than a sequence of individual notes. At low tempos, the inner voices dominate, and it sounds like a different passage entirely. When radically increasing tempo, it's a good idea to shorten note durations to keep the line well articulated.

Pitch

A simple but effective method for changing pitch without causing a harmonic train wreck is octave displacement:

transposing certain notes in a melodic line up or down by one or more octaves. Depending on how you proceed, you'll end up with the original melody in a higher octave, a lower octave, or jumping between higher and lower octaves.

I took the original melody, which spans 2½ octaves (F4 to B6), and transposed notes as necessary to fit it into several different ranges, some of which were rather extreme (see Fig. 1). Depending on the register and the width of the pitch range (from one to five octaves), the relation between the original and altered melody ranges from clear to almost unrecognizable (see Web Clip 2).

Because notes with the same amplitude sound softer in lower registers, you might want to adjust the volume and equalization, especially for very low and very high notes.

Timbre

One of the great joys of electronic music is the power and flexibility that it provides to sculpt timbre. Using only a handful of standard effects—filters, reverb, chorus, flange, and so on—you can produce a vast range of timbral variation. Adding custom effects to the mix, such as the Reaktor Ensembles I've used (see Web Clip 3), you can get almost any sound that you can imagine.

The Reaktor devices I used include a granular resynthesizer (crawlDaddy), a combination FM and reflection device (fmReflect), a combination granular delay and reverb (graidelVerb), a filter-distortion-delay effect (gLitch), and a mushy, enhanced chorus effect (mooshVerb). All are free downloads from the Reaktor User Library at Native Instruments Web site (www.native-instruments.com).

Space

Almost every electronic track makes use of reverb and panning. Rather than repeat what's already been done, you can add your own spin to the spatial component of your songs.

In Web Clip 4, I used reverse, reverb, and a Leslie-style panning effect to create unusual spatial effects. To create the reverse reverb, I first reversed the dry audio file, then added reverb, then reversed the result. For the Leslie effect, I used a custom Reaktor Ensemble called ez-Leslie. **EM**



rachMiel is a composer of experimental electronic and acoustic music. You can reach him at his Web site, www.rachmiel.com.

SUBSCRIBE TO

Electronic Musician®

PERSONAL STUDIO | RECORDING | PRODUCTION | SOUND DESIGN

New year, new design, new columns, more hot tips!

Electronic Musician®

PERSONAL STUDIO | RECORDING | PRODUCTION | SOUND DESIGN

GUITAR AMP PLUG-INS

THAT WILL MAKE
YOUR DAW SCREAM

*How to Create
Great Game,
Film, and Video
Soundtracks*

*Pro-Quality Mastering
On a Limited Budget*

*Three Top Engineers
Sound Off*

REVIEWS

Receptor vs Plugzilla,
EmulatorX Studio,
Sonar 4, Logic 7 Pro,
Big Knob, *and 8 more*



5 WAYS
TO LIVEN UP
PERCUSSION
TRACKS

WWW.EMUSICIAN.COM

Visit www.emusician.com or call 800-245-2737

Sealed and Delivered

By Jim Aikin

Synth envelopes can add life to your sounds.

Music is always changing. Even in the most repetitious groove, the individual sounds change from moment to moment. Some of the changes come in the form of chord progressions and changes in instrumentation, which are topics for a different article. In this column we'll look at envelopes, which are a primary tool for controlling changes in the loudness and tone color of electronic sound.

An envelope is a contour or curve that describes or controls the way some aspect of a sound alters over time. An envelope is simply an abstract shape. To understand what an envelope is doing, I'll explain its source (which might be a module called an envelope generator) and its effect on the sound.

Acoustic sounds have their own natural envelopes. Synthesizers and multitrack digital recorders provide envelopes that can be imposed on a preexisting sound, as well as numerous parameters and utilities for editing the envelope. I'll begin by discussing synth envelopes and the envelopes used to automate sounds in digital recorders.

The most basic type of envelope is volume (amplitude). A piano or plucked guitar string, for instance, jumps suddenly from no volume (before the start of a note) to a high volume, and then decays gradually back toward no volume. The amplitude envelope of an organ, a violin, or a trumpet sound, in contrast, jumps quickly to a high level and then sustains at that same level until the note ends, at which time it quickly drops back to zero. Each note has its

FIG. 1: This is an example of an ADSR (attack-decay-sustain-release) envelope. The level of the signal output from the envelope generator is shown by the height of the contour, and the time is shown on the x-y axis.

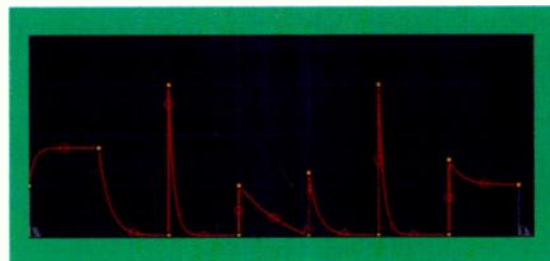
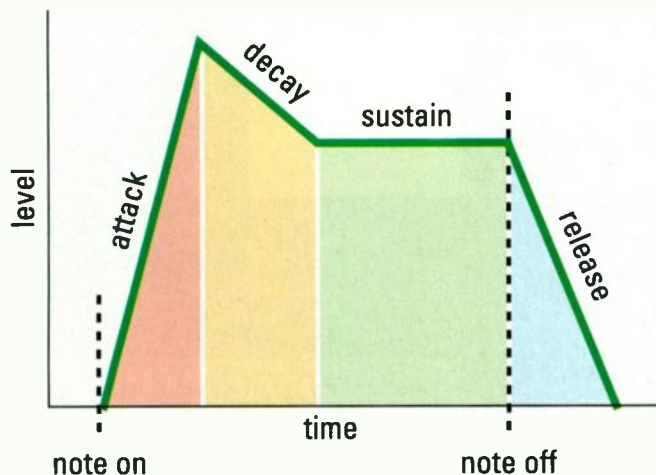


FIG. 2: In this multisegment envelope (from the Sytrus FM synth in Image-Line Software FL Studio 5), the end points of the segments, shown as yellow squares, align with the faintly visible rhythm grid. The red curve represents the output of the EG. By clicking and dragging on the red circles, you can change the curvature of individual segments.

own amplitude envelope. Other aspects of the sound, such as timbre (tone color), can also be described or controlled using envelopes.

The Classic ADSR

In order to give musically useful shapes to synthesizer notes, a synthesizer always includes one or more *envelope generators*. (The term is often abbreviated "EG.") Like other synth features, the EGs are often user-programmable. By adjusting the EG controls, you'll be able to create notes with various shapes, suitable for different musical purposes, such as plucked basses, sustaining leads, strings that swell and die away slowly, and so on.

The classic envelope generator, found in many first-generation synthesizers and still widely used today, includes four parameters: attack, decay, sustain, and release. These four terms gave rise to the acronym "ADSR," which is often seen on the front panels of such devices. The attack, decay, and release parameters control how quickly or slowly the envelope generator's output changes during the course of a note—they are time-based parameters. The sustain parameter is a level-based parameter.

Before the beginning of a note, the ADSR's output is zero. When you press a key on the keyboard, the attack portion of the envelope begins. During the attack, the EG's output rises from zero to its maximum. During the decay, the EG's output falls from the maximum to the sustain level. When the key on the keyboard is lifted, the EG's output falls from the sustain level back to zero. That process is shown in Fig. 1.

Shape, Rattle, and Roll

An envelope generator makes no sound on its own. It outputs a control signal, which is used to control one or more aspects of the sound to which it is assigned (or mapped). In addition to changing the loudness of a synth tone, for instance, you could change the filter cutoff frequency using an envelope. Assuming the filter is in lowpass mode, raising the cutoff frequency will allow more of the overtones generated by the oscillators to pass through the filter, increasing the brightness of the tone. Using the synth's filter EG, you can raise and lower the cutoff frequency automatically during the course of each note. That is easier, though less fun, than twiddling the cutoff knob manually while you play. Filter sweeps created with an envelope generator are heard in many classic types of synth sounds.

Many other aspects of the sound—such as pitch, stereo panning, and vibrato depth or rate—can be controllable using envelopes. Each synth has a slightly different configuration of features for that purpose, so you'll have to consult your owner's manual for specifics. In some synths, each section could have its own dedicated envelope generator—a pitch envelope, a filter envelope, and so on. In other synths, a set of two or more general-purpose EGs might be used to modulate many different parameters at once.

Multisegment Envelopes

Software-based synthesizers, which aren't limited to a small number of physical knobs or sliders, often have EGs that don't limit you to a fixed ADSR shape. Instead, you might find multisegment envelopes, in which you can add 32 or more separate segments to create a complex, constantly evolving contour (see Fig. 2). Segments are defined by their start and end points, each of which has its own time and level values. The end point of each segment is the same as the start point of the next segment.

Generally, a multisegment envelope can be edited graphically by clicking on and dragging segment start/end points using a mouse. More points can usually be added between existing points by right-clicking (Windows) or option-clicking (Mac) on the area where you'd like to create a point. You may be able to edit other aspects of the envelope as well, such as the curvature of the segments (using a logarithmic curve rather than a linear one, for example) and the loop start and end points. Looping envelopes, in which a number of segments are cycled through over and over until you lift your finger from the key, can be used to create exciting groove-oriented patches. With that type of patch you can play and sustain one key on a MIDI keyboard and hear a propulsive rhythm complete with pitch changes and volume accents.

Multisegment envelopes with looping are usually designed to synchronize with an external clock signal.

By switching on envelope sync, you can ensure that the rhythm being generated by the synth patch will stay at the tempo of your song. If the envelope can be synced, the Envelope Editing window will probably have a snap-to-grid feature, which makes it possible to align the segment start/end points of segments precisely with 16th notes or other rhythmic values.

Automation Envelopes

Multisegment envelopes are not only in synthesizers. Many computer-based multitrack audio recorders use similar envelopes for track automation. Such an envelope is assigned to or created within a single audio track and controls one parameter of that track, such as loudness, panning, an EQ cut/boost amount, or an effect send. You'll probably be able to edit the envelope graphically in the Track window, again by clicking to add new envelope points and then dragging individual points up and down or left and right (see Fig. 3).

Automation envelopes provide a convenient way to sculpt a multitrack mix over the course of a song. A guitar track can be boosted during the solo, for instance, and then automatically dropped into the background when the vocal enters. Before the advent of affordable automation, that type of manipulation was done by hand.

Unlike a synth's envelope generators, however, automation envelopes are always applied to one specific parameter. A single envelope can't be used to modulate several things at once. You can, however, use cut-and-paste editing to copy an envelope shape and paste it into another envelope.

The Envelope, Please

There isn't enough space here to discuss some other important envelope features—for example, many synths allow you to modulate the time or level values of an envelope segment from Key Velocity, which is important for creating realistic emulations of acoustic instruments. Understanding the fine points of envelopes is essential for any musician who uses electronics. **EM**

*Jim Aikin writes, teaches, and plays music in Northern California. His most recent book is *Chords & Harmony* (Backbeat Books). For more on Jim's varied activities, visit him online at www.musicwords.net.*

FIG. 3: In Cubase SX3, volume envelopes appear below the audio track that they control, in a separate display space that includes a gray version of the waveform. Note the text at the cursor, which shows the time and the level of an envelope point that has been clicked on.



Got You Covered

By Mike Levine

The scoop on getting exposure in the print media.

Press coverage is one of the keys to success for any independent artist or composer. A review about your CD or a feature article about your music will spread your name around and help you build credibility and momentum. It's more than just a feather in your cap; it's something that you can put on the Press or Reviews page of your Web site and in the press packages that you send out when trying to get coverage. It can build on itself.

Although getting journalists to pay attention to your music isn't as difficult as getting noticed by major-label A&R people, it's still a daunting task. As someone who has been on both sides of the fence (as a musician looking for attention and as a journalist), my goal here is to offer insights that will help you better understand what you are up against when trying to get an editor or a writer to notice your music.

I'm assuming, for the sake of this article, that you're taking the DIY approach to getting press coverage, and that you don't want to spend the money on a publicist.

Do the Research

If you are unknown and unsigned, you shouldn't expect to appear in *Blender* or *Rolling Stone*. A good place to start your quest for press coverage, however, is a local or regional music publication, or an entertainment publication in your market. You should also consider any national, local, or regional publications that have columns that cover unsigned acts.

Find out which publications might realistically give your music coverage, and obtain as many details about them as possible. It's important to get the name of the person who writes

or edits the section in which you want to appear. That way, you'll have a specific person you can submit your CD and press package to. If you send the package without addressing it to an individual, it's much more likely to end up languishing in a pile of never-to-be-listened-to CDs, eventually destined for the circular file.

Sometimes reviews and features won't be written by staffers; rather, they are written by freelance writers. There's likely to be a staff editor, however, who coordinates the section. If you can get that person interested in your music, you have a shot for coverage. If you're not sure who edits the particular section, call the editorial department and ask. A secretary or an administrative assistant can likely provide you with that information, as well as the editor's name and email address.

Get Their Attention

Once you've researched a list of target publications and names, the tricky part begins—getting somebody to listen. Based on my own experience and what I've heard from other editors, I recommend that you try to establish yourself in the journalist's mind by opening up a line of communication before sending your music. People often feel more inclined to listen to a CD from somebody with whom they have had prior contact.

After you determine who to contact, send people an email that introduces yourself, briefly describes your music, and explains that you'd like to submit your CD and press kit. (Among other benefits, that shows the editor that you've done your homework regarding his or her section, and that effort is likely to be appreciated.) Email is better than a phone call, because editors tend to be harried and are not likely to respond well to a cold solicitation call. Email, on the other hand, can be answered at their leisure.

If an editor responds to your initial email, follow up by sending your package. If you don't get a response, email again a week later. If another week passes and you still don't hear back, don't give up. While the editor might not have had a chance to respond, he or she is probably now aware of your presence. At that point, you could try either emailing again or sending your CD and press package, hoping



FIG. 1: Producing quality packaging for your music is crucial. Which of these CDs would you listen to, if you were an editor?



“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

that you've established enough name recognition so that when the package arrives, it will be recognized.

Impress the Press

When you send a package to the editor, it's important that it looks professional in every way. Don't send a CD with a handwritten label—it will look amateurish in comparison to a printed CD cover, and it will invite immediate rejection (see Fig. 1). The editor isn't likely to have a lot of time to listen, so don't give him or her any excuse not to.

It's crucial that one of your strongest songs—if not your best—plays first (if song 1 is weak, the editor will never get to song 2). The old adage about not getting a second chance to make a first impression definitely applies. I recommend starting with something up-tempo that will grab the listener quickly. If your initial song is slow or has a meandering intro, it's likely to be turned off and discarded before it makes it to the hook.

If for some reason the songs that you want to emphasize are not at the beginning of the disc, put a printed sticker on the CD's jewel case that says something along the lines of "Reviewers: please listen to tracks 3, 7, and 9."

Be sure to include a cover letter with your package that gives a clear and concise synopsis of your music, especially the genre. The cover letter should also state why your music would be a good fit for the specific section that you're shooting for in the publication.

If you're looking for feature coverage, you'll have to give the media person a compelling angle to write about. Perhaps it's the release of your CD or a charity show that you're doing, or some kind of unusual synthesis of genres (for example, "We play heavy-metal versions of bluegrass songs").

DOS AND DON'TS FOR GETTING COVERAGE

- Do spend the time to research the media outlets that you're targeting to make sure that they cover acts of your type.
- Do try to establish email communication with the editor before sending your package.
- Don't send a CD/press package unless it's addressed to a specific editor or writer.
- Do make sure that your CD/press package includes a cover letter that clearly states the musical style of your act, the type of coverage you're looking for, and any other press coverage that you've had.
- Don't forget to include contact information about every item that you send.
- Do make sure that the first song on the CD you send is one of your strongest and gets to the hook quickly.
- Do follow up about ten days after sending your package.
- Don't give up. Getting press coverage isn't easy, but it's possible.

If you've had previous press coverage, make sure to mention it and include press clippings on separate pages. You should also provide a bio (again, on a separate page) and a professional-quality photo. Make sure that you have your contact information (phone, email, and Web URL) on everything that you send.

Consider sending some sort of merchandise item (like a band T-shirt or a cap) with your package to make it stand out from the others (not all editors, however, will respond to that). A band called Punchy once sent me a package that included a pair of miniature boxing gloves. As silly as that might sound, it got my attention—I listened to and liked the CD and subsequently wrote about the band.

Make It Easy

Another important consideration is to make it as easy as possible for the editor to listen to your music. Some people advocate taking the shrink-wrap off of the CD before sending it. The theory is that the reviewer might not want to hassle with removing the shrink-wrap if he or she has another CD in the pile that's already unwrapped and ready to pop into the CD player.

Once your package has been in the journalist's hands for ten or so days, follow up with another email. If you still haven't heard anything, wait a couple of days and send another email. Remember, though, that you have to walk a fine line between being persistent and being annoying.

One way to avoid the whole dance of trying to get the journalist to listen to your CD is to not send a CD at all; instead, send your initial email with a link in it that will immediately play a streaming song file from your Web site. The one-click ease of that approach can be very appealing. The email with the link should have a similar content to the cover letter discussed previously, and the link should read "Click here to listen." Make sure that when the link is clicked on, it either automatically starts a streaming download of the file in a format that most browsers can handle (such as Windows Media, Real, or QuickTime) or it leads to a page with a choice of formats from which the editor can select. Remember, the easier you make it for the editor to hear your music, the more likely you are to get his or her attention.

Stand Out from the Crowd

I realize that all this probably sounds daunting. Just remember that if your music is strong, fits the criteria for the section of the magazine or newspaper (or Web site) in which you're looking for coverage, and is presented in a professional-looking press package, you stand a good shot of capturing the journalist's attention. **EM**

Mike Levine is a senior editor at EM.

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

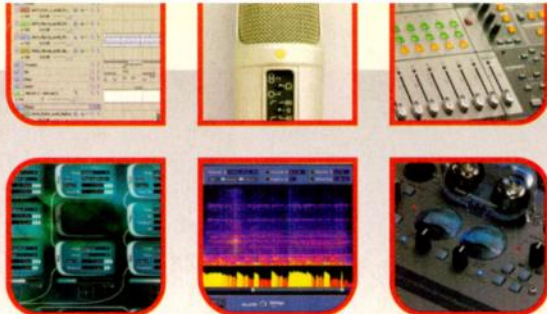


DO-IT-YOURSELF



GET OUR FREE FACTORY-DIRECT CATALOG
1-866-294-9013 • www.discmakers.com/em

REVIEWS



LEXICON Omega

Desktop recording system, with reverb included.

By Rusty Cutchin

Lexicon, known for its studio-quality outboard delays and reverbs built to withstand the rigors of 24/7 session work, has made its technology available to the home- and mobile-studio market with its desktop USB Audio/MIDI interface, the Omega Desktop Recording Studio. After some package modifications (the product was announced more than a year ago, and originally included a version of Pro Tracks Plus, since replaced by Cubase LE), the Omega is now a competitive player in the world of desktop USB interfaces.

The system is an outstanding value at \$449.95 (and is available at significantly lower street prices), offering good mic pres, 24-bit converters, a pro-style $8 \times 4 \times 2$ routing scheme, a copy of Cubase

FIG. 1: The Lexicon Omega's front panel groups input controls in a symmetrical two-column layout. Each pair of inputs, including S/PDIF, can be assigned to a pair of USB channels.

LE, and, for good measure, a Lexicon reverb: the Pantheon VST plug-in. But to see if the Pantheon and a Greek chorus of inputs and outputs make the Omega the last word in budget interfaces, we have to start at the alpha.

Road Gladiator

Housed in a stout grey and gunmetal blue lunchbox-style case, the Omega is a roadworthy, if somewhat bulky, add-on for laptop recording. Its $4\frac{1}{2}$ -inch-wide front panel makes it the Greco-Roman wrestler in the group of tabletop interfaces typified by the more svelte Mackie Spike and Digidesign Mbox. The Omega's shape is stable on the desktop, and the extra room allows for easy-to-reach knobs and features that those other interfaces lack, such as 4-stage metering and assignable USB channels.

Laid out in two-column symmetry, the Omega's front panel (see Fig. 1) has controls for two mic inputs and four line inputs. Counting S/PDIF, eight inputs can be active and assigned to the USB bus for four channels of recording at a time. Viewed top to bottom, the front panel's left column features pots for Mic 1, Line 1, Line 3, and Monitor Mix, which balances direct input levels with signals returning from the computer. Below the pots is a high-impedance $\frac{3}{4}$ -inch instrument input, which is controlled by the Line 3 pot (plugging into that input disables the rear-panel Line 3 input). The column of controls on the right has Mic 2, Line 2, Line 4, and the master stereo-output pot (Output Level), followed by a headphone jack.



LETHAL COMBINATION



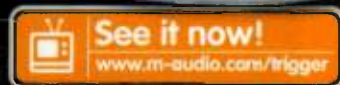
PADS | KNOBS | FADERS



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



▶ 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

Between the two columns are USB Assign and Stereo/Mono switches for each pair of analog inputs. Mic 1 and 2, for example, can be assigned to USB channels 1–2 or 3–4, or left out of the stream by using the 3-stage switch. Small red LEDs indicate which USB stereo pair is selected. The Stereo/Mono switch lets you feed inputs in either column to both outputs for direct monitoring, which is especially helpful when you're working with headphones.

Between the Monitor Mix and Output Level pots are 4-stage LED meters (-40, -20, -8, and Clip) that are selectable for USB channels 1–2 or 3–4 using a Meter Assign switch. Blue and red LEDs below the switch light up when

USB and +48V phantom power are active, respectively. Between the Instrument input and the headphone jack, a S/PDIF Assign switch routes incoming digital audio to USB channels 1–2, taking over the stream, although analog inputs can still be routed to USB channels 3–4. An accompanying LED indicates that S/PDIF is being sent to USB. On the other side of the switch, the Lock LED indicates that the Omega is synced to the transmitting unit's clock.

Rear Legions

The rear-panel I/O takes up all of the Omega's width (see Fig. 2). The unit's four ¼-inch line inputs occupy the top portion. Below those are the main stereo outputs, which are stacked vertically to the left of Mic 1's XLR input; a 20 dB pad switch; and a ¼-inch TRS insert jack. Immediately below those is a duplicate set of controls for Mic 2, with the unit's MIDI In and Out connectors positioned vertically to the left.

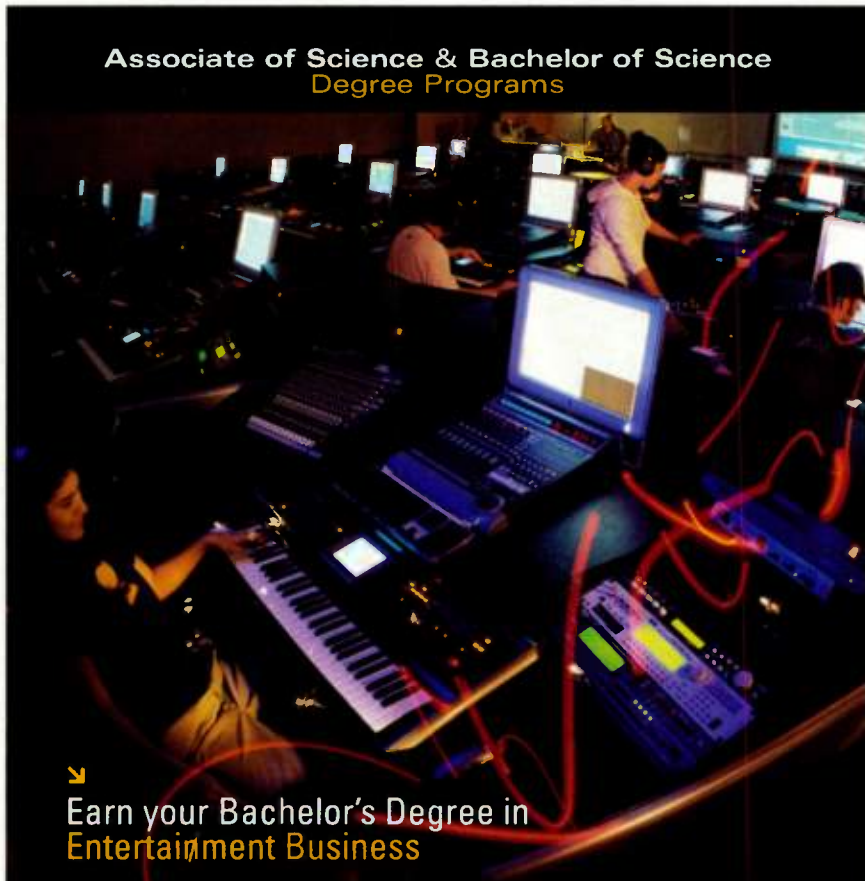
S/PDIF In and Out phono jacks, a +48V phantom-power switch, a USB connector, and a 9 VAC connector for the unit's wall-wart cable take up the rest of the rear panel.

The unit requires AC power to operate, so laptop users will need to be stationary. All controls except for the phantom-power switch are easy to get to and grasp. I hope that Lexicon will find a way to place the pad and phantom-power buttons on the front of the unit in future revisions.



FIG. 2: The Omega's rear panel includes mic and line inputs and main outputs, and S/PDIF, MIDI, and USB ports.

Associate of Science & Bachelor of Science Degree Programs



➤ Earn your Bachelor's Degree in Entertainment Business



800.226.7625
fullsail.com

If you're serious about your dream, we'll take your dream seriously.

school of

Computer Animation
Digital Media
▶ Entertainment Business
Film
Game Design & Development
▶ Recording Arts
▶ Show Production & Touring

3300 University Boulevard • Winter Park, FL 32792

Financial aid available to those who qualify • Job placement assistance • Accredited College, ACCSCT

© 2005 Full Sail Inc. All rights reserved. The terms "Full Sail" and "Real World Education" are trademarks of Full Sail Inc. For more information about our programs, visit our website at www.fullsail.com. For more information about our services, visit our website at www.fullsail.com.

PANTHEON OF REVERBS

As a bonus with its Omega desktop interface, Lexicon includes a copy of its VST reverb plug-in Pantheon (see Fig. A). Lexicon's engineers have provided 35 factory presets, featuring six reverb types (hall, chamber, plate, room, ambience, and custom) that are controlled by a user interface with 16 editable parameters.

A large jog wheel selects reverb type. The parameters Room Size, RT 60 (decay time), Pre-Delay, Damping,



FIG. A: Lexicon's VST reverb plug-in, called Pantheon, has 35 factory presets based on six reverb types, each of which can be modified by 16 parameters using graphical sliders, knobs, and a reverb-selection wheel.

Wet/Dry Mix, and Output Level are controlled by sliders in the central part of the window. A Density section has Delay and Regeneration controls, while the Echo section has independent left and right Time and Level pots. Diffusion, Spread,

Bass Boost, and Frequency get their own controls in the corner of the window.

The interface is well designed and makes it easy to understand how the various parameters interact. The clear and concise manual, which comes in printed and PDF formats, explains the parameters and presets in detail. If you're a novice, the manual is a good place to start.

Even better is Pantheon's great sound. Lexicon's engineers have genuinely instilled some of their trademark sound into the plug-in. I particularly liked its Lead Vocal Room and Chamber presets. I used them as starting points to create my own presets, which usually require short decay times. The plug in's bass boost was helpful when I ran into a preset that was a bit too bright.

Pantheon sounds good enough to add significant value to the Omega package. I wish there were an Audio Units or MAS version (I wasn't able to test Pantheon with one of the VST "wrappers," such as FXpansion's VST-to-Audio-Units-Adapter). But the supplied Cubase LE made it clear that Pantheon was an add-on worth singing about (and simulating the echo) from the top of Mt. Olympus.

TRANSPORT™ Wireless DAW Controller

"You are now free to move about the studio."



- ⌘ 2-way RF for wireless, through-the-wall communication with your DAW
- ⌘ Presets for Pro Tools®, Digital Performer®, Sonar®, Cubase® and other DAW apps
- ⌘ Easy setup, fast access to your most often-used functions
- ⌘ Remote control of transport, mutes, solos, punches, markers, loops and more
- ⌘ Onboard metering, time display, track info, footswitch jack
- ⌘ Compatible with Mac® OS X and Windows® 2000/XP



FRONTIER
DESIGN
GROUP

www.frontierdesign.com

In the Coliseum

The Omega was up and running quickly, and with a minimum of fuss. I tested the unit on a dual 2 GHz Mac G5 running OS X (10.3.8). Your Mac must have at least a 450 MHz G4 processor. PC users need at least a 500 MHz Pentium III processor running Windows XP, although Lexicon recommends a 1 GHz Pentium 4 or faster. Both platforms require 256 MB of RAM and 1 GB of available disk space, although more of each is recommended.

First I experimented with the Omega's audio capabilities. I connected my Roland Fantom-S keyboard to Lines 1 and 2, and connected the unit's stereo outputs

to my powered monitors. The Omega sounded clean and quiet, and plenty of gain was available to blast the keyboard throughout the studio. Lines 3 and 4 sounded just as good. Line 3 had plenty of headroom for my Strat when I fed its signal to the front-panel Instrument input.

Next, I tried Mics 1 and 2 with a Neumann TLM 103 with phantom power engaged and, later, a Shure SM57 dynamic mic. The dbx Silver Series mic pres installed in the interface sounded fine, with no alteration or flattening of sonic character compared to other mic pres in units I've tested in this price range.

In fact, I was pleased with the Omega mic pres. They are solid performers and pleasing, especially with large-diaphragm condensers.

The interface was recognized as soon as I connected it to my Mac's USB port. I put off using the Omega with the supplied Cubase LE software and launched my usual digital audio application, Digital Performer (DP). I had to Shift-click to activate Lexicon Mac USB (input) and Lexicon Mac USB (output) in DP's Configure Hardware Driver dialog panel. After that, the Omega was ready to record and play back.

With tracks activated, I returned to keyboard, guitar, and mics to see what kind of recording I'd get. Though the speed of my computer allowed me to work at the lowest buffer settings without latency, I used the Omega's monitor-mix control frequently to monitor my direct and DP's converted sound. I detected no any degradation or alteration in

analog preamp
digitally controlled

Frank G.

carvin.com/TN100
frankgambale.com

TN100 Tone Navigator Features include:

- Analog Distortion and Crunch
- Bass, Mid, Treble, and Presence controls
- Two Mid-sweeps as found on high-end studio consoles
- One button access for each control, MIDI interface
- Dual 24-Bit Effects (Chorus, Reverb, Echo, Flange)
- 2nd effects loop with stereo return
- Cabinet voiced 1/4" & XLR outputs

CARVIN.com
800.854.2235
Proudly Made in San Diego, CA
Get your FREE Carvin Pro sound, Amp & Instrument catalog

PRODUCT SUMMARY

LEXICON Omega

desktop recording system
\$449.95

OVERALL RATING (1 THROUGH 5): 4

PROS: Compact and stable on desktop. Clean and quiet. Good mic pres. Four line ins. Preconverter 4-stage meters. Assignable USB channels. Assignable S/PDIF. Cubase LE and Pantheon Reverb included.

CONS: Small phantom-power and pad buttons on rear. Bulky. Some labels too small.

MANUFACTURER

Lexicon
www.lexiconpro.com

OMEGA SPECIFICATIONS

Analog Inputs	(2) balanced XLR mic; (4) ¼" TRS balanced/unbalanced line; (2) ¼" TRS balanced/unbalanced insert; (1) ¼" unbalanced instrument
Analog Outputs	(2) ¼" TRS balanced or unbalanced
Digital Input	coaxial RCA (S/PDIF)
Digital Output	coaxial RCA (S/PDIF format) always transmits the audio data from the USB stream
Maximum Input Levels	mic: -2 dBu (150Ω source); line: +19 dBu (40Ω source); instrument: +19 dBu
Frequency Response	20 Hz–20 kHz
THD+N (20 Hz–20 kHz)	mic: <.005%; line: <.012% A/D, <.012% A/D/A; instrument: <.0125% A/D
Crosstalk	<-74 dB, 20 Hz–20 kHz, <-95 dB at 1 kHz (typical)
Output Level	+19 dBu maximum
Output Impedance	110Ω
Dynamic Range (20 Hz–20 Hz)	101–118 dB
USB	type B socket, version 1.1 (version 1.1 hubs not supported)
Dimensions	4.62" (W) × 7.25" (H) × 7.75" (D)
Weight	2.65 lbs.

the signal that I sent into the interface or in the one that I got back from DP.

I liked being able to control elements in the USB stream from the Omega's front panel. Along with the onboard metering, it's safer and more logical to send data to the computer by controlling record levels pre-converter (as opposed to attenuating the incoming digital signal in software) and converting only what you intend to record at a given moment.

To the Omega

The advance of technology has made basic USB interfaces somewhat of a commodity item, and in some respects, there's no more room to grow, especially for units that have wrung every last drop of 4-channel recording ability out of the original USB 1 spec. Lexicon has proven, however, that there's still life in the format through creative use of

a mixerlike environment with real bus assigning and better metering.

In addition, the Omega is the cleanest and quietest of several tabletop interfaces that I've tested, and the unit demonstrates real value. Anyone who needs high-quality mic pres and flexible routing for a fair price will benefit from the package. The Omega is a fine 4-channel USB interface, and the included software (see the sidebar "Pantheon of Reverbs") makes it attractive to novices and to those with more experience under their belts. And speaking of belts, as long as you let out the straps of your laptop bag a little to accommodate its extra girth, the Omega should make a perfect traveling companion.

Rusty Cutchin is an associate editor of EM. He can be contacted at rcutchin@comcast.net.

Instruments

Samples

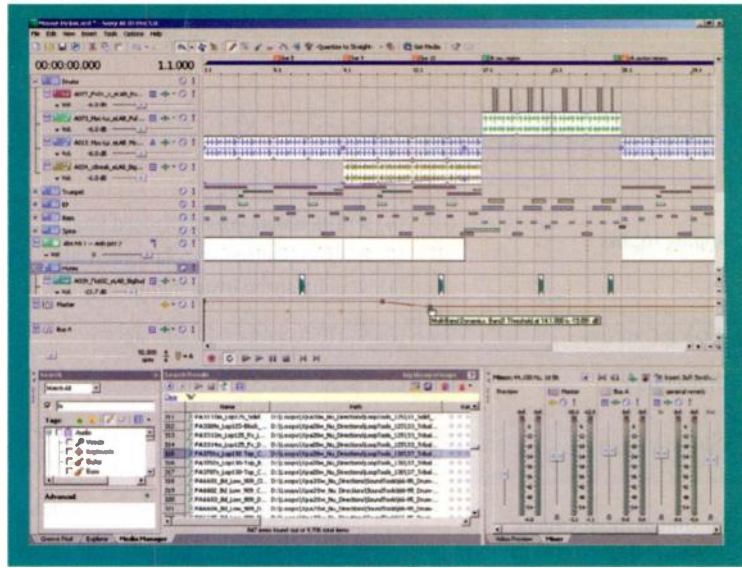
Beats

Sounds

Loops

 **bigfishaudio.com**

FIG. 1: Sony Media Software Acid Pro 5 offers folder tracks, which are shown at the top of this display. The Drums folder is open to show its contents, and the contents of the next four folder tracks are displayed as miniature blocks. Note the Media Manager database in the lower-center pane.



SONY MEDIA SOFTWARE Acid Pro 5 (Win)

Popular loop software adds high-end tools.

By Jim Aikin

Whenever a major corporation acquires a music software company, there's always some uncertainty about what the future holds. When EM reviewed Acid Pro 4.0 in its June 2003 issue (available online at www.emusician.com), the program was still under the aegis of Sonic Foundry. Today, however, Acid is a Sony product. It is a special pleasure to report that Sony has taken Acid's development seriously. Acid Pro 5 boasts several vital new features that should keep it competitive in the hurly-burly of desktop music production.

For starters, Acid can now function as either a ReWire host or a ReWire client, which allows it to integrate fairly seamlessly with a number of important DAW programs on the PC. Acid can now quantize MIDI and audio to grooves in a flexible and intuitive fashion. The Track view has been cleaned up by the addition of folder

tracks (see Fig. 1), and the new Media Manager database utility will be a godsend to any Acid user who has a large loop library.

Acid is primarily a multitrack production tool, and therefore it makes no attempt to compete with the real-time interactive capabilities of programs such as Ableton Live. It has some important features, though, such as support for video and surround mixing, that Live lacks. In this review, I'll focus on the new features in Acid Pro 5. But first I'll start with a quick survey of the program's basic functionality.

The Acid Base

Acid's raison d'être is to allow audio loops to be time-stretched and pitch-shifted seamlessly. Throw a bunch of loops into the program, paint them into the tracks where you want them to play, and you can achieve a professional-sounding mix with the greatest of ease,

provided you have the right loops on your hard drive. If Acid doesn't change the tempo of a beat or other audio clip with the kind of transparency or precision that you need, you

Among my favorite new features in Acid are folder tracks.

PreSonus 
freedom to record.



FIREBOX

WWW.PRESONUS.COM



Cubase • LE

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

© 2002 PreSonus Audio Electronics. All rights reserved. Mac logo is trademark of Apple Computer, Inc. registered in the US and other countries. Cubase LE is a registered trademark of Steinberg Media Technologies GmbH.



Musician's Friend

The World's Largest Music Gear Company

For Your **FREE** Catalogs

1-800-436-6976 • www.musiciansfriend.com/free

Source Code: EMEGPS

- 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.



can open the Track Properties window and drag the slice points around on the waveform, auditioning the results at the current tempo of the project until it sounds good.

The track-editing commands are comprehensive. When dragging-and-dropping audio clips, you have the option of making them snap to a grid. Tempo changes can be programmed, and you can pitch-shift different instances of a sample separately in order to follow a chord progression. Five types of timeline markers are supported. As an alternative to using track automation, you can fade in at the beginning of an audio clip and fade out at the end.

Track parameters can be automated with graphic point-and-click envelopes (though not by recording control moves in real time with the mouse). The same technique applies to plug-in effects' parameters, if the plug-in allows it. A built-in suite of effects gives you plenty of control over sonic details, and Acid's VST support opens up a world of other options. I tried



FIG. 2: Acid's Media Manager window can be "floated" and enlarged to show more data. Here, I've searched for files that have the word "loop" as the type or in the name.

Antares Filter and iZotope Trash—two of my favorite plug-ins—and got good results. My computer had two freeze problems, however, when opening the Edit window for Filter. Sony reports that it has duplicated the problem—which is intermittent—and is working with Antares on a fix. I also had two crashes while Acid was running as a ReWire slave under Cubase SX 3. Sony has not seen any other reports of that problem, but the company indicates that version 5a, which should be available for download by the time you read this review, contains several ReWire fixes.

THE FIRST PRE-AMP WITH PLUG-INS!!!

Hand-Assembled In USA Modular Pre
Introducing the **AP-1**



AP-1 EXCLUSIVE FEATURE-SETS:

- Hand Crafted in USA, by Top U.S. Engineers
- Toroidal Power Supply – No Wall Wart Here!
- Open-Ended Architecture to Vary Tone and Texture
- Dual-Topology with ADK "Pop and Swap"™ Technology
- Interchangeability – Both at the Op-Amp and the Transformer
- Robust Design and Tonality are the Paramount Design Criteria
- Upgradeable both in the future, and – remarkably – from the past!

IT'S MORE THAN A PRE-AMP
- IT'S A TIME-MACHINE!!!



ADK MICROPHONES, U.S.A.
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



Although most programs that host plug-ins have a CPU usage meter, Acid is not one of them. Nor will Acid freeze tracks that use synth or FX plug-ins in order to free up CPU horsepower—another feature found in most DAW software. It is true that you can render a track and then unload the plug-in, but that takes several extra steps. What's more, Acid will destroy any automation envelopes when an effect is unloaded, which will be a big headache if you should need to reedit the effect automation later.

Acid's Chopper window provides a quick way to make new beats out of old ones or do buzzing 64th-note fills. Regions within a loop can be selected and inserted in the track using key commands, a much faster method than dragging segments around in the track window itself. Using the Chopper is definitely fun!

MIDI Miasma

Starting with version 4, Acid added MIDI tracks, which can be used with either external hardware synths or VSTi soft synths. Though they are functional and are certainly an important addition to the program, Acid's MIDI implementation is inferior to what you'll find even in an entry-level sequencer. The conceptual logjam, which Sony has failed to come to grips with in the version 5 release, arises from the fact that Acid allows you to assign only one media clip to any given track. Although that might make sense for audio tracks (albeit Acid is the only program that I know of with this limitation), it doesn't make any sense for MIDI tracks.

Several undesirable results stem from that design choice. For instance, the piano-roll editor window doesn't scroll during song playback, and its time ruler always starts with bar 1, beat 1, no matter where in the song the MIDI clip is positioned. What's worse, while you can record a new MIDI phrase just the way you would in a real MIDI sequencer, once the phrase has been recorded, you can't overdub or punch-in on it. Flubbed notes can be fixed in the piano-roll or event-list window, but if you need to erase a particular lick within a MIDI track and rerecord it, your new recording will go onto a different track. Copying and pasting will then be required to get the two MIDI licks into the same track.

In version 5, MIDI Control Change contours can be edited graphically in the piano-roll window using a familiar controller

strip. Unfortunately, the selection and eraser tools don't work in the strip: whenever the mouse cursor is over the strip, it turns into the paintbrush tool. As a result, if you should want to overdub a MIDI part that includes Control Change or Pitch Bend data, cutting-and-pasting can't be used to get the data into a single track, because those data types can't be selected for copying. They can be selected for deleting in the event list, but the Copy command doesn't work there.

While using Native Instruments Absynth 2 as a plug-in synth in Acid, I found that Absynth played the correct patch when I loaded the file but sometimes subsequently



MUSICIANS INSTITUTE

CAREERS IN:

- GUITAR
- BASS
- KEYBOARD
- PERCUSSION
- VOCAL
- GUITAR MAKING
- AUDIO ENGINEERING
- MUSIC BUSINESS
- MUSIC VIDEO AND COMMERCIAL PRODUCTION

WEBSITE: WWW.MI.EDU
E-MAIL: admissions@mi.edu
TEL: 323.462.1384
ADDRESS:
1655 McCadden Place
Hollywood, CA 90028

MUSICIANS INSTITUTE
THE WORLD'S MOST INNOVATIVE CONTEMPORARY MUSIC SCHOOL
Hands On! Experience - Saturday, July 23rd 10:45AM
For Reservation Call 1-800-255-7529 ext. 151

Affordable RTAS Solutions for the Pro Tools LE Platform



mcdsp.com

ACID PRO 5

REVIEW

switched back to patch 1. That happened several times.

Managing Media

Acid's new Media Manager will be a terrific boon for those people who have a collection of loop libraries on their hard drive (see Fig. 2). Media Manager creates a searchable database of all the loops in whichever folders you choose. Initially, the database will show only the information in the file name and any tags that the library developer thought to include in the file header, which means, for instance, that you could see a list of dozens of files all named "drums02." You would then have to scroll over to the column containing the full directory path information to figure out what you're hearing.

You can add existing tags or your own comments to any item, which will then be included in the search process. Compilation and searching of the database are fast, and you can organize the database window to show the items with which you are most concerned. Note that the Media Manager is in addition to, and not a substitute for, a conventional browser. That is good, because you can still use the browser to find files that are on uncataloged CDs, for example. (Sony claims that all new Acid libraries are now cataloged.)

Groovin'

The new Groove Pool in Acid 5 offers a quick way to realign audio to fit any rhythmic feel (see Fig. 3). Just drag-and-drop a groove from the Groove Pool window onto a track, and notes within the audio file will shift forward or backward as needed to match the groove. Grooves can be extracted from any existing loop and can be added to the Pool, provided that stretch markers already have been placed in the loop file. (If stretch markers haven't been placed, you can do that yourself.) You can also move groove markers to different spots to create your own grooves.

It's normal for sampled loops to have slightly different placements of different beats, and Acid gives you a quick way to line up the beats so that they lock together. Grooves can be applied to different portions of a single sample, and grooves can be applied to MIDI data in exactly the same way.

In my experiments, applying grooves to audio clips didn't always sound good. Even when a beat is playing back at its original sampled tempo, laying a new groove on it sometimes produces audible time-stretch artifacts. It's best to use grooves selectively; for instance, in a beat with an 8th-note feel and just a few 16th notes, I added the "16th Note Swing" groove *only* to the spots where there were 16th notes.

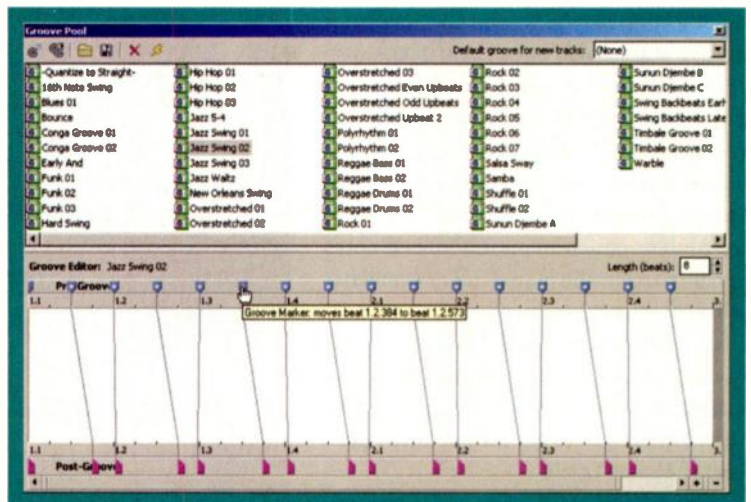


FIG. 3: The Groove Pool window shows 51 factory grooves in the upper area and the Groove Editor below. Pregroove and postgroove markers can be dragged freely left and right.

PRODUCT SUMMARY

SONY MEDIA SOFTWARE Acid Pro 5

loop sequencer

\$399 retail; \$299.96 direct download

OVERALL RATING [1 THROUGH 5]: 3

PROS: Video and surround-mixing support. New database and groove-editing functions. ReWire (host and client).

CONS: MIDI track handling has not been improved. No CPU usage meter. No track freeze.

MANUFACTURER

Sony Media Software
<http://mediasoftware.sonypictures.com/products/acidfamily.asp>

That changed the feel of the 16ths without blurring the other drum hits. You can find an example of this editing technique on the EM Web site (see Web Clip 1).

More New Stuff

Among my favorite new features in Acid are folder tracks. After creating a folder track, you can tuck any number of other tracks into it and open or close the folder. That eliminates a lot of clutter in the Track window. If your project uses a dozen different drum loops, for instance, you can put them in a folder track, name it Drum Loops, and close the folder so that the dozen tracks are displayed as only a single narrow strip. Folder tracks can be muted or soloed but have no other track parameters. (A global output-level fader for each folder track would be a nice addition to the program.)

Speaking of track muting, I'm still waiting for another problem in Acid to be fixed: the Track Mute buttons override the track's volume fader, but a track's output can be sent to a bus either prefader or postfader. If a prefader send is being used as a track output, the Mute button doesn't shut off the sound of the track. (Sony claims that design choice was intentional, and it is not viewed as an oversight in need of fixing.)

Multimedia developers will be pleased that Acid lets them add interactivity to a presentation streamed over the Internet. At

a particular spot in the music, for instance, you can open up a new Web page. Text (even closed-captioning) can be added, as well as clickable links. And speaking of media, Acid will now perform disc-at-once CD burning.

You can extensively customize Acid's keyboard command set to match the way you like to work. The toolbar at the top of the Main window can also be customized. Most of the other enhancements in version 5 are minor: a metronome for playback and recording, the ability to reverse playback of a given audio clip without stopping the transport, support for VSTi soft synths that require multiple mixer channels, and mixer routing from one effects bus to another, rather than from only each bus to the master bus. There's also support for Macromedia Flash SWF file import, the ability to adjust the levels of several clips within a track with a single mouse move, and more. The metronome lacks precount for recording, but at least you can control its loudness. I tested the VSTi support by instantiating Native Instruments Battery 2, whose 16 stereo outputs make it a real mixer hog, and Acid had no trouble coping.

The Acid Test

The new features in Acid Pro 5 make the program a pleasure to work with. ReWire support largely overcomes the significant limitations of Acid's MIDI tracks, at least for anyone who owns a ReWire-capable sequencer. ReWire also makes it easy to use Acid in tandem with Reason for deep-groove productions. The Groove Pool and Media Manager are excellent additions, and the folder tracks, while a seemingly humble detail, eliminate screen clutter, which makes a big difference in handling the workflow. My biggest reservation about Acid is that it won't freeze CPU-hogging tracks. Overall, I'd put Acid in the "good but not great" category. It isn't the lightning bolt that it was six years ago, but it's still a respectable piece of software and will continue to have a worthy place in many desktop music environments.



Jim Aikin writes, plays, and teaches in Northern California. His latest book is Chords & Harmony, an introduction to music theory. For more information, visit him online at www.musicwords.net.

TRIAL • FREE 7 DAY TRIAL • FREE 7 DAY



SE

Z3300a

The Z3300A is our most versatile FET microphone and utilizes a large 1.07" twin diaphragm, which gives the engineer a choice of three polar patterns, omni, cardioid and figure of eight.

Couple this with a 100Hz low cut filter and new ultra clean, ultra quiet Z range electronics and the Z3300A is the ultimate solid-state microphone for almost all recording applications, from vocals, to pianos and acoustic instruments.

TRIAL • FREE 7 DAY TRIAL • FREE 7 DAY

Exclusive Worldwide Representative

SONIC DISTRIBUTION

617-623-5581

www.sonic-distribution.com
usa@sonic-distribution.com



FIG. 1: Tascam's FW-1082 has audio and MIDI I/O, an independent audio mixer, and control-surface functionality in one compact device.

TASCAM FW-1082

Tascam creates a compact FireWire control surface. By Orren Merton

Tascam's FW-1082 is a FireWire audio/MIDI interface and control surface that can function as a fully capable stand-alone audio mixer. Tascam and Frontier Design Group have again joined forces to produce the unit, a descendant of Tascam's flagship control surface, the FW-1884. The FW-1082 is designed for those who want an all-in-one control surface but don't need some of the options and capabilities offered by its more expensive sibling.

Jacks-of-All-Trades

The FW-1082 (see Fig. 1) is approximately two inches shorter in each dimension and eight pounds lighter than the FW-1884. Nevertheless, Tascam and Frontier Design Group have packed a full complement of I/O features onto the FW-1082's chassis. The unit's rear panel (see Fig. 2) has eight balanced TRS inputs, which can be switched between line and guitar level. The first two channels have TRS insert jacks. There are four XLR mic inputs with switchable phantom power for channels 1 through 4.

The XLR and TRS inputs for channels 1 through 4 are wired in parallel, and you can't select between the TRS and XLR inputs for them. Tascam warns you to connect a source to either the TRS or the XLR input for a given channel, but not to both inputs simultaneously.

The FW-1082 has two balanced TRS monitor outputs and coaxial S/PDIF I/O. The analog and digital

I/O can operate simultaneously, allowing for a total of ten simultaneous input channels and four simultaneous output channels. It also has two sets of MIDI I/O ports, a stereo-headphone jack, and a power button and DC input jack for the included lump-in-the-line power supply. Interestingly, the unit has two FireWire ports, but the manual strongly suggests that you don't connect anything to the second FireWire port.

Under Control

The top of the FW-1082 contains the main controls for the mixing, monitoring, and control surface functions of the device. The upper-right section houses the monitor and headphones volume knobs, as well as the phantom power, FireWire, external word clock, digital input, and MIDI I/O LEDs. The Mode control buttons are located below that section. Those allow you to switch the unit into Computer Control-, MIDI Control-, or Monitor Mix mode. In a nice touch, there is a dedicated Control Panel button that launches the FW-1082 Manager software (or brings it to the front if it's already running). The software runs on Windows XP or Mac OS X.

The input section of the FW-1082, which is located in the upper-left corner, has a trim control as well as signal and overload LEDs for each channel. The trim knobs on channels 1 through 4 are adjustable from -2 dB to 54 dB of gain, while the trim knobs on channels 5 through 8 provide -2 dB to 44 dB of gain. The four center buttons

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



CONNECTIONS are
EVERYTHING

- › Patented compression spring plugs* for unrivaled connections
- › Premium oxygen-free copper conductors
- › Double-insulated/ double-shielded design
- › Guaranteed for life
- › Check out the full line at: www.planetwaves.com



**PLANET
waves**

www.planetwaves.com

J. W. Adams & Company, Inc. | P.O. Box 290 | Farmingdale, NY 11735 USA

FW-1082 SPECIFICATIONS

Analog Inputs	(8) balanced TRS, (4) balanced XLR, (2) TRS insert
Analog Outputs	(2) balanced TRS, stereo headphone
Digital I/O	coaxial S/PDIF I/O, (2) FireWire
MIDI I/O	(2) MIDI In, (2) MIDI Out
Adjustable Gain	+56 dB (channels 1–4), +46 dB (channels 5–8)
Internal Bit Depth	24-bit
Sampling Rates	44.1-, 48-, 88.2-, and 96k Hz
THD (Level +4 dBu)	<.005% line in to insert send <.01% line in to monitor output
Noise Level (20 Hz–20 kHz, Trim Maximum)	<-128 dBu mic in to insert send <-64 dBu line in to monitor output
Crosstalk (@1 kHz)	>80 dB
Dimensions	19.11" (W) × 3.25" (H) × 15.2" (D)
Weight	14.31 lbs.

allow you to select the sampling rate (44.1-, 48-, 88.2-, or 96 kHz) in Monitor Mix mode. In the other modes, the buttons perform control surface functions. (You can also select the sampling rate in the FW-1082 Manager software.)

The input section has no metering other than the signal and overload LEDs, and the monitor section has no output monitoring. Moreover, the FW-1082 Manager software has no software meters, although Tascam leaves open the possibility that that might change. You can monitor levels visually in your DAW application, but that won't help you monitor direct-output levels.

The channel controls consist of eight 60 mm touch-sensitive motorized faders, each with a select, a mute, and a solo button. A separate 60 mm master fader is positioned directly to

the right of the channel faders. The select button becomes a REC enable button when you hold down the REC button. In Monitor Mix mode, the channel controls adjust the input and output channels just as the faders and buttons do on other hardware mixers. The Master Fader can also be set up in the FW-1082 Manager software to control analog monitor levels. In Computer Control mode, the channel controls serve as software controllers.

Finally, the FW-1082 has a complete selection of transport controls: in addition to the standard play, rewind, fast-forward, record, and stop buttons, there are four cursor buttons, two bank-select buttons, locate forward and back buttons, and a jog wheel. Those controls are mainly for use in Computer Control mode, but in Monitor Mix mode, the bank selection keys allow you to monitor either the



FIG. 2: The FW-1082's rear panel contains all of the unit's I/O connectors, including the headphone jack.

analog or the digital inputs. Most DAW applications offer full FW-1082 support either directly (Logic, Sonar, and Digital Performer) or through the FW-1082's built-in Mackie Control or HUI modes (Cubase, Nuendo, and Pro Tools).

In Use

I used the FW-1082 extensively, producing a rock track from recording through mixdown. Configuring the interface is intuitive. The FW-1082 delivers more than enough gain for instruments and most microphones, but its trim control lacked enough headroom for mics that need serious preamplification (such as my Royer R-121 ribbon mic). The converters sound neutral and are not hyped in any particular frequency. The FW-1082 drivers were solid, never crashing or exhibiting audio dropouts during weeks of daily use.

As a software controller, the FW-1082 provided everything I needed for a basic session, including channel faders, pan knobs, and mute, solo, record-enable, and transport controls. The FW-1082 lacks all the assignable function buttons of its larger sibling, the FW-1884, but the newer model's features are more than enough for most jobs. Personally, I rarely use the more in-depth editing functions of other software control surfaces.

I was happy to discover that the motors of the FW-1082's touch-sensitive motorized faders were quieter than those in my Logic Control. At first I missed the 100 mm fader track of the larger control surfaces, but in use I found that the shorter 60 mm one was still usable.

The Tascam FW-1082 ships with a SoftLCD application that provides a resizeable "scribble strip" on your monitor. The utility displays the channel information that a Mackie Control or a HUI would display on its surface LCDs. That utility was of limited use. I don't keep my control surface right under my monitor, and trying to use SoftLCD resulted in a fair amount of neck twisting. I would prefer dedicated LCDs on the control surface.

PRODUCT SUMMARY

TASCAM FW-1082

FireWire control surface/
audio interface
\$999

OVERALL RATING [1 THROUGH 5]: 4

PROS: Well-built. Quality converters. Very well supported control surface. Channel inserts for channels 1 and 2. Includes limited versions of Cubase LE and GigaStudio 3 LE.

CONS: Group selection of phantom power. XLR and TRS inputs on channels 1 through 4 cannot be connected simultaneously. No metering. SoftLCD program instead of hardware LCDs.

MANUFACTURER

Tascam
www.tascam.com

Compact Control

Overall, I was left with a good impression of the Tascam FW-1082, despite wishing for certain capabilities. The rear panel I/O is convenient, but I would have liked the headphone jack to be placed on top of the device. It would be nice if the unit allowed users to select between the TRS and XLR input on channels 1 through 4, and select phantom power on those channels individually.

The unit's design compromises make sense, however, and didn't get in the way during actual session use. The FW-1082's knobs, buttons, and scrub wheel are solid, and the device feels sturdy and rugged. It sounds good and is easy to operate. Users looking for an all-in-one recording/control surface solution and who don't need all the I/O and controller functionality of the FW-1884 should give the FW-1082 serious consideration.

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

APOGEE USERS

Vincent Jones



“ I have recently added the Mini-DAC to the keyboard setup that I use while touring with Sarah McLachlan. What a difference from my hardware sampler converters! The combination of Logic and the Mini-DAC is not only a leap forward in sound quality, but it has enabled me to eliminate a couple of samplers from my setup. I also have a Rosetta 200 with an X-HD card. So, I'm looking forward to using Apogee in the studio with my Pro Tools rig at home!”

Musician/Producer/Mixer

Recent Projects: Sarah McLachlan, Dave Gahan,
Cowboy Junkies

Mini-DAC

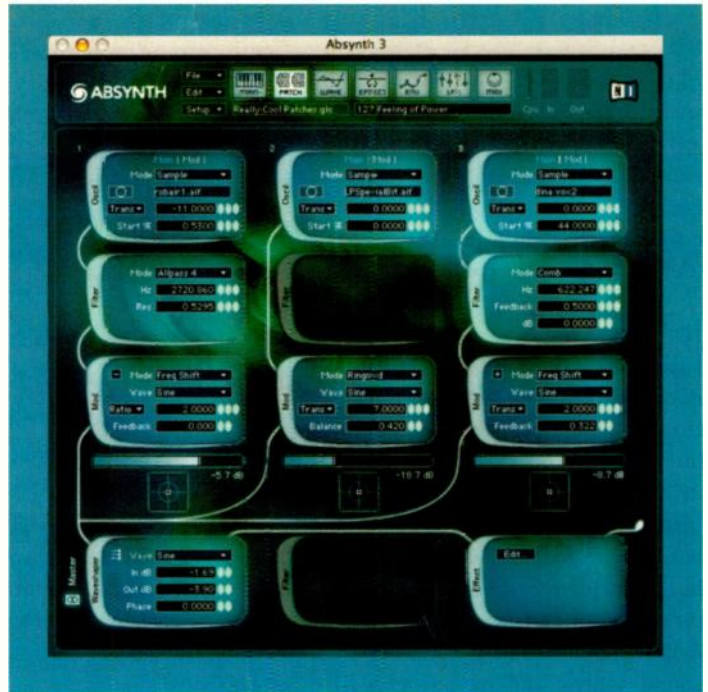
2-channel 192k D/A Converter
(with optional USB)



read more at:
www.apogeedigital.com

APOGEE
SOUND AMAZING

FIG. 1: Almost everything in Native Instruments Absynth 3 takes place in one window. To activate or deactivate a module, simply click on it.



NATIVE INSTRUMENTS Absynth 3 (Mac/Win)

A software synthesizer that continues to amaze.

By Jonathan Segel

In its original incarnation, which featured the now-familiar H. R. Giger-esque interface and sophisticated envelope programmability, Absynth was a shoe-in for an EM Editors' Choice Award in 2002. Since then, Native Instruments has taken the formidable software synthesizer through two major revisions. (Absynth 2 was reviewed in the January 2004 issue of EM, available online at www.emusician.com). The most recent incarnation, Absynth 3, adds a number of welcome features, including two new source modes, support for multi-channel output, and the ability to process three external stereo audio signals.

The ability to create complex rhythms within a single sound are almost endless.

Absynth 3 can be used as a standalone instrument with Core Audio on the Mac and ASIO 2.0, DirectSound, and MME on the PC. It can also be

used as a plug-in, and it supports VST 2.0 and RTAS on both platforms, as well as DXi for Windows and Audio Units on the Mac. As a plug-in, Absynth syncs its envelope grid seamlessly with its host: it worked easily in all windows as an auxiliary input to Digidesign Pro Tools LE.

Sources of Certainty

Absynth 3 has three separate sound sources, called Oscil modules, which can be mixed and modulated against one another. Each Oscil module has eight modes. The wavetable synthesis modes include a single oscillator, a double (modulated) oscillator, FM, Ring Modulation, and a new Fractalization mode, which offers math functions that are applied locally to the module's waveform. You can also choose one of two sampling modes—Sample and Granular—or the new external Audio In mode.

A new feature added to the wavetable synthesis functions is the Unison tab, which gives you control over the number of voices produced (as many as eight) and the transposition of each voice. Another new feature for those

modes is the ability to switch between a free or prescribed initial phase setting for the oscillator: in Free mode the phase is not reset with each Note On.

The instrument's sample playback is basic, but it lets you adjust frequency, loop points, and start times. Granular mode has controls for playback speed, density, and grain size, as well as randomization amounts for time, frequency, and amplitude. There is no keymapping control in Absynth 3, but you can use the note-scaling editor in the MIDI window to map samples in each of the three Oscil modules—one per oscillator channel—to different areas of the keyboard.

From the Oscil modules, each source can be routed through a filter module (14 filters are available) and a modulator. From there, the sources are sent through a Mono/Surround pan matrix. Absynth 3 can route audio out to one of 14 surround-sound schemes, with as many as eight individual outputs supported (see Fig. 1). Unfortunately, as an RTAS plug-in, it is limited to two outputs. (Native Instruments plans to have addressed that limitation in an update by the time you read this review.)

The sources are then mixed and routed through a waveshaper (for amplitude-dependent distortion), a global filter set, and the effects module. The effects module contains a set of delay-based effects: Pipe, Multicomb, Multitap, Echoes, and Resonators. Most of them are self-explanatory, but the Pipe is idiosyncratic. It is similar to a waveguide simulation of a waveform traveling along a string, but Native Instruments claims that it is not

an attempt at real physical modeling. The Pipe's left- and right-output positions and its overall length can be modulated by MIDI controllers or LFOs (see Fig. 2).

FIG. 2: The Pipe delay effect: at the bottom of the screen is the sound's input point along the imaginary pipe, and its modulating left and right output points. The Record window is also shown.



FIG. 3: Shown above is an example of the Envelope Editor window, with superimposed LFO and grid functions.

Views from Above

Native Instruments' intent for Absynth 3 was to make the working environment controllable from a single window. To that end, there is a navigation bar at the top of the screen, with seven buttons (with F-key equivalents) that change the interface view between Main, Patch, Wave, Effect, ENV, LFO, and MIDI. The controls in each view are, for the most part, self-explanatory. For example, the Main window contains the list of presets; controls for polyphony, pan, bpm, transposition, and tuning; and a virtual keyboard. The Patch window shows the sound source modules and their routings. The Wave window allows you to graphically edit the waveform in Wave and Spectral views. Small meters that show CPU usage and input and output levels are located at the top-right side of the screen.

You must use your mouse to navigate within the windows: you cannot tab through control boxes. The Main window's presets are easily accessible, and you can move through them using the arrow keys. Unfortunately, your computer keyboard cannot be used to trigger Note Ons as it can with Native Instruments Reaktor.

The exception to the single-window rule is the Record window, which is available only in standalone mode. It is a separate floating window that allows you to record as much as five minutes of audio, depending on the amount of RAM in your computer, whether you are recording in stereo or mono, and whether you have the Undo function enabled. The 1.5 GB of RAM in my computer gave me three minutes of stereo-recording time.

Pushing the Envelope

Beside the ability to produce incredibly lush sounds, what puts Absynth 3 into a category of its own is that nearly every parameter is controllable with user-editable envelopes. Envelope mode allows you to loop and retrigger and gives you attack and release control, offering choices for scaling and duration and a simple preset for attack retriggering. The controls can be used in either free or

ABSYNTH 3

REVIEW

synchronized time, and they can lock to a host program.

The ability to create complex rhythms within a single sound are almost endless, and they aren't limited to four-square time structures. (The grid sizes are only $\frac{1}{8}$, $\frac{1}{16}$, and $\frac{1}{32}$. Any complex subdivisions that you want to create have to be made in multiples of those.) Additionally, each envelope can be retriggered at a different time, allowing you to create continuously variable relationships. That sort of complex envelope interaction lets you easily build entire sonic landscapes using a single Note On.

And if that weren't enough, any envelope can be controlled by any assignable MIDI controller. In that mode, the range is mapped to the envelope's time, so that you can control level and playback speed by hand (see Fig. 3).

An Update

Absynth 3 is not without problems. The program's single-window idea becomes unwieldy in the Envelope windowpane. There are a few buttons to control overall window size, but you can't click-and-drag to resize windows. The top and left-side bars are click-and-drag capable for changing the view's track height and timeline.

One major inconvenience in envelope editing is that while you can copy and paste the entire envelope, you can't copy and paste just a limited portion of it over existing parts of the timeline without displacing the following portions of the envelope. Similarly, when generating an Attack-Release pulse set (one of the envelope choices), it automatically generates it along the entire timeline. It would be nice to be able to apply changes like that to only selected portions of the timeline.

The normal edit commands didn't work at all on my copy of the Mac version of Absynth 3. Copy appeared to copy but pasting didn't work, and using

PRODUCT SUMMARY

NATIVE INSTRUMENTS Absynth 3

software synthesizer
\$339

OVERALL RATING (1 THROUGH 5): 4

PROS: Extensive control features. Excellent sound quality. Unlike other soft synths.

CONS: No click-and-drag window resizing. No computer keyboard note input. Cannot tab between parameter boxes.

MANUFACTURER

Native Instruments
www.native-instruments.com

Command + Z to undo didn't work either. During my review, however, Native Instruments posted an update to Absynth 3 (version 3.0.1, available as a download at www.ni-absynth.com) that fixed those problems.

Starting from Scratch

With the envelope editing commands now available, I created a multivoiced polyrhythmic patch using looping envelopes of differing lengths to control pitch, amplitude, modulation frequency, and panning for the three oscillators and their modulators. I also added a few LFOs to vary some of those things, allowing me to change speed and depth at any breakpoint. With different loop lengths for the modulation frequencies and pitch, I was able to create a complex, rhythmic ditty that would take quite a while to fully repeat. And with so many breakpoints available, I created a whole new set of rhythms after the release/loop node of the envelope (see Web Clip 1).

I created a simple yet interesting melodic voice. I started by scouring the vast number of presets for similar sounds. Absynth 3 has more than 1,000 preset patches that are organized into several banks. Some banks offer examples of different types of sounds, while others group specific things together, such as evolving atmospheres, synth instruments, bass

Sound Partners

What Would You Do Without Your Hearing?

Monitor Your Decibels for A Lifetime of Sound

A Hearing Conservation Tip from Sound Partners™
...Bringing You Choices that Make Sound Sense
visit www.hel.org

Sound Partners is an educational program of

House Ear Institute
Advancing Hearing Science

EXPLORE

emusician.com

Electronic Musician

Exciting new interface

Content category searches

Useful downloads and links

Product news and articles

bookmark www.emusician.com today

instruments, acoustic models, and rhythmic pads. I decided, however, to create my own instrument from scratch, starting with the default patch of one sine oscillator.

The basic waveforms in Absynth 3 sound good, and the factory set comes with 41 waveforms (in addition to any sets that the user might add). In the Waveform window, the waveform can be edited and saved to your own preset library. The ability to change it from single to multiple voices makes even a simple sine wave interesting, because additional voices can be transposed up and down from the base pitch. You can add randomized transposition, which in small increments can make for constant (but subtle) modulation. The overall note tuning can be changed to either a preset system (several microtonal sets are provided) or a user-created tuning system. Unfortunately, the factory presets cannot be edited as a starter set for your own tuning. I found some good sounds quickly, but I got caught up in the infinite possibilities available with envelope editing (see Web Clip 2).

Next, I checked out the included samples to be used in wavetables for the Oscil modules; there are plenty of good ones, as well as example presets that show various uses for them. I began adding in my own samples and quickly found an entirely new universe of sounds (see Web Clip 3).

While using the Audio In function on one of the Oscil modules, I added transposition and modulation to gain more control over the soundscape (see Web Clip 4). I used the Overdub function within the recording window to track my musical ideas, creating an entire piece without leaving the application itself (see Web Clip 5).

Hallucinogenic

With the lengthy envelope controllers and surround-sound panning options, Absynth 3 lends itself perfectly to a variety of uses—from sound design to film scoring. (In fact, many of the preset names obliquely reference famous films.) The resulting sonic landscapes are entirely *sui generis* and often can stand on their own musically: entire scenes can be created using just one patch.

The instrument's sound quality is high and its overall structure is inspiring. Overall, Absynth 3 is an exceptional musical tool.



Jonathan Segel composes music using computers and instruments. Find out about some of it at www.magneticmotorworks.com.

WE WILL BEAT ANY DEAL!

EVERY MAJOR BRAND IN STOCK!

**Guitars • Amps • Drums • Keyboards • Synthesizers • Samplers
Sound Systems • Recording Equipment • Software • Accessories**

Donna D'Errice and Nikki Sixx shopping at West L.A. Music Legendary rap artist Tricky with West L.A. Music staff member Saxophonist David Sanborn with West L.A. Music's Mike Griffin West L.A. Music's Mark Spiwak with Eagles guitarist Glenn Frey

West L.A. Music staff member with the legendary Steve Winwood West L.A. Music's Don Griffin with Velvet Revolver guitarist Slash Country star Dwight Yoakam with West L.A. Music's Glenn Noyes Virtuoso drummer Vinnie Colaiuta with West L.A. Music's Tony Adams

Shop Where the Pros Shop • Call Us Today!

West L.A. Music

We will beat any price from any authorized stocking dealer anywhere in the United States
call now: 310-477-1945 • sales@westlamusic.com

ENTERTAINMENT TECHNOLOGY eClassifieds

Reach more than 1.1 million web visitors!

**Buy and Sell Equipment!
Post and Find Jobs!
eClassifieds are FREE!**

- Immediate response • Sell your gear to an interested market
- Post items yourself, anytime with the self-service tool
- Include a photo, audio or video file • Power search capabilities

Find what you need, sell what you don't!

Visit entertainmentClassifieds.com or hit the eClassifieds link at these magazine websites:
emusician.com • remixmag.com • mixonline.com
svconline.com • metmagazine.com

Get Serious.



Logic® Pro 7. Serious tools

34 software instruments. 70 studio quality effects. Total ed

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 "XYZ" 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.

ing 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.



- 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

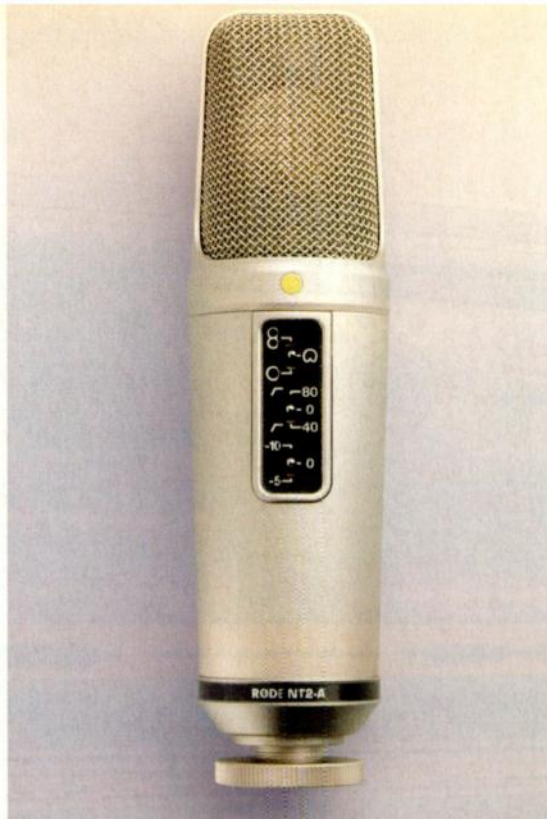
CALL SWEETWATER TODAY!

(800) 222-4700

www.sweetwater.com

Sweetwater[®]
music technology direct™

FIG. 1: Røde's new NT2-A uses the same capsule as in the company's NT2000 mic, and gives you cardioid, omni, and figure-8 patterns; a selectable highpass filter; and a 3-position pad.



RØDE NT2-A

A multipattern condenser with an affordable price tag.

By Rob Shrock

Røde spent more than \$1 million developing the HF-1 capsule, and that investment is likely to benefit not only the company, but also a whole new group of recordists who are looking to find value and quality. A case in point is the company's HF-1-equipped NT2-A, which is a streamlined version of the NT2000. The

Right from the start, the NT2-A sounded excellent.

latter is a mic that is popular with project studios and commercial facilities around the world because of its great sound, quiet operation, and affordability.

The HF-1 is designed to capture the essence of the best vintage microphones. With the overflow of mics coming out of China, it is worth noting that all Røde microphones are designed and manufactured in Australia. I reviewed the original NT2000 for EM (see the June 2004 issue), so I was curious to see

if the magic could be retained in such a relatively inexpensive mic.

If It Ain't Broke

The NT2-A offers selectable pattern, rolloff, and sensitivity settings (see Fig. 1). Having selectable patterns (cardioid, omni, and figure-8) is particularly notable for a mic in this price range. The patterns, unlike the NT2000, aren't continuously variable, but nor are they on most mics. The NT2-A I reviewed sounded just like an NT2000 when settings were matched, and Røde confirms that the mics spec out identically.

The NT2-A comes with a pouch bag and a simple microphone clip. It's a bit heavy, so the shockmount cage that ships with the NT2000 and Røde's K2 tube mic would be much better for the NT2-A than the clip. Including the cage, however, would have added substantially to the price.

Background Check

Feeling confident that the NT2-A had not been compromised to hit a budget price point, I put it through the

paces at my studio. First up was a background-vocal session featuring three world-class singers. Two of them work with me in Burt Bacharach's touring band and have also worked with George Duke, Elvis Costello, and Patrice Rushen. All three are seasoned veterans with great voices who know if things don't sound right.

I put up a single NT2-A set to omni in the middle of the room. I like to use omni in this kind of session because it not only provides a more natural frequency response, but it also allows the singers to stand more comfortably in a circle around the microphone and balance themselves. Of course, that also means more room sound will be picked up, so in this situation I used some strategically positioned absorptive material and a rug to tame things down a bit.

Right from the start, the NT2-A sounded excellent. Through a Neve preamp, the mic sounded like a quieter version of a Neumann U67—a mic I've always liked for background vocal groups. The NT2-A has a little lift between 8 kHz and 12 kHz in omni mode that gives the sound a nice kiss of air and openness without being harsh, strident, or unnatural.

I was recording only two passes of the trio, so the amount of ambience picked up in my room (which is on the live side), with the mic set to omni, was just right to push the group a little back in the mix without the need for artificial ambience (see Web Clip 1).

Stringing Along

A few days later, I was recording a string quartet that was to be close-miked for a pop recording. Since I had received a pair of NT2-As for review and I already own a pair of NT2000s, I used both pairs of mics considering their similarity in sound.

I used the NT2-A pair on the violins (the most critical application) and the NT2000s on the viola and cello. All microphones were set to cardioid pattern to minimize bleed and to provide more individual balance control after the session (each instrument was printed to its own track). For added natural ambience and glue, I stuck a single Neumann KM 86 in Omni mode up high above the group.

I set the NT2-A's highpass filter to roll off at 80 Hz to clean up the low end a bit on input. I intended to start there and later audition the 40 Hz and Off settings before committing. Once the session got going, though, I completely forgot about it. After a little moving around of the microphones to find the sweet spots, the quartet sounded great. The two violins sounded naturally rich and clear, without any harshness or nastiness. Had they sounded too thin, I probably would have been reminded to check the other rolloff settings, but it was unnecessary. The mics sounded great (see Web Clip 2).

I ended up rolling back the NT2000s' cardioid positions about a third of the way toward Omni in order to lessen the proximity effect resulting from close-miking the instruments to get an intimate sound. A taste of EQ would have done the same, but I like being able to play in between the patterns on the NT2000, which is impossible on the NT2-A (and on most other microphones, for that matter).

As of this writing, the final mixes on these two songs are incomplete. But, so far, I haven't had to add any EQ—I've just slipped a couple of

PRODUCT SUMMARY

RØDE NT2-A

multipattern condenser microphone
\$699

OVERALL RATING (1 THROUGH 5): 4.5

PROS: Great sounding. Sonically reminiscent of vintage microphones. Quiet operation. Provides multiple patterns, rolloff, and pad. Affordable.

CONS: Mounting clip is small for a relatively heavy microphone.

MANUFACTURER

Rode Microphones
www.rodemic.com

NT2-A SPECIFICATIONS

HF-1 Capsule	1-inch dual diaphragm, gold sputtered
Polar Patterns	multipattern; figure-8, cardioid, omni
Frequency Response	20 Hz–20 kHz
Output Impedance	200Ω
Signal/Noise Ratio	87 dB
Equivalent Noise	7 dBA SPL
Maximum SPL	147 dB; 157 dB pad at max
Sensitivity	−36 dB (1 kHz into 1 kΩ)
Dynamic Range	140 dB
Power	48V
Output Connection	3-pin XLR
3-Position Variable Highpass Filter	flat, 40 Hz, 80 Hz
3-Position Variable Pad	0 dB, −5 dB, −10 dB
Dimensions	2.2" (W) × 8.3" (L)
Weight	1.9 lbs.

tracks in time to clean up their phase coherency. Nor did I use the Neumann room-mic track, because a bit of room ambience added through the Space Designer plug-in in Apple's Logic Pro sounded every bit as good.

Flying Solo

Next up were solo vocals. A male and a female singer with whom I work regularly had previously cut a number of tracks with the NT2000 in my studio, each of which I like a lot. A handful of test recordings with the NT2-A—all using the same preamps and compressor settings—yielded identical results with each singer when compared with previously recorded tracks using the NT2000 (see Web Clip 3). The NT2000 has been my preferred mic for the male singer for the past year, while I have been liking a K2 (which also used the HF-1 capsule) best for the female. In other words, I accept the NT2-A for what the manufacturer claims: a slightly paired-down version of the NT2000.

I also tried the NT2-A out on a guitar amp. I placed a Shure SM57 up close on the speaker of a small Vox amp, and placed the NT2-A in figure-8 position at ear level about five feet back. With a little compression and EQ, I combined the two microphones into a killer amp

sound. In addition to sounding flattering and natural for vocals and strings, the NT2-A can take a lot of drastic EQ without the sound falling apart on sources such as electric guitar.

Another Quality Mic

Røde has produced another winner. For those looking for a reasonably priced mic of high quality, the NT2-A provides great sound and the versatility of three patterns, a selectable highpass filter, and a pad. My only complaint is its microphone clip, which seems puny compared with the one that comes with the NT2000 and the K2.

The HF-1 capsule sounds great in the NT2-A, as it does in the NT2000 and the K2. Unlike some of the budget models coming out of China, Røde microphones are well built and perform consistently, and the NT2-A is no exception. Within its price range, the NT2-A is my "desert-island" mic of choice.

Composer/producer Rob Shrock has worked with Burt Bacharach, Dionne Warwick, LeAnn Rimes, Elvis Costello, Ronald Isley, Aretha Franklin, and a host of world-class artists.

EMWEB
CLIPS

Rockwind

A Division of The Woodwind & Brasswind



Guitars, amps, keyboards, recording gear and more.

The right place for the hottest gear at the right price

Check us out online at www.wbw.com

Call toll free 888-348-5003

FREE Catalog





YOUR TIME. ANYTIME. ONLINE.

Audio Production Seminars On Demand are an exciting new medium for experiencing new products, applications and techniques. Sharpen your music production skills on your time, anytime. Log on to learn more:

mixonline.com | emusician.com | remixmag.com

PRESENTED EXCLUSIVELY BY

Electronic Musician®

MIX®

REMIX®

QUICK PICKS

NADY SYSTEMS

RSM-2

By Jonathan Segel

Ribbon microphones continue to be popular in the studio because of their smooth response in the highs and lows, offering what we generally think of as a warm sound. In addition, however, they typically come with a premium price tag. With the RSM-2 ribbon microphone (\$249.95), Nady has changed that.

The RSM-2 resembles the classic RCA 77A ribbon mic, with a flat-bottomed tube and grill-covered, pill-shaped top (available in a platinum or gold finish), which is held by an integrated yokemount. Inside is housed a 2-inch-long, 2-micron-thick aluminum ribbon. The mic has an attached 9-foot



The Nady RSM-2 ribbon microphone sits in an integrated mount and comes with an attached cable.

XLR cable, which can be a bit short for some applications. (Personally, I don't like fixed cables, because they're difficult to change out if they get damaged.) The yokemount appears strong, but the

cable length from the clip on the mount to the mic itself is short, so that to keep the mic upright—as a ribbon mic must be kept—the stand must hold it at a greater-than 70-degree angle.

Like all ribbon mics, the RSM-2 has a figure-8 polar pattern, which makes it good for capturing room ambience and useful in a Blumlein stereo setup, in which two figure-8 mics are placed at a 90-degree angle. The pair of mics I tested, however, while two serial numbers different, were wired out of phase with one another, even though they both passed Nady's quality control.

Ribbon to Ribbon

I compared the RSM-2 to its Royer and AEA counterparts (which cost three to ten times more), and the results were generally good. But the results were spectacular when I recorded my Gretsch electric guitar running through a Fender Princeton amp. The mic yielded a full, beautiful response across all of the amp's tone settings, and the highs sounded clear without poking out or pinching.

The figure-8 pattern captures the sound of the room behind it, including string noise if you're playing in the same space. Mic placement is critical with the RSM-2: put it too close to your subject, and you'll get bass overloads.

In a side-by-side comparison with an AEA R84, the RSM-2's response was slightly curtailed at both ends, sounding a bit midrangey and slightly less expansive, though with similar output levels. Strangely, the RSM-2 that was wired out of phase sounded slightly brighter than its mate.

The RSM-2 is very useful for vocals. Because its response is even and warm, it works better in quieter contexts than loud rock mixes, unless you plan to use it in conjunction with another mic, such as a condenser (the condenser's upper midrange could add the bite needed for a louder mix). For a song that demands the exhibition of vocal beauty, the sound of the RSM-2 can be perfect.

The RSM-2's frequency response works well when recording instrumental backing tracks, such as brass and

strings. It captures the tone of acoustic instruments well, without expressing too much of the high frequency attacks of the lip or bow.

Dynamic Duo

Using an FMR Audio Really Nice Preamp, I set up the mics about ten feet in front of the stage in the Blumlein pattern, to record a live performance of improvising acoustic musicians. The sound was clear and full, with a wide image and nearly perfect stereo placement. The coincident figure-8 patterns also added a beautiful ambience to the recording, placing the subjects within their environment but not overwhelming them by it.

The biggest problem with the RSM-2 in this setup is that when there was significant bass production in the environment, it easily overloaded the preamps on my portable DAT recorder, despite metered -12 dB levels. In a more controlled environment, the mics would yield great results for live, acoustic ensemble recording. If you intend to do stereo recording with a pair of RSM-2 mics, be sure to check out how well the pair is matched before you buy.

Blue Ribbon Performance

Overall, the Nady RSM-2 ribbon microphone would make a great addition to any mic collection. And at around \$500 a pair, they are a great investment that will diversify your studio's sound palette.

Overall Rating (1 through 5): 3.5

Nady Systems
www.nady.com

DISCODSP

Legacy Bundle (Win)

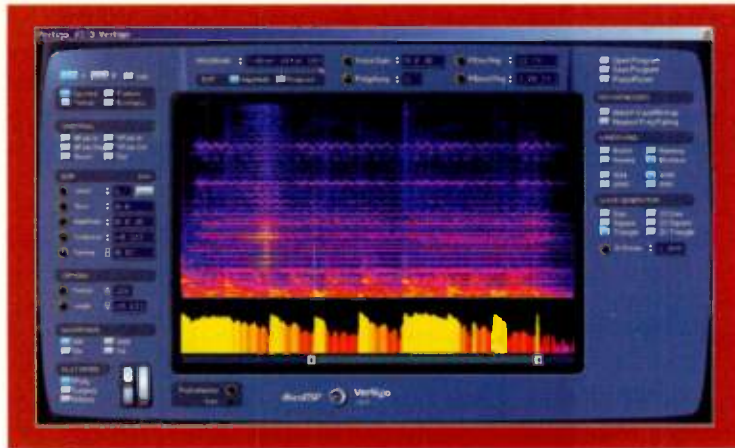
By Len Sasso

DiscoDSP's line of Windows VST plugins consists of three synthesizers (\$99 each), a sampler (\$99), and a mastering effects collection called FX (\$99). Two bundles, Integral (\$349) and Legacy (\$299), are also available—Integral contains everything, and Legacy contains

the three synths. I'll concentrate here on the synthesizers in the Legacy bundle; if you're considering one of the bundles, though, the sampler and effects are certainly worth the small difference in price.

Everything and More

Discovery 2.3 is the workhorse of the synth line. It comes with more than 3,500 presets, and it will import Nord Lead 2 patches. At its heart, Discovery is a classic analog-style 2-oscillator synth, to which has been added basic FM capability, a multimode filter, a bevy of effects, and advanced modulation options. But that's only one part of the story. Each Discovery preset can have as many as four completely independent layers, including separate modulation and effects settings. Layers can be toggled on and off in real time using MIDI Control Change messages. Furthermore, each layer can have two separate setups, which you can morph between using the MIDI Modulation



The Spectral view of the Vertigo control panel shows a time-based graph of the evolving additive waveform on which you can edit the amplitude and frequency dynamics of each partial.

Wheel and Velocity. Unfortunately, you can't turn off or control the amount of Velocity morphing.

Discovery's modulators include two LFOs: one doubles as an arpeggiator, and the other as an invertible attack-decay envelope. Effects include an auto-panner, a chorus-flange, a ping-pong delay, and a 32nd-note gate effect. Using different gate and arpeggiator settings for different layers can produce very com-

plex and interesting rhythmic patterns (see **Web Clip 1**).

Out of the Night

Phantom 1.2 is a 4-operator FM synth that can import DX21, DX27, and DX100 patches. Each operator is a sine-wave oscillator, and there are eight operator configurations, which route operators either to the output or to modulate other operators. One of Phantom's more



◀ **Everyone who knows me knows how much I love Peak.**

It's an environment that makes me feel really creative. My DAW software is where I do my multi-tracking and it can serve as a decent environment for doing 2-track and waveform editing. But I like exiting that program to go into Peak for my sound design. Peak makes me feel like I'm going into a different room in my house.

BT — Composer/Producer

www.bias-inc.com • 1 [800] 775-BIAS

Peak™ 4



interesting quick tricks is to switch a preset's operator configuration, which almost always produces an interesting variation on the original sound. Furthermore, like Discovery, each preset has two separate setups that you can morph between using the MIDI Modulation Wheel.

Phantom features both FM and Phase Modulation (the method used in the famous Yamaha DX line of synths). In FM, the number and amplitude of generated sidebands is frequency dependent, which makes PM more even and controllable. Having both forms of modulation at your fingertips is a nice feature.

As is now common with virtual FM synths, Phantom expands the paradigm with a multimode filter as well as chorus, delay, and reverb effects. Phantom's only drawback is its awkward preset-management scheme, which is entirely host dependent (you can't change presets directly from the control panel, for example).


Scaling New Heights

Vertigo is the most sophisticated of the Legacy synths. It is an additive synth with advanced harmonic generation and resynthesis capabilities, including allowing you to import WAV audio files and BMP graphics files for resynthesis. And, like the other Legacy synths, you can morph between two setups of each preset. Morphing (as well as other parameters) can be controlled by envelopes with as many as 16 breakpoints and individual segment shapes.

Vertigo takes the management of partials in the additive waveform to new heights. First, there are two views: the typical bar chart view, called Partials, and a more powerful, Spectral view. The Partials view allows you to edit bars for amplitude, frequency offset, phase, and pan position for each partial in the waveform. The Spectral view allows you to create independent envelopes for each partial's amplitude and frequency. In other words, the Spectral view allows you to impart a dynamic contour on the additive waveform, and that is what is analyzed

when importing WAV or BMP files.

In case you can't get what you want out of Vertigo's additive synthesis algorithm, there are dual multimode filters that can be configured in series or in parallel, a 128-band formant filter, and a multi-effects processor. Vertigo gives you so much to work with and such minute control that it can easily leave your head spinning (hence, the name), but the 173 factory presets are a great starting point and worth the price of admission in and of themselves.

All three synths in the Legacy bundle are worth a listen, and demos and audio examples are available from the discoDSP Web site. If I had to pick just one, it would clearly be Vertigo, but Discovery and Phantom have their own  charms as well.

Overall Rating (1 through 5): 3.5

DiscoDSP
www.discodsp.com

LINE 6

Variax Bass 700

By Eli Crews

Line 6, a pioneer in digital modeling, has followed up its Variax guitars with a 4-string instrument that promises 24 classic and modern bass sounds at the turn of a dial. The Variax Bass 700 (\$1,679.99) is more than a fine bass guitar—it's a digital processor with strings. Housed in the body of the instrument, the digital-modeling electronics are powered by either six AA batteries or the included XPS-DI, a combination power supply and DI box that carries power to the Variax and the signal from it by means of an included TRS cable.

Supermodel Citizen

Noticeably absent from the bass's body is any visible pickup; piezo pickups are located in the bridge saddles. The five knobs—one each for Volume, Model Select, Blend, Treble, and Bass (the last two being concentric)—each have a classic chrome look. The Blend knob

performs one of two related functions: for modeled basses with two virtual pickups, it sweeps variably between them, and for modeled basses with one virtual pickup, it moves the pickup continuously from the bridge position to the neck position, drastically changing the tone of the given setting. The tone knobs apply active boosts and cuts, regardless of which model is selected. Another slick feature is that if you depress the Model Select knob for a moment, the bass will memorize your Blend and Tone settings for the next time you select that model.

The Model Select rotary switch lets you choose from 12 models, and an adjacent LED illuminates the selected setting. Each model has two versions; depressing the Volume knob toggles between them, changing the LED from green to red. In addition to the electric and acoustic basses you would expect to hear, the Variax's synth-bass sounds are really cool. Although the tracking of the notes was somewhat imprecise at faster speeds, the synth-bass models sound great at slow tempos.

Unreal Reality

How accurate is the modeling? To find out, I did some A/B comparisons of my '69 Fender Precision versus the Variax's '63 Prebass setting, my '72 Rickenbacker 4001 versus the '71 4001 Clang setting, and a '60s Kay versus the Variax's upright model. Did the originals sound like the models? Well, not really. But keep in mind that even two basses of the same brand from the same year can sound different. I definitely heard characteristics of the originals that held true in the models, such as a chunky, Fenderlike low end on the Prebass model and a crisp high end on the Rick model that sounded as though it could be from a Rick. The upright, well, let's just say that perhaps your ears might fool you into thinking you were hearing an upright if you were playing very simple lines that were buried in a mix.

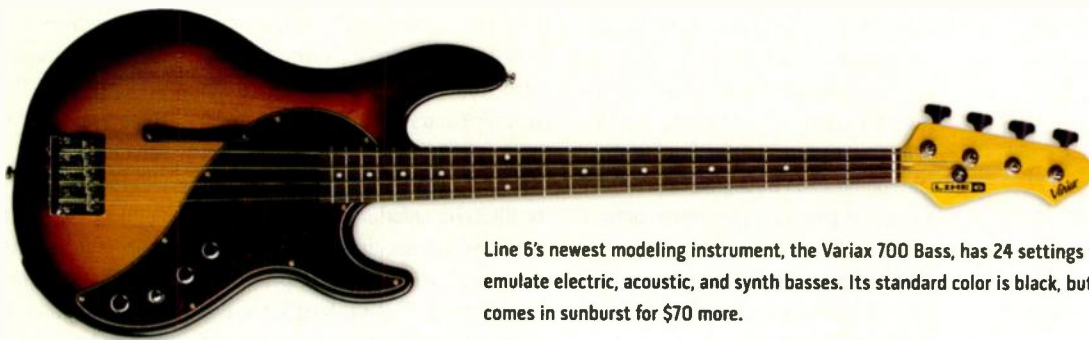
Because modeled instruments seldom sound exactly like the real thing, an emulation should be judged on whether it sounds good, rather than on how

accurately it mimics the original. Most of the Variax's sounds are highly usable and at least resemble the targeted basses.

Its most significant problem is that

processor trying to emulate the physics of a flatwound string. To my ears, several of the sounds had slight digital artifacts, albeit barely noticeable when the bass sits in a mix.

lugging around a carload of instruments. The bass feels good, plays well, and has plenty of sustain. It feels like a Fender Jazz, but with the weight of a Precision. If you want a lot of variety, then by all



Line 6's newest modeling instrument, the Variax 700 Bass, has 24 settings that emulate electric, acoustic, and synth basses. Its standard color is black, but it comes in sunburst for \$70 more.

sometimes, usually in a note's decay and especially on the 8- and 12-string models, you can hear the algorithm fritzing out a little, as if it's confused about which pitch it's playing. And in some models, most notably the upright and flatwound settings, I heard an unnatural *woofy* sound that I suspect is a product of the

Bass Ballistics

The benefits of the Variax Bass 700 are undeniable. If you're a studio musician, you have a diverse tonal toolbox at your fingertips, allowing you to quickly find just the right tone to match a song. If you're a live performer, you can quickly change sounds for each song without

means test-drive the Variax. Analog purists might laugh at you, but that's a small price to pay for having the right sound at the right time.

Overall Rating (1 through 5): 3.5

Line 6

Web www.line6.com

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

KORG**TP-2**

By Kerry Rose

The Korg TP-2 (\$699) is a dual-channel tube-mic preamp with built-in optical compression. It provides 24-bit, 96 kHz conversion and offers analog and digital outputs. Mounted in plain view on top of a sturdy all-metal chassis, two 12AX7 tubes provide the amplification and compression through feedback from an optical photo-coupler. Resembling a part from the robot on *Lost in Space*, the TP-2 glows a nifty blue color when powered up, enabling it to perform double-duty as a mood lamp.

From the (Table) Top

The tabletop unit lies flat, and the manual recommends maintaining that position for the meters to function



The Korg TP-2 tube preamp features a unique tabletop design, real tubes, and optical compression.

properly. The top panel has two Mic/Instrument inputs on Neutrik combo connectors. Each channel offers phase and phantom-power switches and gain trim control. Underneath the trim knobs are the switches to select high impedance, a -26 dB pad, fast or slow compressor mode, and a -6 dB-per-octave 70 Hz low-cut filter. Under the circular VU meters in the center is a compressor-sensitivity knob for each channel and a

switch to link the compressors for stereo operation. On the far right are two 60 mm output level faders to control the analog output.

The rear panel supports the 9V DC power connector and switch and two pairs of +4 dBu balanced analog outputs—one on XLR, and the other on ¼-inch TRS connectors. The unit provides S/PDIF output on Toslink and RCA connectors. Next to those is a 3-position switch to select 44.1-, 48-, and 96 kHz sampling rates (no 88.2 kHz, unfortunately). All of these rear-panel connections are labeled for easy identification from the top.

When the TP-2 was lying flat as suggested, it was difficult to see the meters, and the status, and the labels of the switches unless I was directly over the unit. It was also difficult to see the position of gray buttons against the gray chassis in dim light. (I typically work late at night with a single

while recording electric bass directly, using primarily the digital output for both channels. Getting the right levels and the proper amount of compression was challenging. Trying to get a proper input level often created tube-induced distortion, something I would prefer to introduce after getting a good working level. The fast setting on the compressor was a bit heavy, imparting too much attack, and the slow setting was too subtle. It wasn't clear from the manual if the attack and the release times were affected, but it sounded as though they were.

The ratio was not adjustable, and setting the sensitivity (threshold) was tricky. I like to start "by the numbers," and then use my ears for tweaking. After a bit of knob twiddling, I got a sound I could use. But achieving it took longer than it should have, and I wasn't completely satisfied. The controls interact to clearly affect the sound, but because many parameters are out of reach of the user, obtaining sonic adjustments that were more refined was somewhat difficult.

That being said, the quality of the sound was quite good, and the unit delivered the warmth factor. The pre-amps have a decent range, the tubes impart some heft, and the compression has a creamy quality to it. If you are looking to fill out the sound of some source material, you can get that job done with ease.

Mixed Bag

The Korg TP-2 offers to give "analog tube warmth and richness," and succeeds in that capacity. Sold as an add-on for Korg's D32XD and D16XD hard-disk recorders (TPB-2), it adds a unique feature to those units. I found the unit frustrating to operate, while trying to perform and engineer simultaneously. I might have had better luck if I were recording someone else. I would suggest, however, that you try it out for yourself to see if its design, user controls, features, and sound are right for you. **EM**

desk lamp in a common home-studio environment.) After using the TP-2 for a while, I decided to ignore the manual and prop the unit up at an angle. I would have preferred indicator lights for most of the other switches in addition to the lighted phantom-power indicator.

Getting Tubed

I recorded acoustic guitar and vocals with a large-diaphragm condenser mic

Overall Rating (1 through 5): 2.5

Korg USA
www.korg.com

ADVERTISER INDEX

ADVERTISER	INTERNET	PAGE	ADVERTISER	INTERNET	PAGE
ADK Microphones	www.adkmic.com	118	Musician's Friend (PreSonus)	www.musiciansfriend.com	117
Apogee	www.apogeedigital.com	125	Musicians Institute	www.mi.edu	119
Arturia	www.arturia.com	47	Native Instruments (Kontakt 2)	www.ni-kontakt.com	67
Audix	www.audixusa.com	33	Native Instruments (Reaktor 5)	www.ni-komplete.com	69
Auralex	www.auralex.com	12	Remix Hotel (LA)	www.remixhotel.com	73
B&H Photo-Video (Integrated)	www.bhphotovideo.com	83	Rode Microphones	www.rodemicrophones.com	11
B&H Photo-Video (Integration)	www.bhphotovideo.com	123	Roland	www.rolandus.com	9
BIAS	www.bias-inc.com	137	SAE Institute	www.sae.edu	75
Big Fish Audio	www.bigfishaudio.com	115	Seminars on Demand	www.emusician.com	135
Broadjam	www.broadjam.com	81	Sibelius Software	www.sibelius.com	44
Cakewalk (Sonar 4)	www.cakewalk.com	19	Sonic Distribution	www.sonic-distribution.com	96
Cakewalk (Project 5)	www.cakewalk.com	139	Sonic Distribution	www.sonic-distribution.com	121
Carillon	www.carillonusa.com	55	Sonic Implants	www.sonicimplants.com	51
Carvin	www.carvin.com	114	Submersible Music	www.drumcore.com	77
Cycling 74	www.cycling74.com	45	Sweetwater Sound	www.sweetwater.com	27
D'Addario (Planet Waves)	www.daddario.com	124	Sweetwater Sound (Creation Station Series)	www.sweetwatersound.com	71
Digidesign (Mbox Pro Tools LE)	www.digidesign.com	31	Sweetwater Sound (Mackie)	www.sweetwater.com	79
Digidesign (GNX4)	www.digidesign.com	65	Sweetwater Sound (PreSonus)	www.sweetwater.com	60-61
Disc Makers	www.discmakers.com	109	Sweetwater Sound (Digidesign)	www.sweetwater.com	98-99
Echo Digital Audio	www.echoaudio.com	155	Sweetwater Sound (Apple, Alesis, Apogee)	www.sweetwater.com	130-131
E-mu Systems (Laptop Interface)	www.emu.com	39	Sweetwater Sound (MOTU Studio)	www.sweetwater.com	15-151
E-mu Systems (XBoard)	www.emu.com	57	Sweetwater Sound (MOTU Studio)	www.sweetwater.com	152-153
Frontier Design Group	www.frontierdesign.com	113	Tascam	www.tascam.com	23
Full Compass Systems	www.fullcompass.com	93	Tascam (FW Family)	www.tascam.com	53
Full Sail	www.fullsail.com	112	Taxi	www.taxi.com	107
Genelec	www.genelec.com	41	TC Electronic	www.tcelectronic.com	6
House Ear Institute	www.hei.org	128	Universal Audio	www.uaudio.com	25
IK Multimedia	www.ikmultimedia.com	91	Waves	www.waves.com	46
Ilio (AAS)	www.ilio.com	29	West LA Music	www.westlamusic.com	129
Ilio (Spectronics Stylus RMX)	www.ilio.com	43	Woodwind & Brasswind	www.wbw.com	134
International Music Software Trade Association	www.imsta.org	85	Yamaha (Motif ES, Cubase SX 3)	www.yamaha.com	2-3
Joemeek	www.joemeek.com	95			
Kaysound (CME)	www.Kaysound.com	37			
Kaysound (SM Pro Audio)	www.Kaysound.com	97			
Korg	www.korg.com	20-21			
Line 6 (Propellerhead Software)	www.line6.com	15			
Mackie (Tracktion 2)	www.mackie.com	4-5			
Mackie (TAPCO)	www.mackie.com	17			
Mackie (Big Knob)	www.mackie.com	59			
Mark of the Unicorn	www.motu.com	156			
M-Audio (Pro Tools)	www.m-audio.com	13			
M-Audio (BX5A)	www.m-audio.com	34			
M-Audio (Trigger Finger)	www.m-audio.com	111			
McDSP	www.mcdsp.com	120			
Music Industry Manual	www.emusician.com	86			
Musician's Friend	www.musiciansfriend.com	89			

ELECTRONIC MUSICIAN MARKETPLACE ADS

AEA	www.ribbonmics.com	144
Bayview Pro Audio	www.bayviewproaudio.com	145
Cascade Microphones	www.cascademicrophones.com	145
Crystal Clear Sound	www.crystalclearcds.com	143
ELS Productions	www.elsproductions.com	142
Emulation Media	www.emulationmedia.com	142
Florida Music	www.floridamusicca.com	145
House Ear Institute	www.hei.org	143
Lonely Records	www.lonelyrecords.com	142
Media Services	www.mediaomaha.com	142
Paramount Technology	daw.ptipc.com	144
Play-It Productions	www.play-itproductions.net	145

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 Donnerwerth

(770) 643-1425

jdonnerwerth@primediabusiness.com

CLASSIFIEDS

Kevin Blackford (West Coast)

Jason Smith (East Coast)

(800) 544-5530 or (510) 653-3307

emclass@primediabusiness.com

EM Marketplace



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



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



CD & DVD MANUFACTURING

INDIE ARTIST ONE STOP!

New Lower Prices! Same Great Quality!

1000 Retail Ready CDs \$995

Glass Mastering, up to 3 color silk screen on CD, full color insert, jewelbox with choice of black or clear tray, assembly, shrinkwrap, 4 Panel folder add \$100

FREE barcode, FREE CoolDisc™ Upgrade, FREE CD Baby.

1000 Retail Ready DVDs - \$1499

emulationmedia 1-800-791-0063

www.emulationmedia.com

FREE Barcode, FREE CoolDisc™ Upgrade, FREE CD Baby
Graphic & Website Design • Web Stores • Marketing & Promotion
Short & Long Runs • Quick Turn Times • Merchandise • Mastering



REMIX

Maximize your exposure by advertising in the Marketplace or Classified sections.

REMIX is the premier consumer magazine in North America dedicated 100 percent to the tools, techniques and production styles of electronic and urban artists. Contact your sales representative today!

Philip Boyok

(800) 544-5530

remixclass@primediabusiness.com

www.remixmag.com

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.

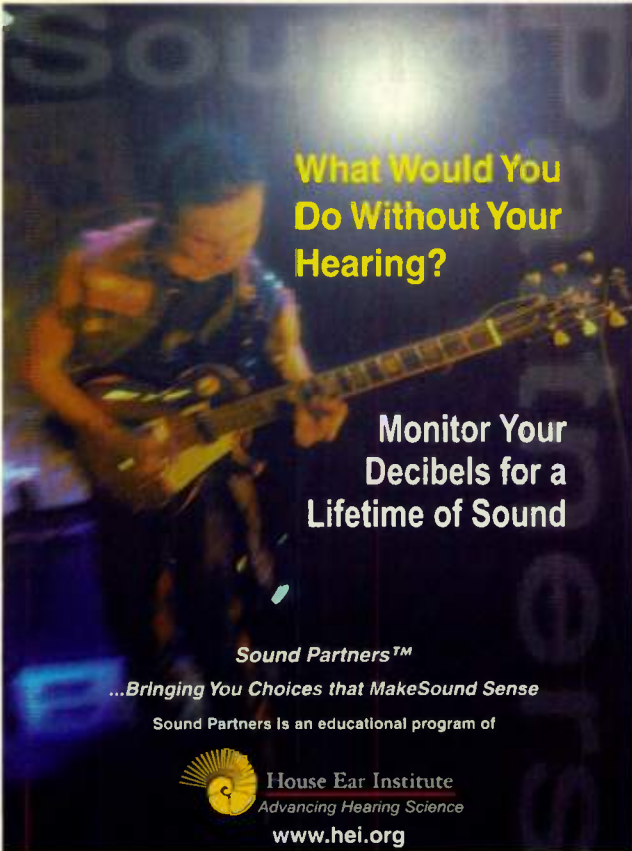
We at Media Services look forward to providing you with outstanding service and quality. You can trust us to take your CD/DVD project to the next level. Call us today on pricing for all standard and custom packages. We also offer great deals on promotional products such as posters and postcards.



CD AND DVD MANUFACTURING

(888) 891-9091

www.media-services.com




What Would You Do Without Your Hearing?

Monitor Your Decibels for a Lifetime of Sound

Sound Partners™
...Bringing You Choices that Make Sound Sense

Sound Partners is an educational program of



House Ear Institute
Advancing Hearing Science
www.hei.org

CD • DVD • CD-ROM • SHAPED CD • CASSETTE • PACKAGING

NEED CDs?
the choice is

CRYSTAL CLEAR
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 TO 10-40% OFF ONLY \$99

1-800-880-0073
www.crystalclearcds.com

MIX guides

THE ONLINE PRO ENCYCLOPEDIA

<http://mixguides.com>

LET US DO ALL THE WORK!

Each Mix Guide includes reviews, new product announcements, applications, features, tradeshow reports and more, all in one customized category section.

MORE MIX GUIDES COMING SOON!

ENTERTAINMENT TECHNOLOGY

eClassifieds

Reach more than 1.1 million web visitors!

The Entertainment eClassifieds are the user friendly, affordable way to connect buyers, sellers, job seeker and employers.



- Immediate response Sell your gear to an interested market
- Post items yourself, anytime with self-service tool
- Include a photo, audio or video file
- Power search capabilities

eClassifieds are your one-stop shop for reaching web visitors of: www.remixmag.com • www.mixonline.com
www.svconline.com • www.metmagazine.com

Find what you need, sell what you don't!
www.emusician.com/eMarketplace

MIM MUSIC INDUSTRY MANUAL 2005-2006

Now available in the U.S. from *Mix*, *Electronic Musician* and *Remix*

ORDER NOW \$39.95

MIM 2005-2006
MUSIC INDUSTRY MANUAL

DJ? Promoter? Producer?... accept no other resource, the new International Edition MIM 2005/6 is the reference book for the global music production and dance scenes, and is now available in the United States.

PRO DJ

Special pricing for readers of *Mix*, *Electronic Musician* and *Remix*, just \$39.95 (plus S&H). Order yours online at mixonline.com/mixbookshelf, emusician.com/embookshelf or remixmag.com/remixbookshelf or call **800-262-1954!** Item # MIM05-06

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!

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 PCI **\$2195**

<http://DAW.PTIPC.COM>
925.825.4046
daw@paramounttechnology.com

audio PRODUCTION
SEMINARS ON DEMAND

YOUR TIME. ANYTIME. ONLINE.

Audio Production Seminars On Demand are an exciting new medium for experiencing new products, applications and techniques. Sharpen your music production skills on your time, anytime. Log on to learn more:

mixonline.com | emusician.com | remixmag.com

PRESENTED EXCLUSIVELY BY

Electronic Musician® MIX® REMIX®

BAYVIEW PRO AUDIO
 "America's #1 Online Professional Audio Dealer"
www.bayviewproaudio.com
 888.718.0300

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

\$1099⁰⁰ 1000 pcs
Complete Minijacket Package
 INCLUDES COLOR PRINTING
 ASK ABOUT OUR FREE BARCODE
 TOLL FREE: 1-800-815-3444 or 212-695-6530
WWW.PLAY-ITPRODUCTIONS.NET
 CDS • DVDs
 Graphics • Printing
 Mastering and More!
PLAY-IT PRODUCTIONS

CASCADE MICROPHONES

WWW.CASCADEMICROPHONES.COM

GET YOUR COPY OF THE ULTIMATE GUIDE TO HOME STUDIO GEAR

Personal Studio Buyer's Guide
 THE ULTIMATE GUIDE TO HOME STUDIO GEAR
 ESSENTIAL INFO ON MORE THAN 2,500 PRODUCTS
 Jam-packed with recording tips and techniques.
 SWEETENING DRUM TRACKS WITH EFFECTS
 SAFE AND SANE MONITORING
 UNDERSTANDING DYNAMIC RANGE
 STUDIO SETUP TIPS OF THE TRADE
 AND MORE

MIC SPECS DEMYSTIFIED
 VOCAL TRACKING CLINIC

Find the *Personal Studio Buyer's Guide* on newsstands wherever *Electronic Musician* is sold, or call 800-245-2737.
www.emusician.com

M-AUDIO WORLD-CLASS MUSIC TECHNOLOGY
 Where do you want to take your music?
Amps | Effects | Drums | Recording Interface
 built-in USB audio interface (24-bit)
 microphone preamp (XLR input)
 99 drum patterns 99 factory presets, 99 user presets
 effects processing of guitar, mic or drums

M-AUDIO BLACK BOX
 guitar performance recording rig

Floridamusicco.com
 1-800-378-7599

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

SILENT Source
 58 Nonotuck St., Northampton, MA 01062
 Info: (413) 584-7944 Fax: (413) 584-2377
ORDER: 800-583-7174
 Acousticon Fabric Panels •
 Sound Barrier • Isolation Hangers
 Tube Traps • Silence Wallcovering •
 WhisperWedge • ProFoam • Clearsonic
 • Mushfoam • R.P.G. Diffusers •
 Sonex • Sound Quilt • More
www.silentsource.com
info@silentsource.com
 QUALITY • PRICE • DELIVERY • INTEGRITY

Subscription Questions??
 Call (800) 245-2737

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
RPG DIFFUSOR SYSTEMS, INC.
 Absorption,
 Diffusion and
 Total Room
 Solutions.
www.rpginc.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

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

Subscribe to
 Mix online at
www.mixonline.com

VIBRANT TECHNOLOGIES



DIFFUSER PANELS
 WAVE-FORMS™ ACOUSTIC PANELS
 800-449-0845
www.vibrantech.com

REAL TRAPS®
 MINI TRAPS — 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**

ANALOG SYNTHS

Synthesizers.....
 made of TUBES??
 (...WHY NOT?)
METASONIX
 WWW.METASONIX.COM
 PMB 109, 881 11th St
 Lakeport CA 95453 USA

BATTERIES & CABLES

AccuSound
 Silver Studio Pro Microphone,
 Patch & Instrument Cables
 World Class Cables at a Real World Price
 Visit our website for secure online shopping
www.ACCUSOUNDPROAUDIO.COM

MODULARSYNTH.COM
 REAL ANALOG MODULAR
 OVER 350 MODULES
 15 COMPANIES
www.modularsynth.com

BLACET METASONIX OAKLEY
 CYNDUSTRIES MODCAN WIARD
 DOEPFER MOTM SYNTHESIZERS.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

Over 10,000 Studios Served
 Total Sound Control
Auralex
 acoustics
www.auralex.com
 What About Your Room?

AcousticsFirst™
 Toll Free: 888-765-2900

Full product line for sound
 control and noise elimination.
 Web: <http://www.acousticsfirst.com>

CASES

Gator Cases
Studio-2-Go Solution

Gator's Studio 2 Go Products Are The Perfect Grab And Go
 Solution. Holds One Laptop And Two Rack Spaces



GRC-STUDIO-2-GO **GSR-2U**

TEL: 813.221.4191 / FAX: 813.221.4181 / **WWW.GATORCASES.COM**

Case Specialists
discount-distributors.com
We Will Beat
ANY Price! 
800-346-4638

EMPLOYMENT

"This Job Rocks!"

— Mark Magdich, Sweetwater Sales Engineer



- Do you know professional audio, MIDI, guitars, keyboards, studio and live sound?
- Are you a music technology expert?
- Do you love talking about gear, technology, and music with other audio pros?
- Do you believe in providing stellar customer service?
- Do you want a job you can be proud of, working for a company you can believe in?

If you are a highly motivated music technology expert, Sweetwater wants to speak with you! We are growing fast, so we're seeking several Sales Engineers to fill new positions for our award-winning Sales Team.

Visit www.sweetwater.com/careers now for full details and online application. Contact Kristine Haas, Director of Human Resources, at 1-800-222-4700, ext. 1050.




REMIX

Sign up for the
REMIX HOTEL Newsletter
www.remixhotel.com

EQUIPMENT FOR SALE

SINGERS! REMOVE VOCALS

Unlimited Free Backgrounds from Original Standard Recordings!
Thompson Vocal Eliminator™
VE-4 Free Brochure & Demo
24 Hour Demo/Info Line
(770)482-2485 - Ext 16
LT Sound Dept EM-1 7980 LT Parkway Lithonia, GA 30058
www.VocalEliminator.com *it's M*
Better Than Karaoke for Over 25 Years!

MIX

For the latest news and technology check out Mix at
www.mixonline.com

Professional Audio and Music Production

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) 985-3276
West Coast - Kevin Blackford (510) 985-3259

or call toll free at (800) 544-5530 or email:
EMCLASS@primediabusiness.com

Subscribe to
Sound&Video contractor
www.svconline.com

FURNITURE

OMNIRAX
STUDIO FURNITURE



CODA DB with Sidecars

OMNIRAX 800.332.3393 418.332.3392
FAX 418.332.2607
www.omnirax.com

THE ORIGINAL
RACKMOUNT YOUR GS - WWW.ISO-BOX.COM



ORDER TOLL-FREE: 888.580.9188

 Sound Construction & Supply Inc.

www.ArgosyConsole.com
studio furniture
800.315.0678



Spire ARGOSY

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 Lind

Baltimore Dances #11
Fox Trot, Tango, Salsa, Merengue, Waltz, etc.
\$14.00

www.ballroommusic.com

INSTRUCTION & SCHOOLS

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>

Subscribe to
Electronic Musician
www.emusician.com

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
 314 66th Ave, Suite F, San Francisco, CA 94121
 Or visit us at www.audioinstitute.com

MASTERING & PRODUCTION

CUSTOM PRO TOOLS HD EDITING SUITE
LOW-COST MASTERING
 AMAZING RESULTS
stephensongs.com
212.712.2237

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

RECORDS, TAPES, CDS

Odds On
 CD & DVD MANUFACTURING
Odds On Save BIG!

100 CDS \$299	250 CDS \$499	500 CDS \$699
1,000 CDS \$1,799	2,500 CDS \$4,999	5,000 CDS \$8,799

ORDER TODAY!
877-ODDS ON!
www.OddsOnRecording.com

Lowest Price Period!
 CD Audio / CD Rom / DVD Replication
 Video Duplication / Graphic Design
 Printing / Packaging / Pre-Press

888.256.3472
www.ballmedia.com

Lions Den inc
 Analog / Digital
 waveplate
 platinum
 diamond
 Manley - Massive Pangue
 Focus Rite pro pack
 ISA 40MK2
 Mable DSE
 EMI-MK
 Roland VS2480
 Nuendo 2.2
 High Quality Low Cost
708-848-6105
Lionsdeninc.com

CD • DVD • CD ROM • SHAPED CD • CASSETTE • PACKAGING
CRYSTAL CLEAR
 DISC & TAPE
 Trusted experience for over 30 years.
1-800-880-0073
www.crystalclearcds.com

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
 Eastco Multimedia
1-800-365-8273
www.eastcomultimedia.com

Subscribe to
Remix online at
www.remixmag.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!

WE BEAT ANY PRICE!
 • Highest Quality
 • Reliable Service
 • CD's
 Cassettes
 Video
 Posters, etc.
NO BULL
TOTAL TAPE SERVICES
(888) 567-6835
www.totaltapeservices.com

ELS PRODUCTIONS
100 Full Color Retail Ready CDs \$240.00!
1-800-927-3472
www.elsproductions.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.

Lonely RECORDS
 Get a FREE Catalog
 1.800.409.8513
www.lonelyrecords.com
 Retail Ready CD Packages **99¢**

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

HEY LOOK! WE'RE ON THE WEB!

Toll Free:
800-538-2336



All Formats!
Best Prices!

www.tapes.com

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.

www.yourmusiconcd.com

100 BULK CDRS \$59 **300 FULL COLOR PACKAGE \$549**

100 BASIC CDRS \$99 **100 or more packages \$99**

100 FULL COLOR CDR PACKAGE \$199

1000 FULL COLOR PACKAGE \$999

500 FULL COLOR PACKAGE \$824

SNS ATLANTA 678-442-0933
DIGITAL INC TOLL FREE 1-877-442-0933

CD, CASSETTE, CDR and CD-ROM Complete Packages!

DDAI 1-800-444-DDAI www.ddai.com

- CD/CASS MASTERING
- CD/CASS REPLICATION
- CEDAR RESTORATION
- GRAPHIC DESIGN
- FILMS AND PRINTING
- CD-ROM AUTHORIZING

Whitewater Studios
MASTERING • CDs • TAPES

Complete CD Mastering \$375.00

FREE 500 Bulk CDs \$349
SAR CODE1

FREE 1000 CDs complete \$999
SAR CODE1

Short-Run CD packages • Real-Time cassettes

We give you the best in service & price!
9 Busbee View Rd
828-274-0956 Asheville, NC 28803
www.whitewaterrecording.com

For the best price in CD Replication . . .
there is only one number you'll need!

1.888.891.9091

MEDIA WWW.MEDIAOMAHA.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!

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

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

BAND-IN-A-BOX IMPROVEMENT PRODUCTS***

You can put a Better-Band-In-Your-Box.

Norton Music (since 1990)

www.nortonmusic.com

Subscribe to
millimeter
www.millimeter.com

The Patch King
QUALITY SOUNDS for SYNTHS
and SAMPLERS SINCE 1984
(246) 420-4504
WWW.KIDNEPRO.COM

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

Music Tools Blowout!
10 Years of Great Deals
Digital Audio Hardware, Interfaces,
Samples, Software, Cables, MIDI's
Over 1300 Classic Guitar MIDI's
Shop for 20,000+ products at
www.midi-classics.com
Call 800-787-6434 NOW!
MIDI Classics Dept E, Box 311, Weatling, CT 06089

Tired of not finding the right groove? Unlimited patterns are yours to create with **DRUM MOSAICS**. No Library is complete without it! 2 Disk Wav. CD Rom, only \$89.00! Available only at loop-d-loops.com.
The Beat Is All In Your Imagination!

The MOTU Power-on-Demand Studio

Digital Performer, the Traveler and a host of development partner products deliver on-demand processing and world-class sound.

The look.

Whether you've got a G4 PowerBook, G5 Power Mac or both, the Apple 30-inch Cinema Display gives your MOTU power-on-demand studio the world class look your eyes want — and the look your clients respect. A 77% increase in screen real estate gives you the space you need to visualize your entire DP project. An eye-popping 2560x1600 pixel resolution lets you view 64 faders at one time in the Mixing Board!



The effects.

Cycling 74 **Pluggo™ 3.1** is an extraordinary, must-have collection of more than one hundred audio plug-ins that offer real-time interactive audio processing, modulation, and synthesis right inside DP. Delays, filters, pitch effects, distortion, granulation, spectral effects, modulators, multi-channel processing, synthesizers, audio routing, reverb, dynamics, visual display — the list is huge, and you'll have a blast exploring Pluggo's vast array of sounds and effects.



The piano.

Three incredible grand pianos, Bösendorfer®, Steinway®, and Yamaha®, in one Virtual Instrument for Digital Performer. Synthogy **Synergy™** has been knocking the critics flat with its stunning realism and unsurpassed playing experience! It features more than 32 GB of premium piano samples and a custom engine built exclusively for the exacting demands of recreating the piano. Produced by piano sound design pioneer Joe Ierardi and DSP wiz George Taylor, you have to play it to believe it. Trust us, you will!



The help.

Of course, the tech support wizards at Sweetwater can help you with any operational issues you might encounter with your MOTU power-on-demand studio, but if you want complete peace of mind, the **AppleCare Protection Plan** is the perfect insurance policy. No matter what perils await your portable rig on the road or your studio setup at home, with AppleCare, your investment in your Apple gear is totally protected.



Waves on-demand processing.

The Waves **APA-44M** delivers on-demand Waves processing to your MOTU native desktop studio via standard Ethernet. Open your existing Waves plug-ins as usual in Digital Performer via the new Waves Netshell™. But now you can run up to 6 Waves IR-1 Convolution reverbs at 44.1kHz at once, and save your CPU power. Need more Waves processing? Just add another APA-44M with the snap of an RJ45 Ethernet cable. It's that simple. For extreme processing needs, connect up to 8 units to your network. The APA-44M is equally at home connected to a laptop, desktop or both. Just transfer your Waves authorized iLok. You can even share a stack of APA-44M's among several computers across the Waves Netshell network. The APA-44M ushers in a new era of state-of-the-art, distributed-network Waves processing for your MOTU power-on-demand studio.



The mix.

The new Grace Design **m902 Reference Headphone Amplifier** is the final word in high fidelity headphone amplification and is the new must-have tool for audio playback in your MOTU power-on-demand studio. Combining a full compliment of analog and 24-bit/192kHz digital inputs with dual headphone and unbalanced line outputs, the m902 is an ideal solution for critical editing, mastering and monitor control for a MOTU studio of any scope.



Mastering & restoration.

The BIAS **Peak 4.1 Mastering and Restoration Edition** combines Peak 4.1 with 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 DP or in Peak as an AU plug-in. Enjoy the very best in sample editing, batch processing, file conversions, loop creation, sound design, restoration, and Redbook CD mastering on OS X!



The feel.

Looking for the ultimate compact keyboard controller for your MOTU studio? The Alesis **Photon™ X25** delivers the revolutionary Alesis XYZ 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.



(800) 222-4700
www.sweetwater.com



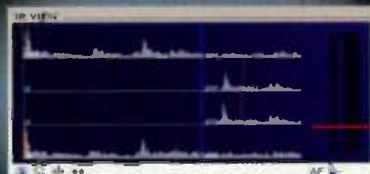
Sweetwater
music technology direct™

Authorized Reseller

The MOTU Power-on-Demand Studio

Audio Ease **Altiverb V5™** Your first choice in convolution reverb

Altiverb broke new ground as the first ever convolution reverb plug-in, delivering stunningly realistic acoustic spaces to your MOTU desktop studio. Altiverb V5 continues to lead the way with cutting edge features. Altiverb V5's ever growing Impulse Response library provides the most diverse and highest quality acoustic samples on the market. Recent additions are shown below from the Altiverb Fall 2004 East Coast Tour. Version 5 delivers more seconds of reverb, more instances, and less CPU overhead than any other convolution reverb. And its new adjustable parameters are a snap to use! Altiverb takes full advantage of the Altivec™ processor in your PowerBook G4 or desktop Power Mac G4 or G5. THE must-have reverb for every MOTU studio.



Shift resonances and room modes while adjusting reverb times.

See a 15 minute demo movie at www.audioease.com



The new multi-channel waveform overview reveals crucial detail about gain levels and timing during the first tenth of a second of a reverb tail. The rotatable and zoomable 3D time/frequency plot reveals even more about damping, EQ and resonances.

- Highest quality samples on the market.
- Legendary concert halls and studios.
- Versatile damping and hires-EQ section.
- Click-and-drag 3D sound placement.
- 'Size' parameter shifts resonances and room modes.
- Gains and delays for direct early-reflection and tail.
- Waterfall diagram shows time-frequency behavior in 3D.
- Surround up to 192kHz.
- Snapshot automation for mixing and post-production.

A rotating Virtual Reality movie helps you feel the presence of each space.

Snapshots let you automate complete preset changes.

Altiverb is the most efficient convolution reverb. Reduce CPU load even further with extensive settings.



Place the violins stage left, cellos stage right, and percussion in the back, all in stereo.



Use up to four bands of EQ, tailored for reverb tail adjustment, to fine-tune the sound.



Allaire studios — Shokan, NY

Haydn Hall — Eisenstadt

Mechanics Hall — Worcester, MA

Forest Austerlitz — Netherlands



www.allairstudios.com

Schubert Hall — Vienna

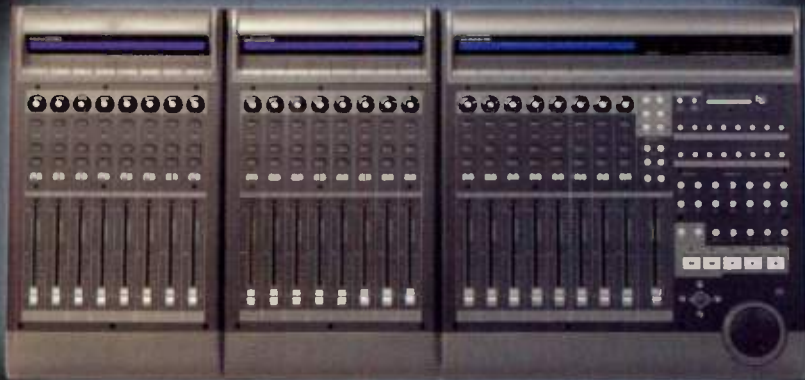
www.mechanicshall.org — Photo by Steve Rosenhaft

Sound on Sound Studios — NYC
www.soundonsoundstudios.com

The control room.

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.



The faders.

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 Universal** 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 DP itself.

The desk.

When you're on the road and looking to record a full band, the Mackie **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.



The monitors.

The Mackie **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.



(800) 222-4700
www.sweetwater.com

FREE
SHIPPING
SPEEDY FEDEX DELIVERY
MOST ORDERS SHIP SAME DAY

Authorized Reseller

Trying to Accomplish Something

By Larry the O

If rules are made to be broken, then why are they made? Breaking rules is often viewed as a positive artistic and cultural attribute. So popular is the image of the rule breaker that one is hard-pressed to find famous quotations praising the idea of following rules. It is simple, however, to find quotations such as Ansel Adams's assertion "There are no rules for good photography, only good photography" or Katharine Hepburn's sly comment "If you obey all of the rules, you miss all of the fun."

If so many people are so down on rules, where do the rules come from and of what use are they? Some individuals would argue that rules stem from fear and are of no use whatsoever; that conclusion, however, seems too pat. Where they come from is the easier question to tackle: rules are imposed either by a single person or a small group of people onto others, or they are the result of some form of agreement between people.

Usefulness is a more complex and interesting question, and I think that context has a lot to do with the answer. For example, some rules are fundamental to our basic ability to function. Laws are rules that

Caribbean: The Curse of the Black Pearl. He says, "The code is more what you'd call 'guidelines' than actual rules."

Rules serve as jumping-off points for explorations of boundaries and limits. Baseball impresario Bill Veeck—not, to my knowledge, a musician—captured that spirit perfectly when he said, "I try not to break the rules, but merely to test their elasticity."

Ironically, what underlies all of these sentiments is an implicit emphasis on the importance of actually following rules. Sounds crazy, doesn't it? But bending or breaking rules is of no interest to people unless the rules are not only known but familiar. Without that familiarity, one can receive no impact in deviating from them. So, it would therefore seem that one use for rules is as a stalking horse for disobedience. In the words of the immortal Leo Durocher: "I believe in rules. Sure I do. If there weren't any rules, how could you break them?"

Working backward logically, if breaking a rule is interesting because of the resulting deviation, then it stands to reason that following a rule should produce an expected and a more or less predictable outcome. In fact, that proves to be another use for rules, in that they allow specific needs to be met by design. This is a common demand in film and television music, for example. There are many ways to score a love scene, but sweet strings have worked so often that many directors want to use them simply because they are known to work. Similarly, epic battle scenes are frequently scored with lots of brass, while urban action scenes employ drums and percussion, distorted guitars, and funky electric bass. The particulars of musical style vary to some degree with fashion but, paradoxically, when someone breaks a rule successfully, others often imitate that, quickly making the technique into a new rule.

Distinguishing good from evil requires having both, yet most of life comes in shades of gray. We find the world of rules to be much the same in the arts. Ultimately, it is a mistake to think that the rules will always accomplish what is needed or that breaking them is necessarily clever. Sometimes it is better not even to concern oneself with the concept of rules. Or, as Thomas Edison growled, "Hell, there are no rules here—we're trying to accomplish something." **EM**

"I try not to break the rules, but merely to test their elasticity."

—Bill Veeck

are deemed so important to society that they are designated as compulsory and penalties are imposed on those people who break them.

In the world of creativity and art, that is not necessary, as it is relatively rare for anyone to get hurt by rules being broken. Sure, there were riots at the premiere of Stravinsky's "Le Sacre du Printemps" but, by and large, rule breaking in music and sound is at least physically benign. In fact, it is in breaking the rules that a great deal of artistic material is generated.

For musicians, the situation is often closer to the qualification that is given by Captain Barbosa when he describes the pirate's code in the film *Pirates of the*

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



A day in your life

with
the
Traveler™

10:30am

Review last night's
tracking session
over coffee



2:30pm

Head to client's
studio for surround
mix approval



7:30pm

Record overdubs
back in the studio for
yet another project



4:30pm

On the way back,
capture some fresh
ideas, while they're hot



TRAVELER™
BUS-POWERED HIGH-DEFINITION FIREWIRE AUDIO INTERFACE



MOTU
motu.com