

# PROJECT Record Label Revolution

# E

THE PROJECT  
RECORDING &  
SOUND  
MAGAZINE

MAY • 1998

**In Review**

**JBL-Smaart v.2**

**JOEMEEK VC5 EQ**

**Lexicon DC-1**

**Korg D8**

**Mic Auditions**

**Earthworks**

**Danish Pro Audio**

**Sennheiser**

**Neumann**

**Audix**

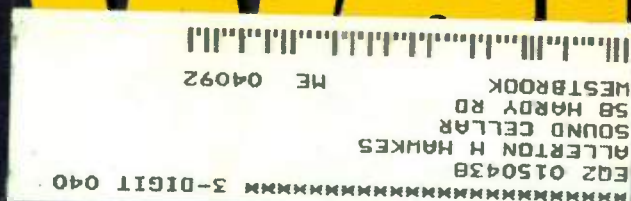
**Peavey**

*Robbie  
Robertson's*

# Next Waltz

VISIT US ONLINE  
[WWW.EQMAG.COM](http://WWW.EQMAG.COM)

**SPECIAL  
DIGIDESIGN  
DEVELOPERS  
SUPPLEMENT**



World Radio History

A MILLER FREEMAN PUBLICATION



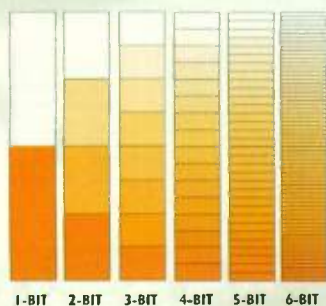
# It's Not Science Fiction.

ALESIS  
recording





# It's Reality.



Every bit you add doubles the resolution of a digital recorder. Compared to 16-bit formats, ADAT Type II's non-compressed, linear 20-bit recording offers a wider dynamic range, less quantization distortion at low levels, more headroom and even lower noise. Result: detailed, full-spectrum audio fidelity that far exceeds the quality of any analog recorder.

While the rest of the world is trying to figure out the final frontier of recording formats, you need to make a decision. What's the best choice today that will keep you ahead of the game tomorrow?

The answer: **ADAT Type II**. It's the next generation of Alesis' award-winning digital audio technology that combines the proven power of ADAT with the astonishing fidelity of true 20-bit linear recording.

With the new **XT20™**, you get a serious improvement on the world standard for professional recording. The new **LX20™** is the most affordable ADAT ever made. Both provide all the real-world qualities that made ADAT the most popular professional recording format: modular design, efficient tape-based media and complete compatibility with over 110,000 ADATs around the world. Plus, as the only modular digital multitracks that write 20 bits to each track of tape, the new ADAT Type II recorders offer audio quality that's miles ahead of any 16-bit system, period. And with the introduction of the **ADAT-PCR™** interface card, you get the advantages of nonlinear editing on your Mac® or Windows® computer seamlessly integrated with ADAT format recording.

Most importantly, the intuitive ease-of-use, comprehensive features and incredible affordability of the ADAT Type II systems put no limits on your creativity. Because, after all, the final frontier is really your imagination.

## adat TYPE II

There are over 110,000 ADATs in use today, and the new ADAT Type II recorders are compatible with all of them. The XT20 and LX20 will work with your 16-bit ADAT tapes, and you can combine the Type II recorders in a system with any model of older ADAT.



If you think tape isn't as advanced as other removable recording media, think again. You'd need more than 30 Zip® disks to equal the 3.4 gigabyte storage capacity of just one inexpensive ADAT tape.

Don't get fooled by the science fiction of some "24-bit" recording systems. Just read the fine print: the state-of-the-art ADAT Type II recorders offer audio specs that rival any 24-bit system, without resorting to tricks like data compression or track sharing.

For more information on ADAT Type II, the XT20, the LX20 and the PCR, see your Authorized Alesis Dealer. Or call 800-5-ALESIS to order the ADAT Type II Systems video and brochure (\$4.95 for shipping and handling).

® Alesis and ADAT are registered trademarks; XT20, LX20 and PCR are trademarks of Alesis Corporation. Mac is a trademark of Apple Computers. Windows is a trademark of Microsoft. Zip is a trademark of Iomega.

Alesis Corporation

1633 26th Street Santa Monica CA 90404 800-5-ALESIS alecorp@alesis1.usa.com www.alesis.com

World Radio History

## ALESIS

CIRCLE 04 ON FREE INFO CARD



# "Overall frequency was almost hard

# HR824 ACTIVE MONITOR



Logarithmic wave guide helps accurately propagate high frequencies over a wider area. Result: better dispersion, more precise imaging and a far wider sweet spot.

Edge-damped 25mm high-frequency transducer is directly coupled to its own 100-watt FR Series™ Low Negative Feedback internal power amp.

Alloy dome is free from "break-up" that plagues fabric domes, causing high frequency distortion.

Signal present and overload LEDs.

Instead of a noisy port, a passive honeycomb aluminum transducer on the rear of the HR824 almost doubles the low frequency radiating surface.

*"This allows the HR824 to move a large volume of air with minimal low frequency distortion & power compression."*  
EM Magazine\*

Specially-designed 224mm low frequency transducer has a magnet structure so massive that it wouldn't even work properly in a conventional passive loudspeaker. But servo-loop-coupled to a 150-watt FR Series™ amp, it's capable of incredibly fast transient response and extremely low frequency output.

Inside, the HR824 cabinet is 100% filled with adiabatic foam. Result: Unwanted midrange reflections from the low frequency transducer are absorbed inside the enclosure instead of being reflected back out through the cone into your listening space.

*"The enclosures — dressed in a conventional yet classy black — are shielded."*  
EM Magazine\*

Inside. Two separate FR Series™ power amplifiers with a total of 250 watts rated power — the most of any active monitor in the HR824's class.

On the back, HF Boost/Cut, Acoustic Space, Roll-Off and sensitivity controls, balanced 1/4" and XLR inputs. *"The Mackie HR824 is the only system (in the comparative review) that doesn't require the user to fumble around with tiny tools in order to make adjustments."*  
EM Magazine\*

\* Electronic Musician, October 1997, All quotes are unedited.

©1997 Mackie Designs. All Rights Reserved. All specifications are subject to change without notice.

UREI is a registered trademark of Harman International.

MACKIE... HR Series are registered trademarks or trademarks of Mackie Designs Inc.

Actually this paragraph doesn't have anything to do with the HR824. Mackie is further expanding its R&D/Engineering department and is looking for more analog and digital engineers with experience in pro audio. Log onto our web page for particulars.



# response was so flat that it to believe." Electronic Musician Magazine\*

**Ready to confront reality? The HR824 Active Monitor is now in stock at Mackie Dealers.**

Owning a set of HR824 near field studio monitors has the potential of seriously altering your perception of sound.

For the first time, you'll be able to hear **precisely** what's going on all the way through your signal chain — from microphones right through to your mix-down deck. You'll suddenly discern fine nuances of timbre, harmonics, equalization and stereo perspective that were sonically invisible before.

Some tracks you've recorded will amaze you; others may send you back for an immediate remix. But either way, for the first time, you'll be hearing **exactly** what was recorded — not what a conventional loudspeaker may or may not have been capable of reproducing.

Admittedly, these are pretty brazen claims (which is why we're backing them up with comments from a credible, third-party source).

But all you have to do to become a believer is to visit

your nearest Mackie dealer. When you

compare HR824s to the competition,

you're going to hear some dramatic differences.

First you'll notice far more openness and detail. Critical listeners tell us that it's as if a curtain has been lifted between

themselves and the sound source.

Next, you'll notice low frequency output so accurate that you might look around for the hidden subwoofer (some of the world's most experienced recording engineers have



Each HR824 ships with its own signed Certificate of Calibration attesting to its  $\pm 1.5\text{dB}$  39Hz-22kHz frequency response.

done this, so don't be embarrassed). The HR824 really IS capable of flat response to 39Hz. Moreover, it's capable of accurate, articulated response that low. Rather than a loudspeaker's "interpretation" of bass, you can finally hear through to the actual instrument's bass quality, texture and nuances.

Next, if you can "unlock" yourself from

the traditional, narrow "sweet spot" directly

between the monitors, you'll discover that the HR824s really DO live up to our claim of wide, dispersion.

Their sweet zone is so broad that several people can sit next to each

other — or if you work solo, you can move from side to side in front of large consoles — and still hear a coherent, detailed stereo panorama.

Finally, let the sales-

person go wait on somebody else and enjoy an extended session with one of your favorite CDs. When you're through, you'll discover that when distortion and peaky frequency response are minimized, so is ear fatigue:

You can listen to HR824s for hours on end.

**"The low end was robust and present; the electric bass and kick drum thumped into my chest the way those huge UREI® monitors did back in the old days."**

**"Overall, the response was so smooth that I wasn't even aware of a crossover point."**

**"Stereo imaging and depth were fabulous."**

One final point... your monitors are the only part of all your studio equipment that you actually hear.

Along with good microphones, HR824s are the best investment you can

make, no matter what your studio budget. And, like premium mics, HR824

monitors cost more than less accurate transducers.

But if you're committed to hearing **exactly**

how your creative product sounds, we know you'll find owning HR824s well worth it.

## MACKIE

In the U.S., phone 800/898-3211 • Outside the U.S. 425/487-4333  
Web: [www.mackie.com](http://www.mackie.com) • E-mail: [sales@mackie.com](mailto:sales@mackie.com) • NASDAQ: MKIE

CIRCLE 46 ON FREE INFO CARD  
World Radio History





# EQ

PROJECT RECORDING  
& SOUND TECHNIQUES  
VOLUME 9, ISSUE 5  
MAY 1998



## FEATURES

**ROBBIE ROBERTSON: LONG HOUSE MUSIC** *By Mr. Bonzai* .....68  
*The legendary Band member talks about his project studio and how he used it on his latest Native American-themed release.*

**THE PROJECT RECORD LABEL** .....76  
*Record label? We don't need no stinkin' record label! This special section tells you how to get your releases into the hands of the people that want them — without major label support. Stories include:*

- **DO-IT-YOURSELF DISTRIBUTION** *By Dylan Magierek* .....78  
*The title says it all — how to get those discs out of your basement and into stores.*
- **INTERNET PROMOTION & DISTRIBUTION** *By Allen Whitman & Jon R. Luini* .....82  
*EQ's FezGuys tell how to use the Internet to spread the word and dole out the discs.*
- **PRODUCTION SMARTS** *By Jay French* .....86  
*A good production agreement can prevent trouble later on down the road.*
- **DUPE-IT-YOURSELF CD DUPLICATION** *By Roger Nichols* .....90  
*With the introduction of cost-effective new equipment and media, it is easier than ever to press your own discs.*

**MIC AUDITIONS '98** *By Mike Sokol & Steve La Cerra* .....94  
*EQ tests six new microphones and gives you the information you need to know before you buy. Mics include: Audix D4, Earthworks Z30X and QTC1, Sennheiser Evolution Series, Peavey PVM 22, Danish Pro Audio DPA4060, and Neumann TLM 103.*

## EQ LIVE

**MATCHBOX20: ACCURACY & ENERGY** *By Stephen W. Mackey* .....110  
**ROAD GEAR** .....114  
**CLUB PROFILE: KING CAT THEATER** *By Steve La Cerra* .....116  
**ROAD TEST: JBL-SMAART SYSTEM V.2** *By Wade McGregor* .....120

## TECHNIQUES / WORKSHOPS

**POSTPRODUCTION: BIG EXPECTATION, LITTLE TIME** *By E.D. Menasché* .....48  
**SKA'S THE LIMIT** *By Victor Rice* .....54  
**ENTERING THE VINTAGE ZONE: BUYER BEWARE** *By Bennet Spielvogel* .....58  
**PETER FRAMPTON: SHOW US THE WAY** *By Steve La Cerra* .....64

## COLUMNS / DEPARTMENTS

**MI INSIDER: WHO MADE THIS BIG MESSE?** *By Craig Anderton* .....34  
**KOOPER'S KOUCH HACKS & FAQS** *By Al Kooper* .....42  
**THE FEZGUYS: SPATIAL DELIVERY** *By Jon Luini & Allen Whitman* .....132  
**MAINTENANCE: DOUBLE BONUS** *By Eddie Ciletti* .....138  
**FAST FORWARD: BE NICE TO THOSE WHO PAY YOU** *By Martin Polon* .....140  
**ACROSS THE BOARD: A HARD DISK'S NIGHT** *By Roger Nichols* .....154

**EDITORIAL** .....8  
**LETTERS TO EQ** .....10  
**EQ&A** .....12  
**PRODUCT VIEWS** .....18  
**STUDIOWARE** .....24  
**FIRST LOOK: TASCAM TM-D1000** .....28

**MICROPHILE: MICROTECH GEFELL UM 900** .....32  
**FIRST LOOK: NEUMANN CONTEST** .....44  
**IN REVIEW: JOEMEEL VCS EQUALIZER** .....124  
**IN REVIEW: LEXICON DC-1 SURROUND PROCESSOR** .....126  
**IN REVIEW: KORG D8 HARD-DISK RECORDER** .....130  
**AD INDEX** .....123

### ON THE COVER:

**Robbie Robertson at  
The Village Recorder.**  
*Photo by Mr. Bonzai.*

EQ (ISSN 1050-7868) is published monthly plus Buyer's Guide in December by Miller Freeman PSN Inc., 460 Park Ave. south, 9th fl., New York, NY 10016-7315. Periodicals postage paid at New York, NY and additional mailing offices. POSTMASTER: Send address changes to EQ, P.O. Box 0532, Baldwin, NY 11510-0532. SUBSCRIPTIONS: U.S. \$29.95 for 1 yr. (13 issues); CANADA add \$16.00 per year for surface; other countries add \$15.00 per yr. for surface; All add \$30.00 per yr. for Airmail. All subscriptions outside the U.S. must be pre-paid in U.S. funds by International Money Order, checks drawn from a bank located in the USA Visa, Master Card or American Express. Back-issues \$5. Printed in the U.S.A.



# DARE TO COMPARE

## The Award-Winning Peavey PVM™ 22 Diamond Microphone Against Your Favorite Microphone!

Every microphone manufacturer says its mic is better. We invite you to test drive the **PVM™ 22 Diamond Mic!** Don't follow the masses by using an outdated industry-standard mic with thirty-year-old technology. Check out the new standard in hand-held microphones.

- ◆ Exclusive diamond-coated diaphragm for exceptionally accurate signal reproduction
- ◆ Acoustical baffles for reduced handling noise (utilizing space shuttle materials)
- ◆ Neodymium magnetics for superior output gain
- ◆ Rubberized finish for less handling noise and comfortable feel



The PVM™ 22 Diamond Mic was awarded *Music and Sound Retailer's* "Most Innovative Microphone/Wireless System of the Year 1998."



### It's Time You Heard!

Peavey Electronics Corporation • 711 A Street • Meridian, MS 39301 • Phone 601-483-5345 • Fax 601-486-1278 • <http://www.peavey.com> • ©1998  
Music and Sound Awards are copyrighted by Testa Communications and the Music and Sound Retailer.

CIRCLE 55 ON FREE INFO CARD





Vol. 9, No. 5 May 1998

**PAUL G. GALLO**  
Publisher

**HERB SCHIFF**  
Associate Publisher

**TIM WETMORE**  
Editorial Director

**HECTOR LA TORRE**  
Executive Director

**MARTIN PORTER**  
Executive Editor

**ANTHONY SAVONA**  
Managing Editor

**CRAIG ANDERTON**  
Technology Editor

**STEVE LA CERRA**  
Senior Editor

**ROBERT GRANGER**  
Associate Editor

**EDDIE CILETTI, DAVID MILES HUBER, DAVID FRANGIONI, AL KOOPER, BOB LUDWIG, JON LUINI, WADE MCGREGOR, ROGER NICHOLS, BOBBY OWSINSKI, MARTIN POLON, MIKE SOKOL, TIM TULLY, ALLEN WHITMAN**  
Contributing Editors

**MR. BONZAI**  
Editor-At-Large

**MP&A EDITORIAL**  
Editorial/Design Consultants

**MATT CHARLES**  
National Sales Manager

**ANDY MYERS**  
Midwest Regional Manager

**ALBERT MARGOLIS**  
West Coast Regional Manager  
Tel: 714-582-5951, Fax: 714-582-5015  
E-mail: blusenote@msn.com

**MARSHALL MOSELEY**  
Art Director

**MELISSA HALKA**  
Assistant Art Director

**Editorial Offices**  
6 Manhasset Avenue  
Port Washington, NY 11050  
Tel: (516) 944-5940, Fax: (516) 767-1745  
E-mail: eqmagazine@aol.com

**PUBLISHED BY MILLER FREEMAN PSN, INC.**

**KATHLEEN MACKAY** Associate Publisher—Audio Division

**RIVA DANZIG** Creative Director

**FRED VEGA** Production Manager

**CRISTINA GALLO** Marketing Manager

**ANNETTE GOLLOP** Circulation Manager

Subscriptions: EQ Magazine

P.O. Box 0532, Baldwin, NY 11510

tel: (212) 378-0449 email: circulation@psn.com

Article Reprints: tel: (212) 378-0440 email: reprints@psn.com

Administrative/Sales Offices

460 Park Avenue South, 9th Floor

New York, NY 10016-7315

Tel: (212) 378-0400, Fax: (212) 378-2160

Websites: [www.prsoundnews.com](http://www.prsoundnews.com) [www.eqmag.com](http://www.eqmag.com)



EQ (ISSN 1050-7868) is published monthly plus Buyer's Guide in December by Miller Freeman PSN Inc., 460 Park Ave. S., 9th Fl., New York, NY 10016-7315. Periodicals postage paid at New York, NY and additional mailing offices.

POSTMASTER: Send address changes to EQ, P.O. Box 0532, Baldwin, NY 11510-0532. SUBSCRIPTIONS: U.S. \$24.95 for 1 yr.; CANADA add \$10 per yr. for surface, other countries add \$15 per yr. for surface. All add \$30 per yr. for Airmail. All subscriptions outside the U.S. must be pre-paid in U.S. funds by International Money Order, check drawn from a bank located in the USA, Visa, MasterCard or American Express. Back issues \$5. All product information is subject to change, publisher assumes no responsibility for such changes. All listed model numbers and product names are manufacturers' registered trademarks.

Printed in the U.S.A.

**Miller Freeman**  
A United News & Media company

# Are Engineers **Obsolete?**

Back in 1988, I got a call to record the lead vocals for an album. The vocals wouldn't be recorded in a studio, though; the producer had rented a condo and installed a console and Akai 12-track recorder. They only wanted me for one session — to get the vocal settings. When I asked who would be engineering, the producer assured me he was quite capable of punching three buttons: Play, Record and Stop. I bit my tongue and didn't say what I knew to be true: that there is much more to engineering than punching buttons. At the time, I didn't realize that this session marked the beginning of a disturbing trend that continues to escalate.

These days, it seems everybody is an artist/producer/player/programmer/studio owner/and, of course, engineer. Low-cost recording equipment initiated this revolution, and one of the side effects is that engineering may be turning into a lost art. Some artist/producers who put studios in their homes really think that engineers are a luxury, and prefer to spend their engineering budget on equipment. Is an engineer's only contribution to a project knowing when to punch and how much equalization to add? Does buying better equipment instead of hiring an engineer ultimately produce a better-sounding album? I don't think so.

A great engineer doesn't just make sonic improvements. He or she also provides an experienced second opinion for the artist/producer. An engineer frees up the artist from thinking about technical issues while trying to enhance the creative process. It's simply not possible to give 100 percent of one's attention to the creative and technical aspects of recording at the same time. Biology dictates that we use different hemispheres of our brain for analytical and creative tasks; one or the other will suffer, depending upon our current area of focus.

Is the current state of engineering the result of ego, technology, or financial constraints? Some think engineers were necessary "back when we used analog tape and had to worry about tape noise and alignment," asserting that engineers were needed due to primitive recording equipment. These people believe that today's superior recording tools have rendered engineers nonessential. Another factor is shrinking budgets. Many artists who once spent enormous amounts of money on studio time and engineers are now buying equipment with the \$50k previously budgeted for engineering. This way they are investing in technology, but that investment is not always a "sound" decision.

We should ask ourselves whether we are making better music, and better *sound-*ing music, as the result of these changes. History reminds us that string players panicked when string synths appeared, and some thought the LINN drum would threaten drummers' livelihoods. Some commercial studios are still crying about lost business due to project recording. Now it seems the last bastion of expensive high technology, the mastering facilities, are feeling the desktop revolution's financial impact. With each of these successive technological strides, we have gained some things and lost others. Who among us can't tell the difference between sampled and real strings? But financial restrictions discourage spending \$5000 when a \$300 synth overdub will satisfy 99 percent of the buyers. Nonetheless, cost isn't everything. The key issue is whether or not we are making better-sounding recordings.

Should engineers reinvent themselves to prove their value? The adage "Diversify or Die," used in the mid-'80s to encourage studio owners to broaden their services, seems appropriate for engineers today. Some engineers are setting up workstations for clients, optimizing computers for audio, or getting sounds on a per-project basis. Other engineers are turning to graphics and album artwork or offering editing and mastering services for project recordings. Surround sound and new data-compression technologies also offer new areas where expertise will be crucial.

Ultimately, I strongly believe that the sonic tide will turn. People will realize that the "Emperor's New Digital 8-Track" is not what makes a record sound great, and that inexpensive equipment is a poor substitute for talent and years of experience. Drastic changes are coming in the way we make and mix music and in the technology we use. The future belongs to those who can adapt and offer services that are perceived as having or adding value. That value must be demanding the absolute best in sonic quality.

—Lynn Fuston, 3D Audio, Inc.



# Someone should build an all-tube guitar amp dedicated to recording.



**Signature 284**  
Designed by John Riddings

All Tube Class "A" Stereo Recording Amplifier and Direct Source



**lexicon**

## Lexicon does.

The **Signature 284** is the ultimate direct box for guitar, delivering authentic feel and tone as only a fully-cranked, all-tube amp can.

A unique design combines a high-gain preamp with a low-watt, stereo Class "A" power amplifier. The preamp section uses three 12AX7 tubes and incorporates a

switchable high-gain stage and beautifully-voiced tone controls. The stereo amp uses two EL 84 tubes in a Class "A" configuration. A tube-driven stereo effects loop lets you place effects in-line between the preamp and power amp for sonic effects that can't be



obtained at the console. The speaker outputs handle any 8 or 4 ohm guitar cabinets — and built-in speaker loads allow silent recording.

Simultaneous stereo outputs (slave amp and recording) are post power amp — so they carry the sonic signature

of the whole amp, not just the preamp.

When you want to go direct, built-in speaker simulation eliminates the need to mic cabinets — nice when you're the artist, the engineer and the tech.

**Signature 284. An all-tube amp designed to help you record great guitar tracks.**

**lexicon**

Heard In All The Right Places

Lexicon, Inc. • 3 Oak Park, Bedford, MA 01730 • 781/280-0300 • Fax: 781/280-0490 • Email: info@lexicon.com • Web: www.lexicon.com

H A Harman International Company

CIRCLE 36 ON FREE INFO CARD  
World Radio History



## HAVE WE OFFENDED SOMEONE?

*Ouch. The editorial by Steve "Woody" La Cerra in our March issue has apparently hit a nerve with quite a few readers. Here is a sampling of some of the letters we have received:*

I would maintain that, in many ways, working for a living in the music business can lead to less creativity. One only has to listen to the many well engineered and produced, high-budget, musically infantile offerings on the radio these days to see what I mean. There is a cookie-cutter mentality in the popular music world that seems to resist new ideas. Faced with the pressures to keep food on the table, a studio owner must work on projects that they would not otherwise if given a choice (instructional Bar Mitzvah tapes come to mind here). But that's the primary difference between an amateur and a professional. Professionals do work first for money (with love hopefully a close second). Amateurs do it for the pure joy.

I think that maybe you are a little envious of hobbyists. We get the best of all worlds. I can create what I want, when I want, without any outside pressures or judgments. Who knows, I might even get a bit lucky and find that some of my work sneaks into the mainstream. Technology has so narrowed the gap between what full-fledged project and home studios can accomplish, that in many cases, the only thing separating us is our mission in life.

Mark Robinson  
via Internet

There are a lot of professional musicians now so fed up with the arrogance and ego trips of others involved in this business (that includes project studio engineers) that they are willing to go it alone — production, marketing, distribution. Hopefully the Internet will help facilitate this.

After reading Mr. La Cerra's thoughts, I have to say, I couldn't read the rest of the magazine without thinking throughout every article how arrogant and egotistical this or that sound or mix engineer seemed. I don't think I'm going to be able to forgive this attitude any time soon.

Rick Knepper  
Ft. Worth, TX

I was under the assumption that your magazine's goal was in part to help out those of us who do not know as much as the writers in *EQ*. I always felt that *EQ* was supportive of the efforts of those of us on the bottom of the musician/engineering food chain. Let me remind you of some definitions. The line you draw between home studios and project studios is artificial and harmful. It suggests that home studios are not places of serious work. While my "projects" might never reach the marketplace, that in and of itself *does not* make them less legitimate. I would also assume that many project studios are physically located in people's houses, therefore, your attempt to clearly define the two is somewhat poor. It seems to me that the distinction you really want to make is that some people buy gear to play and others are more serious (i.e., try to make a living at it).

Brett A. Fox  
via Internet

## SHOW OF SUPPORT

*Of course, there were quite a few letters that came in supporting the editorial. Case in point...*

I enjoyed the topic of home vs. project studio, and I want you to know that I will be showing [the editorial] to my students to help clear up any misguided thoughts. (I even think my wife has a better understanding of the situation after I had her read it.) I feel that the difference between people who turn knobs and push faders and the people who engineer is that engineers have a greater understanding of the audio task at hand. It always comes down to... "It's not the gear, it's the engineer." A good engineer can have all the gear in the world and will still come out with a not so great-sounding project. In today's world, it is becoming more important that the project studios and traveling local/regional SR engineers have a greater understanding of the basics of audio. This is true in every aspect, from maintenance and troubleshooting to turning knobs and acoustics.

Jason Spartz  
St. Mary's University of MN  
via Internet

## SOUL SEARCHING

Kudos to Al Kooper for saying what I think a lot of people today are afraid to

say — namely that today's R&B is a tired, formulaic, derivative, creatively bankrupt shadow of what R&B and soul used to be. Nobody seems to care, however, because the Benjamins (which, as we all know, are what it's all about) are flooding in, and the cost of albums is minuscule thanks to the 100 percent MIDI, cookie-cutter production aesthetic. It's a record executive's wet dream. Sadly, I don't think we'll be seeing an album on par with *Songs in the Key of Life* from today's R&B production environment anytime soon. But, fortunately for R&B producers, there are still a couple of songs left on that album that haven't been lifted yet. Better hurry!

Steve Rossiter  
New York, NY

## DI CORRECTIONS

In the April issue's "To DI For" story, there a couple of items that need clarification. First, the wrong phone number for ARX was published. The correct number is 818-225-1809.

Second, the features of the Radial JDI and the Radial JDV were confused. (Both models were sent, but only the JDV was listed in the issue.) The Radial JDV is a Class-A transformerless DI. It runs on a phantom power supply and has five NiCad batteries that receive a trickle charge from the two external power sources. The momentary battery check works two ways: when nothing is connected to the front panel 1/4-inch input jack, you can test if phantom is present, and when a guitar is plugged in, you can check the batteries.

The Radial JDI *does* have a transformer. It uses a premium Jensen transformer and Mogami cable on the inside. It is phase accurate, and solves problems such as common mode noise and ground loops from keyboards.

We apologize for any inconvenience.

## WRITE TO US

Send your letters to:  
EQ Magazine • Editorial Offices  
6 Manhasset Ave.  
Port Washington, NY 11050  
Fax: 516-767-1745  
E-mail: EQMagazine@aol.com  
Web: www.eqmag.com



# Pure Gold Sound Investment



**THE ULTIMATE  
SOLUTION TO  
DIRECT-TO-DIGITAL  
RECORDING**



**HIGH-END**  
TWO-CHANNEL MIC. PREAMP

**CUTTING-EDGE**  
24 BIT AD/DA CONVERSION

**POWERFUL**  
48/96 KHZ DIGITAL PROCESSING

## INPUT

- ◆ STEREO/DUAL MONO MIC PREAMP
- ◆ TRUE 48V PHANTOM POWER
- ◆ 24 BIT AD CONVERTERS
- ◆ LO CUT FILTER
- ◆ SOFT LIMITER
- ◆ AES/EBU
- ◆ S/PDIF
- ◆ ADAT™

## PROCESSING

- ◆ 48/96 KHZ INTERNAL DYNAMICS PROCESSING
- ◆ EXPANDER/GATE
- ◆ COMPRESSORS
- ◆ EQs
- ◆ DE-ESSER/DYNAMIC EQ
- ◆ DRG™ DIGITAL RADIANCE GENERATOR
- ◆ MICROPHONE TIME ALIGNMENT DELAY
- ◆ M/S ENCODING/DECODING

## OUTPUT

- ◆ 24 BIT DA CONVERTERS
- ◆ AES/EBU
- ◆ S/PDIF
- ◆ ADAT
- ◆ ANALOG XLR
- ◆ Simultaneous Analog and Digital Outputs

**RECALL THE MAGIC:** VERSATILE FACTORY PRESETS AND CUSTOM USER BANKS ENABLE YOU TO SAVE THE EXACT SETTINGS FROM YOUR FAVORITE RECORDINGS AND RECALL THEM AT WILL, SAVING YOU HOURS OF WORK IN THE STUDIO.

**t.c. electronic**  
ULTIMATE SOUND MACHINES

TC ELECTRONIC INC., 790-H HAMPSHIRE ROAD, WESTLAKE VILLAGE, CA 91361, USA · PHONE: (805) 373 1828 · FAX: (805) 379 2648  
EMAIL: INFOUS@TCELECTRONIC.COM · HTTP://WWW.TCELECTRONIC.COM  
TC ELECTRONIC A/S, SINDALSVEJ 34, DK-8240 RISSKOV, DENMARK · PHONE: + 45 8621 7599 · FAX: + 45 8621 7598  
**CIRCLE 67 ON FREE INFO CARD**



## E-MU II POWER SUPPLY

**Q** I just took my Emulator II + 6060 model keyboard sampler to get serviced. It needed a new power supply and I was told that E-mu no longer has the part, nor will they fix it. I called E-mu customer service and left a message on their voice mail, but got no reply. I then e-mailed them, but again no reply.

I bought that keyboard new in the mid '80s for nearly \$6000 and I put thousands more into my sound library. I can't believe E-mu would do this to me. Please help.

Chuck Mason  
via Internet

**A** It is unfortunate that our e-mail responses did not reach Mr. Mason, but E-mu did in fact respond twice to Mr. Mason's e-mail requests. We always try to help owners of our gear, but sometimes even the best intentions go awry.

E-mu never had any schematics or specs for the EII Compower power supply. We simply purchased the supply assembled from Compower in San Jose, CA. Compower, unfortunately, seems to be out of business (I tried to find some kind of contact for them, and they no longer have any listed number in San Jose). As such, we have absolutely no way to reference a schematic to repair the power supply. It has always been the policy of E-mu to replace the power supplies on our units as an assembly, not repair their individual components. There are no more EII power supplies in stock and we have no reference for aftermarket suppliers. It has been our suggestion to all EII users that they take the power supply to a local independent power supply repair company and ask them to rebuild the power supply. We need to consider that the unit is over ten years old, and parts on "vintage" units will only be increasingly difficult to find. You should try calling JL at Music

Technology Services, who says that he could rebuild the power supply. His phone number is 818-506-4641.

We wish you good luck, and if we can help with any other E-mu questions, please contact us.

Dan Becker  
E-mu Systems, Inc.

*Note:* If there are any other parts suppliers or repair centers out there that can assist Mr. Mason, drop us a line at EQ and we'll pass along the word. —HGL

## BURNING QUESTION

**Q** I've owned a Fostex RD-8 (ADAT compatible) for about four years now, but it's only been in heavy use this last year. For the past four months, it's been used in a relatively warm setting (80–85 degrees). Two days ago, while formatting a tape, the machine stopped and the display shut down. I noticed a strong burning smell coming from the unit. There was also an intermittent sound, like a pulse, from its balanced analog outputs. Also,

none of the transport functions worked, and the unit was warm to the touch.

I let the unit cool down for an hour and then turned it on again; I still got the pulsating sound, and the display remained dark. I removed the underneath cover and noticed that the burning smell came from the compartment housing the transformer. I also checked the fuse, but it wasn't blown.

I have been trying to contact Fostex, but haven't had any luck. I know it's difficult for you to tell from just this letter, but could you give me some advice as to my options for repairing the unit? What kind of expense am I looking at and can you point me in the right direction as to a service center that can perform the repairs? As for the cost, I'm just looking for an idea, as I have never had to take a unit in for repair and can't even imagine what the costs are.

Julio A. Perez  
via Internet

**A** I'll bet your problem is precisely where you noticed the strong smell — at the transformer, a.k.a., the power supply. Check again with Fostex, but for about \$175, you can purchase a new/rebuilt supply from Alesis (tell them you have a blackface "original formula" ADAT). I don't know why you are having difficulty getting hold of Fostex. They did have an area code change. Try them again, as they are usually very helpful, and can supply you with a list of authorized service centers. Their contact information is: 562-921-1112; fax: 562-802-1964; e-mail: info@fostex.com; Web: www.fostex.com

Eddie Ciletti  
Contributing  
Editor  
EQ magazine

## QUESTION MAN

**Q** I have a few questions. First, what is the difference between balanced and unbalanced inputs on mixers, power amps, etc.? Next, what exactly do line inputs do that the other inputs don't (or vice versa)? Also, why are ground lifts necessary and what do they do? Fi-

CIRCLE 71 ON FREE INFO CARD



# HOW DOES SWEETWATER SOUND GUARANTEE YOU THE BEST VALUE on Music and Recording Equipment?

**1. Convenience:** Shop from your phone — no racing all over town to noisy stores! Choose from a huge selection. Get professional assistance from an experienced music technology specialist to select the right products — without high-pressure hype. Your gear is shipped direct to your door! What could be easier?

**2. Savings:** Our exclusive "ProNet Direct Pricing" can save you thousands! We buy in tremendous quantities so we always get the lowest price and pass the savings directly on to you! Why spend a penny more?

**3. Service:** Our in-house tech and service department supports all brands of gear with one call! We don't pass the buck — we make your rig sing! Why go it alone?

**4. Respect:** Shouldn't shopping for equipment be fun and exciting, rather than a hassle? Wouldn't you enjoy old-fashioned courtesy? We'll do everything we can to make it easy for you to create and record great music! Why settle for any less?

- ✓ All the top microphones and preamps.
- ✓ Your choice of recorders, from tape-based to hard disk.
- ✓ The leading mixing consoles for studio or stage.
- ✓ Versatile reverbs, effects and dynamics processors.
- ✓ The best selection of MIDI keyboards and modules.
- ✓ Powerful drum machines and electronic percussion.
- ✓ Music software for sequencing and recording.
- ✓ The best monitors and amps for studio and stage.
- ✓ Premium guitars, basses, amps and pedal effects.
- ✓ Every imaginable stand, accessory and more!

There's never been a better time to own the gear you've always wanted. Features and sound quality are way up in every category, while prices are way down. An investment in your musical equipment has never gone farther than it will today.



## MUSIC TECHNOLOGY DIRECT AND THE BEST VALUE — GUARANTEED!

*Why not call right now to find out why Sweetwater is your Premium Direct Music Technology Source? We think you'll find there's simply no better way to shop!*



# (800) 222-4700

(219) 432-8176 • FAX (219) 432-1758 • sales@sweetwater.com  
5335 BASS ROAD • FORT WAYNE, INDIANA 46808

**Win FREE GEAR!** Monthly giveaway on our website!  
Go to "www.sweetwater.com/contests" right now for more info!



## Record Deals.

## Publishing Deals.

## Film/TV Music Deals.

## Foreign Deals.

## We're Not Kidding...

But you won't know that unless you call this toll-free number and request our FREE information kit.

**1-800-458-2111**



# TAXI

The Leader in Independent A&R

CIRCLE 68 ON FREE INFO CARD

nally, what do parallel inputs do?

Justin Raikes  
via Internet

**A** Let's handle your questions in order:

- Balanced inputs use three conductors: plus, minus, and shield. Their main benefit is they pick up less noise from other electrical activity (including other sound gear) in the area. Unbalanced inputs only have two conductors: plus and shield. Typically, all XLR connectors are balanced, while all mono 1/4-inch phono plugs are unbalanced. A lot of boards, Mackie in particular, use what are called TRS jacks (Tip, Ring, and Sleeve), which look like stereo headphone connectors and can be balanced as well.

- Line inputs don't have as much gain, since it's assumed that the signal going to them will be pretty hot to begin with. Also, most don't have EQ or complex routing controls. Usually they just go to the main left and right busses.

- By lifting pin 1 in the XLR connector and disconnecting the shield from the chassis, ground lifts help reduce the 60-cycle hum you get when stage amplifiers and mixing boards are plugged into different 120-volt AC sources. Properly utilized, they allow you to keep the stage amplifiers and console safely grounded, while losing the hum.

- I don't think there's any such thing...

Now for the plugs: You should keep reading *EQ magazine*, checking my Web site, and invest in a copy of my book *The Acoustic Musician's Guide to Sound Reinforcement and Live Recording*. All these, and many other questions, will be answered.

Mike Sokol  
Contributing Editor  
EQ magazine  
www.soundav.com

### WHAT'S THE BUZZ

**Q** I have two Yamaha TX81Z tone modules that when plugged in but not turned on seem to give off voltage of about 110 volts through the steel chassis. A friend of mine used a voltmeter to verify this, but could not tell me at how many amps. Strangely, when the TX81Z's are powered on, the voltage decreases to roughly half.

Since both units exhibit the same problem, perhaps it's some kind of design flaw that, if possible, I'd like to correct. What makes the problem worse is that when the TX81Z's are placed nearby other gear or in a rack, they cause noise in the neighboring modules. The TX81Z has a steel chassis and an internal pow-

er supply and the power plug is 2-pronged. Do you have an idea what might remedy this problem?

JD990  
via Internet

**A** My guess is that both units need to be grounded. The lack of a third pin on the power cord means current leakage from the power transformer will be magnetically transferred to the steel chassis. (Or, there is a capacitor to chassis from one or both of the power mains.)

In either case, the voltage measured most likely has little current. Try reversing the "polarity" of the incoming power by physically flipping the plug 180 degrees. This alone may solve the problem. (Some two-pronged power plugs are "keyed" so they can only be inserted one way.)

It is always a good idea to make sure your power outlets are correctly wired. See fig. 1 and purchase a polarity checker available from Radio Shack (part number 22-101) for \$5.99. You can also test for dangerous current by connecting a 120-volt light bulb between the chassis and the round (ground) pin of a power outlet. My bet is that the bulb won't light and that, while connected, there will no longer be a charge on the chassis.

The proper fix would be to wire a new, three-wire power cable to each unit with a third (round) pin tied to chassis/ground. If your current wiring scheme defeats this feature on any other device, the TX-81Z (which I assume is a rack-mounted device) may have interaction with your other equipment. If the interaction is just proximity sensitive and not when screwed into the rack, then the TX-81Z must be radiating hum from its power transformer. In this case, re-dress the audio wiring in the rack to be as far from this device as possible.

The only other potential for equipment interaction occurs especially when 1/4-inch and RCA jacks are employed. Most companies use plastic, ground-isolated jacks, while others use metal jacks, which, obviously, make metal-to-metal contact with the chassis. The metal is far better. (Feel free to send e-mail to edaudio@interport.net.)

Eddie Ciletti  
Contributing Editor  
EQ magazine

Send your questions to:  
EQ Magazine • Editorial Offices  
6 Manhasset Ave.  
Port Washington, NY 11050  
Fax: 516-767-1745  
E-mail: EQMagazine@aol.com



# SCREAM

LA'S FRIENDLIEST STUDIO: SCREAM STUDIOS, 11616 VENTURA BOULEVARD, STUDIO CITY, CA 91604 TEL: 818 505 0785 FAX: 818 505 0405

## Studios

Where you  
can put  
your feet  
on the desk



PRODUCER DAVID KAHNE — EVERYONE RELAXES AT SCREAM



Celebrating  
10 years of  
number 1 hits

The following records were either recorded, mixed or both at SCREAM Studios!

- |   |  |   |                                       |
|---|--|---|---------------------------------------|
| NIRVANA - NEVERMIND                                 | JANET MONSON - BLACKCAT                            | ALICE IN CHAINS - JAR OF FLIES            | BEVEL - FOOLISH GAMES                 |
| OSZY OSBOURNE - NO MORE TEARS                       | SUGAR RAY - FLY                                    | LISA LOEB - STAY                          | HANSON - NIMN BOP & MINNIE OF NOWHERE |
| SHORE - SUBLINE & WHAT I GOT                        | FAITH NO MORE - REAL THING & ANGEL DUST            | HOOTIE & THE BLOWFISH - CRACKED REAR VIEW |                                       |
| RAGE AGAINST THE MACHINE - RAGE AGAINST THE MACHINE | TRACY CHAPMAN - GIVE ME ONE REASON & NEW BEGINNING | EXTREME - MORE THAN WORDS                 |                                       |

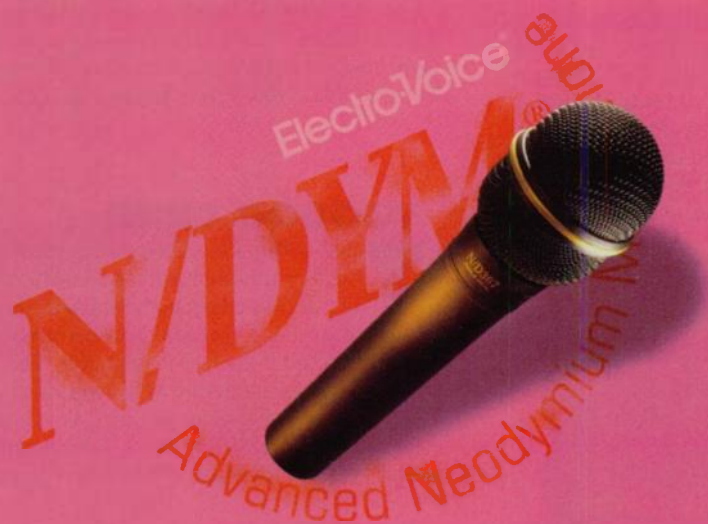




(I SING)



**DO ONE THING.**



**DO IT BETTER.**

Claire sings for one reason, to bare her soul. Electro-Voice has designed the N/D367 Female Vocal Mic to capture the emotion of the female voice. For a microphone that listens first, then speaks just the way you want to be heard, contact your nearest Electro-Voice dealer and check out our complete line of application specific, N/DYM® Series mics.



Electro-Voice 600 Cecil Street Buchanan, MI 49107 616/695-6831 800/234-6831 In Canada: 613/382-2141 [www.electrovoice.com](http://www.electrovoice.com)  
© Telex Communications, Inc.

**CIRCLE 26 ON FREE INFO CARD**  
World Radio History



# EQ PRODUCT VIEWS

## ACOUSTICALLY SPEAKING

**T**ech 21 has expanded its SansAmp line of tube amplifier emulators with the introduction of SansAmp Acoustic DI. Engineered for both studio and live applications, the SansAmp Acoustic DI is designed to go direct into the mixing console of a recorder or PA system. It can also be used with con-



ventional acoustic or electric guitar amps to enhance and expand their capabilities. It features: active tone controls, bass and treble, and cut or boost  $\pm 12$  dB. The sweepable semiparametric EQ controls range from 170 Hz to 35 kHz,  $\pm 16$  dB. The Blend function mixes the amount of SansAmp emulation circuitry with the direct instrument signal. There's a 1/4-inch 4.7 Mohm instrument level input, as well as line and instrument level outputs. For an Effect Loop, the dual-function 1/4-inch output and input to XLR act as send and return, respectively. The unit can also be used as a standard direct box with EQ, or solely as a standard transparent direct box. SansAmp Acoustic DI is phantom power operable, or utilizes an optional 9V DC power. Price is \$225. For more information, contact Tech 21, Inc., 1600 Broadway, New York, NY 10019. Tel: 212-315-1116. Circle EQ free lit. #103.

## RADAR LOVE

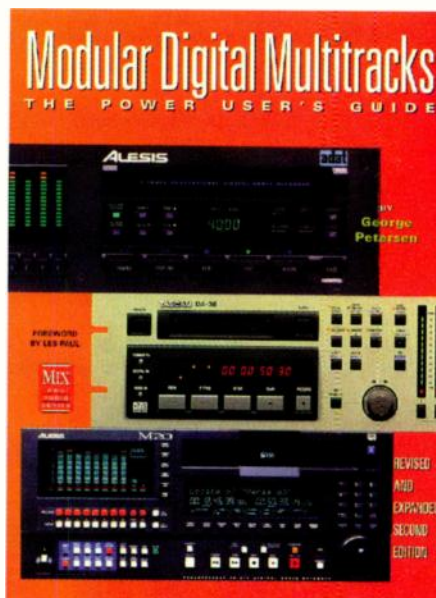
**F**ollowing in the footsteps of its predecessor, the 16-bit, fixed hard drive RADAR I, Otari's RADAR II is the world's first 24-bit, 48 kHz sampling, 24-track hard-disk recorder. It has a standard 9 GB removable hard drive and a new RE-8 re-



moote control that emulates the operation and feel of a standard remote-controlled analog tape recorder. New features include a detachable remote meter bridge that lets RADAR II be located away from the control room and optional T/DIF link. RADAR II is also compatible with RADAR I. RADAR II also features a unique "auto-reclaim" function that lets the user automatically reclaim unused disk space to maximize storage capacity at all times. For more information, contact Otari Corporation, 378 Vintage Park Drive, Foster City, CA 94404. Tel: 650-341-5900. Circle EQ free lit. #101.

## VOODOO CHILD

**T**he Voodoo Lab Pedal Power (\$199) is a universal power supply for all battery operated guitar pedal effects. It provides eight 9V outputs, each of which is completely isolated, short circuit protected, regulated, and highly filtered. A toroidal power transformer is used to eliminate hum in sensitive effects such as wah pedals. The Pedal Power comes complete with cables and a detachable AC power cord, and features an auxiliary AC power outlet and a five year warranty. For more information, contact Digital Music/Voodoo Lab, 5312-J Derry Avenue, Agoura Hills, CA 91301. Tel: 818-991-3881. Web: [www.voodoolab.com](http://www.voodoolab.com). Circle EQ free lit. #102.



## VIVA LA (MDM) REVOLUTION!

**A**ffordable modular digital multitrack recorders—such as the Alesis ADAT and TASCAM DA-88—fueled the fire of the project studio revolution. This completely revised and updated edition of *Modular Digital Multitracks: The Power User's Guide* by George Petersen covers MDM systems from Alesis and Tascam, as well as MDMs and third-party accessories from other manufacturers. The \$29.95 book also provides advanced operating features, undocumented secret functions, insider techniques and detailed maintenance and troubleshooting sections on keeping your MDMs at peak performance. At bookstores

and music dealers everywhere, or contact Hal Leonard Corp., 7777 W. Bluemount Road, Milwaukee, WI 53213. Tel: 414-774-3630. Circle EQ free lit. #104.



# The Recording Studio for the New Millenium

**TRIA™ Triamplified Workstation Monitor System**



**EVENT EMP-1™**  
Microphone  
Preamplifier

**GINA™**  
20-Bit Multitrack  
Digital Audio Recorder

**RØDE™ NT1**  
Large Diaphragm  
Condenser Microphone

**Great Old Guitar**

**The Future of  
Recording.**



**Available Today  
From Event.**

P.O. Box 4189, Santa Barbara, CA 93105-4189 Voice: 805-566-7777 Fax: 805-566-7771 E-mail: [info@event1.com](mailto:info@event1.com) Web: [www.event1.com](http://www.event1.com)

*Software shown is Steinberg Cubase VST. Tria subwoofer not shown. CPU, cables, and mouse not shown.  
Gina is designed and manufactured in the U.S. by Echo Corp., an Event Strategic Partner.*

**CIRCLE 25 ON FREE INFO CARD**

*World Radio History*



# EQ PRODUCT VIEWS

## MAXIMUM MIXER

**A**llen & Heath's GS3000 console has twin-fader, dual-path inputs and two patchable tube preamps. The console is available in 24- and 32-input frame sizes, each with an extra two dual stereo inputs, offering a total of 52 and 68 inputs



to the mix, respectively. MIDI mute automation with scenes and groups is provided as standard, together with MMC. For more information, contact Allen & Heath, 8760 South Sandy Parkway, Sandy, UT 84070. Tel: 801-568-7660. Circle EQ free lit. #105.

## SILVER SOUNDS

**D**bx inaugurates the launch of its new Silver Series with the dbx 586 dual-channel tube microphone preamplifier. The silver 2U dbx 586 offers custom-designed VU meters that monitor drive level, gain reduction or output levels, +48 V phantom power, 20 dB pad, phase invert, and low-cut filter. Gold-plated Neutrik XLR mic and 1/4-inch TRS line inputs are also included. Two hand-selected and matched premium 12AU7 vacuum tubes are utilized by the dbx 586. The unit also includes dbx's patent-pending TYPE IV™ conversion system. Suggested retail price is \$999.99. For more information, contact dbx Professional Products, 8760 South Sandy Parkway, Sandy, Utah 84070. Tel: 801-568-7660. Circle EQ free lit. #106.



# INTRODUCING THE 48





## SUPER SYNTH

**T**he Generalmusic SK88 workstation/synth features a tone generator equipped with 32 parts, 32 layers, 32 splits, and a maximum polyphony of 64 notes over eight full octaves. It also has 64 programmable digital filters from five different types, 600 sounds that can be reprogrammed, 2 MB of RAM that allows new sounds to be loaded from the Generalmusic sound library, as well as from a variety of other disk formats. Sixty-four real-time performances can be used to memorize any combination of sounds, effects, controls, MIDI channels, track status. It also includes a Sound Edit feature with advanced editing functions using two-pole and four-pole resonant filters. The SK88 workstation carries a suggested retail price of \$2995. For more information, contact Generalmusic Corp., 1164 Tower Lane, Bensenville, IL 60106. Tel: 630-766-8230. Circle EQ free lit. #107.

## THE PURPLE ONE

**H**oused in a purple 2U metal chassis, DigiTech's new 2120 valve guitar system is a fully-programmable tube guitar preamp and multieffects processor for studio or live applications. The 2120 features dual distortion paths, allowing the unit's tube distortion (using two 12AX7's) and solid-state distortion to be run in parallel. The 2120 also features full MIDI implementation. Price is \$1149.95. For more information, contact DigiTech, 8760 South Sandy Pkwy, Sandy UT, USA 84070. Tel: 801-566-8800. Web: [www.digitech.com](http://www.digitech.com). Circle EQ free lit. #108.



## Hour Day



## DOUBLE YOUR OUTPUT FOR LESS THAN THE COST OF TWO SINGLE DAT RECORDERS

If you've been asking for more hours in the day, TASCAM's DA-302 Dual DAT Recorder makes your time count double. Finally, you can dub at twice normal speed with ABS time, subcode and PCM data intact. Make two masters at a time, even dub from any location on the source tape — no more rewinding! And the DA-302 costs hundreds of dollars less than you'll pay for two single units — only \$1999 (MSRP). See your TASCAM dealer or call TASCAM FaxBack at 800-827-2268 and request document #2330, The DA-302 Dual DAT Recorder. Put it to work in your studio 48 hours a day, 7 days a week.

**TASCAM®**

©1998 TEAC America, Inc., 7733 Telegraph Road, Montebello, CA 90640 (213) 726-0303  
TEAC Canada Ltd., 5949 Wallace Street, Mississauga, Ontario L4Z 1Z8 Canada (905) 890-8008  
TEAC Mexico, S.A. de C.V., Privada Corina #18, Colonia del Carmen, Coyoacan, Mexico D.F. 04100 (525) 658-1943



# EQ

## PRODUCT VIEWS

### SILKY SOUNDS

**T**he Bellari LA120 is ideally suited for both vocal or instrument compression. With its variety of input and output options, the LA120 adapts to recording and live situations, providing warm, silky tube compression/limiting, all tube gain circuitry with proper high-voltage plate voltages, optical gain reduction, 1/4-inch and XLR inputs



and outputs, and calibrated metering. Frequency Response is 20 Hz–40 kHz; input impedance is 10 kohms balanced, 1 Mohm unbalanced; THD+N is less than 0.1% typical, S/N ratio is 90 dB. The LA120 also includes an active LED indicator, analog meter, input/output jacks (XLR balanced, 1/4-inch unbalanced), and a 1/4-inch sidechain jack (unbalanced). For more information, contact Rolls/Bellari. Tel: 801-263-9053. Web: [www.rolls.com](http://www.rolls.com). Circle EQ free lit. #109.

### GREAT X-SPECK-TATIONS

**A**n upgraded version of Speck Electronics' XTRAMIX 40 x 8 x 2 line mixer, the new XTRAMIXxi, combines the benefits of a keyboard mixer and an 8-bus recording mixer into a 4-rack space chassis. Each of the 20 stereo input channels now has the ability to send true stereo signal so the user can get the maximum use from their stereo effects processors. The XTRAMIXxi also has 8 stereo effects returns that are fully assignable to the 8 busses. The new high performance balanced input channels will now



accept a wider range of input levels, from -20 dBu to +22 dBu. Other improvements include a new grounding architecture and lower noise pots and switches. Price is \$4215. For more information, contact Speck Electronics, 341 Alvarado St., Fallbrook, CA 92028. Tel: 760-723-4281. Web: [www.speck.com](http://www.speck.com). Circle EQ free lit. #110.

### STORM SELLER

**S**torm Audio Systems, Inc., makers of the Vortex Multimedia Pro Audio Series, has introduced the V500A/D 20 bit analog-to-digital converter (\$675). The half-rack unit includes two microphone preamplifiers with phantom power capability, while high impedance balanced or unbalanced inputs are provided through the phone jack portion of the front-panel Neutrik combo connectors. Each channel has a separate gain and level control. Sample rate frequencies of 32, 44.1, and 48 kHz are selected using soft touch pushbuttons with LEDs. Digital output can be AES/EBU and S/PDIF coaxial or optical. A word clock output is also provided through a rear-panel mounted BNC connector. For more information, contact Storm Audio Systems. Tel: 702-221-2027. Web: [www.stormaudio.com](http://www.stormaudio.com). Circle EQ free lit. #111.

### PRE VIEW

**T**he Studio Technologies Mic-PreEminence is a high-performance microphone preamplifier designed to produce a clean, transparent sound. Features include two independent preamplifier channels, +48 VDC phantom power that's on/off switchable, dual five-stage LED metering, output phase reverse switch, selectable balanced or unbalanced outputs, adjustable gain range of +12 dB to +68 dB, and electronically balanced input and output circuitry. Suggested price is \$799. For more information, contact Studio Technologies, 5520 West Touhy Avenue, Skokie, IL 60077. Tel: 847-676-9177. Web: [www.studio-tech.com](http://www.studio-tech.com). Circle EQ free lit. #112.





**SOLIDTUBE**

# EXPERIENCE THE WARMTH



**AKG Acoustics**,  
the leader in studio  
microphones for over  
50 years, proudly brings  
you the latest in tube  
microphone technology,  
the **SOLIDTUBE**



A full complement of  
accessories is included  
with every **SOLIDTUBE**.



AKG ACOUSTICS, A Division of Harman Pro North America, Inc., 1449 Donelson Pike, Airport Business Centre 12  
Nashville, TN 37217 U.S.A. Tel: (615) 399-2199, Fax: (615) 367-9046

World Radio History

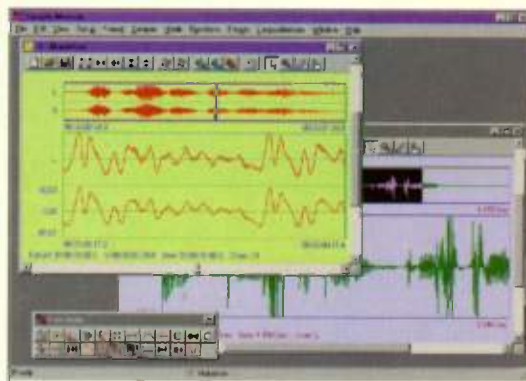
CIRCLE 02 ON FREE INFO CARD



# EQ STUDIO WARE

## A WRENCH IN THE WORKS

**S**ample Wrench 4.1 from dissidents is a CD quality visual sound sample editing package for mono and stereo sounds. The menu system has been reworked to allow faster and more efficient access to Sample Wrench's effects and functions. A free evaluation version is available for download on the dissidents Web site. Price is \$259. Users of version 4.0 can upgrade for \$20. For more information, contact dissidents, 10325 Woods Road, Utica, NY 13502-6723. Tel: 315-797-0343. Web: [www.dissidents.com](http://www.dissidents.com). Circle EQ free lit. #113.



## ACID INGESTION

**S**onic Foundry's new ACID software puts a multiple track audio editor with unique continuous loop audio processing features behind an approachable user interface. Users are able to take audio files from a variety of sources and



easily create seamless "loops" with precisely matched tempo and pitch to produce music for use anywhere a music bed is required. ACID ships with hundreds of pre-recorded loops of different formats, instruments, and sounds. Features include Generate or chase to MTC/SMPTE timecode, DirectX Audio Plug-In support for real-time effects, 16- and 24-bit audio support, and unlimited levels of undo/redo. ACID runs on Windows 95 and NT 4.0 or later systems. For real-time effects previewing a Pentium II is recommended. Price is \$399. For more information, contact Sonic Foundry, Tel: 608-256-3133. Web: [www.sfoundry.com](http://www.sfoundry.com). Circle EQ free lit. #114.

## LEXICON FOR COMPUTERS

**T**he Lexicon Studio System is comprised of hardware components, providing I/O options, DSP, signal routing, and synchronization. The hardware provides high-quality audio capabilities for leading industry software packages based on PC or Macintosh computer audio production systems. With Lexicon's innovative hardware and critically acclaimed software like Steinberg's Cubase VST, computer-based productions achieve final results that are fully professional. The Lexicon



Studio System incorporates the proprietary LexiPowerCore technology (LPC), which works with a new generation system architecture to accelerate the host computer for maximum audio processing. The Lexicon Studio will also interface to today's tape-based systems (including ADAT and TASCAM DA-88 and DA-38), allowing editing and processing of previously recorded material. For more information, contact Lexicon, 3 Oak Park, Bedford, MA 01730-1441. Tel: 781-280-0300. Web: [www.lexicon.com](http://www.lexicon.com). Circle EQ free lit. #115.

## SIGMA 1 SURROUNDS YOU

**A**PB Tools' Sigma 1 fills the gap of a "spatial mixer" in the surround sound production chain by implementing a dedicated surface for this approach on the Pro Tools III hardware. It consists of a 16x16 Mixer TDM plug-in and the graphical interface, which runs as the foreground application. For a 8x16 setup (this means 128 automatable crosspoints), Sigma 1 needs only one DSP. The user is able to use either 16 external inputs or disk tracks or a Pro-Tools session and move each track in real time individually through the space. The space is defined with up to 16 speakers (outputs) that can be placed arbitrarily. Each movement of the input track can be recorded to timecode and replayed later. For more information, contact APB Tools, Landgrafenstr. 9, D-10787 Berlin, Germany. Tel: +49-30-2627354. Web: [www.kgw.tu-berlin.de/80/~feiten/doc/EM\\_I/](http://www.kgw.tu-berlin.de/80/~feiten/doc/EM_I/). Circle EQ free lit. #116.





# The Panasonic DA7 Mixer. Taking Digital Further.



Panasonic introduces the WR-DA7 digital mixer, and sets an entirely new standard in quality, flexibility, ease-of-use, and affordability—all for under \$5000.

**ADTV**  
ADVANCED DIGITAL TELEVISION & VIDEO

World Radio History

1-Step Functionality

24 Bit A/D and D/A

Moving Faders

Surround Sound

Automation & Memory

**Panasonic**

Broadcast & Digital Systems Company

For more information call:

1-800-777-1146



# It's like an extension cord for your computer.



Studio/Edit Bay

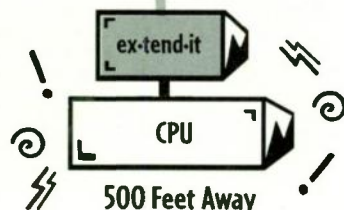
The **ex-tend-it** TSE and PCX Series work like an extension cord for your Macintosh and PC computer, allowing you to place your computer up to 500 feet away from your monitor, keyboard & mouse. Virtually eliminating all computer fan noise and CPU clutter from your studio.

- Maintains Highest Resolution Video.
- Keyboard & Trackball Extension to 1,000'.
- Two Users can Work at the Same Time at Local & Remote Locations.
- Supports Two Monitors Side by Side.
- Ideal for Avid, Digidesign, Studer, Sonic Solution, Dawn & other DAWs.
- Simple Telephone & RGB Cables used for Extension.
- Supports any Make & Size Monitor.
- **ex-tend-it** 241 CPU Switchers let you switch effortlessly between 2 or more CPUs.
- Rackmounting version available.
- Installs in Minutes.



Phone: 800-545-6900

Internet: <http://www.gefen.com>

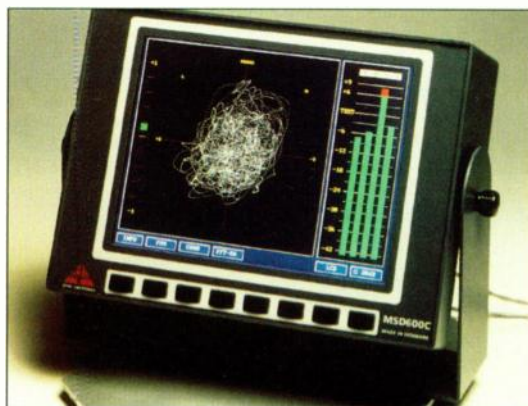


CIRCLE 29 ON FREE INFO CARD

# EQ STUDIO WARE

## MONITOR IN SURROUND

**D**K Audio's MSD600C/MKII now supports surround sound monitoring in a new software upgrade option. The new optional surround sound software enables the user to select a "Jelly-Fish" image on the display instead of the normal vector oscilloscope image, to indicate surround sound signal information. Retail prices begin at \$4195. DK Audio offers several other Master Stereo Display models with varying features and options starting from \$995. For more information, contact TC Electronic, 790H Hampshire Road, Westlake Village, CA 9136. Tel: 805-373-1828. Web: [www.tcelectronic.com](http://www.tcelectronic.com). Circle EQ free lit. #118.



## INSTANT RECORD LABEL

**T**he Cedar Technologies Desktop CD-R Publisher publishing system is scheduled to begin shipping a Macintosh version in May, priced at \$7685. The package includes two 4X CD-recorders, a Fargo Signature CD Color Printer, the Cedar Autoloader, two CD holders, Cedar CD Face label editing software, Prassi CD-Rep premastering software for Windows 95, NT, or Macintosh, Prassi Robo Rep duplication software, printer alignment posters, power cable, printer control cable, and a user's guide. Signature prints full-color, high-resolution text, graphics, logos and photographs directly onto printable-surface CD-R media. User requirements are a host computer running Windows 95, NT, or Macintosh OS, 16 MB memory, and a busmaster SCSI host adapter. For more information, contact Microboards Technology, 1480 Park Road, Suite B, P.O. Box 856, Chanhassen, MN 55317. Tel: 612-470-1848/800-646-8881. Web: [www.microboards.com](http://www.microboards.com). Circle EQ free lit. #119.



## KILLER MOD

**S**ADiE Inc. has introduced "Time Mod" Time Modulation as one of the new plug-ins included in its latest free software upgrade for SADiE and Octavia digital audio workstations. Time Mod is a plug-in that allows users to speed up or slow down a recording without altering the pitch. The user interface has a ratio control that enables the speed of the recording to be adjusted from 60 percent to 140 percent of the original length. For more information, contact SADiE Inc., 1808 West End Ave., Suite 1119, Nashville, TN 37203. Tel: 615-327-1140. Web: [www.sadie.com](http://www.sadie.com). Circle EQ free lit. #117.





# There's never been a better time to buy a Beta mic.

Now during Shure Beta Days, our top quality drum mics, which set the highest standards for performance and reliability, are a better value than ever. Because between March 1 and May 31, 1998, you can pick up a \$10 rebate\* on the Beta 52 for your kick, the Beta 56 for your toms, and the Beta 57A for your snare. So for great drum mics and a great deal to match, better get a Beta at your local Shure dealer. For the dealer nearest you, call 1-800-25-SHURE.

**SHURE®**



\* Valid 3/1 through 5/31/98. Rebate will be payable directly to the retail purchaser by Shure upon receipt of proper claim materials. Limit of three microphones per rebate and one rebate per household. Other restrictions apply.

World Radio History

CIRCLE 79 ON FREE INFO CARD



# TASCAM TM-D1000 *Digital Mixer*

With TASCAM's latest digital console, the price is definitely right

BY STEVE LA CERRA

At this year's NAB, TASCAM introduced the TM-D1000, a digital mixer designed to integrate with DTRS-format machines. Utilizing a TDIF-1 port for 8-channel digital I/O, the TM-D1000 comes out-of-the-box ready to interface with a DTRS recorder such as the TASCAM DA-98, -88, or -38 recorders, or the Sony PCM-800.

Connecting the TM-D1000 to the analog world are four balanced XLR mic inputs with 48-volt phantom power and eight 1/4-inch, balanced TRS inputs. Onboard A/D conversion is 20-bit, with 64x oversampling,

while D/A is 20-bit with 128x oversampling. Both 44.1 kHz and 48 kHz sample rates are supported by the TM-D1000. Master L/R outs are carried on balanced 1/4-inch TRS and unbalanced RCA connectors. There are also four group outputs that may be used as aux sends when mixing; these are available on two balanced 1/4-inch and two unbalanced RCA jacks. For 2-track playback, there is a stereo monitor input using the same variety of jacks. Output may be monitored from balanced TRS line outs or a conventional headphone jack.

The 16 channels of the TM-D1000 are divided into three slightly different types. Input Channels 1 through 4 each give you a choice of the XLR mic in, 1/4-inch line in, or (stereo) Digital Input "A," which can be either an AES/EBU or S/PDIF. Input Channels 5 through 8 can be used for mic or line level via 1/4-inch input — the input stage has sufficient gain to accommodate microphones via the 1/4-inch connector.

Alternatively, Digital A can be routed to Channels 5 through 8. Channels 9 through 16 are dedicated to 8 channels of tape return digital input via the rear-panel TDIF-1 connector. Any or all of these 16 channels may be assigned to the mixer's four groups, which are output from the mixer via the analog RCA and 1/4-inch connectors or alternatively may be digitally sent from the rear panel via two S/PDIF or two AES/EBU connectors. Also on the rear panel is the TDIF-1 connector, which is software-switchable to carry the group outs, the direct outs from Channels 1 through 8, or the direct outs from Channels 9 through 16.

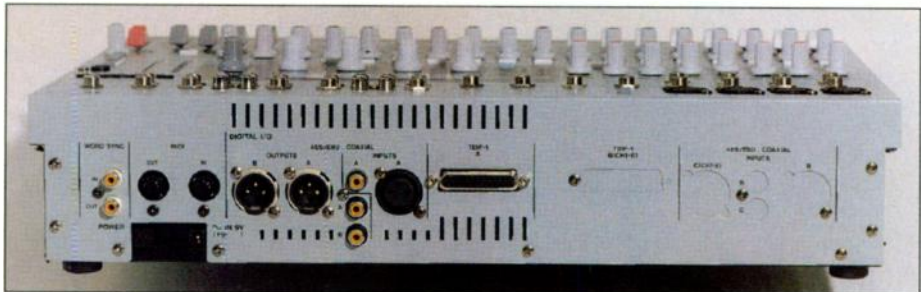
Taking a closer look at the input channels, each has 3-band EQ, including high-shelf, fixed-bandwidth, semi-parametric sweep midrange, and low shelf. All EQs are variable from 41 Hz up to 16 kHz with a boost/cut range of 12 dB. TASCAM gives you four onboard dynamic processors that can be assigned to any of the inputs, and also a stereo pair of onboard effects. If you require more processing ability, the optional FX-1000 effects board adds another four dynamics processors and another pair of stereo effects.

The TM-D1000 may be expanded by adding another 8 channels of TDIF-1. The TM-D1000 has a second card slot that can accept the IF-TD1000 digital I/O board. When the IF-TD1000 is installed, this second TDIF-1 connector carries direct out signals from Channels 1 through 8. Adding an IF-TD1000 will also provide another two stereo digital inputs: Digital "B" and Digital "C" via AES/EBU or S/PDIF connectors (two of each). Finally, the IF-TD1000 adds a 2-channel sample-rate converter to the system.

Alongside all of the audio I/O connectors, the TM-D1000 supports MIDI. One-hundred and twenty-eight snapshot scenes may be stored and then recalled either from the front panel or through MIDI program change commands. Each scene stores mixer settings such as EQ, aux send level, pan, mute, and effects. Since the TM-D1000 transmits MIDI Machine protocol, it can be used to control transport and track arming of up to two DTRS machines.

The TASCAM TM-D1000 will be shipping in July at a suggested retail price of \$1199.

*For more information, contact TASCAM at Tel: 213-726-0303. Circle EQ free lit. #120.*



I/O YOU: TASCAM's new digital mixer leaves plenty of options for mixdown.



# 100% PURE PERFORMANCE

Azden Performance Series wireless UHF microphone systems deliver crystal clear uncolored sound, with reliable rock-steady RF—all the time! Using the latest design and manufacturing techniques, Azden has removed the price barrier to high-quality UHF. All systems are 63 channel user selectable (in the 794-806MHz range), are crystal-controlled, PLL-synthesized, frequency-agile, and have XLR and 1/4" output jacks. And unlike many of our competitors, we have a 2 year warranty, manufacture and tune each product ourselves, maintain full customer service and repairs in house, offering the "user-friendliest" technical support and service in the industry.



147 New Hyde Park Road, Franklin Square, NY 11010  
(516) 328-7500 • FAX (516) 328-7506  
E-Mail - AZDENUS@AOL.COM  
Azden Home Page: <http://www.azdencorp.com>



422UDR dual channel rackmount with unique cascading antenna feature, eliminating the need for an antenna distribution device, rear mount antennas, dual LED displays for RF and AF levels.



412UDR Full rackmount receiver with antenna mounting on front and rear



411UDR stand alone receiver which can be rack-mounted using the 321RK rack mount kit



41HT handheld microphone. Heavy-duty case, with supercardioid uni-directional element, 63 internal user-selectable frequencies, and uses either 2 AA alkaline batteries or Azden Ni-Cads and unique charging system.



41BT bodypack transmitter with input level control, standby switch, locking mini-plug connector, and metal belt clip. Available with electret condenser omni-directional or uni-directional elements, instrument cable, or HS-11 headset boom mic.



AMC-1A 2 mic Ni-Cad battery charging station for making the 41HT handheld mic into the rechargeable UHF microphone available.



# 328

Digital 328 represents a REVOLUTION IN LOW COST PROFESSIONAL AUDIO, bringing all the functionality and sonic excellence of digital mixing to a brand new audience. With its unique CONSOLE BASED INTERFACE, 328 finally bridges the gap between analog and digital mixers, retaining the SPONTANEITY AND EASE OF USE of an analog console yet providing all the advantages of digital, such as INSTANT TOTAL RECALL, MOVING FADER AUTOMATION and ONBOARD LEXICON EFFECTS.

Quite simply, Digital 328 is the most advanced analog 8 bus you'll ever drive combined with the easiest digital console you've ever used - check it out for yourself.

## 42 Input/8 Bus Configuration

For a mixer with such a small footprint, Digital 328 packs an extraordinary number of inputs. 16 full spec. analog mono mic/line channels - each with its own balanced XLR connector, dedicated insert point and access to phantom power - come as standard, along with 5 stereo inputs. With the addition of 16 digital tape returns on 328's TDIF\* and ADAT\* optical interfaces, a maximum of 42 inputs are possible. Every input is fully routable to any of the 8 groups and has access to the full complement of 328's parametric EQ, signal processing, onboard effects and auxiliaries.

## As Easy to Use as your current analog console

Although other digital mixers offer an amazing array of functions, it can often be a nightmare to access them.

In contrast we've designed Spirit 328 to operate like your old analog 8-bus console and not like a computer with faders, so that you can take it out of its box and get started without even opening the manual. Unlike other digital mixers, there's instant access to any channel, group or master feature with one button press, and you can see that feature's status from the front panel without having to rely on an LCD display.

The key to it all is Spirit 328's unique "E-strip", the lighter-colour bank of encoders and switches that runs across the center of the console. Simply select a channel and the E-strip immediately becomes a "horizontal input channel" with instant access to all that channel's EQ, aux sends, channel pan and routing. Alternatively, press any button in the rotaries section above the E-strip and the encoders change to become a channel pan, auxiliary send, or Lexicon effects send for each channel.

Select a fader bank to display mic/line input faders, tape returns faders, or group and master faders and that's it; no delving through level after level of LCD menus to find the function you want, no delays in making alterations and no need to study complicated EQ curves. With 328, everything you need is immediately accessible from the front panel of the console - giving you the freedom to let your ears decide.

If you want the functionality of a digital console but the usability of your old analog 8 bus, then Spirit 328 is for you.

## All the Digital I/Os you need as standard

Most digital mixers don't include digital multitrack I/Os, which means that to get digital recording and mixdown you have to buy extra, expensive I/O options. In contrast, Digital 328 includes two Tascam TDIF\* and two ADAT\* optical interfaces as standard, allowing you to record 16 tracks entirely in the digital domain, straight out of the box. As you would expect, we've also included a pair of AES EBU and SP DIF interfaces assignable to a wide range of inputs and outputs, including group and auxiliary outs, as well as for use as mix insert points with digital signal processors. In addition, a dedicated auxiliary optical output allows you to send a signal digitally to an effects unit.

## 2 Onboard Lexicon Effects Units

Only 328 can offer the world's premier name in studio effects on board - Lexicon. Two separate effects units are included, offering a full range of reverbs, choruses, delays, and flanges as well as dual effects such as chorus plus delay - all with fully editable program and parameter settings.

Digital 328 includes two mono or stereo signal processors which can be assigned to any input, output or groups of ins or outs. Each processor provides a choice of compression, limiting, gating or ducking.

## Comprehensive EQ

All of 328's mic/line, tape return and stereo inputs have access to 3 bands of fully parametric EQ, designed by British EQ guru and co-founder of Soundcraft, Graham Blyth. A man with over 5 million channels of his EQ designs in the field, Graham has brought 25 years of Soundcraft analog EQ circuit experience to bear on Digital 328. If you want the warm, musical sound of real British analog EQ, look no further.

## Unparalleled Sonic Spec

Rubbish in, Rubbish out! It doesn't matter whether the console is digital or analog - if you have poor mic preamps, your sound will be compromised. That's why 328 includes Spirit's acclaimed UltraMic+™ padless preamps, giving your input signals the cleanest, quietest start of any digital mixer on the market. With 66dB of gain range and a massive +28dBu of headroom, they offer an extremely low noise floor and are virtually transparent. Spirit 328 is 24-bit or better throughout; your signal hits the digital domain through state-of-the-art 24-bit ADCs with 128 times oversampling, guaranteeing that it maintains its clarity, while 24-bit DACs on all main outputs equal this sonic integrity should you wish to return your signal to the analog world.

## Moving Fader Automation

All of Digital 328's 100mm faders (including the master) are motorised to allow current channel, tape return, group and aux master levels to be viewed at a glance.

# DIGITAL 328

By pressing AUX1 in the rotaries section, the E-strip indicates Auxiliary Send 1 levels for each channel. The Fader Bank section indicates whether Mic/Line or Tape Return levels are being shown.

By pressing any select switch, the "E Strip" becomes a horizontal channel strip, indicating EQ, auxiliary, FX and Pan settings. Mono Mic/Line, Tape Returns & Stereo Inputs all have access to the same channel strip functions



### All parameters instantly recallable

In addition to level automation, every other digital parameter of 328 is instantly recallable, allowing snapshots of the entire console's status to be taken. Up to 100 of these "scenes" may be stored internally and recalled either manually, against MIDI clock or against MTC or SMPTE. Alternatively, every console function has been assigned its own MIDI message allowing dynamic automation via sequencer software.

### Easy to edit - direct from the control surface

The majority of 328's input and routing parameters may be edited from the control surface without resorting to the console's LCD. Settings and levels may be copied and pasted from one channel to another with just two button presses and, using 328's query mode, the routing or assignment status of every channel on the console may be viewed instantly simply by selecting the function (such as Group 1 or Phase Invert) you

want to question. In addition, with 328's Undo/Redo function located in the master section, editing is entirely non-destructive, allowing you to compare new EQ - and other settings - with previous ones.

### Grows with your needs

Two Digital 328s may be digitally cascaded, giving you up to 84 inputs at mixdown and 32-track digital recording capability

### Full Metering and Monitoring Options

All of the Mic/line inputs, Tape return inputs, group and master levels may be monitored per bank via Digital 328's 16 10-segment bargraph meters. Additionally, 328's onboard dynamics processors may be monitored using the console's master meters. Any input may be solo'd using AFL, PFL or Solo-in-Place.

### Timecode and Machine Control

Digital 328 reads and writes MTC and reads all SMPTE frame rates, with a large readout display instantly indicating current song position. Store and locate points are accessible from the console's front panel, with 328's transport bar controlling a wide range of devices including Tascam and Alesis digital recorders.

# digital

three two eight

### Add-On Module Options

To meet the needs of a variety of users, there are several module options:

#### 8 Channel Analog I/O Interface

Connecting to the TDIF\* ports, 16 phono connectors provide 8 analog group or direct outs and 8 analog inputs for tape returns 17-32. Two interfaces may be connected, allowing 16 track analog recording or access to 16 more sequenced keyboard or sampler inputs.

#### AES/EBU Interface

4 pairs of AES/EBU connectors allow optional digital interfacing to hard disk production systems such as Pro Tools\*. A maximum of two interfaces may be connected.

#### Mic Pre-Amp Interface

Each interface provides 8 XLR mic ins with Spirit's acclaimed UltraMic+™ preamps and gain control, plus 8 analog outs. Connecting two interfaces turns 328 into a 32 mic input, 8 bus mixer for PA or theater applications.



## SPIRIT

by Soundcraft

Spirit by Soundcraft™,  
Harman International Industries Ltd.,  
Cranborne House, Cranborne Industrial Estate,  
Cranborne Road, Potters Bar,  
Herts EN6 3JN, England.  
Tel: +44 (0)1707 665000 • Fax: +44 (0)1707 665461

Spirit by Soundcraft™ Inc.,  
4130 Citrus Avenue #9, Rocklin, California 95677, USA.  
Toll Free (888) 459-0407 • Fax: (916) 630 3950

usa: [www.spiritbysoundcraft.com](http://www.spiritbysoundcraft.com)  
uk: [www.spirit-by-soundcraft.co.uk](http://www.spirit-by-soundcraft.co.uk)



This equipment complies with the EMC Directive 89/336/EEC.

CIRCLE 64 ON FREE INFO CARD

\*ADAT is a registered trademark of the Alexis Corporation. TDIF is a registered trademark of the Tascam Corporation. Pro Tools is a registered trademark of Digidesign, Inc.

World Radio History

H A Harman International Company



# Microtech Gefell **UM 900**

There's a new  
tube in town

**MIC NAME:** Microtech Gefell UM 900

**PRICE:** \$3750

**TYPE OF MIC:** Multipattern tube condenser

**POLAR PATTERNS:** Omnidirectional, wide cardioid, cardioid, hypercardioid, figure eight

**FREQUENCY RANGE:** 40 Hz to 18,000 Hz

**ACOUSTICAL OPERATING PRINCIPLE:** Pressure gradient transducer

**RATED IMPEDANCE:** 30 ohms

**SIGNAL-TO-NOISE RATIO:** 68 dB (CCIR-weighted), 78 dB (A-weighted); re: 1 Pa at 1 kHz


**DIMENSIONS:** 200 mm x 75 mm

**CURRENT CONSUMPTION:** 4 milliamps

**MAXIMUM SPL FOR THD LESS THAN 0.5% THD:** 130 dB (or 140 dB with pad switched in)

**WEIGHT:** 900 grams

**MIC NOTES:** Unlike any other tube condenser microphone, the UM 900 from Microtech Gefell (which utilizes the well-known M7 large-diaphragm, dual-membrane capsule) derives power from any standard 48-volt phantom source capable of delivering a minimum of 4 milliamps. A transverter inside the microphone body converts phantom power into the necessary voltages required to run the tube preamplifier and bias the capsule, negating the need for an out-board power supply. The rather large headgrille and flared headgrille mount give the UM 900 a unique appearance, but also contribute to the microphone's sound. In particular, the flared headgrille mount serves as a nonreflective surface near the diaphragm, reducing acoustical interference that might otherwise result in sonic anomalies.

**USER TIPS:** Because it operates without an out-board power supply, the UM 900's polar pattern selector is located on the mic body (this characteristic is more typical for a solid-state multipattern mic). For accuracy and repeatability, the pickup pattern is selected via stepped switch between the five patterns mentioned above. A three-position level switch provides a traditional -10 dB pad, but also has a +4 position. In the +4 position, the UM 900 functions only in the cardioid pattern and offers a 4 dB increase in sensitivity, resulting in an increased signal-to-noise ratio. A low-frequency rolloff switch is also included to control proximity effect. 

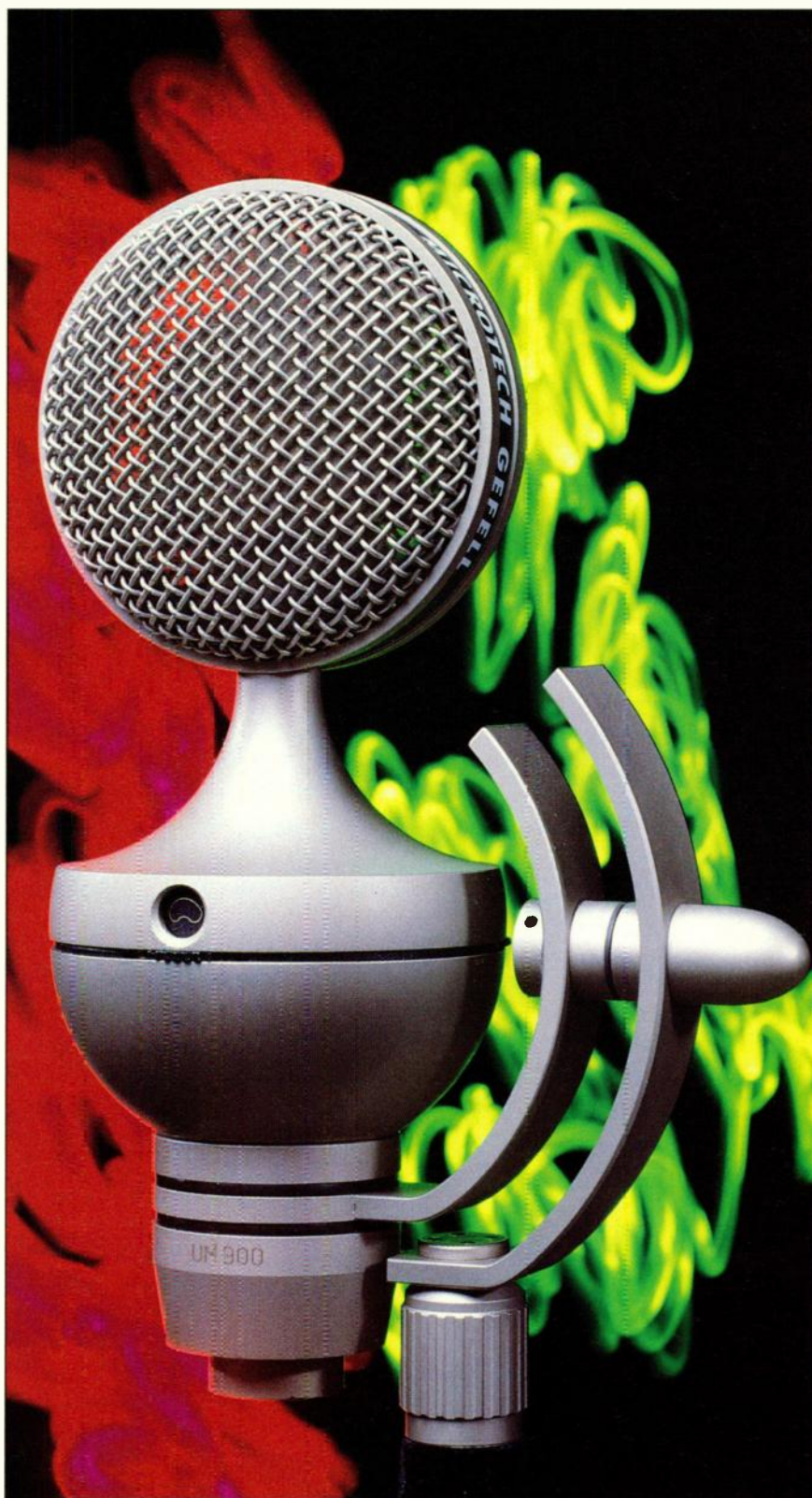


PHOTO BY EDWARD COLVER



ACM1406

# Add Something DIFFERENT to your Mix for ONLY \$25

## DESIGNED AND MANUFACTURED IN THE U.S.A.

Based in St. Louis, Missouri, Audio Centron has over 200 full time employees including one of the largest Research and Development staffs and manufacturing facilities in the industry. Audio Centron has dealers and distributors in the Americas, Europe, Australia and the Far East. All Audio Centron products are designed and manufactured completely in the United States, and come with a full 5 year warranty on electronics.

1. **6-Mic Channels**—Balanced XLR / 1/4" inputs with inserts on each channel. Insert acts as discreet direct out when plug is inserted 1/2 way. Input Gain, 3 band EQ, peak LED's, 2-Aux sends with stereo returns.
2. **4-Stereo Channels**—Stereo 1/4" inputs, 3-band EQ, 2-Aux sends with stereo returns.
3. **Channel Solo Button**—turns off all other channels so you solo only the channel you select. Featured on 6-mic and 4-stereo channels.

4. **Mute Switches**—allow you to "turn off" a single channel. Featured on both 6-mic and 4-stereo channels.
5. **60mm Faders** give you precise level controls for each channel in your mix. Featured on 6-mic and 4-stereo channels.
6. **Solo in PFL / AFL**—Select between Pre-Fader Listen (PFL) and After-Fader Listen (AFL).
7. **Solo to Mains or solo to Headphones cue**—Select between solo to mains when setting up

your mix, or solo to headphone cue, where the selected channel goes to cue only and leaves your master L&R mix unaffected.

8. **Top loaded L&R balanced 1/4" outputs.**
9. **Footswitch insert**—Plug in optional foot switch to control Aux 2 send.

### ALSO FEATURES:

- **Rear loaded L&R balanced outputs**—Select either +4 or -10 level for these additional outputs.

For only \$25 more, get a **TFX1-SP Digital Signal Processor.**  
**A \$179 Value !**

- 32 Editable Programs
- 1/3 Rack Space
- Choruses, Delays, Reverbs, Flanges
- Perfect for Live Sound & Recording

- **Rear loaded 1/4" Mono output**—Provides additional feed for broadcast, perfect for send to subwoofer.
- **19" rack mountable** with optional rack ears (ACM1406RE).

## Audio Centron

1400 Ferguson Ave. • St. Louis, MO 63133 • [www.audiocentron.com](http://www.audiocentron.com)

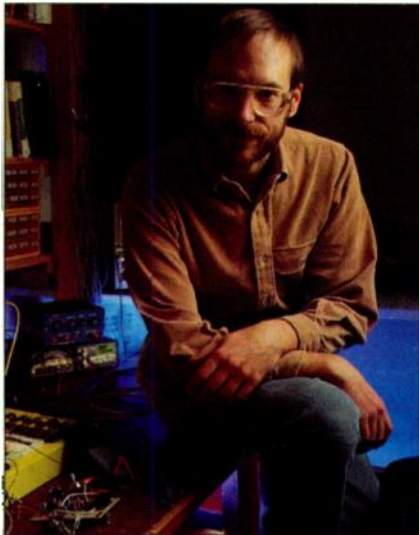
CIRCLE 6 ON FREE INFO CARD

World Radio History



# Who Made This Big Messe?

A look at the trends revealed at the world's largest MI show



BY CRAIG ANDERTON

Frankfurt, Germany — where the weather is grey, the hotel rooms have ISDN lines, and beer flows out of drinking fountains (well, not exactly, but it's still cheap and plentiful) — hosted another Musik Messe, the world's largest MI trade show.

These are uncertain times in Europe; "stagnation" was the most common word used to describe the current retail MI scene. But hey, you don't want to know about that; you want the skinny on new gear and trends! Images that formed hazily in the NAMM crystal ball became much clearer in the nippy Frankfurt air, such as...

## WILL VST RULE?

In a striking display of cooperation from former rivals, Logic Audio for the Mac OS will now support Steinberg's VST plug-in format. But there's more to the story. There is speculation that Apple, concerned by comments that the Windows platform got it right by coalescing around the DirectX standard for plug-ins while the Mac platform turned into a plug-in Tower of Babel, may "bless" a plug-in standard. The smart money is betting on VST, owing to its ubiquitous standing and the

general perception that it's a better-written standard than DirectX anyway.

## FASTER MIDI!

The Emagic/Steinberg collaboration isn't one-way: Steinberg will support Emagic's AMT (Active MIDI Transmission interface, mentioned in last issue's "Gear-At-A-Glance" report), which dramatically speeds up MIDI timing. Let's be grateful for those who put the needs of customers ahead of the "not invented here" syndrome.

## SPEAKING OF APPLE...

Thanks to the relentless work of a cadre of dedicated audio fanatics at Apple, the Mac is re-entering the limelight. The G3 certainly helps (what's this, plug-ins with no detectable latency?!), but it's also related to the perception that Apple indeed cares about retaining its hold on the "creativity" market, including high-end audio. It's a small indicator, but at Frankfurt, there were so many Apple literature bags that everywhere you turned, you saw the Apple logo. Now that Windows has caught up with the Mac, it looks like Apple would like to raise the bar again.

## GROOVY SOFTWARE

The "groove" phenomenon continues unabated, with several software programs designed specifically for groove applications. B.Box (\$99), a "groove generator" for Windows (fig. 1), is now distributed by Steinberg. It's based on sampled drum sounds

from the E-mu SP12, Linn 9000, TR-808 and 909, Simmons SDS5, Yamaha RY30, and many others. Grooves can take up an unlimited number of bars, and be streamed to hard disk as a 44.1 kHz WAV file. It's sort of like ReBirth-for-newbies. And speaking of ReBirth, it's now up to version 2.0, adding a digital delay, four distortion units, compressor, and analog filter emulation.

Even effects are getting into the act. NeuroSonic's Groove Delay, about \$200, see fig. 2), is a VST Mac plug-in that provides 16 delay taps, which make up one measure. Input a tempo, enable various taps, and you get synchronized echo effects with variable level, feedback, and panning for each tap, as well as "shuffle" timing options (Web: [www.trust-group.com](http://www.trust-group.com)).

Complete "DJ packages" are also popular. For example, the Evolution Dance Station bundles composition software, samples and loops, and a keyboard for control. It saves songs as MIDI files that trigger the samples, and that can also be edited within the software. The keyboard provides pitch bend, modulation, octave shift, and other functions for controlling and editing what you're composing. It's more a consumer product than a "pro" piece of software, but is representative of a new genre of "music collage" software designed for the mass market (Web: [www.evolution.co.uk](http://www.evolution.co.uk)).

## DESKTOP VIDEO

The Project Post phenomenon just got a lot more affordable. Edirol (by Roland) an-



FIGURE 1: B.Box is a fun, simple, inexpensive groove generator.



# 24 Bit / 96 kHz

## We are there !

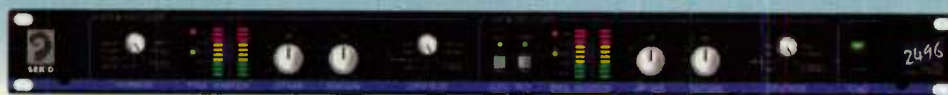


WINDOWS™ 95/NT

### Samplitude 2496

Samplitude 2496 Mastering/Multi-Tracking Software. Shown above: Multitrack Screen, FFT Filter, Noise Reduction, Multi-Band Dynamics Module.

# Where are you ?



Mail in for a free **SEK'D CD-ROM**  
that will turn your computer into a recording studio!

NAME: \_\_\_\_\_

COMPANY: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

CITY: \_\_\_\_\_ STATE: \_\_\_\_\_ ZIP: \_\_\_\_\_

PHONE: \_\_\_\_\_ FAX: \_\_\_\_\_

E-MAIL: \_\_\_\_\_

Who are you?

☐ Musician ☐ Pro Studio ☐ Home Studio ☐ Broadcast

Who is your favorite dealer? \_\_\_\_\_

Which software do you currently use? \_\_\_\_\_

### PRODIF 96

Digital Transfer Card: Sample rates: 32, 44.1, 48, 64, 88.2, 96 kHz, <2 ns in PLL mode. Analog Out: 20-Bit, 96 kHz, Dynamic Range >94dB

### SEK'D America

P.O. Box 5497  
Santa Rosa, CA 95402  
Tel: 707-578-2023  
Fax: 707-578-2025  
eMail: [info@seko.com](mailto:info@seko.com)  
Web: [www.sekd.com](http://www.sekd.com)

SEK'D Pro Audio dealers: **Draco Audio**, AZ, 520-325-6543 – **Apex Audio**, CA, 714-596-1185 – **Sound Chaser**, CA, 800-549-4371 – **MIDI Classics**, CT, 860-651-1349 – **Interactive Microsystems**, IL, 847-426-1950 – **Parsons Audio**, MA, 781-431-8708 – **Non Linear Productions**, NY, 212-732-3773 – **Studio Cat Software**, OH, 888-873-8855 – **Smoky Mountain Recording Co., Inc.**, TN, 423-428-9088 – **Wright Spirit Music**, TX, 210-497-3389 – **Bayview Pro Audio**, WA, 888-718-0300

CIRCLE 39 ON FREE INFO CARD





FIGURE 2: The Groove Delay is a digital tapped delay optimized for adding rhythmically related echoes to dance grooves.

nounced its VideoCanvas series, which includes the V-5 Video Mix/Title Processor (around \$1500). This video mixer integrates a video mixer, still image capture function, title maker, scan converter, and editing features into a compact, portable box.

In addition, the A-6 Digital Multi Audio Station (also around \$1500) is a 4-track stereo hard-disk recorder (with mixing, sampling, and effects) optimized for video soundtrack production. It synchronizes to video via MIDI timecode or MIDI Machine Control. An optional expansion board provides a SCSI

port, and both coaxial digital and XLR analog I/O. These boxes are a clear sign that digital video will continue to go through the same kind of democratization that occurred with digital audio.

#### MIXING À LA DIGITAL

Yamaha, whose ProMix 01 started the affordable digital mixing trend, announced the 01V (\$1999). It provides 16 analog mix channels (balanced 1/4-inch on all channels, plus XLR inputs with phantom power on 12 channels), but can accommodate

eight more analog or digital channels intended for digital tape returns. I/O on these channels is determined by your choice of optional user interface cards (\$299 each), including Alesis ADAT, TASCAM TDIF, and AES/EBU. These inputs feature 2-band parametric EQ, four aux sends, and assignability to any output bus for combining tracks. The 16 main channels include the same 4-band parametric EQ and dynamics controls as the 02R, as well as a 250 ms delay line. Other features include two stereo effects returns, six mix buses, six aux sends, 99 memories for storing mix snapshots, two stereo/32-bit multieffects processors, 20-bit converters, and one set of dedicated rotary controls for EQ and pan (assignable to the various channels).

You can even link solo and mix functions of two 01V's so they behave like a single 48-channel mixer with four stereo effects returns. Does Yamaha have another hit on their hands? It looks that way.

Generalmusic raised some eyebrows with two digital mixing console introductions, both of which include extensive controls for real-time use. The Falcon offers six mono mic/line channels with 20-bit con-



## 3 POWERFUL REASONS TO CHOOSE ASHLY'S FTX SERIES III POWER AMPS

### 1 FTX AMPLIFIERS ARE MORE RELIABLE

Ashly's FTX Series III amps have a fully modular design and combine metal-can MOS-FETs and high-tech thermal components for advanced heat dissipation. Rugged all-metal construction, and our 5-year worry-free warranty, ensure that your sound system will continue to operate at peak performance.

### 2 FTX AMPLIFIERS ARE MORE PRECISE

Our Class A amplification provides incredibly precise yet musical sound that rivals high-end studio-monitor amplifiers. The FTX Series III let you drive the amplifiers to their maximum output without compromise throughout the entire frequency spectrum.

### 3 FTX AMPLIFIERS ARE MORE FLEXIBLE

A full range of plug ins including compressor/limiter, 2 and 3-way crossover and mic/line mixer modules allow you to customize the FTX Series III for virtually any application. Rated output per channel at 4Ω: FTX-1001—175 watts RMS, FTX-1501—300 watts RMS, FTX-2001—500 watts RMS.

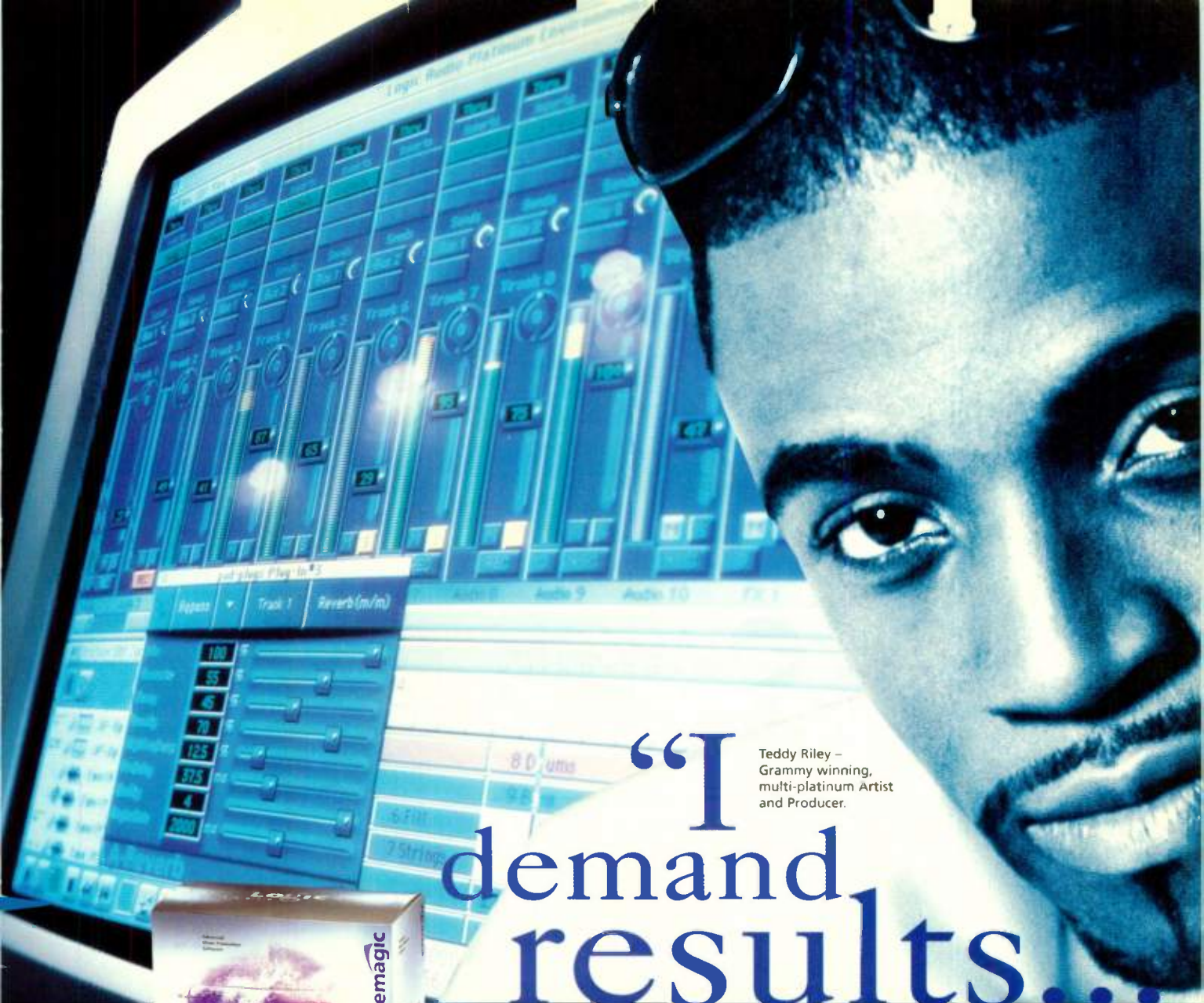
# ASHLY

ASHLY AUDIO INC., 847 HOLT ROAD, WEBSTER, NY 14580-9103 • TOLL-FREE TEL: 800-828-6308 • TEL: 716-872-0010 • FAX: 716-872-0739 • VISIT US ON THE WEB: [www.ashly.com](http://www.ashly.com)  
IN CANADA: GERRAUDIO DISTRIBUTION INC. • TOLL-FREE TEL: 888-462-8346 • IN MEXICO: COMERCIALIZADORA GONHER S.A. de C.V. • TEL: 52 (17) 16-82 00

Power Amplifiers • Graphic Equalizers • Parametric Equalizers • Crossovers • Remote-Controllers • Mixers • Signal Processors

CIRCLE 05 ON FREE INFO CARD





# "I demand results..."

Teddy Riley –  
Grammy winning,  
multi-platinum Artist  
and Producer.



...and I'm used to getting them with Logic Audio."

Multi-Platinum artists need complete and reliable solutions. That's why more professionals use Logic Audio Platinum than any other digital audio sequencer.

The most comprehensive integrated feature set available: multiple hardware

support, a myriad of plug-in options, real-time DSP, high powered MIDI sequencing, quality scoring, and the list goes on...

Logic Audio is the advanced choice for those who demand the best. Available at finer music stores worldwide.

Emagic Inc.  
Tel. +530.477.1051 E-mail: [info@emagic.de](mailto:info@emagic.de)  
Fax +530.477.1052 <http://www.emagic.de>

CIRCLE 74 ON FREE INFO CARD

All rights reserved. Logic™ and Logic Audio™ are Registered Trademarks of Emagic®.

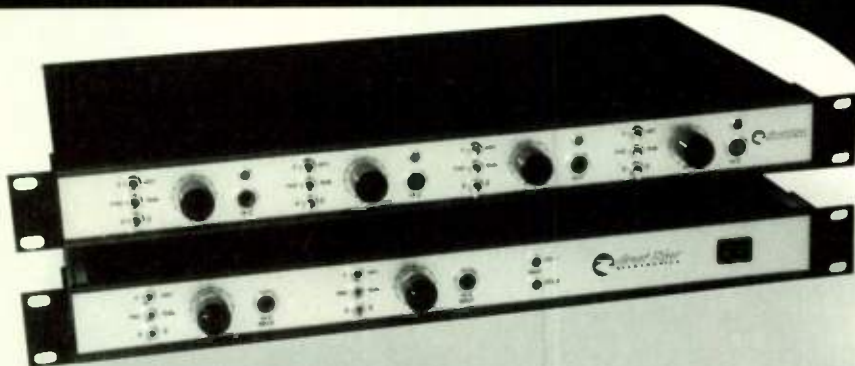
World Radio History

**emagic**

Technology with Soul.



## MASTERPIECE QUALITY IN PROFESSIONAL RECORDING



### MP Series Mic Preamplifier

- Discrete Class A Solid State Design
- Quiet, Musical, Affordable Optimum Performance
- Two and Four Channel Standard Models as well as Custom Designs
- Low Distortion/Low Noise
- Jensen Transformers
- Gold Plated Switching Contacts



3056 East 65th Street • Inver Grove Heights, MN 55076 • 612.455.1846  
<http://www.greatriverelectronics.com>

CIRCLE 35 ON FREE INFO CARD

HDD Recording

Multi-Tracking

Digital Mastering

CD Burning

Multiple ins and outs

# Finally!

a series of Digital Audio Workstations designed for your digital audio needs that is in tune with your budget.

The DSR2000 and the IMI2000 are two complete computer-based Digital Audio Workstations designed by Interactive Microsystems, Inc. Professional digital multi-tracking, digital mastering, CD burning, and CD duplication are no longer out of reach. IMI has designed the 2000 series to meet the requirements of digital audio recording and mastering. Why mess with audio tape when you can edit your recordings using non-destructive editing, and insert seamless crossfades? You can also take advantage of the digital effects. IMI also offers software/hardware packages to convert your existing PC into a DAW. You can also check out IMI's line of computers designed for those who want to upgrade their existing PC. IMI gives you Digital Audio Solutions and *it's about time*.

**Interactive Microsystems Inc.**

847.426.1950  
[www.imidaw.com](http://www.imidaw.com)

CIRCLE 40 ON FREE INFO CARD

## MI INSIDER

version, two stereo line channels, two stereo analog outs, two aux outs, one stereo pair of digital I/O, and an optional ADAT interface for eight more channels of digital I/O. Each channel incorporates 3-band parametric EQ, four aux sends, and motorized faders. Other features include two internal processors (one for reverb, one for multieffects), 128 scene snapshots, eight outs, and a RS-232 serial port.

The Eagle console is similar, but increases the I/O to 18 ins, 10 outs, 4 aux outs, 6 aux sends, and more processors (up to 30 different processors — delays, EQs, enhancers, etc. — assignable to inputs or outputs). For more info, go to [www.eagle.generalmusic.com](http://www.eagle.generalmusic.com)

### IT'S THE MUSIC, STUPID!

Of course, it's the music that ultimately drives music industry development. In Europe, techno/house/drums and bass has become more or less mainstream, but mutant strains of dance music continue to emerge. This year the new wave is coming in from France with a looser, more romantic form of techno. Recordings such as Etienne de Crecy's *Super Discount* exemplify this style, which is gentler, more meandering, yet solidly anchored in the groove. Also, guitars are being re-integrated into the mix — not just as samples, but as signal fodder for importing into hard-disk recording systems. Many guitarists who took detours into the land of MIDI and sequencers seem to be returning to guitar, but with a whole new vocabulary.

Also significant: the proliferation of groove products like Sonic Foundry's Acid (which, not surprisingly, was a huge hit at the Messe), Roland's Groove Machines, and the do-it-yourself DJ programs like Mixman Studio. The most important point about these new technologies is that they *break down the barriers between composition and recording* — you record while you compose, and what you compose gets recorded almost instantly.

The bottom line is that some of the excitement and immediacy of live playing is making a comeback, but based on a totally different paradigm. In fact, the term "DJ" seems a bit of a misnomer; it takes as much artistic skill to assemble music in a compelling way as it does to create music.

Overall, the show confirmed the feelings many had at NAMM: we are in the midst of a major transition. It's still in its infancy, and no one knows where it will end up, but it's sure injecting a breath of fresh air into what had been an increasingly stagnant musical scene. **EQ**



TAKE 10% OFF YOUR NEXT PURCHASE OF SELECTED BASF AUDIO PRODUCTS THROUGH JUNE 30, 1998

# To GET ONE OF these...

FABS  
RECORDS

The Way Out Cowboys  
Sing Lowry's Well  
Metal

## You'll need to use one of these....

You put everything you have into each recording project, because the whole point is to make it to the top of the chart. So why settle for anything less than the absolute best when it comes to your tape?

**BASF** media is the clear choice of today's studio professional. It delivers the most reliable performance time after time. Tests have shown that BASF digital media have the lowest block error rates (BLER) of any major brand — providing you peace of mind that your performance will be on your master every time you go back to it.

If you're serious about recording, get serious about your recording media — trust **BASF**.




**EMTEC** Magnetics

 **BASF**

Distributed in North America by EMTEC Pro Media, Inc. © US 1-888-295-5551 Canada 1-800-205-0070 or visit our web site at [www.emtec-usa.com](http://www.emtec-usa.com)  
CIRCLE 24 ON FREE INFO CARD





	<b>VS-840</b>	<b>Digital Tape</b>	<b>Mini Disk</b>	<b>Analog Tape</b>
<b>Virtual Tracks</b>	<b>Yes</b>	No	No	No
<b>Cut and Paste Song Editing</b>	<b>Yes</b>	No	Limited	No
<b>Digital Mixer</b>	<b>Yes</b>	No	No	No
<b>Digital Effects &amp; EQ</b>	<b>Yes</b>	No	No	No
<b>Waveform Editing</b>	<b>Yes</b>	No	No	No
<b>999 Levels of Undo</b>	<b>Yes</b>	No	No	No

**Duh.**

The fact that digital recording is the wave of the future is no longer a secret. Unfortunately, which format to go with can be. But not for long. Introducing the affordable VS-840, a complete 64 virtual track digital recording studio and the first to record directly to a built-in Zip drive.

For the producer in you, the VS-840's random access recording system allows you to record a great verse and chorus and then

simply cut and paste tracks to try out endless song structures and arrangements. Throw in a built-in 12-channel mixer with 20-bit A/D converters, a full-blown stereo multi-effects processor, 64 virtual tracks with scrubbing ability, and you've got an unbeatable package at an unbeatable price.

Head on over to your nearest Roland dealer and see where digital recording is headed. It's an absolute no-brainer.



<http://www.rolandus.com> CompuServe®: GO ROLAND Fax-Back Information: (213) 685-5141, ext. 271 (Doc. #10237)

Roland Corporation U.S., 7200 Dominion Circle, Los Angeles, CA 90040, (213) 685-5141 Roland Canada Music Ltd., 2111 Midland Ave., Scarborough, Ont. M1V 4A3, (416) 291-7666

World Radio History



## 64 Virtual Tracks

You can record up to eight takes on each of the VS-840's eight tracks. Record your solo over and over on the same track, keeping the previous takes. Bounce without fear. Comp the ultimate track. A total of 64 virtual tracks are available.

## Built-In Effects

The VS-840 features a world class COSM-based guitar preamp for modeling the greatest vintage tube amps in history. It also comes with digital Reverb, Delay, Chorus, EQs and much more.

## 999 Levels of Undo

Now you can edit, bounce and record with peace of mind because with the VS-840's 999 levels of undo, operations or mistakes are never permanent.

## EZ Routing

EZ Routing takes the fear out of recording by automatically configuring your VS-840 for greatly simplified recording, bouncing and mixing. Recording has never been this easy.

## Iomega® Zip™ Drive

The VS-840 uses a convenient built-in Iomega Zip drive to digitally record your music, a first for digital multi-tracking. As simple as a cassette tape, Zip media is inexpensive, reliable, portable and available everywhere.

**Roland**  
**VS-840 Digital**  
**Studio Workstation**

World Radio History

CIRCLE 59 ON FREE INFO CARD

Call 1-800-386-7575 ext. 591 for a demo video (\$5.00).





# Hacks & FAQs

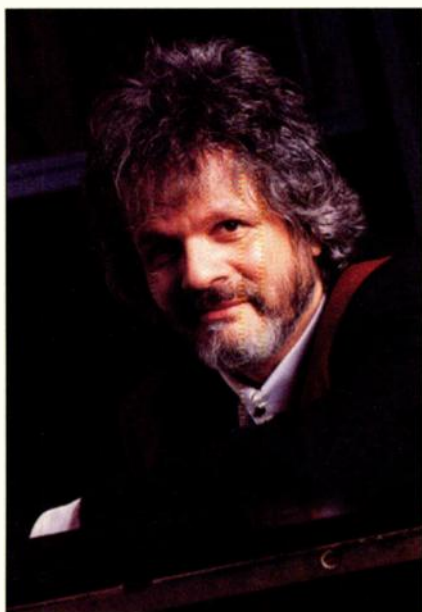


PHOTO BY JIM HERRINGTON

Here are the answers to those questions you keep asking me...

BY AL KOOPER

Here're some questions I've been asked more than once. Now that the answers are written down, hopefully I won't be asked these questions again. Most of these questions pertain to home and songwriting studios, so I hope you project studio folks'll put up with me.

## 1. How do you record background vocals at home?

This is for the guy who does it all himself, as opposed to having friends come in and help. This info is easily adaptable to group singing; it's basically just track usage.

It's necessary to record a scratch lead vocal first to work against. It's also advisable to do this early on, prior to keeper lead vocals, solos, etc. for multitrack availability. Let's say you're gonna do three-part harmony. Record the lowest part on track 1. When you are happy with your performance, bus it to track 2 and sing along with it live with the mic bussed to track 2 as well. Record the two performances to-

gether, balancing them as a true double. When you are done, you will have your low part doubled on track 2. Return to track 1 and record your middle part. Using the same technique, bus the middle part to track 3 and the live mic as well. Return to track 1 for the high part and then bus to track 4. You will then have three part harmony doubled on tracks 2, 3, and 4. Just like Brian Wilson!

Track availability permitting, you can then premix the three tracks to stereo or mono in order to make later mixing easier and free tracks up. This only works on digital machines because of adjacent track problems in analog. By leapfrogging tracks, you can also perform this task in analog.

## 2. What are the advantages to putting your stereo mix on your multitrack, space permitting?

Again, this is best served in digital, as two "border" tracks are necessary in analog to prevent adjacent track weirdness. When I finish recording, I try to have tracks 21 & 22 open to mix to. When I get a great mix, I can then adjust the volume that goes to my DAT player without compromising the ceiling of my mix. If I don't have automation, and, for instance, the mix is great but needs a little more vocal, I simply play tracks 21 & 22 back and add as much of the vocal as I need from the vocal track, adjusting the level to the final DAT. And the *really* best part is, if the mix is great except for the bridge, I can punch the bridge in. All without automation. Try this and you'll never go back.

## 3. If I only have 16 tracks, what do I do about recording instruments in stereo?

This is a *good* question and it deserves a good answer. I am very opinionated about this. In my project studio, I usually record most MIDI instruments in mono, and here's why:

As an arranger, I think in terms of balanced parts. For example, if I record a piano part, I'll usually put it on the left and record an organ "answer" part that addresses the areas where the piano is not

playing. I don't mean where the piano tacits, I mean if the piano plays beats 1, 2, and the upbeat of 3 in a bar, the organ might play beats 3 and 4 to complement the piano and give a stereo feeling not possible from one instrument. Conversely, if the piano is playing a choppy staccatto part, I might have the organ sustain and play whole notes through that passage. If you add a balanced part to every mono part, you can get better stereo by doing it this way. You'll definitely become a better arranger. I guarantee it!

## 4. How can I improve my skills in my home studio?

At Berklee, where I teach, one of the exercises for producer and engineer hopefuls are "sound-alike" assignments. The instructor picks about 15 classic rock tracks, (i.e., "Hey Joe" by Hendrix, "Paperback Writer" by The Beatles) and the student picks one and attempts to emulate it. The reason classic rock is used is because modern home-type equipment can now *easily* replicate sounds it took us hours to get in the '60s. It's also fun to check how good you really are at reproducing a sound you hear. I do this at home sometimes with old Spinners records, aping the genius Thom Bell arrangements from the early '70s. When you can actually duplicate "Don't Talk (Put Your Head On My Shoulder)" by the Beach Boys from the *Pet Sounds* album, send it to me. That one has eluded me for thirty years!

5. Where can I send you a tape of my band, Al? Please refrain from doing such a thing because:

a. I am not looking to produce anything at this point in my life.

b. You should send it to someone who actually can help you, so as to minimize duplication costs.

c. In the music biz, the latest is the greatest. I'm definitely not the latest. It's now time for Butch Vig to get your tapes.

Hope these tips help you out in elevating your studio expertise. Good luck and I'll see ya next month.

*In the music biz, the latest is the greatest. I'm definitely not the latest. It's now time for Butch Vig to get your tapes.*

EQ



# Powerful 24-Bit Sound

**Hear the full depth of your work  
for the first time.**

Whether you need analog or digital I/O, the Multi!Wav PRO24 Series delivers the clarity of true 24-bit sound and brings out the best in your 16 or 20-bit files.

Introducing the Multi!Wav PRO Analog 24, two channels of the finest 24-bit analog audio available, and the Digital PRO24, 24-bit digital I/O with 24-bit analog output. Both cards record and play 24, 20, and 16-bit files.

Use the on-board Word Clock for tight synchronization with external audio and video gear. The Multi!Wav PRO24 Series even has Speaker Pop Protection to prevent destructive noise spikes from entering your audio system during system power up, a feature not found on any other audio card.

16, 18, and 20 bit converters are yesterday's technology! Why compromise when you can afford leading edge technology today?

For the full scoop on the Multi!Wav PRO24 Series, give us a call or visit our web site.

## **PRO Analog 24 Features:**

Professional 24-Bit A/D and D/A Converters  
Balanced/Unbalanced +4, 0, or -10 Operation  
Word Clock Synchronization  
Exclusive Anti-Hum Design  
Power On/Off Speaker "Pop" Protection  
Fully Balanced Analog Signal Paths

## **PRO24 Digital Features:**

Pristine 24-Bit Analog Output  
Professional 24-Bit AES/EBU Digital I/O Capability  
24-Bit Optical & Coaxial S/PDIF Digital I/O Capability  
Word Clock Synchronization  
Power On/Off Speaker "Pop" Protection  
Multi-Channel 2 In 4 Out Capability  
Word Clock to AES (& S/PDIF) Clock Conversion

**AdB**  
PERFECT SOUND

# Multi!Wav PRO24 Series

WORLD'S BEST AUDIO INTERFACES



Software  
Included

AdB International Corporation • Voice: 770-623.1410 • Fax: 770-623.1629 • Email: [info@adbdigital.com](mailto:info@adbdigital.com) • Web: <http://www.adbdigital.com>

AdB and Multi!Wav are trademarks of AdB International Corporation. ©1998 AdB International Corporation. All Rights Reserved. Specifications may change without notice.

CIRCLE 90 ON FREE INFO CARD



# Neumann Sponsors Sound Engineering Contest

Company celebrates  
70th anniversary with  
high-tech contest


Neumann has created a multimedia "Sound Engineering Contest" to celebrate its 70th anniversary and the 100th birthday of Georg Neumann. The contest materials are available on the company's Web site, [www.neumannusa.com/con-](http://www.neumannusa.com/con-test.htm)

[test.htm](http://www.neumannusa.com/con-test.htm). The competition is organized into six different categories covering the world of music and audio. In order to provide a fair competition, the sections have been organized so that everyone from music lovers to experienced studio professionals have a good chance to win.

Interested participants are encouraged to browse all six sections in order to choose the three sections they feel most qualified to compete in. Only three categories will be accepted for each entry with each category weighted equally if completed correctly.

Valuable prizes will be awarded to the highest scoring entries from participants worldwide. Prizes include a limited edition, stereo set of Gold U87 Ai microphones, an M 149 Tube mic, a TLM103, and more. (See sidebar for a full description of prizes.) Closing date for entries is September 21, 1998. For specifics on contest rules including how to enter, visit the Neumann Web site at [www.neumannusa.com/contest.htm](http://www.neumannusa.com/contest.htm) or call 860-434-5220.

To see if you've got what it takes, we've provided a few screens from the contest. Good luck.

**Georg Neumann GmbH Berlin**  **Sound Engineering Contest**

**Section A - Studio Practice**

**Use the picture details to identify audio devices**

Using the mouse, drag the text bar bearing the manufacturer's name to the corresponding picture.


10 audio device images are displayed in a 2x5 grid.

Manufacturer buttons: JBL, CROWN, EVENTIDE, KLARK, NEUMANN, DIGITECH, FOCUSRITE, YAMAHA, STUDER, LEXICON

Section: [A] [B] [C] [D] [E] [F] Question: [1] [2] [3] [4] [5] [6] [7] [8] Menu ? Volume

FREE SAMPLE: Many of the tests involve sounds, so we can't show you here, but try your skills on this one.





what's your **studio vision?**



"We've been using Studio Vision since it came out. It's given us the freedom to make music the way we want. Editing audio in bars and beats and visually muting and arranging parts is so musical. Studio Vision lets us see and hear the tracks – that's how we get our sound."

—The Dust Brothers

John King & Michael Simpson

studio  
vision pro 4.0

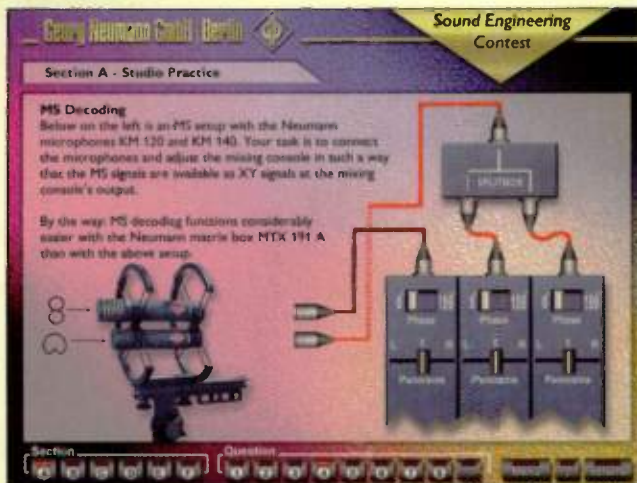


OPCODE

<http://www.opcode.com>

phone 800.557.2633 • fax 650.856.0777





PRESENT

# THE EQ ALL-STARS RECORDING & SOUND ROAD TOUR

AN EVENING EDUCATIONAL SEMINAR ON  
RECORDING AND LIVE SOUND TECHNIQUES FEATURING  
PROMINENT EQ EDITORS AND COLUMNISTS.

## TOPICS INCLUDE:

STUDIO MIKING, RECORDING, MIXING,  
EDITING, SURROUND SOUND, LIVE SOUND,  
FOH/MONITOR MIXING AND MORE

## SCHEDULE:

5/11/98	SEATTLE WA	5/18/98	HOLLYWOOD, CA
5/11/98	SAN JOSE/ SAN FRANCISCO		BOSTON, MA
			HOUSTON, TX
5/14/98	HALLANDALE, FL	5/19/98	NORTH HOUSTON, TX
5/18/98	NEW YORK	5/21/98	HALLANDALE, FL
	PHOENIX, AZ	5/27/98	SHERMAN OAKS, CA

FOR DETAILED PROGRAM INFORMATION & SPACE  
AVAILABILITY CONTACT A GUITAR CENTER  
LOCATION LISTED ABOVE.

## TELL 'EM WHAT THEY'VE WON!!!

Here are the prizes for the educated  
engineers who've got what it takes.

### 1st Prize

The U87 Gold — Jubilee Stereo  
Set — Limited Edition (two gold-  
plated U87Ai studio microphones  
with elastic suspensions and an  
aluminum case). Included in the  
prize is a trip to Berlin in the first  
week of November this year. The  
winner will visit the company  
headquarters, receive the prize at  
the anniversary celebrations, and  
still have enough time to check out  
Berlin on its way to becoming an  
international metropolis.

### 2nd Prize

The award-winning M 149 Tube  
microphone set.

### 3rd Prize

The brand new TLM 103 studio  
microphone.

### 4th-70th Prize

Each winner gets a Neumann  
Contest Set, which consists of a  
Neumann T-shirt, a poster, and  
other little surprises.

### The Special prizes

In addition to competing for the  
above prizes, all entries —  
regardless of score — autom-  
atically qualify for the special  
prizes: three Neumann TLM 193  
studio microphones.



THE FIRST POWER AND LIGHTING SYSTEM  
FOR RACKS WORTH PUTTING OUR NAME ON.  
(AND YOU CAN PUT YOUR NAME ON IT TOO!)



## INTRODUCING POWERBRITE™ FROM SAMSON.

PowerBrite. It's the very latest in power distribution and lighting for your rack. Unlike other systems, its powerful fluorescent bulb shines light on everything in your rack.

Plus you get eight AC outlets on the rear panel for standard plugs and wall-mount power supplies, so you're ready for whatever comes along.

And here's something you weren't expecting. PowerBrite is not only the kind of product we're proud to put our

name on, we figured you'd want to put your name on it too.

So we made it easy to order\* your customized band or studio name and logo for the front-panel display (just like the SAMSON logo in this ad)!

PowerBrite from Samson. The first power and lighting system worth putting your name on.

Look for the special PowerBrite display at a Samson dealer near you.

**SAMSON**

\*Ordering details and information for customized inlay panel logos and names available inside packaging.  
For more information, please call (516) 364-2244, fax (516) 364-3888 or e-mail us at [sales@samsontech.com](mailto:sales@samsontech.com). © 1998 Samson

**CIRCLE 61 ON FREE INFO CARD**



# Big Expectations, *Little Time*

Building your project post studio for speed will help you handle the time restrictions on film projects

BY E.D. MENASCHÉ

Film composing is kind of like playing halfback in the NFL. You need speed, the ability to read the situation in front of you, and the skill to make rapid changes on the fly. Hesitate, and you get hammered. It's no big secret that, thanks to our position near the end of a film's completion schedule, composers often face tremendous pressure. A film might take months to shoot and edit, but once that's done, the filmmaker is waiting for *you*. Time windows are small, and when the call comes, it helps if your project studio is built for speed.

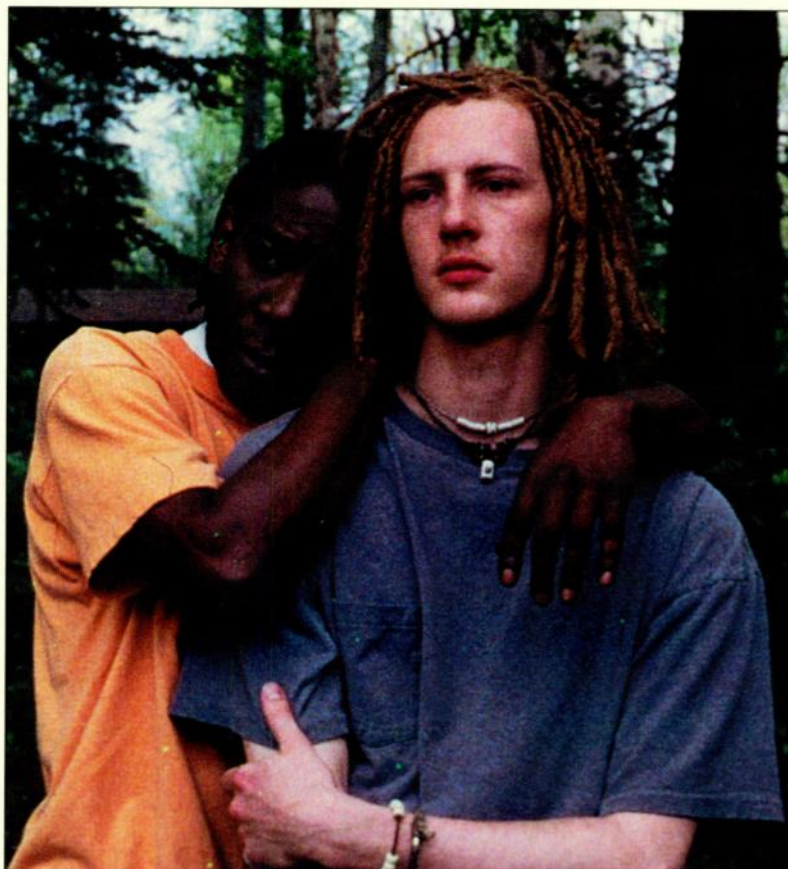
One of your project studio's primary strengths is the way it can be adapted to suit your specific working method. For the film composer, formulating the right environment can be tricky. You need tools that inspire your right-brain creativity while allowing your left brain to deliver the final product on time. And while there's plenty of debate among proponents of analog vs. digital recording, linear tape vs. random access digital systems, and MIDI sequencing vs.

acoustic instruments, the composer most effective rig is often a well-planned combination of all of the above.

I experienced the advantages of combining several different recording methods first hand when I composed and produced the score for *Parallel Sons*, a first feature by director John G. Young. After laboring over his project for about a year, John was suddenly offered the chance to enter the still uncompleted film in the prestigious Sundance film festival. Obviously, this was a tremendous opportunity and a welcome recognition of all his work and commitment, but time was in short supply. By the time he came to us with the project, there was exactly one month to finish editing the film, compose and record a soundtrack, create sound effects, and mix the audio. The project also came down while we had

other commitments to juggle, so the calendar month was shortened considerably.

In addition to the short time frame, the score posed a couple of special challenges. *Parallel Sons* is set in a small town in upstate New York's scenic Adirondack mountains. The story is centered around Seth, a white kid getting ready for college whose interest in black culture makes him an outcast in his conservative hometown. His life changes when he meets and develops a relationship with Knowledge, a black escaped convict running from both the law and his own past. John wanted the score to reflect the film's rural setting, while at the same time integrating less traditional musical elements and sonic textures that push against that setting. Certainly not the kind of score you can bang out on the quick with a sequencer and a couple of synths.



KNOW THE SCORE: The music for *Parallel Sons* (shown above) had to reflect the rural setting by using nontraditional musical elements.

## ROUGHING IT

Traditional folk instrumentation formed the core of the "rural" cues. Violin, viola, guitar, and both bowed and plucked upright bass would be featured in small ensemble settings. Cheesy MIDI samples simply would not cut it for the final mixes — each instrument had to be recorded live. But before going through the time and expense of hiring players and booking sessions, we needed to create rough cues for the director's approval.

Step one involved spotting these cues with Mark of the Unicorn's Digital Performer (DP) for the Macintosh, locked to picture via SMPTE using MOTU's MIDI TimePiece interface. It's always a good practice to request



# have you heard?

There's good news coming from ENSONIQ. The latest release of PARIS™ includes all the cutting-edge components you need to record, edit and mix digital audio at a professional level – Mac and PC! Right out of the box, PARIS gives you the most complete integrated digital audio solution on the market today...for a whole lot less. It's a complete recording studio, with...

**Integrated Control** – Every PARIS system includes a 16 channel dedicated control surface that interacts seamlessly with the PARIS software.

**24-Bit Precision** – 24-bit inputs\*, outputs\*, file path and effects processor.

**128 Track Playback** – Go beyond the typical 16 tracks, using our new transparent submixing technique.

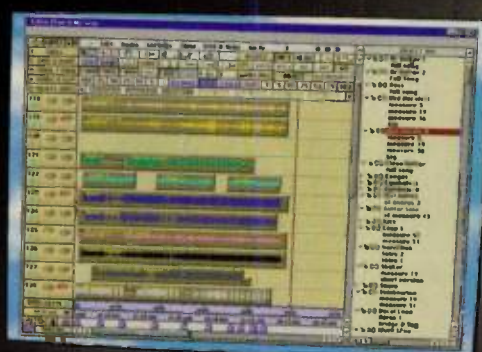
**World Class Effects** – Each PARIS system includes 12 real-time, 24-bit effects, including reverb, delay, chorus, compressor, expander and more.

**64 Bands of Parametric EQ** – Plus, an additional 448 virtual EQs, with transparent submixing.

**I/O Expandability** – The new MEC (Modular Expansion Chassis) includes 9 slots, making it easy to increase the input/output capacity of your system. New MEC modules: 24-bit 8 inputs, 24-bit 8 outputs, ADAT, SMPTE.

For more information and a list of Authorized ENSONIQ Dealers nearest you, visit the PARIS website today: [www.paris.ensoniq.com](http://www.paris.ensoniq.com)

\* with optional MEC modules



**ENSONIQ**

LEADING THE WORLD IN SOUND INNOVATION

CIRCLE 98 ON FREE INFO CARD

ENSONIQ Corp, 155 Great Valley Parkway, P.O. Box 3035  
Malvern, PA 19355-0735 (610) 647-3930 fax: (610) 647-8908

[www.paris.ensoniq.com](http://www.paris.ensoniq.com)



tapes with a window burn depicting timecode; the visual reference can be a great time saver when spotting scenes or fine tuning hit points.

Digital Performer is an especially effective scoring tool: The combination of random access digital audio with MIDI allowed me to start composing with my most intuitive instrument, the guitar, which forms the backbone of almost every piece in the film. In DP, any given file can hold a long list of individual cues (known as "chunks" in MOTUese), each with its own start time, digital audio "soundbites," tempo map, MIDI instrument layout, etc. Data, including audio, can be copied freely between chunks. Early in a project, the flexibility afforded by random access digital audio is invaluable. In addition to allowing me to hone in on specific hit points and fine tune tempo, I was able to audition four or five different pieces of music on the same scene simply by assigning various chunks to the same SMPTE start time. Later, as the score started to take shape, Performer let me take one or two important thematic

ideas and try them at different locations in the film. As I mentioned earlier, we began work on the music while the final edits were still under way. DP's flexibility let us painlessly move our cues to reflect last minute scene changes.

#### CREATING A SIGNATURE SOUND

Though we knew we'd be bringing in real players for the final recordings, we created a demo of each cue's string parts using samples from our pre-existing in-house Akai library (recorded by engineer Bill Philbrick). Creating a library of your own samples may be a lot of work, but homegrown samples can offer several advantages over commercial libraries — you the producer can get the performance you want from the player, and the samples will have *your* studio's sonic stamp. In our case, the fact that we recorded the samples ourselves meant we would only have to match our own sound later on, not some generic sound off a disk.

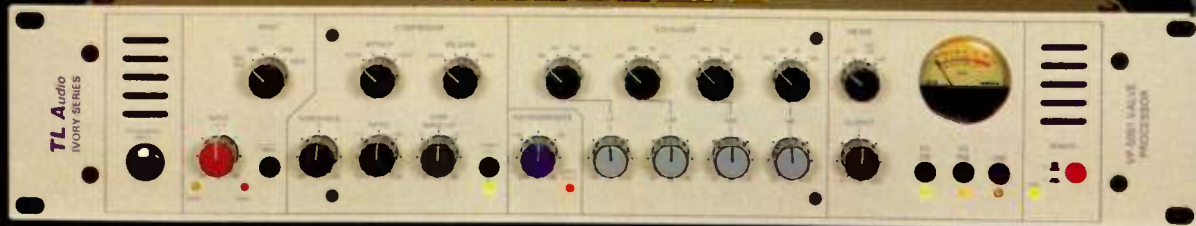
In the real world of dealing with filmmakers, that kind of consistency and attention to detail can save major has-

le. Remember, musicians might be able to hear a rough sound and imagine what the final track will be like, but most civilians can't. The closer your demo sounds to the final track, the more comfortable the director will be when he hears it. The last thing you want to do when the pressure is on is explain how it's "gonna" sound, or, worse, why your beautifully recorded final mix doesn't sound like the demo the director approved.

In addition to the acoustic music, a distinctly electronic element was needed to portray the characters' alienation from their rural surroundings. We maintained the same minimal approach we used for the acoustic cues, employing some of the same traditional instruments in nontraditional ways. Here, we took advantage of the Ensoniq ASR 10's strength as a performance sampler/sound design tool. For the title sequence, which precedes the main story and takes place in Knowledge's Brooklyn apartment, we sampled plucked viola through the ASR's onboard effect's nonlinear reverb algorithms. We looped

**TL Audio**

## IVORY SERIES



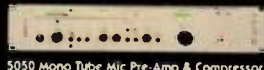
5001 4 Channel Tube Mic Pre-Amp



5013 2 Channel Tube Parametric EQ



5021 2 Channel Tube Compressor



5050 Mono Tube Mic Pre-Amp & Compressor

### 5051 Mono Tube Voice Processor

■ Tube Mic Preamp: Variable gain; 48v Phantom power; Low cut filter; Tube drive and peak LED's

■ Tube Compressor / Expander Gate: Fully variable threshold, ratio & gain makeup; 4 attack / release times; Side chain insert

■ Tube EQ: Same as EQ1 - 4 bands with 4 frequencies per band; Bypassable & switchable pre or post compressor

■ Master Section: Output level control; VU meter reads output or gain reduction; stereo link

**\$699**

**sascom  
DIRECT**

Phone- (905) 827-9740 Fax (905) 469-1129  
http://www.sascom.com E-mail: sales@sascom.com



# 128 Tracks NO LIMITS

# You know you Want it.

## 10 Inputs/ 10 Outputs

## LIVE

## Mutate

## 30 DSP Plug-ins

## Powerful Software Fast Trax

# 32-bit Plug-n-Play PCI



Early on, you were told you can't have everything you want. But finally, there's an exception — at least when it comes to hard disk recording.

Forget about confusing user interfaces, compatibility problems, track limitations, and meager I/O. **Digital Wings for Audio Elite** transforms your Windows 95 PC into a 128 track, next-generation digital recording studio with everything you want.

Pop the PCI board into your computer, connect the rack-mount 10 x 10 Break-out Box for 10 channels of simultaneous record/playback (or stack 4 boxes for up to 40 channels of I/O!), and get ready to fly with award-winning software.

Mix with the fader console. Mutate your sound with

DSP effects like compression, reverb, and noise reduction. Do SPDIF transfers, or import/export ADAT tracks with the optional ADAT interface. And with 128 tracks, the days of erasing a track to make room for another are over. DWA Elite also includes free technical support and a 5-year limited warranty.

The DWA Elite 10 x 10 I/O hardware is compatible with Cubase VST, Cakewalk Pro Audio, Sound Forge, Cool Edit Pro, Logic Audio, and other software that works with standard Windows and ASIO drivers. In addition, the bundled DWA 2.0 software accepts DirectX-compatible plug-ins.

Go ahead — touch it, work with it, create with it. You know you want it...now you got it.

**We're shipping now,  
so contact Metalithic  
for a dealer near you.**



METALITHIC SYSTEMS, INC.  
3 Harbor Drive, Suite 206 • Sausalito, CA 94965  
800-550-1255 US tel • 415-332-2690 tel • 415-332-6735 fax  
[www.metalithic.com](http://www.metalithic.com)

CIRCLE 41 ON FREE INFO CARD



where do  
west coast  
mastering  
studios  
refer their  
clients?



compact discs  
graphic design  
drum scanning  
printing  
film output

1220 south central ave.  
suite 205, glendale, ca 91204  
**800.599.9534**

CIRCLE 16 ON FREE INFO CARD

## PRO AUDIO

BEFORE YOU JUMP...  
**CALL US LAST!**



We'll  
Save  
You  
Time &  
Money!

- SYNTHESIZERS
- DIGITAL PIANOS
- RECORDING GEAR
- PRO AUDIO
- SAMPLERS
- AMPLIFIERS
- MIXERS / EFFECTS
- SOFTWARE

CALL OUR SALES STAFF  
OF MIDI EXPERTS

**All Major Brands!**

**RICH**  
music

**1-800-795-8493**

Hours: Monday - Friday 10 - 6:30, Saturday 11 - 5  
<http://www.richmusic.com>

VISA • MASTERCARD • DISCOVER • AMERICAN EXPRESS

CIRCLE 58 ON FREE INFO CARD

## TECHNIQUES POSTPRODUCTION

and pitched down the results to create an eerie rhythmic bed. Over that bed we laid processed sampled piano, playing a theme that would recur later in the film. We ran the samples through a Summit Audio TPA 200 tube mic preamp, which allowed us to emphasize the sample's dynamic character while mitigating some of the sound's harsher elements.

Just like an album project, a good film score should hold together sonically, even if the music is stylistically diverse. I like to assign specific sounds to characters or settings, then use those sounds in different combinations to fit the action. We used an electric guitar to create a dark, brooding pad that was an important sonic device in connecting various dramatic moments in the film. I played slide electric guitar with an E-Bow, which creates an infinite sustain. I fed the guitar into a DigiTech [GSP] 2101, a tube preamp with extensive onboard effects.

Using the real-time control pedal on the GSP's floor controller, I added harmony notes while the slide slowly changed the pitch of the feedback-like buzz created by the E-Bow. The result was a complex pad with a distinctly electronic flavor; plus, the sound was like a twisted echo of the bowed bass used in other parts of the film. Again, DP allowed us to clip and reuse the pad throughout the film, both on its own and as a layer in some of the more complex cues.

With little time to spare, John came in to hear the demos and make final suggestions. He had some changes, most of which involved the placement and tempo of the cues; fortunately, Performer enabled us to audition those changes on the spot. Approval granted, it was safe to call in the string players and lay the final tracks down.

### ROLL TAPE

The computer had served us well in the early going. It helped us lay a framework for the score, make demos, and tweak them to meet the director's approval. However, although several of the electronic tracks we had recorded into the computer would ultimately find their way into the mix, we did our final tracking to a trio of TASCAM DA-88's (24 tracks). As tape machines go, DA-88's chase to external timecode relatively quickly. Better yet, they can handle long-format tape (up to 120 minutes on

a single Hi8 cassette). Having the entire film's worth of music on one set of tapes saved us substantial hassle.

Storage was also an issue. The kind of multitracking we were doing was way beyond our hard disk's capacity. And, though it's not my favorite way to work, due to time constraints we had the players lay several takes down for each cue and move on. We chose the best performances later. We recorded each acoustic instrument in stereo. Plus, in the midst of the composing process, engineer Bill Philbrick had been designing ambience effects on an Eventide H3000, which would become integral to the music; each of those needed to be printed in stereo, too.

Fortunately we had been anticipating this move, so switching from disk to tape produced no unwanted drama. Locking both computer and digital multitrack to SMPTE, we were able to use the Performer tracks as a guide for the finals, giving us a frame of reference when judging the musicians' performances and the timing of the cues. Just as important, we were able to recycle key material from the demos — like the aforementioned guitar pad — which would have been tough to reproduce.

### FINAL SCORE

You learn a lot about your tools when you're under pressure. For all the good preamps and microphones and instruments and effects in our studio, our most important asset was not a piece of hardware but a concept of design. The integration and compatibility between various *pieces* of gear, most notably our computer and digital multitracks, let our work go faster, and made the leap between composing and tracking seamless. By maximizing the strengths of each format, we were able to compensate for any format's inherent weaknesses, allowing us to spend critical time working out creative issues without being distracted by the technology. That focus and efficiency allowed us to deliver the score on time — with not a moment to spare.

*E. D. Menasché is a composer, producer, and writer living in the New York area. He co-owns PM Productions, inc. with Bill Philbrick. Parallel Sons should be appearing at an arthouse near you in the spring of 1998.*



# Clean Up Your Listening Environment



## Recycle Your Old Monitor Speakers



**TANNOY**  
FOR THOSE WHO KNOW  
**REVEAL**



Tannoy/TGI North America • 300 Gage Avenue, Unit 1 • Kitchener, Ontario, Canada N2M 2C8 • 519 745 1158 • Fax: 519 745 2364 • Web site: <http://www.tannoy.com>

TOLL FREE DEALER ORDER HOT LINE (FAX): 1-800-525-7081

CIRCLE 84 ON FREE INFO CARD

World Radio History



# Ska's *the Limit*

Bridging the gap  
between the "new" ska  
sound and the time-  
honored traditional

BY VICTOR RICE

Ska has become one of the most popular styles on the music scene today. Musicians have adopted ska's upbeat tempos and staccato rhythms and combined them with more of a modern flare — adding equal parts of punk, metal, hardcore, and jazz — to create the most recent wave of ska music.

Over the years, the fidelity of recording ska has changed immensely, and that's

a big issue in the ska community right now. A lot of people are trying to make a choice whether to use the technology that we have with us or try and re-create the traditional sound of ska — essentially a couple mics in a room with not much in the way of out-board effects. I've been trying to strike a happy medium by using some of the best-sounding equipment from yesterday and today, along with the bigger track counts that are available.

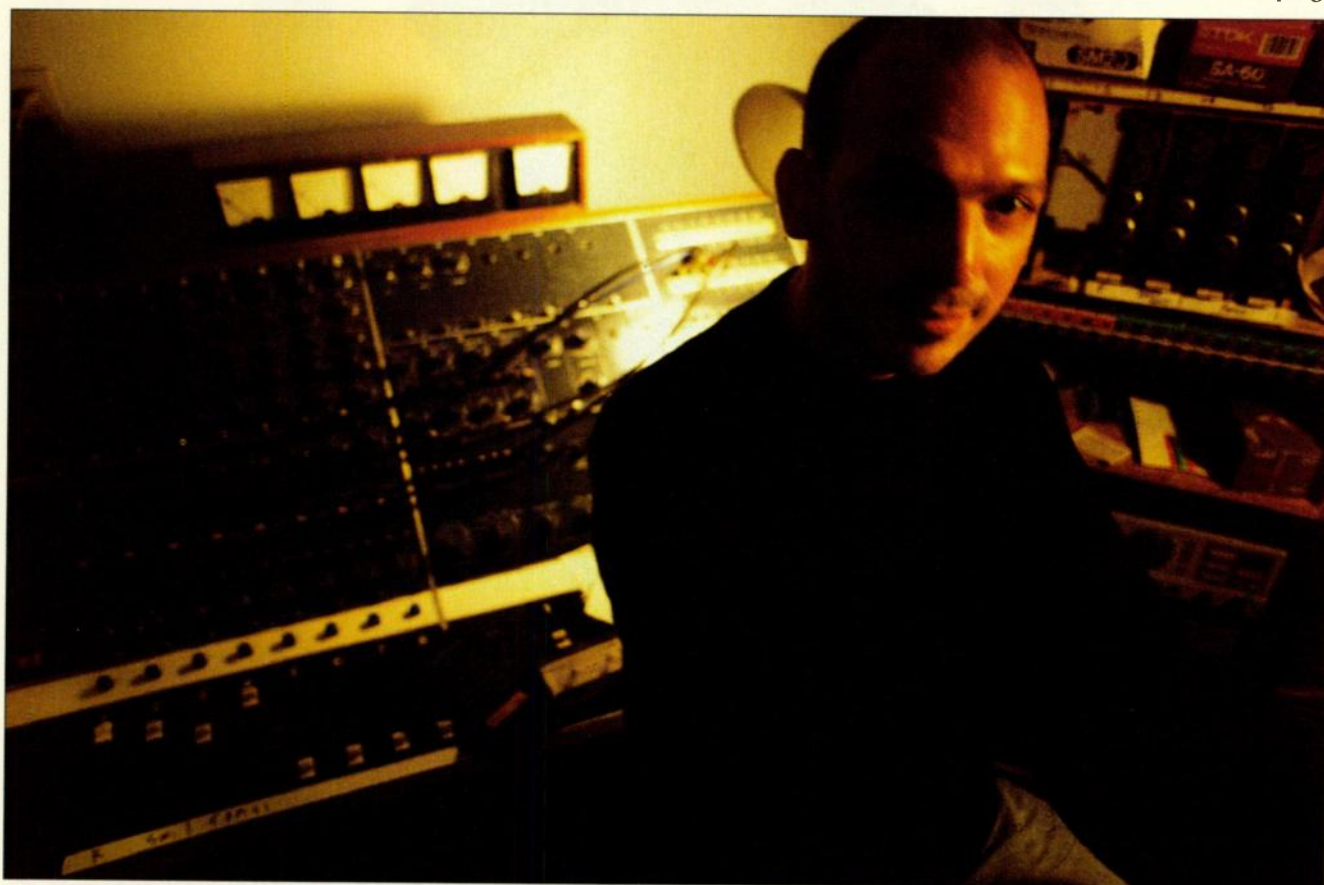
## ROOM TO BURN

Because I don't have a room that I can call my own, when I'm getting ready to produce a band I look for a studio with a lot of space. I also look for good microphones, good mic pres, and analog gear — I'm strictly analog until the mastering stage, then I'll go to digital. Proximity to the band is another important factor that I also take into account. I like to record a band where they're comfortable and

then I tend to mix the project where I prefer to work. So if I go out of town to produce a band, I'll usually bring the tapes back to New York, unless I really like the facility. Lately, I've been mixing at Coyote Studios in Brooklyn, NY.

You have to remember that a lot of ska bands are up to 10 or 12 pieces, so it's really good to have a separate place that people can hang out in — I have a real problem with people hanging out in the control room and in the live room when I'm trying to track. I like to make sure that there's a third room for people to keep themselves occupied in so I can just call on them when I need them.

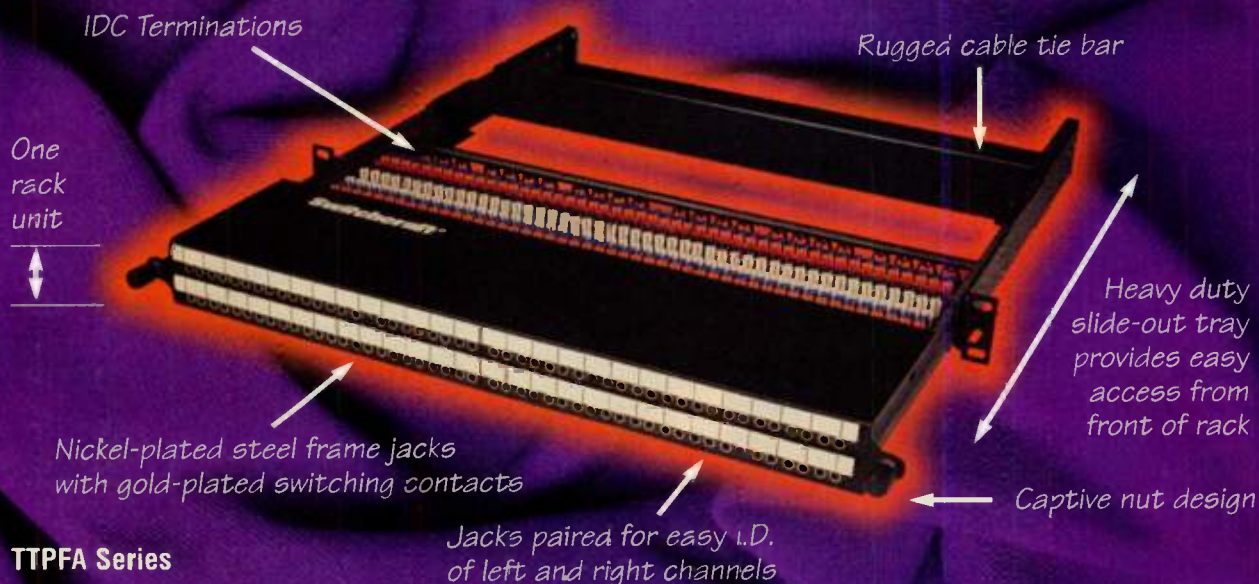
When it comes down to recording, I love to record bands live. I like to try and get the entire band down on tape. From that point, we'll listen to the drum tracks, and if the drummer's happy, we'll keep them. We'll also listen to the rhythm section, and if the tracks are worth keeping,



SKA-FACE: Ska-master Victor Rice reveals how he records each of the many elements in a ska band to achieve a balance between high-tech and tradition.



# Fill Your Rack With Switchcraft®...



## Introducing the Front Access Patchbay Series... an exciting new reason to make Switchcraft your source for audio panels.

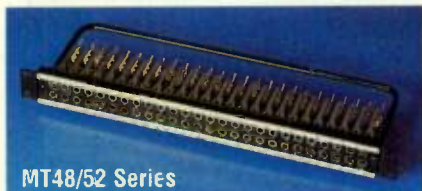
Our innovative front access patchbay gives you space where you've never had it before and convenience you've never dreamed of, in a quality package you've come to expect from Switchcraft. Our heavy duty slide-out tray gives you access to the 96 nickel-plated steel frame jacks **from the front** of the unit.

But that's only the beginning! See the photo above for all of the features and benefits, which make this panel

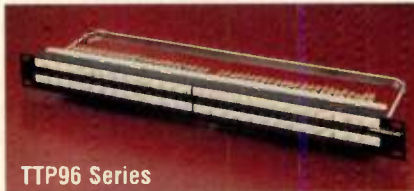
ideal for use in studios, tape editing rooms, mobile facilities and anywhere space is limited.

While you're at it, check out the patching products below. Don't forget our high quality patchcords, and industry-standard Q-G® microphone connectors.

Switchcraft is your one-stop shop for all of your broadcast interconnect needs. Call (773) 792-2700 ext. 243 today for a copy of our Audio Video Products catalog.



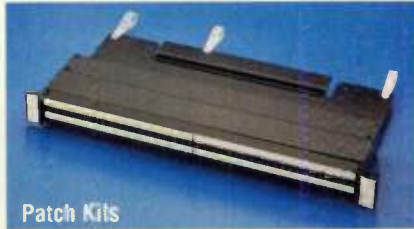
- 1/4" Nickel-plated steel frame jacks
- Rugged cable tie bar
- 3 1/2" or 1 3/4" panel height



- TT Nickel-plated steel frame jacks
- Rugged cable tie bar
- Extra wide labeling strips
- 1 3/4" panel height



- Extra wide labeling strips
- Fully-wired with EDAC connectors



- Choose from a variety of normalizing configurations
- 3 1/2" or 1 3/4" panel height (1/4" or TT)

# Switchcraft®

5555 North Elston Avenue • Chicago, IL 60630  
(773) 792-2700 • Fax: (773) 792-2129

**Switchcraft® - Consistently Excellent Since 1946<sup>SM</sup>**  
[www.switchcraft.com](http://www.switchcraft.com)

CIRCLE 62 ON FREE INFO CARD

World Radio History



# Entering The Vintage Zone: Buyer Beware

Take steps to avoid getting burned with vintage gear purchases

BY BENNET SPIELVOGEL

The primeval magnetism that draws a moth to a flame is not unlike the attraction vintage recording and studio equipment holds for those in the recording and sound racket. The squeal of delight that comes from other engineers and clients who recognize you own a blackface Tohnafone Cordless with the rare mildew-colored knobs is music to any gear-head's ears.

It's unfortunately all too easy to be burned by vintage deals gone sour. And like the moth taunting the flame, the outcome can be similar. I've hovered around that flame many times and have run the gamut of complete escape (well, not quite complete, maybe a slight singe or two) to getting pretty toasted. Over the years, I've discovered a few ways to avoid and minimize pitfalls when shopping for "mature" gear.

First, what exactly are we talking about? If someone asked me what constitutes a vintage piece (as opposed to plain ol' "old"), I'd have to say it's probably vintage if:

- it's not made anymore
- it continues to hold enduring interest and importance within the industry
- it possesses outstanding distinction for what it does
- it's appreciating in value
- it's more expensive than you care to think about

• someone once said, "Ten years ago I once had a box full of these I couldn't give em away, I wound up selling the entire lot for \$20."

The refreshing things about old gear, when you make comparisons to modern equipment, concern design, function, and ease of use. Most old pieces usually only do one thing, but they do it very well. For example, an EMT250 doesn't have a jillion presets, but once it's properly set up, it gives you some astonishing reverb. Or take leveling amps. You can't get much simpler than an

LA2 — two controls and terrific sound.

Sometimes all it takes for a piece to enter the realm of the classic is a little publicity. For instance, a photo or interview of a well-known engineer/mixer holding or talking about a forgotten piece of equipment — "Man, if I didn't have my old Raptronix 88, I'd never have gotten the vocals to bounce with a quality like that." Give the Rap 88 some additional publicity, and what used to sell for \$400 goes into the four digits.

Whenever you think "vintage," make it a rule to think "buyer beware." Become knowledgeable about the equipment you



want to purchase before you buy it. It's all too common to buy a marginally working or even a nonworking piece for big bread and then realize that you need to invest quite a bit more in order to get it working. This happened to me about seven years ago when I bought my first vintage pieces, a pair of LA3A's.

I had wanted a pair of these for a long time. I had seen pictures and I used them in other studios, but I had never bothered to learn much about them. I found a mail-order deal from a used equipment place (now out of business...): \$1200 for the pair. I asked a couple of questions: "Do they work?" ("Yes.");

"Can I get them tomorrow COD?" ("Of course."). Sign me up, that sold me. The units arrived the next day.

Neither unit worked, and one didn't even light up. And so began some intense learning involving LA3A's. I knew nothing. Thus, after phone calls, trips to the library, and the used book store, my crash course in understanding the LA3A began to develop. As it turned out, all I needed was one meter bulb and two "optos" — one for each LA3A.

I'll contend though, that the quickest (and usually the most expensive) way to learn about something, especially a vintage piece, be it a U47, a Neve mic pre, or a Gibson Lloyd Loar mandolin, is to buy one. So...

Rule #1: Find out as much information about the gear you want before you buy it. What makes it tick? Are there any models to steer clear of? What's your source for spares? Can you speak with someone who already owns the kind of piece you want? Would a Web search offer information?

## ELECTRONICS AND BEYOND

It's important to emphasize that, unlike a fine wooden acoustic guitar or violin, most electronic gear fail to age gracefully. Capacitors dry out and open up. Wires oxidize. Switches act like diodes. Pots turn ugly. Most vintage pieces can be serviced, but, unfortunately, you may wind up paying twice. That is,

an initial price for the piece and then more money to have the unit brought up to specs. That would be fine, if the units were priced according to condition.

This is usually not so with classic gear. The \$1200 I paid way back when seemed to be the going price for those units, working or not. I got off reasonably light for my first experience. It's not unusual to find them with bad optos, noisy pots, and leaky caps, yet you'll most likely pay "the going rate" — these days between \$1800 and \$2500 (each) — regardless of condition. Therefore...

Rule #2: Budget for repairs and spare parts when buying older stuff. Face facts, the popularity of vintage gear has driven prices way, way up, and most people fail to factor in the cost of refurbishing from a reliable servicer.

## MAKING THE SCORE

I grew up on the Lower East Side in New



# State-of-the-Art, Discrete, Low Z Mic Preamp

## Only \$41.67\*

\*when purchased in this convenient 12-Pack.

The RQ™ Series proves that high performance, state-of-the-art, microphone preamps can exist in groups larger than two! We use the same large geometry, Ultra low Rbb, discrete transistors as in our large format consoles. You could easily spend a lot more money for mic preamps, but since the RQ delivers a Noise Figure within 1.5 dB of perfect,\* you are not likely to find one for any price that is audibly quieter. Quiet is good.

Only  
**\$37.50**  
per Mic Pre  
when purchased  
by the full case

Unity™ 2002-12 RQ

Only  
**\$49.99**  
per Mic Pre  
for the 8-pack

Unity™ 1002-8 RQ

Only  
**\$43.75**  
per Mic Pre  
for the 16-pack

Unity™ 2002-16 RQ

Only  
**\$43.75**  
per Mic Pre  
for the 24-pack

Unity™ 2002-24 RQ

Yet another benefit from our **32** years of designing mixers for professional users.

\*Prices are U.S. Suggested Retail Only. The MONITOR Magazine is a publication filled with the latest information musicians want to know. To receive 4 issues for only \$5 (price good in U.S. only), send check or money order to: Monitor Magazine, Peavey Electronics, 711 A Street, Meridian, MS 39301 • (601) 483-5365 • Fax (601) 486-1278 • <http://www.peavey.com> ©1998

CIRCLE 57 ON FREE INFO CARD



**PEAVEY**  
Experience the Difference.



## INTERFACING CLASSIC GEAR: SOMETHING OLD, SOMETHING NEW...

By Mike Sokol

Collecting and using classic audio gear can be hard on your bank account. Nonetheless, the fun really begins when you finally get your hard-won collectable back to your studio and want to hook it up to your console.

Your first hint of trouble normally will be when you don't find XLR or phone connectors on the back panel. You'll likely find just a terminal strip label with alien terms like "IN," "OUT," "COM," "+" and "-." Not to worry, this is a good thing. In fact, I've scored some real deals over the years from sellers that couldn't figure out how to hook this stuff up. So play it close to your vest and offer them a ridiculously low price for that old UREI.

Here's how to hook 'em up: If you need a little help on how compressor/limiters hook up in your sound chain, check out my piece in last month's compressor issue of *EQ*. With the help of a kludge cable and maybe a resistor or two, you'll be in business. Normally you want to insert a compressor in a channel strip or subbus using a TRS (Tip Ring Sleeve) plug. I like to hang a little box on the back of my old gear that has 1/4-inch jacks prewired to the terminal strip. For about five bucks you can build an interface that allows you to hook up classic gear like all your modern stuff without drilling holes in your old (and collectable) processors.

Fig. 1 shows the terminal strip layout on my UREI LA3A (and, no, you can't have mine). Check the diagram. The IN and OUT should be obvious, but the "plus," "minus," and "C" markings have to do with transformer inputs and outputs. If you're going into an unbalanced TRS insert, then you need to wire the input and output transformers to tie the "C" leg to ground. On other brand gear, there may be a separate "plus" and "minus" terminal, which implies high-side and low-side transformer connections. The "-" terminal must be tied to the shield on the unbalanced TRS jack. If not, you'll get a sonic situation similar to a low-impedance mic with one broken wire in a snake, i.e., all high frequencies and no bass due to capacitive-only coupling of the broken side of the bal-

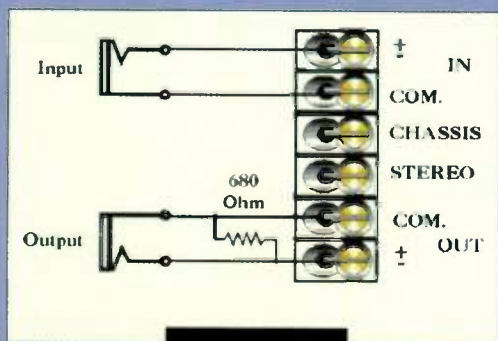


FIGURE 1

(which most modern consoles won't), you can get a very "peaky" frequency response without much bass. The cure is to simply add a small resistor of the correct value across the output transformer of the gear. For most gear, a 680-ohm resistor will work, although some old ribbon mics want to see about 150 ohms of loading. Then, when you plug it into the high-impedance jack on your modern console (usually 2.5 to 10 kohms or higher), the proper loading is already done for you.

The terminal connection labeled "Stereo" allows you to connect a pair of compressors together so that each detector will affect the gain reduction of the other processor. This is generally only needed when using a pair of compressors in a stereo mixdown situation. Since this allows the gain reduction of each channel to be mirrored in the opposite channel, the stereo image will remain stable and not dance side-to-side. The "Chassis" terminal is a chassis ground to be used in a floated-rack situation, but may not normally be used in some project studios and unbalanced signal situations.

You can also hang a set of balanced XLR input and output plugs off the terminal strip if desired. You'll still want to put a loading resistor across the output transformer, unless the gear will be properly terminated by another piece of classic gear.

Have fun with your old stuff. I know I do!

York City, not far from the open street market on Orchard Street. There, yelling, screaming, and bargaining are an art form. You deal face-to-face, the goods are in your hand, it's put up or shut up. The world of vintage electronics bears little resemblance to the personalized give and take of the street merchant because most old gear is bought sight unseen through the mail.

If you're one of the lucky few who can actually test out the piece, by all means do so. At the minimum, pass some signal and listen with headphones (part of my test arsenal is an old and soon to be vintage non-VLZ Mackie 1202 mixer and some Sony MDR-V6 headphones). When evaluating outboard and rack-mount gear, a small cassette or DAT player can be used as a signal source. Bring along an assortment of patch cords and adapters, including some that end with alligator clips for connecting to equipment that uses barrier strips.

It's been my experience that private sellers will deal, especially if you can demonstrate that the piece ain't exactly happening. Some private sellers are, for any number of reasons, in a rush to sell. Perhaps they need the bread; they inherited the equipment and never used it much (never could quite figure out how to make it work with their home stereo); they may not be aware of current prices and trends; the hobby aspect of recording has worn off; or they discovered that the recording business wasn't all partydolls and wine and have moved on to other endeavors.

Whatever the case, your best bet for getting a deal is with a private seller. Lately I've had great success buying (and selling) with people on the Internet. Equipment brokers, on the other hand, seem more apt to say, "Sorry that's the price; take it or leave it." It's not that these brokers are shysters or crooks, it's supply and demand.

Brokers know the market. They're aware of the gear's popularity, so they'll hold onto in-demand pieces to get their price. Most dealers are honest about the condition, while others don't have a clue. In some cases (especially big-ticket items such as consoles and tape machines), they are brokering the gear and never get to try or test it out. It's up to you, the buyer, to ensure it's working.

### SEE ON DEE LIGHT ON DEE DARK

If you can't test the equipment and you're dealing with a broker, ask if they have the gear or if they're brokering it for someone else. Ask about the unit's physical condition and history, and if it works. Is there a return policy? Many of the more reputable dealers give you at least 48 hours. Determine what the policy is if you're dissatisfied before you settle the deal.



# THE TECHNOLOGY THAT MADE WAVES FOR TITANIC CAN MAKE WAVES IN YOUR PC

For more than 25 years, E-mu Systems has been one of the most respected names in the music industry. Our sampling and synthesis technology is found in post-production and project studios worldwide. You'll hear the results in many major Hollywood films including *Titanic*, *Independence Day* and *Hunt for Red October*.\*

E-mu's sampler products set the standard for excellence in sound. Now you can put E-mu technology in your computer with the E-mu Audio Production Studio (APS)—the first sound card designed as an instrument, not a game card. And, like an iceberg, there's more to APS than meets the eye. APS is a PCI audio system that gives you **sampling**, 64-voice wave-table **synthesis**, multi-track **hard-disk recording**, and **real-time effects** in an easy-to-use, plug-and-play, music-making package.

APS allows you to create professional audio for sound design and multimedia content using your computer's RAM so you don't need to buy additional, proprietary memory.

APS lets you integrate up to 32MB of SoundFont® samples while playing stereo digital audio from your hard drive. SoundFonts are the most widely-used downloadable sample format. Thousands are available from E-mu, third party developers or on the Internet. You can even create your own with the Audio Production Studio.

## E-Card—the heart of APS

The E-Card allows full duplex, 16-bit CD-quality streaming audio that can be augmented with programmable hardware-based real-time effects including reverb, chorus, echo/delay, compression and parametric EQ.

## E-Drive—convenient drive bay access

APS includes E-Drive, an audio access panel that installs in the drive bay of your PC. It has switchable mic/line inputs, studio-quality preamps, balanced 1/4" connectors and switchable microphone types (with internally-selectable 12V phantom power). There's also an extra S/PDIF I/O and headphone output with volume control. E-mu's E-Control software for Windows® 95 lets you easily manage all of your mixing and routing tasks.

## Professional Features and Capabilities

- 64-voice wave table synth/sampler
- Professional balanced input/output connectors
- Supports 32 internal MIDI channels and 16 external channels
- Records stereo audio at eight common sample rates
- Powerful DSP engine for mixing, routing, and real-time effects processing
- Complete with software from E-mu Systems, Sonic Foundry, Cakewalk and compatible with most other audio/MIDI software and hardware

APS is the future of digital audio. So whether you use APS as a standalone digital audio system or as an addition to your existing studio, APS's professional features will add new flexibility and fidelity to your creations—all for less than \$700.

To find out more about how the E-mu Audio Production Studio is just the tip of the iceberg, see E-mu's desktop music site at [www.emu.com](http://www.emu.com), or visit your local dealer.



E-mu Audio Production Studio E-Drive



E-mu Audio Production Studio E-Card



E-Control software for APS

## E-MU SYSTEMS

P.O. Box 660015, Scotts Valley, CA, USA. 95067-0015  
Tel: 408.438.1921 • <http://www.emu.com>

London Sales Office: Pinewood Studios, Pinewood Road, Iwer, Buckinghamshire, SL0 0NH England • Tel: +44 1753 630808

© 1995 E-mu Systems, Inc. E-mu Systems, E-mu, and the E-mu logo are trademarks of E-mu Systems, Inc. registered in the United States of America as well as numerous other countries worldwide. All other trademarks are property of their respective owners. Reference to artists or technical specifications does not imply endorsement or ownership of our products and is not intended to imply an endorsement or other association.

CIRCLE 99 ON FREE INFO CARD



# HOLDS UP ON THE ROAD



**COUNTRYMAN ASSOCIATES, INC.**  
417 Stanford Ave. Redwood City, CA 94063  
Phone: 1-(800)-669-1422 Fax: (415)-364-2794 Email: sales@countryman.com

CIRCLE 18 ON FREE INFO CARD



## FREE Web Site

When you make CDs, cassettes,  
or 12" vinyl records with Disc Makers.

Disc Makers wants to put your music on the Internet  
Underground Music Archive (IUMA).

IUMA is the hottest promotion and distribution Web site  
for indie music. Over 20,000 people visit IUMA every day.

Call Disc Makers today for a complete brochure:

**1-800-468-9353**

[www.discmakers.com/iuma](http://www.discmakers.com/iuma)



## DISC MAKERS

AVL0428-12

CIRCLE 21 ON FREE INFO CARD

In most cases you'll pay certified check COD. If credit cards are accepted, go that route instead of COD. Find out how long the broker has been in business, some like Mercenary Audio (Boston, MA) have been doing vintage sales for years and have built a reputation within the industry.

When the gear arrives, inspect it before you hand over the COD check. Carriers/shippers don't like you to do this, but tell them you're paying a lot of money, you don't know the seller, and you need to see if you're getting what you ordered or two bricks wrapped in bubble pack. I always keep wide clear cellophane packing tape handy if I have to do a quick repack and refuse.

Rule #3: Test the equipment before you buy whenever possible. When making the deal, find out if you can get your money back within a certain period of time if the equipment falls short of expectations. And for sight-unseen mail-order transactions, inspect the shipment before handing over the COD check. A broker is more apt to give you your money back than a private seller. But, you'll probably get the best "deal" from a private sale.

### HAPPY HUNTING

Sources for used equipment can be found in the back pages of most pro audio magazines, especially *Pro Sound News*. If you're online, the following locations offer information, links, and sources of used gear:

[www.aes.org](http://www.aes.org)  
[www.proaudio.net](http://www.proaudio.net)  
[www.tangible-technology.com](http://www.tangible-technology.com)  
[www.mossware.com/Technical.html](http://www.mossware.com/Technical.html)  
[www.micshop.com](http://www.micshop.com)  
[www.mercenary.com](http://www.mercenary.com)  
[www.k-bay106.com/mics.htm](http://www.k-bay106.com/mics.htm)  
[www.3daudioinc.com](http://www.3daudioinc.com)  
[www.neumannusa.com](http://www.neumannusa.com)  
[www.visionwork.com/oceanaudio](http://www.visionwork.com/oceanaudio)

These newsgroups and forums enable you to post questions, read opinions, and find private sellers/buyers:

[rec.audio.pro](#)  
[rec.audio.highend](#)  
[rec.audio.marketplace](#)  
[rec.audio.misc](#)  
[rec.audio.opinion](#)  
[rec.audio.tech](#)  
[rec.audio.tubes](#)

Finally, avoid getting emotionally attached to any piece before you pay your money. Get the information you need and shop with a dose of skepticism. Good luck.

*Bennet Spielvogel owns and operates Flashpoint Recording Studio in Austin, TX. He enjoys combining the newest whizbangs with those big-knobbed retro relics.*



# PERFECT POWER.



## 4 AMPS THAT ARE AS SPECIALIZED AS YOUR SPEAKERS.

If all speakers were identical then maybe you would need only one type of amplifier. However, today's sound systems are comprised of complex multi-way speakers using high-power subwoofers, horn-loaded mid-ranges, and high-frequency compression drivers. Our four newest PowerLight™ amplifiers are designed to give each one of these speakers the right power for peak performance. So stop by a dealer near you for some ideas on how you might power your system, perfectly.

"HEAR THE POWER OF TECHNOLOGY"

Model	Watts per channel		
PowerLight	8Ω	4Ω	2Ω*
1.0HV	300	500	4
1.5X	200	300	100
1.6HVX	200	300	4
2.4MB	1000	550	2400

\*1AMP, 1% THD

### PowerLight® 1.0HV

The PowerLight 1.0HV use a high voltage power supply to deliver 300 watts/channel at 8 ohms and 500 watts per channel at 4 ohms. Employing an ultra-low distortion Class AB output circuit (0.01% THD typical), it is ideal for powering midrange and high frequency drivers, studio monitors, and other critical sound system applications.

### PowerLight® 1.5X & 1.6HVX

Tailor made for bi-amping your monitors or your mains, the PowerLight 1.5X and the PowerLight 1.6HVX offer a high-power channel with a high-efficiency Class H output circuit to power low frequencies, paired with a medium-power channel with an ultra low-distortion Class AB circuit to power high-frequencies channel. Built-in crossovers can also be added.

### PowerLight® 2.4MB

The PowerLight 2.4MB mono-block is a single channel amplifier that delivers 2,400 watts at 2 ohms while operating from a single 15 amp 120v AC circuit. It is ideal for driving multiple sub-woofers (up to 600 watts each to four eight-ohm drivers) as well as allowing an odd number of amplifier channels to be configured in a system.

\*PowerLight®, PowerWave® and "Hear the Power of Technology" are trademarks of QSC Audio Products, Inc. "QSC" and the QSC logo are registered with the U.S. Patent and Trademark Office. PowerLight Patent Pending. QSC Audio Products, Inc., 4675 McArthur Blvd., Costa Mesa, CA 92626 USA



[www.qscaudio.com](http://www.qscaudio.com)

CIRCLE 52 ON FREE INFO CARD



# Show Us **The Way**

Frampton is alive —  
and offers some  
techniques for project  
studio recordists

BY STEVE LA CERRA

*Peter Frampton's name is no stranger to the music industry — especially to those of us who remember the '70s — but you might not know that he has had a project studio since back in 1977 when he bought his first 2-inch machine: a 3M M79. Peter's recent move to Nashville, TN was accompanied by the construction of his latest studio. Peter spoke to EQ about this studio and how he's using it in his latest musical activities.*

"We basically said yes to the house, but the only problem was that there was no room for my studio," begins Peter Frampton, referring to his recently-constructed project studio. "The builder suggested I make the garage my studio, but I didn't want to do that. I felt that when I sell the house, the majority of people might want to put cars in the garage. So we decided to build a little room on the end, a nice working space with lots of light coming in. It could be an office or anything, but I put all my gear in there, so there's the studio." The presence of a Studer A827 2-inch, 24-track, and Peter's Amek Angela (28 x 24) is a dead giveaway that there's more than just some fiddling going on here.

## PILOT TO COPILOT

Peter's control room is set up "cockpit-style" so that he can sit in the center of the gear and operate it while playing his instrument. Although he doesn't have a

"proper" studio area, guitar and vocals can be recorded in the guitarist's rather unconventional iso booth: "It's the laundry/cat room, so we take the cat litter out when we have a singer in there! And maybe put some incense in there, too. It's bare bones, but it works. I also use that room when I want to record an electric guitar and I want to listen through speakers (I hate monitoring through headphones). The cats don't feel terrifically good about it, but they don't pay the mortgage so it's OK.

"I'm lucky in that I am far enough away from other houses that I don't have to keep the sound contained. I have never been big on doing a lot of sound treatment to a room — I tend to like the real ambience of rooms, and if it doesn't sound right, I'll move to a different room. I've always been into finding the right room for the right instrument. In previous homes, I've had every room wired with a mic panel, but my current resi-



PHOTOS BY ED RODE

'70s SURVIVOR: Peter Frampton (right) and engineer Dave Thoener sit with a mysterious "thumbs-up" guy.



# Bringing the Store TO YOUR Door

AUDIO, VIDEO, A/V & LIGHTING EQUIPMENT  
**Full Compass**  
Catalog

Catch the Tidal Wave of  
**Audio & Video Products in**  
Your **FREE** Catalog or Surf the  
Web! [www.fullcompass.com](http://www.fullcompass.com)

Our store is at your fingertips.  
Check out our customer support—  
you'll be impressed!

**FULL COMPASS**

Audio • Video • A/V • Lights

**1-800-356-5844**



dence is not wired. Moving into the laundry room, I had to have a meeting with the wife, so I'm not sure about a mic panel in the bathroom..."

Since the studio was constructed as an add-on, it is physically separated from the house, which improves isolation between the studio and the house. According to Frampton, "The studio is actually on the outside of the outside wall of the house, which really does isolate it. Late at night, I am probably more likely to bother neighbors than I am people in the house. Sometimes I'm blasting away, I come into the house and my wife is watching TV. I say, 'Can you hear that?' and she says, 'No.' That's a great thing. It has worked out very well. If the studio had been part of the house — within the house structure — I think it would be a different story."

In addition to the Studer, Amek, and a TASCAM DA-98, Frampton says he's "collected things over the years such as an LA2A, three 1176's, an EQP-1A, Harmonizers®, and quite a few gadgets. There's always another thing that you want, and I'd like to start collecting mics. You can go crazy over old mics — and they are wonderful — but it really comes down to the performance and the moment. I have done vocals on a Shure '58 where maybe the tool wasn't as good as it could be, but for that moment in time it sufficed. The performance made the mic sound better than it actually was."

#### DON'T FRET IT

As you might expect, Peter does a lot of guitar (as well as bass) recording in his studio. His recording technique is simple but effective: "I have two Neve 1073 modules from Brent Averill that have the mic pre and that wonderful EQ. They also have a direct input that I often use for bass. I'll plug the bass into the 1073, let it do its magic, come out of the 1073 into

a limiter like the 1176 or LA2A, and then go straight into the tape machine. On guitar, I might use one 1073 for a direct sound (if I want some of that dry direct sound) and the other to mic an amp. Or I might put two mics on an amp. Being a one-man operation, I very rarely record more than one instrument at a time. So it is perfect for me to have two of the 1073's.

*Moving into  
the laundry  
room, I had  
to have a  
meeting with  
the wife, so  
I'm not sure  
about a mic  
panel in the  
bathroom..*

"Nearly always, I record electric guitar with an amp. I have a stockpile of small amps such as old Ampeg's from the 1960s, an old '60s 2 x 10 Marshall combo, a '64 Vox AC30, and a Matchless single-12. If I am looking for a chunky power-rhythm sound (not clean), I would use this Ampeg 1 x 12 Jet, which has been with me for many years. It has that sort of overloaded sound, almost like it is going to blow up every moment. When I do a solo, I could easily do it with a small amp. In a regular studio I might put out my big Marshall rig, close-mic it, have mics around the room at different distances, and mess with the ambient sound of it. At home, I really can't get my stack in the room. It's much more controlled with a smaller amp and, in the final analysis, you can't tell anyway.

"I have a wall with four amps linked together. I turn them on and I listen to combinations of different ones for the track. I usually end up with two of them or possibly three, in which case I'll mic two of them and let the third get picked up by the room mic. If I am using the little Marshall and the little Ampeg, I'll have a Shure '57 on each of them and then experiment with AKG '414's and Sennheiser '421's close up. Probably the '414 would be further away, it being a condenser. Then I have my trusty old tube Neumann '47 that is always up as my vocal mic. I just sort of turn it on and it becomes the room mic. I virtually know

what to do with the mics EQ-wise because I know the amps so well. I'll wear headphones to hear the mics, but if I really want to get into it I'll move the amps into the isocat room.

"It's pretty evident if the guitar sound is too big or too small for the song. You have to come up with the right puzzle piece. If the guitar sounds too big for the rhythm section or the vocal, then it's not the right sound and I'd try a different amp or EQ. My philosophy (learned from many great engineers that I've had the privilege of working with) is that if it's the right guitar, the right amp, and the right player, you should be able to stick any mic in front of it and it will sound right in the track. If you are taking a good sound and making it fantastic, that's one thing. But you cannot take a not-very-good-sound and make it a good sound by using any of the gadgets in a studio. It's just going to be reverb or an effect on top of a not-very-good-sound."

When recording his guitar tracks, Peter is not locked into recording with or without effects. "I have recorded tracks both ways. When it is something that happens by accident — such as a delay or effect that I am playing against — that's usually when I will record the effect, because the part is played off the effect. Like a U2 rhythmical delay that the Edge does. On *When All The Pieces Fit*, there's a track called "More Ways Than One" that was done in L.A. I had a small room with a closet and I stuck the amp in there. It was a little dry-sounding to say the least, so I put a delay on it. I was just messing around with it and put on the flanger setting from my Eventide SP2016. I flanged the delays — not the guitar signal — just the delays. It was so cool and really was inspiring. When that happens, you have got to record it. I started by putting the effect on a separate track and then took the bull by the horns and mixed it together. This can be a dangerous thing because you can have too much effect. Too little is fine because you can re-create it and add more. But once you have too much, it's ruined and you have to start from scratch. It's a fine line, how much of the effect you put on."

#### FRAMPTON ON DRUMS?

Although Peter uses the studio for overdubs such as guitar solos, vocals, and keys, his recordings can also start as songwriting demos. He explains how his Roland V-Drums facilitate the process: "I

*continued on page 67*



- ANTARES
- APB TOOLS
- APHEX
- APOGEE
- AUDIO EASE
- BIAS
- CONSERVATORY  
OF RECORDING  
ARTS &  
SCIENCES
- COOL BREEZE  
SYSTEMS
- DOLBY
- DRAWMER
- DUY, S.A.
- EMAGIC
- FOCUSRITE
- GEFEN SYSTEMS

**digidesign®**

# DEVELOPMENT PARTNERS

- GLYPH
- INA-GRM
- LINE 6
- MACKIE
- NIKON
- OPCODE
- QDESIGN
- RORKE DATA
- SPATIALIZER
- SYNCHRO ARTS LTD
- TASCAM
- TCIWORKS
- WAVES
- WILD SYNC

*A Digidesign power-user  
"mixes it up" with  
Pro Tools and Mackie's HUI.*

# RIDE THE TDM BUS

**THIRD-PARTY PLATFORM SUPPORT  
BRINGS POWER TO PRO TOOLS USERS**

A Supplement  
to Miller Freeman  
PSN, Inc.



# CONTENTS

## I TOLD YOU SO .....by Roger Nichols

EQ magazine columnist and Grammy winner takes a personal assessment of why he's hooked on Pro Tools and why he simply won't let go of his system..... page 3

**MIXING IT UP** Why some of the biggest names in the business are building their own Pro Tools Plug-In and how Digidesign's TDM platform is revolutionizing recording for music, video, new media and film .....page 4

**ANTARES** Auto-Tune is a software Plug-In for Pro Tools designed to transparently correct errors in the intonation of voice or solo instruments .....page 15

**APB TOOLS** Sigma 1 is a completely revised and mature product for managing the challenges of Surround Sound in an easy and intuitive way.....page 16

**APHEX** Modeled on the latest incarnation of Aural Exciter Type III technology, the Aural Exciter Typer IIIpi, re-creates and restores missing harmonics .....page 12

**APOGEE** The AD-8000 represents the latest in converter technology for the Pro Tools system .....page 17

**AUDIO EASE** BarbaBatch is an easy-to-use way to convert audio files to different formats and allows you to set up multiple conversions .....page 25

**BIAS** With an improved toolset and user interface, new features, and expanded sampler support, BIAS Peak 2.0 has evolved into an editing standard .....page 13

**CONSERVATORY OF RECORDING ARTS** The school has become an Avid/Digidesign Education Ctr. ....page 27

**COOL BREEZE SYSTEMS** How-to CD-ROMs include over 100 software movie tutorials .....page 26

**DIGIDESIGN** Plug-ins right from the source, including D-Fi, D-FX, DPP-1, DINR, and D-Verb .....page 19

**DOLBY** With Dolby Surround Tools you can produce surround mixes for music, video, and games in the Pro Tools TDM environment .....page 21

**DRAWMER** Bring Drawmer dynamic signal processing into Pro Tools with the Drawmer Dynamics Plug-In .....page 23

**DUY** Create virtually any type of processing device with the DSPider Plug-In .....page 26

**EMAGIC** Logic Audio Platinum offers one of the the most comprehensive real-time audio and MIDI recording environments available to date .....page 10

**FOCUSRITE** The popular rackmount processors are now available for Pro Tools .....page 22

**GEFEN** Why wait to hear your audio files when the M&E Pro QuickSample High Resolution System features instant playback of audio tracks from hard disks .....page 18

**GLYPH** You have to store all those audio files some-

where, and Glyph offers plenty of options .....page 28

**INA-GRM** GRM Tools' two volumes of algorithms will add some unique processes to your system .....page 26

**LINE 6** With the Amp Farm, classic guitar tones are a simple click away .....page 22

**MACKIE** The HUI gives access to all of Pro Tools features via a work surface that every fader-pusher will love...page 6

**NIKON** Store your tracks with the Beluga AV Magneto Optical Drive .....page 26

**OPCODE** fusion:EFFECTS audio Plug-Ins can open up a world of possibilities for your sounds .....page 26

**QDESIGN** MPEG Pro is MPEG-2 stereo compression software for real-time, studio-quality encoding ....page 24

**RORKE** Share your work quickly and accurately by using StudioNet-FC networking workgroups .....page 5

**SPATIALIZER** The Spatializer Plug-In adds depth and powerful 3D effects to your mixes .....page 27

**SYNCHRO ARTS** VocAlign, ToolBelt, and TITAN Plug-Ins offer time-saving solutions .....page 23

**TASCAM** Mix down your tracks with the MMR-8 multi-track recorder and MM-RC remote control .....page 8

**TCIWORKS** TC Tools puts two powerful processors into your Pro Tools system .....page 24

**WAVES** The Gold Bundle offers plenty of solid DSP possibilities .....page 14

**WAVE MECHANICS** The PurePitch Plug-In delivers pitch-shifting solutions .....page 25

**WILD SYNC** The company's Tape Plug-In will enhance your post production capabilities.....page 27

## HOW TO CONTACT DIGIDESIGN

Digidesign, 3401-A Hillview Avenue,  
Palo Alto, California 94304-1348 USA  
650-842-7900 / 650-842-7999 (Fax)

Product Information .....	800-333-2137
Fax-on-Demand .....	650-842-6602
England .....	44-1753-658-496
Germany .....	49-811-5520-555
France .....	33-1-41-49-40-10
Benelux .....	31-0-73-613-8080
Italy .....	39-2-57-511-799
Asia (Japan) .....	81-3-3505-7963
Pacific (Australia) .....	612-9568-1711
Latin America (Miami) .....	1-305-971-4075
Website .....	www.digidesign.com
	www.avid.com

**Publisher's Information:** The Digidesign Development Partners supplement is published by Miller Freeman PSN, Inc. and developed by the editors of EQ Magazine. All editorial is provided by authorized Digidesign Third-Party Development Partners.





## I TOLD YOU SO

Buying Plug-Ins can save you a lot of money — not to mention plenty of studio real estate

**J**ust to remind you, in my January *EQ* column I called 1998 "The Year Of The Plug-In." Well, it looks as though my prediction is becoming a reality. Almost all of the major ancillary equipment manufacturers have designed a TDM Plug-In version of their hardware processors, and some companies are offering Plug-Ins that have no hardware counterpart.

So, you are planning your project studio and making a list of all the hardware you want. You add up all the prices and suddenly realize that you can now relate to the National Debt.

The solution? Start another list. At the top of this list put Pro Tools|24. From your previous list, you can now cross out the console, automation, synchronizer, and patchbay. Now look at the list of outboard gear and compare their prices with the Pro Tools equivalent. Everything you want is available as a Plug-In at a fraction of the hardware price.

The hidden advantage to Plug-Ins is that you only need to buy one of each. In the hardware only studio environment, if you want to use Focusrite EQ on eight different channels, you have to buy eight Focusrite EQs. If you want to limit all six background vocal tracks, you have to buy six limiters. If you want a different reverb on the vocal than you are using on the drums, then you have to buy additional reverbs. With

**BY ROGER NICHOLS**

Plug-Ins, you can use as many copies as you want, up to the limit of your DSP Farm. If you want to have a Focusrite EQ on each vocal track, all you need is a few mouse clicks to get the job done.

Some Plug-Ins are available for hardware that you couldn't afford to buy. Ten years ago, if you wanted to use QSound for stereo image enhancement, you would

like Arboretum Software's HyperPrism audio processor, for example. The Plug-In environment is great for companies who have great ideas but do not want to spend the money that is necessary to design and build hardware boxes to house their product.

There are album projects for major record labels that are completely produced within the Pro Tools environment — thanks to the Plug-Ins. Bela Fleck and the Flecktones just completed an album for Warner Bros. by recording the tracks into

Pro Tools, doing all the overdubs in Pro Tools, and mixing the whole album in Pro Tools. He used a few reverbs, but everything else was done with Plug-Ins. Give it a try.

Actually, try this: Keep a balance sheet going as you add Plug-Ins to your Pro Tools system. Every time you purchase a new Plug-In, put its price in one column and the price of the hardware version in a second column. In a third column enter the amount you saved. In no time at all, you will have saved enough to offset the price of the Pro Tools system. So, if you buy enough Plug-Ins, your Pro Tools system will be *free*. Cool.

**EQ columnist Roger Nichols recently won a Grammy as producer of John Denver's "All Aboard" (Sony/Wonder).**



have to contact the company in Canada and make arrangements to rent their giant rack of processors and get them delivered to the studio. I went to some sessions at A&M where the producer was using the QSound processor. Now, you can buy a Plug-In and have your own processing factory right inside your Pro Tools system.

Some Plug-Ins provide functions that do not even exist as a hardware version,





# DIGIDESIGN **PRO** TOOLS

Pro Tools Mixes It Up with the Best Names in the Business —  
Or What This Supplement is All About.

Once upon a time, people in the audio production industry talked about a cool editing software called Pro Tools. But these are times of radical change in digital audio production. Today, people are using Pro Tools for a lot more than just editing — they're using it for everything from recording to mixing and digital signal processing. In fact, record numbers of audio professionals in music, film, multimedia, and broadcasting are flat-out abandoning their tape machines for Pro Tools and never looking back.

The point is, once you've got a Pro Tools system and a bunch of Plug-Ins, you've got a fully integrated professional audio production solution in your hands. You can record audio into a single environment — with 24-bit resolution using the flagship Pro Tools|24 system and 16-bit for Pro Tools

III — and then process, mix, and edit to your heart's content with the same system all the way to final CD master.

Just ask some of our

high-profile users like Teddy Riley, Butch Vig, and Lenny Kravitz. Or anyone else who's used Pro Tools, for that matter. They all know there's no other system that matches its functionality.

As much as we'd like to sit back and

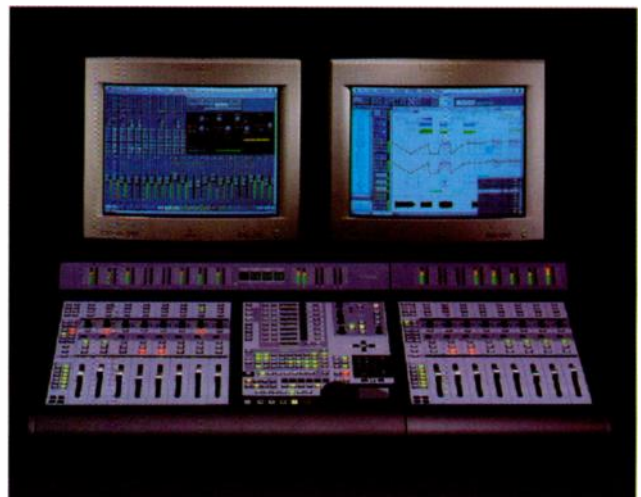
take full credit for Pro Tools' incredible mixing environment, we simply can't. The truth is, there's strength in numbers. Over the past several years, we've acquired an army of supporters including 60 or so of the best names in the business who, in turn, have developed more than 100 state-of-the-art Plug-Ins offering everything from EQ and reverb to music delivery on the net.

The foundation of Pro Tools powerful mixing capabilities is an open platform called the Digidesign TDM Bus, an integrated digital mixing and DSP Plug-In environment. When we brought this technology to the audio world back in 1993, it was a revolutionary concept. The success of Pro Tools with TDM immediately launched an industry-wide scramble to develop other open platforms to capitalize on this newfound sonic gold. AudioSuite, another Digidesign technology, offers a file-based processing alternative to TDM's real-time processing and is an option for all Pro Tools users.

Besides offering software Plug-Ins, our third-party development partners provide a variety of hardware solutions such as expansion chassis and removable media for Pro Tools. And, for the

highest quality I/O, Digidesign offers several high-quality hardware interfaces including the new ADAT Bridge I/O for transferring ADAT (or compatible) tracks to Pro Tools.

The only thing that could make



Pro Tools even more powerful is ProControl: our new world-class Pro Tools control surface. ProControl offers "hands-on" control of the Pro Tools TDM mixing, editing and DSP processing environment, plus a comprehensive monitoring section. What's more, it offers complete access to every single parameter capable of automation in Pro Tools.

We could go on and on about Pro Tools being a totally modular, flexible, expandable solution with systems available at every price point. But we think it would be more convincing to let our products and developers speak for themselves.

Happy mixing!





## STUDIONET: FIBRE-CHANNEL WORKGROUPS FOR DIGIDESIGN USERS

**T**he Digital A/V industry's requirement for collaborative workgroups to share high-bandwidth data is the next level of performance. Simply put, faster and faster drives or CPUs can't solve the problem of networking. StudioNet-FC does, and does it today!

How? By taking advantage of the MacOS's unique volume-based file structure that lends itself to "server-less" workgroups, and Fibre-Channel's unique topology that solves both

SCSI & Ethernet bottlenecks simultaneously! The fastest speeds we've recorded so far with 100B-T, even with added techniques like "data packet management," etc. is in the range of 3MB/s. There are ways to get more speed off the server

with Quad-port board sets, but the main problem remains: the ethernet connectivity (100B-T) vs. SCSI limi-

tations, as mediated by the server & client bus structures. In publishing, print graphics, & A/V large digital files are the differentiating factor, so simply increasing the ethernet bandwidth is only half the problem — getting the data off the disks fast, in very large chunks (aka streaming) is the other side of the coin. So far, ethernet as a datacom protocol does not interface directly to disk storage, but Fibre-channel does. As a matter of fact, FC simultaneously replaces ethernet & SCSI, eliminating both topologies' shortcomings (i.e. the need to pass data through server and client buses).

StudioNet-FC uses volume management software, requires 1 PCI slot per user, and an expandable StudioNet Fibrestorage module, (36GB to terabyte range) and you're ready to go. If you can run a Mac GUI, you can run at Fibre-speeds.

**Contact: Rorke Data, Inc.; Tel:**  
**800-328-8147, 612-829-0300;**  
**Fax: 612-829-0988;**  
**Web: [www.rorke.com](http://www.rorke.com).**



*Solve your Pro Tools networking problems with StudioNet-FC, which solves both SCSI and Ethernet bottlenecks.*

# StudioNet FC

Rorke Data's StudioNet-FC includes a family of Fibre-Channel storage & network products that range from high-capacity RAID/JBOD disk storage arrays to complete turnkey workgroup configurations including bridges, hubs, NICs, cables & volume management software. We understand your workflow requirements. Fourteen years of industry experience enables us to customize and integrate the power of Fibre-Channel for you today.



## Fibre-Channel workgroups for DAW's

**RORKE  
DATA**

9700 W. 76th Street,  
Eden Prairie, MN 55344  
(800) 328-8147, (612) 829-0300,  
Fax (612) 829-0988

**RORKE  
DATA EUROPE**

Nautilusstraat 5a 7821 AG Emmen -  
The Netherlands  
Tel. 31-(0)591651165,  
Fax 31-(0)591651185



[www.rorke.com](http://www.rorke.com)





# MACKIE DESIGNS HUI DIGITAL AUDIO WORKSTATION INTERFACE

**M**ackie Designs Inc. is targeting the rapidly-growing digital audio workstation market with HUI, its first digital audio product.

Aimed at video, film, multimedia and recording studio professionals, Mackie's HUI (Human User Interface), is a hands-on control surface designed for Digidesign's popular Pro Tools 4.1 (or higher) digital audio workstation. HUI enhances DAW user productivity with tactile controls and visual displays for mixing and editing functions that were previously controlled by conventional computer controls.

"HUI is a major interface advancement," observed Chief Operating Officer Roy Wemyss. "It does for Pro Tools users what the mouse did for computer users: Familiar physical movement is instantly translated into

According to Wemyss, early positive response from major motion picture and broadcast production companies indicates that HUI will become an essential tool for media professionals.

Mackie collaborated closely with Digidesign, the global leader in the digital audio workstation market. Dave Froker, General Manager of Digidesign stated, "HUI

brings a level of control and functionality to the Pro Tools system that was never before attainable. We are extremely pleased with Mackie's successful development and release of the Human User Interface."

Mackie Designs is known worldwide as a manufacturer and marketer of high-quality, affordable professional audio systems. Mackie products can be found in professional and project recording studios, video and broadcast suites, post production facilities, sound reinforcement applications including churches and nightclubs, and on major musical tours. Mackie Designs is marketed by 54 distributors to over 100 countries.

precise creative control. For example, HUI includes what appears to the user to be familiar rotary knobs... but the Pro Tools DAW sees a virtual interface that can be stored and recalled digitally."

**For more Mackie product information please contact:**  
**Mackie Designs, Inc. 16220 Wood-  
Red Rd. N.E., Woodinville, WA 98072.**  
**Phone: (425) 487-4333;**  
**Fax: (425) 487-4337;**  
**Web: www.mackie.com**



# Pro Tools® 4.1 productivity breakthrough!

## Analog Feel. Digital Power. All Mackie.

# HUMAN USER INTERFACE



### A HUI™ GUIDED TOUR.

- 1 Assign Section.** V-Pot™ assignment control lets you configure Sends A thru E, pan and channel bus I/O functions.
- 2 Channel Strips.** Eight channels are considered the maximum human hands can handle at once. Stereo/mono LED meter bridge displays digital dBFS levels.
- 3 DSP Section.** Fluorescent display shows plug-in DSP parameters. Rotary V-Pots let you "tweak" settings with fingers instead of mouse.
- 4 Switch Matrix section** handles automation configuration and edit functions such as cut, paste, copy, delete, etc.
- 5 Control Room Section** controls I/O selection, master monitor level, and global muting.
- 6 Navigation Controls.** Scrub and shuttle wheel controls, timecode display, cursor controls, virtual "tape transport" buttons, window buttons for Pro Tools screens such as Mix, Edit and Transport, and keyboard shortcut buttons including Save, Undo, Edit Mode, etc.

### THE CHANNEL STRIP DESCRIBED.

- All eight HUI strips can be soft-configured in Pro Tools® 4.1 as an aux return, group or main master or channel strip.
- 7 Record Ready** toggles track record.
  - 8 Insert** calls up DSP plug-ins.
  - 9 V-Pot's and V-Pot function selectors** can act as pan pots or aux sends. Built-in LED display gives visual indication and displays recalled settings.
  - 10 Auto** toggles automation modes.

### THE HUI REAR PANEL REVEALED.

- 15 Built-in power supply.**
- 16 Digital comm ports** including two parallel/thru ADB mouse and keyboard sockets, RS422/RS232 serial connectors, MIDI I/O, and expander port.
- 17 Trigger ports** add foot switches for Stop/Play/Punch, On-Air, external console solo, etc.
- 18 Analog Control Room I/O.** Three stereo pairs can be switched between six discrete signal paths for surround sound.
- 19 Discrete mic preamps** with gain controls and switchable phantom power. Balanced XLR inputs.
- 20 Inserts** for your favorite NON-plug-in (hardware) signal processors.

## PRO TOOLS

**D**igital audio workstations need hands-on control. Not just a fader pack, but a whole

"cockpit" of controls that you can get your hands — and even FEET<sup>1</sup> — on.

Mackie's Human User Interface (HUI™) gives you 100mm faders to record and tweak level automation moves, virtual rotary controls for functions such as panning and adjustment of DSP plug-in parameters and dedicated function buttons for things like

muting, soloing, or "arming" a virtual Pro Tools 4.1 track. Then HUI lets you "touch update" levels as the motorized faders play back your automation sequence.

If we stopped there, we'd have beaten the knobs off any



conventional fader pack. But we also added a complete analog control room section and two of our renowned microphone preamps. For many post production applications, HUI provides all the mixer you'll need — including discrete/mono switch, input source selection matrix, speaker/headphone assign, master monitor level control and built-in talkback microphone! If you're a serious professional who makes your living running Pro Tools day in and day out, call us, or contact your Digidesign® vendor for more information on HUI.

Then get behind the jog/shuttle wheel of the ultimate workstation control surface and accelerate your productivity.

<sup>1</sup> See number 17 to left

©1997 Mackie Designs Inc. All rights reserved. Digidesign and Pro Tools are registered trademarks of Digidesign, a division of Avid Technology Inc. The following are registered trademarks or trademarks of Mackie Designs Inc.: The "Mackie" logo, the "Running Man" figure, HUI, and V-Pot.



# MACKIE®

U.S. 800/898-3211 • Outside the U.S. 425/487-4333  
www.mackie.com • e-mail: sales@mackie.com • NASDAQ: MKIE

World Radio History







# TASCAM MMR-8 IS SEAMLESS WITH PRO TOOLS

**T**ASCAM's new MMR-8 Modular Multitrack Recorder, together with version 1.25 software, is the only complete solution to the problem of mixing audio tracks from mutually incompatible digital audio workstations.

With the added benefits of random access functionality, independent track slip capability, workstation compatibility, and a wide choice of synchronization options, the MMR-8 will continue to broaden TASCAM's prominence throughout the

48 kHz sample rates, and perform two channels of sample-rate conversion. The recorder incorporates auto-locate and loop capability, varispeed play, individual track, region, or event slip functionality and basic editing functions.

The MMR-8's controls include four biphase (film tach) inputs, LTC, or VITC timecode chase with offset and the ability to provide sample-accurate synchronization of 100 units (or 800 tracks). There is also RS-422 editor support, video, word

not only the right machine for today, but the right machine for tomorrow as well. With its 20-bit A/D and D/A converters, audio quality is pristine.

The MMR-8's roots are PC based, making the recorder easily upgradeable and easily serviceable. The flexible hardware and software architecture of the MMR-8 enables it to easily deal with multiple workstation formats, including Digidesign Pro Tools (Session) files. The MMR-8 is the only system capable of

simultaneously playing back tracks from different disks in multiple formats.

To make work easier in a sound-for-picture environment, the new MMR-8 will play lock forward and backward at 0–1.5 nominal speed while locked to biphase (film tach). This capability ensures that the audio remains



postproduction industry.

Included in its arsenal of features, the TASCAM MMR-8 provides both 16- and 24-bit recording and playback, recognizes PC- and Macintosh-formatted disks, supports a variety of removable drives, and is fully compatible with Pro Tools (Session File) and other interchange formats. The MMR-8 will Play Lock to biphase (film tach) forward or backwards at 0–1.5 times nominal speed, pull up/down at both 44.1 and

clock, and digital audio sync — plus controls for biphase transport control and external serial transport control.

The new TASCAM MMR-8 supports both 16- and 24-bit recording and playback. This capability not only makes the unit fully compatible with the vast majority of current digital audio systems, but keeps the MMR-8 right in step with the trend toward higher resolution word lengths. This means the MMR-8 is

perfectly in sync while mixing to picture on the film dubbing stage. Audio can be "scrubbed" in either direction while working. The MMR-8's auto-locate, loop, and varispeed capabilities will certainly speed the job along, and the unit's ability to slip individual tracks, regions, or events in order to fine-tune the placement of sound elements is a feature no studio should be without. As expected, for film-video transfers, the MMR-8 will pull up/down from



both the 44.1 and 48 kHz sample rates — ensuring perfect sound-to-picture synchronization at every stage of post-production.

The new TASCAM MMR-8 can readily perform 2-channel sample-rate conversion on input in real time. This capability makes it easy to match material derived from CD and DAT sources while keeping everything in the digital domain.

With the MMR-8's four biphase (film tach) inputs, you'll be able to lock to any one of four film projectors without having to constantly repatch. In a large post-production facility with multiple projection rooms, this convenience feature enables you to deliver perfectly in-sync audio at the touch of a control — no matter where the picture is being viewed. And, the MMR-8 is capable of generating its own biphase signal, enabling other devices to sync to it. The MMR-8 is also capable of controlling external equipment via an integrated serial connector and fully supports RS-422 editor control.

The TASCAM MMR-8 also provides LTC and VITC timecode chase capability with timecode offsets. With the MMR-8, finding the right sync signal to feed the unit is straightforward and simple. The system's special MMR bus can even lock up to 100 machines for an impressive total of 800 tracks of digital audio — all of them sample accurate. The MMR-8's integrated machine synchronizer offers the same features found on the TimeLine Lynx synchronizer, and it can be directly connected to the TimeLine Lynx Keyboard Control Unit by interfacing with the MMR's built-in Lynx bus. For the biggest job on the biggest sound stage, the MMR-8 is ready to handle the most demanding production.

Support for the Digidesign Pro Tools Session file format has been improved with the addition of the ability to play Pro Tools version 3.2 Sessions. Previously, the units only supported 4.0 and higher Session files. This new capability will make it easier for the large existing installed base

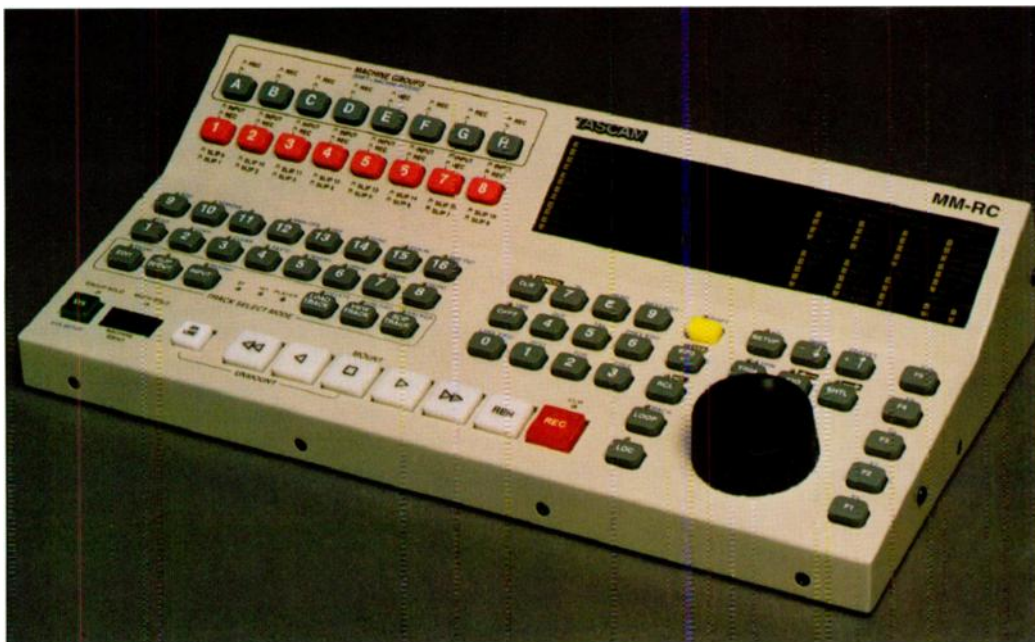
of Pro Tools users to take their disks directly to the MMR units for playback.

Another new feature facilitates the recording of tracks to different disk drives simultaneously. Projects loaded from an external disk may now be recorded into directly, regardless of the SCSI ID of the drive in a multiple drive system.

Sony 9-pin P-2 protocol support has also been added in release 1.25. This

system as though it were one large machine — complete with system-wide transport functions and timecode registers. With the ability to control up to 100 MMR-8 recorder, the MM-RC provides the flexibility to deal with even the most demanding multichannel setups.

The new MM-RC incorporates special machine group keys for controlling



allows the MMR units to be controlled serially from an edit controller or other P-2 control devices. This support provides for the control of track arming, transport, and punch in-out capabilities of MMR units.

The MM-RC remote control unit now supports a standard PC AT-style alphanumeric keyboard. This makes it simple to name projects and tracks, and allows easy access to setup menus and parameters from the keyboard. The Version 1.25 software automatically adds this capability to any MM-RC attached to the system. The new software is directly available from TASCAM on their Web site at <http://www.tascam.com>.

The MM-RC control unit is designed to control up to 100 MMR-8's when connected via the MMR Bus and provides system-wide transport functions and timecode registers. The controller provides a series of function keys with 10 assignable user macros, 8 machine groups, machine solo, and includes a 30 ft. remote cable as standard equipment.

The MM-RC governs the entire

smaller groups of machines within the overall system. Similarly, any individual unit can be soloed from the MM-RC for the purpose of viewing its individual parameters or to access its setup menus.

The new TASCAM MM-RC provides function keys with 10 assignable macros for executing strings of keystrokes with a single button press. This important feature provides easy one-button access to complex functions that usually require several keystrokes. The 30-ft. standard remote cable may be extended up to 330 feet for controlling units located in a distant machine room in a larger facility.

With TASCAM's new MM-RC Remote Control, easy access to your MMR-8 can be wherever this powerful new controller is placed.

-----  
**Contact: TASCAM,**  
**7733 Telegraph Road,**  
**Montebello, CA 90640.**  
**Tel: 213-726-0303.**  
**Web: [www.tascam.com](http://www.tascam.com).**





# EMAGIC'S LOGIC AUDIO PLATINUM, THE PROFESSIONAL'S CHOICE

**W**hen it comes to integrating digital audio and MIDI within a single application, Logic Audio Platinum offers the most comprehensive real-time audio and MIDI recording environment available to date. Emagic was the first company to introduce an integrated stereo sample editor with an audio DSP collection called the Digital Factory. They were the first to support Digidesign's TDM architecture and the first to automate TDM Plug-Ins. This commitment to supporting Digidesign's hardware was again exemplified with Emagic's timely announcement at the 1997 AES convention that true 24-bit support was finished and would ship in November of 1997. In addition Emagic also added the ability to record on all 48 tracks of an expanded Pro Tools III system with an increase of automatable TDM 'busses' to 32.

The true test of any audio and MIDI sequencing program is the degree of seamless integration. Serban Ghenea (Teddy Riley's studio engineer & technical advisor) states: "the operational focal point of the studio is Emagic's Logic Audio. We use Logic Audio with Digidesign's 24-bit, 888 interface. The program handles both MIDI sequencing and digital audio recording — which is the key to remixing" (1998 issue 2 of *EQ* magazine). Billy Cobin, NYC Producer, composer and Musical Director of Gullah Gullah on Nickelodeon, also states "Emagic has done an incredible job in creating a nearly seamless audio and MIDI environment, where speed and

flexibility and ease of use go hand in hand. You can perform the tiniest little edits and then move to totally complex audio algorithms without sacrificing ease of use and flexibility. They write code like nobody's business."

Timing in any musical application is critical. By far, real-time functionality and feel is Logic Audio's most fundamental

Logic Audio has a wide range of real-world tools for editing digital audio. One of the most common DSP functions of any audio editor is 'Time Compression and Pitch Shifting'. Accessed via Logic Audio's famous Digital Factory menu is the Time Machine 2 for compression/expansion and format pitch shifting. Teddy Riley's Serban Ghenea

states; "since sometimes a song might be too fast or slow, we can put a vocal into Logic Audio and time-compress or expand it to any tempo, changing the remix into more of a remake."

Logic Audio Platinum features worth mention are; Punch On the Fly, Continuous Audio Cycle Record, Point to Point Automation on top of the audio waveform, Repeat and Pause functions for audio recording and mixer automation enhanced with 'Update', 'Replace',

'Merge' and 'Punch Out Soft Fade Time'. More recent enhancements include; Real-Time Non-Destructive Crossfades and an automatic mixer function called the 'Adaptive Mixer'. In addition to this, Logic Audio Platinum includes a free copy of Bias Peak SE. With such a powerhouse feature set, it's no wonder Logic Audio has become the true professional choice of the 90's.

strength. Logic Audio is simply the best-feeling integrated audio and midi sequencer on the market today. "Logic Audio was the first sequencer that had the feel as good or better than my MPC-3000" says Jimmy Bralower, New York producer/songwriter and programmer for Eric Clapton, Cyndi Lauper, Steve Winwood, and Celine Dion. Jimmy continues to expound on Logic Audio's feel and real-time aspects; "It's like molding compositions out of clay in real-time as opposed to chiseling them out of rock. Logic Audio has made the integration of digital audio and MIDI so transparent and highly musical that it's changed the way I work".



**Emagic, Inc., 13348 Grass Valley Ave., Bldg. C, Suite 100, Grass Valley, CA 95945; Tel: 916-477-1051; Fax: 916-477-1052; Web: [www.emagic.usa.com](http://www.emagic.usa.com)**



"Logic Audio provides me with the flexibility to be creative in the preproduction environment, yet the features with the Digidesign hardware and Logic Audio are an unbeatable combination."  
Gernard Parker, Producer for SWV and K-Ci and JoJo from Jodeci.

"Nowadays, with something that is as powerful and accurate as Logic, both sonically as well as timewise, you have everything in one box - and that's a beautiful thing. I love it, it makes my life a lot easier...You can power it up, boot it up, press record and be working right away...it will do incredible things - you can dig down layer after layer and manipulate what you've done in really quite amazing ways. I'm not just a Logic user, I'm a Logic lover."  
Bob Power, Producer for Erykah Badu, DeAngelo, Tribe Called Quest, and The Roots



# The best got better

When it comes to integrated MIDI/Audio software, Logic Audio is undoubtedly the number one choice among ProTools users worldwide. With the new Platinum version featuring full ProTools24 support and non-destructive crossfades in real-time, the best program got even better.

Emagic Inc.  
Tel. +530. 477 11051  
Fax +530. 477 11052

Emagic Internet  
<http://www.emagic.de>

All rights reserved. Logic™ and Logic Audio™ are Registered Trademarks of Emagic®.

World Radio History

**emagic**

Technology with Soul.





# AURAL EXCITER & OTHER **APHEX** FAVORITES AVAILABLE IN TDM FORMAT

It's exciting to see the rapid advances being made with TDM, from development and capability standpoints as well as the innovative ways that users have taken this technology to a new level. It's their resourcefulness and quest for a better way of doing things that is really helping to drive this entire process to ever-increasing heights.

And for more than 20 years, a wide spectrum of these same creative audio professionals from around the world have come to rely upon the rather unique and highly useful tools that Aphex Systems provides to improve and add another dimension to their sound work.

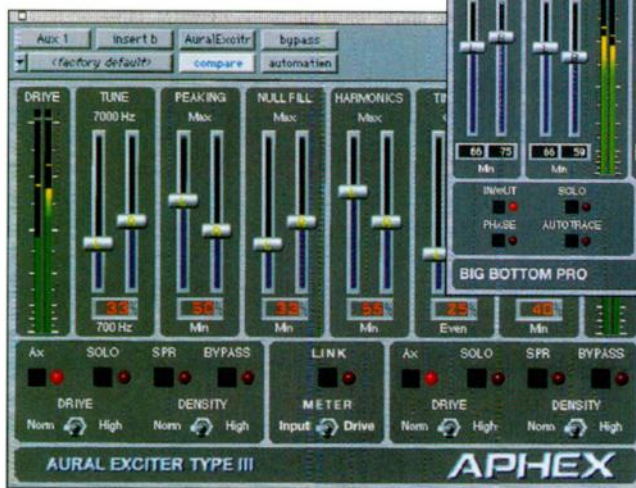
With this in mind, Aphex embarked several years ago on a mission to provide enhanced versions of our audio technology in the still-fledgling TDM format. Our first foray on this path, fittingly, was a TDM Plug-In based on the first Aphex product ever introduced, the Aural Exciter.

Modeled on the latest incarnation of Aural Exciter Type III technology found in the popular Model 250, this new TDM tool has quickly moved to become an essential tool in the recording industry. It took a great deal of time and effort to develop the complex algorithms that could meet and exceed the performance of the Type III — an analog technology — but the end result is a powerful and flexible tool with an easy-to-use software package.

Essentially, this new tool, called the Aural Exciter Type IIIpi, is an audio

process that recreates and restores missing harmonics. In fact, it is invaluable for reviving the natural brightness, clarity, presence and intelligibility of the original performance.

The Type IIIpi provides a wide range of controls, including fader, flow, and switch. Accurate metering is also included. The fader control section is where the really neat stuff occurs.



The user can set the bandwidth of the side chain at the point where the harmonic excitement effect is taking place, a process implemented by a second-order, high-pass filter.

Meanwhile, the damping effect on the leading frequency edge of the high-pass filter can also be set. The amount of harmonics being generated can be adjusted, as well as the mix between odd and even harmonics. All can then be mixed into the original signal at the user's preference.

Talk about fun! Not only can the originality of the recording be restored, but tailored to sound even better than the

original. And it's all in a convenient, precise digital package.

Right after the Type IIIpi, we introduced the Big Bottom Pro Plug-in to the Aphex TDM line. Again, it provides features similar to those found in the hardware version of Big Bottom, but with new features for even greater capability.

The Big Bottom Pro can be used as a stand-alone product or in conjunction with the Type IIIpi. The two devices, partnered together, create something similar to the Aural Exciter Type C with Big Bottom. A number of industry pros have come to appreciate

the combination of these two over the years.

The primary function of Big Bottom is to help create stronger, more powerful bass, along with bass density and "endurance." However, the key is to do this with little or no increase of peak output while also reducing overload distortion.

We're thrilled with the present reality and future potential of TDM. Work is ongoing to offer more popular Aphex technologies and products in this revolutionary format. The results of these efforts will be available soon, and we can't wait!

**Aphex Systems, Ltd.,**  
11068 Randall St.,  
Sun Valley, CA 01352;  
Tel: 818-767-2929;  
Fax: 818-767-2641;  
E-mail: [sales@aphexsys.com](mailto:sales@aphexsys.com)





## BIAS PEAK 2.0

# THE INNOVATION CONTINUES

In just two short years since its initial release, BIAS Peak has evolved into a digital audio editing standard while winning critical acclaim from leading experts and publications. Now Peak 2.0 is even more power- and feature-rich than before, yet it's still the easiest 2-track tool Macintosh audio professionals can use to take their creativity from conception to final mix.

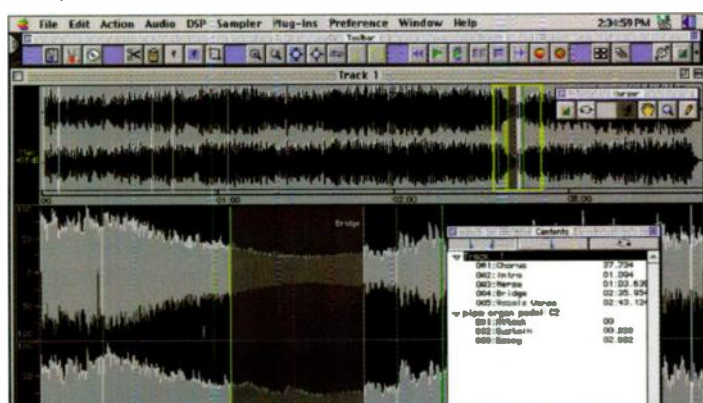
An improved toolset and user interface, expanded sampler support, and new features like DAET<sup>SM</sup> support, SMPTE synchronization, Playlist-direct CD burning, 24- and 32-bit file support, and support for TDM<sup>SM</sup>, Audio-Suite<sup>SM</sup>, and real-time, third-party Plug-Ins are just a few of 2.0's highlights. Whether mastering CDs, making audio for film, scoring QuickTime<sup>SM</sup> movies, or adding audio to a website, Peak's truly non-destructive editing accomplishes these tasks in a fraction of the time required by more costly systems.

Beyond bread-and-butter processing, Peak has loads of exciting, flexible, and creative tools for making rhythmic and sonic discoveries. Finding just the right sample loop point with Loop Tuner<sup>SM</sup> is an on-the-fly snap, and the improved Loop Surfer<sup>SM</sup> creates real-time, tempo-based loops from audio clips.

There's also advanced batch file pro-

cessing, click repair, custom blend and fade envelopes, innovative DSP tools, and the ability to easily transfer multiple audio tracks from CD to a hard drive or sampler.

Peak 2.0's re-designed user interface is totally new and a breeze to navigate. The new customizable tool bar and floating palette give easy access to edit tools for an improved ergonomic workspace,



Playlist									
#	Name	In	Time	Gap	Start	Out	Time	Gain	DSP 2 3 4
1	Intro	0:010	00:00:00	00:01:23	0:010	+0.0dB			
2	Intro	0:010	00:00:00	00:03:16	0:010	+0.0dB			
3	Verse	0:010	00:00:00	00:06:02	0:010	+0.0dB			
4	Chorus	0:010	00:00:00	00:09:20	0:010	+0.0dB			
5	Bridge	0:010	00:00:00	00:10:26	0:010	+0.0dB			
6	Verse	0:010	00:00:00	00:13:12	0:010	+0.0dB			
7	Bridge	0:010	00:00:00	00:14:17	0:010	+0.0dB			

cessing, click repair, custom blend and fade envelopes, innovative DSP tools, and the ability to easily transfer multiple audio tracks from CD to a hard drive or sampler.

For Mac OS8 users, dialog boxes now take full advantage of Appearance Manager, and new QuickTime<sup>SM</sup> and SMPTE support synchronizes audio to video with better-than-frame accuracy.

Peak breathes new life into any Mac audio program, multitrack workstation, sound card, multimedia authoring program, or non-linear video editing system — including Digidesign Pro Tools<sup>®</sup> and Audiomedia<sup>TM</sup> III.

Sound files are shared with MIDI samplers like no other 2-track editing program can.

Peak speaks all major audio file formats, including AIFF, Sound Designer<sup>TM</sup> II, .WAV, and QuickTime<sup>TM</sup>, and is fluent in 8-, 16-, 24-, or 32-bit files. There's also RealAudio<sup>TM</sup> 2.0, 3.0, and 5.0 support for authoring Internet sound files. The Batch File Processor effortlessly converts thousands of files into new formats and amazingly gives access to any of Peak's functions as part of the batch process, including third-party Plug-Ins.

Peak works with all Power Macintosh<sup>®</sup> computers and Power Mac compatibles — even PowerBooks — without

the need for any additional sound cards or hardware. Just a PowerPC, System 7.1, QuickTime 2.0, Apple Sound Manager 3.1, and 32MB of RAM are all that's needed to take full advantage of

Peak's native Power Mac performance.

With an MSRP of \$499, Peak 2.0 is an affordable, powerful pleasure to work with, and upgrades from version 1.5 are just \$129.

For more information,  
contact BIAS, Inc.;

Tel: 800-775-BIAS (2427);

Fax: 415-467-8446;

E-mail: sales@bias-inc.com;

Web: www.bias-inc.com





# WAVES GOLD BUNDLE

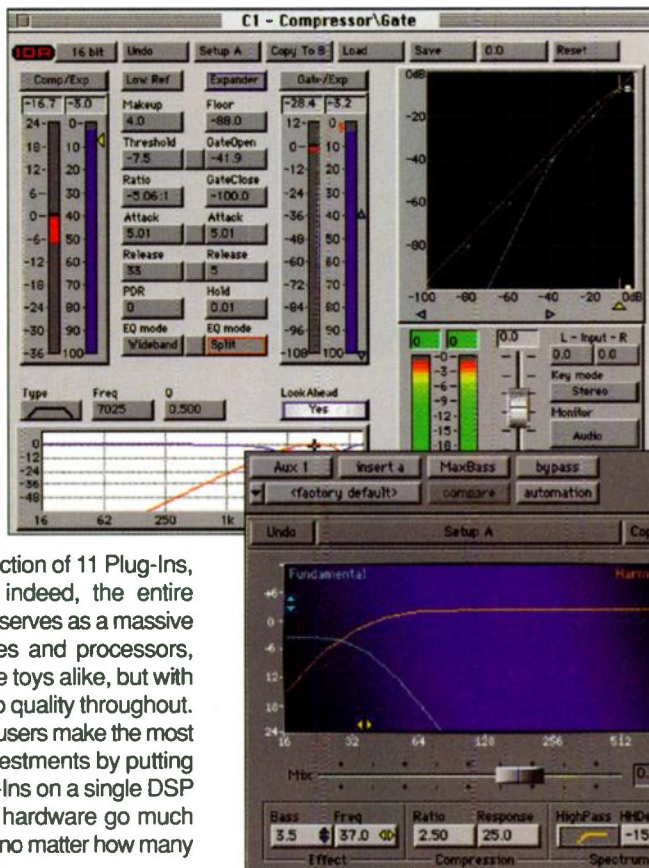
**W**ay, way back in 1993, Waves made the first audio Plug-In for Sound Designer — the Q10 Parametric Equalizer. They've never stopped working to provide the best audio tools for desktop workstations.

The relatively new Waves Gold bundle is simply the best buy for DigiDesign TDM power users, with 11 Plug-Ins and 3 applications, plus the customer will receive all the Plug-Ins Waves makes during 1998 for no charge at all. This type of service and support to the customer has driven the loyalty of Waves' users to great height, which is quite evident from newsgroups and dealers.

Not merely a collection of 11 Plug-Ins, the Gold bundle — indeed, the entire Waves product line — serves as a massive collection of processes and processors, both tools and creative toys alike, but with the highest attention to quality throughout. Only Waves lets TDM users make the most of their DSP Farm investments by putting different types of Plug-Ins on a single DSP chip. This makes the hardware go much further on any system, no matter how many Farms, or how few.

Over 300 processes are available quickly and easily by Waves "component" Plug-Ins; each Plug-In breaks into smaller pieces for optimal DSP usage, so DSP power is not wasted. Setup libraries and factory presets provide a huge audio resource pool to streamline the user's production process. For instance, if you need a de-popper for a vocal track, what better than to simply load the C1 compres-

sor and select De-Popper from the Load menu? *Voila!* It's de-popped. Have a DAT with pre-emphasis and can't make it play back properly? Insert the Q10 and load the CD/DAT de-emphasis setup, and you're done.



It is simply staggering to look at the list of tools these Plug-Ins provide. Far more than what you might guess you'd get for 11 Plug-Ins. For example: mastering limiters, IDR dithering, de-essers, soft high-frequency limiters, bass compressors, de-poppers, mastering EQs, Plateau and tilt filters, SuperNotches, pre/de-emphasis curves, real-room reverb emulation, stereo-im-

age manipulation and mastering, MS processing, 68-band real-time analysis, and much more.

The contents of the Gold Bundle are: Q10 — 10-band ParaGraphic Equalizer; L1 Ultramaximizer — mastering limiter; C1 — Compressor/Gate; S1 — Stereo Imager; TrueVerb — virtual room simulator/reverb; PAZ — real-time analyzer; Renaissance Compressor (now with new vintage "Opto" mode); PS22 — Pseudostereo tool; MaxxBass — patent-pending bass exciter; DeEsser — (new product!); WaveConvert Pro (new release — winner of *NewMedia* 1998 Hyper award, Best Audio Utility); MultiRack; AudioTrack (4-band EQ, comp/gate); and TrackPack Pro for SDII-format sound-file archiving.

Famous users of the Waves processors include Douglas Murray, Oscar-winning Sound effects editor for *The English Patient*, Nine Inch Nails, LucasArts, Interplay, Billy Gould, Joe Franco, Mick Guzausky, Mutato Muzika, Phil Ramone, Bela Fleck, Dave Frangioni, and many more.

Demos of almost all Plug-Ins and processors, plus lists of dealers worldwide, are all on the Waves Web site, [www.waves.com](http://www.waves.com). Finally, a great bonus is that nearly all updates from Waves are free from the Web page!

**Contact: Waves; 6716 Central Avenue Pike, Suite 8, Knoxville, TN 37912; Tel: 423-689-5395; Fax: 423-688-4260; E-mail: [tech-support.us@waves.com](mailto:tech-support.us@waves.com), [sales-info.us@waves.com](mailto:sales-info.us@waves.com); Web: [www.waves.com](http://www.waves.com).**





## ANTARES AUTO-TUNE TDM KEEPS THE EXPRESSION

**A**nTares Auto-Tune is a software Plug-In for Pro Tools designed to transparently correct errors in the intonation of voice or solo instruments while preserving all the expressive nuance of the original performance.

Auto-Tune offers two modes of operation. In Automatic mode, Auto-Tune uses advanced DSP algorithms to detect, in real-time, the incoming pitch of

a voice or solo instrument and, if necessary, correct it to the desired pitch, all without audible distortion or artifacts. The ability to specify the scales (or individual notes of a scale) to correct to, as well as the ability to adjust the threshold and rate of correction, ensures effective pitch correction for virtually any style of performance.

While Automatic mode is sufficient for most applications, Graphic mode provides the ability to make incredibly precise tweaks to a pre-recorded track. Simply select a desired phrase and

Auto-Tune displays a graphic representation of its pitch contour, along with a selection of tools that let you modify the pitch in almost any imaginable way.

Auto-Tune's unique real-time pitch detection and correction algorithms give a producer or engineer ultimate flexibility in deciding how to handle those inevitable tracks that are too good to scrap but not quite in tune enough to use as is.

If you're working with an artist who's having pitch problems during tracking, you can even use Auto-Tune to apply pitch-correction "live" during the recording process, thereby eliminating the need for an additional processing step later.



*AnTares Auto-Tune ensures effective pitch correction for virtually any style of performance.*

**Available from dealers or direct from Cameo International;**

**Tel: 408-399-0008;**

**sales@cameoworld.com.**

**Or contact AnTares Systems;**

**Tel: 530-878-4400;**

**Fax: 530-878-8577;**

**Web: www.antaressystems.com**

# PERFECT PITCH NO DISTORTION AUTO-TUNE

**"another Holy Grail of recording comes to market"  
"everyone with a Mac should have this program"**

— Nick Batzdorf, *Recording Magazine*

The Auto-Tune™ plug-in for ProTools™ TDM corrects pitch problems in vocals and solo instruments. Features include real-time artifact-free processing, an intuitive graphical interface, and complete control of vibrato, scoops, slides, and other stylistic elements. Call for more information on this and all of the other incredible ProTools plug-ins from AnTares Systems.

**ANTARES**

**REALLY COOL STUFF  
FOR MAKING MUSIC™**

Distributed by  
Cameo International, Inc.  
**1-888-332-CAMEO**  
www.cameoworld.com



# SIGMA1 -UPMIXING TO MULTIFORMAT SURROUND SOUND THE SMART WAY



An easy, intuitive way to manage surround sound challenges.

**S**igma1 is a complete stand-alone software application, supporting Pro Tools III and Pro Tools|24. With Sigma1 version 1.6, APB Tools produces a mature product for managing Surround Sound challenges in an easy and intuitive way.

The main approach is to let the user record/playback the "panning" for up to 32 Pro Tools session tracks (or LIVE inputs) over up to 16 virtual speakers (Interface outputs) inside a graphical representation of the speaker setup on the screen. For Surround-Sound-to-Picture work, sample synchronous Full Frame Video with actual QT-capable Video boards is supported. Sigma1 can be integrated in the production environment as a timecode master or slave.

Sigma1 now incorporates such important features like "Next/Previous Take" firing with INSTANT Playback, Snapshot/Mute automation, UNLIMITED number of locators and CS10 Remote integration. All movements/positions of the sound sources are kept separate from the level calculations of the outputs. This allows you to add and

remove speakers, therefore automatically recalculating the format changes from (i.e.) 5.1 to 7.1 in less than two seconds! And, with a Core system, you already can handle all current film formats.

After reading in a prepared Pro Tools session, including volume automation, the individual tracks of the session can be selected and graphically moved/positioned by Mouse, MIDI, or any ADB bus capable device. In each input/output track of the huge proprietary 32x16 APB Mixer matrix, the user is able to insert his favourite TDM Plug-Ins, which are all SIMULTANEOUSLY visible. Also, the panning characteristics between the virtual speakers are free definable in distance and angle, leaving conventional mixing desk approaches far behind!

**Contact: APB Tools,**  
**Spezialisierte Audio Software;**  
**Tel: +49 30 398952-0;**  
**Fax: +49 30 398952-29;**  
**E-mail: APBTools@t-online.de;**  
**Web: www.kgw.tuberlin.de/~y2371/SIGMA\_1/**

00:00:00:00

1 2 3

**SIGMA1**

Upmixing to Surround Sound the Smart Way

- **Multi Format Surround Sound Production**  
Produce your Surround Sound Version of the Stereo mix simultaneously in i.e. LCRS, 5.1, 7.1 or up to 16(!) discrete channels output format.
- **Full Pro Tools® III and PT|24 support**  
Usage of all TDM Plug-Ins in the Matrix I/Os
- **Sample synchronous Full Frame QT Video playback**  
Edit your Surround Sound Video at 30fps full frame with appropriate video hardware boards.
- **Streamlined integration of the Dolby® Plug-In**  
Easy switching between all 4:2:4 monitoring and recording situations

- **POWER JUMP**  
Records the "jumping" to a selected output by hitting the appropriate channel number on the keyboard
- **Next-/Previous Take function**  
INSTANT PLAYBACK for Theatre Show firing of complex audio movements.
- **Copy/Paste of Sound Paths (temporal and spatial)**
- **Full CS10 implementation**  
Edit smoothly Surround Sound to Video or use it as Show Control remote with 299 displayable Locators

APB Tools • Stromstr.38 • D-10551 Berlin • Germany • Fax: +49 (0)30 398952-29  
Email: APBTools@t-online.de • http://www.kgw.tu-berlin.de/~y2371/SIGMA\_1/

World Radio History





## APOGEE'S AD-8000 THE PERFECT PRO TOOLS ADDITION

**T**he AD-8000 represents the latest in converter technology from leading digital converter manufacturer Apogee Electronics. The basic Apogee AD-8000 is an 8-channel, true 24-bit A/D converter with optional 24-bit 2-channel and 8-channel D/A cards. It's a stand-alone unit, but you can install up to four rear-panel interface cards to talk directly to your Pro Tools.

With the Pro Tools card installed, the AD-8000 becomes an integral part of your Pro Tools system. It talks directly to the card in your computer via a standard DigiDesign peripheral interface ca-

able, like an 888 or 888|24, and is controlled by Pro Tools in much the same way. In addition to the AD-8000 and the "Digi-8" card, you can add either two or eight channels of D/A, as you require, and there is also an optional 8-channel AES input card if you need more than the two channels provided on-board.

The AD-8000 is clearly ideal for a Pro Tools|24 installation, although it will work with both d16 and d24 cards. You can combine AD-8000 and 888 or 888|24 units in one system, and connect an AD-8000 wherever an 888|24 would go. You can use the AD-8000 as the master interface, and synchronize additional AD-8000 units via word clock, or 888-style units via the built-in slave clock connectors.

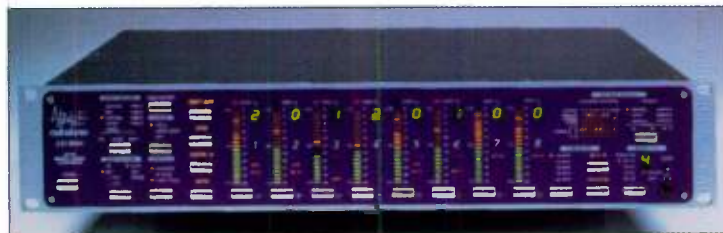
The list price of the AD-8000 is \$5995; interface cards (including the Digi-8 card for Pro Tools) are \$495. The AD-8000 was reviewed in EQ magazine in February 1998.

**Contact: Apogee Electronics Corp.; Tel: 310-915-1000.**

**Fax: 310-391-6262.**

**E-mail: info@apogeedigital.com.**

**Web: www.apogeedigital.com.**



The basic unit is an 8-channel, true 24-bit A/D converter with optional 24-bit 2-channel and 8-channel D/A cards.

# The world's finest digital recorder is the one you already own.



24-bit performance for your MDM! Record 16 or 20 bits with UV22...

Tascam TDIF...

...or 24 bits with Bit Splitting. Easy transfer between MDM formats!

...ADAT Optical

**N**OW, your modular digital multi-track can out-perform the world's finest digital recorders — simply add Apogee's AD-8000 converter!

The AD-8000 is a true 24-bit system with eight channels of the highest quality conversion you've ever heard — and it's packed with features.

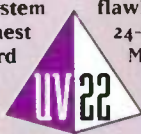
Optional ADAT® and TDIF (Tascam®) AMBus cards connect

direct to your MDM. Convert digitally between installed formats, including AES & S/PDIF. Other interfaces also available.

Apogee's acclaimed UV22 delivers flawless translation of high-resolution 24-bit signals to 16- and 20-bit for MDMs, while SoftLimit adds "analog-like" punch into your recordings.

Optional 2- and 8-channel 24-bit D/A cards complete the picture.

You already own the world's finest 24-bit ready digital recorder: your existing MDM, with an Apogee AD-8000. Try it today at your Apogee authorized dealer.



APOGEE ELECTRONICS CORPORATION, 3145 Donald Douglas Loop South, Santa Monica, CA 90405, USA.

Tel: +1 310/915-1000 Fax: +1 310/391-6262. Email: info@apogeedigital.com.

UV22 & Soft Limit are registered trademarks of Apogee Electronics Corp.

ADAT is a registered trademark of Alesis Studio Electronics Inc. TASCAM is a registered trademark of TEAC Corporation.

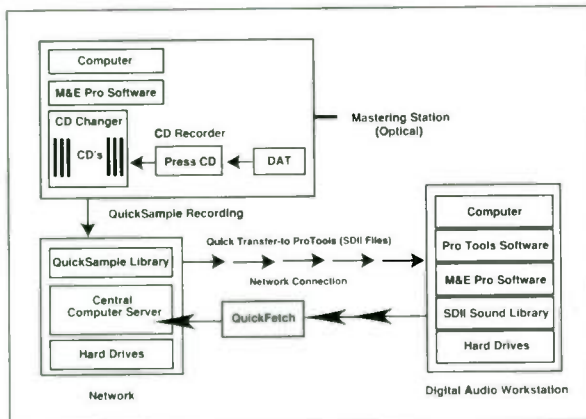


**ELECTRONICS**  
www.apogeedigital.com





## M&E PROFESSIONAL: INSTANT SFX & MUSIC MANAGEMENT FROM HARD DRIVES



*Providing instant playback of sound effects and music tracks from hard disk.*

**T**he M&E Pro QuickSample High Resolution system features instant playback of sound effects and music tracks from hard disks.

The high resolution audio files are used for instant auditioning and for file transferring from the QuickSample library to the digital audio workstation. M&E Pro software facilitates the conversion of the high resolution audio files from the QuickSample library to a variety of sound file formats including AIFF, WAV, SDII and others. Conversion to 48K sampling is also available.

Some highlights of M&E Professional include:

- Accommodates an Unlimited Number of SFX.
- Complete Database Management of all the Commercial SFX Libraries.
- Platform Compatibility — Supports Digidesign, Avid, Media 100.

- Increased Productivity — Multiple sound editors search, audition and transfer files simultaneously.

- Auditions SFX in Seconds — Workstations access SFX files over the network at speeds up to 100MB/sec.

- Access and Audition SFX Instantly — All workstations can work with the same SFX files at the same time.

- No Need to Duplicate Files or Transfer Files Between Workstations — Keeps your SFX in a central and secure location.

- Management of your Private SFX Collection — Keeps your SFX and files in a common database.

- Allows quick auditioning of any sound file stored on any hard drive attached and facilitates file transferring to DAWs.

**Gefen Systems,**  
6261 Variel Avenue, Suite C,  
Woodland Hills, CA 91367;  
Tel: 800-545-6900;  
Fax: 818-884-3108;  
Web: [www.gefen.com](http://www.gefen.com)

## Move your noisy CPU & hard drives away from your workspace.



The **ex•tend•it** TSE and PCX Series work like extension cords, allowing you to place your computer away from your monitor, keyboard & mouse. Eliminating all fan noise and CPU clutter from your workspace.

Call 800-545-6900 or 818-884-6294  
for the name of a dealer near you.

<http://www.gefen.com>







# DIRECT FROM DIGIDESIGN: PLUG-INS RIGHT FROM THE FARM

## D-FI™ FAMILY OF PLUG-INS

One day Digidesign decided to unleash some of its engineers from their fanatical commitment to fidelity, and asked them to come up with something downright "anti-fidelity." A few months later, the engineers unleashed their response: D-Fi, a family of four Plug-Ins (Lo-Fi, Sci-Fi, Recti-Fi, and Vari-Fi) for both the TDM and AudioSuite environments. This unique group of Plug-Ins acts as a sound designer's retro dream tool — without

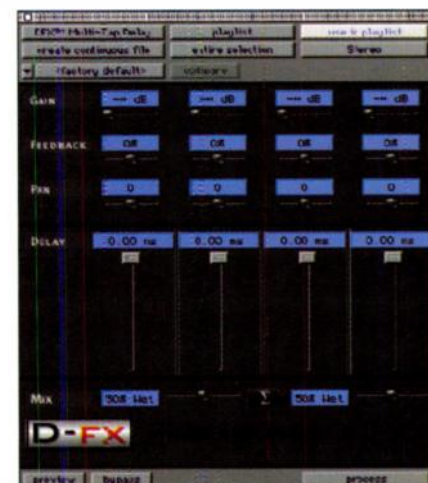
effects with the flexibility and reliability of cutting-edge digital audio technology. Lo-Fi diminishes the audio quality through bit-rate reduction and good, old-fashioned noise and distortion. Sci-Fi contorts the audio signals through analog synth-type ring modulators and resonators. Recti-Fi warps the signal by providing super- and sub-harmonic synthesis, and Vari-Fi (AudioSuite only) simulates a tape player or turntable stating-up or slowing-down while playing back audio.

Without D-Fi, you would literally have to re-sample audio files through an 8-bit sampler or run a file through a modular analog synth to enjoy similar effects. Of course, then you wouldn't have the added benefit of total recall of all parameters or automation either (TDM only). The bottom line is that D-Fi makes retro processing easier, quicker, and more cost-effective than ever before. It's the wave of the future for creating cool sounds of the past.

## D-FX™ AUDIOSUITE PLUG-IN

Who says that Pro Tools|24 and Pro Tools III users get to have all the fun? Digidesign always intended Plug-Ins to increase creative options for everyone from modest home studio users to megastar producers. It's in this spirit of Plug-In democratization that Digidesign introduced the D-fx AudioSuite Plug-In package. D-fx includes a bunch of carefully-selected, great-sounding effects including reverb, chorus, flanger,

multi-tap delay, and ping-pong delay. An AudioSuite version of the popular D-Verb Plug-In provides the reverb and ambiance processing.



the expense, hassle, and unreliability of actual retro hardware.

D-Fi combines a huge range of grungy, weird, and other retro-sounding

Because D-fx doesn't require any special hardware I/O cards, interfaces, or DSP Farms, it makes an ideal companion to any system running Pro Tools 4.x software. With its file-based processing, D-fx is also an excellent addition to any Pro Tools TDM system with limited DSP power.

*continued on page 20*





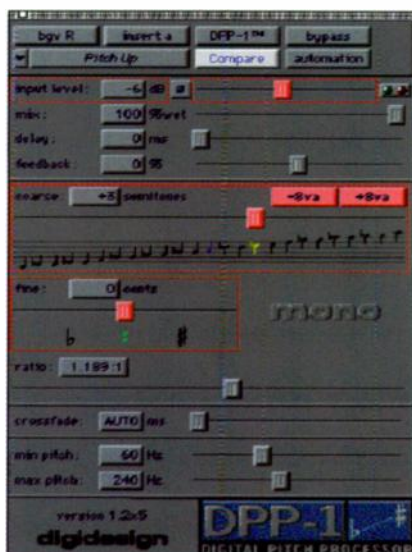
continued from page 19

er. You can choose between "stereo" mode for processing left and right channels separately, or use the summation key to combine the two signals for a mono in/stereo out effect. In addition, each D-fx Plug-In features an intuitive, easy-to-use interface. All the parameters are displayed on one screen, making it easy to fine-tune settings with the click of a mouse.

Like all AudioSuite Plug-Ins, D-fx offers a handy preview feature that lets you hear the effects you've applied before processing, and all parameter settings are stored with your Pro Tools session for instant recall.

## DPP-1™ PITCH PROCESSOR

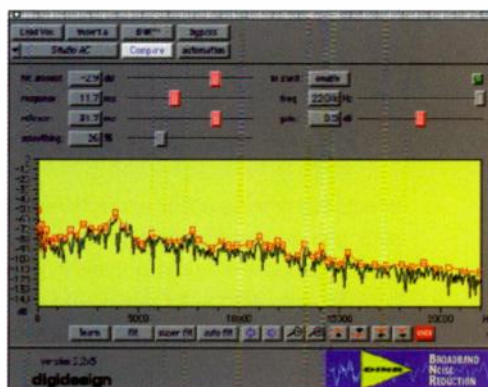
The Digidesign DPP-1 Pitch Processor brings high-quality, 24-bit pitch



and delay processing to Pro Tools TDM systems. It operates in either mono or stereo modes and supplies up to four octaves of stereo pitch transposition. The intuitive user interface features musical staff notes and octave switches. Simply click on a note to quickly navigate to new pitches. In addition to pitch change, the DPP-1 can add up to 125 milliseconds of delay per channel, with positive and negative feedback. With

easy on-screen editing and program storage, the DPP-1 delivers all the power of multiple pitch processors for the price of one software Plug-In.

## DINR™ (DIGIDESIGN® INTELLIGENT NOISE REDUCTION)



When noise is your nemesis, Digidesign Intelligent Noise Reduction (DINR) is your ally. An award-winning Plug-In, DINR effectively reduces unwanted noise — including air conditioner rumble, tape hiss, or guitar-amp buzz — for cleaner, more professional sounding music and film soundtracks. Originally available for TDM systems only, the latest version of DINR also includes Broadband Noise Reduction for AudioSuite (BNR-A/S).

DINR offers two modes: one tailored for broadband noise, such as tape hiss, and the other for more "pitched" noise, such as hum. For broadband noise reduction, DINR intelligently subtracts the noise from the digital audio file after analyzing an example of the noise within the source material. For cancellation of pitched noise, such as buzz and hum, DINR offers specialized digital filters to isolate and render the noise virtually inaudible. (Note: BNR-A/S is Broadband Noise Reduction only.) All parameter settings can be saved and recalled for use on other source audio files affected with similar noise. Of course, with DINR-TDM, all parameter settings as well as noise signatures are stored with your Pro Tools session for instant recall.

Since DINR analyzes and subtracts noise entirely within the digital realm, the re-

sults can be virtually free of side-effects, such as distortion, dynamic modulation (pumping and breathing), and the undesired fluctuations in frequency response associated with conventional noise reduction systems. What's more, DINR doesn't require any intensive training for high-quality results. Once installed, it takes just a matter of minutes to learn to use it.

## PRO QUALITY D-VERB™

From spacious halls to intimate rooms, D-Verb brings professional quality, 24-bit reverb and ambience processing to both the TDM and AudioSuite environment. With D-Verb, you can choose between seven different algorithms (Hall, Church, Plate,

Room 1, Room 2, Ambiance, and Non-Linear) and a variety of parameters for each (size, decay, pre-delay, diffusion, and more). Besides letting you create, store, and instantly recall thousands of different program settings, D-Verb can be used on multiple tracks, as an auxiliary input, in group masters, in mono or



stereo, and more. With all its functionality and superb audio quality, D-Verb does the work of multiple stand-alone reverb processors at a far lower cost.

**Contact: Digidesign;**  
**Tel: 650-842-7900 or 800-333-2137;**  
**Fax: 650-842-7999; or contact**  
**your local Digidesign office (see**  
**page 2 for phone numbers);**  
**Web: www.digidesign.com**





## SURROUND THEM!...WITH DOLBY SURROUND TOOLS



**W**ith over 31 million home systems equipped for Dolby Surround playback, demand for surround programming is skyrocketing. To satisfy this large consumer base, Dolby Surround mixes are also needed for such new media as DVD and DTV.

With Dolby Surround Tools, you can produce surround mixes for everything from TV shows and ad spots to CDs and video games entirely within the Digidesign Pro Tools TDM environment. They provide all the functionality of Dolby's hardware units, plus unique features such as surround panners and special functions for video game developers.

Dolby Surround Tools can also be used to preview results of the encoding process ("4-2-4 monitoring") on discrete four-channel audio elements (L, C, R, S) for movie soundtracks that will be mixed later on a film dubbing stage.\* And your clients can take full marketing advantage of the renowned Dolby Surround trademark

on their productions and packaging, with an easy-to-obtain, royalty-free license from Dolby Laboratories. Dolby Surround Tools will help you surround your clients and their audiences with the world's pre-eminent multichannel audio technology.

TDM Plug-Ins (bundled together):

- Built-in surround panners\*
- Game Mode Encoder and Game Mode Positioner functions
- Dolby Surround, mono and stereo monitoring

\*Pro Tools 4.0 or higher required for automation of Plug-Ins

*\*Dolby Surround Tools are not designed for the final mixing of matrix-encoded theatrical film soundtracks; Dolby Laboratories supplies producers with dedicated film sound encoder systems for this purpose.*

**Contact: Digidesign;**

**Tel: 650-842-7900 or 800-333-2137;**

**Fax: 650-842-7999; or contact**

**your local Digidesign office (see page 2 for phone numbers);**

**Web: www.digidesign.com**

## Surround them! with Dolby Surround Tools.



**D**olby Surround Tools TDM Plug-Ins let you produce Dolby Surround mixes for everything from TV shows to video games entirely within the Digidesign Pro Tools environment. You can also preview the results of the Dolby Surround process ("4-2-4" monitoring) on discrete four-channel material that will later be encoded on a film stage.

Dolby Surround Tools provide all the functionality of Dolby's hardware units, plus new features like surround panners and special functions for video game developers. And your clients can take full advantage of the renowned Dolby Surround trademark on their productions and packaging with an easy-to-get, royalty-free license from Dolby.

Dolby Surround Tools will help you surround your clients – and their audiences\* – with the world's leading multichannel audio technology.

\*More than 31,000,000 Dolby Surround home playback systems worldwide.

Dolby Laboratories Inc., 100 Potrero Avenue, San Francisco, CA 94103-8813.  
Telephone 415-558-0200, Fax 415-563-1373. Weston Bassett, Wiltshire SN4 9QJ, England, Telephone (44) 1793-842100,  
Fax (44) 1793-842101, www.dolby.com. Dolby and the double-D symbol are trademarks of Dolby Laboratories.  
©1995 Dolby Laboratories Inc. 987/11223-11/95. "Pro Tools" and "Digidesign" are registered trademarks of Digidesign, a division of Avid Technology, Inc.



Worldwide distribution by Digidesign. In the USA and non-European countries contact Digidesign (USA), telephone 650-842-7900, Fax 650-842-7999. In Europe contact Digidesign (England), telephone (44) 1753-655939

World Radio History



## FOCUSRITE d2/d3



*Focusrite-quality equalization and compression is available for the Pro Tools environment.*



**T**hrough collaborative engineering development, including precision measurement and modeling, Digidesign and Focusrite have created software-based digital processors worthy of its lineage: The d2 multi-band equalizer is based on the Red Range 2 Dual EQ and the d3 Dual Compressor/Limiter is based on the Red Range 3 Dual Compressor/Limiter.

Features for the d2 include:

- 6-band, 4-band, dual/single band, stereo or mono modules.

- EQ curve display supplies visual feedback of parameters.

- Left/right controls

can be adjusted independently, then linked to retain the offset.

- Three different mono or stereo modules: 6-band, 4-band and dual/single band. These versatile configurations allow DSP power to be used where it is needed most.

Features for the d3 include:

- Two separate Plug-In configurations for maximum DSP efficiency.

- AudioSuite Plug-In included.

- On a single DSP chip, the d3 can be used up to six times on a PCI machine and four times on a NuBus.

- External side chain control.

**Contact: Digidesign;**  
**Tel: 650-842-7900 or 800-333-2137;**  
**Fax: 650-842-7999;**  
**or contact your local**  
**Digidesign office (see page 2**  
**for phone numbers);**  
**Web: www.digidesign.com**

**A**mp Farm, the guitar recording Plug-In for TDM, uses Line 6's revolutionary new, patent-pending physical modeling technology called TubeTone to bring the warmth and feel of classic tube guitar amplifiers to Pro Tools TDM systems. Process a direct guitar signal as you record, or process pre-recorded tracks and tweak your amp sound right up to the final mix. It's the easiest, fastest, and most powerful way to record guitar with a TDM system.

**WHAT'S IT GOT?** The Amp Farm software Plug-In includes an incredible collection of guitar tones, modeled from a collection of specific, sought-after amplifiers. The TubeTone Amp models were developed from in-depth studies of: a Fender

Twin; Fender Blackface Deluxe Reverb; Fender Bassman; Marshall JCM 800; Marshall Plexi; Marshall JTM45; and Vox AC 30 (with and without top boost).

**HOW'S IT WORK?** Plug your guitar right into your Pro Tools interface — no miking up amps, no special pickups or other gimmicks. Pull up the Amp Farm TDM Plug-In in your Pro Tools session, and you get your amp on-screen. Set the knobs the way you like them, and lay down your tracks. Then, at any time you want to, you can go back to those same tracks, and adjust your Amp Farm amp setup, with full automation. Switch amps on the fly. Tweak your tone. Right up to the final mix. And every move you make is stored right in your Pro Tools session.



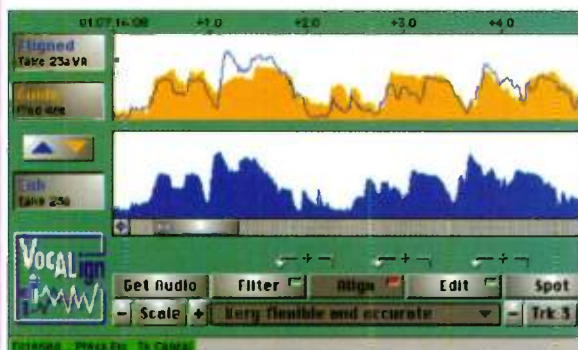
**Contact: Digidesign;**  
**Tel: 650-842-7900 or 800-333-2137;**  
**Fax: 650-842-7999; or contact**  
**your local Digidesign office (see**  
**page 2 for phone numbers);**  
**Web: www.digidesign.com**

## LINE 6 AMPFARM FOR GUITAR RECORDING

*The easiest, fastest and most powerful way to record guitar with a TDM system.*



## SYNCHRO ARTS VOCALIGN, TOOLBELT, AND TITAN SAVE THE DAY



*Automatically edit one audio signal to match its modulations to another signal.*

Users of VocAlign have said it's the "most powerful" and "astonishing" piece of software they have ever used. In simple terms, VocAlign automatically edits one audio signal to match its modulations to another signal.

So it can be used to tighten double tracked or backing vocals and instruments, provide lip-sync dialog, mold sound effects together, etc. The stunning results take only seconds to produce.

ToolBelt contains three essential non-real time functions: a Chaos theory-based Audio Generator — for producing, short samples, longer and natural sounding "fills" or atmospheres for dialog and effects editors; TimeMod — a very fast, very high quality mono and stereo time compression/expansion process; and lastly, a Loop editor for lightning-fast edit manipulation and the creation of backward and forward patterns in seconds. The user has complete control over the naming, time and track

positioning of the new audio in the Pro Tools session.

TITAN has three functions that save days of editing on film and TV productions. It's a stand-alone program that processes entire Pro Tools Sessions. With the "Fix Sync" function, TITAN takes a Session containing conformed audio and, in minutes, automatically corrects the sync of hundreds of regions to exactly match to the work track.

The NEW "Cut and Move" or Re-conform function takes only seconds to create automatically a new version of a Session using an EDL-format Change List. And lastly, the "Cut Only" function creates and names regions in transferred audio using information from an EDL.

All of these programs can be tried out in full functionality for a time limited period.

**Contact: Digidesign;**  
**Tel: 650-842-7900 or 800-333-2137;**  
**Fax: 650-842-7999; or contact**  
**your local Digidesign office (see**  
**page 2 for phone numbers);**  
**Web: www.digidesign.com**

The new Drawmer Dynamics TDM Plug-In brings Drawmer's industry standard dynamic signal processing to the Digidesign Pro Tools environment and is part of a new range of digital products to emerge from Drawmer's ongoing digital research and development program.

The Drawmer Dynamics module provides the Pro Tools user with frequency-conscious noise gating, expansion, ultra-smooth compression, and transparent variable threshold 'brick wall' limiting. Further innovative features include the ability to trigger the noise gate and/or compressor from any other audio track within Pro Tools and attenuate the frequency response of the trigger signal.

The dynamics package is based on the highly successful DS201

Noise Gate and DL241/251 Compressor/Limiter hardware units and has been designed to retain the same intuitive interface.

Features include: variable low-pass and high-pass filters for frequency-conscious gating; full envelope control 'attack', 'hold' and 'decay'; variable frequency trigger source; key input with 'Key Listen' facility for internal or external trigger source; fast attack time to preserve natural attack of program material; Traffic Light LED display i.e., Green, Yellow/Amber, Red; smooth expansion ideally suited for vocals and other complex dynamic waveforms; variable ratio control; high resolution metering; selectable 'manual' or 'fully automatic' attack and release times; and much more.

## DRAWMER DYNAMICS TDM PLUG-IN

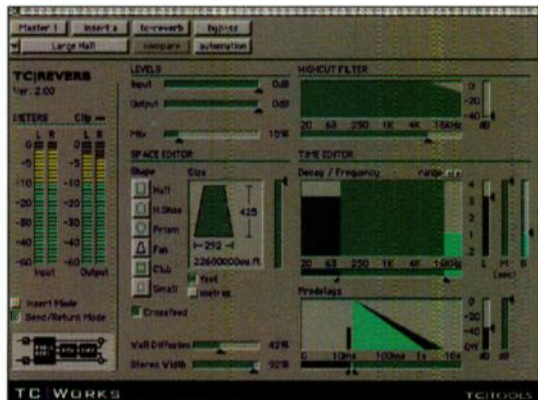


**Contact: Digidesign;**  
**Tel: 650-842-7900 or 800-333-2137;**  
**Fax: 650-842-7999; or contact**  
**your local Digidesign office (see**  
**page 2 for phone numbers);**  
**Web: www.digidesign.com**

*Based on the popular DS201  
Noise Gate and DL241/251  
Compressor/Limiter*



## TC TOOLS: ULTIMATE SOUND EXPERIENCE



Based on the M5000 Digital Audio Mainframe Reverb's acclaimed processing algorithms.

**C**ompatible with Pro Tools|24, TDM-equipped Pro Tools system, or other TDM-compatible systems, TC Tools from TC|Works, a division of TC Electronic, is a package of two software DSP Plug-Ins developed for the Pro Tools III/TDM environment: TC Reverb, TC Chorus/Delay, and TC EQ/Sat.

Based on the processing algorithms developed for the acclaimed M5000 Digital Audio Mainframe Reverb, TC Tools supplies 24-bit software-only processing with a selection of world-class effects from a company well known for creating high-quality signal processing devices. This package is the TC Ultimate Sound Experience.

Right at your fingertips you have:

- The power of Pro Tools integrated with real-time onboard TC Reverb and Chorus signal processing.
- Reverb algorithms from the

TC M5000 — a standard in top-class studios around the world.

- Powerful graphic interface provides extensive visual feedback for easy parameter control.

- More than 30 Reverb Preset Programs including Churches, Halls, Stages, Clubs, and Plates; made by top studio engineers.

- Build reverb ambiances from a list of 6 different room shapes: Hall, Fan, Prism, HorseShoe, Small, and Club.

- 10 great Chorus, Flanging, and Slap Echo delay effects.

- High-precision DC elimination filters.

- Mono/Stereo in, Stereo Out.

- Smooth parameter updates.

- High-quality conscious coding to maintain a 20-bit signal path.

**Contact: Digidesign;**

**Tel: 650-842-7900 or 800-333-2137;**

**Fax: 650-842-7999; or contact**

**your local Digidesign office (see page 2 for phone numbers);**

**Web: www.digidesign.com**

**M**PEG Pro from QDesign is the market's leading MPEG-2 stereo compression software for real-time, studio-quality encoding using the processing power of Digidesign's AudioSuite Plug-In technology or a standard Pentium PC equipped with Audiomeia III™. Available both as an AudioSuite Plug-In and a 32-bit Windows 95/NT application, MPEG Pro is designed to enable audio encoding and decoding without the need for expensive compression hardware. Based on an advanced implementation of the MPEG standard for audio bit-rate reduction, MPEG Pro delivers a new standard in high fidelity sound to audio and multimedia professionals.

MPEG Audio is the cross-platform solution for pro-audio, broadcast, and new media. Audio encoded with

**Contact: Digidesign;**

**Tel: 650-842-7900 or 800-333-2137;**

**Fax: 650-842-7999; or contact**

**your local Digidesign office (see page 2 for phone numbers);**

**Web: www.digidesign.com**

MPEG Pro can be decoded and played back by all standard MPEG players, including Apple's QuickTime 3.0 and Microsoft's DirectShow 1.0. It is the international standard for digital audio broadcast (DAB) and for digital versatile disk (DVD) authoring. Based on a model of human perception which uses the phenomenon of psychoacoustic masking, the MPEG algorithm encodes high quality audio by retaining only those features of the signal which are perceived by the listener. This allows MPEG to offer the highest level of audio compression with the widest range of audio quality.

MPEG Pro has been optimized to run many times faster than other compression algorithms currently implemented in hardware. Using proprietary techniques which have enhanced the compression performance of MPEG, MPEG Pro brings professional quality sound to studio desktops and multimedia production.

## MPEG PRO FROM QDESIGN



*MPEG Audio is the cross-platform solution for pro-audio, broadcast, and new media.*



## PITCH DOCTOR HUMANIZES PITCH CORRECTION

Since pitch shift devices first appeared, the promise of easily harmonizing vocal performances was confounded by their tendency to make lead singers sound like chipmunks. As a result, natural-sounding pitch-shifting has been something of a 'holy grail' for audio effects designers.

When Wave Mechanics introduced the PurePitch™ Plug-In, it appeared the quest had finally ended. PurePitch delivered high-quality, musically useful pitch shifting, in real-time.

Recording engineers, however, still spent long, tedious hours correcting out-of-tune vocals, and continued to hope for an easier way.

Pitch Doctor™, now with PurePitch 2.0, is the answer to their prayers. For minor intonation problems, Pitch Doctor can automatically correct the pitch.

Simply enter the desired key and scale, and Pitch Doctor does the rest, fixing the intonation of any out-of-tune notes.

However, sometimes a single note, or an entire performance, is so far out-of-tune that an automatic algorithm can't determine the intended note, and will perform the wrong correction. Also, the amount of pitch shift required to bring the part back in tune is so large that other pitch shift Plug-Ins will severely distort the spectral character of the original track.

Pitch Doctor easily solves both of these problems. Using the built-in keyboard simply hit the desired note (or use Pitch Doctor's automatic score generator), and the track will be smoothly pulled into perfect pitch. Switch on the format-preserving option, and the result will still sound like the original, human performance — except in-tune.

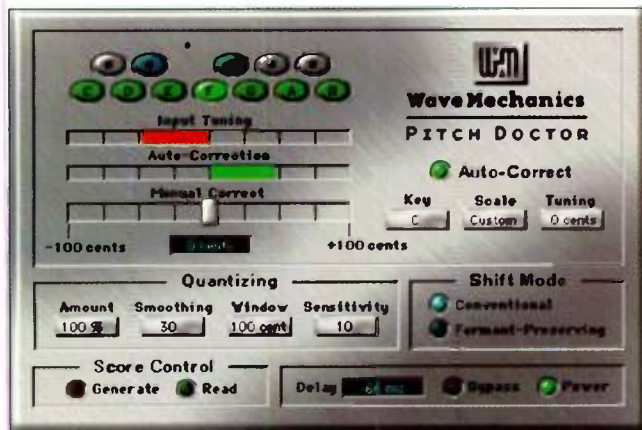
**Contact: Wave Mechanics;**

**Tel: 201-746-9417;**

**Fax: 201-746-0762; E-mail:**

**info@wave mechanics.com;**

**Web: www.wavemechanics.com**



*Delivers high-quality, musically useful pitch shifting in real time.*

BarbaBatch eases the tedious task of converting audio files to different formats. BarbaBatch allows you to set up multiple conversions and will run unattended generating a detailed log file of all activity, making it easy to verify that the conversions were completed successfully.

BarbaBatch is easy to use with excellent performance and quality. Native processing is very fast and BarbaBatch can also utilize AudioMedia and Pro Tools sound cards to further speed processing.

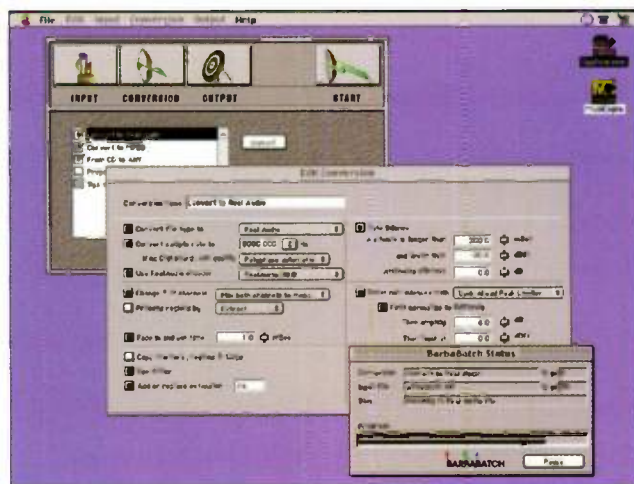
BarbaBatch converts between 8, 16, 24 and 32 bit linear PCM, 4 bit ADPCM and 8 bit  $\mu$ -law and sample rates from 1 to 100,000 KHz. BarbaBatch also includes

gain and dynamics processing as part of the conversion process, with noise gating, normalization and peak-limiting. These features are essential for squeezing maximum fidelity out of low bit depths. Automatic fade-in and -out, dithering and channel processing can also be included during processing.

BarbaBatch supports a plethora of file types including Sound Designer I & II, AIFF, AIFC, AIFC IMA 4:1, and many more

Macintosh, System 7.1, 4mb RAM — \$395. Included in the package are four utility programs to help manage projects with a large number of files. A demo version is available from [www.mac-sourcery.com](http://www.mac-sourcery.com).

## BARBABATCH 2.3: FAST, QUALITY BATCH A CONVERSION



*A high-performance, easy-to-use way to convert your audio files to a plethora of file formats.*

**Audio Ease's BarbaBatch is available directly from MacSourcery (dealer inquiries welcome), P.O. Box 461537, Escondido, CA 92046. Tel: 760-747-5995; Fax: 760-747-5994; E-mail: info@macsourcery.com.**



## PRO TOOLS TRAINING CD-ROMS

**T**he cure for the 2-inch thick manual blues. Get hip to the gig my brothers and sisters, with Cool School Interactus multimedia CD-ROMS. Vol. 1 covers Pro Tools DAE PowerMix through Pro Tools|24 hardware configurations, and includes over 100 software movie tutorials. It also includes sections on synchronization, system upkeep, and the basics (sound fundamentals, computers, MIDI, and digital audio). Vol. 2 features Pro Tools 4.0 and various



Plug-Ins, covering basic functionality, production techniques, and advanced short cuts and key commands. Both CDs contain a 1200 term glossary, including DAE errors.

**Contact:**

**Cool Breeze Systems, Inc.;**

**Tel: 800-729-6919; Fax: 614-486-4690.**

**E-mail: info@coolbreezesys.com;**

**Web: www.coolbreezesys.com**

## DUY'S DSPIDER: 100 PLUG-INS IN ONE

**D**UY's DSPider is the first modular processing software for the Digidesign TDM Bus. DSPider allows you to create virtually any type of processing device from compressor-limiters to weird effects, from reverbs to equalizers, from noise-gates to exciters and even devices that don't currently exist. The DSPider provides 40 modules that can be linked by the user in countless different ways. More than 100 predefined patches are provided as standard with the exclusive Patch Manager feature, which allows programmable switching between them via automation controls. DUY's range of Plug-Ins includes DUY Shape, DaD Valve, DaD Tape, DUY Wide, MAX DUY and DSPider.



**Contact: North**

**America Contact Cameo Int'l at 888-**

**33CAMEO. DUY Research; Tel: 34 93**

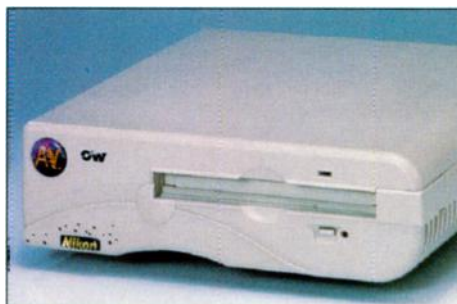
**2174510; Fax: 34 93 2176313; E-mail:**

**info@duy.es; Web: www.duy.es**

## NIKON'S OPTICAL IS THE WAY TO DRIVE

**B**eluga AV Magneto Optical Drive is the removable storage solution of choice for production and post-production professionals. You can easily transport your project from one workstation to another, and this durable media can even be shipped safely across the country.

The Beluga AV can record and play back up



to 10 tracks of 16-bit digital audio at 44.1kHz and up to eight tracks of 24-bit audio at 48 kHz on Pro Tools|24 system. Each 2.3GB cartridge will

hold up to 24 minutes of sound and 15 minutes of digital video.

**Contact: Nikon Optical Storage**

**Tel: 888-88NIKON. Fax: 650-508-3860.**

**Web: www.mo-nikon.com**

## OPCODE'S FUSION- EFFECTS ARE SEAMLESS

**I**n addition to its star-studded lineup of audio sequencing, librarian and notation music software, Opcode is blazing new trails with the fusion:EFFECTS line of AudioSuite Plug-Ins. These Plug-Ins operate seamlessly within any compatible Mac digital audio software, including Studio Vision Pro, Pro Tools, and more. Simply plug in any fusion:EFFECTS product and open up your possibilities! Opcode currently offers fusion: VOCODE, fusion: FILTER and fusion: VINYL with more on the way. Transform your music!



**Contact: Opcode; Tel: 650-856-3333;**

**Fax: 650-856-3332;**

**Web: www.opcode.com**

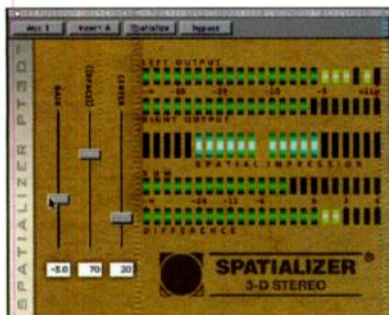


## SPATIALIZER ADDS DEPTH

**N**ow compatible with Pro Tools|24 (including automation and HUI support), the highly-acclaimed Spatializer PT3D can add depth to your mixes.

Spatializer's patented 3D Stereo technology is heard on films, TV shows, and hit records (including Madonna's "Ray Of Light" and the upcoming "Van Halen III"). Spatializer PT3D brings this technology to the screens of Pro Tools users everywhere.

Spatializer PT3D's simple interface and powerful 3D effect create a Plug-In that improves any stereo mix. Priced at only \$299, there's no reason *not* to add Spatializer PT3D to your Plug-In list.



### Contact:

**Cameo Int'l at  
888-33CAMEO.  
Spatializer Audio  
Laboratories;**

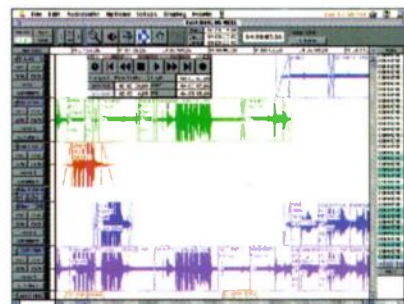
**Tel: 818-227-3370; Fax: 818-227-9750;  
E-mail: pt3d@spatializer.com;  
Web: www.spatializer.com.**

## WILD SYNC TAPE™ POST PRODUCTION UTILITIES

**E**nhance your post production capabilities with Tape™! Features include:

- advanced auto assembly directly to Pro Tools
- frame accurate spotting for ADR, SFX, and Foley
- total automations for ADR, Foley, and Voice Over stages
- control up to 10 DA-88s from your PPC
- reads your Pro Tools sessions and turns them into printed track sheets
- other printouts include ADR logs, ADR character summaries, and EDLs

**WildSync  
Systems, L.L.C.,  
P.O. Box 3237,  
North Hollywood,  
CA 91609-0237.  
Tel: (800)  
794-7962;  
E-mail:  
sales@wildsync  
.com, support@  
wildsync.com.**



## CONSERVATORY OF RECORDING ARTS & SCIENCES

**T**he Conservatory of Recording Arts & Sciences recently announced that it has become an authorized Avid/Digidesign Education Center. The Conservatory is now the only accredited institution in the United States to offer Digidesign Pro Tools Course 135. All Conservatory students who enroll in, and are graduated from, the Master Recording Program will now be Pro Tools Certified.



Their Master Recording Program includes study in multitrack music recording, live sound reinforcement, MIDI, troubleshooting and

electronics, and music business. Conservatory students are required to complete a 280 clock-hour internship in order to graduate.

**Contact: The Conservatory of Recording  
Arts & Sciences, 2300 E. Broadway Rd.,  
Tempe, AZ 85282-1707;  
Tel: 800-562-6383.**



## GRM TOOLS VOLUME 1 & 2

**B**ased on top secret research, GRM Tools are two volumes of mind-bending algorithms originally developed from highly classified government defense work. The Groupe de Recherches Musicales (GRM) took much of this closed door research and made these amazing tools available to the public. These processes are unavailable anywhere else in the world, with Plug-Ins like "Doppler" for authentic moving sound source effects, or Shuffle, a micro-random shuffling algorithm that can only be described as ground-breaking.

Mikhail Graham of *Electronic Musician* said, "If you own Pro Tools, you really owe it to yourself to check out GRM Tools." Please do!

**Call Cameo International, Inc. at  
888-33CAMEO for more information.**







# STORAGE WITH PRO TOOLS

## THE GLYPH WAY

**C**hoosing storage for Pro Tools data is now a decision with many variables. Glyph Technologies Inc. has specialized in providing superior compatible options, flexible enclosure options, and technical support/service for more than four years.

### SCSI IS DEBUNDLED

The new Pro Tools|24 hardware PCI I/O card is smaller and very powerful. The Pro Tools PCI 16-Bit and Pro Tools NuBus Systems came with a Digidesign SCSI bus as part of the hardware. You had no choice but to use this bus for your digital audio data storage. The new Pro Tools|24 system does not come with a SCSI bus and Glyph is recommending Ultra Wide SCSI interface cards and drives. In the future, you might be storing digital audio data on drives that are not SCSI, but maybe FC-AL, SSA, Firewire, or any number of future interface specifications.

### STORAGE CAPACITY — 24-BIT/44.1 KHZ

Twenty-four-bit audio data requires more storage capacity per track, per minute than the older 16-bit data structure. While 16-bit, 44.1 kHz data required about 5 MB per minute, per track, the newer 24-bit data structure requires about 7.5 MB per minute, per track. Multiply this times 24 tracks, and your storage requirements become 180 MB per minute. A 4 GB volume will store approximately 20 minutes of continuous 24-track, 24-bit audio data. A 8.6 GB drive will store approximately 40 minutes of the same data load.

### INTERFACE OPTIONS — ULTRA WIDE ADAPTERS

The optimum storage configuration for Pro Tools|24 comes in the flavor of Ultra Wide SCSI. This bus is rated at a potential of 40-MB-per-second throughput. Six PCI-slot-

ted Macs can easily utilize a PCI, Ultra Wide SCSI interface card in one of the two 3 PCI slot banks. Ultra Wide SCSI is the standard bus for digital video.

### PRO TOOLS|24 STORAGE OPTIONS

Glyph is only recommending Seagate Cheetah and Barracuda, Ultra Wide, 4, 9, and 18 GB, 7200 rpm and 10,000 drives for Pro Tools|24 (check Digidesign's Web site for the latest compatibility information). These drives will provide the future performance that you need to grow with your



Pro Tools|24 system as it evolves. They are available in rack mount and tabletop enclosures and can be mounted in hot swap trays. Both throughput and access times are maximized on these units as the fastest desktop storage devices in the world. Glyph provides enclosures that exceed Seagate's engineering environmental requirements. Glyph optimizes these drives to perform their best in the Pro Tools|24 system. Ultra Wide drives will work with Digidesign Pro Tools 16 systems, and provide an upgrade path for the future.

### PRO TOOLS 16-BIT STORAGE OPTIONS

Glyph continues to offer Seagate Ultra SCSI (narrow) drives for Pro Tools 16-bit systems. These drives are also available in rack mount and tabletop enclosures and can be mounted in hot swap trays.

### BACKUP & CD RECORDING

Glyph provides backup and CD Recording solutions specifically designed for Pro Tools. Tape drive backup options range from low cost 4 GB Travan and DAT to 25 GB, Wide bus, high-speed Sony AIT mechanisms. Masterlist CD 2.0 requires specific CD Recorders to master Red Book audio discs. Glyph has several options in various speed and price ranges.

### SERVICE & SUPPORT

Glyph extends a five-year warranty on most hard disk drives. This is five years parts and labor from Glyph, not from the mechanism manufacturer. If you purchase a drive from most resellers, your warranty is on the mechanism and it is from the manufacturer, not the drive reseller. Glyph's service department turns around most warranty repairs in less than 48 hours from receipt of the unit. This is standard.

As a further commitment to the production community, Glyph offers a special Express Service for 4, 9, and 18 GB hard drives. If any single 4, 9, or 18 GB hard drive fails in the first year of warranty, and Glyph tech support establishes a defective drive status, Glyph will replace the unit by 10:30 am the next day.

**Glyph Technologies Inc.**  
**735 West Clinton St.**  
**Ithaca, NY 14850**

**Tel: 800-335-0345, 607-275-0345;**  
**E-mail: sales@glyphtech.com**  
**Web: www.glyphtech.com**





# DEVELOPMENT PARTNERS DIRECTORY

## A

### ADVANCED DIGITAL SYSTEMS GROUP

Main Product(s): AD SG Professional  
Drive and Media

Main Category(s): Peripherals  
10202 W. Washington Blvd.  
Durante Bldg., Rm. 216  
Culver City, CA 90232  
Tel: 310-244-5523  
Fax: 310-204-2123

### AIRWORKS

Main Product(s): AutoConform, S/Link  
Main Category(s): Compatible Software  
One Thorton Court Suite 700  
Edmonton, AB, Canada T5J 2E7  
Tel: 403-424-9922  
Fax: 403-424-9993  
www.airworks.com

### ANTARES SYSTEMS

Main Product(s): Auto-Tune, JVP, MDT  
Main Category(s): TDM Plug-Ins,  
Compatible Software  
PO Box 697  
Applegate, CA 97703  
Tel: 916-878-8577  
Fax: 916-878-8577  
www.antares-systems.com

### APB TOOLS

Main Product(s): Sigma 1, EM 1

Main Category(s): TDM Plug-Ins,  
Compatible Software  
Stromstrasse 38  
Berlin, Germany D-10551  
Tel: 49 30 39895200  
Fax: 49 30 39895229  
www.kgw.tu-berlin.de/~y2731/SIGMA\_1

### APHEX SYSTEMS

Main Product(s): Aural Exciter, Big Bottom  
Main Category(s): TDM Plug-Ins  
11068 Randall Street  
Sun Valley, CA 91352  
Tel: 818-767-2929  
Fax: 818-767-2641  
www.aphexsys.com

### APOGEE ELECTRONICS

Main Product(s): AD-8000, Master Tools  
Main Category(s): Peripherals, TDM Plug-Ins  
3145 Donald Douglas Loop South  
Santa Monica, CA 90405.00  
Tel: 310-915-1000  
Fax: 310-391-6262  
www.apogeedigital.com

### ARBORETUM SYSTEMS

Main Product(s): Hyperprism  
Main Category(s): TDM & AudioSuite  
Plug-Ins  
915 Cole Street, Suite 387  
San Francisco, CA 94117

Tel: 415-626-4440  
Fax: 415-626-4439  
www.arboretum.com

### AUDIO EASE

Main Product(s): BarbaBatch  
Main Category(s): Compatible Software  
Esdoornstraat 14  
Utrecht, The Netherlands 3551 AJ  
Tel: 31 30 2433606  
Fax: 31 30 243 8500  
www.futuremusic.nl/AudioEase

## B

### BIAS

Main Product(s): Peak, SFX Machine  
Main Category(s): Compatible Software  
PO Box 2481  
Sausalito, CA 94966  
Tel: 415-331-2446  
Fax: 415-331-2446  
www.bias-inc.com

### BINARI SONORI S.R.L.

Main Product(s): Sound SuperEdit  
Main Category(s): Compatible Software  
Viale Fulvio Testi 11  
Cinisello Balsamo, Italy 20092  
Tel: 39-2-61866-310  
Fax: 39-2-61866-313  
www.binarisonori.it

\* Distributed by  
DigiDesign

### AVID AUTHORIZED EDUCATION CENTERS FOR PRO TOOLS

#### UNITED STATES

**Avid Technology, Inc. -  
West Coast\***  
115 North First Street  
Burbank, CA 91502  
Contact Person: Flynn Atkins  
Tel: 800-867-2843  
Internet: www.avid.com

**Conservatory of Record-  
ing Arts & Sciences**  
2300 East Broadway Road

Tempe, AZ 85282  
Tel: 602/858-9400  
Contact Person: Kirt Hamm  
Internet: www.cras.org

**Future Media Concepts**  
305 East 47th Street  
New York, NY 10017  
Contact Person: Ben Kozuch  
Tel: 212-888-6314  
Internet: www.fmctraining.com

**Video Symphony\***  
731 North Hollywood Way, 2nd  
Floor  
Burbank, CA 91505  
Contact: Patricia Montesion  
Tel: 818-558-1900

Internet:  
www.videosymphony.com

#### CANADA

**Ontario Institute of Audio  
Recording Technology**  
502 Newbold Street  
London, Ontario, Canada N6E  
1K6  
Tel: 519/686-5010  
Fax: 519/686-0162  
Contact Person: Will Meadows  
Internet: www.oiaart.org

**Vancouver Film  
School/Multimedia**  
420 Homer Street  
Vancouver, B.C. V6B2V5

Contact: Person: Gary Burgeouis  
Tel: 604/685-6331 ext 105  
Fax: 604/685-6321  
Internet: www.multimedia.edu

#### AUSTRALIA

**Avid Technology  
Australia Pty, Ltd\***  
Level 1  
166 Epping Road  
Lane Cove, New South Wales  
2066  
Australia  
Contact: David Corazza  
Tel: +61-2-9937-1800  
Internet: www.avid.com

\* Indicates AudioVision™ training available as well





### **BIT 3**

Main Product(s): 2101-00-02 Expansion Chassis  
Main Category(s): Peripherals  
8120 Penn Avenue South  
Minneapolis, MN 55431  
Tel: 612-905-4700  
Fax: 612-905-4701  
www.bit3.com/digi.html

## **C**

### **CAKEWALK**

Main Product(s): Cakewalk Pro Audio  
Main Category(s): Sequencer  
5 Cambridge Center  
Watertown, MA 02142  
Tel: 888 CAKE WALK  
Fax: 617-924-6657  
www.cakewalk.com

### **CEDAR**

Main Product(s): Declick, Decrackle, Dehiss  
Main Category(s): TDM Plug-Ins (Nubus)  
9 Clifton Court  
Cambridge, UK CB1 4BN  
Tel: 44 1223 414 117  
Fax: 44 1223 414 118  
sales@cedar-audio.com

### **COOL BREEZE SYSTEMS**

Main Product(s): Cool School Interactus  
Main Category(s): Compatible Software  
2041 Riverside Drive Suite 122  
Columbus, OH 43221  
Tel: 614-481-4000  
Fax: 614-486-4690  
www.coolbreezesys.com

## **D**

### **DIGIDESIGN**

Main Product(s): Pro Tools, Plug-Ins, Pro Tools|24, Pro Tools III  
3401A Hillview Ave.  
Palo Alto, CA 94304  
Tel: 650-842-7900  
Fax: 650-842-7999  
www.digidesign.com

### **DOLBY\***

Main Product(s): Dolby Surround Tools  
Main Category(s): TDM Plug-Ins  
3401A Hillview Ave.  
Palo Alto, CA 94304  
Tel: 650-842-7900  
Fax: 650-842-7999  
www.digidesign.com

### **DOREMI LABS**

Main Product(s): V1  
Main Category(s): Peripherals  
3631 Caheunga Blvd. West

Los Angeles, CA 90068  
Tel: 213-874-3411  
Fax: 213-874-3401  
www.doremilabs.com

### **DRAWMER\***

Main Product(s): Drawmer Dynamics  
Main Category(s): TDM Plug-Ins  
3401A Hillview Ave.  
Palo Alto, CA 94304  
Tel: 650-842-7900  
Fax: 650-842-7999  
www.digidesign.com

### **DUY S.A.**

Main Product(s): DSPider and other Plug-ins  
Main Category(s): TDM Plug-Ins  
Plaza Lesseps 33  
Barcelona, Spain 8023  
Tel: 34 3 2174510  
Fax: 34 3 2176313  
www.uy.es

## **E**

### **EMAGIC**

Main Product(s): Logic, ZAP  
Main Category(s): Sequencer  
13348 Grass Valley Ave. Bldg. C, Suite 100  
Grass Valley, CA 95945  
Tel: 916-477-1051  
Fax: 916-477-1052  
www.emagic.usa.com

## **F**

### **FOCUSRITE\***

Main Product(s): d2, d3  
Main Category(s): TDM Plug-Ins  
3401A Hillview Ave.  
Palo Alto, CA 94304  
Tel: 650-842-7900  
Fax: 650-842-7999  
www.digidesign.com

## **G**

### **GALLERY SOFTWARE**

Main Product(s): Post Production Tools  
Main Category(s): Compatible Software  
Suite B Frognaal Gardens  
Hampstead London, UK NW3 6UX  
Tel: 44 171 431 6260  
Fax: 44 171 435 8134  
www.demon.co.uk/gallery

### **GEFEN SYSTEMS**

Main Product(s): ex-tend-it, M&E Professional  
Main Category(s): Compatible Software  
6261 Variel Ave Suite C  
Woodland Hills, CA 91367  
Tel: 800-545-6900

Fax: 818-884-3108  
www.gefen.com

### **GLYPH TECHNOLOGIES**

Main Product(s): Storage Solutions  
Main Category(s): Peripherals  
735 West State St.  
Ithaca, NY 14850  
Tel: 607-275-0345  
Fax: 607-275-9464  
www.glyphtech.com

## **I**

### **IBS**

Main Product(s): On-the-Air Studio  
Main Category(s): Compatible Software  
Chemin des 2 Maisons, 61  
Brussels, Belgium 1200  
Tel: 32 2 771 7371  
Fax: 32 2 771 1766  
www.softronmedia.com/ibs

### **INA-GRM**

Main Product(s): GRM Tools vol 1 & vol 2  
Main Category(s): TDM Plug-Ins  
Paris, France  
Fax: 33 1 42 30 49 88

## **L**

### **LEXICON**

Main Product(s): LexiVerb  
Main Category(s): TDM Plug-Ins  
3 Oak Park  
Bedford, MA 07130  
Tel: 617-280-0300  
Fax: 617-280-0490  
www.lexicon.com

### **LINE 6\***

Main Product(s): Amp Farm  
Main Category(s): TDM Plug-Ins  
3401A Hillview Ave.  
Palo Alto, CA 94304  
Tel: 650-842-7900  
Fax: 650-842-7999  
www.digidesign.com

### **LIQUID AUDIO**

Main Product(s): Liquifier for Pro Tools  
Main Category(s): Compatible Software  
810 Winslow Street  
Redwood City, CA 94063  
Tel: 650 562 0880  
Fax: 650 562 0899  
www.liquidaudio.com

## **M**

### **MACKIE**

Main Product(s): HUI  
Main Category(s): Peripherals  
16220 Wood-Red Road

\* Distributed by  
DigiDesign





Woodinville, WA 98072  
Tel: 425-487-4333  
Fax: 425-487-4337  
www.mackie.com

#### **MAGMA**

Main Product(s): PXB-7-RMD  
Expansion Chassis  
Main Category(s): Peripherals  
6725 Mesa Ridge Road  
San Diego, CA 92121  
Tel: 619-457-0750  
Fax: 619-457-0798  
www.magma.com

#### **MARK OF THE UNICORN**

Main Product(s): Digital Performer,  
PureDSP  
Main Category(s): Sequencer,  
AudioSuite Plug-In  
1280 Massachusetts Ave.  
Cambridge, MA 02138  
Tel: 617-576-2760  
Fax: 617-576-3609  
www.motu.com

#### **METRIC HALO**

Main Product(s): SpectraFoo  
Main Category(s): TDM Plug-Ins  
Studio H 841 South Road  
Poughkeepsie, NY 12601  
Tel: 914-298-0451  
Fax: 914-298-4089  
www.mhllabs.com

## **N**

#### **NIKON PRECISION INC.**

Main Product(s): Beluga  
Main Category(s): Peripherals  
1399 Shoreway Road  
Belmont, CA 94002  
Tel: 888-88 NIKON  
Fax: 650-508-3860  
www.mo-nikon.com

## **O**

#### **OMNIRAX**

Main Product(s): Studio Furniture  
Main Category(s): Peripherals  
PO Box 1792  
Sausalito, CA 94966  
Tel: 800-332-3393  
Fax: 415-332-3392  
www.omnirax.com

#### **OPCODE SYSTEMS**

Main Product(s): Studio Vision,  
fusion:EFFECTS  
Main Category(s): Sequencer,  
AudioSuite Plug-Ins  
3950 Fabian Way, Suite 100  
Palo Alto, CA 94303

Tel: 650-856-3333  
Fax: 650-856-0777  
www.opcode.com

## **P**

#### **PEAVEY**

Main Product(s): PC-1600x  
Main Category(s): Peripherals  
711 A Street  
Meridian, MS 39301  
Tel: 601-483-5365  
Fax: 601-486-1278  
www.peavey.com

## **Q**

#### **QDESIGN\***

Main Product(s): MPEG Pro  
Main Category(s): AudioSuite Plug-In,  
Compatible Software  
3401A Hillview Ave.  
Palo Alto, CA 94304  
Tel: 650-842-7900  
Fax: 650-842-7999  
www.qdesign.com

#### **Q SOUND LABS**

Main Product(s): QSYS/TDM, QX/TDM  
Main Category(s): TDM Plug-Ins  
2748 37 Avenue NE  
Calgary, AB, Canada T1Y 5L3  
Tel: 403-291-2492  
Fax: 403-250-1521  
www.qsound.ca

## **R**

#### **RORKE DATA**

Main Product(s): VMOD-100  
Main Category(s): Peripherals  
Tech. Park II, 9700 West 76th St.  
Eden Prairie, MN 55344  
Tel: 800-950-0318  
Fax: 612-829-0988  
www.rorke.com

## **S**

#### **SONIC SCIENCE**

Main Product(s): Sonic Search  
Main Category(s): Compatible Software  
119 Spadina Ave., Suite 767  
Toronto, ONT, Canada M5V 2L1  
Tel: 800-26-SONIC  
Fax: 416-351-0100  
www.sonicscience.com

#### **SPATIALIZER**

Main Product(s): PT3D, AS3D  
Main Category(s): TDM & AudioSuite  
Plug-Ins  
20700 Ventura Blvd. Suite 134  
Woodland Hills, CA 91364  
Tel: 818-227-3370

Fax: 818-227-0750  
www.spatializer.com/

#### **STEINBERG**

Main Product(s): Various TDM  
Plug-Ins, Cubase Audio  
Main Category(s): TDM Plug-Ins, Sequencer  
21354 Nordhoff St. Suite 310  
Chatsworth, CA 91311  
Tel: 818-993-4091  
Fax: 818-701-7452  
www.steinberg.net

#### **SYNCHRO ARTS LTD.\***

Main Product(s): VocALign, TITAN, ToolBelt  
Main Category(s): Compatible Software  
3401A Hillview Ave.  
Palo Alto, CA 94304  
Tel: 650-842-7900  
Fax: 650-842-7999  
www.digidesign.com

## **T**

#### **TCIWORKS\***

Main Product(s): TC|Tools  
Main Category(s): TDM Plug-Ins  
3401A Hillview Ave.  
Palo Alto, CA 94304  
Tel: 650-842-7900  
Fax: 650-842-7999  
www.digidesign.com

## **W**

#### **WAVE MECHANICS**

Main Product(s): PurePitch  
Main Category(s): TDM Plug-Ins  
PO Box 657  
West Milford, NJ 07480  
Tel: 973-728-2425  
Fax: 973-728-2931  
www.wavemechanics.com

#### **WAVES**

Main Product(s): Various TDM Plug-Ins  
Main Category(s): TDM Plug-Ins  
6716 23 Kalisher St.  
Tel Aviv, Israel 65165  
Tel: 972 3 5107667  
Fax: 972 3 510 5881  
www.waves.com

#### **WILD SYNC**

Main Product(s): Tape  
Main Category(s): Compatible Software  
PO Box 3237  
N. Hollywood, CA 91609  
Tel: 800-794 SYNC (7962)  
www.wildsync.com

\* Distributed by  
Digidesign



**digidesign®**

A division of **Avid**

## Credits

*Let Love Rule*

*Mama Said*

*Are You Gonna Go My Way*

*Circus*

5

# "I cut<sup>my</sup> latest album **5** entirely in Pro Tools... **no** tape!"

— Lenny Kravitz

**L**enny Kravitz refuses to be limited by his creative tools.

"I turned to Pro Tools, because I felt like a kid who needed more crayons to play with. Now anything is possible. I record everything into Pro Tools and have this tremendous palette to work with. It's all album-quality, so I can piece songs together and mix them however I like. There are no boundaries."

Wait a minute: Isn't Lenny, like, an analog guy?

"I can still run sound through my old tube equipment or use Plug-Ins like flange or some weird little filter. Any color that I want, I can get with Pro Tools. It depends on the record I want to make. Pro Tools is the future."

Lenny's finally found a box of crayons as unlimited as his imagination. Isn't it time you had the tools to expand yours?

For more information about Pro Tools and Third-Party Developer products, call 1.800.333.2157 ext. 367 for a free Pro Tools video or to schedule a free demo.



[www.digidesign.com](http://www.digidesign.com)  
[www.avid.com](http://www.avid.com)

**LENNY KRAVITZ, ARTIST | PRODUCER | SONGWRITER**





have been writing with my friend, John Regan, who has been playing bass with me for years. We always write one or two songs together for my records, usually on bass and acoustic guitar with a little drum loop from the Akai MPC3000.

"When the song is written, we program the drums — which takes forever. The MPC3000 is a beautiful machine and has been my sequencing savior in my studio. (I moved my computer out of the studio years ago because, being a gadget freak, I found that with Performer I was spending a day saying, 'Shall I move this snare three ticks ahead?') It's quick to use, and that's the whole idea in writing a song: to grab the moment. Yesterday John and I were writing and had come up with a verse and chorus. John played bass and I sat down at the V-Drums to play a four-bar loop with the right feel. I am a very basic drummer, but just the fact that the part was not programmed with fingers makes so much difference."

Frampton records the loops directly into the MPC3000 via MIDI. MIDI out

from the V-Drums is patched to MIDI in on the MPC3000. An MPC track is set to record, and the four-bar phrase is played.

*If  
it's the right guitar,  
amp, and player,  
you should be able to  
stick any mic in  
front of it.*

Once the loop is in, the two work out the song arrangement while running the MPC3000 on internal clock. When the arrangement is completed, SMPTE code

is striped on 2-inch tape, a start time is established, and the MPC3000 plays from code (this loop can either be recorded or run virtual). Peter and John record guitar, bass, and possibly a vocal to the loop. Then Peter can record a performance of drums through the entire song, either into the MPC3000 via MIDI or onto tape.

Frampton admits, "If we had a real drummer, it'd be quite feasible to lay down a track from start to end, but you'd have to wait forever to do that when you are programming parts on a drum machine."

#### NEW FRONTIERS

Frampton's current endeavors include writing material for his next solo album as well as stepping into production shoes. "Last summer I played with Ringo, which was fantastic. We had Eric Stewart (a great performer and writer) open for us, and at the end of the tour he asked me if I'd be interested in producing him, which I am now doing. We've recorded six songs and I am trying to get him a deal. He is the first artist that I have ever really produced, and I'm quite excited about that." **EQ**

**NEATO has already labeled  
5,000,000 CD-Rs  
and now... DVDs**



- DESIGN** labels with NEATO's CD-FACE Design Software
- PRINT** labels on any laser or inkjet printer
  - proven, permanent and guaranteed
  - available in white, clear, metallics & colors
- APPLY** to your CDs and DVDs with the NEATO Applicator
- PACKAGE** to Identify and Impress

- K1 Includes:
- NEATO CD Label Applicator
  - Set of Assorted Labels & Inserts
  - CD-FACE™ including Design Software (Mac/PC) and Background Art for Labels & Inserts
  - Disc & Jewel Case Templates for Popular Graphics Programs (Mac/PC)

NEATO LLC USA 250 Dodge Avenue • East Haven, CT 06512  
800-984-9800 203-466-5170

NEATO LLC EUROPE +44 (0)990 561571 • FAX +44 (0)181 932 2200

See us at: [www.neato.com](http://www.neato.com)

CIRCLE 50 ON FREE INFO CARD

## #1 in Best Sound Clarity by Guitar Player Magazine

*The only thing  
standing between  
you and great  
sound . . .*



*right now is directly  
under your nose.*

*George Lo's*

P.O. Box 238 • Madison, TN 37116 • (615) 868-6976 • [www.georgels.com](http://www.georgels.com)

CIRCLE 33 ON FREE INFO CARD







# long house music

robbie robertson discusses the native  
american roots of his latest release

by mr. bonzai

**Bonzai:** Can being an outsider boost the creative spirit?

**Robertson:** You hear stories of people who've come from the other side of the tracks and brought inspiration from their upbringing that helped to feed the beast of inspiration. I think that it's helpful. There could be some truth to that, but at the same time, Cole Porter wrote songs sipping champagne at a grand piano. Just about anything can work, depending on what kind of music you're trying to convey. You sing about the "Long House" of your ancestors. Was it like a commune?

Well, commune has taken on such strange meanings. It's a community spirit, for sure, but the people did not necessarily live within a commune. I don't know if a reservation would be called a "commune." [Laughs.] Initially, you go to most communes of your own free spirit, and on the reservation that is not necessarily the case. For the people of the Six Nations, the long house is a gathering place, a place of shared spirituality where the confederation tried

to sort out the great peace throughout the years.

It was originated by Deganawida, the Peacemaker. A thousand years ago, he was the guy who started to bring together the nations of the Iroquois. He called for all the different nations to come together, and they dug up a huge tree. They laid down their weapons of war in the cavity the tree came from. Then they replanted the tree and called it The Tree of Peace. He went around speaking to the different Indian nations about the strength of unity — the strength of peace. Everybody had always thought of war as being the strength.

He had a partner who was called the Speechmaker. Deganawida had a speech impediment, and his partner, the Speechmaker, was Hiawatha. Everybody's heard of Hiawatha — he was kind of the front man of the duo, but it was Deganawida who was the idea man. So, they created these ideas of peace and unity, and it was called The Good Word in the Iroquois nation.



Then, in the late 1700s, there came along the Seneca prophet named Handsome Lake, who was dying of alcoholism. In his delirium of dying, he was visited by the messengers described in The Good Word. There are four messengers between the creator and the people — like Indian angels. He was visited by three of the messengers, who told him that the only way to beat this

disease of the spirit was to put himself completely in the hands of his creator, and to go around and help other people who had the same problem. This is no different than Alcoholics Anonymous is today — and this was happening in Indian country in the late 1700s. When he went around to speak to all the other nations, he spoke The Good Word that had been passed down from Deganawida.

The place in which they speak The Good Word is the long house. For the people of The Six Nations, this is the place where the Good Word is spoken, and the Code of Handsome Lake is shared.

making the record. One of the reasons was that we didn't have an engineer [laughs] and somebody had to do it. On the records that I make now, I do a lot of the engineering — a lot of it right here in this studio with that old Neve board. A good portion of the records are done here, and when I'm working with more people and need a bigger space, I go downstairs to the big rooms.

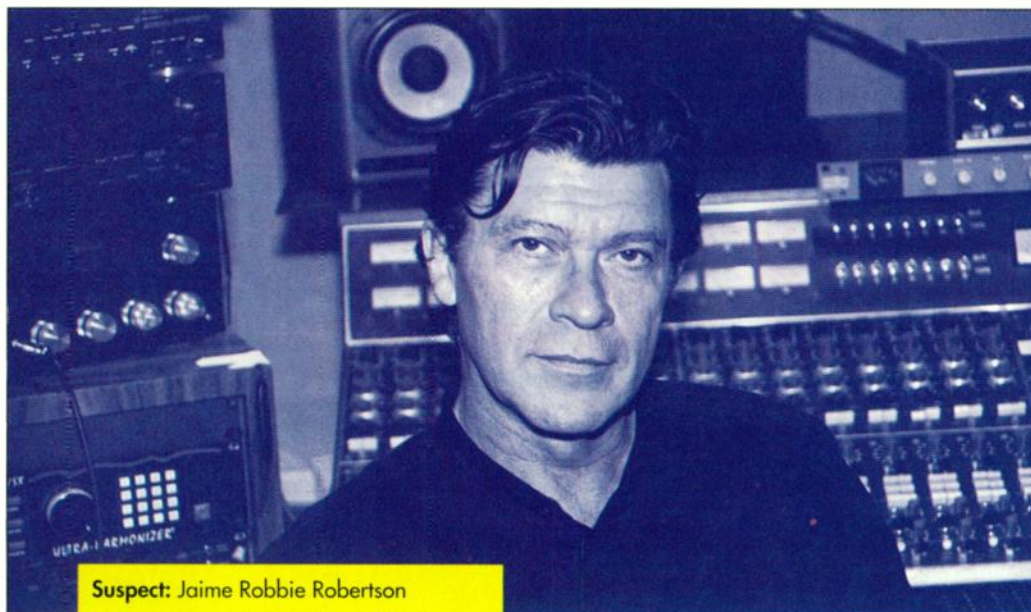
**Did you have any teacher of engineering?** My first teacher was John Simon, who was the producer with The Band in the early days. He was the one that took the mystery out of it for me, and said, "Oh, shit, it's just a bunch of tone controls and volume." He simplified it. People go into studios and they look at the board and say, "This is really intimidating — this makes an airplane look simple." What they don't realize is that it's a whole bunch of the same thing over and over again. John was the first one to simplify things for me, and I've been comfortable with that ever since. A lot of the time, because of what I'm doing in the recording process, it is unnecessary for me to have an engineer and assistant. By the time I explain what I'm trying to do, I could just as quickly do it myself. It's a matter of, "How do I get this on tape the quickest possible way, with the way I'm hearing it?"

**Is it easier to make records now?**

No, it's more complicated to make records now. It's kind of a trick bag. They give you all of these new gizmos to save you time, but by the time you use the gizmo and figure out how to use it well, and try out all the options that are possible with it — that all takes more time. So, you might remove all of these options and go directly to the source, directly to the tape. No way is it quicker now. It's not that I don't enjoy having the technology and the options, but it's the long way around the block, for sure.

**When you have a concept for a song, what do you lay down first?**

I don't have any formula because sometimes it just comes in unexpected ways. On this record, a lot of the songs came out of accidental noises that I made. I'd plug the guitar in and maybe start with some of the effects that were left on it from the last tune. A lot of times, I used Native rhythms that I have been gathering for years. Some of it I



**Suspect:** Jaime Robbie Robertson

**Occupation:** Artist, Producer, Engineer

**Ancestry:** Native American and Jewish

**Residence:** Los Angeles

**Location of Interrogation:** Robertson's private studio at The Village Recorder.

**Notes:** Robertson began performing at the age of 15, in groups such as Little Caesar and the Consoles, Robbie & The Robots. 1965: Robertson tours with Bob Dylan, contributes extensive guitar solos to *Blonde On Blonde*. 1968: The Band releases *Music From Big Pink*, followed by seven albums before the film *The Last Waltz* is released in 1978. Robertson embarks on solo recording career, acting and producing music for films such as *Carny*, *Raging Bull*, *King of Comedy*, and *The Color of Money*.

*Contact From the Underworld of Red Boy* is Robertson's first album in three years, recorded in Canada at the Six Nations Reservation and in L.A., New Mexico, and London. Working with Native American artists, the sound gets a new twist from underground DJ/mixer Howie B.

**Is making an album like making a movie?**

There are definite similarities in the "committee" art aspect of making records and movies. It's very difficult to make a record all by yourself — you do need the engineer, the assistant engineers, the producer, the musicians. And, of course, the record company gets involved as well. In making a movie, though, the committee is real big. For me, starting from the very beginning, I knew about the similarity and enjoyed it. If anything, in my experience, it's become more profound — the closeness of it to making a movie.

**You were engineering early on, weren't you...**

I still am. My first engineering was for the Basement Tapes, and I did most of the engineering on The Band album, the brown album. Because it was a new thing for me, and it was a nonstudio situation, I felt it was part of my job in



The power of  
an 02R digital  
mixer and  
16-track hard  
disk recorder

Imagine having the processing power of the 02R

digital recording console on a computer card. When you install the card in

your computer, you've got a **24 channel, 10 bus digital mixer** with all

the mixing power of the acclaimed 02R. Pretty great. Imagine this card

also gives you **16 tracks of tape-less recording**

with up to **32-bit resolution**. And works

out of the box with the industry's most

popular PC and Mac recording soft

ware. Imagine you can have all

this for **under \$1,000**. Yamaha

proudly presents the DS2416

Digital Mixing Card. The star

component in the **Yamaha**

**DSP Factory**—a complete digi

tal recording and mixing system

inside your computer. For details,

call 800-937-7171 ext 662.



24 channel, 10 bus  
digital mixer



16 track recorder  
with up to 32 bit  
capability



104 bands of  
parametric eq



26 dynamics  
processors



Two 32 bit effect  
processors



Comprehensive  
metering



Full mix automation  
via software



All features available  
simultaneously

Y A M A H A D S P F A C T O R Y



**YAMAHA®**

The Future of  
Music and Sound.

© 1998 Yamaha Corporation of America, 5600 Orangethorpe Avenue, Buena Park, CA 90620

**CIRCLE 75 ON FREE INFO CARD**

World Radio History



(cleverly  
disguised as  
a \$1,000  
computer card).



recorded recently in New Mexico, some of it was sent to me, some of it was done at Six Nations. A lot of it came from a rhythmic thing. It was inspirational. I'd plug in the guitar and it would make some weird noise, but musical in a way that made me want to try something. It had to do with improvising against rhythms and sounds. Some-

times I'd have a chant that took me to a place and helped me focus on an atmosphere. Not very much on this record was done in a traditional way where you sit down and write some chords on a guitar, or sit at the piano and think of a melody and a lyric idea.

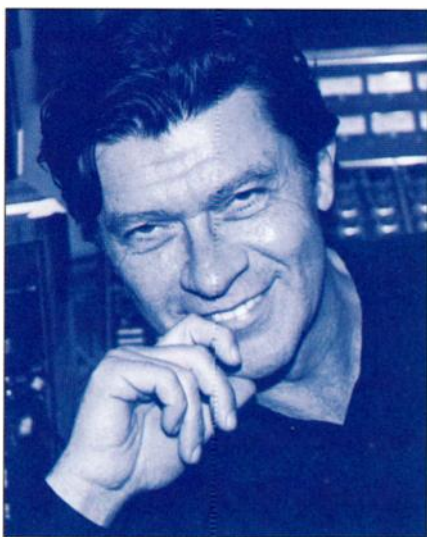
**What are these guitar boxes you've got over here?**

These pedals, called LoveTones, are made in England. They have names like The Meatball, Big Cheese, Brown Source, Doppelganger, and one of my favorites is

the Wobulator. The name of the guy who makes these pedals is Vlad. He has an interesting angle on noise and the sounds are almost out of control. They're not modest [laughs] and I like that about them. It isn't like you plug in and say, "Is that doing anything? Can you hear that? Here's what it sounds like 'on' and here's what it sounds like 'off.' Can you hear the difference?" In the booth, they're usually saying, "Not really." That is not the deal with these LoveTones. You plug in, and what comes out is extreme — very analog sounding. Thick and warm. At the same time, they're not goofy. Some pedals are just silly and they make silly things come out. These are musical.

**Do you record analog?**

Some analog, some digital. It depends. When recording digitally, I just think of it as a big sampler. Whatever you put into it, if you are working on a good digital machine, it just kinda spits back whatever you give it. Analog complements what you do; it complements the sound.



If it's used in certain ways, analog can almost be an effect — it can warm and fatten things up. There's the compression that's built into the machines, and the sound of analog tape on the bottom end has a certain richness in the way that it blends the different sounds of the low end together. The way that they rub against one another is sometimes very musically complementary.

**What are your favorite guitars?**

Well, I have a lot of favorite guitars, but when I just have to plug in and do it right away, I have two. This is when you don't want to dilly-dally around, because some instruments have so many options that it can slow you down. Here

"Eugen Beyer" founder of beyerdynamic, GmbH & Co., shown testing the World's First moving coil Headphones.

**A Bright Past...  
A Brilliant Future**

**DT 48**  
Audio history. In 1937, beyerdynamic introduces the world's first moving coil stereo headphone, the legendary DT 48.

**MCD 100**  
Audio future. In 1998, beyerdynamic introduces the world's first digital recording microphone, the MCD 100.

Established in 1924, beyerdynamic's legacy of innovation, fidelity and reliability is recognized and honored by audio professionals around the world.  
73 years of audio excellence.

An ear to the past, an eye to the future.  
beyerdynamic... Fidelity in Audio.™

**beyerdynamic**

for more information  
1.800.293.4463  
e-mail: salesUSA@beyerdynamic.com  
56 Central Ave., Farmingdale, NY 11735

CIRCLE 14 ON FREE INFO CARD



are the two that I reach for the quickest in the electric guitar area: I have this old 1948 Fender Broadcaster that I've had for a long time. It's the best "plug it in and it sounds great" guitar. And then I have a Stratocaster that Fender made for me. It's a signature model that I designed. It does what I'm asking of the instrument, and I've had a lot of experience in using stock versions of it.

When the people from Fender came to me and said, "If you could have anything you could want, what would it be?" I explained what I wanted and it took awhile to get it right. I designed a certain neck on it, the electronics — just the whole feel of the instrument. For the electronics, instead of the regular Stratocaster where you have a pickup in the front, pickup in the middle, and a pickup at the back, I have two in the front, two in the back, and they can be used individually or they can be used in combination with one another, where they make like a "humbucking" effect.

If there is any criticism of Fender guitars over the years, it's that sometimes they sound too thin. Somebody

might want a fatter sound, and for that you don't go to a Fender guitar. But if you didn't want to change guitars, this was a way to just thicken up that sound. I also use Active Passive pickups on it,

too, where I have an option of them being like old-style pickups or these new Active pickups that put out a lot more energy and volume. I have a Push-Push switch that goes from Active to Passive,

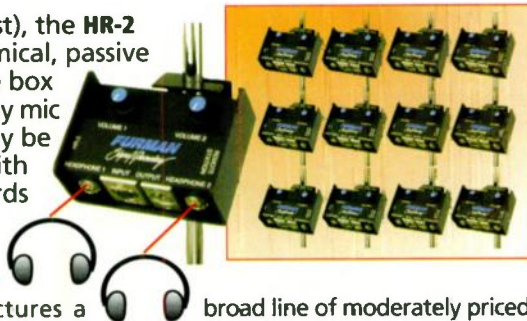


## Headphone Solutions for the Studio or Control Room



**THE HA-6A HEADPHONE/MONITOR AMP** is ideal for the studio without a separate control room. Plug up to six headphones into the front panel, and each musician has his or her own volume control. Its very ample 20W per channel capacity is enough to get headphone levels really loud or to do double duty as a power amp for small monitor speakers. Expand it by adding up to twelve HR-2 Headphone Remote Stations.

**A**t just \$88 (list), the **HR-2** is an economical, passive dual headphone box that clamps to any mic stand. HR-2's may be daisy-chained with standard mic cords from an HA-6A or an SP-20A.



Furman manufactures a broad line of moderately priced, high quality signal processors and power conditioners for pro audio applications. For more info and a catalog, please contact us.

**THE SP-20A HALF RACK STEREO POWER AMP** is the best way to go in the studio with a separate control room.

This compact unit contains the same beefy 20W per channel headphone amp as the HA-6A, but with only one built-in headphone jack.

You can also attach a chain of up to twelve HR-2's on the studio floor.

And that's not all—the SP-20A can also do double duty driving small monitor speakers.



**FURMAN**

1997 S. McDowell Blvd.  
Petaluma, CA 94954  
Phone: (707)763-1010  
Fax: (707)763-1310  
Web: <http://www.furmansound.com>

CIRCLE 28 ON FREE INFO CARD

MAY 1998  
World Radio History





## Acoustics First cuts prices. Many are baffled.

**A**fter lengthy negotiations with suppliers, we are able to offer substantial savings on many of our baffles and diffusers. ▲ Hanging baffles include polyurethane anechoic wedges, Class 1 FireFlex melamine panels and low-cost polywrap fiberglass baffles. Custom Ceiling Baffles available in colors, sizes and shapes to suit your needs. ▲ Barrel and pyramidal diffusers come in a variety of sizes in 60 Guilford of Maine fabric colors or white gel-coat.

▲ Call for details and spec sheets on our complete line of state-of-the-art acoustical products and materials.

▲ Reduced standing waves ▲ Reduced flutter echoes ▲ Reduced prices

**Toll Free**

**1-888-765-2900**

**Acoustics First Corporation**

2247 Tomlyn Street  
Richmond, VA 23230-3334 USA  
Fax: 804-342-1107  
E-mail: [acoustics@i2020.net](mailto:acoustics@i2020.net)  
Web: [www.acousticsfirst.com](http://www.acousticsfirst.com)

CIRCLE 01 ON FREE INFO CARD



COMING UP  
IN **EQ JUNE**

### CLEAN UP YOUR ACT

When was the last time you did any maintenance around your studio? We thought so. This issue is devoted with tips and techniques on cleaning and tweaking your gear so you can get the most out of them.

### MIC PRE SPECIAL

A look at some new mic preamps and some ideas on how to use them properly.

### SPECIAL TREATMENT

John Storyk tells how to acoustically treat a pre-existing room where you can't tear the walls down. Plus a directory of acoustical treatment providers.

For more information on this existing issue, contact:

Herb Schiff, Associate Publisher (ext. 470);  
Matt Charles (ext. 458), Karen Godgart (ext. 455),  
Andy Myers (ext. 457), Karen Godgart (ext. 455);  
Advertising Sales: Albert Margolis,  
West Coast Sales (714-582-5951)

**Tel: 212-378-0400 Fax: 212-378-2158**

long  
house  
music

and a switch that goes from being single pickup to double pickup. That's about it, technically. The other differences are in the details.

**So, you're ready to go out on the road and play your guitar, right?**

Well [laughs], these guitars are "road ready." I'm just not sure I'm road ready yet. But I am talking to the people I worked on this album with. It was such an experience in the studio, and it was visually interesting. The combination of very old and very new, melding together so effortlessly — it was like butter in the studio. It looked much more like a musical ritual going on than people just making a record. Some of the Native artists would be chanting; there was dancing; and at the same time there would be these computer screens flashing and Howie B. with beats pounding



out of the board and me in the middle of this making weird noises on guitar and improvising. All of this beginning to take shape — everybody was saying, "People gotta see this!" But it's a little bit complicated, just because of the nature of the music and where these people come from.

**Last question. Do you ever get tired of being a hero?**

I'm not a hero. [Laughs.] I don't think I've ever been a hero. I'm suspicious of heroes, to be really truthful, because I think that when someone becomes aware that they are a hero, in most cases in human nature it makes them behave in a way of a responsibility to who they are supposed to be. Anybody who's a real hero is not going to be fooled by that. **EQ**



# TO MAKE IT, YOU GOTTA HAVE THE DRIVE. HARD DRIVE.



**DMT-8vL**  
8-Track Digital Multitracker

**8**  
DIGITAL  
TRACKS

• 8 TRACKS OF 16-BIT, 44.1 KHZ (CD QUALITY) UNCOMPRESSED DIGITAL AUDIO

ABSOLUTELY  
**NO**  
COMPRESSION

• 18-BIT, 128X OVERSAMPLING A/D CONVERSION AND 20-BIT D/A CONVERSION

**1.3**<sub>gb</sub>  
HARD DISK

• 2-BAND EQ AND 2 AUX SENDS ON EACH CHANNEL

• BUILT-IN 1.3 GB HARD DISK (STORES 30 MINUTES OF 8-TRACK RECORDING)

**SCSI**  
EXPANDABILITY

• VERSATILE ANALOG MIXING CONSOLE

• OPTIONAL SCSI-2 INTERFACE FOR ADDING EXTRA STORAGE DEVICES

It doesn't matter how well you play if your recording device isn't flexible or high-quality enough to keep up with you. The Fostex DMT-8vL is an 8-track fully-digital hard disk recorder that's as portable and easy-to-use as a conventional multitracker but offers 8 tracks of uncompressed, crystal-clear CD-quality sound.

The DMT-8vL gives you expansive storage—a built-in 1.3 gb hard drive and an optional SCSI-2 interface for adding external backup devices. Plus there's direct compatibility with DAT recorders and other digital devices as well as the sheer power of distortionless digital editing—all the things other multitrackers can only dream of!

The DMT-8vL costs about the same or less than the competition's four-track MD recorders, but ours does so much more to help you make it.

## Fostex

FOSTEX CORP. OF AMERICA • 15431 BLACKBURN AVE. • NORWALK, CA 90650  
TEL: 562-921-1112 • FAX: 562-802-1964 • <http://www.fostex.com> • e-mail: [info@fostex.com](mailto:info@fostex.com)

CIRCLE 94 ON FREE INFO CARD  
World Radio History



# ! ! ! The Project The

*As new technologies like affordable CD-R recorders and the Internet continue to evolve, the project studio is turning more and more into a full service facility — from recording all the way up to selling a finished product. As you venture into this arena, here are some tips to help you get your projects into the hands of the people who want it.*





# Record Label

## Project Record Label



ILLUSTRATION BY MIKE SPERANZA



# Do-It-Yourself Distribution

The guerrilla tactics  
of getting your CD  
into stores

BY DYLAN MAGIEREK

Congratulations. You've finished your CD. Now what will you do to get the thousand CDs sitting around your house into the hands of music junkies? Distribution is the answer — whether you do it yourself or seek the help of professionals. Guerrilla tactics can help you get distribution, create successful promotions, get radio airplay, and work smarter with distributors. How well you use these strategies can make the difference between hand delivering your CD to your local record shop or having it carried by every music store in America.

## THE CHALLENGE OF DISTRIBUTION

Having a reliable record distributor is the key to making your project available at stores within and outside your area. Getting a distributor to be interested in your project can be backbreaking. They want releases that will make them money — and most do not. This is true of independent and major distributors.

Most independent distributors will deal with a small record company (herein referred to as a "label") with a few promising artists and a small (several thousand dollars per release) advertising budget. Major distributors will usually only deal with multi-million dollar established labels with proven sellers for artists. Major distributors have deep pockets and long arms. Budgets and expectations are much larger. You have to

sell a great number of records to show a profit in their world. For the majority of us, an independent distribution deal would suit us well.

You want distribution? Create a gameplan. Focus on your accomplishments. Do you have radio airplay? Is there previous sales history on your artist? Do you have a tour booked? What media reviews are confirmed? Use this information to create a one-sheet. A one-sheet is a one-page sales solicitation that includes bullet points of plans, accomplishments, suggested list price, a UPC, and photos of album art. A good one-sheet, along with strong releases, can help you get a distributor to take on your label. It will show them that you mean business and is a good outline of how you plan on supporting your release. A distributor will use a one-sheet to sell your CD to their accounts.

Contact record stores in your area. Ask the buyer who their favorite distributors are and why. She/he can probably give you names and addresses of the distributors they recommend. Tower Records would be a good place to start your inquiry. They deal with hun-

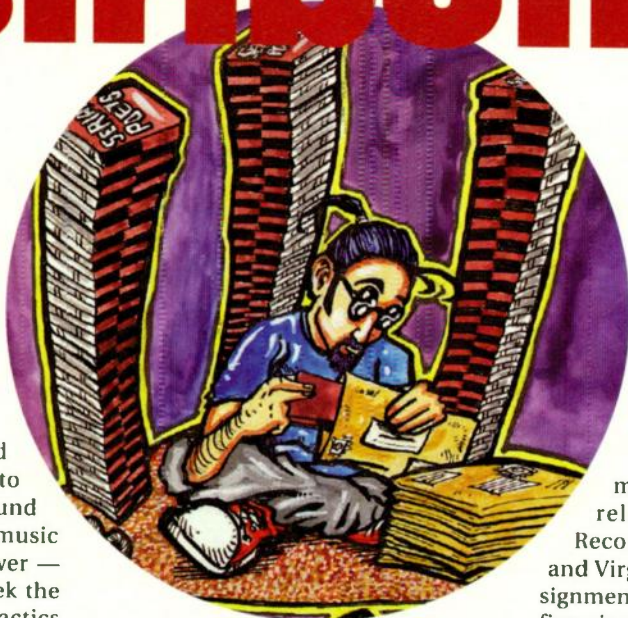
dreds of independent and major distributors every week. You may also want to pick up a copy of the Music Industry Distribution List. It's available for \$10 through mail order by calling 415-437-9664. It has a large directory of distribution company's names and addresses.

You can also use consignment as a means of getting your releases into stores. Tower Records, Borders Music and Books, and Virgin Megastore all support consignments. Most stores will take at least five pieces of your music product.

You will need to decide how much you want for each CD. If you can afford to do it, I recommend having a store selling a new artist for \$9.99 to \$12.99. This price point makes it easy for a consumer to try out something relatively unknown. Having a store price a CD at \$12.99 will get you around \$7 for each one they sell. Check with the store every few weeks to make sure they have enough in stock. See if the store has a local or independent area that will put a poster up for you or highlight your CD. Give them a few promos and try to get positioned in a discretionary (free) listening station. At the retail level, a listening station is the single most effective tool in selling an unknown artist.

## WORKING SMARTER WITH YOUR DISTRIBUTOR

Once you obtain distribution, you need to make sure they're taking care of business. Call record stores to make sure they have stock on your releases. Do the stores' buyers need promotional copies for in-store play or discretionary listening stations? Do they know that one of your artists is coming to perform in their







**SKIMP ON EVERYTHING BUT THE MUSIC.** Even if your clothes say "I live in a van" your demo can say "gold record." Just be sure to use the tape more gold records are recorded on, so your music has every opportunity to sound its best. Ask for the Quantegy Professional Studio Series.



Phone: 800-752-0732 Website: [www.quantegy.com](http://www.quantegy.com)

**CIRCLE 87 ON FREE INFO CARD**

World Radio History



town? Is a store manager interested in having your artist play an acoustic set in their store? If so, you better call your distributor and make sure there is plenty of product for the event. Maybe putting together a sales incentive contest for the distributor's sales representatives would increase stock levels at retail and make stores more aware of your artist. Don't forget to feed your distributor radio airplay updates and copies of great reviews. It will give them more ammunition to sell your release and let them know that you are out there assisting their efforts.

A good distributor should get your releases into most record retailers, sub-distributors, and one-stops. Sub-distributors and one-stops are wholesale mini-distribution centers that sell to small record retailers. You should supply a distributor with plenty of assistance in selling your product.

Promotional CDs, advertising dollars, radio and video airplay, sales contests, and promotions will help your CDs sell. The more demand there is for your music, the more attention you will get from your distributor.

## PROMOTION: GENERATING INTEREST, EXPOSURE, AND SALES

Promotion is the key to successfully supporting your release. Obtaining radio airplay is essential in making a big impact on sales. It is hard to get played on major radio stations, but most have shows that feature local artists. Get on them! Send out CDs and a one-sheet to college radio stations. Follow it up with phone calls and requests. Try to get the band to play live on the air. This not only gets them exposure, it will probably lead to more airplay. If you are getting strong airplay, consider doing advertising on that station. It may drive people into stores to buy your record and it shows the station that you are supporting their efforts.

Media reviews and mentions are also important. Create a list of media outlets to solicit for reviews. Start by collecting magazines that you feel would review your release. Provide them with a press release, band photo, and a CD. Follow up with a phone call or e-mail. Don't forget that fanzines are often hungry for artists to review. Tower Records is a great

place to find a good collection of these indie-style mags. Regional weeklies and daily newspapers will often review CDs and mention upcoming events. Advertising in an issue that accompanies a review of your CD maximizes your efforts. Make sure you tag (mention) a record retailer so you get sale pricing and special positioning in the store. Do this for the majority of your advertising. This will increase sales, exposure and delight your artist. Book the advertising through a record retailer's main office. Major retailers such as Sam Goody, Virgin Megastore, and Blockbuster Music can get better advertising rates than if you approached the newspaper or radio or television station yourself. And if you set it up at least two weeks in advance, they will give you special positioning and sale pricing for one week to a month.

## TRACKING SALES AND RADIO AIRPLAY

Knowing where your record is getting played and where it is selling will allow you to focus your efforts. If you are getting major airplay in San Francisco,

*continued on page 85*

## MediaFORM Introduces a New CD-R Duplicator Designed for the "Audio Professional"

# DAT'S EASY



### CD2CD/PRO CD-R Duplicator

MediaFORM's CD2CD/PRO is already the industry leader in CD-R copiers with one button burning of 8 CD's simultaneously, expandable to 64 drives, and autoloader ready. The CD2CD/PRO offers an option bay which allows for the following: Jaz Drive, Zip Drive, Plextor CD-Rom Drive or virtually any SCSI device. So how do we top that?

DAT's easy! MediaFORM's new Easi-DAT option allows audio users to interface their existing DAT player with the CD2CD/PRO by way of SPDIF, Optical and AES/EBU ports. Audio professionals can also take advantage of the CD2CD/PRO's unique track extraction feature. Finally, a CD-R copier that's flexible enough to meet all of your audio needs.



400 Eagleview Blvd., Suite 104 • Exton, PA 19341  
Phone: 610-458-9200 • Fax: 610-458-9554 • Toll Free in the USA 800-220-1215  
email: [info@mediaform.com](mailto:info@mediaform.com) • web: <http://www.mediaform.com>

CD2CD/PRO is a trademark of MediaFORM, Inc. • All other trademarks remain the property of their respective companies.



**NEW!**



### 3. Get it right.

#### Mixer window

Automating a mix is child's play. Just click on "write" and record levels, pans, solos and mutes on the fly. EVERYTHING is automated - effect sends, effect parameters, etc. You can no longer call yourself a tortured artist.



### 2. Get it sweet.

#### EQ/Effects rack

Each channel strip has 4 bands of parametric EQ. There's also a four-space effects rack loaded with reverb, chorus, delay, etc., with room for more third party plug-ins than you've ever had compromising dreams about.



### 1. Get it together.

#### Arrange window

This is the nerve center, where most of the work is done - MIDI and audio recording, editing and trying out new arrangements. There's up to 32 tracks of digital audio at the ready - just follow your intuition.

**You're independent,  
stubborn, one of a kind,  
on a first name basis  
with your inner self.**

**Let it flow.**



# CUBASE VST

Virtual Studio Technology  
For Mac or Windows

**Steinberg**  
NORTH AMERICA

21354 Nordhoff Street, Suite 110, Chatsworth, CA 91311  
(818) 993-4161 Fax: (818) 701-7452 Fax On Demand: (800) 884-7510  
Steinberg Canada: (416) 789-7100 Fax: (416) 789-1667  
All trademarks are registered by their respective companies. † Optional Plug-ins.  
[www.us.steinberg.net](http://www.us.steinberg.net)

CIRCLE 65 ON FREE INFO CARD

### 4. Get it warm.

#### Magneto™

This plug-in is outrageous. It adds tape saturation warmth to digital recordings. Yowza.



### 5. Get it ready to burn.

#### Master section

Here's where the true mastering comes in. There's an *additional* four-space effects rack for pinpoint EQ fixes and other mastering effects. With the ultra high-end Loudness Maximizer™, your master mix is guaranteed to pack a wallop. Amateur hour is officially over.





# Internet Promotion & Distribution

Thanks to the Web,  
you don't need  
a large record  
label to promote  
and distribute  
your release

**BY ALLEN WHITMAN  
AND JON R. LUINI**

The Internet is the most profound technological change in the creation, distribution, and commerce of music since the invention of recorded media. Much of what the music industry depends on for a reliable and comfortably accepted infrastructure is in transition. The good news is that everybody can relax. Great music will drive the as-yet-undecided standards. But for now there's no right way of doing things. Take heart and grab a mouse. Whatever you do makes a difference. The proof is in the pudding.

Major artists have taken advantage of the technology with spectacular results. (The-Artist-Formerly-Known-As-Prince has sold 100,000 albums on his Web site through mail-order only. No advertising, no radio.) In the trenches, thousands of independent musicians and recording studios have sold more albums than most major-label releases by narrow-casting their music to a niche market. (Did you know that 97 percent of all major-label releases sell

less than 700 albums? The business relies completely on a handful of multi-platinum sellers to keep itself afloat!) Creating a Web presence for yourself and your music isn't mysterious, it's merely technological. And that means there are clear methods and means to arriving at financial viability as an independent musician.

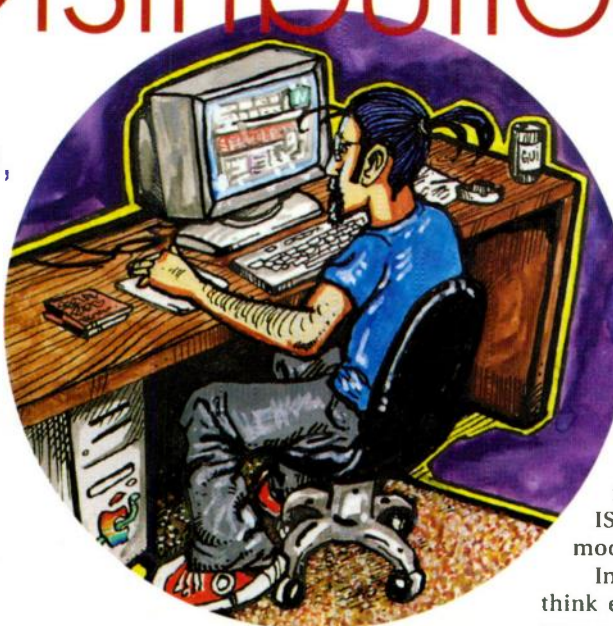
Who can take advantage of these tools? You can, even if you're a complete computer neophyte. Whether you're performing as a solo artist or in a band, whether you're running an independent record label or recording studio; if you have a phone line, you're ready to go. As Mary Poppins said: "A job begun is half done." Let's begin with a checklist.

Buy, beg, borrow, or steal (well, sort of) a Web site. If you don't have a computer, get one. They cost about the same as a good guitar. Get as fast a modem as you can and an online account through an Internet Service Provider

(ISP). All of this information is finely detailed and documented, with numerous pithy examples on our Web site: [www.fezguys.com](http://www.fezguys.com). You can get started on your own Web site very easily. We're not kidding: it's not a big deal. And it's fun because it involves creativity. If you don't want to do it yourself, find a friend who will do it for you. Or find someone who works at your ISP and ask them if they'd like to moonlight.

In the process of creating your site, think efficiency and simplicity. Keep your graphical images small and your writing clear. A simple architecture for easy maneuvering is key. Let your particular artistic sensibility drive your end result, just like the music you create or service you provide. Post several pieces of individual songs for quick auditioning and then the entire song itself. Provide these songs (the heart of your "content") in both streaming and download-only files and in a variety of Internet audio formats. Use MP3, RealAudio, Audioactive, Liquid Audio, anything and everything. Most of these tools are free downloads. Don't forget to listen to them yourself before putting them out into the ether for the world to enjoy — this way you can feel confident that an enjoyable experience will be had by all! Check [www.fezguys.com](http://www.fezguys.com) for exact locations and tutorials on these formats.

Other ideas for your Web site: let people vote on various song clips you put up. Add new stuff regularly. Have a public comments page. In short, find





# Need a Miracle?



## MUSICIAN'S FRIEND COULD BE THE ANSWER TO YOUR PRAYERS.

It's your **FREE** guide to more than 3,000 of the most popular music gear products at the best prices you'll find anywhere. Mixers, PA systems, keyboards, amps, guitars, cables, lighting packages...everything but the stage.

### THE MUSICIAN'S FRIEND BEST PRICE GUARANTEE

- We match any **PUBLISHED** price before or after the sale
- 2-day Express delivery
- 45-day money-back satisfaction guarantee
- Easy payment plan available
- Major credit cards accepted



**CALL 1-800-776-5173 NOW & GET THE BEST MUSIC EQUIPMENT CATALOG FREE!**

☐ **YES!** Rush me the next 3 editions of

**Musician's Friend**



Join hundreds of thousands of satisfied musicians in receiving the #1 music catalog, absolutely free! **CALL: 1-800-776-5173**  
subscribe online at: [WWW.MUSICIANSFRIEND.COM](http://WWW.MUSICIANSFRIEND.COM)

or mail this coupon to:

Musician's Friend, Dept. 38.805 • P.O. Box 4520 • Medford, OR 97501

NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

**CYBERSHOP ANYTIME ONLINE AT: [WWW.MUSICIANSFRIEND.COM](http://WWW.MUSICIANSFRIEND.COM)**

**CIRCLE 47 ON FREE INFO CARD**

World Radio History



ways to justify regular updates that keep people interested and coming back for more.

There are a number of Web-based techniques for the independent recording studio that will benefit your business. Because an increasing number of your potential clients want to provide songfiles on their Web sites, you can offer ready-to-go files of recorded material in a variety of formats. Your clients will leave your studio with an analog master tape of finished music and a digital master disk of Web-optimized song files. It's not rocket science.

A Web site gives you the central nest for your constituency to come home to. The way to keep track of (and keep in touch with) your fans is through e-mail. Every time a fan e-mails you, write them back promptly. Be concise and polite. Just like writing thank you notes to Grandma for that adorable birthday present. Offer (always ask for permission) to place their e-mail addresses on a subscription list from your site only. Create a master list of your subscribers and send messages period-

ically about new music or relevant shows, tours, and events you've posted on your site. Never sell or trade your e-mail lists. Nobody likes spam and there's too much of it already.

Of course, you have to get people to visit your site. Promote your e-mail and Web site address (URL or Universal Resource Locator — your Internet address) everywhere you represent yourself. On your CDs, t-shirts, business cards, stationery, faxes, or bass drum head. Tag it wildly with compelling urban graphics on giant corporate billboards. Don't get caught!

A word about URLs and e-mail addresses. If possible, keep them short. The shorter the better, because it makes them easier to remember. Get your own domain name (i.e., "fezguys" in the [www.fezguys.com](http://www.fezguys.com) URL).

There are two obvious ways to sell your music online: mail-order and downloads. Mail-order is tried and true. Fans want to support artists whose music they like and will gladly use the United States postal system to do this. If you are selling physical product via mail-order,

process your orders quickly. Selling downloadable music files from your site is less straightforward, but nonetheless technologically feasible. You will need the services of an online banking system. They're easy to find, and very happy to help. Since your potential customer must provide credit card information and answer a number of questions, keep your interface simple and straightforward. Provide useful information such as the size of the file to be downloaded and the approximate time it will take at various modem speeds (check [www.fezguys.com](http://www.fezguys.com) for a table of times).

If you perform your music; play a lot. Play anywhere and everywhere. There is not now, nor will there ever be, a substitute for the intimacy and power of live music. This is your most powerful mojo.

Speaking of mojo... let's talk about the person who likes your music. Treat them well. Be polite. It's the accepted truth in the music business that word of mouth is your most powerful promotional pixie dust. If you're a small or independent musician or record label, for-

## HEADPHONE MIX BREAKTHROUGH

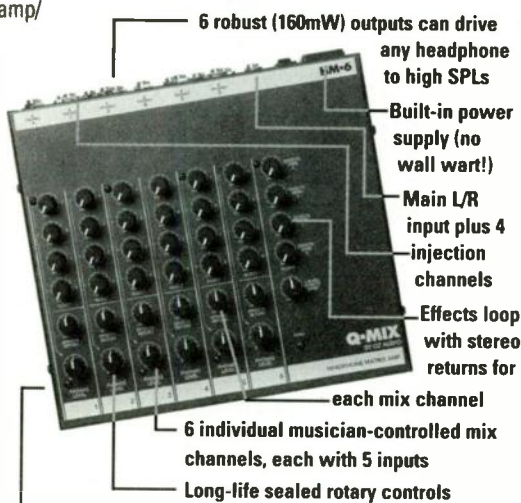
### 6 independent, musician-controlled headphone mixes at once!

The Q-Mix HM-6 headphone matrix amp/mixer lets 6 musicians create their own individual headphone mixes from up to 5 sources — plus effects! For just \$349 suggested retail.

**The conventional part:** Plug your main stereo mix into Q-Mix and drive six high-output headphone amps.

**The OZ Audio difference:** you can route four MORE mono inputs to the Q-Mix. For example, 4 mixer subgroups such as drums, background vocals or keyboards. Or an assortment of aux sends, individual channels, or a click/scratch track. The musicians dial in their own input levels—and stop constantly nagging the control room.

**It gets even better.** The Q-Mix HM-6 also includes a separate 5-channel mixer. Connect its output to an effects processor and return the signal to the HM-6. Every Q-Mix channel has its own stereo effects return, so all 6 performers can dial in their



Rackmount brackets available  
Also great for live applications

own effects. And you can concentrate on engineering instead of dealing with constant cries of "More vocals!", "More Effects!" or that old standby "More ME!"

#### Built for rough use.

We know it's a jungle on the other side of the glass. Smoke. Liquids. Dust. Distracted musicians. That's why the Q-Mix HM-6 has rugged metal chassis with sealed pots mounted on a thick fiberglass circuit board that can take abuse. Yet at the same time, the HM-6's impeccable electronic specs will impress even the pickiest engineer.

**Call or fax for complete info.** We'll also give you the location of the nearest Oz Audio Q-Mix dealer so you can get your hands on an HM-6. For the price of 4 sets of quality headphones, you can optimize the value of the headphones you already own.

## OZ audio™


1102 boneville Ave. Unit B-2 • Snohomish • WA • 98290  
Ph 360.568-3636 • Fax 360.568-9747

CIRCLE 54 ON FREE INFO CARD



get about banner ads on Web sites and opt for trading promotion with similar bands and like-minded individuals. Forget newsprint ads and radio spots. Be nice to your people and they will tell everyone they meet about you. That's personal testimonial and can't be bought. Ever.

Think about the possibilities. If you listen to the radio, you are hearing about one tenth of one percent of the total musical output of the human race. Whether you play jugband music on banjos and washtubs or industrial gamelan tone poems on steel railroad materials, there is a group of people who want to hear your music. They will never hear your music on corporate radio. They will probably never hear your music at the listening booth of a large CD store. But you are able to provide both of these worlds (and many more) through your Web site. A small touring band, a tireless coffeeshop singer, a soundtrack composer, a mid-level manager employed at a suburban manufacturing facility with an 8-track digital studio in the closet; anyone can get usefulness and create community using a Web presence.

All of the tools and techniques necessary to perform all of the above-mentioned functions can be found on our Web site in common-sense language and straightforward explanation. Contact us and we will respond to you. We'll help any way we can. Did we mention [www.fezguys.com](http://www.fezguys.com)? 

## CD DISTRIBUTION

*continued from page 80*

consider advertising in the *SF Weekly* or doing radio spots. If your CD is selling especially well on the East Coast, maybe you should set up a tour to hit that area. By focusing your efforts, you can better spend your time and money supporting your release.

There are two important tools for tracking sales and radio airplay. These are Soundscan and BDS. Soundscan is a company that tracks over-the-counter sales of recorded music. Whenever someone buys a CD, its UPC gets scanned into the cash register. This information is downloaded into Soundscan's computers and made available to paid subscribers. Soundscan can give you a weekly report on how many CDs you

sold and in which cities they were purchased. This allows you to track sales and make adjustments to your gameplan.

BDS, short for Broadcast Data Systems, tracks radio airplay. You must register your CD with BDS for them to track your songs. Each time a song is played on any popular radio station, BDS records it as being played. In fact, they can tell you which stations spun it, at what time of the day it happened, how many times, and what size audience was listening to it! You can check out their Web site at [www.bdsonline.com](http://www.bdsonline.com). Like Soundscan, you must pay to use BDS's services. But these are useful tools and highly recommended.

When creating your CD, don't forget to include a bar code. This can usually be obtained directly from the company you have manufacture your CD. They will charge about \$50 to create a UPC from their database. You should do this before your CD back cover artwork is finished, or leave a small white rectangle on the Zip disk that contains your back cover so they can pop a barcode on there. A barcode is important for several reasons. Most record retailers are Soundscan reporters and a UPC is necessary for them to be able to track a release. A UPC is also essential for a distributor to sell your music product to stores.

So get off the couch, dust off those boxes, and get your gameplan together. Create a one-sheet emphasizing your accomplishments and goals. Research distributors and find someone you feel comfortable working with. Get your artist on the radio and get your friends to request the hell out of it. Call stores to make sure they have your release and try and get it on a listening station. Use advertising in conjunction with tours, airplay, and reviews. Once the momentum starts building, you'll be so excited, and all the risk taking and creativity you put into it will have paid off. You might actually become so successful that you can finally quit your day job.

*Dylan Magierek works as a sales representative for Universal Music and Video Distribution. He is also a lecturer for the Music Recording Industry Program at San Francisco State University. In his extra time, he runs Badman Recording Co., a production company and label. He can be reached at [Dylmisc@aol.com](mailto:Dylmisc@aol.com).*

## Heads Up!



Your best choice is JRF...  
**Hands Down!**



201 579 5773 FAX 201 579 6021

CIRCLE 44 ON FREE INFO CARD

## Better.

Super nice compression: three layered stereo compressors in one box.

## Cleaner.

100 kHz bandwidth. Meticulous circuit design and layout.

## Cheaper.

"Compression at a near-unbelievable price-performance ratio...absurdly cost effective"

—Craig Anderton, EQ



### RNC1773

### Really Nice Compressor

Pristine analog audio path & precise digital control creates what some professionals are saying is one of the best compressors you can buy for under \$2,000!

**\$199** MSRP

**FMR Audio**

Austin, Texas

**1-800-343-9976**

CIRCLE 81 ON FREE INFO CARD



# Production Smarts

The beginning of  
a great band/  
producer  
relationship  
starts with a great  
production  
agreement

BY JAY JAY FRENCH

*A producer can be an extraordinary asset to a band. Take, for example, George Martin and The Beatles, Andrew Loog-Oldham and the Rolling Stones, or Mutt Lange with Def Leppard or AC/DC. There was a synergy between these artists and their respective producers that made for amazing recordings. There's a great deal of trust in that kind of relationship, and a production agreement between producer and band is a building block for that trust. To gain some perspective on exactly what a production deal is, EQ spoke to Jay Jay French. As the founder/guitarist/manager of Atlantic recording artists Twisted Sister and manager/coproducer of T.V.T. recording act Sevendust, Jay has had extensive experience negotiating deals. Here is what he had to say about beginning a production career, learned from his formative days with Twisted Sister.*

I cannot stress strongly enough the importance of a good attorney if you intend to take your production career seriously. Unless you're very good at writing up contracts, I always suggest that you hire an attorney to draft any sort of agreement. Both the producer and the band each need to have an attorney — even if

they're planning a very simple agreement. When money is owed, people misunderstand, their memory fades, and they say things like, "Hey, we didn't say we'd pay you." In the event of doing a very basic deal with a band, going to an attorney may eat up your profit. You might be able to write up something as simple as, "I So and So, promise to pay Mr. Joe Studio Owner for the use of his studio, pending a deal within a certain period of time (typically 9, 12, or 15 months), should I get a deal with a label. Whether it be an independent or major label, I agree to pay you if these tapes made at your studio are used for the release." Fine.

#### FIRST BASE

Here's a very basic example: Let's say you own a studio, you find a band you really like, and decide to extend your time to them for free. You say to them, "I'll let you record here, but we have to enter into an agreement that not only pays me when the band gets paid, but (e.g.) pays double." As the studio owner, you are taking the risk. Let's say it's a small studio and you normally charge

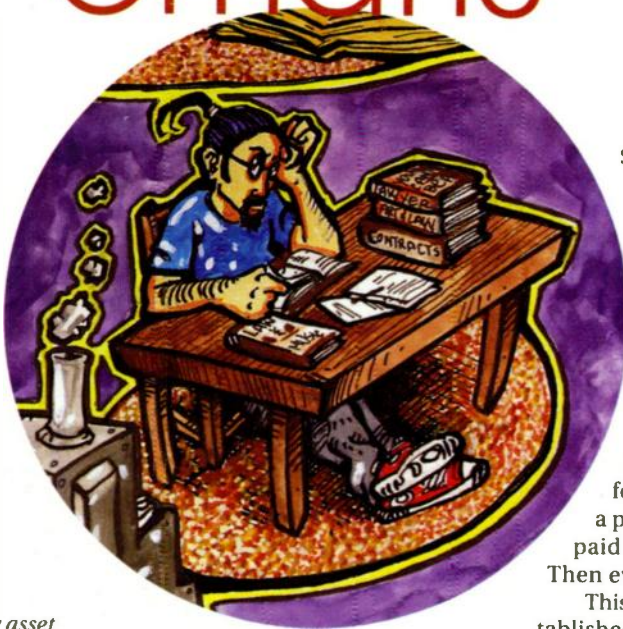
\$35 or \$50 per hour. The band has no money now, and wants to take these tapes around to try to get a deal — but they don't want any strings attached. They'd like to be able to have anybody produce their record. All you really want to do is engineer the demos and offer your studio — but the band is broke. So what's the incentive for you? The incentive is to have a predetermined price you will be paid when the band gets a deal. Then everybody is free and clear.

This type of arrangement can be established in a lot of different ways, but one of the more popular is that you double your normal studio rate and then add the engineering fee on top of that. If the band has "spent" \$2000, when they get the deal they pay you \$4000 plus an engineering fee. You have extended this courtesy to the band so they can go off and become rock 'n' roll stars; when they get the deal, you get double.

You don't expect to share anything later on and the band has freedom to do whatever they want without owing you anything more. You are providing the service and you get paid a handsome return should something happen. Then everybody walks away. That's the base level. *In all but the loosest of agreements — meaning that you really trust the band — the multitrack and mixdown masters should be owned by you, and only cassettes given out to the band for shopping the deal. This will give you protection so that (at the very least) if the record label wants the masters, they must pay you for the tapes.*

#### UP THE LADDER

The next step up from that would be when a band thinks you're a good pro-





# "NO FRILLS, NO FLUFF, JUST GOOD SOUND."

RECORDING  
MAGAZINE

The specs on this EQ are remarkable



"The specs on this EQ are remarkable. The distortion is so low and signal to noise ratio is so high that you'd think they had all digital parts in there."

RECORDING  
MAGAZINE



"It's sometimes nice to have the compressor (MC22) do the thinking for you – especially when it is as smart as this one."

GUITAR PLAYER  
MAGAZINE



"I was truly astonished at how hot an input signal I could crank into the MH4..."

ELECTRONIC  
MUSICIAN



"The MX22 & MX23 crossovers offer a winning combination of great sound quality, functional controls and nice perks ...subwoofer out."

PRO AUDIO  
REVIEW



**ENOUGH SAID.**

See your Mojo Series dealer

RANE CORPORATION TEL 425.355.6000 FAX 425.347.7757 WWW.RANE.COM  
IN CANADA: OMNIMEDIA CORPORATION TEL 514.636.9971 FAX 514.636.5347

CIRCLE 82 ON FREE INFO CARD World Radio History



**RANE**

www.rane.com



ducer, they want to do demos with you, you want to get them a record deal, and you own (or have access to) a studio. What happens if they do get a deal? You'd like to produce their album, and let's say they want the same thing. The most common agreement would be something that states, "Should a deal be acquired within a certain period of contracted time (normally one year from completion date of demos), then you would be the producer "of record" and would produce the first album. There are

problems with that. Most attorneys representing a band don't want the band locked into a certain producer. Or the label might want to bring in somebody else. And therein lies another whole set of issues. You can have a binding agreement designed so you'll be the producer, and if you're not the producer, then the record is not going to get done. You can construct a deal like that and the band could possibly sign it.

Now, the label might not love you as the producer, but if they want the

band badly, you have to figure that they like the demos you made with the band. If you don't have a contract with the band, and the label doesn't like you, you're blown out of the deal. If you do have a well-written contract, you'll either produce the album or be given money or points (or both) to walk away. This is known as a buyout, which can occur on different levels. If there's no buyout articulated in the production agreement between the band and the producer, the producer can claim anything he wants. He could really make a stink and hold out. To ensure that you get a return on your investment and don't get hurt, have the band sign to you personally — like a mini-record deal that has to BE sold in order for a larger label to get the band.

## TOP OF THE HEAP

An established producer may be recognized as a part of the "story" in making a record happen, and because of that, there is a reputation involved that may significantly enhance interest in the project. The producer can say they want an advance, points on the deal, or — if they are a songwriter — possibly get involved in the music publishing. If a producer winds up in a songwriting or arranging situation, the dynamics of the whole deal are altered. There's a great deal of value for a band in working with a well-known producer who can help them write or fight their battles with the record label for them — which is what a good producer does (like another manager). It's an important consideration because the band is up against a lot of politics. They need somebody who has a good mouthpiece to make things happen so the producer's value could be incalculable.

Any one of these examples could work out disastrously or could work out great. Nothing is written in stone, but you have to come to terms with what you are looking for. It really comes down to a matter of who the band is, who the producer is, and how much they need each other. If an agreement is correctly stipulated in advance, there should be minimal trouble. There are as many options as there are bands and producers, which is why I really insist that you *must* have a very good attorney who can help you figure out what you want given the circumstances.

*Inquiries to Jay Jay French may be directed to EQ Magazine via e-mail at [EQMagazine@aol.com](mailto:EQMagazine@aol.com)*

"...the meek shall inherit the earth."

VC3 PRO CHANNEL \$399

VC6 MEEKBOX \$599

VC5 MEEQUALIZER \$599

VC4 STEREO ENHANCER \$599

VC1 STUDIO CHANNEL \$1099

VC2 TUBE CHANNEL \$1999

SC2 STEREO COMPRESSOR \$1999

SC3 DAD STEREO COMPRESSOR \$2799

**JOEMEEL**

Our Sound Comes From A Higher Source

Got Meek?

JOEMEEL distributed by PMI 23773 Madison St., Torrance, CA 90505  
voice 310 373 9129 • facsimile 310 373 4714 • website [www.joemeel.com](http://www.joemeel.com)

CIRCLE 42 ON FREE INFO CARD



# How did Chris Andromidas make it to The Galapagos?

His scores have graced over 350 movies and tv shows, adding texture and romance to places as remote as The Galapagos and as bizarre as The Catacombs. Yet Chris Andromidas rarely leaves his home to record. And the microphone he depends on most often is the CAD E-200. "On my latest Discovery series, "Invisible Places", I recorded everything from french accordion to Armstrongesque muted trumpet to renaissance lute, I found the E-200 to be remarkably accurate."

So no matter where your music takes you, take along an E-200 from CAD. You'll get the sound you want, naturally.

Equitek E-200



P.O. Box 120 Conneaut, Ohio 44030 (216) 593-1111 Fax (216) 593-5395 E-mail [salesdept@ASTATIC.com](mailto:salesdept@ASTATIC.com)

Export Representative

M.M.S., Inc. P.O. Box 210065 Nashville, TN 37221 (615) 673-1100 Fax (615) 673-0995 E-mail [MMSInc@IX.netcom.com](mailto:MMSInc@IX.netcom.com)

CIRCLE 10 ON FREE INFO CARD



# Dupe-It-Yourself CD Duplication

With decreasing  
materials  
costs and new  
technologies,  
literally producing  
your own CDs  
is easier than ever



BY ROGER NICHOLS

Whether it is making a copy of your latest demos to give to a friend, producing 20 CDs to send to record companies to try to get a deal, or transferring DAT tapes to CD for easier access and increased long-term storage, there are plenty of good reasons to want to cut your own CDs.

## HISTORY LESSON

Times have changed since CD-R was introduced more than ten years ago. The first system available to cut your own CD was manufactured by Yamaha. The system consisted of a central control unit and multiple CD recorders. The system cost was about \$50,000 and had to be controlled from an external PC. To get digital audio onto the CD (it only recorded at 1x) you had to feed it from a Sony 1630 system, which cost another \$40,000. Oh, and don't forget that the blank CD-Rs cost \$85 each. You could not write part of the CD at one time and another part of the CD later, the whole CD had to be done at once.

Record producers would pay mastering facilities \$350 per CD to be able to walk away with their finished album on a CD-R that they could listen to at home on their CD player.

Some mastering rooms had multiple recorders in their Yamaha system so that they could make up to four CD-Rs at once. The bug had bitten us, and we could never get enough CDs.

Soon Sonic Solutions hit the market and Sony started producing CD-R recorders and the price of blank CD-R discs started coming down — to \$50 each.

Around 1994, Philips produced a stand-alone audio CD-R recorder (under various brand names like Marantz, Studer, Carver, Micromega, etc.) that would allow you to transfer your digital audio from DAT tapes or record analog audio through the built-in A/D converters. You could record one song and stop the CD-R recorder. You could add material as you needed in increments without “finalizing” the CD-R. When you were done adding tunes to your CD-R, you could “finalize” the CD-R and it would become a CD that could no longer be recorded. It would now play back on any regular CD player.

## THE TOC

The key to this ability to add songs on to a partially recorded CD-R is the Table Of Con-

tents or “TOC.” On a normal CD, the first thing recorded is the Table Of Contents that tells the CD player where each cut starts, how long it is, and other information needed for the CD player to skip around between cuts. Without a TOC, a CD player will display “NO DISC” when an un-finalized CD-R is inserted. CD-R recorders like the Philips used a temporary TOC area to compile information as the tunes were added to the disc. Once you were done adding things, the act of “finalizing” would gather this information and fill in the missing TOC. Once the TOC was written, nothing more could be added to the disc and CD players were happy to accept your CD.

## THE FUTURE IS BRIGHT

Now there are CD-R recorders coming out of our ears. You can buy them off the shelf at any computer store, and some new computers come with CD-R recorders instead of CD-ROM drives. Most recorders record at 2x or 4x and play back at 6x or even faster. Kodak makes a 6x recorder, if you need the speed.

CD-R software now lets you drag and drop files to the blank CD-R disc. It looks just like a hard disk on your computer, except that you can't erase it. If you drag audio files to a blank CD-R disc, you can produce an audio CD that will play on any CD player. With a 4x CD-R recorder you can record a 60-minute CD in 15 minutes. This makes it easier than ever to make CDs of your music for your friends.

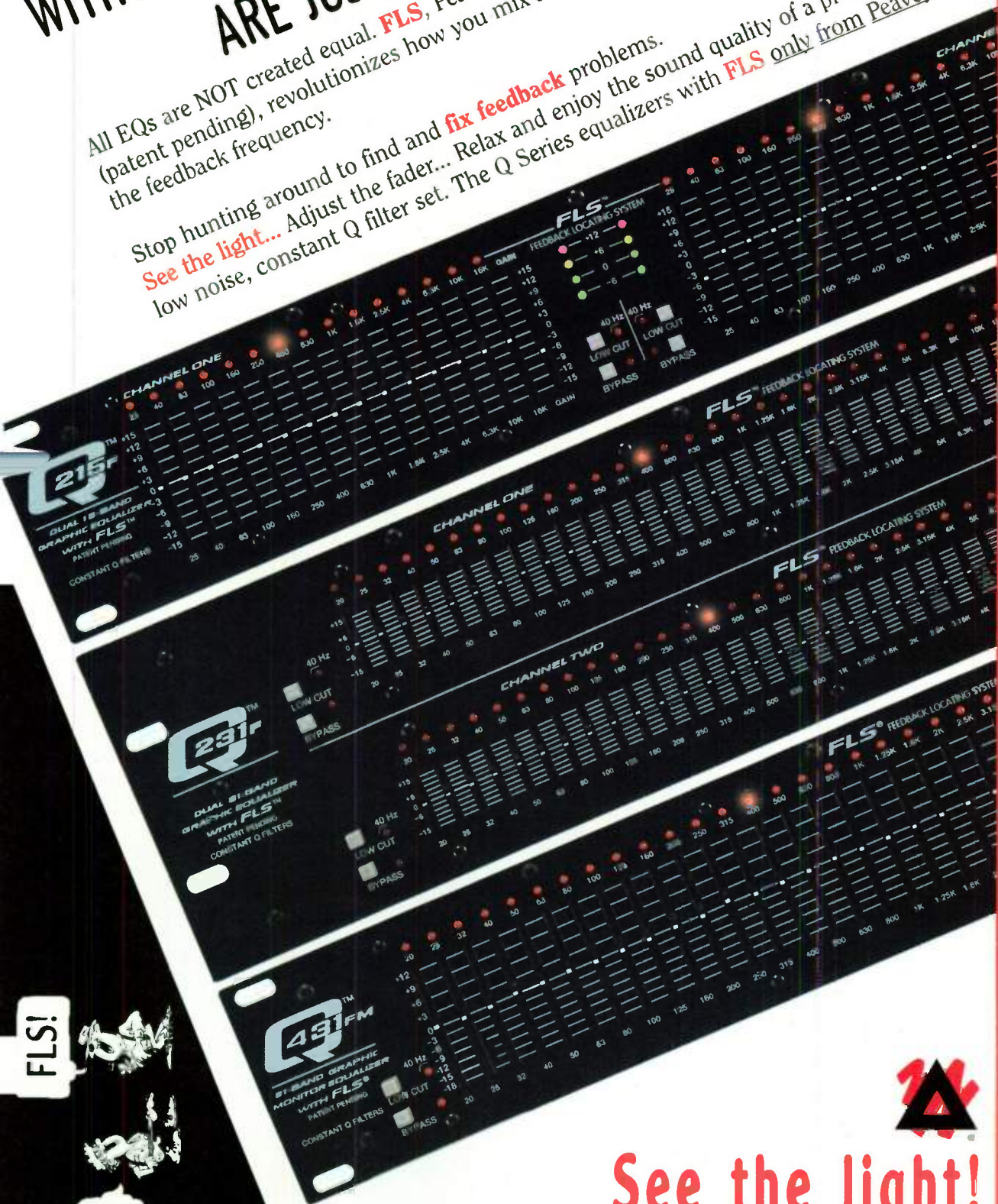
The best part of this whole deal is the cost. You can buy a CD-R drive for your computer for under \$300. Drives that record at 4x are under \$500. Blank CD-Rs are available at all computer stores from \$1 to \$5 each, depending on the brand name. I have even seen discs that were *free* after the mail-in rebate. You can't beat that price.



# WITHOUT **FLS**, THE REST ARE JUST EQUALIZERS!

All EQs are NOT created equal. **FLS**, Peavey's unique Feedback Locating System (patent pending), revolutionizes how you mix sound by **showing** you the feedback frequency.

Stop hunting around to find and **fix feedback** problems.  
**See the light...** Adjust the fader... Relax and enjoy the sound quality of a precision, low noise, constant Q filter set. The Q Series equalizers with **FLS** only from Peavey!



- ▲ Feedback Locating System
- ▲ Constant Q topology
- ▲ Internal power supply
- ▲ Precision filter components
- ▲ ISO frequency filter centers
- ▲ Low cut and Bypass switches
- ▲ More than 95 dB signal-to-noise ratio

FLS!



What's a 3-letter word for "little red light that tells you where your feedback is?"

**See the light!**  
(and hear the difference)

CIRCLE 56 ON FREE INFO CARD

The MONITOR Magazine is a publication filled with the latest information musicians want to know. To receive 4 issues for only \$5 (price good in U.S. only) send check or money order to: Monitor Magazine, Peavey Electronics, 711 A Street, Meridian, MS 39301 • (601) 483-5365 • Fax: (601) 486-1278 • <http://www.peavey.com> • ©1997

**PEAVEY**



# The Project Record Label

## MULTIPLE COPIES

If you want to make lots of copies of your CDs, there are two ways to do it. You can pop in a fresh blank every 15 minutes until you have the 50 CDs you need, or you can get a CD duplicator. Advertisements for CD duplicators are showing up all over the place. Lower prices of drives have allowed for reasonable prices on multidrive, stand-alone duplicators. I have a Microboards system that consists of one playback drive for the master CD and seven 4x recorders that can duplicate the source simultaneously. With this stack, I can produce 28 discs per hour if the original is 60 minutes long. Even more if the original is shorter.

This type of duplicator performs bit by bit copies so that the copies are exact clones. It doesn't matter if you are duplicating audio CDs to send to A&R departments, or CD-ROMs of your new catalog to prospective customers, or prereleases of your new software title for magazine reviewers.

## PRINTING LABELS

If you are going to look professional when you send out those CDs, you have to have nice looking labels. No more writing on the CD with a Sharpie or hand-writing the blank label that comes with the blank CD-R.

There are two methods of adding professional looking labels to your newly dupli-

cated CD. The first is stick-on labels. There are many brands of precut labels designed for placement on the back of the CD. These labels can be printed on any laser printer or ink jet printer. You can buy tools from several manufacturers that help you center the label perfectly on the CD. The finished labels look good and are suitable for impressing your client with a professional image.

The second method is using a printer that prints directly on the back of the CD-R. Blank CD-R discs are available from many manufacturers with a "printable backing" in either a white or gold color. The backing has been designed to protect the sensitive data area of the CD-R while allowing you to use a thermal or ink jet printer to print whatever you want directly on the CD-R. Fargo makes a color ink jet CD printer. Rimage makes a monochrome (depending on the color of the ribbon) thermal CD printer.

## FULLY AUTOMATED

There are systems that you can set up that will automatically duplicate your CDs and print the labels without human intervention. Press the GO button when you leave at night and come back in the morning to find 200 finished CDs with labels printed on them.

With these automated systems, you buy the blank CD-Rs on a spindle. The autoloader picks up a blank CD-R from the ingoing spin-

dle, places it in the recorder, closes the drawer, and starts the recording process. After the CD is recorded, the autoloader picks up the CD and places it on the tray of the printer. The printer sucks the CD inside, prints the label, and offers the prize back to the autoloader. The finished disc is placed in a stack on the outgoing spindle. Pretty slick.

## FINALLY

With the prices of CD duplicators and blank CD-Rs dropping rapidly, it is now reasonable for an individual who needs a few copies of important CDs for distribution to have his own duplication system. It doesn't need to consist of seven recorders; it may only be one player and one recorder. Allowing the duplication to go on unattended with a stand-alone device enables you to continue working on something else. You can be recording your next hit, editing the next CD, writing your next article, or whatever it is you need to be doing. Having a separate stand-alone system does not tie up your computer while you are duplicating CDs.

If you are thinking about a small duplication system, just do it! For short runs it is now cheaper than sending a master to a CD plant for duplication. I hope that this time next year I will be talking about DVD duplicators and \$1 blank DVD-R discs. I won't hold my breath, though.

EQ

## DO-IT-ALL DUPLICATORS

How serious are you about doing your own CD duplication? There are a number of project studio duplicators available. Here are a couple of examples that show the variety that's out there...

### Hard Problem, Soft Solution

Microboards Technology's CopyWriter Pro, consists of proprietary control software, up to seven 4x/12x CD-recorders and one 12x CD-ROM reader housed in a streamlined tower. Entry-level priced at \$1995 for a two-CD-recorder configuration, the CopyWriter Pro is the first software solution on the market for multiple CD-R recording. Price for the six-CD-R drive, one-CD-ROM drive version is \$4895 and \$5595 for a seven-CD-R drive model.

The CopyWriter software duplicates data and audio formats, and operates in a Windows 95 environment. System requirements include a 200 MHz PC with 32 MB of RAM, PCI bus master SCSI host adapter, and a 1 GB hard drive. For more information, contact Microboards Technology, 1480 Park Road, Suite B, P.O. Box 856, Chanhassen, MN 55317. Tel: 612-470-1848 or 800-646-8881; Web: [www.microboards.com](http://www.microboards.com). Circle EQ free lit. #128.

### CopyPro CD-R 5000 A CD Factory

The CopyPro CD-R 5000 is an industrial-grade autoloading duplicator designed for rapid, high-volume CD duplication, up to 32 CD copies per hour fully configured with eight CD-R drives. The CD-R 5000 utilizes CopyPro's own patent pending vacuum-based (pneumatic) robotics in conjunction with a caddyless, spindle-based loading and unloading mechanism.

The unit can hold up to 8 CD-R writer drives, and is driven by a Pentium-based CPU. Bit-for-bit verification allows for immediate testing for defective discs. CopyPro also offers the CD-R 5000 with an inline printing option, utilizing a 300 dpi mono-color CD printer.

The CopyPro CD-R 5000's caddyless "walk away" automated operation and handling of up to 450 CD-R media in a single run offers overnight production for time-critical CD publishing and duplication needs.

For more information contact CopyPro, Inc., 1590 Solano Way, Concord, CA 94520-5300. Tel: 800-887-9906 (international, 510-689-1200). Web: [www.copypro.com](http://www.copypro.com). Circle EQ free lit. #129.

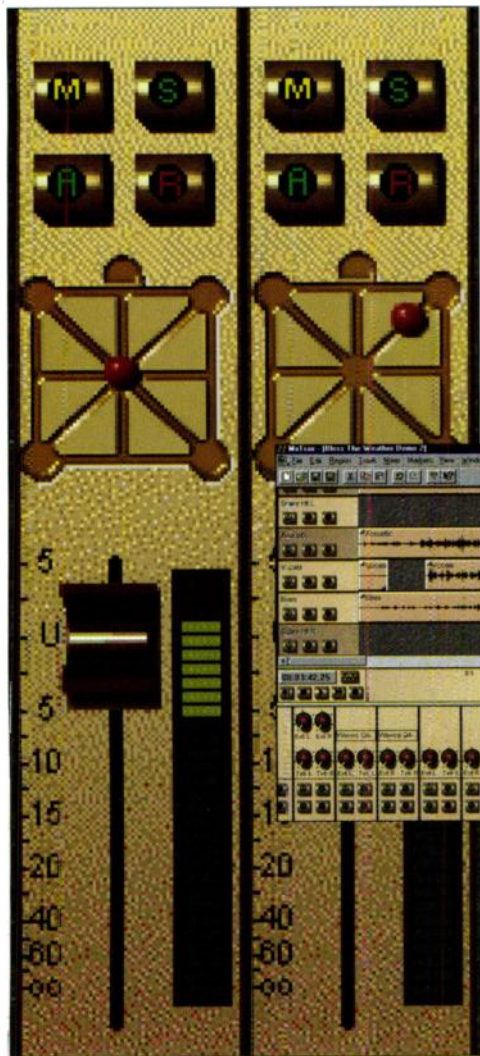
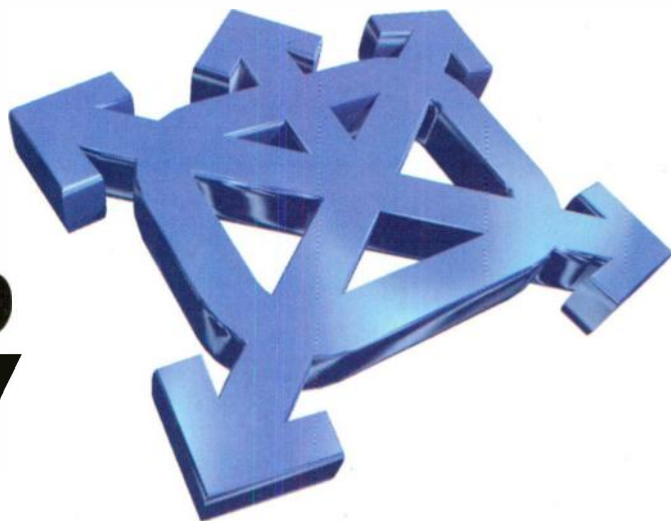


Microboards  
CopyWriter Pro



# Mx51™

## 5.1 SURROUND THE EASY WAY



**Mx51™ from Minnetonka Software;**  
the elegance of MxTrax and the power of V8™  
come together to deliver a revolutionary new tool  
for surround sound production.

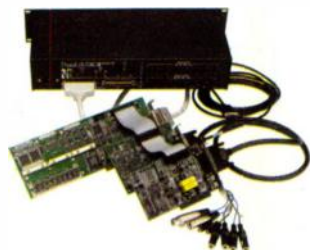
Finally, a professional audio workstation designed  
specifically for true multichannel format mixdown.  
With Mx51 software, a Digital Audio Labs V8  
system, and a PC, surround mixes are a breeze:

- Individually pan each channel with Mx51's five way pan controls.
- View surround panning on all channels simultaneously.
- Dynamically automate all surround panning in real time.
- Automatic 5.1 bussing on V8's mixer.
- Easy-to-use adjustable subwoofer crossover

**Plus get all the power of the standard MxTrax/V8 combination, including:**

- 16 *true* hard disk tracks
- Drag and drop automated digital mixer
- True ADAT & DA88 integration\*
- LTC and VITC video sync\*
- Optional realtime 3rd party effects from the V8 audio gearhead partners

Breakthrough tactile interface lets  
you *feel* surround panning  
as you *hear* it.



### Why the V8?

The V8 from Digital Audio Labs is a modular audio workstation platform for the PC. Systems can be configured with a choice of analog and digital I/O, MDM interfaces for ADAT and DA88, and realtime DSP options Contact Digital Audio Labs for information:

(612) 559-9098 [www.digitalaudio.com](http://www.digitalaudio.com)

**Minnetonka**  
AUDIO SOFTWARE, INC.

17113 Minnetonka Blvd. • Suite 300  
Minnetonka, MN 55345 • (612) 449-6481  
[www.minnetonkasoftware.com](http://www.minnetonkasoftware.com)

\*Some options require additional hardware.

Prices and specifications subject to change without notice.

**CIRCLE 43 ON FREE INFO CARD**  
World Radio History



# Mic Auditions



MIC AUDI



*There's no doubt that microphones are one of the most important tools a studio has. And every year, there are more and more models introduced. Which ones are right for you?*

*To help you decide, EQ presents six microphone auditions from noted manufacturers such as Earthworks, Audix, DPA (formerly B&K), Neumann, Peavey, and Sennheiser.*

**'98**



## Audix D4

BY STEVE LA CERRA

The D4 is the latest in Audix's line of D-Series instrument microphones. Audix refers to the D4 as a "sub-impulse" dynamic microphone, because it's designed to capture high-SPL sound sources that contain significant frequency content below 100 Hz. The D4 employs Audix's VLM (Very Low Mass) technology to provide quick transient response. While the D4 might be looked upon as a "kick drum" mic, Audix suggests that the mic can also be used in other applications, including piano, bass and horns. I took the D4 out on a tour with Blue Öyster Cult for a couple of weeks to give it a test spin.

One thing I immediately liked about the D4 is its small size. Most kick drum mics come in huge capsules that are difficult to place and can be impossible to get inside of a drum with a

**MANUFACTURER:** Audix Corporation, P.O. Box 4010, Wilsonville, OR 97070-4010. Tel: 503-682-6933. Web: [www.audixusa.com](http://www.audixusa.com).

**APPLICATION:** Dynamic microphone for high-SPL instruments with extended low-frequency response.

**SUMMARY:** A welcome addition to any live sound or studio microphone arsenal.

**STRENGTHS:** Extended low-frequency response; easy to position; solid construction.

**WEAKNESSES:** None, really.

**PRICE:** \$329  
**EQ FREE LIT. #:** 130

small hole in the front head. Because the D4 is so compact, it's easy to insert. You can move it around without a problem, and its weight won't make a boom stand sag.

I used the D4 on Bobby Rondinelli's kick drum for the first few shows.

After moving the mic around a bit to find the sweet spot, the sound that the D4 captured was brutal — exactly the way it should be for Bobby's sound. Bottom end was extended but very tight — without the sloppiness that some LF-type mics can produce. The

D4 also had a nice attack, which cut through the mix consistently and (generally) with minimal EQ. Note, however, that the D4 is sensitive to placement. Our "spot" turned out to be way inside the shell, approximately 5 to 6 inches from the beater head and slightly to the left of center.

When we tried the D4 on a 14-inch floor tom, it ruled. The tonal decay of the drum was beautifully reproduced, but it still had enough smack to define the stick hit within a busy mix. Plus, the small size kept it out of Bobby's way (again, the sonic bottom was round without being sloppy). On snare drum, the D4 was OK, but not meaty enough in the lower-midrange.

Next we used the D4 to mic bassist Danny Miranda's SVT rig. In this case, the mic captured all the growl from Danny's rig, but lacked the fat bottom we desired (we used his DI to round it out). This could have been due to placement, which was about a 1/2-inch from the cabinet grille, slightly off-center from one of the drivers. We could have pulled the mic further away from the cabinet in an effort to let the LF wavelengths develop a bit more, but then extraneous sound from the rest of the stage would have been way too loud. Under studio circumstances — where the mic could be backed off from the cabinet a little more — the D4 might have performed differently. As an experiment, we tried the D4 on Danny's vocals. This worked out really well — plenty of presence, good feedback rejection, and (interestingly) not a lot of proximity effect.

On Buck Dharma's guitar rig, we compared the D4 to a new Shure SM57 and they sounded a lot alike. The D4





# Gina™ Digital Multitrack.

**Get Music Into Your Computer.  
Get Music Out of Your Computer.  
Make Records. Have Fun.**



**Y**ou've just written the masterpiece to end all masterpieces. The one that's destined to be the title track of your CD. Do you turn to your trusty four-track recorder? Not a chance. This isn't a demo—this is your life. Okay. So you call up a major studio and book a month or so of premium session time. (Thank goodness you're independently wealthy.) Or you walk up to your PC, plug into Gina, and record, arrange, and master your music with unparalleled fidelity and precision. You make music without watching the clock. Without settling for demo quality. Without being restricted by numbers of tracks, outdated media, or proprietary, closed-ended systems.

## **Gina Digital Multitrack. Enjoy.**

**\$499, including multitrack recording/editing software.**

Gina is 100% compatible with all of the best Windows 95 multitrack recording and editing software, including programs from Steinberg, Sonic Foundry, Cakewalk Music Software, Innovative Quality Software, SEK'D, and Syntrillium Software.

*Is your PC ready for Gina? Download the Echo Reporter™ system analysis software from [www.event1.com](http://www.event1.com)  
Gina is designed and manufactured in the U.S. by Echo Digital Audio, an Event Strategic Partner*







produced a touch more air, but you'd have been hard-pressed to identify one from the other in an A/B comparison. This is contrary to our experience on the snare, because, on snare, the D4 sounded much brighter than a '57.

Overall, the D4 is a really smart choice for doing live sound because it can be used in so many applications. I could easily see miking an entire drum kit with D4's and getting a great sound. The D4 never encountered an SPL that it could not handle, and, believe me, Blue Öyster Cult's stage volume is no Debussy *Nocturne*.

The D4 mic is ruggedly built and even survived a 5-foot drop on the head without a scratch or dent in the grille. It's versatile enough that everyone should have at least one on hand — and it's affordable enough that everyone can do so.

## Earthworks Z30X and QTC1

BY MIKE SOKOL

Microphones are like paint brushes. Some are wide and sloppy, allowing you to heap on huge amounts of paint, while others are fine and delicate for doing close-in detail work. A good audio engineer (painter?) knows how to pick the right mic for the job at

hand. And while some mics (brushes) leave desirable streaks and patterns, sometimes you really want a

of realism and stereo imaging superior to a standard mic that's been designed for flat frequency response alone with disregard to impulse response. I've got to admit,

my experiments with phase shifts on the stereo sound field lead me to believe they must be on to something. They've certainly got my attention.

Earthworks sent me a pair of the omni QTC1's and a cardioid Z30X for some live and studio work. While the slim, tapered look of these mics seems to relegate them to the studio, I took them out on several live sound and recording gigs with some interesting results.

First, the omnidirectional QTC1's: I

glossy finish without any brush marks. That's why there are so many microphone designs. The world is full of sounds and sonic situations, and each one calls for the correct mic. And while sometimes a quick coat of paint with a familiar brush is the correct answer (think SM-57 on a snare), other times you can get better results with a different sort of mic.

Earthworks has two very interesting mics that could fit in your bag o' brushes: the QTC1 (omni) and the Z30X (cardioid). Besides boasting very low self-noise, both mics have optimized impulse response, which, depending on your viewpoint, is either a singularly important design spec for microphones or the emperor's new clothes. In a nutshell, the very small diaphragm coupled with the physical design of the mic body (and the electronics) produces low phase shift and a clean impulse response. According to Earthwork's Eric Blackmer, this provides a degree



**MANUFACTURER:** Earthworks, Inc., P.O. Box 517, 37 Wilton Road, Wilton, NH 03086. Tel: 603-654-6427. Web: [www.earthwks.com](http://www.earthwks.com).

**APPLICATION:** Studio-grade mics that also work well for live stage and voiceover applications.

**SUMMARY:** Brings laboratory precision to recording and live applications; very low self-noise; small capsule condenser with excellent impulse response and extremely flat frequency response (4 Hz to 40 kHz).

**WEAKNESSES:** Lacks coloration (but you may consider this a plus).

**PRICE:** \$950 each, both models; \$2000 for matched pair in cherry box.

**EQ FREE LIT. #:** 131



## EARTHWORKS LAB102 MIC PRE

Earthworks, Inc. also produces mic preamps: the LAB101 and LAB102. The technology is based on the same [microphone] philosophy of accurate time response (0.25 microsecond rise time) and frequency response ( $\pm 0.1$  dB from 2 Hz to 100 kHz). The LAB102 turned out to be an exceptionally quiet and well-behaved mic preamp. Controls include phantom power, polarity reverse, stepped and variable gain outputs, and a Standby/Mute switch. The LAB101 is a mono unit, while the LAB102 is the stereo version.

The LAB102 sounded great teamed up with the QTC1's — really showing off their low self-noise. And we tried a variety of other studio and live mics on it as well with equally satisfactory results. I placed it in another project studio, where it was used instead of the built-in mic preamps on a TASCAM board, and the studio owner quickly became a convert. As with other Earthwork's products, this preamp doesn't seem to have a real sound of its own. It "just" adds gain without coloration. Nicely done.

—Mike Sokol

used a pair of them initially on a hot conga set tucked down inside the kit. Now, you could never make this sort of close-miking work with a pair of cardioid mics, but a good set of omnis is great in this application. Since the off-axis frequency response of the QTC1's was just about perfect, there wasn't any coloration from the off-axis drums. So we successfully miked the full kit with just two omni pattern mics instead of the six or seven cardioid mics normally used. It sounded great, too, since they seemed to have more "reach" than you would expect from omnis. Next, I tried them on the Maryland Symphony Orchestra in the Maryland Theatre. While you wouldn't normally use omnis in a close-spaced pair from the center of the room, the lack of backside coloration and excellent impulse response made for a very realistic stereo recording.

Next up was the cardioid-patterned Z30X for vocals and acoustic guitar. For voiceover radio work, it was outstanding. You could get a very flattering "male bottom" with just a touch of equalization, and the high end was silky smooth. This could make a nice replacement for your aging RE-20 in the sound booth. I also loaned it to another project studio in town for some singing tracks, and they fell in love with it. On acoustic guitar, the controlled bottom end gave a very big sound without going into tubby mode (often a problem with cardioid mics on a big-bodied guitar). And the strings stayed very focused without the strain you sometimes hear from a condenser mic. We liked the sound a lot.

In general, these mics don't have a real sonic signature of their own. So if you're expecting a glitzy "tiz and boom" or "tube sound," these won't do it for you. But they do seem to put out what you put in with extreme accuracy. And that's no mean feat, indeed.

BROADCAST VIDEO PRO-AUDIO MULTIMEDIA AUDIO VISUAL INTERFACE CUSTOM CABLING **You.**

**POWER TEAM MARKERTEK.**  
America's Largest Systems & Equipment Catalog.

**www.markertek.com**  
America's Largest Web Site  
For Audio • Video • Multimedia Supplies & Equipment  
**16,000 Products Orderable On-Line !**



### Our New 1998 Catalog Is HERE !

America's largest (328 pages with all new color section) and most complete supply and accessory catalog in the entire industry contains thousands of exclusive and hard-to-find items for all levels of Broadcast Video, Pro-Audio, Multimedia and Audio-Visual production.

Call • Write • Fax • E-Mail

**SALE! PLUS FREE ADHESIVE!**  
**MARKERFOAM™ ACOUSTIC FOAM**  
**GIANT 54"x54"**  
**Immediate Shipping**



2" Reg. \$29.95. Now \$19.99  
3" Reg. \$39.95. Now \$29.99  
**KILL NOISE QUICK!** High performance, full size sheets of super high density Markerfoam. EZ mount. Blue or gray. Super-effective sound absorption for studios. Markerfoam offers best value, looks professional and is proven in studios worldwide. Request Foam-Buyers Guide/Catalog, specs and free samples today. VISA, MC, AMEX, COD, POS, QUANTITY DISCOUNTS.

**MARKERSTIK™** foam adhesive. FREE with any foam purchase in this ad. Limited Offer. A \$4.95 per tube value.

**MARKERTEK BLADE TILES**  
**HIGH PERFORMANCE**  
**LOW, LOW COST!**

\$3.49 per tile, 16x16x2". America's best acoustic tile value, only from Markertek. Charcoal or Blue. Also available: 16x16x3" (as shown) \$4.49 each or 16x16x4" \$5.49 each.



**SONEX**  
**ALL THE COLORS & SIZES**  
**PLUS GREAT PRICES!**

**MARKERTEK JUMBO**  
**SOUND ABSORB BLANKETS**

Heavy duty, 72" x 80" padded blankets absorb sound wherever they're hung or draped. Fabulous for stage, studio & field use. Top professional quality at a super saver price. Weight: 6 lbs. Black. \$19.99



**MARKERTEK®**  
**VIDEO SUPPLY**

800-522-2025 • 914-246-3036 • Fax 914-246-1757  
4 High Street, Saugerties, NY (USA) 12477  
E-Mail sales@markertek.com

CIRCLE 48 ON FREE INFO CARD



## Sennheiser Evolution Series

BY MIKE SOKOL

I like microphones waaaaaay too much. Even though I've got a lot of mics in my studio and road cases, it seems I'm always looking for the perfect mic for each sonic situation. And while a lot of what I use comes pretty darn close, I usually want a little bit better fit. (Does this sound familiar?) So Sennheiser had to get me stirred up by sending a briefcase full of mics. (I will be strong and not buy any more mics....) That's right, its

new Evolution mics came in sales-presentation form — a custom foam-lined briefcase with all the goodies a mic junkie could want: tech and sales literature, mic clips, and, most important, one each of their Evolution Series mics.

I got the following mics for review: E 825-S (entry-level cardioid vocal mic with switch); E 835-(S) (mid-level cardioid vocal mics w/wo switch); E 845-(S)

(mid-level super-cardioid mics w/wo switch); E 855 (premium super-cardioid vocal mic); E 602 (large diaphragm



## No Other Card Can Touch It.

With built-in Sample Rate Conversion and Multi-I/O the ZA2 is the Master of CD Mastering.



The ZA-2 includes the professional features the other cards leave out. Its powerful 24-bit DSP sample rate converter lets you take inputs directly from a 48kHz pro DAT or a 32kHz LP DAT, and converts them on the fly to perfect 44.1kHz for CD mastering. Its Multi-I/O configuration gives you AES/EBU on real XLR cables and S/PDIF (both optical and coax) inputs and outputs, plus analog outputs for monitoring. You can use all the inputs and outputs simultaneously to do sample rate or format conversion (for example, S/PDIF in and AES/EBU out) or tricks like managing SCMS, or manipulating DAT start ID's or CD PQ codes — and you can switch back and forth between inputs with just a few mouse clicks.

The ZA2 delivers up to 24-bit recording — beyond the range of any commercially available A/D converters. It also works as a Windows sound card, converting all wave audio data (even mono, 8-bit, or 11kHz) to 16-bit stereo. You get drivers for Win95 and NT, plus Sound Forge XP 4.0 editing software and a discount upgrade path to CD Architect.

Basically, the ZA2 packs in more features than we can cover in an ad. Check it out at <http://www.zefiro.com> or call 714.551.5833 and find out how affordable the right card can be.

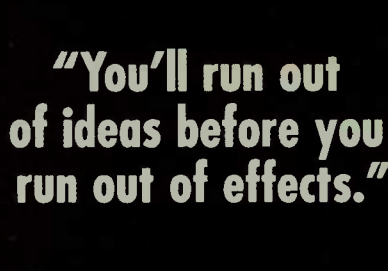


Our new InBox has an outstanding mic-pre & built-in 20-bit A/D converter for just \$295!

CIRCLE 97 ON FREE INFO CARD



# The New PCM 81 Digital Effects Processor



**"You'll run out  
of ideas before you  
run out of effects."**



Scott Martin Gershin  
Sound Designer



**NEW FEATURES • Pitch Shift algorithms on-board • 20 seconds of delay • AES Digital I/O**



**T**he new PCM 81 Digital Effects Processor has everything that made the PCM 80 the choice of professionals – and more. More effects, more algorithms, longer delay and full AES/EBU I/O. Each effect has an uncompromised stereo reverb with several voices of additional effects. A full complement of *Pitch Shifters* provides everything from pitch correction to unique special effects. 300 meticulously-crafted presets give you instant access to pitch, reverb, ambience, sophisticated modulators and dynamic spatialization effects for 2-channel or surround sound applications.

With its huge assortment of superb effects, the PCM 81 is the

perfect tool for a sound designer like **Scott Martin Gershin** of *Soundelux Media Labs*. Scott, who used the PCM 81 to process his voice as the voice of *Flubber*, says, "This is the best pitch shifter I've used. Our job is to create emotional illusions in audio and the PCM 81 is a powerful tool to get us there. I feel I have only scratched the surface of what can be created on the PCM 81 and encourage everyone to explore the depths of this processor."

Explore the depths with Scott's customized presets – **Send us proof of purchase and your PCM 81 serial number by July 30, 1998, and we'll send you the Scott Martin Gershin Preset Card – FREE.**

Heard In All The Right Places

**Lexicon**

A Harman International Company  
World Radio History

3 Oak Park, Bedford, MA 01730-1441  
Tel: 781 • 280-0300 Fax: 781 • 280-0490  
Email: info@lexicon.com Web: www.lexicon.com

**CIRCLE 45 ON FREE INFO CARD**

Scott Martin Gershin's film credits include:  
*JFK, True Lies, Braveheart, Flubber*  
and *Mouse Hunt*



cardioid mic for bass and kick); E 604 (compact cardioid mic with integral drum clip); E 608 (super-cardioid clip-on for horns and drums); and an E 609 (flat-profile super-cardioid mic for guitar cabinets and drums). What's a guy to do? Well, since I had a big show scheduled the next weekend, I took them out

**MANUFACTURER:** Sennheiser Electronic Corp, 1 Enterprise Drive, P.O. Box 987, Old Lyme, CT 06371. Tel: 860-434-9190. Web: [www.sennheiserusa.com](http://www.sennheiserusa.com).

**APPLICATION:** Stage mics for both instrument and vocal sound-reinforcement and live recording. Includes the E 825S, E 835 & E 835-S, E 845 & E 845-S, E 855, E 602, E 604, E 608, and E 609.

**STRENGTHS:** The Evolution Series of microphones is designed with both the professional sound person and weekend road warrior in mind; they give you the legendary Sennheiser sound without breaking the budget; nicely balanced engineering for each application.

**WEAKNESSES:** The optional on-off switch.

**PRICE:** \$129 to \$349  
**EQ FREE LIT. #:** 132

on the road and fired those babies right up.

The act was Carnivalito, a 7-piece Brazilian-Jazz act with a full drum kit, congas and djembe, electric and bass guitars, piano, and brass. This was going to be fun! I used the E 845's on the horns, the E 855 on vocal, the E 602 on kick, the E 604 on rack tom, and the E 609 on electric guitar. I was in for the whole enchilada — either these new mics worked properly or I was in for a whole mess o' trouble. The bottom line: the whole Evolution series worked great!

The E 845's were excellent on the brass — no overloading even when in the bell of a baritone sax, great gain before feedback, and a gentle presence boost I didn't have to notch-out to keep the levels under control. The E 602 [kick] sounded like a quality large-diaphragm dynamic (my normal mic in that position being an Electro-Voice RE-20). The E 604 was a real hit on rack toms (instead of my normal Sennheiser 421's). The E 604 seemed to have just the right pattern to get an excellent drum sound

while ignoring the rest of the kit. The one-piece drum-clip was perfect: you just hooked it onto a drum rim, loosened the screw and slid the mic into position. I'm gonna get myself a bunch of the E 604's. The E 609 may not replace the venerable SM57 as the standard working mic for electric guitar cabinets, but it certainly had great tone on a Marshall cabinet, and the close-mount flat profile was very cool. This would be a great mic for jazz guitarists who are looking to simply amplify the inherent tone coming out of their speaker cabinet, rather than clone the standard Stratocaster/Marshall/Celestion/SM57 combo that's a sound unto its own.

Sennheiser has really done their homework on the Evolution series. The series offers smooth frequency response, high SPLs without overload, one mic clip fits all, no phantom power required, integral clips on the E 608, E 604 and E 602, and a price range affordable to the working musician. (List prices range from \$129 for the E 825-S up to \$349 for the E 609.) The only thing I didn't like was the optional On-Off switch on the mics. [Noted by the (S) in the part number.] I know that some people like them, but I only use a switch on a talk-back mic. Any place else and it's sure to be turned off at the most inappropriate time (remember Murphy?). I usually tape all switches "On," just in case.

The only real problem with mic auditions is that sometimes I just hate to send them back. Now, if could just get a few more of those 604's and an extra 608 or three.... Oh yeah, and a spare 855 in case I get two singers....

*Mike Sokol is a communications integrator and audio engineer with too*

*many microphones (just ask his wife). Visit his website at [www.soundav.com](http://www.soundav.com) to review past columns. His book The Acoustic Musician's Guide to Sound Reinforcement and Live Recording is now available at [www.amazon.com](http://www.amazon.com) or directly from his Web site.*

## Peavey PVM 22 Diamond Series

**BY STEVE LA CERRA**

Peavey's PVM 22 is a cardioid, dynamic microphone that utilizes Peavey's patented technology for coating the diaphragm with an extremely thin diamond layer. This technique is primarily intended to increase the stiffness of the diaphragm while keeping it very light — a requirement for good high-frequency response. Although the PVM 22 looks like a "handheld vocal mic," it can be used to mic instruments (which we did). The folks at Peavey sent us three PVM 22's, which we promptly took out on a small club road trip.

The PVM 22 is housed in a well-made, die-cast, zinc housing finished with a black

**MANUFACTURER:** Peavey Electronics Corporation, 711 A Street, Meridian MS 39301. Tel: 601-483-5365. Web: [www.peavey.com](http://www.peavey.com).

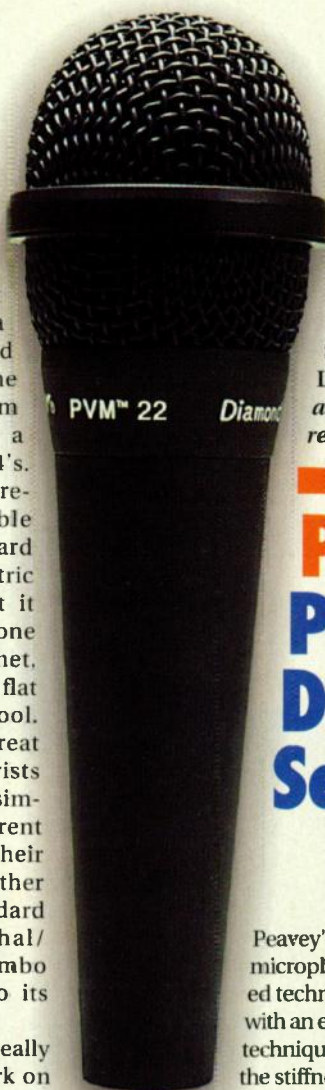
**APPLICATION:** Stage mic for handheld vocal or instrument miking.

**SUMMARY:** A very good-sounding, versatile microphone.

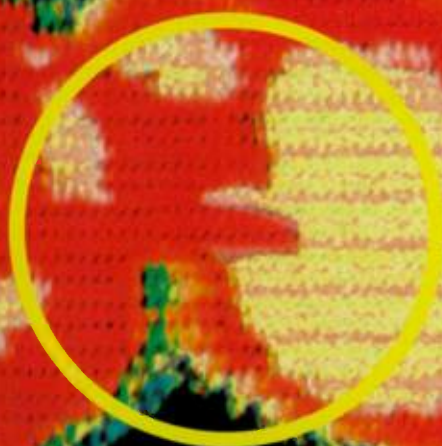
**STRENGTHS:** Good feedback rejection, crisp top end and cosmetically appealing.

**WEAKNESSES:** Frequency response does not extend to the bottom octave.

**PRICE:** \$149.99  
**EQ FREE LIT. #:** 133







# IF IT'S THERE YOU'LL HEAR IT

**dynaudio**acoustics

Ultra Precision Studio Monitors

CIRCLE 02 ON READER CARD





rubberized paint, making for a nice-looking package. Our experience showed that this finish resisted scratches and contributed to the mic's low-profile appearance. A stand clip is included, and we're happy to see that Peavey continues the trend of providing pliable rubber clips that stand up to abuse better than hard plastic clips.

Our first task for the PVM 22's was vocal miking of the entire frontline for the band Driving Blind. These guys take their vocals seriously, with a lot of three-part and four-part harmonies. The PVM 22's sounded very good. Proximity effect was subtle, allowing the singers to move in close to adjust balance without getting the bloated, bottom-heavy tone typical of many cardioid dynamics.

Feedback rejection was excellent — we were able to crank the front wedges up loud without experiencing any problems. Frequency response was consistent to about 30 degrees off-axis; any further movement off-axis and the bottom end began to drop off. Mechanically transmitted noise from mic stands or handling was noticeable, but very low in level and well damped. Generally, the PVM 22's output was about 4 to 5 dB hotter than a Shure SM58, though it wasn't so strong that it could present problems for headroom-challenged mic preamps. Lead vocalist Kim Lee commented that he liked the PVM 22's crisp top end in his monitor.

We then used the PVM 22's on a drum kit (contemporary jazz) for kick, snare and rack tom. On kick, the mic was placed center, just inside a hole in the front head, pointing towards the beater. Again, the modest proximity effect proved to be a strength. Although the bass response didn't give us the heart attack factor, the low end was tight and well controlled. On snare, the PVM 22 did a good job of delivering a crisp sidestick sound without sounding too bright on the regular snare hits. Rack tom was reproduced with a nice decay, though a bit shy in the bottom. Overall, the PVM 22 gave us what we'd consider a softer attack than what a condenser mic might reproduce, and we liked this characteristic.

Peavey has created a versatile mic with the PVM 22. We could easily see the PVM 22 as an effective choice onstage for just about any instrument, though its strength is vocals. It's well made, looks good, and doesn't cost a bundle — making it an especially smart choice for those on a limited budget.

## Danish Pro Audio DPA4060

BY MIKE SOKOL

I must confess to an infatuation with Brüel & Kjaer mics. I first used B&K mics many years ago as part of an OSHA test for noise levels in a noisy factory, and occasionally saw them used in the studio. They always were a little too expensive for my budget, so I figured that maybe someday Santa would

on different instruments in the studio and in live performance.

The DPA capsule is smaller than a pencil eraser. Two different protection grids are supplied: one gives you a 3-dB boost in the 8–20 kHz range, while the other gives you a 10-dB boost at 12 kHz. The boosts are designed to provide natural sound when the mics are mounted on a performer in either the head or chest position. You can, though, also use the grid on instrument miking to get three different-sounding mics for the price of one. I like the short grid for most instruments, because it gives you a slight “tilt” in the 8–20 kHz range that you usually expect from a condenser mic. The mics also feature another interesting design feature: the MicroDot connector system. A tiny thread-on plug allows you to securely attach a variety of connectors such as 3-pin XLR, 3-pin Lemo, or



bring me a pair. Well, Christmas came a little early this year, 'cause I was sent a pair of DPA4060's to audition. (Yes, I was a very good boy.) And the price is so reasonable that every project studio can afford a pair. Although designed as a miniature vocal mic to be hidden on the face or chest of on-the-air talent, they work surprisingly well for acoustic instruments. And since acoustic instrument miking's my main gig, I tried them

Switchcraft TA4F (18 different types in all). This useful feature effectively multiplies your mic inventory since you can use the same microphone element on a variety of RF body packs or XLR preamps.

Three sensitivity levels are available: the DPA4060 (134-dB SPL peak); DPA4061 (144-dB SPL peak); and DPA4062 (154-dB SPL peak). I was sent the most sensitive version (the DPA4060) and was unable to over-



load them with the instruments I tried. Really loud situations, however, might require the built-in padding of the 4061 or 4062. And for the cosmetically inclined, you can get them in black, beige, or white. A point that, while unimportant to most studios, is

**MANUFACTURER:** DPA Microphones (formerly known as Brüel & Kjær). Distributed by TGI North America, 300 Gage Avenue, Unit 1, Kitchner, Ontario, Canada N2M 2C8. Tel: 519-745-1158. Web: [www.dpamicrophones.com](http://www.dpamicrophones.com)

**APPLICATION:** Miniature voice/performance microphones that also can be used for acoustic instrument miking.

**SUMMARY:** Brings legendary B&K sound within price range of every studio.

**STRENGTHS:** Connection adapters allow mics to be used with a variety of RF body packs or standard XLR inputs; different protection grids are supplied that provide acoustical equalization for different mic positions on a performer.

**WEAKNESSES:** No mounts supplied (please don't make me use duct tape again); omni pattern only.

**PRICE:** \$430 for mic element; \$67 to \$164 for connectors.

**EQ FREE LIT. #: 134**

important for on-air talent (...lights, cameras, action!).

I tried them on acoustic piano and guitar in the studio, and the sound was surprisingly natural considering the small element. But the DPA4060 got the MVT Award (Most Valuable Transducer) from me at a live/recording concert with Celtic musician Robin Bullock. The C-Ducer contact pickup in his Cittern (sort of a round-back, Celtic mandolin) went noisy without a spare in the house. We simply taped a DPA4060 near the sound hole, and the sound was fantastic. There was plenty of gain before feedback, and none of the bass build-up you can get with a cardioid mic. Plus, there was none of the brittle string tone you often get with a contact pickup. In fact he liked it so much, I loaned him one to take next week on a quick Paris/Germany tour.

The only thing that's needed to make the system complete is a good mounting system for instruments. For piano, a pair of soda straws make acceptable mini-booms, and some double-sided tape works for acoustic guitar, but these are jury-rigs at

**PRO  
TOOLS**

**Avid.** | Authorized  
Education Center

- Multi-Studio Facility
- Hands-on Training
- Affordable Tuition
- Internships
- Small Classes
- 22 Week Master Recording Program
- Financial Aid to Qualified Students
- Our Graduates are in Demand

**Call Today!**

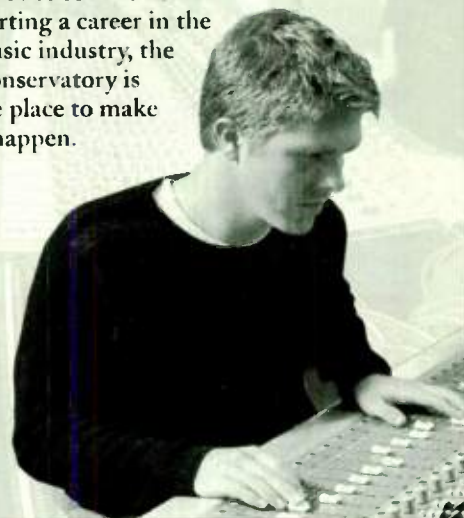
**1-800-562-6383**

**CONSERVATORY OF  
Recording**  
Arts & Sciences

2300 East Broadway Rd.  
Tempe, AZ 85282

## LEARN AUDIO RECORDING AT THE CONSERVATORY LIKE NOWHERE ELSE.

The Conservatory is the only recording school in the *entire country* that's authorized by Avid to teach ProTools recording, editing, and mixing functions. If you're serious about starting a career in the music industry, the Conservatory is the place to make it happen.



**CIRCLE 78 ON FREE INFO CARD**

**we're not the experts... you are.**



**grandma's**  
music & sound

albuquerque, new mexico

<http://www.grandmas.com>

**1 - 800 - 444 - 5252**

**CIRCLE 80 ON FREE INFO CARD**



best that won't make it on the live stage. No, what's needed is a variety of clips and mini-booms that can be attached to violins, guitars, dulcimers, and banjos. Yes, these mics would be right at home with the Celtic and Bluegrass crowd if only there were a quick mounting system that didn't require duct tape.

So if you like the sonic integrity of using B&K mics, but used to faint at the price, try out the DPA4060's. They offer a champagne sound to those on a beer budget. Bottom line: A real value, offering tremendous sonic bang for the buck.

## Neumann TLM 103

BY STEVE LA CERRA

It's not every day that a new microphone emerges from the Neumann factory, so it was with great interest that *EQ* learned about the TLM 103. This cardioid condenser employs a new capsule (the K 103) based upon the design of Neumann's U87. It uses, though, the transformerless electronics of their 100 series FET mics. The TLM 103's self-noise is rated very low (7 dB) and the mic is said to handle SPL's of up to 138 dB, so we were anxious to take it for a spin.

The TLM 103 comes with a wood storage case and a stand adapter. As you'd expect from Neumann, this is a well-built microphone. The finish and fit of the parts are first-rate, and the mic has considerable heft considering its size.

The TLM 103 has a very healthy output level. For equivalent signal level at a tape machine, we could set mic preamp gain noticeably lower than with other condenser mics we had on-hand, including a Sony C48, AKG C414, and Neumann U87 (not to be confused with the 87A, which has a hotter output). This gives the TLM 103 a huge advantage in the noise floor. In fact, with the TLM 103 in our empty studio, we easily heard the *filament noise* of our studio light bulbs — against a background of virtual silence. This quiet background was evident when recording vocals and voice-overs.

Overall tone of the TLM 103 was well-



balanced and present. Transient response was very fast on instruments like steel string acoustic guitar and percussion (shakers, maracas, etc.). The pickup pattern of the TLM 103 is fairly tight — moving the source slightly to the side will result in a distinct change of timbre — so be careful to keep the source on-axis.

When we tried the TLM 103 with the mic pre in a Mackie 24\*8, we experienced an interesting phenomenon. Way up around 10 kHz or so, the sound became "spitty," almost like something was ringing. This did not happen when the mic was plugged into our Demeter VTMP-2a pre, but we did experience something similar when using other inexpensive mic preamps.

We then put the '103 to task in a number of other uses: drum overhead and toms (where it sounded great) and, at the coaxing of the folks at Neumann, kick drum. While the tone of this mic up-close on kick

didn't kick our aural butt, it blossomed when we moved it about 2.5 feet in front of the center of the drum — for some low end that could easily launch your woofers.

We miked a singer/acoustic guitarist using a single TLM 103 with the mic about three feet in front of the singer, pointing slightly downwards towards the guitar. The result was excellent. Voice and guitar both had the immediacy of close miking without the phase problems that often occur in this type of situation. In ambient miking situations, the TLM 103 excelled, able to pick up low-level sound without introducing its own noise.

Our one minor gripe about the TLM 103 is in regards to the mic stand adapter. The supplied mount is a threaded ring with a pivot. And since the entire device is constructed of plastic, you must be very careful when threading it to the mic and stand. Our recommendation: screw a quick-release mount into the adapter and avoid a lot of screwing around. We'd suggest getting the EA 103 suspension mount, or, in a pinch, you could use an EA 193 (designed for a TLM 193).

The TLM 103 is certainly worthy of the Neumann name. It sounds excellent and looks and feels like a quality instrument. You can be sure that any noise you hear through this mic is either coming from the source or your mic pre. This mic is very versatile; it's highly recommended for the project studio. **EQ**

**MANUFACTURER:** Neumann USA, One Enterprise Drive, Old Lyme, CT 06371. Tel: 860-434-5220. (Canada, Tel: 514-426-3013.) Web: [www.neumannusa.com](http://www.neumannusa.com).

**APPLICATION:** Condenser microphone for studio recording.

**SUMMARY:** An excellent microphone for all-around instrument and vocal use.

**STRENGTHS:** Extremely quiet; handles high SPLs; well-built.

**WEAKNESSES:** Care must be taken to avoid stripping of threads in supplied stand adapter.

**PRICE:** \$995; EA 103, \$175  
**EQ FREE LIT. #:** 135



# The world's most *outrageous* rhythm section is now at your fingertips.



Not your typical drum machine — from Zoom, of course.

RhythmTrak has 124 different drum kits that range from thrash, metal, punk, rock, techno and industrial to the solid backbeat rhythms of funk, R&B, hip hop and more. That plus fiery Latin percussion sounds, Middle

Eastern, Indian, Celtic and African drums and more. Enough for up to 297 different rhythm patterns!

And you can create up to 50 bass patterns with all the most popular bass guitar sounds from vintage classic to futuristic.

RhythmTrak has EZ RealTime recording. The Soundjammer

slider lets you change sounds, dynamics and pitch for bass and drums — up to 3 octaves! With Groove Play, you can assign different patterns to the pads and play 'em back any way you want.

Real bass and drums, no waiting. RhythmTrak...234. Tap into one now at your local Zoom dealer.

## THE ZOOM RHYTHMTRAK...234 DRUM & BASS MACHINE

**ZOOM**  
CATCH US IF YOU CAN

CIRCLE 73 ON FREE INFO CARD

Every amazing ZOOM machine is distributed in the USA by Samson Technologies Corp., P.O. Box 9031, Syosset, NY 11791-9031  
Phone: (516) 364-2244 • Fax: (516) 364-3888 • [www.samson-tech.com/zoom/](http://www.samson-tech.com/zoom/) ©1998 Samson

World Radio History



# CLAIR BROTHERS USES POWERLIGHT.™

**POWERWAVE**



**"100% RELIABILITY"**  
**"GREAT SOUNDING!!"**

This spring, Clair Brothers Audio added the QSC PowerLight™ 2.0<sup>HV</sup> to their touring inventory for use with their 12AM Series monitors. During their busy summer touring season Clair received positive feedback on the PL 2.0<sup>HV</sup>'s great sound and, best of all, experienced no field failures. With remarks like these and the backing from a company who's been supplying power to top professionals for over 30 years; it's no wonder the PowerLight™ 2.0<sup>HV</sup> is shaping up to be a great amplifier for Clair Brothers.

**"HEAR THE POWER OF TECHNOLOGY"**

## PowerLight™ Features

- PowerWave™ Technology
- Neutrik "Combo" (XLR & 1/4") and barrier balanced input connectors
- Stereo/bridging/parallel mode switch
- Advanced thermal protection
- Computer Control Data Port
- "Touch proof" binding post output connectors
- Variable speed fan
- Power standby control
- Clip Limiters (user defeatable)
- Detented gain controls with 2 dB steps for easy resetting
- DC, sub audio and thermal overload protection
- Patented Output Averaging™ short circuit protection
- Full LED status arrays



**QSC™**  
**AUDIO**

[www.qscaudio.com](http://www.qscaudio.com)

"PowerLight", "PowerWave", "Output Averaging," and "Hear the Power of Technology" are trademarks of QSC Audio Products, Inc. "QSC" and the QSC logo are registered with the U.S. Patent and Trademark Office. Powerlight Patents Pending. QSC Audio Products, Inc.: 1675 MacArthur Blvd., Costa Mesa, CA 92626 USA

**CIRCLE 53 ON FREE INFO CARD**





**MATCHBOX20**

*Hits the Road with  
a Tour Designed  
to Provide Album  
Accuracy with the  
Energy of a  
Live Performance*

**BY STEPHEN W. MACKEY**



# ACCURACY AND ENERGY

## MATCHBOX20 TAKES STEPS TO ENSURE FAITHFUL ALBUM REPRODUCTION ON TOUR, BUT WITH LIVE SPONTANEITY

By Stephen W.  
Mackey

No, the band Matchbox20 does not beat women. The Florida-based band gained a lot of attention from the misconstrued lyric "I want to push you around" from

1997's single "Push" — the source of much controversy. Their album *Yourself or Someone Like You* recently topped the five million mark in worldwide sales. The success of "Push" brought them into the spotlight, with opening-act stints for the Lemonheads, the Wallflowers, and the Rolling Stones. In January, Matchbox20 embarked on their first major headlining tour, with me performing FOH duties.

Production rehearsals took place in early January in Atlanta. *Yourself or Someone Like You* producer Matt Serletic (Collective Soul, Cool for August) was on hand to oversee the development of the audio portion of the show. From keyboard and guitar rig programming to arranging and producing, Matt's thorough knowledge of the album and attention to detail provided the backbone of the show.

Audio production was provided by Clair Brothers Audio Enterprises of Lititz, Pennsylvania, with additional support from MD Systems/Clair Brothers in Nashville, Tennessee. The main PA con-

sists of 24 Clair Brothers S-4 speaker cabinets with four P-2 front fill boxes. Main power is provided by Clair/Carver 2.0 amplifiers. System tech J. Summers handles PA duties and stage miking, as well as assisting in monitor world.

During preproduction meetings, it was decided to put the entire band on personal monitors. Guitarists Kyle Cook, Adam Gaynor, and lead vocalist Rob Thomas use Sensaphonics 2X dual-driver in-ears. Bassist Brian Yale and drummer Paul Doucette use the single-driver 4X in-ears. Monitor engineer Brian "Kyd" Worthen explains, "The biggest difference has been lower stage volume." The lowered stage volume has many advantages for me as well, most notably isolation between instruments. We were able to turn down the guitar amps, significantly decreasing the amount of bleed into the vocal mics, and cleaning up the sound for the first few rows." The artists have also benefitted in other ways. Worthen points out, "Rob experiences much less vocal fa-



Personal monitors help keep the on-stage volume down.



# ENGINEERED FOR THE STUDIO. BUILT FOR THE STAGE.

## Audio-Technica 40 Series technology goes from studio to stage.

The new AT4054 and AT4055 cardioid capacitor microphones put premium 40 Series performance in the palm of your hand. Based on the same advanced technology used in the critically-acclaimed AT4050, their true capacitor, large-diaphragm design provides extremely smooth, warm and true-to-life audio reproduction.

Both microphones feature a unique protective capsule design with performance optimized for live-sound use. Exceptional transient response and sound pressure level capability ensure clean output even in high SPL situations. The AT4054 features a tailored low-frequency roll-off while the AT4055 remains flat, providing the right choice of mic for different applications.



AT4050



AT4054/AT4055 capsule

Whichever model you choose, count on sparkling realism *plus* reliable performance. Both are engineered for the studio, built for the stage... and at \$499 each, they're priced for your budget as well.

Call, write or fax today for more information.



**audio-technica.**

**Audio-Technica U.S., Inc.**

1221 Commerce Drive, Stow, Ohio 44224 330/686-2600

Fax: 330/686-0719 E-mail: [pro@atus.com](mailto:pro@atus.com) [www.audio-technica.com](http://www.audio-technica.com)

**Audio-Technica Limited**

Old Lane, Leeds LS11 8AG England 0113 277 1441

Fax: 0113 270 4836 E-mail: [sales@audio-technica.co.uk](mailto:sales@audio-technica.co.uk)

**CIRCLE 07 ON FREE INFO CARD**



**Cardioid!**  
but *with* the  
**Great Sound of**  
**Earthworks Omnis!**

Earthworks

**Z30X**

Clarity & Focus  
With the Quality  
of *Being There!*

real: +1 603 654 6427  
virtual: [www.earthwks.com](http://www.earthwks.com)  
fax: +1 603 654 6107



tigue than he did on wedges. He's much more consistent throughout the show."

A great sounding show starts with great sounding rigs. Kyle and Adam each control their guitar rigs with Robert Bradshaw MIDI switching systems. The heart of each system is the TC Electronic G-Force guitar processor, which allows separate control of multi-effect patches, all accessible from the Bradshaw pedal board. Kyle uses two Mesa Boogie Dual Rectifier Trem-O-Verb heads powering two 4x12 Traditional cabinets for his distorted sounds and two Roland JC120's for his clean sounds, with both sets of amps in stereo. Adam uses two Vox AC30's, also in stereo. Brian employs a Bradshaw bass system, controlling a dbx 120XP sub-harmonizer, an Expandora, and a Tube Screamer running through two Eden Highwayman WT500 heads powering two 410 XLT cabinets with the horns turned off. Samson UR-5D's are used as the wireless systems.

Keyboardist Joey Huffman (stolen from Soul Asylum) was brought onboard to handle the piano and organ parts, as well as trigger the large number of sampled sounds residing in the Kurzweil K2500XS — acoustic and electric guitars, percussion, and woodwinds to name but a few. A Hammond B3 and Leslie round out the keyboard rig.

Paul plays a Slingerland Studio King kit. Drum samples are generated by an Akai S2000 and a Roland SPD11. Paul takes a different approach to his click track. Instead of the usual side stick sample, Paul grooves to rave music from his Roland MC303. Drum technician Tony Adams provides additional percussion, including congas and shakers.

The initial goal of rehearsals was to acclimate the band to personal monitors. Once this was achieved, a large amount of rehearsal time was devoted to audio experimentation. The first step was the removal of the feedback busters from the acoustic guitars, allowing the bodies to resonate properly. Microphone selection and placement were intensely analyzed. Matt's knowledge of studio techniques and my experience in sound reinforcement provided a broader range of ideas.

The guitar rigs ended up with two different mics on each: a Shure SM57 on the onstage cabinet and a Sennheiser MD421 on the offstage. This created a wider, punchier guitar sound. The bass cabinet is miked with an Audix D2 and taken direct with an Avalon Ultra Five DI. The Avalon has a selectable tone contour that shapes the low end and

sounds very natural. Rob uses a Sennheiser SKM3072 mic with the 3032 wireless system. The 3005 condenser capsule

has a natural spaciousness to the top end that you can't achieve with equalization, and the rejection is ideal for Rob, who likes to go out in front of the PA.

Capturing the sonic details of the album while providing the impact of a live show proved quite challenging. During preproduction, I approached Matt and tour manager Dean Serletic with the concept of automation in live sound. They agreed that an automated console would be necessary to reproduce the complexity of a studio mix in a live situation. I chose the Amek Langley Recall console with Showtime automation. The Recall feature enables me to use one console for Matchbox20 and the support act, which proved to be invaluable in theaters where mix positions are unbearably small. Showtime automation is like having ten hands all working together in perfect synchronization.

Mixing the show involved a great deal of work and patience from everybody. Matt communicated with the band, having them repeat sections while I programmed mutes, levels, crossfades, effects changes, etc. Unlike programming a studio mix or a lighting show where you're rewinding a tape, constructing an automated live mix involves rewinding (and winding up) an actual band. Morale remained high throughout, and everyone appreciated the results.

During the mixing process, I was able to incorporate many of Matt's studio techniques in the show, the most prevalent being liberal use of tube compression. Most units use hybrid circuitry to maintain the low noise level of solid state while maintaining the characteristics of a tube sound. The bass DI and bass mic signal are blended together into a group, with one side of a Summit DCL200 inserted on the group. I run the bass at about 4 to 6 dB of gain reduction with a slow attack to preserve punch. The other side of the Summit handles Kyle's acoustic, while another DCL200 handles Rob and Adam's acoustics. I run the Summits from 3 to 6 dB of gain reduction on the acoustics. They impart a body to the midrange that brings out the tone of the wood.

For Kyle's and Adam's vocals, I use a Drawmer 1960 as a preamp and compressor. I take the signal straight from the snake into the 1960 and return it into the insert return of the console. A switch on the channel moves the insert point pre-EQ. A TLAudio 5051 voice processor

*continued on page 135*





congratulations!



**james taylor and frank filipetti**

on winning two GRAMMY® awards for "Hourglass."\*

best pop album, best engineered album (non classical).

from your friends at **YAMAHA** pro audio.

If **you** would like a copy of the Hourglass session notes, call Yamaha (800) 937-7171 ext.669. [www.yamaha.com](http://www.yamaha.com) and [www.yamaha.co.jp/product/proaudio/homeenglish/index.html](http://www.yamaha.co.jp/product/proaudio/homeenglish/index.html)  
©1998 Yamaha Corporation of America, Pro Audio Department, P.O. Box 6600, Buena Park, CA 90622-4600. Yamaha is a registered trademark of Yamaha Corporation.  
\* ©1998 Sony Music Entertainment Inc./Columbia® Reg. U.S. Pat. & Tm Off. Marca Registrada. GRAMMY is a registered trademark of the National Academy of Recording Arts & Sciences

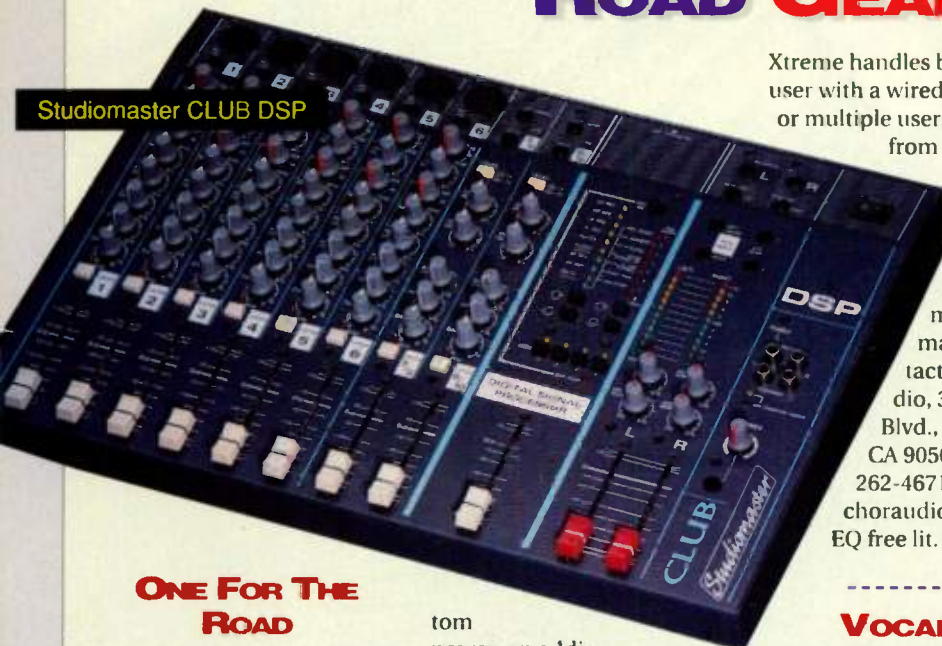
**CIRCLE 72 ON FREE INFO CARD**

World Radio History



## ROAD GEAR

### Studiomaster CLUB DSP



### ONE FOR THE ROAD

The Studiomaster CLUB DSP rackmountable (rack ears included), 8-channel mixer incorporates the same design and professional features as Studiomaster's popular Club 2000 Series with the addition of a built-in 79-memory, 16-bit digital effects processor, providing an array of reverb, delay, and special effects settings. Other features include: discrete balanced mic and line inputs, 3-band EQ w/ mid sweep on the main channels, 2-band EQ on channels 7 and 8, 2 aux sends per channel (both internally selectable pre/post), PFL listen per channel, 60 mm linear faders, discrete balanced/unbalanced main outputs, 48 V phantom power, stereo record playback bus, and more. Suggested retail price is \$695. For more information, contact Studiomaster Inc., 3941 Miraloma Ave., Anaheim, CA 92806. Tel: 800 878-7883. Web: [www.studiomaster.com](http://www.studiomaster.com). Circle EQ free lit. #121.

### LIBERTY FOR ALL

Anchor Audio's 130-watt A/C Liberty Xtreme features a switchable mic/line level XLR input with selectable phan-

tom power, an additional 1/4-inch line-level input, and a balanced XLR line-level output. Both inputs have independent volume controls. As with all Liberty systems, the Xtreme includes the Music/Project switch that creates two different sound modes for maximum flexibility: the "Music" mode for clean full-range sound, and a "Project" mode for articulate voice projection. Bi-amplification (40-watt horn/90-watt woofer) creates more clarity and audibility for vocals. As a stand-alone system, the



Liberty Xtreme

Xtreme handles both a single user with a wired microphone or multiple users connected from any mixer's line-level output. Suggested retail price is \$699. For more information, contact Anchor Audio, 3415 Lomita Blvd., Torrance, CA 90505. Tel: 800-262-4671. Web: [anchoraudio.com](http://anchoraudio.com). Circle EQ free lit. #122.

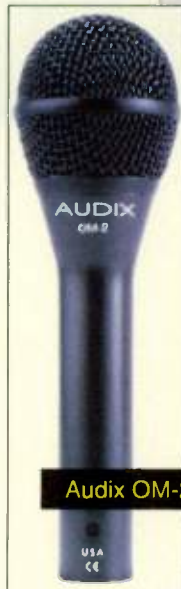
### VOCALIST EFFECTS

DOD's VoTEC is a personal, floor-controlled multieffects processor exclusively for vocalists that allows singers to manipulate their vocal effects on stage in real-time. With the VoTEC, no longer does everyone in the band have to have the same vocal effects. Effects include Delay, Reverb, Compression, EQ, Noise Gate, and a modulation section that includes Chorus, Flange, Phase Shift, Pitch Shift, and Tremolo. Also included are DOD's Pixellator, Ring Modulator,

Telephone and Megaphone effects, Envelope Filter effects, and Vocal Distortion for a wide range of bizarre tools. Effect parameters may be adjusted by patching in an external volume or continuous controller pedal. VoTEC carries a suggested retail price of \$199.95. For more information, contact DOD Electronics, 8760 S. Sandy Parkway, Sandy, UT 84070. Tel: 801-566-8800. Circle EQ free lit. #123.

### LIKE A ROCK

Audix has released the OM-2, the latest addition to the OM Series of professional vocal microphones. The durable OM-2 features a spring-steel grille ball with 10 times the tensile strength of typical grille balls, an electronically cut one-piece inner pop filter for consistent dispersion of incoming signals, a durable E-coat finish, an unbreakable nylon mic clip, and a sturdy cordura carrying pouch. With a bit of added warmth in the lower mid-bass and a slight boost in the mid-range, the OM-2 sounds clear on a small- to mid-size PA system without having to add EQ or pad the sensitivity. Suggested retail price is \$149. For more information, contact Audix, 9400 SW Barber Street, P.O. Box 4010, Wilsonville OR, 97070. Tel: 800-966-8261. Web: [www.audixusa.com](http://www.audixusa.com). Circle EQ free lit. #124.



Audix OM-2



# CARVER

P R O F E S S I O N A L

For more  
information  
regarding Carver  
Professional  
accessories,  
contact your local  
Carver  
Professional  
dealer or call  
503.978.3344

get the connection...



# CLUB PROFILE: KING CAT THEATER

A LOOK AT  
THE HOT SEATTLE  
NIGHT-SPOT THAT STILL  
RESEMBLES A  
TRADITIONAL THEATER

By Steve  
La Cerra

It's no big secret that the Seattle music scene has been rockin' for quite some time now, and if you're headed downtown, then the King Cat Theater is bound to be of interest. One of the few remaining stops on the theater/club circuit that still actually

looks like a theater, the King Cat seats 865 people with reserved seating throughout the house. In addition to hosting acts as diverse as David Benoit, Blue Öyster Cult, Victoria Williams, Wayne Shorter, and Duncan Shiek, the King Cat has also recently presented nonmusical events such as comic Cate Clinton, feature films, and a Chinese Acrobat show.

## MAKING ROOM

Since the King Cat functions as a traditional theater, all seating remains intact, and the padded seats are covered with velour material — which helps increase the sonic absorption factor. King Cat house engineer Frank Farmer comments on the room's acoustics: "It's pretty dead because it's a movie theater with padded seats and carpet on the floor. The walls are lined with fiberglass underneath burlap, so out in the room there aren't many reflections. Almost zero.

There's very little sound coming back at the stage and you don't really have to contend with sound slapping back from the rear of the hall when you're on stage. That's actually kind of disconcerting to artists because they don't feel anything coming back. You have to use the monitors in such a way that you can make the performer feel there is some beef there.

"The stage itself is also very dead, but the other day when I was ringing out the monitors I noticed that if you stand in the middle of the stage at the front, there is an echo that comes off the ceiling. Directly over the stage there's acoustical tiling. At the rear of the stage there's a curtain and then the movie screen hangs behind that. About 6 feet behind the screen there's concrete block and sound will bounce off there. It's a quick little slap in the midrange — between about 1 kHz and 2.5 kHz — that seems to only affect the front center position. That presents a bit of a problem in getting clarity for the musician

in the middle. I usually put two wedges up there for the center guy, if I can spare them. We only have one wedge for each of the six mixes, so to free them up, I'll often use the side fills as drum monitors."

The monitor wedges Frank is referring to are proprietary boxes made by Proshow (Seattle, WA), the 1152M. Each wedge houses a 15-inch McCauley woofer and an EV horn. Side fills are also from Proshow: three-way with one 18, one 12, and a 2-inch horn. The



*The King Cat Club has many of the attributes of a standard theater, including plenty of sonic absorption.*



# JUDGE with your EYES

Proprietary Dynamic Engine Allocation™  
24 Bit Double-Precision Effects Resolution  
20 Bit A/D - D/A Audio Conversion  
Four Discrete Inputs and Outputs  
Two Independent, Discrete Stereo Processors  
All-New Effects Algorithms  
Never Before Available Effects  
Over 5 Seconds of Delay Time  
100 User Preset Locations  
Twin Stereo, Discrete 4, Cascade and Stereo Routing  
Fully Programmable  
Performance MIDI™

# DECIDE with your EARS

## Quadra/Fx

TWIN 24 BIT STEREO ENGINE DIGITAL MULTI-EFFECTS PROCESSOR



All the specs in the world matter only if the processor they describe sounds equally incredible. A R T's new Quadra/Fx gives you all the top-flight specs that you demand AND real advances in sound quality, available only through our all-new proprietary digital effects platform.

Lose yourself in lush waves of our most heralded reverbs to date. Create volume-dependent stereo rotary speaker simulations. Model the most sought-after vintage phaser (without the noise). Or do it all at once - that's the power of having two discreet stereo processors in one box.

Unleash your every creative urge with our ingenious dynamic performance features and operation enhancements. The flexibility of 4-in/4-out routing inspires unlimited creativity, while Dynamic Engine Allocation™ technology guarantees the best possible effect quality at all times.

Visit your A R T dealer today to HEAR what our specs are saying. Because in the end, hearing is believing.

APPLIED RESEARCH AND TECHNOLOGY, INC., 215 TREMONT STREET, ROCHESTER, NY 14608

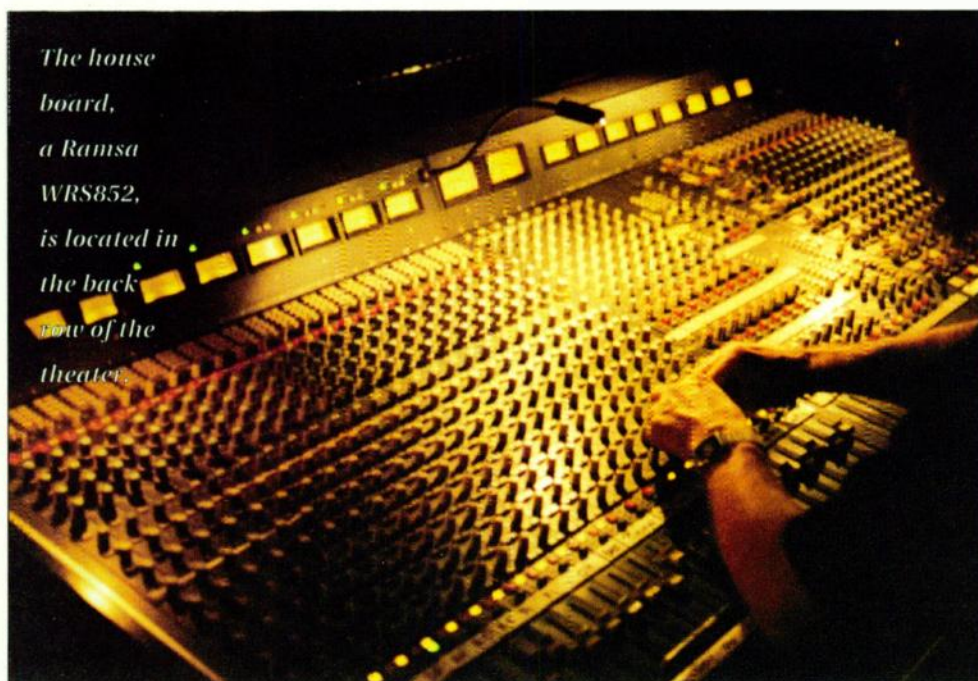
Voice: 716/436.2720, Fax: 716/436.3942, <http://www.arttech.com>

CIRCLE 96 ON FREE INFO CARD

World Radio History

A R T  
APPLIED RESEARCH AND TECHNOLOGY





*The house board, a Ramsa WRS852, is located in the back row of the theater.*

1152M's are biamped with Crown 2400's on the low end and a single Rane MA6 monitor amplifier for all of the wedge mixes (the Rane unit is interesting in that it has six channels in a single chassis, at 200 wpc). The sidefills are triamped with Crown Macro Tech 1200's on the high's and mids, and 2400's on the low end.

All crossovers for the monitor (and house) speakers are from TDM. A Soundcraft Delta M40 (10 bus) console is used for mixing monitors. "Right now," explains Frank, "we are set up to do six wedge mixes and two sidefill mixes for a total of eight. But if necessary I could actually get 12 mixes because the console has stereo outs. A lot of times, I'll use the sidefills for drum fills."

In regards to EQing the wedges, Frank has noticed that the cabinets are "really hot between 2 and 4 k, so I'll drop those frequencies out in the monitors. Most of the time I go with my 'house' EQ in the monitors and I can have an uneventful, feedback-less show. In the upper-mid and high end, the monitor and house EQs are similar because the Proshow cabinets use the same horn and driver from EV that are in the mains cabinets."

An interesting consideration that Frank has addressed in maintaining a happy house is power supply redundancy for both the monitor and house consoles. There are two power supplies

for each console, so if one should fail, the other can be connected to the console (though the system would have to be taken offline to do so). Frank has noticed that since power supplies are subject to AC spikes, bridged rectifiers will short, or one of the voltage regulators will go south.

#### **BINGO!! LAST ROW!**

The house mix position is in the rear of the theater, at the center of the last row. This area is raised up above the floor a few steps, but it's not really a balcony (the floor slopes upwards towards the back of the hall, which presents pretty good sight lines around the room). Living in the mix area is a Ramsa WRS852 console, dbx 160x's, and TDM third-octave EQs for the house mix bus, a Yamaha Rev7 and SPX900 for effects, and insert patchables that include four Behringer Composers and four Behringer Intelligates. Forty mic channels are run via snake from the stage up to the house, with eight return lines and a nonisolated split to the monitor desk. Power for the three-way mains system comes from Crown Macro Tech 5000's for the low end, 2400's for the mids, and 1200's for the top end. The house speaker complement is all EV, with four DML-1152's (one 15 and a 2-inch horn) flown above the proscenium. Four MTL-1 subwoofers (two 18's each) and two more DML-1152's are placed in a rather un-

usual area. Frank tried putting the low-end cabinets under the stage, but that position "excited the heck out of the stage. For a while we had the MTL-1's stacked on the stage, but that was before we had the proscenium curtain in place. When we got the proscenium curtain we had to move the stacks, so we decided to put them up above the stage area. There's a little balcony above the exit way on each side of the stage, so we put them up there to get the low end off the floor. You don't get any coupling off the floor, but there is still plenty of low end in the room. You can overdue the low end pretty easily

with four 18's per side."

On top of the MTL-1B's is stacked another DML-1152 (one more per side), pointed down towards the front rows. Frank would prefer to have these DML's "throwing back into the hall towards the mix position. You mix from a spot that is way in the back of the hall. I find myself mixing too bright because you can't hear all the top end. If you walk down front, it'll rip your head off, but back up at the mixing console it sounds fine."

Another issue to deal with when mixing at the King Cat is that the PA volume in the room can be deceiving. Since you mix from the last row, you are at the point furthest from the PA. As a result, you're looking to give the system more gas because you don't think it's loud enough. But the truth is that, if you walk down front, you'll find that there is *plenty* of volume. Frank likes mixing in this room due to "the deadness of the hall. It's a tight room, but it does have its eccentricities. I have done some shows here with real low stage volume, and you could just about get it to sound like a record. You don't have to mix that loud in the PA, and you can make it sound transparent." That's a beautiful thing!

**EQ**





YOUR VOLUME GOES TO

10

**YOU NEED  
A SPEAKER  
THAT'S  
WARRANTED  
TO TAKE IT**

CSX-S2 systems from Community are  
the only professional loudspeakers  
that carry a  
10 year warranty.

CSX-S2 is built for today's music with  
tomorrow's needs in mind.

It resists failure with  
built-in protection that keeps you up  
and running  
night after night.

CSX-S2 from Community. Your kind  
of speaker.

**Rely on it.**



**Community**

PROFESSIONAL LOUDSPEAKERS

333 East 5th Street  
Chester, PA 19013-4511  
800-523-4934

[www.community.chester.pa.us](http://www.community.chester.pa.us)

CIRCLE 17 ON FREE INFO CARD



# JBL-SMAART MEASUREMENT SYSTEM V.2

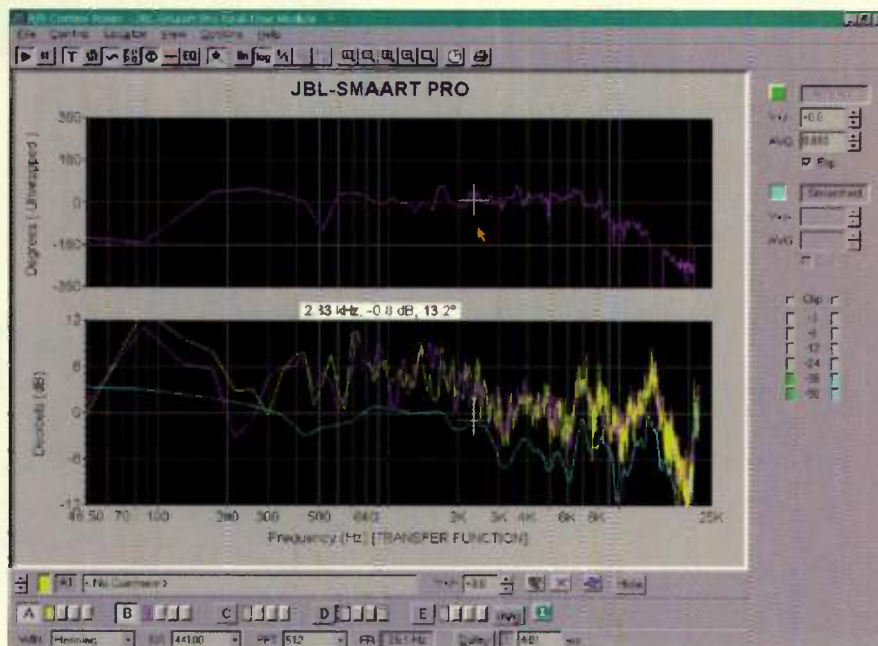


FIGURE 1: The Real-Time Module Transfer Function display of a loudspeaker's acoustic output. The lower graph shows the real-time frequency response with smoothing turned on (blue line on lower graph) while the real-time phase response is shown on upper graph.

viewed onscreen above the frequency response. This offers greater insight into the behavior of the system under test, especially when adjusting crossover parameters and system equalization.

**Increased and Enhanced Reference Registers:** Comparison of different measurement locations or different drivers has been greatly enhanced with four storage bins in each of the five registers that store up to 40 traces in 2-channel mode and 20 traces in transfer function mode. The traces can be named and stored on disk for later comparison. Stored traces can even be averaged.

**MIDI Control Interface:** As a nod to the use of JBL-Smaart as a tool for system equalization, the new version includes the ability to use MIDI control to adjust the equalization. So far, this has been implemented on parametric equalizers in the BSS Varicurve product range. Although MIDI is not a control protocol suited to larger sound system installations, its low cost and widespread use provide a practical method of con-

By **WADE MCGREGOR**

The recent upgrade to this popular measurement software (Version 1 was reviewed in the December '96 issue of *EQ*) includes an array of new features based on a rewrite of the software for 32-bit operating systems (Windows 95 and NT). Features include more comprehensive control over the on-screen and printed output from the software, in addition to better data export capabilities. Here is a brief synopsis of the new features.

## REAL-TIME MODULE

**Fixed-Point Per Octave (FPPO) Resolution Transfer Function:** Our logarithmic perceptions don't correlate well to linear measurement systems. In an effort to make the JBL-Smaart Pro interface easier to use, a new FPPO display feature offers logarithmically distributed data points that provide a graphic display better suited to quick evaluation. More data points (and therefore smoother response display) are taken at low frequencies, while fewer data points are allocated to high frequencies. This avoids the typical FFT measurement display that has just as much data between 19 kHz and 20 kHz as between 20 Hz and 1020 Hz. This feature, however, locks up systems

(such as one of mine) that use the Turtle Beach Tahiti sound card.

**Automatic Delay Location:** A feature that speeds up the allowance for the time it requires the sound to travel through the air to the measurement mic. This delay must be set accurately to take advantage of the next feature. I found the automatic function could be fooled, and on one occasion it couldn't find the real peak of the direct sound, but insisted on stopping on peaks down in the noise floor.

**Phase Display:** A new feature in the program that allows the phase response to be

## ROAD TEST

**MANUFACTURER:** JBL Professional, 8500 Balboa Boulevard, Northridge, CA 91329 Tel: 818-894-8850. Web: [www.siasoft.com](http://www.siasoft.com)

**APPLICATIONS:** A software-based system for measuring sound systems, room acoustics, and electronic devices.

**SUMMARY:** An excellent system for evaluating and fine-tuning sound systems.

**STRENGTHS:** A well-focused interface; integrates control for some system equalizers.

**WEAKNESSES:** Dependent on the vagaries of the computer's audio interface.

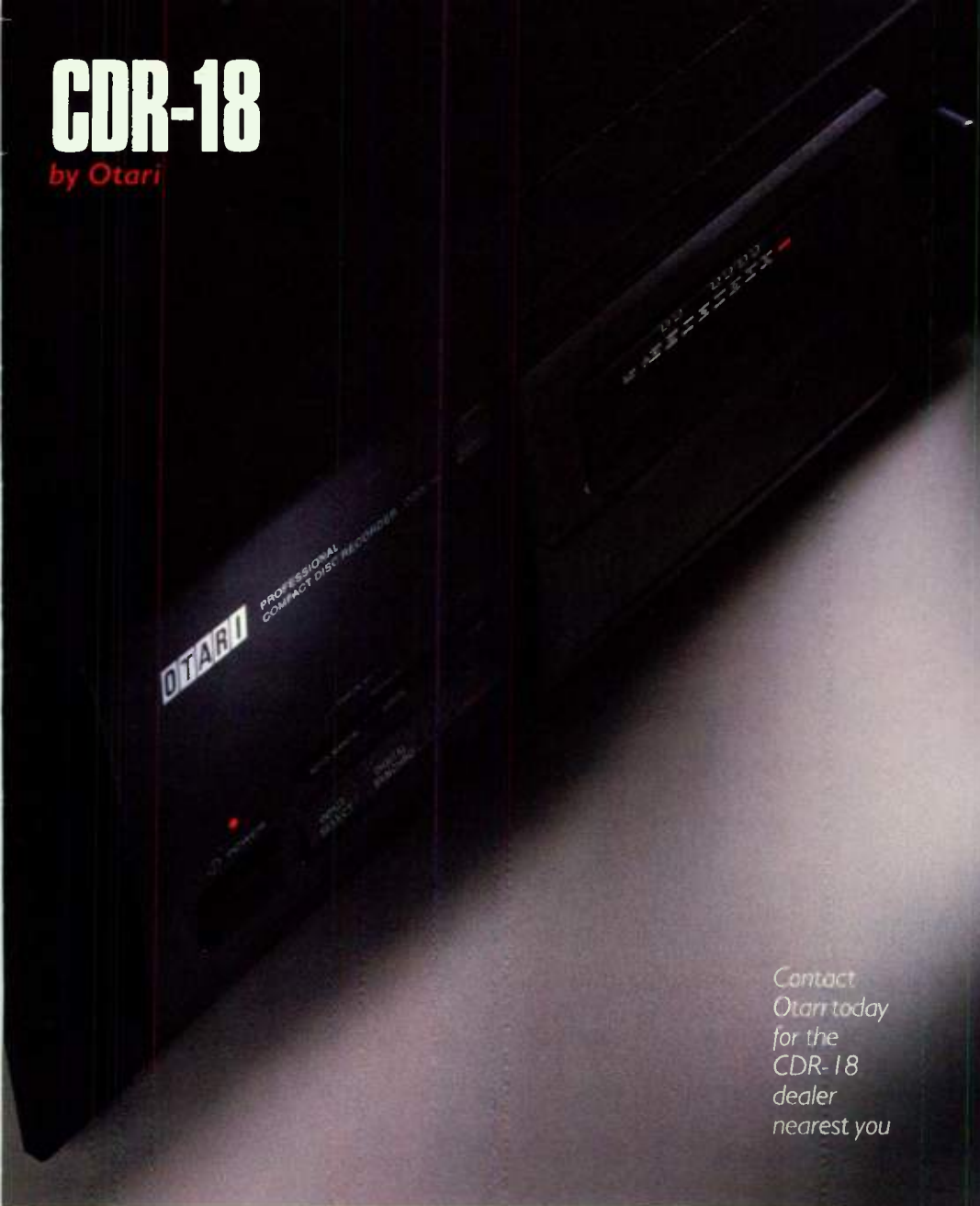
**PRICE:** \$795; \$249 for upgrades from earlier versions

**EQ FREE LIT #:** 125



# CDR-18

by Otari



Contact  
Otari today  
for the  
CDR-18  
dealer  
nearest you

The CDR-18 is an inexpensive device for writing CDs from virtually any analog or digital source. Universal recordable CD media is utilized and is readily available at a fraction of the price of other forms of storage. The CDR-18 has all the familiar controls you would expect to find on a consumer CD recorder but has been designed with the rigors of professional recording environments in mind.



## CDR-18 Highlights

DAT, CD and MD IDs can be copied along with audio for easy copying functions

Balanced analog inputs with selectable input level

Comprehensive digital interface with AES/EBU input and SPDIF input and outputs

Digital Synchro Record Mode

Digital Fader function providing natural automatic fade-in, fade-out

Rack-Mount kit and infrared remote supplied standard

Input monitoring without disc

Built in sample rate converter

Ultra stable transport with downward firing laser

## OTARI CDR-18 Compact Disc Recorder



Otari, Inc.  
Japan  
Phone: (81) 4-2481-8626  
Fax: (81) 4-2481-8633  
www.otari.co.jp

Otari Corporation  
USA  
Phone: (800) 877-0577  
Fax: (650) 341-7201  
L.A. Sales: (818) 972-3687  
S.E. Sales: (615) 255-6080  
www.otari.com

Otari Europe GmbH.  
Germany  
Phone: (49) 2159-50861/62/63  
Fax: (49) 2159-1778

Otari Singapore Pte., Ltd.  
Singapore  
Phone: (65) 284-7211  
Fax: (65) 284-4727

Specifications are subject to change without notice or obligation.  
© 1998 Otari Corporation. The Otari Logo is a registered trademark of Otari Corporation.

CIRCLE 91 ON FREE INFO CARD

World Radio History



Version 1.1 Now Shipping!

# Cool Edit Pro

multitrack

graphic  
equalizer

NOISE  
REDUCTION



compress

delay

3D ECHO CHAMBER

expand

transpose

change tempo

SMPTE slave

distort

find beats

flange

punch-in

convolve

CREATIVITY: THE PROCESS  
OF TAKING THE SOUND  
STRAIGHT FROM YOUR MIND'S  
EAR TO THE STUDIO  
MONITORS. THAT'S OUR  
DREAM AT SYNTRILLIUM, AND  
THAT'S WHAT COOL EDIT PRO  
LETS YOU DO. IT'S GOT  
POWER: 64-TRACK MIXING,  
MORE THAN 30 DSP  
EFFECTS (MOST WITH REAL-  
TIME PREVIEW), DIRECTX  
PLUG-IN SUPPORT, AND  
AMAZING WAVEFORM EDITING  
CONTROL. IT'S ALSO A BREEZE  
TO LEARN AND USE, AND IT  
WORKS WITH JUST ABOUT  
ANY SOUND CARD ON ANY  
WINDOWS™ 95 OR NT  
COMPUTER. CONTACT  
SYNTRILLIUM OR YOUR  
FAVORITE SOFTWARE DEALER  
TO FIND OUT MORE.

CIRCLE 100 ON FREE INFO CARD

Syntrillium Software Corporation

Download a functional demonstration version from <http://www.syntrillium.com>

[sales@syntrillium.com](mailto:sales@syntrillium.com)

1-888-941-7100

toll-free sales in the US and Canada

P.O. Box 62255 Phoenix AZ 85082-2255 USA +1-602-941-4327 fax +1-602-941-6170

Cool Edit and Cool Edit Pro are trademarks of Syntrillium Software Corporation. Other products mentioned are trademarks or registered trademarks of their respective manufacturers.

World Radio History







trolling smaller systems. The EQ mode allows the equalizer response to be overlaid on the system response with the vertical scale of the EQ's response inverted. This allows parametric equalization to be more pre-

#### HARDWARE/SYSTEM REQUIREMENTS:

##### Recommended System Configuration

Microsoft Windows 95 or Windows NT 4.0 (or later)

90 MHz or faster Intel Pentium or compatible microprocessor

16-24 MB system RAM

800 x 600 x 256-color Super VGA display

Windows MCI-compliant sound hardware w/stereo line level inputs, 16-bit resolution, and selectable sampling rates from 5.512 k to 44.1 k

##### Minimum System Configuration

Microsoft Windows 95 or Windows NT 4.0 (or later)

66 MHz (or faster) Intel i486 or compatible microprocessor

16 MB system RAM

640 x 480 x 16-color VGA display

Windows MCI-compliant sound hardware with stereo line level inputs, 16-bit resolution, and 44.1 k sampling rate

cisely adjusted. SIA Software is currently extending this feature to support a wider variety of equalizers.

**System Presets:** Finally, all the display and parameter settings can be saved for recall the next time you have to perform a similar measurement.

**NC and STC Ratings:** Onscreen curves that only an acoustical consultant can love.

#### ANALYSIS MODULE

**Comparison of Two Wave Files:** Compare the frequency response or reverberation from: two different measurement locations; before and after equalization; or with and without acoustical treatments. This is a great addition to this powerful off-site tool.

**More Flexible Time and Frequency Scale and Range Controls:** A wider range of control over the display characteristics are part of the improved single parameter window that offers tabbed access to all the optional settings.

**User-configurable Rainbow Display:** The colorful spectrum display of the audio signal (frequency in color over a horizontal time scale) has been enhanced to allow greater control over the display.

**Live Displays:** A digital oscilloscope function that allows you to view the audio input signal in the time domain to examine the timing relationship of impulsive sounds in

real time. The audio can also be saved as a wave file for further analysis.

**Recording Controls:** Now you can even use the analysis module to make measurements, on site. This side steps the need to use the Delay Finder (or other Windows application) to record a wave file for analysis.

There are potential problems in using game-oriented sound cards for measurement applications. The internal settings for equalization and 3D-sound field enhancement can have negative effects on measurement data. (Those pathetic 3.5-mm phone jacks that are common to

these sound cards can also limit reliability.) A number of pro-audio oriented sound cards are available to those for whom these issues are a concern.

This new version of JBL-Smaart shows that the highly responsive staff of SIA Software have been listening to the concerns and suggestions of their users, while adding a few ideas of their own to this well-done upgrade to JBL-Smaart.

*Wade McGregor is a principal consultant for Mc<sup>2</sup> System Design Group, an acoustical consulting firm. For more info, visit their home page at [www.mcsquared.com](http://www.mcsquared.com).*

#### Ad Index For fast and easy information use the reader response card in this issue

PAGE	BRAND	INFO#	PHONE#	PAGE	BRAND	INFO#	PHONE#
74	Acoustics First Corporation	1	888-765-2900	88	JOEMEKE	42	310-373-9129
43	AdB International	90	770-623-1410	85	JRF Magnetic Sciences	44	201-579-5773
23	AKG	2	615-399-2199	9, 101	Lexicon	36, 45	617-280-0300
2-3	Alesis	4	800-5-ALESIS	4-5, 128	Mackie Designs	38, 46	206-487-4333
117	Applied Research & Technology	96	716-436-2720	99	Markertek Video Supply	48	800-522-2025
36	Ashly Audio	5	716-544-5191	80	MediaFORM	49	610-458-9200
33	Audio Centron	6	314-727-4512	51	Metathic Systems	41	415-332-2690
111	Audio Technica	7	216-686-2600	128	Microboards	83	800-646-8881
29	Azden Corporation	11	516-328-7500	127	MIDIMAN	89	800-555-7445
142-145	B&H Photo	9	212-807-7474	93	Minnetonka Software	43	612-449-0187
141	Bell Electronics	12	903-784-3215	83	Musician's Friend	47	800-776-5173
131	Bellari/Div. of Rolls Corporation	13	801-263-9053	67	Neato	50	800-984-9800
72	beyerdynamic	14	516-293-3200	45	Opcode	51	415-856-3333
141	bpm studiotechnik	85	305-588-7008	121	Otari Corporation	91	415-341-5900
89	CAD	10	800-762-9266	84	Oz Audio	54	360-568-3636
115	Carver	15	503-288-2008	25	Panasonic	XX	714-373-7277
52	CDS Graphics	16	800-599-9534	7, 59, 91	Peavey	55, 56, 57	601-483-5365
119	Community	17	800-523-4934	63, 108	QSC	52, 53	714-754-6175
105	Conservatory of Recording Arts	78	800-562-6383	79	Quantegy	87	800-752-0732
62	Countryman Associates	18	415-364-9988	87	Rane Corporation	82	206-355-6000
133	dB Technologies	19	213-845-1155	141	Reamp	86	617-982-2626
62	Disc Makers	21	800-468-9353	52	Rich Music	58	800-795-8493
125	Discount Distributors	23	516-563-8326	40-41	Roland	59	213-685-5141
103	Dynaudio Acoustics	8	617-982-2626	47	Samson Pro Audio	61	516-364-2244
57, 112	Earthworks	93, 95	603-654-6427	15	SCREAM Studios	88	818-505-0755
37	E-Magic	74	916-477-1051	35	SEK'D America dba Hohner Midia	39	707-578-2023
61	E-mu Systems	99	408-438-1921	155	Sennheiser	63	203-434-9190
39	Emtec/BASF	24	800-225-4350	27	Shure Brothers	79	800-25-SHURE
49	Ersoniq	98	610-647-3930	30-31	Spirit by Soundcraft	64	615-399-2199
19, 97	Event Electronics	25, 30	805-962-6926	81	Steinberg North America	65	818-993-4161
16-17	EVI Audio/Electro-Voice	26	616-695-6831	13	Sweetwater Sound	211	219-432-8176
85	FMR Audio	81	800-343-9976	55	Switchcraft	62	312-792-2700
75	Fostex	94	310-921-1112	122	Syntrillium	100	602-941-4327
65	Full Compass	27	800-356-5844	53	Tannoy	84	519-745-1158
73	Furman Sound	28	415-927-1225	20-21	TASCAM/TEAC America	66	213-726-0303
26	Gefen Systems	29	818-884-6294	14	Taxi	68	818-888-2111
141	Geoffrey Daking	31	212-749-4931	11	TC Electronic	67	805-373-1828
67	George L's Musical	33	615-868-6976	152	The John Hardy Company	88	847-864-8060
105	Grandma's Music & Sound	80	800-444-5252	125	The Recording Workshop	69	614-663-2544
38	Great River Electronics	35	612-455-1846	50	TL Audio	60	905-420-3946
134, 135	HMB Communications	32, 37	310-319-1111	125	West L.A. Music	70	310-477-1945
137, 139	HMB Communications	76, 77	310-319-1111	12	Whirlwind	71	716-663-8820
35	Hohner Midia	39	707-578-2023	71, 113	Yamaha	72, 75	714-522-9011
38	Interactive Microsystems	40	847-426-1950	100	Zetiro Acoustic	97	714-551-5833
156	JBL Professional	XX	818-895-8190	107	Zoom Corporation	73	516-364-2244



# JOEMEEK VC5 *3-Band Equalizer*

If you are looking for some interesting sounds, you've found the right EQ

BY ZENON SCHOEPE

Few can challenge JOEMEEK product designer Ted Fletcher for pure nerve. Seemingly flying in the face of other current routes to audio nirvana, where the pristine and the calculated are held in high regard, Fletcher has carved a successful niche for his ever-so-slightly oddball outboard products. All with an at-

way of frills or extras. The three bands are marked treble, mid, and bass, and peculiarly run in that order from left to right rather than the more established reversed convention. The mid band is the fancy band — offering a sweepable frequency pot covering 600 Hz–3.5 kHz and an associated gain pot. All bands are marked to offer a vague  $\pm 11$  dB, but real values probably run into the mid-teens; each path is capped off with an overall input gain pot offering  $\pm 12$  dB. Input gain seems a strange inclusion on an EQ, but is actually quite a sensible one

Quality is of the now-accepted utilitarian, adequate, and green that always looks better in a rack than out. Rear-panel connectors have balanced jack inputs, paralleled outputs, and an insert.

EQs, to me, fall into four categories: (1) those that are clinically precise and ex-

tremely useful for corrective measures but are of limited value for creative purposes; (2) those that are not clinical in approach or appeal but just sound dead good; (3) the very few that can truly perform in both the aforementioned roles; and (4) those that are plain dogs to use.

The VC5 definitely falls in to the second category. I remember Fletcher remarking to me with a laugh at the New York AES that he dared not publish a plot of what the filters in this unit do because, as he put it, "They look so bloody awful." Only in a compressor or an EQ could the fact that it plots dreadfully be of any passing interest, because, in this do-

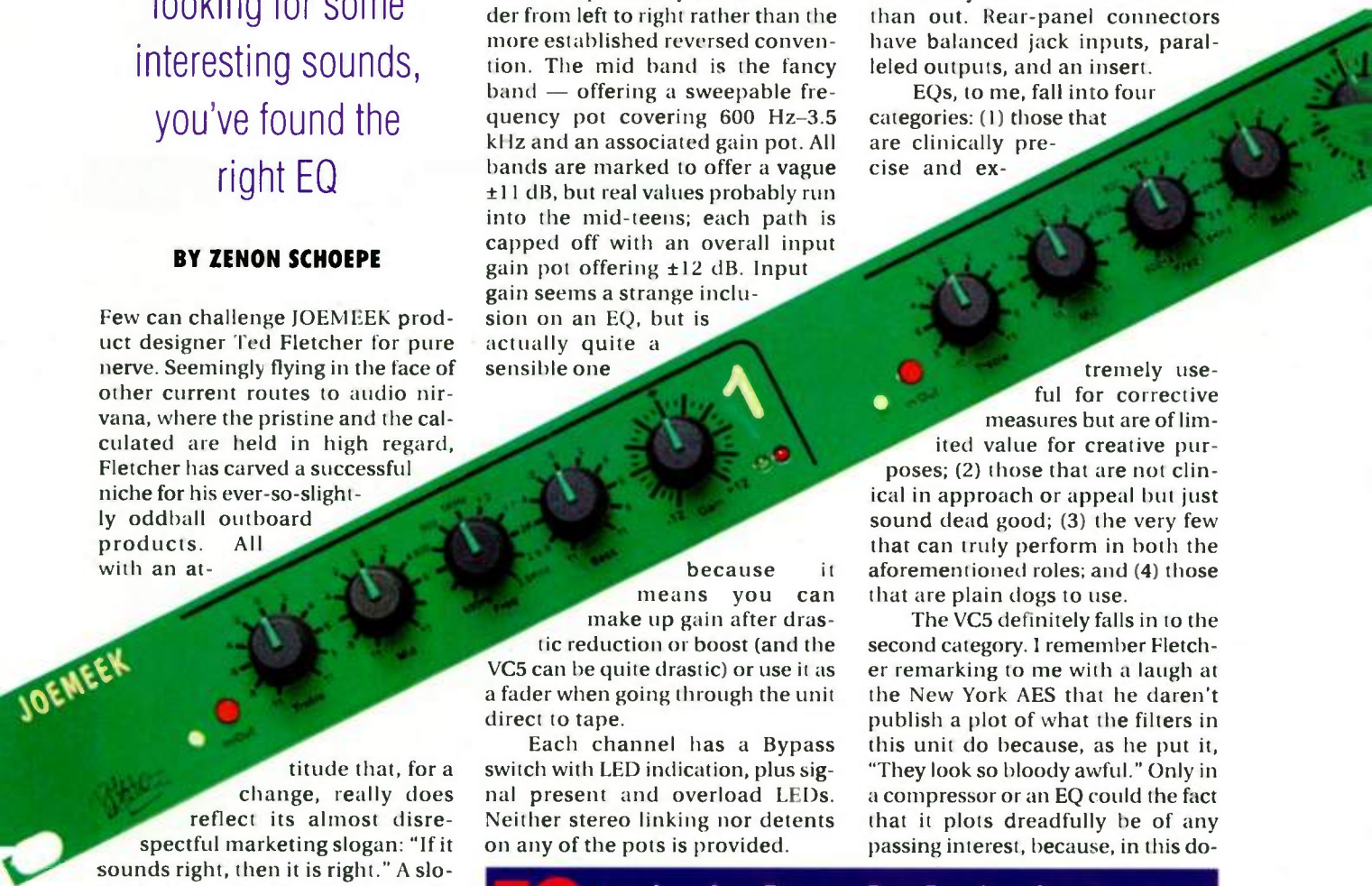
because it means you can make up gain after drastic reduction or boost (and the VC5 can be quite drastic) or use it as a fader when going through the unit direct to tape.

Each channel has a Bypass switch with LED indication, plus signal present and overload LEDs. Neither stereo linking nor detents on any of the pots is provided.

itude that, for a change, really does reflect its almost disrespectful marketing slogan: "If it sounds right, then it is right." A slogan borne out by the curious qualities but unmistakable class of the original JOEMEEK stereo compressor and succeeding string of like-minded offerings that all roughly adhere to this code.

The only real omission from the company's outboard range was, until recently, an equalizer; but with the introduction of the VC5, cleverly nicknamed the "Meequalizer," the company now also has all the constituent parts required for what I would consider to be the very interesting concept of a JOEMEEK-based console.

The VC5 presents two channels of 3-band EQ with little in the



## EQ LAB REPORT

**MANUFACTURER:** JOEMEEK. Distributed by PMI, 23773 Madison Street, Torrance, CA 90505. Tel: 310-373-9129. Web: [www.joemEEK.com](http://www.joemEEK.com).

**APPLICATION:** Studio tracking and mix sweetening.

**SUMMARY:** Dual-channel 3-band equalizer.

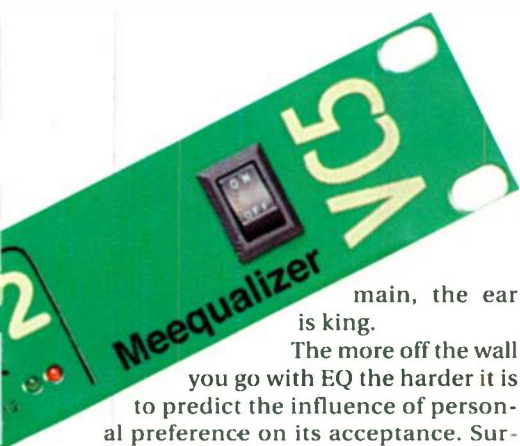
**STRENGTHS:** Excellent sound and "vintage" character; superb tracking with power that belies its modest 3-band arrangement.

**WEAKNESSES:** No pot detents; not clinical enough for clinical EQ duties, an acquired taste.

**PRICE:** \$399

**EQ FREE LIT. #:** 126





main, the ear is king. The more off the wall you go with EQ the harder it is to predict the influence of personal preference on its acceptance. Surgical steel EQ can be appraised easily in the light of those who are likely to have a requirement for it, but stuff like this falls right into the love it or hate it dilemma.

I love it, but I'm quite prepared to believe that it may be a little too rudimentary for some. This 3-band EQ, with its LF, HF, and swept mid, is not the most powerful, but you can use what's there to the utmost as you get the full travel's worth out of each pot and an initially unpredictable but ultimately surprising degree of interaction between the bands.

It has to be said: the EQ is pretty filthy stuff. You can hear the *graunch* at work here. I'd equate the VC5's responsiveness to the EQ on a good electric guitar head. I don't mean that disrespectfully, but simply because the chosen frequencies are so well tuned to causing immediate and apparent EQ effect. Above all else, the VC5 has a sound, and it's apparent as soon as you twiddle a knob. It's a sound that I would describe as being in the "classic" old-world EQ style — fat, granular and full of signature. The box can be used on any signal that you don't mind imposing this character on. Plus, with judicious use of the Channel Gain control, you can push the signal hard to give a very pleasant softness. Great on vocals, excellent on drum groups (keep the bass control full on all the time), electric guitars, and stereo program in general (excellent for warming up lackluster DAT masters). Treble 'n' bass fiends will have a field day as the fixed bands epitomize what you're about.

The VC5 is a very satisfying little box that is probably one of the cheapest ways into "classic" sounding character EQ. I encourage you to try it. **EQ**

# West L.A. Music

## GUARANTEED LOWEST PRICES!

EVERY MAJOR BRAND!

DIGITAL MULTI-TRACK RECORDERS • MIXING CONSOLES  
HARD DISC RECORDERS • EFFECTS PROCESSORS • MICROPHONES  
DAT AND CASSETTE DECKS • STUDIO MONITORS • CD RECORDERS  
COMPUTERS • SOFTWARE • KEYBOARDS • SYNTHESIZERS • SAMPLERS  
SOUND SYSTEMS • GUITARS • AMPS • DRUMS AND ACCESSORIES

## WE WILL BEAT ANY DEAL!



Jermaine Jackson at West L.A. Music with Mark Spiwak.



Legendary drummer Hal Blaine visits drum manager Glenn Noyes



Joni Mitchell with West L.A. Music own Jon Cox.

## "WHERE THE PROS SHOP"



We Ship Everywhere! Call Now!

## WEST L.A. MUSIC

11345 Santa Monica Blvd. Los Angeles, CA 90025  
Two blocks West of the San Diego (405) Freeway  
(310) 477-1945 Fax: (310) 477-2476

ALL MAJOR  
CREDIT CARDS,  
FINANCING,  
AND LEASING.

CIRCLE 70 ON FREE INFO CARD

## PROFESSIONAL QUALITY AT THE RIGHT PRICE



Medium to Heavy Duty  
Keyboard Cases

• Prices starting at \$126



Heavy Duty ATA

- Custom and stock sizes
- Quick turn around



Heavy Duty AMP  
and Effect Racks

• Prices starting at \$129



Hardshell Cases

Available for:

guitars racks  
keyboards



## DISCOUNT DISTRIBUTORS

FOR INFORMATION CALL 800-346-4638  
AND FREE BROCHURE (In N.Y.) 516-563-8326

## The Case Specialists

CIRCLE 23 ON FREE INFO CARD



## LEARN THE ART OF RECORDING

You can get the practical, real-world skills needed to successfully start your career as a recording engineer, producer or studio musician. • Hands-on approach, learning by doing • Previous experience not required • Complete 300 hours of training in less than 2 months • 6 studios filled with the latest equipment • Small classes, excellent personal attention • Job placement assistance • Financial aid available • Low cost, on-campus housing

For free brochure, call or write today  
1-800-848-9900 1-614-663-2544



## THE RECORDING WORKSHOP

455-Q Massieville Rd  
Chillicothe, Ohio 45601

Ohio State Board of Proprietary School Registration #80-07-0696T

CIRCLE 69 ON FREE INFO CARD



# Lexicon DC-1 *Digital Surround Processor*

Hear what your audience will be listening to with this versatile processor

BY DAVID FRANGIONI

Some readers may be wondering why a consumer-oriented product such as

upgraded through the use of logic boards, permitting a consumer to upgrade from an entry-level \$2000 version all the way up to Lexicon's full-blown \$4995 unit. Understanding the DC-1 will help you understand the basic concept of most digital surround processors.

The Lexicon DC-1 is a 20-bit digital surround processor with 8 analog inputs, 4 digital inputs (2 S/PDIF coax, 2 TOSLINK), 5 composite video inputs, and 3 S-Video inputs. If you use any of the digital audio or "S" inputs, you replace one of the available

to change the names of any of the inputs to a name of your choice. All of the inputs are unbalanced on RCA connectors. Standard 75-ohm coaxial cable is used to connect the composite video, 4-pin "S" cable for the S-Video I/O, and unbalanced RCA cable for all other connections.

All functions of the unit are controlled by an on-screen display that helps you easily navigate through the many options for setting up the processor. You tell the DC-1 whether your speakers are large (full-range) or small (crossed over at a user selectable

frequency), the distance to each of your speakers (for calculating the proper time alignment) and whether your system contains a subwoofer, center channel speaker, and/or side speakers. The DC-1 has special algorithms for decoding 5.1 surround into seven channels instead of five. In order

to hear this effect, you need to have two speakers on the side along with the traditional surround speakers in the rear. More on that later.



the Lexicon DC-1 would be featured in a professional sound magazine such as *EQ*. The answer is simple: It always pays to know what's going on in the world outside our studios. In essence, some consumer-based products demand you take them seriously or risk being excluded from the game. For example, at a recent seminar, I was amazed to learn how little most engineers know about consumer surround sound products. If you don't know how people are listening to your mixes, you'll never know how to properly mix the material. It's somewhat like mixing to CD without ever having heard a CD player. And if you thought understanding how your mixes were going to sound on CD was a learning process, wait until you see (and hear) what's around the corner...

## ON WITH THE SHOW

The Lexicon DC-1 represents a state-of-the-art digital surround processor at an affordable price. It can be user-

analog audio or composite inputs. The inputs are labeled Tape, Tuner, CD, Aux, TV, V-Disc, VCR1, and VCR2, although the DC-1 allows you

## EQ LAB REPORT

**MANUFACTURER:** Lexicon, 3 Oak Park, Bedford, MA 01730. Tel: 781-280-0300. Web: [www.lexicon.com](http://www.lexicon.com).

**APPLICATION:** Listening to all formats of digital surround sound.

**SUMMARY:** The best digital surround processor to date at any price. The DC-1 offers comprehensive audio/video switching. User configurable parameters with on-screen display makes setting up a breeze.

**STRENGTHS:** Sounds great, is easy to use, and supports all current formats and sample rates; DTS discrete digital sounds amazing; system can be upgraded from the very affordable entry-level unit to a full-blown, THX-DTS-AC3 top-of-the-line processor.

**WEAKNESSES:** None to speak of, but it could use more digital inputs for certain professional listening applications.

**SYSTEM REQUIREMENTS:** A minimum of 6 channels of amplification, an LD, DVD, or DSS source (with digital output), and at least 6 speakers.

**PRICE:** \$1995-\$4995

**EQ FREE LIT. #:** 127



# Who's DMAN In Your Life?



**DMAN**

## DIGITAL AUDIO CARD

- Stereo analog inputs and outputs.
- Full-duplex digital audio card.
- 95dB total dynamic range.
- Frequency response: 20 Hz to 20 kHz.
- 16-bit ISA bus card.
- Standard waverable header for adding any waverable daughter board.
- 1 in/1 out MIDI interface.
- Fully Windows 95 & NT Plug-and-Play™ compliant.

**\$249.95 msrp**

**DMAN™**  
**2044**

## PCI DIGITAL AUDIO CARD

- 4 independent audio inputs and outputs.
- 20-bit delta-sigma converters with 128x oversampling.
- All converters rated 99dB dynamic range.
- Frequency response: 20 Hz to 22 kHz at  $\pm 0.5$ dB.
- Powerful onboard digital mixer allows inputs to be monitored at any combination of outputs.
- Sample rates: 22, 24, 44.1, 48 kHz.
- Fully Windows 95 & Plug-and-Play™ compliant.

**\$349.95 msrp**

**midiman**

(800) 969-6434 • [info@midiman.net](mailto:info@midiman.net) • <http://www.midiman.net>

World Radio History  
CIRCLE 97 ON FREE INFO CARD

IMAGE COPYRIGHT ©1997 PHOTOdisc, INC.



## A DIGITAL CONSUMER SURROUND SOUND PRIMER

There's no doubt that 5.1 digital surround is here. DVD is quickly becoming a favored format among consumers. This means that playing back 5.1 digital surround sound and hearing its full impact is now something that 100,000 or more people now understand, and that number is rapidly growing. DTS predicts that over 350,000 consumers will own DTS-capable processors by the end of 1998.

I have been a fan of surround sound since the '80s when I was listening on laserdisc. In 1995, the LD format took a big step forward when Dolby began offering AC3 (or Dolby Digital as it is now called) on LD. Dolby found that if they RF modulated the digital signal onto one of the analog tracks, they could fit an entire movie, along with the already existing digital tracks, on a conventional LD. To hear the digital tracks, you needed a demodulator to turn the audio back into a digital bitstream.

Unlike LD, DVD is an all-digital format that contains the full Dolby Digital bitstream encoded on the disc. This means that you do not need to do any demodulating to hear the Dolby Digital tracks. DTS is Dolby's competitor in the surround sound wars. DTS, at present, is a much higher quality 5.1 format than Dolby, as it is a 20-bit instead of 16-bit format and it uses about 4:1 compression rather than Dolby's close to 13:1 compression!

There are valid reasons why both formats exist. Dolby's high compression ratio allows for multiple languages and special features to exist on one DVD. DTS offers the definitive version of any movie by using all of the allocated space for the highest quality transfer possible. These are two distinctly different approaches, both of which serve the needs of consumers.

## WHAT COMES IN MUST GO OUT

There are eight unbalanced outputs that feed the power amps. These outputs are Front Left & Right, Rear Left & Right, Side Left & Right, Center, and Subwoofer. Two additional sets of user-selectable stereo outputs accompany those on the video side. These are to feed a recording device (such as a VCR or tape deck) and one other Zone. This is a great feature if you want to send the output of your DSS to a TV in another room while you listen to a CD in a different room and record it to tape. Very flexible.

Once the unit is properly connected and you have custom-configured the DC-1, it's time to calibrate the system. You can either generate pink noise from the DC-1 or input your own source of "noise." I typically use the internal generator to expedite the proper setup. Each speaker can be calibrated to any desired SPL with adjustments of .5 dB per speaker. It was possible to get every speaker in the setup at exactly 80 dB SPL. This means that all soundtracks (which are mixed in a balanced system) will play back as they were mixed. You will know just how loud the

*continued on page 135*

# CD-Recordable by MICROBOARDS Technology, Inc.

**AudioWrite 2040 PRO**  
Professional Audio CD System

Seamless CD-R Premastering  
System for Hard Disk Editing.



World Wide  
distributor of  
high quality  
CD-R media

Dealer Inquiries Welcome!

## Desktop CD-R Publisher

Record and print 50 CD-R's,  
Supported by Sonic Foundries  
New CD Architect.



## DSR 8000

Standardize CD Duplication  
of up to 160 discs/hour in  
network configuration.  
DAT options available.



## CD Master

Creates and duplicates  
audio CDs without a  
computer, featuring track  
extraction capability.



**MICROBOARDS**  
Technology, Inc.

Web [www.microboards.com](http://www.microboards.com)

Headquarters  
(800) 646-8881  
Fax (612) 470-1805

East Coast  
(888) 215-3966  
Fax (610) 495-5437

United Kingdom  
44-1386-834-438

CIRCLE 83 ON FREE INFO CARD



# Pro Tools® 4.1 productivity breakthrough!

## Analog Feel. Digital Power. All Mackie.

# HUMAN USER INTERFACE



### A HUI™ GUIDED TOUR.

- 1 Assign Section.** V-Pot™ assignment control lets you configure Sends A thru E, pan and channel bus I/O functions.
- 2 Channel Strips.** Eight channels are considered the maximum human hands can handle at once. Stereo/mono LED meter bridge displays digital dBFS levels.
- 3 DSP Section.** Fluorescent display shows plug-in DSP parameters. Rotary V-Pots let you "tweak" settings with fingers instead of mouse.
- 4 Switch Matrix section** handles automation configuration and edit functions such as cut, paste, copy, delete, etc.
- 5 Control Room Section** controls I/O selection, master monitor level, and global muting.
- 6 Navigation Controls.** Scrub and shuttle wheel controls, timecode display, cursor controls, virtual "tape transport" buttons, window buttons for Pro Tools screens such as Mix, Edit and Transport, and keyboard shortcut buttons including Save, Undo, Edit Mode, etc.

©1997 Mackie Designs Inc. All rights reserved. Digidesign and Pro Tools are registered trademarks of Digidesign, a division of Avid Technology Inc. The following are registered trademarks or trademarks of Mackie Designs Inc.: The "Mackie" logo, the "Running Man" figure, HUI, and V-Pot.

### THE CHANNEL STRIP DESCRIBED.

- All eight HUI strips can be soft-configured in Pro Tools® 4.1 as an aux return, group or main master or channel strip.
- 7 Record Ready** toggles track record.
  - 8 Insert** calls up DSP plug-ins.
  - 9 V-Pot™s and V-Pot function selectors** can act as pan pots or aux sends. Built-in LED display gives visual indication and displays recalled settings.
  - 10 Auto** toggles automation modes.



### THE HUI REAR PANEL REVEALED.

- 15 Built-in power supply.**
- 16 Digital comm ports** including two parallel/thru ADB mouse and keyboard sockets, RS422/RS232 serial connectors, MIDI I/O, and expander port.
- 17 Trigger ports** add foot switches for Stop/Play/Punch, On-Air, external console solo, etc.

## PRO TOOLS

**D**igital audio workstations need hands-on control. Not just a fader pack, but a whole "cockpit" of controls that you can get your hands — and even FEET<sup>1</sup> — on.

Mackie's **Human User Interface (HUI™)** gives you 100mm faders to record and tweak level automation moves, virtual rotary controls for functions such as panning and adjustment of DSP plug-in parameters and dedicated function buttons for things like

- 11 Real Solo and Mute buttons!**
- 12 "Scribble" Strip.** "Write" a channel's title. Also shows status of grouping, routing, phase and other parameters.
- 13 Select** enables editing, grouping, automation, assignment routing or DSP.
- 14 Touch-sensitive 100mm fader.** Conductive knob reacts instantly to touch updates without pressing a separate enable button. Long-life fader motor uses a high-resolution (default resolution 9 bits), tightly-tuned servo amplifier to reduce annoying fader "chatter."

muting, soloing, or "arming" a virtual Pro Tools 4.1 track. Then HUI lets you "touch update" levels as the motorized faders play back your automation sequence.

If we stopped there, we'd have beaten the knobs off any



conventional fader pack. But we also added a complete analog control room section and two of our renowned microphone preamps. For many post production applications, HUI provides all the mixer you'll need — including discrete/mono switch, input source selection matrix, speaker/headphone assign, master monitor level control and built-in talkback microphone!

If you're a serious professional who makes your living running Pro Tools day in and day out, call us, or contact your Digidesign® vendor for more information on HUI. Then get behind the jog/shuttle wheel of the ultimate workstation control surface and accelerate your productivity.

<sup>1</sup> See number 17 to left

# MACKIE®



U.S. 800/898-3211 • Outside the U.S. 425/487-4333  
www.mackie.com • e-mail: sales@mackie.com • NASDAQ: MKIE

CIRCLE 38 ON FREE INFO CARD





# Korg D8 *Hard-Disk Recorder*

BY CRAIG ANDERTON

The diminutive Korg D8, with its 10- x 15.25-inch footprint, is a compact, hard-disk-based "studio-in-a-box." While very much designed as a "personal sketchpad" for songwriting, demo work, taking on the

Fortunately, including S/PDIF means that you can bounce any "magic takes" to some other digital recorder, as well as do digital transfers from the D8 directly to DAT or a stand-alone CD recorder. This makes the D8 a suitable "remote" studio that can later transfer tracks to your

up/restore with DAT. Data is in a proprietary format: you can't, for example, hook up a SCSI drive containing your song(s) to a Windows or Mac machine and import/export files to digital editing programs.

It's unclear whether Korg plans software editing support via SCSI, but I think the D8 will be enough of a hit to draw some third-party support.

Forty-seven front-panel buttons and a data wheel simplify using the D8. Transport buttons are Stop, Play, Rew, FF, and Record, although you can also scrub quite well and jump to the song end or beginning. These functions are all obvious, as are Punch and Rehearse. Three autolocation points (also referenced for automated punching) have corresponding front-panel buttons; jumping to any of up to 100 "mark" points takes a little more

effort — put the time display in a special mode, and dial in the mark with the data wheel. The D8 can repeat an audio region, but the return-to-beginning is not instantaneous, so this is more for rehearsing than creating "loop music."

road, etc., within that context it's a surprisingly complete performer. A 1.4 GB internal drive (enough for 34 minutes of 8-track recording), SCSI port, and optical S/PDIF I/O come standard. But there are some thoughtful extras, like built-in rhythm patterns instead of a metronome, the ability to optimize one input for guitar, and a variety of solid, built-in effects. Even better, the D8 runs quietly — you can hardly tell it's on except for a slight ticking that occurs during hard drive access.

Of course, some corners had to be cut to meet the price point, but these may or may not be important to your particular style of work. Let's investigate further.

Given the product's intended application and price, the D8 records only two tracks at a time (from the analog inputs, S/PDIF In, or master bus). Realistically, this is all that most solo studios need. The two analog 1/4-inch TRS inputs and their trim controls are conveniently recessed under the front panel.

Outputs consist of RCA phono stereo main out, RCA phono aux out, and S/PDIF.

"motherhip" studio.

The built-in SCSI, which allows expanding the storage, is a big plus. You can even save the internal drive contents across several external drives (e.g., save a 450 MB song over five Zip disks) and back-



## EQ LAB REPORT

**MANUFACTURER:** Korg, 316 South Service Road, Melville, NY 11747-3201. Tel: 516-333-9100. Web: [www.korg.com](http://www.korg.com).

**APPLICATION:** Record, process, and mix multitrack digital audio, using an all-digital signal path, in a self-contained device.

**SUMMARY:** Yes, it's a cool sketchpad, but the important part is what you get in return for what you pay.

**STRENGTHS:** Built-in 1.4 GB hard drive, SCSI, and optical I/O; one input switchable to accommodate guitars; drum patterns included as well as metronome; wide range of editable effects; digital mixer with scene automation; mechanically quiet; solid backup/restore functions; decent scrubbing.

**WEAKNESSES:** No mixer midrange EQ (can compensate somewhat by inserting parametric EQ effect into a channel while recording); non-backlit display; no virtual tracks; can't slave to MTC or SMPTE; doesn't support SMPTE rates other than 30 fps.

**PRICE:** \$1250

**EQ FREE LIT. #:** 136



You can store up to 50 songs. A song playlist option means that, with enough drives, you could record a whole CD's worth of material — then play everything in the desired order, and blast it all through the optical I/O to DAT. Songs can also be copied (good for alternate mixes and such) and re-ordered.

Recording basic tracks is simple: set levels, then press Record and Play. Including drum patterns as well as a simple metronome click is great; while the patterns aren't intended to compete with drum machines, they do help kick start the creative juices. Although there aren't any "virtual track" options, you can copy a song, do overdubs on that, then copy the desired sections back to your original song. For example, suppose you want to double a rhythm guitar part on a song, but have no tracks left. You'd copy the song, record the doubled rhythm guitar over something like the vocal track, bounce the rhythm guitar with the new doubled rhythm guitar to another track, then copy the bounced track back to the original song in place of the original rhythm guitar part.

You don't really need the manual until you get into features such as effects editing and automation/autolocation. The biggest drawback is the nonbacklit display that shows only one editable parameter at a time,

## KORG D8 SPECS

**Track Count:** 8 tracks, 2 tracks simultaneous record

**I/O:** Two 1/4-inch phone, balanced ins with trim controls for line/mic (one input can switch to a high-impedance, unbalanced in for guitar), main stereo out, mono aux out, stereo aux return (all RCA phono types), optical S/PDIF In and Out, MIDI In and Out, SCSI, headphones, footswitch

**Effects:** 50 onboard effects types (65 preset programs, 65 user)

**Digital Mixer:** 12 channel (6 mono channels, 1 stereo channel, aux returns, S/PDIF in), 4 bus (stereo master, internal effects bus, aux send). The 6 mono + 1 stereo channels have level, pan, effect send, 2-band EQ (100 Hz @ ±15 dB, 10 kHz @ ±15 dB) and status button; automation consists of 20 snapshots per song

**Resolution:** 16-bit uncompressed, 18-bit converters, 24-bit internal processing

**Sample Rate:** 44.1 kHz

**Disk Drive:** 1.4 GB internal

**Expansion:** Up to seven 4 GB drives

**MIDI:** Sends MTC or MIDI clocks (tempo map allows 10 events per song), accepts MMC in

**Autolocation:** three points per song + 100 mark points per song

but at least the characters are large and readable if the lighting is decent.

The D8's mix interface is familiar: six mono channels and one stereo channel, each with fader, pan control, effect send status, EQ, and track status selection (play, analog record, digital record, and mute — but no solo). A master fader sets overall level.

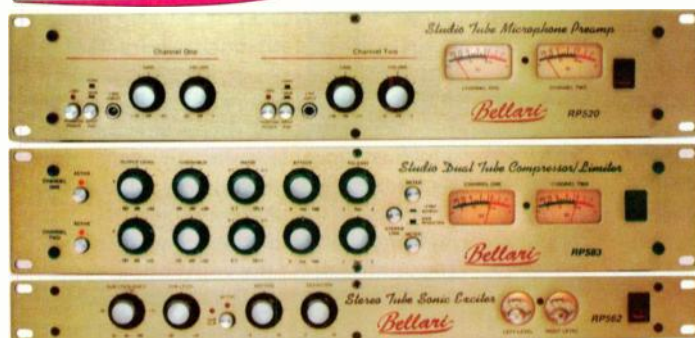
The D8 records individual channels eas-

ily. Recording in stereo requires using adjacent tracks (e.g., 1+2 can be a stereo pair, but not 1+6). You can also link the two channels in a pair, so that EQ or aux send can affect both channels simultaneously. Bouncing occurs digitally, and since (unlike MD-based multitracks) there's no data compression, the sound doesn't accumulate "artifacts" the

*continued on page 137*

# Bellari

## Studio Tube Processors



Bellari products have the sound you've been looking for. They maintain plate voltages ranging from 150 volts in the smaller units, to 250 volts in the rack-mount preamps and processors. What that means to you is warm vocals and instrument tracks that subtly make their presence known in a mix.

All Bellari tube compressors use light/photocell elements in their gain cell for smooth, distortion-free compression.

### RP533 Studio Tube Multi-Processor

- ALL THE GREAT FEATURES INCLUDED IN THE RP520, RP583, AND THE RP562 IN ONE MONO UNIT.



### RP520 Studio Tube Mic Preamp

- Smooth, warm sound
- 30 dB Input and Output Padding
- Phase Reversal
- Analog Metering

### RP583 Studio Tube Compressor/Limiter

- Designed for Subtle compression applications such as:  
Vocals - Program Material - Soft Instruments
- Side Chain for direct detector circuit access
- Smooth, natural tube compression
- All Tube Gain Circuitry

### RP562 Studio Sonic Exciter

- Restores Signal Clarity
- Adds Life and animation to the Sound
- Automatic Sound Separation
- Adjustable 18dB/Octave Subwoofer
- Subwoofer Clip Indication



Check out our NEW LA120 Tube Compressor/Limiter with the same great features of the RP583 in a single channel unit.

# Bellari

Bellari is a division of  
Rolls Corporation

5143 South Main Street  
Salt Lake City, UT 84107

(801) 263-9053 • FAX (801) 263-9068

email: [bellari@rolls.com](mailto:bellari@rolls.com)

[www.xmission.com/~rollsrfx](http://www.xmission.com/~rollsrfx)

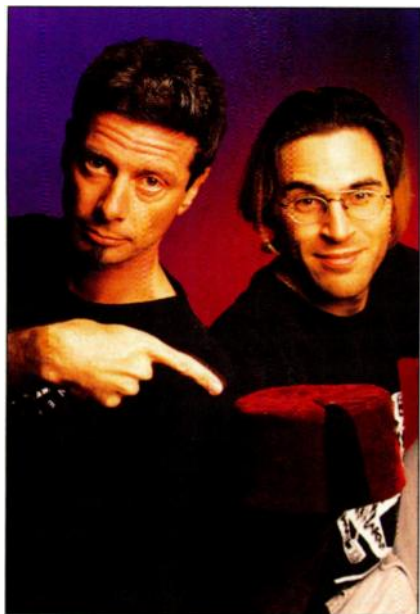
CIRCLE 13 ON FREE INFO CARD

MAY 1998  
World Radio History



# Spatial Delivery

PHOTO BY STEVE JENNINGS



A look (listen?)  
at QSound's 3D audio  
and a couple  
of Fez road trips

BY JON LUINI & ALLEN WHITMAN

Using our secret Fez-decoder rings we decrypted an urgent missive about a small plug-in that supposedly makes Web audio "sound" better. Is it more unsolicited e-mail, spam-sucking us into the latest marketing hype? Well, for once, no. We test-drove software from QSound Labs, and frankly Scarlet, we're impressed. For \$25, you can purchase (online at [www.qsound.ca/](http://www.qsound.ca/)) the latest in "3D" audio technology and, at the least, turn mono music into a stereophonic experience. Though they'd probably prefer we tell you about their amazing "spatialization" techniques, the most useful aspect of QSound's iQ software is the stereo conversion it does before its special spatial business.

The iQ system operates on a stereo signal, converting from mono first (as needed), and runs it through their QXpander technology. The 3D "spread" is

controlled with a simple slider on the iQ control panel. Best results are achieved by connecting your computer's sound output to your stereo system and placing your speakers in optimal listening position. If you are using a set of inexpensive computer speakers, you may not be wowed at the 3D effect, but the mono-to-stereo enhancement will be noticeable (and appreciated!).

A small 2 MB download (about 10 minutes' wait over a 28.8k connection), iQ is available right now for Windows95 users. The Macintosh version is in beta and may be available by the time you read this. Installation is very simple, and you should spend a few minutes familiarizing yourself with the controls. If you have questions, the included documentation is very clear.

iQ enhances just about all WAV-based audio — that is, anything that doesn't play through directly on your PC. CD audio and MIDI will remain unchanged, but RealAudio, Shockwave Audio, AudioActive, MP3, MP2, Netshow, games, and standard Win95 system sounds will all benefit from the iQ engine. Other plug-ins (such as Cakewalk) are available for Win95 apps. The Win95 interface also provides a nice taskbar icon that shows whether the iQ engine is enabled. With a single-click you can access a pop-up control panel to modify the 3D spread, or put it into bypass mode.

QSound is not an unknown upstart; they've been around since 1988 and the younger generation (or at least young-at-heart) of faithful FezReaders may recognize the name from a slew of traditional arcade games.

QSound's iQ won't turn your Sound Blaster into a hundred-thousand dollar sound system, but it will make the audio you listen to online (especially streaming audio) sound better. The FezGuys consider the iQ processor a worthwhile stop in our tireless pursuit of Internet audio nirvana. It doesn't hurt that QSound is endorsed by Pink Floyd co-founder Roger Waters. For that, we forgive the perplexing use of backslashes in their URL in the included documentation. As of this writing, RealNetworks is providing a \$5 discount if you order iQ through their online store, [realstore.real.com](http://realstore.real.com). That's a good idea. The audio quality of RealAudio over modem speeds needs all the help it can get!

## INTERNET WORLD:

**MARCH 9TH-12TH (LOS ANGELES, CA)**

We enter the enormous Los Angeles Convention Center, passing from stagnant daylight heat into cool, dry, and fluorescent biospheres of blinding color, full-spectrum white noise at 100+ decibels, and an overwhelming press of people. People everywhere and everyone moving. Call it a ballet of sorts — a clumsy ballet, full of hog-calling carny barkers in sharp, double-breasted suits and futuristic headsets shouting phrases like: "I'm gonna show you something you've *never* seen before!" One hatchet-faced guy, preternaturally tanned and wearing, of all things, an honest-to-God straightjacket, speaks the patois of a used-car salesman, pronouncing all his soft "th" sounds as a hard "t," making "get with this" into "get wit dis." It's a living, breathing late night cable infomercial of massive proportions.

To obtain admission to this calamitous bazaar we're directed to a rat-maze of knee-high aquamarine curtains. Back and forth we wander, with thousands of others, souls in a Dante-esque purgatory of convoluted seeking. At one arbitrary point in the Habitrail (we can almost smell the cedar chips) another uniformed security woman asks to see our coupon. After verifying authenticity she marks our paper with the cryptic sigil "OS" in yellow highlighter and hands it back.

We continue down the slow-moving pipeline of people, eventually directed to a monitor and keyboard, one of hundreds arranged in long lines and hovered over by hundreds of bleary-eyed people seeking admission to the convention. A personal monochrome CRT thanks us for being where we are and asks us for our basic marketing research data, prior to coughing up a convention floor access badge. The interface is anything but GUI. In fact, it's DOS, the stuff of bank-tellers, supermarket checkout lines, and the endless horrid drudgery of data-entry clerks.

After confessing to everything, we are thanked again and directed to a booth to pick up our badge. A seated woman with a pleasant smile calls out our names. We drape the badge around our necks and enter the arena.

There are multiple hangar-sized rooms, each packed to the far corners with display booths dressed in breeding plumage that would obscure the most frantic mating



display of the baboon or cockatoo. After wandering around for ten minutes, we're sucked into a connecting corridor, a conduit from this apparently medium-sized room, into an absolutely enormous stadium-sized space vibrating within the measurable energy spectrum; all the way from humming gamma-ray down to the deep sonic footprint of plate tectonics.

Everywhere we look something is screaming for attention. An old businessman crouches in a metal chair. He studies a piece of paper in his lap, lank grey hair falling over one eye, legs tightly crossed. Above him, multicolored lights whirl. Around him chemical fog drifts slowly onto his shoulders. Loud, electronic dance-club music pounds. The attack of technical theatrics doesn't seem to faze him. He continues to turn pages, oblivious to the onslaught. Suddenly, the high black curtains close, obscuring his poignant pose.

Whew! Actually, from a business standpoint, Internet World is a very useful event. It's easy to get in (just bring your business card) and there's lots of little freebies. Except for the conspicuous absence of Apple Computer, all the major players and most of the less well-known organizations are present. This show is recommended for those with a need for up-to-the-minute Internet-related information. The founding fathers of the technology and infrastructure, the huge multinationals — everyone with a stake in the creation of this culture-molding community — is represented. The size of the event mirrors the global nature of the game.

On the other hand...

#### **SXSW INTERACTIVE: MARCH 15TH-17TH (AUSTIN, TX)**

Thousands of experienced multimedia professionals, information-hungry artist and the merely curious gathered in sunny southern Texas at the SXSW Interactive Festival over St. Patrick's day. This event, held simultaneously with the SXSW Independent Film Convention, is an offshoot of the much-celebrated SXSW Music Convention created 16 years ago by the publishers of the celebrated independent weekly newsmagazine *The Austin Chronicle*.

Though by the standard of conventions like Internet World this was not a huge industry event, SXSW Interactive represented local and national elements of the Internet multimedia community and boasted a very useful element: various panel and educational seminars, featuring hundreds of respected and successful pioneers in New Media.

Apple, Sprint, and Macromedia represented some of the bigger names in the industry, while many smaller (but no less important) participants with whimsical names like Team Smarty Pants, Human Code, and Tequila Mockingbird added welcome local color and compelling evidence that the New Media community is thriving in the Lone Star State. Prominent figures of the Internet culture were also present, including award-winning author Bruce Sterling (a local resident), Thomas Dolby Robertson (Headspace, Inc.), and, curiously, representatives

of Whole Foods Market and *National Geographic Magazine*. All discussed at length the  
*continued on page 137*

### **CORRECTION!**

In The FezGuys' March column, we incorrectly listed the URL for Headspace, Inc. as Beatnik.com. The correct URL should be:

**Headspace.com.** The FezGuys apologize for any confusion.

**96kHz Performance 44.1 Price**

*From the company that meets and beats the standards.*



**dB Technologies'**  
**dB 44-96**  
**MULTICHANNEL SYSTEM**

**M•DA820**  
2 CH - D to A module

**M•AD824**  
2 CH - A to D module

**M•DD1-2-1**  
Single/double wire AES Translator

- 44.1, 48, 88.2 or 96kHz
- 2, 4, 6, or 8 channels
- Selectable interface
- 96kHz bandwidth requires more precision and tighter tolerances which makes audio at all sample rates sound better.
- **NO JITTER** - Exclusive Crystal-Lock™ for clocksolid performance. Your incoming signal is buffer suspended, Crystal-Lock™ for absolute accuracy, and sent out with high-resolution perfection.

Distributed worldwide by:  
**AUDIO INTERVISUAL DESIGN**  
1155 N. La Brea, W. Hollywood, CA 90038  
(213) 845-1155 FAX (213) 845-1170

*From the think tank at*



**Technologies**

**CIRCLE 19 ON FREE INFO CARD**



# FIRST WE MADE CD RECORDERS AFFORDABLE



# NOW WE'RE GIVING AWAY THE DISCS

No other pro audio CD recorder sounds better. No other pro audio CD recorder is easier to use. And no other pro audio CD recorder is backed by HHB's award winning technical support.\*

No wonder the HHB CDR800 is so hot.

And it's about to get even hotter. Buy an HHB CDR800 CD Recorder and you'll now receive a pack



of 10 HHB CDR74 Gold blank discs, absolutely free. That's more than 12 hours free recording on the most advanced Phthalocyanine, audio - optimised CD-R discs that money can buy.

There's never been a better time to record your work on CD-R. Call HHB about the CDR800 today.

\* Winners of the Professional Recording Association Award for Technical Achievement, 1997.

## ALSO FROM HHB • COST EFFECTIVE, HIGH PERFORMANCE DIGITAL RECORDING MEDIA



DAT Tape



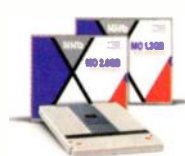
CD-R



MiniDisc



MiniDisc Data



Magneto - Optical



ADAT



DTRS

HHB Communications USA - 626 Santa Monica Boulevard, Suite 110, Santa Monica, CA 90401, USA - Tel: 310 319 1111 - Fax: 310 319 1311 - E-Mail: [sales@hhbusa.com](mailto:sales@hhbusa.com)

HHB Communications Canada Ltd - 260 King Street East, Toronto, Ontario M5A 4L5, Canada - Tel: 416 867 9000 - Fax: 416 867 1080 - E-Mail: [hhbcan@istar.ca](mailto:hhbcan@istar.ca)

HHB Communications Ltd - 73-75 Scrubs Lane, London NW10 6QU, UK - Tel: 0181 962 5000 - Fax: 0181 962 5050 - E-Mail: [sales@hhb.co.uk](mailto:sales@hhb.co.uk)

Visit HHB on line at: <http://www.hhb.co.uk>





## MATCHBOX20

continued from page 112


handles Rob's lead vocal, which is a great sounding unit with a tube preamp, compressor, and equalizer, and which also returned into the insert return.

In true studio form, Matt and I experimented with compressing the entire mix. After testing several units, we decided on the Manley Labs Variable MU stereo tube compressor. I only use about 1 to 2 dB of compression, but the results were startling. It added a musical clarity and richness to the mix the moment I inserted it.

Front of house effects consist of a TC Electronic M5000 for special effects and vocal harmonizing, an Eventide H3500 for guitar harmonizing, Lexicon PCM80 for background vocal chorusing and reverbs, Lexicon 480L for drum and lead vocal reverbs, Yamaha SPX1000 for delays, and a Yamaha SPX990 for vocal effects. All effects changes are made via MIDI from the Recall. I change drum and vocal reverbs on every song. That way, each song has its own individual sense of space.

As the tour progressed, I found I could effectively use board tapes to analyze the mix and make automation changes. Always a work-in-progress, many afternoons are spent listening to tapes and fine tuning the mixes. I'm up to about 160 automated cues, and quite a few manual ones. Showtime allows me to run the show in an update mode called "Relative per Scene." This means that when a cue is loaded, I can still control the levels manually at the faders without the changes affecting the next scene in the sequence.

I don't think a live show will ever run on autopilot: there's just too many variables. What automation does allow, however, is greater creative freedom. For example, try instantaneously sending program changes to three effects units, turning on a snare and lead vocal aux send, fading out the stage right guitarist in .2 seconds, fading up the lead vocal delay on a perfect four count, panning the congas to the right, and turning the compression off on the snare — all while watching the band in case they improvise. It's tough to do manually with any degree of accuracy.

One of the greatest challenges of live mixing is trying to preserve the original focus without sacrificing the spontaneity of the performance. Shows evolve constantly. New instruments, effects, microphones, are always being evaluated in an effort to improve. As Matchbox20 begins looking ahead to the summer shed tour, I think back to the day the gear left Nashville. Ralph Mastrangelo of MD/Clair looked over the final manifest and asked, "Aren't you forgetting the tube mic stands?" Do they make those? 

## LEXICON DC-1

continued from page 128

mixing engineer wanted the shaker (or car screech) in the back left channel.

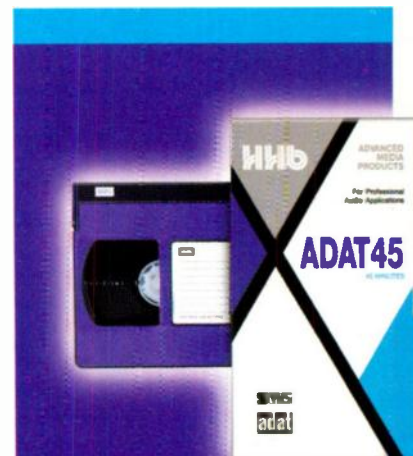
### À LA MODE

The biggest difference between straight stereo receivers and (most) high-end surround receivers is the use of different surround "modes." That's right, you get to choose how the surround sound information is going to be processed (or not). The DC-1 offers not only the best sounding surround modes of any processor I've heard, but the most musical and listenable. The available modes include the aforementioned Logic 7, which derives side-channel information from conventional 5-channel mixes. This mode (as most modes on the DC-1) is available for music or movies and for Dolby Digital, DTS, and THX. (Yes, the unit is even THX-approved!) Other modes are mono enhanced, which sounds great on monophonic material (it sounds so good it's almost as if the *Terminator* were originally mixed in surround sound). THX, Party, TV Matrix, 2-Channel, and Music round out the best of the available modes, while you can, of course, choose Bypass for the purist approach. The sound quality, low noise floor, and clarity of sound will impress even the most discriminating professional. The 20-bit DACs are evident in every mode.

### IF YOU KNEW WHAT THEY WERE HEARING

The point of this review and overview is not just about how great the DC-1 is as a surround sound processor. You shouldn't stop with the DC-1; also listen to other processors, such as the EAD TheaterMaster, the Citation 5.0, and the Sherwood Newcastle. If these sound like foreign words, get down to your local home theater store. Millions of consumers will hear your mixes — especially surround sound mixes — through these pieces of equipment. The education you invest in surround sound will pay off big time as the years go by. Remember that the evolution from mono to stereo took the same amount of time as that of the evolution from stereo to 5.1 digital. It's a new generation of sound and how we hear it. There's no time like the present to explore some new horizons. Equipment such as the DC-1 just makes it that much more fun and interesting. Enjoy!

*David Frangioni is a studio installer/digital audio consultant. He recently completed studios for Gary Burr at MCA Nashville, Desmond Child, and Will Lee of The Late Show. Check out his Web site at [www.audio-one.com](http://www.audio-one.com).*



**ADAT.**  
It's not a VCR.  
So don't use  
video tapes.

The HHB ADAT45.  
Designed specifically for professional  
audio multitrack recording only.  
Ask for it by name.



Los Angeles: 310 319 1111  
Toronto: 416 867 9000  
London: 0181 962 5000

[www.hhb.co.uk](http://www.hhb.co.uk)

CIRCLE 37 ON FREE INFO CARD





**The Music Producers Guild  
and EQ Magazine** *present*

# *Producing Success*



*Music Producers  
Road Show '98*

**Spend a Day with Top  
Grammy Winning MPGA  
Engineers & Producers  
including:**

**\*Ed Cherney \*Al Schmitt  
\*George Massenburg \*Elliot Scheiner**

*Project professionals* who are serious about rapidly improving their skills and contacts in the music recording business, can't afford to miss this once-a-year opportunity in your area. Face-to-face interaction requires that attendance be limited. So, register today by calling MPGA at 213-465-7697 or visit MPGA website:

**[www.musicproducers.com](http://www.musicproducers.com)**

\$40 in advance

\$50 at the door (space permitting)

Free to MPGA members

**\* Advice from the experts on your career and today's recording and producing opportunities**

**\* Learn their latest recording tips and techniques**

**\* Hear top professionals discuss their greatest recording projects**

**School of Music  
USC Campus, Los Angeles  
Saturday, June 13, 1998  
9:30am-5:30pm**

**Coming soon to:**

New York \* Chicago \* Nashville \* Miami \* San Francisco \* Washington \* Boston



Sponsored by PANASONIC PRO AUDIO—TAKING DIGITAL FURTHER



## FEZGUYS

continued from page 133

nature and character of their widely divergent Internet presence.

One of the more interesting demonstrations, at the Knitting Factory (NY, NY) booth, was a live audio and video connection with their venue in Manhattan featuring a piano player onstage, available to play requests. It was authentic interactivity, in real time, via an ISDN connection. It worked great.

The much ballyhooed Mac vs. PC discussion failed to generate any heat. The welcomed focus of the multimedia professional appears to thankfully be resting correctly on content. Manufactured debates about the veracity of one technology over another seem to fall by the wayside in the face of compelling multimedia production. It ain't how you do it kids, it's what you got goin' on!

While New Media "festivals" continue to spring up all over the country, most, like the Austin-based SXSW, are focused primarily on regional community. If you have any interest in the interaction between the arts and the Internet in a given geographical area, there's no better way to get connected.

### LETTERS

*As my server doesn't offer a streamed-lined service, I tried to download RealAudio's Realtime Streaming protocol from its site, but the shareware is not available for Mac. Has anybody been in this situation and found a solution? Thanks very much. — Daniel*

RealTime Streaming Protocol (RTSP) is RealNetworks' proposed protocol for standardizing how media is streamed on the Internet. Most likely, what you're looking for is the RealNetworks player, which you can download at [www.real.com/products/player/](http://www.real.com/products/player/). You'll choose between their free player or the \$30 PlayerPlus — the free one should be fine for nearly everyone. If your local ISP doesn't offer access to a RealAudio server, take a look at our sidebar in "Geek Thy Neighbor" (Column #6, April '97, on our Web site), which details using HTTP streaming to deliver RealAudio through a standard Web server. If you are, in fact, looking for RTSP documentation and source code samples (Windows and Unix only), you can find that at [www.real.com/rtsp/](http://www.real.com/rtsp/). Unfortunately, Macintosh examples are not immediately available. Contact [rtsp-feedback@real.com](mailto:rtsp-feedback@real.com) for more information.

*We welcome your comments! Give 'em at [www.fezguys.com](http://www.fezguys.com).*

## KORG D8 REVIEW

continued from page 131

more you bounce — good news if you're doing composite solos by bouncing different bits of tracks together.

Automation consists of storing and recalling 20 different "scenes" (level, EQ, pan, aux send, and effect send), either manually or automatically. Editing is basic: for a designated audio region, you can copy, delete, insert, erase, or swap. Undo is also available.

The D8 cannot slave to timecode, only serve as a master at 30 fps (although it can slave to MMC commands). MIDI-wise, the D8 can output MTC or MIDI clocks, using either a beat map (with up to 10 steps), tap tempo, or by recording a sequencer's MIDI clock out into the D8. One limitation with tap tempo and recording MIDI clock is that tempo changes happen properly only if you've recorded a tempo map with these changes.

There are plenty of effects available, including the usual reverbs and EQ, but also several guitar-oriented effects (distortion, phaser, tremolo, etc.). Many effects are available in mono and stereo, and there are also weirdass effects like lo-fi, AM radio, ring modulation, turntable simulator, and other fun remix toys. Most of the programs are actually chains of multiple effects; e.g., rock lead includes distortion, noise reduction, amp simulation, and delay. You can enable/disable effects in this chain, as well as edit effect parameters. However, only one effect can be used at a time — as a channel insert while recording, a "master" effect that works with the effects send control, or a "global" effect that processes the entire 2-track output.

While these effects don't beat those in big-bucks boxes, they are extremely effective in sketching out songs. Furthermore, there's no latency when listening to the effects, and you can monitor through an effect but record only the straight signal. This is great when you don't want to commit to an effect while recording — bounce the part over to another track later, using your effect of choice.

At this price point, I was expecting a lot more limitations than the relatively benign cost-cutting measures (such as no display backlighting and no slaving to MTC). Even the manual is straightforward and helpful. Although one normally doesn't associate the words "class act" with something that clearly addresses a market's budget segment, the D8 is a musician-friendly box with both technical muscle and straightforward operation. When you can buy something this complete for \$1250, the concept of the portable studio as a "second-class citizen" seems as antiquated as...well, cassette-based multitracks.

EQ



The world's  
first audio  
optimized  
CD-R disc.  
Now optimized  
for your printer  
as well.

The HHB CDR74 Gold and the new CDR74 Gold P printable, optimized for use with CD-capable inkjet printers. Secure archival life: 100 years. Ask for them by name.

HHB

Los Angeles: 310 319 1111  
Toronto: 416 867 9000  
London: 0181 962 5000

[www.hhb.co.uk](http://www.hhb.co.uk)

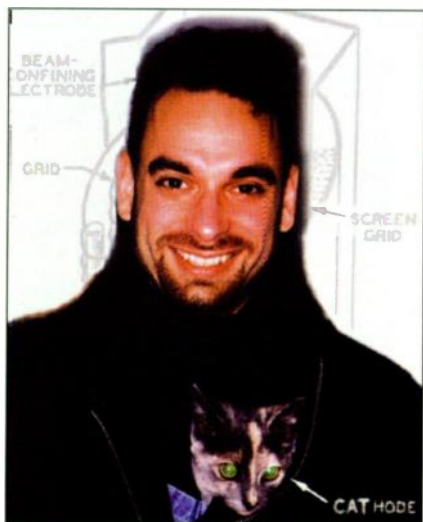
CIRCLE 76 ON FREE INFO CARD



# Double Bonus

Some tips for using a LA3A and some tricks for DAT machines

BY EDDIE CILETTI



Here are three quick LA3A tips to share. First, pop the lid and spray a little CAIG DeOxit™ into the Gain switch — exercise vigorously — then set to 30 dB. Using the 50-dB setting — with a nominal +4 source — may overload the input transformer, unless you're trying to use the LA3A as a mic pre!

While the lid is open, check R14. On the schematic, this part is listed as 220 kohm. Changing the value to 47 kohm will reduce the gain and some noise as well. You'll have to run the Input Level at a higher setting, but that's OK. Like any transformer-based device, the LA3A was designed to drive a 600-ohm load. Unless you are consistently patching into a Pultec, an old Neve console, or some equally vintage piece, it is advisable that you put a 620 ohm, 1/2-watt resistor across the output terminals. There will be a sonic difference.

## TALLY NO

"Tally" is a term that describes machine status. It is part of the language spoken within those multi-pin connectors that link machine-to-machine or machine-

to-"other" devices such as remote and edit controllers. In the pre-cyanide era, the most important Tally was a light bulb labeled RECORD READY. If that bulb were dead, you'd be dead too after pressing Record...

When an open-reel machine is in Fast Wind, no additional clues are necessary. But ever since tape activity went indoors, we've relied on LEDs and LCDs for feedback. I think most people will agree that more feedback would be better, hence this simple mod for the TASCAM DA-30.

All of us are guilty of pressing buttons when, quite often, the machine is simply not ready. Wouldn't it be nice to know that all products could clearly communicate this "readiness?" TASCAM's DA-30 and DA-30 MKII have a DB-15 remote connector on the rear panel. Detailed in the schematic (shown in fig. 1) as P1, "Control I/O," Pin 12 of the DB-15 is the STOP TALLY. It goes "low" (to ground) when the machine is ready to do business. Connect the anode

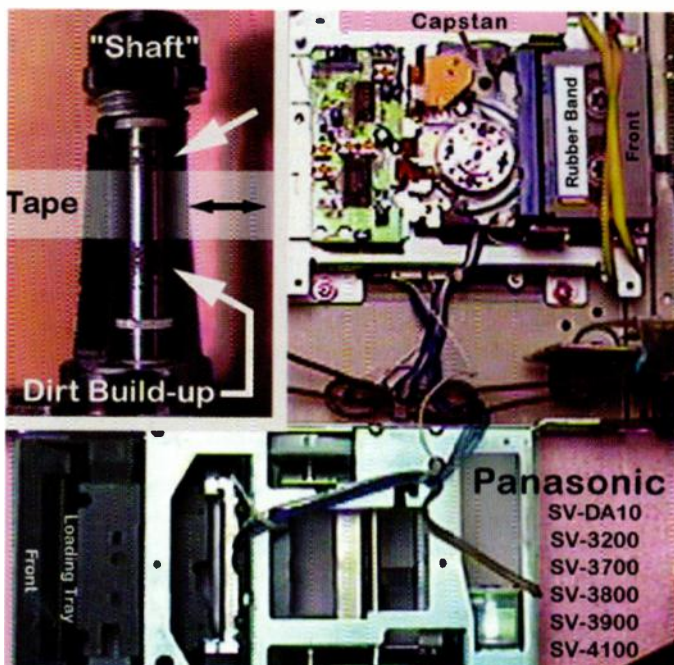


FIGURE 2

of an LED to +5 volts (Pin 16 of either U801 or U802). In series with the cathode is a 220-ohm resistor that goes to pin 4 of U802 (also pin 12 of the DB-15).

Unfortunately, 5 volts does not appear on the DB-15 connector or else you could do this without even opening the unit. (An external supply seems silly doesn't it?) I put the LED just above the Stop button on the machine's front panel. If you get that far, there's an LED-sized hole in the plastic assembly just

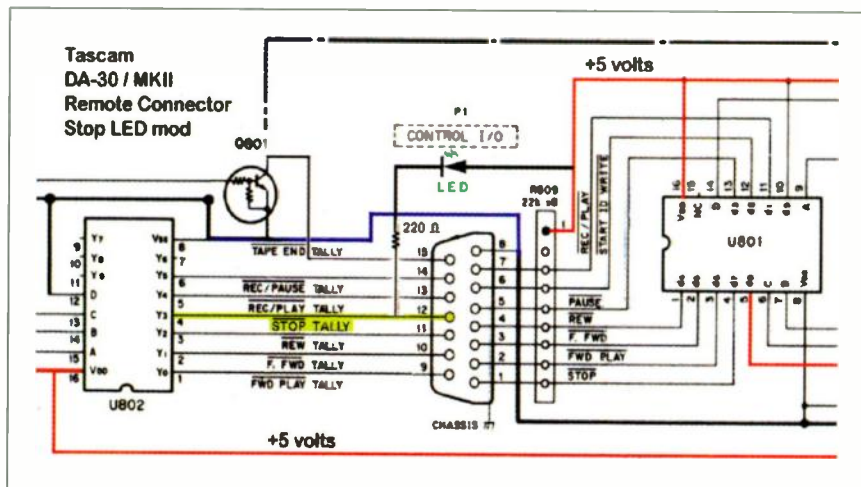


FIGURE 1



above the Stop button. Just knowing that the machine will not accept any commands until the STOP LED comes on will save wear and tear on your fingers, your already-short fuse, and on that button assembly.

#### TALKING 'BOUT SHAFT

Panasonic's DAT transport is more serviceable than some, but harder to clean than others. One example, seen in the accompanying picture (fig. 2), shows how the loading tray can be swung out of the way to provide full access to the transport. It's even possible to play a tape using a rubber band to secure it to the mechanism. Maybe you shouldn't try that trick, but it sure makes it easier to see what's going wrong.

On a recent journey to the interior, I finally zoomed in on the capstan motor to show readers that its Shaft can be one dirty...(shut yo mouth!).... Not many machines come in looking like the Shaft inset at the top left corner of fig. 2. I suspect that a certain brand or batch of tape was responsible.

Removing the funk is not easy; cleaning tapes are powerless. Alcohol must be used sparingly to avoid dissolving the bearing lubricant. I use a special "U"-shaped screwdriver to wrap a cloth part way around the shaft to get the dirt off. Real stubborn dirt requires a mildly abrasive lapping film.

#### LIAR LIAR

I gave the Sony PCM-R500 a glowing review in *EQ* based on its four-motor transport. I do, however, have a confession to make. Its weakness is not that it doesn't have an Error Rate display, but that Sony does not seem to want to inform users about it. It took a bit of newsgroup surfing (my least favorite pastime) and a few phone calls to Dan Haugh at American Digital ([www.american-digital.com/](http://www.american-digital.com/) or 888-USA-DATS). You can find other useful DAT info at the DAT Heads Web site ([www.eklektix.com/dat-heads/](http://www.eklektix.com/dat-heads/)), as well as Terrapin Tapes

([www.ttapes.com/](http://www.ttapes.com/) or 800-677-8650).

To access the display, it is necessary to cut away a portion of the thin plastic laminate on the remote control. The hidden "Test" key is to the right of the Open/Close button, just above the Counter Reset button. It would take a Paul Prestopino (my mentor) to do a neat and tidy job of this. My hack job was made completely beautiful via Photoshop (See fig. 3.)

*Après surgery*, press 9, then 1. You will see the "91" in the Margin area of the machine's display. If so, then press the Test key. You should now see an "A" on the far left of the display followed by four pairs of numbers as shown superimposed at the bottom of the fig. 3. The most I can tell for certain is that low numbers are good (zeros are best). Don't be afraid, there is plenty of built-

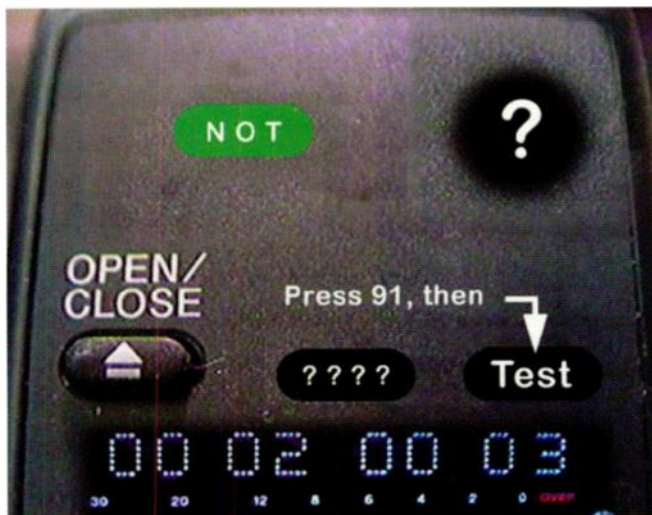


FIGURE 3

in redundancy and tolerance for errors.

I ask all manufacturers to use me as their vehicle to spread the word — not of ignorance and fear — but of enlightenment. I ask all readers to politely make their needs known — via phone, fax, e-mail, and at trade shows. It is always better to be able to anticipate a problem than get caught with yer pants down. Error Rate displays are a good thing.

#### CIAO FOR NOW

Well, that's it for this month. Drop by [www.tangible-technology.com](http://www.tangible-technology.com) for a peek at the archives, or e-mail the recipe for that orange salad dressing served in Japanese restaurants to: [edaudio@interport.net](mailto:edaudio@interport.net).

Thanks to everyone who responded to my March column on compressor/limiters.

EQ



Hold tight!  
We've  
improved  
the brakes.



The award-winning HHB DAT Tape. Now with improved tape braking for smoother than ever tape loading and unloading. Ask for it by name.

HHB

Los Angeles: 310 319 1111  
Toronto: 416 867 9000  
London: 0181 962 5000

[www.hhb.co.uk](http://www.hhb.co.uk)

CIRCLE 77 ON FREE INFO CARD



# Be Nice To *Those Who Pay You*

Some tips and  
ideas for better client  
courtesy

BY MARTIN POLON



Perhaps the most asked question in the project recording studio universe — and in fact in the universe of all studios regardless of size — is as follows: “Why does my competition have more business than I — despite the fact that my equipment is more impressive or at least equal in power and function to theirs?”

The answer to this question is at once complicated and devoid of secret technological solutions. It is about human relations, complimentary behavior, and the oldest piece of business wisdom in the book — that you have to spend some money to make some money!

The answer to the question of customer loyalty is very simple and quite frankly almost biblical — part of the “speak and you shall be heard” school of management! In other words, treat your customers as you would want to be treated yourself.

A recent study confirmed that in the case of recording studios of all sizes, customer loyalty was significantly a function of excellent customer service, small kindnesses afforded the customer, and gracious behavior by savvy management. Most studio customers interpreted these acts of gratuity as the differentiation between studios of equal technical capability and functionality.

Do remember that any of the “courtesies” sometimes offered by recording studios to their customers in the past —

involving hallucinatory pharmacologicals (drugs) or various refined spirit or grain substances (hard liquor or beer) do not make for good business practices these days. First, the U.S. Drug Enforcement Administration (DEA) has already seized so many studios historically, that it may well be at any one time the largest single operator of studio facilities in the United States.

Second, the owner of any studio facility that serves alcohol or allows it to be served by others on their premises to their customers in any way, shape, or form has significant liability. The same liability as the owner of a bar who acts irresponsibly in serving an already intoxicated patron. If anyone leaves your facility intoxicated and has an accident, *you* have significant and potentially business-ending liability problems!

Consider the following customer appreciation tokens practiced by successful recording facilities:

1. Taking customers who have had a problem out to lunch. By sitting down with an unhappy customer, even after you have solved the SNAFU (Situation Normal — All Fugged Up), you can both solve a problem and make a friend. Always remember that you do not need to be right, you just need to be profitable. The customer, ultimately, must always be right!

2. Sending customers that you have had a billing problem with (due to your or your employee's fault), a package of gourmet quality Belgian chocolate via express delivery is a very good way to say that you are sorry about what happened.

3. Providing a cassette of the final 2-track mixdown with a thank you note for customers who pay promptly is a really well-appreciated touch that costs very little.

4. Providing an end-of-project party with soft drinks, alcohol-free beer, quali-

ty food, and colorful paper plates and cups for those customers who have spent a significant amount of time on a project in your facility is another courtesy that works. Some facilities even throw a theme event based on the musical theme of the recording project (Cuban food for Salsa, creole food for New Orleans jazz, etc.).

5. Having a bottomless coffee pot, a hot and cold bottled water server with packets of hot chocolate and various caffeinated and herbal teas, and/or a bottled

juice bar available at all times during a session along with appropriately chilled soft drinks also sends the right message to your clients.

6. Providing a hot dog “buffet” throughout a session or at the end of the session with a hot dog steamer and the fixings (rolls, mustard, ketchup, relish, onions, chili, baked beans, and sauerkraut) is another way of saying thank you to your customers.

The bottom line here is to spend a little money to make a lot of money. If your facility is for profit, consider the options offered by these and other gratuities for your customers. Some studio operators argue that all of this is unnecessary and costly. Yet when someone is spending at an hourly rate that may be measured approaching or exceeding a hundred dollars an hour and sometimes

far exceeding that number over many days, the small cost of such gratuities has to be balanced against the overall revenue of the project in question.

Of course, all such expenditures are tax deductible, although not always at 100 percent of expenditure. Nevertheless, it may be what your competitors are doing and it bears consideration. Obviously, you do not do all of the above, but only those gestures that you deem appropriate to the customer and the size of the project!

*Treat your  
customers  
as you  
would  
want to be  
treated  
yourself.*



## all pro audio

Since 1968

**GIANT  
INVENTORY  
BEST PRICES  
CALL NOW**

Order 1 800 785 3099

Info 1 903 784 3215

Fax 1 903 785 2844

*A Division of Bell Electronics*

CIRCLE 12 ON INFO CARD



Chris Shaw•Jewel  
Rick Chertoff•Joan Osborne  
William Wittman•Too  
Much Joy•Cyndi Lauper  
Butch Vig•Soul Asylum  
Garbage•Beck  
John Siket•Sonic  
Youth  
The Dave Matthews Band  
Tom Jung•Royaltone  
Studios•Stewart Ler-  
man•Joe Chiccarelli John Agnello•Kay  
Benson•Steve Earle•Willy DeVille•The Steve  
Miller Band•John Levanthal Asleep At The  
Wheel•John Cale•Freddy Johnston Audioforce•Mill-  
brook Sound•Bearsville Studios Justin  
Niebank•Freddy Jones Band•Stuart  
Sullivan•Bob Mould•Appaloosa Sound•Kevin  
Beamish•Dave Thoenen•Bon Jovi•The Hooters  
J. Mascis•Coyote Studio•Rancid

**ALL DISCRETE, TRANSFORMER  
BALANCED CLASS "A"  
52270 MIC-PRE WITH 4 BAND EQ  
91579 COMPRESSOR/LIMITER  
AVAILABLE IN  
12.25"H CONSOLE MODULES or 19"W RACK MOUNT**

**GEOFFREY DAKING & CO., INC.**  
800.522.3650 302.658.7003  
IN CANADA 888.216.6888  
WWW.DAKING.COM  
E-MAIL GEOFFDAKE@AOL.COM



CIRCLE 31 ON INFO CARD

## bpm

studioteknik

*"The Quality YOU Desire  
at a Price YOU Can Afford!"*

Large Diaphragm,  
Tube & Condenser  
Microphones.

*Complete*

Project  
Studio  
Dream



Starting at  
\$549.95

**305.5311.BPM**  
bpmusa@southfla.net

CIRCLE 85 ON INFO CARD

## Reamp™

**TAPE RECORDER TO GUITAR AMP INTERFACE**  
Correct impedance and level adjustment.

A must for every engineer's toolkit.  
**NO HUM. NO HISS. NO HASSLE.**  
(Unique circuit design, patent pending)

**Reamp®**



**QUICK. EASY. COOL.**  
\$329 (sugg. Pro Net)

Capture those great first takes. Decide later what  
amp and effects to use with the Reamp®. Use it  
on bass, drums, vox, anything! Try it once, and  
then you'll know - it's always time to Reamp®.

**reamp® users list (partial):**

THE ROLLING STONES • AEROSMITH • BRYAN CARLSTROM  
VAN HALEN • STEVE VAI • JOE SATRIANI • JAY BAUMGARDNER  
CHRIS ISAAK • TOM LAUNE • CHUCK AINLAY  
JACK JOSEPH PUIG • JOHN LEVANTHALL • CRAIG STREET  
ANDY JOHNS • JOE BLANEY • CHARLIE SEXTON  
JOE CHICCARELLI • NRG RECORDING SERVICES  
MATT WALLACE • NEIL SCHON • ROYALTONE STUDIOS  
RANDY BACHMAN • STEVE BUCKINGHAM • MARTIN KLOIBER

**Reamp™**

For further info, call **AXI**  
T (781) 982-2626  
F (781) 982 2625  
axi@axi-marketing.com

CIRCLE 86 ON INFO CARD

**REACH THE MOST  
IMPORTANT  
READERS  
IN THE  
INDUSTRY!  
Advertise  
in the**

# EQ SHOPPER

**Contact  
Christine Cali  
(212) 378-0454**



# B&H

PHOTO - VIDEO - PRO AUDIO

## THE PROFESSIONAL'S SOURCE FOR PHOTO

FOR ORDERS CALL:

800-947-5518

212-444-6688

OR FAX (24 HOURS):

800-947-9003

212-444-5001

Store & Mail Order Hours:

Sunday 10-5

Monday thru Thursday 9-7

Friday 9-2 • Saturday Closed

On the Web: <http://www.bhphotovideo.com>

### PRO HEADPHONES



#### K240M Studio Headphones



The first headphone of choice in the recording industry. A highly accurate dynamic transducer and an acoustically tuned venting structure produce a naturally open sound.

#### FEATURES-

- Integrated semi-open air design.
- Circumaural pads for long sessions.
- Steel cable, self-adjusting headband.
- 15Hz-20kHz, 600Ω

### SONY

#### MDR 7506 Pro Headphones



The Sony 7506's have been proven in the most trying studio situations. Their rugged, closed-ear design makes them great for keyboard players and home studio owners.

#### FEATURES-

- Folding construction
- Frequency Response 10Hz to 20K Hz
- 1/4" & 1/8" Gold connectors
- Soft carrying case • Plug directly into keyboards

### beyerdynamic

#### DT 770 Pro Headphones



These comfortable closed headphones are designed for professionals who require full bass response to compliment accurate high and mid-range reproduction.

#### FEATURES-

- Wide frequency response
- Durable lightweight construction
- Equalized to meet diffused field requirements
- Padded headband ensures long term comfort

### SENNHEISER

#### HD 265/HD580 Pro Headphones



The HD-265 is a closed dynamic stereo HiFi/professional headphone offering high level background noise attenuation for domestic listening and professional monitoring applications. The HD 580 is a top class open dynamic stereo HiFi/professional headphone that can be connected directly to DAT, DCC, CD and other pro players. The advanced design of the diaphragm avoids resonant frequencies making it an ideal choice for the professional recording engineer.

### MIXING BOARDS

## Panasonic RAMSA

Stop dreaming about your digital future, it's here! The Panasonic/Ramsa WR-DA7 digital mixer features 32-bit internal processing combined with 24-bit A/D and D/A converters as well as moving faders, instant recall, surround sound capabilities, and much more. Best of all, it's easy to use, and it's available NOW!

#### FEATURES-

- 32 Inputs/6 AUX send/returns
- 24-bit converters
- Large backlit LCD screen displays EQ, bus and aux assignments, and dynamic/delay settings
- 4-band parametric EQ
- Choice of Gate/Compressor/Limiter or Expander on each channel
- 5.1 channel surround sound in three modes on the bus outputs
- Output MMC
- Optional MIDI joystick



## MACKIE

### 8 Bus Series Mixing Consoles

Since its introduction, Mackie Designs' 8-Bus Series consoles have proven that excellent sonic quality, practical features and extreme durability can be affordable. All 3 versions offer extensive monitoring, 4-band EQ, accurate, logarithmic taper faders, and expansive headroom. The 24x8 and 32x8 can be expanded using Mackie's 24-E Expander console which consists of 24 input channels and tap returns and may be daisy chained to provide 128 or more total input channels.

#### FEATURES-

- Each channel includes Mackie's well-known Mic preamp and a -18/+4 switchable tape return
- 8-assignable submasters and a L/R mix master
- 4-band EQ with true parametric (3-control) Hi Mids, Lo Cut filter
- Extensive routing capabilities
- Available in 16/24 & 32 channels
- Optional Meter Bridges available
- Optional 24-E Expander console available
- Rugged all-metal chassis
- In-line monitoring effectively doubles your input channels



#### MS1202VLZ 12-Channel Compact Mic/Line Mixer

- Gain control, pan, 3 band EQ, and 2 Aux sends
- 4 mono, 4 stereo channels (12 inputs total)
- Great for "extra inputs" on the fly
- Phantom power



#### MS1402VLZ 14-Channel Compact Mic/Line Mixer

- Mic preamps w/Trim control (channels 1-6)
- 60mm "long" faders
- Mute switch routes to alt 3&4 bus
- Low-cut filter • Phantom power



#### CR1604VLZ 16 x 4 x 2 Mic/Line Mixer

- 7 Aux sends, 3 band EQ
- Large 10-segment LED meter
- Lowest noise/Highest headroom
- 16 studio grade mic pre's
- 3 different setup positions
- Low-cut filter • Phantom power



The MS-1202, 1402, 1604 & SR Series all include VLZ (Very Low Impedance) circuitry at critical signal path points. Developed for Mackie's acclaimed 8-Bus console series, VLZ effectively reduces thermal noise and minimizes crosstalk by raising current and decreasing resistance.

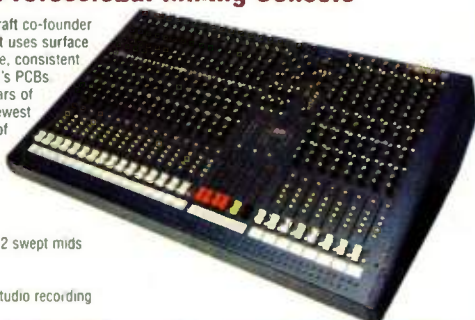
## SPiRiT

### LX7 Professional Mixing Console

The LX7 was designed by Soundcraft co-founder Graham Blythe. Built in the UK, it uses surface mount technology to ensure accurate, consistent insertion of all components into LX7's PCBs. Roadworthy construction and 25 years of audio console experience put this newest addition to the Spirit line at the top of the heap.

#### FEATURES-

- 24 Ultramic preamps
- 100mm ALPS faders
- 7 bus outputs
- Comprehensive 4-band EQ includes 2 swept mids and 15dB of boost or cut
- Separate stereo input section
- Use in FOH applications as well as studio recording
- Internal power supply



### MONITORS

## MACKIE

### HR824

These new close-field monitors from Mackie have made a big stir. They sound great, they're affordable, they're internally bi-amped. "What's the catch?" Let us know if you find one.

#### FEATURES-

- 150W Bass amp, 100W Treble amp
- Full space, half space and quarter space placement compensation
- Frequency Response 39Hz to 22kHz +1.5dB



## SPiRiT

### Absolute Zero

Absolute Zero monitors maintain a wide frequency response at high and low listening levels, both on and off-axis for consistent results every time.

#### FEATURES-

- High definition linear phase design
- Wide controlled dispersion
- CAD optimized, low loss crossover
- Custom designed drivers
- Long throw 170mm LF driver
- 25mm soft dome HF unit on proprietary waveguide



## TANNOY

### PBM 6.5II

The PBM 6.5 II is the industry standard for studio reference monitors. They provide true dynamic capability and real world accuracy.

#### FEATURES-

- 6.5" low frequency driver and 3/4" tweeter
- Fully radiused and ported cabinet design reduces resonance and diffraction while providing deep linear extended bass



## JBL SPECIAL

### 4206 & 4208

The 4206 & 4208 studio reference monitors are 6" and 8" respectively. Both offer exceptional sonic performance, setting the standard for today's multi-purpose studio environments.

- Multi-Radial baffle ABS baffle virtually eliminates baffle distortion
- Superb imaging & reduced phase distortion
- Pure titanium diaphragm high frequency transducer provides smooth, extended response
- Magnetically shielded for use near video monitors.



FOR A FREE MONTHLY CATALOG, CALL 800-947-5933, 212-444-6633 OR WRITE

CIRCLE 09 ON FREE INFO CARD



TO INQUIRE ABOUT YOUR ORDER:  
800 221-5743 • 212 239-7765  
OR FAX 24 HOURS:  
800 947-2215 • 212 239-7549

**New Address:**  
**420 Ninth Ave. (Bet. 33rd & 34th St.)**  
**New York, N.Y. 10001**

## MIC PREAMPS

# dbx

## Blue Series 786 Precision Mic Pre-amp

The dbx Blue Series 786 is a top-quality mic-preamp featuring the dbx M6 module. It's ultra-pristine signal path reveals the true characteristics of any microphone.

### FEATURES—

- Ultra-high-drive transformer coupled outputs.
- 20dB pad, phase invert
- +48V phantom power
- Super-low Z input switch
- dbx Type IV Conversion system digital output option



## Focusrite Green 3 "Voicebox"

The Voicebox provides a signal path of exceptional clarity and smoothness for mic recording, combining an ultra-high quality mic amp, an all new Focusrite EQ section optimized for voice, and full Focusrite dynamics. Use it as a stand alone unit for direct-to-digital recording, or as an upgrade for the input section of a console.

### FEATURES—

- Same mic pre section as found on the Green Dual Mic Pre includes +48V phantom power, phase reverse, and a 75Hz high-pass filter. Mute control and a true VU response LED bargraph are also provided
- EQ section includes a mid parametric band with frequency and gain control as well as a gentle bell shape to bring out the character of the voice
- Dynamics section offers important voice processing functions of compression and de-essing combined with a noise reducing expander
- Single balanced Class A VCA delivers low distortion and a S/N ratio as low as -96dBu

## APHEX 107 Tubessence 2 channel Mic Preamp

The 107 delivers outstanding sonic performance. It features Tubessence technology, front panel balanced inputs on both channels and LED metering, all in a single rack space.

### FEATURES—

- 2 independent channels with front panel XLR inputs
- Up to 64dB of gain available
- 20dB pad with red LED indicator, 2 LED input meter
- Full 48V phantom power with red LED indicator
- Low cut filter for 80Hz, 12dB/octave
- Polarity inversion switch with LED indicator
- Individual channel remote mute capability
- Switchable +4dB/-10dB output with 1/4" TRS phone jacks

## COMPRESSORS

# dbx

## "Blue Series" 160S Stereo Compressor

The dbx 160S combines the best features of all the great dbx compressors in a well-built unit where the craftsmanship is as stunning as the engineering is innovative. This is truly a desirable compressor.

### FEATURES—

- 127dB dynamic range • Program dependent "Auto", or fully variable attack and release
- Hard knee/OverEasy switchable



# ALESIS

## 3630 RMS/Peak 2Ch.Comp/Limiter/Gate

The 3630 is a dual-channel compressor that offers Ratio, Threshold, Attack and Decay controls to handle the toughest signals. It also offers a choice between RMS and Peak compression styles, plus Hard and Soft Knee dynamic curves for every application from subtle gain control to in-your-face punch. Ideal for use in applications from studio recording and mixing to live sound reinforcement and broadcast.

The 3630 is a dual-channel compressor that offers Ratio, Threshold, Attack and Decay controls to handle the toughest signals. It also offers a choice between RMS and Peak compression styles, plus Hard and Soft Knee dynamic curves for every application from subtle gain control to in-your-face punch. Ideal for use in applications from studio recording and mixing to live sound reinforcement and broadcast.

## EFFECTS PROCESSING

# Lexicon

## MPX-1 Multi-Effects Processor

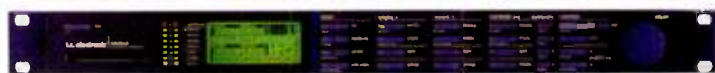


Lexicon's latest addition to their Digital effects family, the MPX-1 features top-quality effects in an easy to use, 1 rack space unit. With 56 Pitch, Chorus, EQ, Modulation, Delay, and world-class reverb effects accessible from the front panel, as well as TRS and XLR balanced I/O and complete MIDI implementation, the MPX-1 creates a new standard for cost and quality in a multi-effects device.

# t.c. electronic

ULTIMATE SOUND MACHINES

## Wizard M2000 Studio Effects Processor



The M2000 features a "Dual Engine" architecture that permits multiple effects and 6 different routing modes making it a great choice for high-end studio effects processing.

### FEATURES—

- 250 factory programs including reverb, pitch delay, chorus, flange, phase, EQ, de-essing, compression, limiting, expansion, gating and stereo enhancement
- 20-bit A/D conversion, AES/EBU and S/PDIF digital I/O
- "Wizard" help menus, 16-bit dithering tools
- Tap and MIDI tempo modes
- Single page parameter editing, 1 rack space

# SONY

## DPS-V77 2 Ch. Master Effects Processor



Sony's latest effects processor, the DPS-V77 yields excellent sonic quality combined with realtime control, a digital I/O and many more features that will put a smile on the face of any discerning studio engineer.

### FEATURES—

- 198 preset & 198 user-definable programs
- Control up to 6 parameters in realtime via MIDI information and an optional foot pedal
- Use the AES/EBU & SPDIF digital I/O to link multiple V-77s together & when working with digital mixers
- 10-key pad input
- Shuttle-ring equipped rotary encoder allows for quick patch changing
- A noise gate circuit is provided ahead of the input for guitar players and other instrumentalists who want top quality effects without sacrificing tone.

## EQUALIZERS

# Focusrite

## Green 2 Focus EQ



The Green 2 Focus EQ is suitable for a variety of applications combining a Focusrite equaliser section with a multi-source input section. Use it as a high-quality front end for recording applications or patch it into the send/return loop to upgrade a single channel of console eq, either way, it sounds great.

### FEATURES—

- XLR & 1/4" inputs are similar to the Dual Mic Pre but have been adapted to cope with a wider range of levels
- VU metering via a 10-LED bargraph
- EQ section derived from the Red and Blue range processors for superb audio quality

# APHEX

## Model 109 Parametric EQ with "TUBESSENCE"



The Aphex 109 is an extremely versatile and high performance parametric vacuum tube EQ with unique features, flexibility and sound. Great for "warming up" digital signals.

### FEATURES—

- True tube circuitry in the output stage
- Dual (stereo) 2 band or mono 4 band EQ configuration offers flexibility from general sweetening to critical problem solving
- Operates in the EQ flat mode yet still passes signal through the Tubessence vacuum tube stage
- 1/5 octave to 2 octave bandwidth adjustment • Switchable -10dBV/+4dBu operating level



FOR ORDERS CALL:  
**800-947-5518**  
**212-444-6688**

OR FAX (24 HOURS):  
**800-947-9003**  
**212-444-5001**

**MOST ORDERS SHIPPED  
 WITHIN 24 HOURS**  
**OVERNIGHT SERVICE AVAILABLE**  
 On the Web: <http://www.bhphotovideo.com>

## MUSIC SOFTWARE

### Steinberg CUBASE VST Virtual Studio Technology

Steinberg's Virtual Studio Technology (VST) turns your PowerPC or Windows based computer into a music production powerhouse featuring digital audio, real-time effects, automation, MIDI and scoring in one single program. Expandable with software Plug-Ins and an audio bus system for use with the latest generation of multi I/O audio cards, Cubase VST delivers

- FEATURES—**
- Up to 32 channels of digital audio
  - Complete mixer with up to 128 EQs
  - 2 full-featured effects racks
  - All Realtime, Every action can be automated
  - **CUBASE SCORE** adds professional score printing and layout functions
  - **CUBASE AUDIO XT** adds support of Digidesign DAE compatible interfaces such as the ProTools System



### emagic LOGIC AUDIO 3.0 For Mac or Windows

Logic Audio integrates Digital Audio Recording & Editing, MIDI Sequencing, and Professional Scoring into a leading-edge music composition and production system. The new Version 3.0 features extended real-time editing and manipulation options along with numerous detailed solutions for use in professional studio environments.

- FEATURES—**
- Custom window setups can be assigned to keys for instant recall, up to 90 screensets per song
  - Interactive Editors such as Event, Hyper, Score, Matrix, Arrange and Environment are all linked
  - Realtime DSP effects
  - Highest resolution available, 960ppq
  - Environment window provides knobs, faders, buttons and other virtual objects that can be defined to send out any type of MIDI data
  - New bus system, Punch on the fly, & Cycle Mode
  - Support of Adobe Premiere and Digidesign Audiosuite plug-in formats



### Mark of the Unicorn Digital Performer 2.11 MIDI Sequencer for Mac

Digital Performer contains all of the sequencing capabilities of Performer V.5 and adds Digital Audio to the picture. Apply effects such as Groove Quantize, shift, velocity scaling and more—**ALL IN REALTIME.**

- FEATURES—**
- MIDI Machine Control, Quicktime Video playback
  - Sample rate conversion
  - Spectral effects, pitch correction
  - Real-time editing and effects processing
  - Full featured Notation section
  - Virtual automated mixing

## HARD DISK RECORDING



A Division of Avid Technology, Inc.

With Pro Tools Project you get 8 tracks of digital audio & 64 virtual tracks! The Pro Tools Project system includes an audio card as well as award winning Pro Tools software. You choose either an 888 or an 882 I/O to complete the package. Random access, non-destructive digital editing keeps your precious recorded material in its original form as you process and play with it, allowing you to take chances on tweaking a performance without risk. Project also features MIDI recording and playback as well as Quickpunch™ punch-on-the-fly & a direct upgrade path that lets you move to a full Pro Tools system when you're ready.

#### REQUIRES—

- Qualified NuBus or PCI Macintosh CPU
- Hard Drive, system software 7.1 or greater
- 24MB RAM minimum
- 14" monitor (17" recommended)

### 888 & 882 I/O Audio Interfaces

The 888 and 882 I/Os each provide 8 channels of high quality A/D, D/A I/O for connection to Pro Tools Project and Session 8 PC systems. Choose the 882 and get an affordable audio interface featuring 1/4" balanced/unbalanced ins and outs in a single rack space. For more high-end applications, the 888 provides features such as XLR balanced analog ins and outs, 8 channels of AES/EBU I/O for direct digital transfers of 8 tracks, high resolution LED metering & individual input/output level trims.

### ProTools Project™ Digital Audio for Macintosh



### Audiomedia III Digital Audio Card

Available for both Macintosh and Windows OS systems, Audiomedia III will transform your computer into a powerful multitrack workstation. Compatible with a wide variety of software options from Digidesign and Digidesign development partners, Audiomedia III features 8 tracks of playback, up to 4 tracks of recording, 24-bit DSP processing, multiple sample rate support and easy integration with leading MIDI sequencer programs.



If you're already familiar with the Waves TDM bundle, you'd better take another look! This great package is now even better with the addition of 5 new processors, at the SAME PRICE! TDM owners can now maximize their power with plug-ins including the famous TrueVerb virtual-space reverb, the Q-10 EQ, C1 Compressor/Gate, S-1 Stereo Imager, PAZ-Psychacoustic Analyzer, L1-Ultramaximizer as well as MultiRack, WaveConvert and TrackPac Pro applications.

### TDM BUNDLE



## DIGITAL MULTI-TRACK RECORDERS

### TASCAM DA-38 Digital Audio Recorder

The DA-38 was designed for musicians. Using the same Hi-8 format as the highly acclaimed DA-88, the DA-38 is an 8 track modular design that sounds great. It features an extremely fast transport, compatibility with Hi-8 tapes recorded on other machines, rugged construction, ergonomic design and sync compatibility with DA-88s.

#### FEATURES—

- Hi-8mm tape format
- Next generation 18-bit A/D and 20-bit D/A converters with Delta-Sigma oversampling
- Digital track copy for simple assembly composite edits

- Built in Digital patchbay
- Track advance and track delay
- Easy to use interface



### ADAT XT20 Digital Audio Recorder

The New ADAT-XT20 provides a new standard in audio quality for affordable professional recorders while remaining completely compatible with over 100,000 ADATs in use worldwide. The XT20 uses the latest ultra-high fidelity 20-bit oversampling digital converters for sonic excellence, it could change the world.

#### FEATURES—

- 10 point autocalibrate system
- Dynamic Braking software lets the transport quickly wind to locate points while gently treating the tape
- Remote control
- Servo-balanced 56 pin ELCC connector

- Built-in electronic patchbay
- Copy/paste digital edits between machines or even within a single unit. Track Copy feature makes a digital clone of any track (or group of tracks) and copies it to any other track (or group) on the same recorder.



## MIDI HARDWARE



### Mark of the Unicorn MIDI Time Piece™ AV 8x8 Mac/PC MIDI Interface

The MTP AV takes the world renowned MTP II and adds synchronization that you really need like video genlock, ADAT sync, word clock sync, and even Digidesign superclock!

#### FEATURES—

- Same unit works on both Mac & PC platforms
- 8x8 MIDI merge matrix, 128 MIDI channels
- Fully programmable from the front panel
- 128 scene, battery-backed memory
- Fast 1x mode for high-speed MIDI data transfer

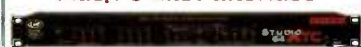
### Digital Time Piece™ Digital Interface



Think of it as the digital synchronization hub for your recording studio. The Digital Timepiece provides scalable, centralized sync for most analog, digital audio, and video equipment. Lock together ADATs, DA-88s, ProTools, word clock, S/PDIF, video, SMPTE, and MMC computers and devices flawlessly. It ships with "Clockworks" software which gives you access to its many advanced features and remote control of some equipment settings such as record arm.



### Studio 64XTC Mac/PC MIDI Interface



The Studio 64XTC takes the assorted, individual pieces of your studio—your computer, MIDI devices, digital and analog multitracks and even pro video decks, and puts them all in sync.

#### FEATURES—

- 4 In / 4 Out, 64 channel MIDI/SMPTE interface/patchbay with powerful multitrack & video sync features
- ADAT sync with MIDI machine control
- Simultaneous wordclock and SuperClock output, 44.1kHz or 48kHz for perfect sync with ADAT, DA-88 and ProTools
- Video and Blackburst in (NTSC and PAL)
- Cross-platform Mac and Windows compatibility

### MIDI Translators MIDI Interfaces

The MIDI Translator II™ and MIDI Translator Pro™ are the next generation portable interfaces. The MIDI Translator Pro™ provides twice the processing power of the MIDI Translator II and both let you switch between MIDI or peripherals with a flip of the THRU-switch - NO CABLE SWAPPING!

#### TRANSLATOR II FEATURES—

- 1 IN and 3 MIDI OUTS • 16 MIDI channels

- Small size fits anywhere - no power supply required!

#### TRANSLATOR PRO FEATURES—

- 2 MIDI INs x 6 MIDI OUTs

- Supports 32 MIDI channels

- 2 MIDI OUTs accessible on front panel

- Self powered - no power supply required







TO INQUIRE ABOUT YOUR ORDER:  
800 221-5743 • 212 239-7765  
OR FAX 24 HOURS:  
800 947-2215 • 212 239-7549

**New Address:**  
**420 Ninth Ave. (Bet. 33rd & 34th St.)**  
**New York, N.Y. 10001**

## KEYBOARDS & SOUND MODULES



### XP60 & XP80 Music Workstations



The XP-80 delivers everything you've ever wanted in a music workstation. An unprecedented collection of carefully integrated features provide instant response, maximum realtime control and incredible user expandability. The XP-80 features a pro-quality 76-note weighted action keyboard while the NEW XP-60 features the same sound engine in a 61-note keyboard.

#### XP80 FEATURES-

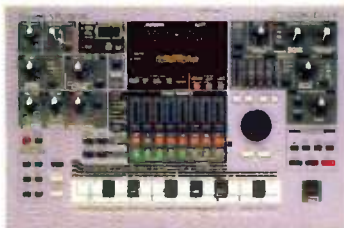
- 64-voice polyphony and 16-part multitimbral capability
- 16 Mbytes of internal waveform memory; 80 Mbytes when fully expanded (16-bit linear format)
- 16-track MRC-pro sequencer with direct from disk playback. Sequencer holds approx. 64,000 notes
- New sequencer functions like "non-step" loop recording and refined Groove Quantize template
- Enhanced realtime performance capability with advanced Arpeggiator including MIDI sync and guitar strum mode and Realtime Phrase Sequence (RPS) for on-the-fly triggering of patterns
- 40 insert effects in addition to reverb and chorus
- 2 pairs of independent stereo outputs; click output jack with volume knob
- Large backlit LCD display

### MC-505 groovebox

The MC-505 groovebox builds upon the success of the MC-303 as a self-contained, retro-styled dance music sequencer and sound module with newly upgraded sounds and powerful, futuristic features. Among these new features are the revolutionary D-Beam controller and a MegaMix function for intuitive realtime mixing of beats and patterns, making the MC-505 a DJ, hip-hop, techno or dance music artist's dream come true. It's Wanderlust in a box.

#### FEATURES-

- 64-voice polyphony, steeper filters, ADSR envelope for editing sounds, powerful effects
- 714 onboard dance music patterns developed by cutting edge sound designers worldwide
- 512 built-in sounds, 26 rhythm sets
- Three independent, synchronized effects processors
- Powerful onboard Arpeggiator



- SmartMedia slot accepts external 2MB and 4MB SmartMedia cards for unlimited pattern and patch storage and direct pattern playback



### QS6, QS7 & QS8 Pro Keyboards



Alesis QS synthesizers all provide true 64-voice polyphony, and a huge sound library that is constructed of 16-bit linear samples. With their powerful computer and digital audio interface capability, built-in 4-bus Multi-effects and expressive performance features, there is sure to be a QS synth perfect for you.

#### FEATURES-

- 16-bit 44kHz sample ROM
- 64 voice polyphonic
- 512 preset, 128 user internal program memory
- 400 preset, 100 user mix memory
- RS422, RS232 port formats • ADAT interface
- 4 outputs (2 main, 2 aux)
- 16MB internal, 16MB expansion memory (32MB total possible)\*
- SoundBridge Sample software for importing almost any sample from your Mac or PC.
- QS6 - 61 key synth, QS7 - 76 key synth
- QS8 - 88 weighted keys
- \*Available on QS7 and QS8 only



### SGproX



#### Stage Piano/Controller

#### FEATURES-

- 88-note, weighted action keyboard
- 64-voice polyphony, 24MB ROM
- 64 user-definable programs
- 12-types of stereo digital multi-effects
- Master Controller functions, Backlit LCD display



### K2500 Series Music Workstations

The K2500 series from Kurzweil utilizes the acclaimed V.A.S.T. technology for top-quality professional sound. Available in Rack mount, 76-key, and 88 weighted key keyboard configurations, these keyboards combine ROM based samples, on-board effects, V.A.S.T. synthesis technology and full sampling capabilities on some units.

#### FEATURES-

- True 48-voice polyphony
- Fluorescent 64 x 240 backlit display
- Up to 128MB sample memory
- Full MIDI controller capabilities
- 32-track sequencer
- Sampling option available
- Dual SCSI ports
- DMTI Digital Multitrack interface option for data format and sample rate conversion (Interfaces with ADATs or DA-88s)



### MicroPiano™ Piano Module



The MicroPiano is a half-rack sound module featuring Grand Piano and other sampled sounds, plus built-in digital effects. Altogether there are 32 available presets, chosen from Kurzweil's highly acclaimed sample library, making the MicroPiano the ideal sound module for any player who demands great sound quality at an unprecedented price.

## SAMPLING

E-MU

E-mu Systems, Inc.

### E-6400 Emulator Sampling Rack

The e-6400 offers the power of E-mu Systems' renowned Emulator Operating System (EOS) and superb audio quality in a package perfect for the budget-minded professional. The e-6400 comes with stereo sampling, 4MB of RAM and is fully upgradeable to E-mu's top of the line Emulator sampling synthesizers, the E4X, and E4XTurbo.

#### FEATURES-

- 64 voice polyphony (expandable to 128)
- 4MB sound RAM
- 2 CD-ROM's included (400MB of sounds)
- 8 balanced analog outputs



- Onboard graphic waveform editing
- Load while play
- Stereo phase lock time compression



### MPC2000 MIDI Production Center

Whether your producing rap or hip-hop, sequencing a rack of MIDI modules, or performing live, the MPC2000 gives you powerful tools to make your music shine. It's the NEW MPC!

#### FEATURES-

- Large 248 x 60 LCD Graphic display
- 64-track, 100,000 note sequencer with linear drum machine style programming
- 16-bit, 32-voice stereo sampler
- Standard SCSI interface
- Soft keys, Data/Digit wheels, cursor control and more
- Keypad for directly entering sample points
- Note variation slider gives you realtime control of any sound's tuning, attack, decay, or filter frequency
- Floppy Disk Drive
- Powerful expansion options turn your MPC2000 into an MPC2000 STUDIO, the ultimate MPC!



### S-Series Samplers

Starting with 64X oversampling, Akai's S-Series Samplers use 28-bit internal processing to preserve every nuance of your sound and the outputs are 18- and 20-bit to ensure reproduction of your sounds entire dynamic range. These three new samplers add powerful capabilities, ease-of-use, expandability and affordability to set the standard for professional samplers.





## EQUIPMENT DEALERS

# CARUSO MUSIC

SAVE THOUSANDS OF DOLLARS  
BUYING YOUR NEW & USED  
EQUIPMENT FROM US

94 STATE STREET • NEW LONDON, CT 06320  
800.264.6614 • 860.442.9600  
carusomusic@aol.com • <http://www.caruso.net>

## Sound thinking

The Best Prices,  
The Best Service  
you'll ever find on...

**digidesign** **ALESIS**  
and related products

**541-386-2682**

### MHB SALE !!!

CDR800 ... Call for Best Price  
ADAT45 ..... \$6.99 (10/box)  
DAT65 ..... \$6.21 (10/box)  
DAT35 ..... \$4.77 (10/box)  
GREEN DOT • 615-366-5964

**Don't Get Beat**  
When you need equipment call

**8TH STREET MUSIC**  
(800) 878-8882

Philadelphia's Largest Musical  
Instrument Dealer!!!

8th Street Music, 1023 Arch St.  
Philadelphia, PA 19107

### SPECIALIZED FURNISHINGS

FOR YOUR **YAMAHA 02R, 03D**



Call for a FREE catalog 800-427-5698

OUTSIDE U.S. 573-346-8549 FAX 573-348-2769  
ACI • 5687 Precision Ct. • Osage Beach, MO 65065  
[www.argosyconsole.com](http://www.argosyconsole.com) [info@argosyconsole.com](mailto:info@argosyconsole.com)



## ACOUSTICAL PRODUCTS

Vocal Booths

Control Rooms

# WhisperRoom

SOUND ISOLATION ENCLOSURES

Practice Rooms

Broadcast Booths

Ph: 423-585-5827

E-Mail: [whisper@lcs.net](mailto:whisper@lcs.net)

Fax: 423-585-5831

Web Site: [www.whisperroom.com](http://www.whisperroom.com)

# ACOUSTIC FOAM

Diffusers, Bass Traps, Sound Barrier & More!

The simple & honest truth is that Auralex makes the best sound control products in the business—regardless of price.

We lead the industry in every category, from speed of order filling to color choices to sonic performance to pricing. Hit our website or ask for us at major retail & mail-order vendors nationwide. You'll be surprised at just how easy and affordable it is to improve the sound of everything you do in your studio.

**USERS:** James Taylor, Clint Black, Andrew Gold, Christopher Cross, Doane Perry (Jethro Tull), Dennis DeYoung/James Young/Todd Sucherman (Styx), George Terry (Eric Clapton), Mike Wanchic (John Mellencamp), Ross Vannelli, Skid Row, Mark Lindsay (Paul Revere & The Raiders), Nona Hendryx, John Baxter (Re-Flex), Walt Disney Co., Harpo Studios, LucasArts, JBL, Shure, Opryland, Sear Sound, Pelonis Acoustics, AT&T, NASA, Sony, CBS Sports, NBC Sports, ABC TV & Radio, ESPN, MSNBC, Discovery Channel, Berklee College of Music, Music Bakery, Steven J. Klein, Former Sr. Eng. @ Criteria Studios (Bee Gees, E. Clapton, Kenny G, Average White Band, etc.) and Studio Designer for Don Was, Babyface, Larrabee, etc., Ensoniq, Cobra Golf, Wayman Tisdale, WhisperRoom, the Lincoln Center, Hitachi, Toshiba, 20th Century Fox, Universal Studios, NPR, Warner Bros., Polygram, Fruit of the Loom Country Comfort Tour, Manley Audio Labs, Lucent Technologies, Time Warner Cable, 3BTV, Electroplex Amps, Azden, Macromedia, Adaptec, Martin-Logan, Crawford Post, ShowCo, Mormon Church TV, Pioneer, Qualcomm, Carvin, MTX, Silver Dollar City (Branson), the voices of McDonald's, Miller Brewing & Sports on Fox and more... These people can afford any products on the planet...they choose ours. So should you.



Our Phenomenal  
LEMRD Bass Trap

Call For  
A Free  
Sample Kit!

**Auralex**  
ACOUSTICS

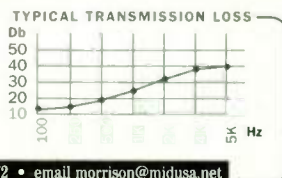
Website: [www.auralex.com](http://www.auralex.com) ★ Email: [auralex@auralex.com](mailto:auralex@auralex.com)  
Voice (317) 842 2600 ★ (800) 95-WEDGE ★ Fax (317) 842-2760



Make your studio or car whisper quiet. Transfer the energies of your listening room. Improve the imaging and clarity of your speakers by reducing cabinet resonance and baffle diffraction. Coustasheet, a .083" thick, 1 lb. per sq. ft. loaded vinyl, will do all this for only \$2.98 per sq. ft. (12 min.) plus \$5 handling. 30% discount on full rolls or FREE SHIPPING in U.S.A.

**GASOLINE ALLEY, L.L.C.**

1700 East Iron, Salina, KS 67401 • 800.326.8372 • [email.morrison@midusa.net](mailto:email.morrison@midusa.net)



## CLOAKING DEVICE

acoustic conditioning systems

- Quick - Affordable - Easy -  
modular systems start at 130.00

**EXPLORE YOUR SPACE**

770 427 8761 [fspace@mindspring.com](mailto:fspace@mindspring.com)

[www.mindspring.com/~fspace](http://www.mindspring.com/~fspace)

Folded Space Technologies



**AcousticsFirst™**

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

Full product line for sound control  
and noise elimination.

Web: <http://www.acousticsfirst.com>



**SILENT**

INFO  
(413) 584-7944  
FAX  
(413) 584-2377

58 Nonotuck St., Northampton, MA 01062  
**ORDER (800) 583-7174**  
[info@silentsource.com](mailto:info@silentsource.com) • [www.silentsource.com](http://www.silentsource.com)  
AcoustiCore Fabric Panels • Sound Barrier  
Isolation Hangers • A.S.C. Tube Traps  
Silence Wallcovering • WhisperWedge  
Melaflex • S.D.G. Systems • Technifoam  
R.P.G. Diffusers • Sonex • Sound Quilt

FOR ADVERTISING  
OPPORTUNITIES IN



Call Christine Cali  
212-378-0454



## DUPLICATION/REPLICATION SERVICES

## Conversion Media ::::

SHORT RUN  
COMPACT DISC DUPLICATION  
SPECIALISTS

10 Discs	\$99	1000 Discs	\$1375
20 Discs	\$178	1000 Discs with layout and mastering	\$1895
50 Discs	\$399	1000 Discs with films from your layout	\$1695
100 Discs	\$599	1000 Discs from Film & CDR	\$1425

10-100 pc packages include 2 panel insert  
full color both sides, shrinkwrap, and insertion.  
From customer supplied artwork and CDR.

Call for Your FREE Duplication Guide 888-999-1760  
[www.conversionmedia.com](http://www.conversionmedia.com)

## Promo CDR's Now!

10 for \$99 / 20 for \$159  
50 for \$319 / 500 for \$799

Top Quality / Fast Turn / MC-Visa-Amex  
Free On-Disk Printing / Inserts Optional  
GREEN DOT • 615-366-5964

\$5 OFF WITH THIS AD

## CUSTOM COMPACT DISCS

Affordable single copy CDs starting at \$15

## 46 PRODUCTIONS

42W557 Hawk Circle, St. Charles, IL 60175  
Tel: (800) 850 5423 • Fax: (800) 203 1725  
Contact Us On The Internet at: [info@46p.com](mailto:info@46p.com)  
Visit Our Web Page at: <http://www.46p.com>

## 50 CD's \$350

Ready in 48 hours

Includes ED Imprints, Jewel Box, Sonic Solutions  
Mastering from your DAT

replidisc

773-775-7558

## 1,000 CD's \$1099

from customer supplied  
printing and film

3 colors on disc  
effect pricing —  
no loss over or under  
super fast turnaround  
sonic solutions mastering  
above red book standard  
other packages available



1-888-DISC-MFG

**EARTH DISC**

prices that are **DOWN TO EARTH!**

500 CD's: \$1290  
WE DO IT ALL!  
package includes:  
Graphic design, film,  
Full color 4 page booklet,  
2 color on CD, Glass Master  
Jewel Box, Shrinkwrap &  
graphic insertion

500 CD's: \$986  
CD package includes:  
Full color 4 page booklet,  
2 color on CD, Glass Master  
Jewel Box, Shrinkwrap &  
graphic insertion

1000 CD's: \$1195  
**1-800-876-5950**  
We accept VISA/AmEx

NOW! YOU CAN CHOOSE! THE BEST MASTERING TAPES!  
HIGH BIAR (TYPE B) FACTORY PREPACKAGED TAPE. ORDER IN MULTIPLE OF 10.  
CALL NOW! 800-859-3579

MAXELL	MAXELL PRO	TDK	TDK PRO
XLII 90 \$1.46 ea.	MS 20 \$1.60 ea.	SA 60 \$1.26 ea.	SM 30 \$1.65 ea.
XLII 90 \$1.20 ea.	MS 30 \$1.69 ea.	SA 90 \$1.49 ea.	SM 60 \$1.82 ea.
XLII 100 \$1.86 ea.	MS 60 \$1.85 ea.	SA 100 \$1.95 ea.	SM 90 \$1.99 ea.
XLII-S 60 \$1.75 ea.	MS 90 \$2.05 ea.	SAX 60 \$1.75 ea.	SMX 30 \$2.00 ea.
XLII-S 90 \$1.96 ea.		SAX 90 \$1.99 ea.	SMX 60 \$2.20 ea.
XLII-S 100 \$2.99 ea.		SAX 100 \$2.30 ea.	SMX 90 \$2.60 ea.

NOW! RECORDING SYSTEMS, INC.  
32 WEST 39TH STREET, 9TH FLOOR, NEW YORK, NY 10018  
Telephone: 212-768-7800 • 800-859-3579 Fax 212-768-9740  
<http://www.tapes.com> e-mail: [nowrec@aol.com](mailto:nowrec@aol.com)

Ask about FedEx Express Saver  
\$50 minimum product order. Mixed orders okay. Shipping charges  
extra. Prices subject to change without prior notice.  
Log onto our Internet Site for more money saving offers!

## CD MASTERING • DESIGN • MANUFACTURING



Call us toll free! 888.787.7700

**IT'S YOUR BABY AND WE DELIVER.**

500 1000 5000  
\$750.00 \$1,100.00 \$4,500.00

Packages include: glass master, 2 color label, jewel box, packaging, polywrap

Services:  
• Mastering  
• Design  
• Film & Printing  
• Web Development  
• Enhanced CDs

**DIGIDOC** PRODUCTIONS

800-DIGIDOC  
[www.digidoc.com](http://www.digidoc.com)

**CD & CASSETTE  
MANUFACTURING**

Serving the country with  
over 25 years of experience.  
The Southwest's premiere  
full-service manufacturing facility!

PRINTING • GRAPHIC DESIGN • BLANK CASSETTES  
DIGITAL MASTERING & EDITING • ONE-OFF CD-RS  
RETAIL READY PACKAGES! CALL FOR FREE CATALOG!

**CRYSTAL CLEAR SOUND**  
1-800-880-0073  
mc/visa accepted [www.crystalclearsound.com](http://www.crystalclearsound.com)

**DRT Mastering**

If your CD needs the fat NY/LA sound  
(or better) that major labels demand,  
you owe it to yourself to call us before you manufacture.  
Simple as that! Guaranteed results. Free broch.

800-884-2576 [www.drtmastering.com](http://www.drtmastering.com)

**WE BEAT ANY PRICE ON CD'S** NO BULL!

1000 CD  
PACKAGE \$1,340

AND GIVE YOU HIGH QUALITY, PERSONAL  
SERVICE AND QUICK TURNAROUND  
LOWEST PRICES, CALL US LAST!

**TOTAL TAPE SERVICES**  
(813) 446-8273

**DIGITAL FORCE**

TOTAL CD,  
CD-ROM, E-CD,  
& CASSETTE PRODUCTION

**212-252-9300**  
[www.digitalforce.com](http://www.digitalforce.com)

Feel the "Power of Excellence"  
call for POWER PLAY the  
DIGITAL FORCE Sampler &  
Studio Reference Disc

149 MADISON AVENUE NY, NY 10016



## DUPLICATION/REPLICATION SERVICES

Call for a  
FREE  
Sample CD

## MEDIA TECHNOLOGY

Major Label Quality - Fast Turnaround Low Prices

- Professional Graphic Design, Layout, Positive Film, Full Color Inserts, Jewel Case, Shrink Wrap and Packaging on Deluxe CD Packages.
- 2 Reference CD's Included, 1 For Test Proof and 1 for CD Replication. Tests and Proofs Sent Via FedEx.
- We Use the Finest Mastering System, Sonic Solutions For Your Mastering Needs. Studio Quality Mastering Includes, EQ and Level Correction Service and Digital Editing On All Deluxe CD Orders At No Extra Cost To You.

### DELUXE CD PACKAGES

100 CD's w/4 Page 4 Color Imprints on the CD, w/jewel case and tray .....\$499 (5 day turnaround)  
500 CD's w/4 Page 4 Color Inserts .....\$1350  
1000 CD's w/4 Page 4 Color Inserts .....\$1499  
(Price Includes Everything Mentioned Above No Hidden Costs)

### DELUXE CASSETTE PACKAGES

200 BASF Super Chrome Package .....\$700  
500 BASF Super Chrome Package .....\$850  
1000 BASF Super Chrome Package .....\$999

Above Price Includes DAT to BIN Master Transfer, Test Copy, Full Color J-Cards, On-Shell-Printing, Duplication, Insertion Into Norelco Boxes, Shrink Wrapping, & Packaging

\* Test Cassette Sent Via FedEx No Cost to Client\*

135 EAST CHESTNUT AVENUE, UNIT# 4A, MONROVIA, CA 91016

1-800-826-3873 FAX: (818) 449-2084

24 HOUR TOLL FREE

Free brochure  
888-373-4455  
Toll Free

**Rock Solid \$199.**  
**MASTERING** (30 minute program)

Sonic Solutions • Manley • Focusrite • Apogee • TC

Try us for \$30, one song (Call for details)

**BASE** Multimedia Inc.



Price Includes:  
Full Color CD Label,  
(customer supplied film)  
Jewel Box  
Glass Master  
Assembly &  
Overwrap

www.bmmi.com

1-800-579-7010

**300-\$599**

300 full length CD's! (74 min. max)

**500-\$750**

Our most popular package for independent artists!

**1000-\$1150**

That's only \$1.15 per CD packaged & retail ready!



PHONE: 1-800-211-4689  
**MEDIAWORKS®**  
INTERNATIONAL, INC.  
1719 West End Avenue Suite 100  
Nashville, TN 37203  
(615)327-9114 • FAX: (615)327-3438

Compact Discs • CD ROM  
CD + /CD Enhanced  
Digital Bin Cassette  
Duplication  
Video & Vinyl  
Graphic Design  
Printing  
Packaging  
Shrink Wrap

1,000 CDs  
**\$1,875.00**  
(Complete Package)  
Full Color

1,000 CDs  
**\$1,450.00**  
Full Color  
(From your film)

**100 CD's \$399**

200 CD's \$448 300 CD's \$489 500 CD's \$599  
FREE COLOR CATALOG  
**1-800-365-8273**

13 Years Serving The World

**EASTCO PRO**

Audio Video Corporation  
FAX: (716) 655-1500  
www.eastco-pro.com

**1000 CD's \$699**

CD's  
DVD  
Cassettes  
Video  
Graphics  
Printing/Packaging

4212 14TH AVENUE • BROOKLYN, NY 11219  
**ANDOL**  
AUDIO PRODUCTS INC.

30 YEARS PROVIDING  
FAST GUARANTEED SERVICE

SONY & TELEX  
HIGH SPEED  
DUPLICATORS

**800-221-6578**

NYC 718-435-7322 • FAX 718-853-2589

	BASF CHROME +	TDK SA PRO	MAXELL XL II	BASF SUPER CHROME
<b>TDK</b> C-10	.27	.27	.27	.30
<b>SONY</b> C-20	.32	.32	.32	.38
<b>SONY</b> C-30	.37	.37	.38	.47
<b>BASF</b> C-40	.41	.43	.44	.56
<b>TELEX</b> C-50	.46	.46	.47	.65
<b>AMPEX</b> C-60	.51	.51	.55	.69
<b>maxell</b> C-70	.57	.60	.67	.80
<b>maxell</b> C-80	.63	.65	.70	.87
<b>maxell</b> C-90	.68	.70	.76	.89

IN HOUSE DIRECT ON CASSETTE PRINTING  
CUSTOM PRINTED LABELS & J-CARDS

FREE CATALOG

FREE LABELS WITH EVERY CASSETTE ORDER  
ROUND EDGE OR STD NORELCO BOXES \$ .12 EA

www.andolaudio.com • andolaudio@aol.com

DUPLICATING & RECORDING SUPPLIES

C-O'S PANCAKE C-D-R HI-8 A AT R-DAT VHS  
S VHS MASTERING TAPE JEWEL BOXES  
AUDIO/VIDEO CASSETTE STORAGE CASES,  
VINYL CASES, PRE-LOADS 32,47,62,92&122 MIN.  
CALL FOR VOLUME DISCOUNTS, GSA PRICING

ballistic.com

YOUR LINK FOR ALL  
COMPACT DISC,  
CD-ROM

• CASSETTE MANUFACTURING

**\$999.00** 1000 CD'S

2 color on disc, insertion of your printed material  
standard jewel box & polywrap MANUFACTURED BY EMI

1.800.401.8273

YOUR MUSIC ON CDR AS LOW **\$5** AS  
GO HERE: www.smart.net/~bluehouse  
OR CALL: 301-589-1001 **Blue House**  
PRODUCTIONS

MASTERING • MANUFACTURING • PRINTING

**DIGI-ROM®**

CD-AUDIO • CD-ROM  
REAL TIME & HIGH SPEED  
AUDIO CASSETTES

Complete Packages • CD-ROM One-Offs  
In-House Mastering Studio • Graphic Design &  
Printing • CD-ROM Production & Archiving  
1 to 300 CD-R's Duplicated Overnight

**800.815.3444**

212.730.2111  
www.digilrom.com



130 WEST 42ND STREET • NEW YORK, NY 10036

**CLASSIFIED ADS WORK!!!**







## REPAIR SERVICES

## DAT TECHNIQUES

Be smart. Get the service and turn-around you can't get anywhere else! Let us rebuild that old reliable deck at a fraction of the cost of new. Over 50 models serviced.

1-800-203-2151/1-941-275-0757

**DAN ALEXANDER  
AUDIO REPAIRS**  
ANALOG GEAR OF ALL TYPES.  
WE BUY AND SELL

Mics and vintage gear a 20 year specialty.  
All work guaranteed. 415 546-0200  
e-mail: da.audio@internetMCI.com

## INFORMATION GUIDE

**FREE IUMA  
WEB SITE!**

when you manufacture CDs, cassettes, or 12" vinyl

Call Disc Makers today  
for a complete brochure.

**DISC MAKERS**  
www.discmakers.com/iuma  
1-800-468-9353

## TRAINING/TUTORIALS

**BE A RECORDING ENGINEER**  
★ **TRAIN AT HOME** with ATA  
Easy Home-Study practical training in  
Multi-track Recording. Join our successful  
working graduates or build your own studio.  
Diploma. Career guidance. Licensed.  
FREE INFORMATION:  
Audio Institute of America  
2250-A Union St., Suite AM, San Francisco, CA 94123

## EQUIPMENT DEALERS

**ODYSSEY PRO SOUND**

NEW USED • VINTAGE QUALITY  
RECORDING EQUIPMENT  
NOW FEATURES

THE MISSING LINK to **DIGITAL**

**UnibitLink**



audio  
technologies

Dual all tube Compressor/Limiter

WE BUY, LIST, AND TRADE QUALITY AUDIO EQUIPMENT

TEL: (978) 744-2001 FAX: (978) 744-7224

VISA AMEX MC

http://www.odysseyprosound.com/

## VOCALS

**SINGERS! REMOVE VOCALS**  
Unlimited, Low Cost, Instantly Available  
Background Music from Original Standard  
Recordings! Does Everything Karaoke  
does... *Better* and gives you the  
Thompson Vocal Eliminator™  
Free Brochure & Demo Tape.  
LT Sound Dept EQ-1  
7980 LT Parkway Lithonia, GA 30058  
Internet: http://ltsound.com  
24 Hour Demo Info Request Line (770) 482-2485-Ext 28  
When You Want Something Better Than Karaoke!

## COVERS/CASES &amp; RACKS

Custom Console Desk & Studio Racks Give your studio the  
look of high end facilities for less.  
For your Mackie 8-bus, Yamaha 02R, or ANYTHING!  
Elevate up to 5 inch high!  
Includes 12 space rack  
base below  
\$700.00  
plus shipping for Mackie 24-8  
(shown)  
Xanthi Music  
300 Observer Hwy  
Hoboken, N.J. 07030  
CALL: 800-254-7919  
For brochure

**OMNIRAX**  
STUDIO FURNITURE

MixStation/02R

Also available for  
Mackie  
8-Bus mixers

Custom Design  
and  
Modifications Available

**800.332.3393**

FAX 415.332.2607  
Outside U.S. 415.332.3392  
WWW.OMNIRAX.COM

P.O. Box 1792 Sausalito, CA 94966

## RIBBON MICS

**Coles 403S**  
*The Best in the World*  
Matched Pairs & Stereo Bars  
**Ribbon Mics**  
Sales, Parts & Service  
**Coles 4104B**  
The BBC "lip mic" used by  
ABC, BBC, CBS, CNN, NBC  
NO Voice Booth Needed



**WES DOOLEY**

(800) 798-9127 FAX (818) 798-2378  
1029 N. Allen Ave, Pasadena, CA 91104

## MAINTENANCE SERVICE

**Midwest Digital Services, Inc.**

(Chicagoland/Area)

- \* Premium Dat Service
- \* Sony Pro Specialist since 1985
- \* Authorized by Sony & Tascam.

Tel: (708) 448-7539

Fax: (708) 448-7678



## PRO AUDIO EQUIPMENT



Over 150  
ProAudio & Lighting  
Lines At Guaranteed  
Lowest Prices

Visit Our Website:  
**www.thunderlight.com**

Phone: (800) 333-9383  
Fax: (860) 828-0558  
All Major Credit Cards Accepted

## AUDIO UPGRADES

**DA88 UPGRADES  
MIC MODS**

Component level upgrades for  
mixing consoles, tape machines,  
mics, and all outboard gear. Also,  
high speed mic preamps. Step up  
to the 90's and hear what high  
speed electronics can do for your  
studio.

**AUDIO UPGRADES**

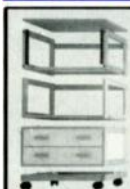
6410 Matilija Ave.  
Van Nuys, CA. 91401  
(818) 780-1222  
(818) 346-2308 FAX

**LA-2A LA-3A OWNERS**

Before you buy a new T4B optical  
attenuator, have it rebuilt at a fraction  
of the cost. Also stock OPTO's.

**ANTHONY DEMARIA LABS**  
**914-256-0032**

## STORAGE SYSTEMS



**The RACKIT™ System**

Modular stackable oak units  
hold all recording formats  
New: Racks with mounting rails!

Free mail-order brochure  
(please mention EQ)

Per Madsen Design  
(415) 822-4883 • P.O. Box 882464  
San Francisco, CA 94188



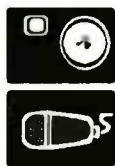
## CAREER MARKETPLACE

## Busy Music Company

Looking for hot **composer/arranger/sequencing guru** with experience in post scoring TV commercials, film or jingles. We're offering very attractive compensation/benefits. We'd like to hear your work, both video and audio (VHS, 3/4, DAT, accepted). Please call 1-800-484-3525 ext./code 1467.

## STUDIO

## The Place



## RECORDING FOR INTERACTIVE MEDIA! WE ARE PROUDLY UNBEATABLE!!!!

We have created the *ultimate* state-of-the-art tracking facility. Ideal for Indy Label album projects who need to make a first class CD at half the usual cost. Otari MTR-90 II 24 Track Tape Machine, Neve and Tubetech Mic Pre's, Digital Editing and Mastering, Lots More Outboard Gear!!

**The Place 408 W. 14th St. Suite 16  
(212) 924-2193**

## INSURANCE

## GREAT RATES ON INSURANCE!

\$45,000 of Studio Gear for \$500  
\$100,000 of Studio Gear for \$850  
\$250,000 of Studio Gear for \$1,875

### GREAT COVERAGE!

Includes Theft, Breakage and Loss  
Covered Wherever Located\*  
Coverage for Rented Gear Available  
\$1,000 Deductible

### GREAT SERVICE!

Immediate Coverage Available  
Easy Enrollment/Local Claims Office

**(800) 800-5880**



UNITED AGENCIES INC. Insurance

Pasadena, California  
CA. License # 0252636

[www.UnitedAgencies.Com](http://www.UnitedAgencies.Com)

## MULTI-MEDIA ACCESSORY



### CL6/1800 Midi Lighting Dimmer

- 6 Independent Channels of Dimming
- Responds to Midi Notes and Controllers
- Only \$399.00 US List Price!

Ask about our other Midi products to control Valves, Relays, Servo's, Lighting, Analog Keyboards & more!!



2461 West 205th Street, B100,  
Torrance, CA 90501  
Phone: (310) 320-0696  
Fax: (310) 320-0699

Shows Control & Multi Media Systems

Visa, MC, Discover & AmEx. "Dealer Inquires Welcome"

## EQ INSTANT ORDER FORM

**CLASSIFIED:** ☐ EQUIPMENT FOR SALE ☐ DUPE/REPLICATION SERVICES  
☐ DEALERS ☐ MISCELLANEOUS  
\$115 per column - 1 inch minimum. 7 lines to the inch.

### ALL ADS MUST BE PREPAID

☐ **CLASSIFIEDS/SERVICES** (Specify Heading) \_\_\_\_\_

### PAYMENT:

AMOUNT \$ \_\_\_\_\_ ☐ CHECK (ENCLOSED)

☐ AMERICAN EXPRESS ☐ VISA ☐ MASTERCARD CARD NUMBER \_\_\_\_\_

EXPIRATION DATE \_\_\_\_\_ SIGNATURE \_\_\_\_\_

NAME \_\_\_\_\_

COMPANY \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

PHONE \_\_\_\_\_

Please supply camera ready art or ad copy on a separate sheet.  
Enclose copy, payment and this Instant Order Form and mail to:

460 Park Avenue South • 9th Floor • New York, NY 10016.  
Attn: Christine Cali, Specialty Sales Manager

**TEL (212) 378-0454 • FAX (212) 378-2158**

COMING UP IN



**JUNE**

Maintenance  
PC Quarterly

Deadline For  
Advertising: May 8

Call: Christine Cali  
212-378-0454



## ACROSS THE BOARD

continued from page 154

### I HATE EVERYTHING

One of the things that I hate most of all is backing up data. Another thing I hate is running out of room on my hard disk when I only need another 30 seconds of recording time. Since the new d24 Pro Tools system expects to see its storage devices on the Mac SCSI bus, it makes it much easier to experiment with different storage devices.

I get Pro Tools files sent to me on 1 GB Jaz drives. I used to transfer them

to a nonremovable hard disk before mixing. I added a SCSI accelerator card to my Mac 9600/300 and moved the Jaz drives over to the accelerator. I found that I could get 24 tracks of material directly off of the Jaz drive, even if there was a fair amount of editing in the Pro Tools session. I then tried recording directly to the Jaz drive and found that I could reliably record 16 tracks at 16 bits or 12 tracks of 24 bits without overrunning the drive. The only problem was that I could use more than 1 GB. Enter 2 GB Jaz drives.

For my current project, I am transferring a lot of data into Pro

Tools — partly because we can listen to previous takes of a song without waiting to change tapes on the Sony 48-track machine. Removable media seemed to be the answer, so I hooked up two 2-GB Jaz drives. I set the disk allocation table so that 12 tracks are stored on each drive, so I basically have 4 GB of space before I have to change disks. With the DAE buffer set high enough, and the drives connected to the SCSI accelerator card, I have no problem recording 24 tracks at once to the drive pair. When I get to the point where there is not enough room for another take, I just pop in two more Jaz cartridges and go.

For more demanding recording loads, I record to a 9 GB 10,000 rpm Seagate Ultra-Wide SCSI drive. This allows me to record 32 tracks of 24-bit simultaneously onto one drive. With a dual-channel SCSI accelerator card and two of these drives and the Digidesign 32 channel upgrade, there is no problem recording and playing 64 tracks at a time.

### SESSION DOCUMENTS

I found that the longest delay in changing media is opening a new session document and getting everything set to record, so I cheated. After initially setting up the session document on one of the removable cartridges with all of the routing, track names, number of tracks, destinations, etc., I copy the document to the resident hard disk. When it comes time to load new blank cartridges, I copy the session document from the internal drive and open it. All I have to do is record enable the tracks and go. Each pair of Jaz cartridges I insert has the same name. The top drive cart is labeled "AA" and the bottom drive cart is labeled "BB." This keeps me from having to change the disk allocation table each time I reopen the session document on a new pair of carts. The physical labels on the cart show the name of the song stored.

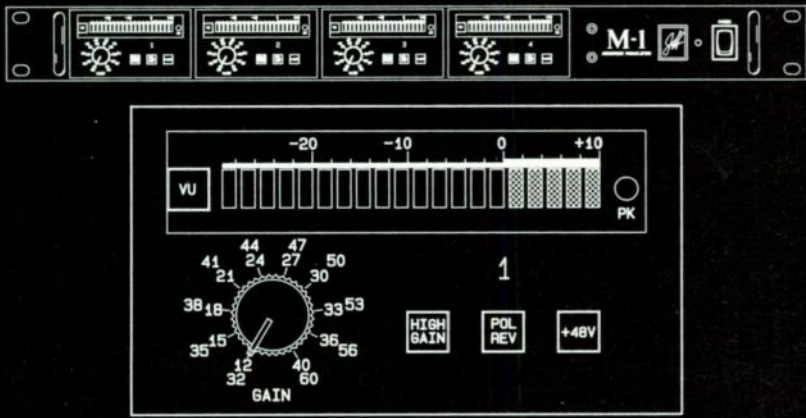
### THE END

I didn't mean for this to end up being a Pro Tools column, but I find that I am doing more and more of this kind of stuff to get albums done. Lots of ADAT and Pro Tools sessions including Take 6, Tower of Power, Robben Ford, Less McCann, Shirley Horn, Flora Purim, Bela Fleck, Steely Dan, and others. It seems like bringing your Pro Tools system to a project is becoming as natural as bringing your own nearfield monitors.



# M-1

## MICROPHONE PREAMPLIFIER



(ACTUAL SIZE)

Gloria Estefan, Dolly Parton, Neil Young, Lou Reed, Laurie Anderson, Bob Dylan, Madonna, Eric Clapton, George Harrison, Paul McCartney, Paul Simon, Joe Henderson, James Carter, Ernie Watts, Bill Hollman, Saturday Night Live, The Muppets and many others have done great work with the M-1. The M-1 is clearly superior, *satisfaction guaranteed*. Here's why:






**The Jensen JT-16-B Input Transformer.** The world's best mic-input transformer. If you thought transformers were a compromise, you haven't heard the JT-16-B!

**The 990 Discrete Op-Amp.** The 990 discrete op-amp is superior to the monolithic op-amps found in other equipment.

**No Coupling Capacitors in the Signal Path.** DC servo circuitry and input bias current compensation circuitry eliminate all coupling capacitors and the degradation they cause.

**Standard features:** LED-illuminated push-buttons; phantom power switch; polarity reverse switch; conductive plastic gain pot and high-gain switch; shielded toroidal power transformer with 6-position voltage selector switch; gold plated XLRs; ground-lift switches.

**Options:** VU-1 meter (shown); PK-1 meter; Jensen JT-11-BM output transformer;

**THE JOHN HARDY COMPANY**

P.O. Box AA631  
Evanston, IL 60204

Phone: 847-864-8060      Fax: 847-864-8076

CIRCLE 88 ON FREE INFO CARD



# Get what's missing from your mix.

Subscribe to the  
hands-on, how-to  
magazine for today's  
project recording  
studio professional.  
For the perfect mix,  
read EQ every month



EQ gives you  
the perfect mix

Fill out the coupon and return it today.

**Save Over 50% Off Newsstand Price!**

- ☐ YES, I'd like to receive EQ every month at a rate of  
☐ 1 yr = \$24.95 (13 issues) ☐ 2 yrs = \$39.95 (26 issues)

Payment Method:

- ☐ Bill Me ☐ Check/Money Order ☐ Visa ☐ MC ☐ Amex

Card # \_\_\_\_\_ Exp. Date \_\_\_\_\_

Signature \_\_\_\_\_

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_

State/Prov \_\_\_\_\_ Zip/PC \_\_\_\_\_

Prices good in U.S. only. Canada add \$10 per year for surface; other countries add \$15 per year for surface; all add \$30 per year for Airmail. All non-U.S. orders payable in U.S. dollars by Visa, MC, Amex, or international money order only. Allow 4-6 weeks for delivery of first issue.

Mail Coupon To: EQ, P.O. Box 0532, Baldwin, NY 11510.

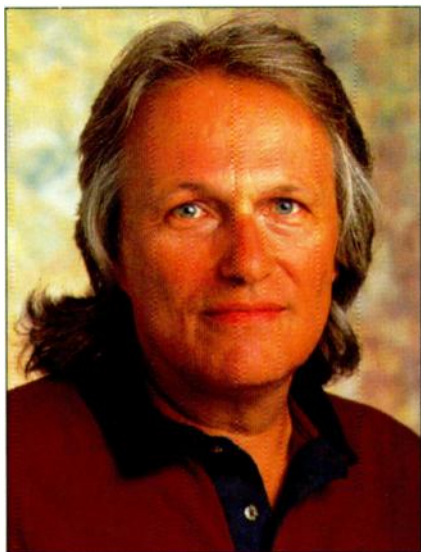
EQ/5/98

World Radio History





# A Hard Disk's Night



Solving transfer and storage problems with Pro Tools and 2 GB Jaz drives

BY ROGER NICHOLS

First of all, I want to rave on about d24 Pro Tools. I have been using various systems since September '97 with excellent results. Recently I went into the studio to cut tracks on a Sony 3348 48-track digital machine. In the past, when multiple takes had to be edited together we would rent a second 48-track machine and copy the pieces from one machine to the other, much like video editing. The Sony machines lock to one millisecond accuracy, and perform all required edits flawlessly.

Sometimes the edit points don't work with all 48 tracks edited in exactly the same place. If a guitar pickup is earlier on one take or a bass note rings over the edit point on another take, the

edit points will be different for each track. With a tape-based machine, you have to perform multiple passes over the required edit spot, changing the edit point slightly each time to accommodate the variances. This is where hard-disk editing comes in.

This time, instead of two Sony 48-track machines, we decided to use one Sony 48 track and a d24 Pro Tools system. Since the edits would be done on the basic tracks before the overdubs, there would only be 24 to 32 tracks to deal with during the editing. The interface to the Sony 48-track would have to be digital, and we would have to have lots of storage that was readily available when we needed to change tunes.

The digital transfer was easy. An Otari UFC-24 format-converter box was used to get the digital data back and forth between the Sony 48-track and Pro Tools. One UFC-24 will convert 24 channels of digital audio from any format to any other format. Previously I have transferred 48 channels at a time by using two UFC-24's sync'd together. They work flawlessly. Digital audio signals can also be rerouted as they pass through the UFC-24. If you want track 17 of the source machine to end up on track 3 of the destination machine, you are only a button press away. You can reroute all 24 channels at once if you want to.

## TWO NEW GIG TOYS

In my system I do a lot of transfers between Pro Tools and ADATs. I have also found that I never have enough physical channels to get in and out of

my Pro Tools system. Until this week, I had two 888/24 I/O interfaces and one 882 I/O interface. This gave me eight digital or analog ins and outs from each 888 box, and two digital or eight analog from the 882 box. I needed more digital I/O. Digidesign just

started shipping their new ADAT Bridge, one of which went right into my Pro Tools system.

Unlike Digidesign's previous ADAT interface, the second generation ADAT Bridge is a snap to install and works without a hitch on the first try. The box occupies a single rack space and acts like two 8-channel interfaces, giving you 16 channels of digital I/O on ADAT optical cables. You also get two 20-bit D/A converters for monitoring purposes, and channels 1 & 2 can be AES or S/PDIF. As an added feature, the ADAT Bridge will work in stand-alone mode, allowing you to transfer two channels of digital audio from AES (or S/PDIF) to or from ADAT optical.

If your primary recording device will be ADATs, you can set up a Pro Tools system so that the only interface is the ADAT Bridge. With the bridge connected to one or two ADAT machines, the ADATs become your analog I/O. In my system now I have two 888 boxes and the ADAT Bridge, which gives me 32 channels of I/O. The two 888 boxes are connected with a "Y" cable to the d24 card, the first eight chan-

nels of the ADAT Bridge are connected to a DSP Farm card, and the second eight channels of the ADAT Bridge are connected to a second DSP Farm card. So far everything works fine. Now where do I store all of this stuff?

*continued on page 152*

*One thing  
I hate is  
running  
out of room  
on my  
hard disk  
when I  
only need  
another 30  
seconds of  
recording  
time.*



*where do you want to be?*

With Sennheiser headphones, all you need to do is listen. The experience will take you wherever the music goes.

Startling realism and fast, smooth response are Sennheiser's trademarks.

For casual listening Sennheiser headphones are simply the best.

For your creative impulses, imagine the possibilities that can result from the accurately referenced imaging that Sennheiser headphones can provide.

Available from your dealer, or give us a call.

*just listen*



HEADPHONES



SENNHEISER ELECTRONIC CORPORATION  
P.O. BOX 987, OLD LYME, CT 06371 • TEL: 860-434-9190 • FAX: 860-434-1759 • CALIFORNIA: TEL: 818-845-7366 • LATIN AMERICA: TEL: 525-639-0956  
SENNHEISER CANADA: 221 LABROSSE AVE., PTE-CLAIRE, PQ H9R 1A3 • TEL: 514-426-3013 FAX: 514-426-3953  
World Wide Web: <http://www.sennheiserusa.com>

Manufacturing Plant: Am Labor 1, 30900 Wedemark, Germany

CIRCLE 63 ON FREE INFO CARD



# THE NEWEST TECHNOLOGY IN MONITORS FROM THE FIRST NAME IN SOUND



- Dynamic Braking
- Low Power Compression
- Differential Drive®



- Neodymium Motor Structure
- 2" Edgewound Voice Coil
- Butyl Rubber Surround



- Ultra Low Distortion
- Controlled Dispersion
- High Power Capacity
- Maximum Transient Response



- High Rigidity
- Ultra Low Resonance
- Reduced Diffraction and Reflection

New multichannel formats are challenging old monitor concepts. While traditional stereo is still prevalent, 4, 5 or more channels are being monitored in modern production environments, daily. The LSR Family applies new technology to meet these requirements. By going beyond traditional design techniques with Linear Spatial Reference performance, JBL has literally redefined how a system is created. The LSR concept helps to dramatically expand the listening area, creating a larger, more accurate mixing space.

**The LSR32** introduced the world to the Linear Spatial Reference philosophy. This 12" 3-way mid field monitor offers maximum performance in both vertical and horizontal configurations.

**The LSR28P** is an 8" bi-amplified near field monitor, ideal for multichannel mixing in small to medium-size production environments.

**The LSR12P** is a 12" powered subwoofer that easily integrates into a wide variety of stereo and multichannel formats, and complements both the LSR32 and LSR28P.

LSR12 Subwoofer (Vertical)



LSR28P



LSR32 (Vertical)  
Mid field Reference Monitor



LSR32 (Horizontal)  
Mid field Reference Monitor



For more information on the LSR Family  
[www.jblpro.com](http://www.jblpro.com)

© 1998 JBL Professional

**LSR**  
Hear Every Thing



A Harman International Company