

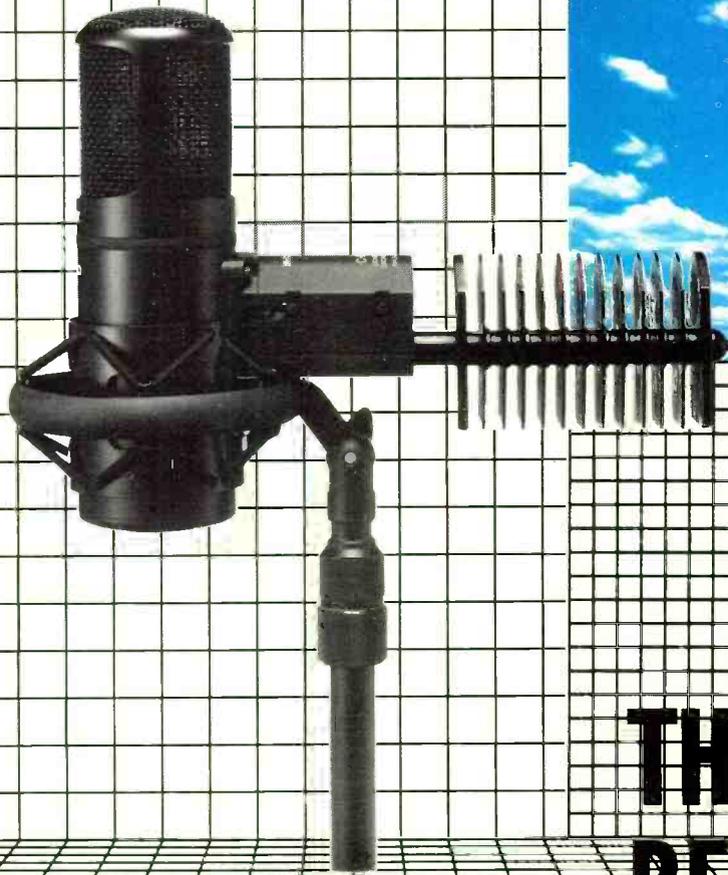
December 1991

Recording ■ Engineering ■ Production

\$4.00

R-E-P

The Pro Audio Applications Magazine

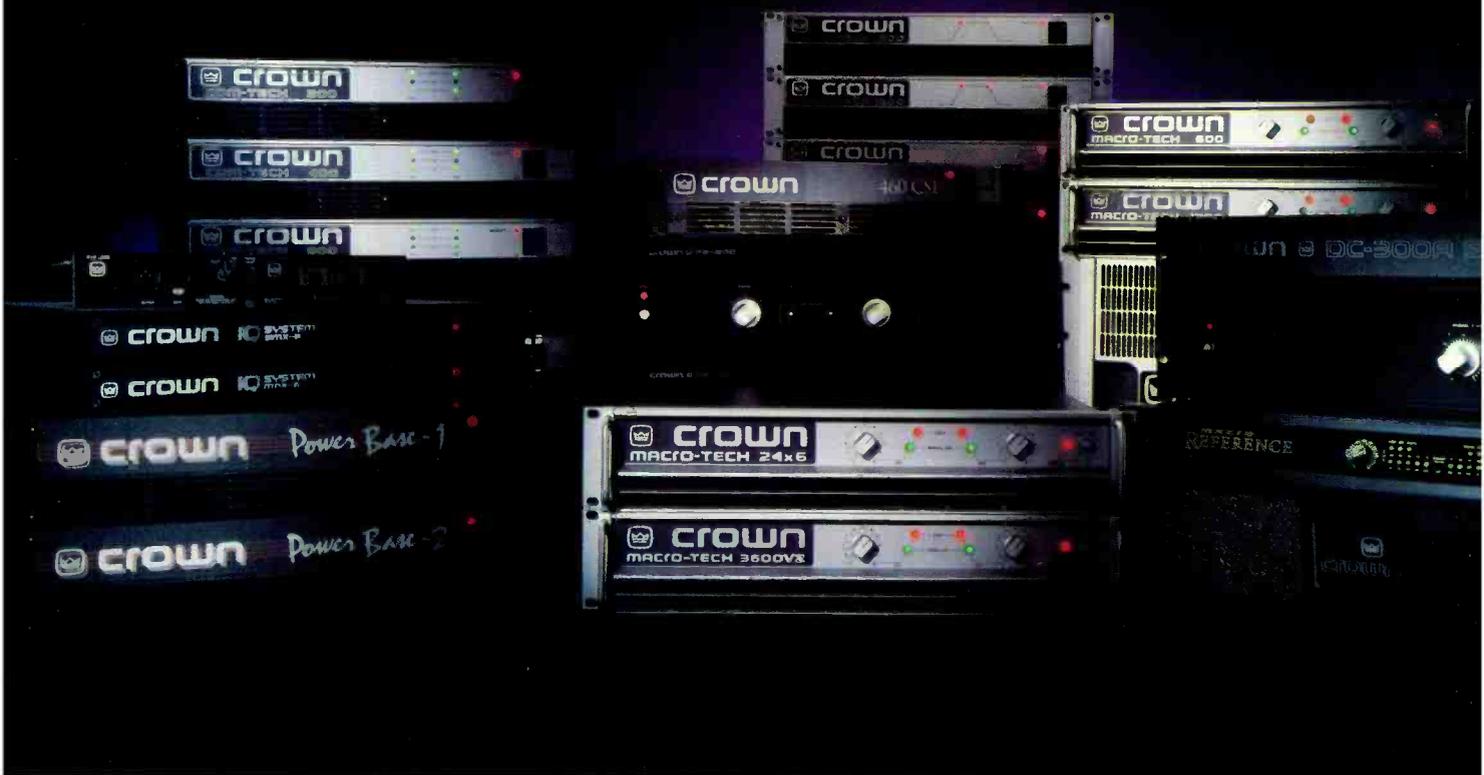


THE R-E-P
RESOURCE

AN INTERTEC PUBLICATION

www.americanradiohistory.com

IN A WORLD OF COMPROMISE, THESE DON'T.



From the DC-300, introduced twenty-five years ago, to the latest Macro-Tech 3600VZ™, Crown amplifiers have earned a reputation for uncompromising performance that is simply unmatched.

Recognized for their sonic accuracy and reliability, our amps are *the* choice of professionals worldwide—from touring sound companies to recording studios to stadiums everywhere.

And for some very innovative reasons. Like ODEP™, our sophisticated protection circuitry. And P.I.P.® modules, which allow you to plug into the revolutionary IQ System® and future technology as it is developed. Plus, our latest achievement, VZ (Variable Impedance) power supply technology.

Yet beyond all the patented features, Crown is the only manufacturer to offer a 3-Year No-Fault

Warranty that is transferrable, extendable and pays shipping both ways. It's easy to see why our excellence is guaranteed.

For more information or the name of an authorized Crown dealer, call toll-free: 1-800-535-6289.

 **CROWN**

Guaranteed Excellence

Made in U.S.A. Exported as Amcron
P.O. Box 1000 • Elkhart, IN 46515-1000
219/294-8000 • FAX 219/294-8FAX

Circle (1) on Rapid Facts Card

www.americanradiohistory.com



British studio performance at a revolutionary American price!

MEGAS Studio is the first 24 buss recording console to combine world-class *British sound* with a wealth of smart, practical features for today's recording situations—*priced from \$17,100**

Featuring a highly flexible split console design, the Studio can be specified in 16 or 24 discrete buss formats and is available in 24 to

40 input configurations with or without patchbay.

An ideal choice for today's input-intensive recording, the Studio has an on board MIDI computer which can be interfaced with a sequencer to provide automated MIDI muting. It also comes with an exceptionally smooth, transparent 4-band EQ for optimized sonic performance.

The MEGAS Studio can accommodate a combination of mono or stereo input modules and comes with full metering as a standard feature.

MEGAS Studio. Superior sound and performance at a price that'll revolutionize the way you think about British consoles.

MEGAS STUDIO

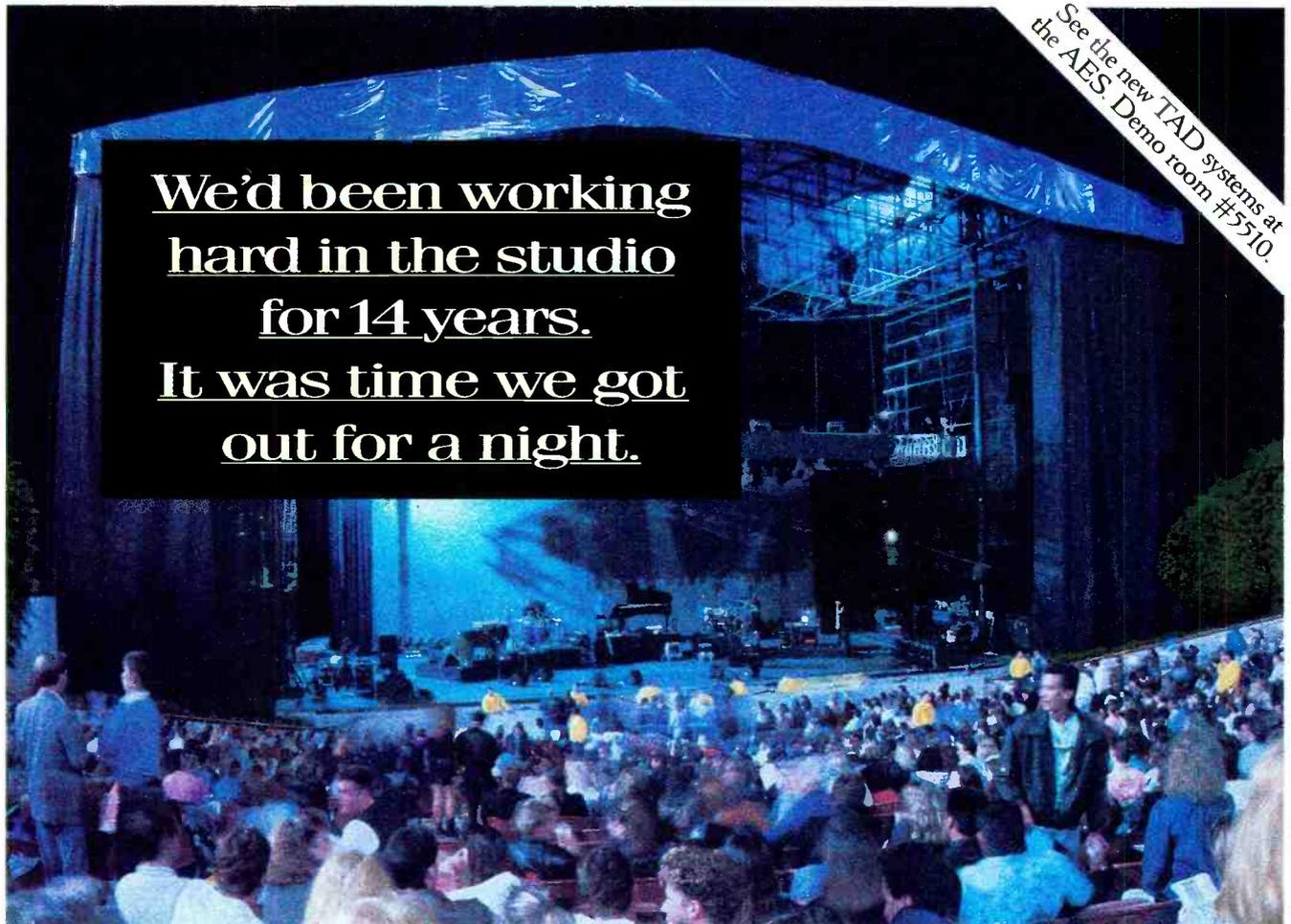
Circle (3) on Rapid Facts Card

SOUNDTRACS

Soundtracs distributed exclusively in the United States by Samson Technologies Corp., P.O. Box 9068, Hicksville, NY 11802-9068 TEL: (516) 932-3810 FAX: (516) 932-3815

*Suggested retail price for the Model 24/24 Megas Studio console. Other prices will vary somewhat based on specific configuration and features

© 1991 SAMSON



We'd been working
hard in the studio
for 14 years.
It was time we got
out for a night.

See the new TAD systems at
the AES. Demo room #5510.

Spending years on end cooped up in small, dark rooms with a bunch of engineers takes certain special qualities. Durability, for one. We've always been known for that. Of course, clear, uncolored sound quality doesn't hurt, either. Or hand-assembled components, with gap precision to plus or minus one-millionth of an inch.

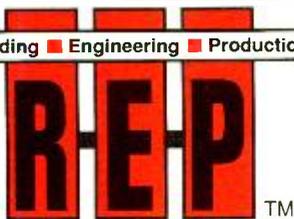
These features got TAD speakers into studios like Record Plant, NOMIS and Masterfonics. And the same features are now getting us out of them.

See, we had this funny idea that if TAD could make music sound terrific in a small room, we could make music sound terrific in a huge arena. And every outing we've had with Maryland Sound has proved us right.

Not that we won't still work our woofers off in studios from L.A. to London all day. But, at night, we'd like to get out and jam more often.

TAD Technical
Audio Devices®

Pioneer Professional Products Division



EDITOR

Mike Joseph

SENIOR ASSOCIATE EDITOR

Sue Edwards

FEATURES EDITOR

Anthony McLean

GRAPHIC DESIGNER

Liz Veternick

EDITORIAL ASSISTANT

Joe Ramsey

DIRECTORY EDITOR

Pat Blanton

GROUP MANAGING EDITOR

Tom Cook

CONSULTING EDITORS

John Monforte, Technical Consultant
David Scheirman, Live Performance
Laurel Cash-Jones, Editorial Consultant
Sarah Coleman, Washington Correspondent
Dan Levitin, Music Production Editor
Rick Schwartz, Contributing Editor
Mark Herman, Contributing Editor
Dan Torchia, Contributing Editor

GROUP VICE PRESIDENT

Cameron Bishop

PUBLISHER

Dennis Milan

MARKETING DIRECTOR

Darren Sextro

GROUP SPECIAL PROJECTS DIRECTOR

Czatdana (Dana) Inan

PROMOTIONS MANAGER

Evelyn Hornaday

MARKETING COORDINATOR

Sally Nickoley

ADVERTISING BUSINESS MANAGER

Dee Unger

ADVERTISING PRODUCTION SUPERVISOR

Mary Birnbaum

ADVERTISING COORDINATOR

Pat Eisenman

CLASSIFIED ADVERTISING COORDINATOR

Mia Fountain

PRESIDENT

R.J. Hancock

CORPORATE CIRCULATION DIRECTOR

Sandra Stewart

CIRCULATION DIRECTOR

Doug Wilding

CIRCULATION COORDINATOR

Susan Link

CUSTOMER SERVICE

913-541-6628

R•E•P is an applications-based publication targeted at professional individuals and companies active in the commercial business of studio and field recording, audio for video, live sound production and related fields. Editorial content includes descriptions and demonstrations of audio production techniques, new products, equipment application, maintenance and audio environment design.

Member, Business Publications

Audit of Circulation

Sustaining member, Audio

Engineering Society

Sustaining member of Acoustical Society of America

Member, International Communications Industries

Association

Associate member of Society of Professional Audio

Recording Services

©1991 by Intertec Publishing. All rights reserved.

From the Top

Rehearsing in Red

I recently had the opportunity to pilot a commercial date. The studio was a nicely appointed single-room analog 24-track with a modern 32-input mid-priced console. It had all the mics and dynamics control to do a fair-sized acoustic jazz combo date. It was, in short, a typical current-day recording studio. It felt good — I even liked the monitors.

As I prepped for the arrival of the musicians, I recalled what I knew about the session: The producer would be the Creative from a local agency and the composer/arranger, an out-of-town hired gun. Instrumentation would include drums, piano, string pads (probably samples from someone's MIDI synth), electric guitar, bass and no lead vocals. I lovingly selected many old friends — Shures, Neumanns, AKGs and a B&K — from the mic locker in preparation for a lively, fast-paced, challenging date.

Well past the time any responsible studio players should have arrived, the bell rang. I ushered in the suited creative director and an equally young, corporate-looking guy with a shortish keyboard under one arm and a Mac portable under the other. Ahh, I thought, the boss and the arranger!

I showed them to the can and the coffee machine, in that order, and sent the arranger out to the car to get his gear, a Zero attache case with cables and a MIDI Manager interface.

"Where are the other players?" I asked. "Where's the keyboard rack?"

"Right here, except for the guitar," the arranger huffed as he laid-out his single keyboard/sampler and computer on the producer's desk. A short minute later he asked me if I was ready to roll. I looked longingly through the glass at the studio, with its colored track lights reflecting off of the glittering mic stands arrayed about the room, and shut off the studio lights.

We set levels on two input channels and layed down one track after another, watching the sequencer on the Mac spit out one instrument at a time in stereo — piano, bass, solo synth, string swells, kick, snare, hat, tom fills, even BG vox "Oohs" and "Aahs." Twenty minutes for the entire 90-second bed, 20 tracks-worth. Not an EQ or F/X send touched. The processing was in the samples. I was tempted to ask why they even bothered to come into a 24-track. They could have layed it down straight to DAT for later voice-over work on a striped 4-track. But then I remembered — we still had electric guitar to do. There was yet a chance to do some *real* recording.

And as I thought about it, my enthusiasm built. Electric guitar was something that you just couldn't stuff onto a MIDI sequencer's hard disk, not with any real sense of justice or musical integrity. But that thought was shattered

as the guitarist walked into the room, a Steinburg electric 6-string in one hand and a Zoom ubiqi-box snapped to his belt. Two minutes from "Hello, my name is..." to "got a level yet?" All for 4 bars of standard-fare B.B. King licks, second take.

In less than 45 minutes we had cut and mixed an up-tempo commercial music bed without a moment of creative challenge. It was, literally, a stand-back-and-watch-it-happen event. My wildest moment had been aligning the 2-inch an hour before, and that had been a yawner, what with auto-bias and programmable level-set. The track had almost mixed itself.

Which led me, as I later put the mics away, to reflect on the joy, the excitement, the challenge that has traditionally been the nature of the recording process. I reflected on the thousands of magic moments I had experienced, where everyone in the control room would hang on the edge of their chairs, breathing every single note of the fuzzy guitar's searing solo, or hoping upon hope that the players in the studio would pull off that perfect basic take, holding tempo, punching the turnaround just so.

I recalled all the times that, under the guise of setting levels and running down the parts, I would sneakily drop the machine into record on the off-chance that a truly momentous element — the Angel of creation — would appear unannounced, delivering a slice of something that didn't always happen once the tape was officially rolling. Rehearsing in Red.

I remembered all that, and was saddened that recording itself, in many cases, had become a production-line process: walk in, call up a file, dump it out, pack, walk out, send the bill. And even though my intellect knows that all around the world tracks are still being cut by the seat of the pants, with hot mics and unknown transients comin' at ya in the very next bar, I can't help but feel that something important is getting lost in this wave of high technology, ostensibly designed to make our engineering lives easier.

If you take away the artistic science of equipment manipulation and interface, what is left for the recording engineer? If recording is a one button, auto-scaling CPU function, is there room left only for financial enablers (producers) and composers? Does musicianship also fall by the wayside, victims of step-programmable sequencers driving samplers with perfect 20-bit, 48kHz sound bytes? Will the price of non-programmable, non-automated gear hit the ceiling in a major back-to-basics movement? Time will tell ...

Mike Joseph
Editor

Letters

Subcode Sense

From: Greg Reiersen, Custom Cassette, Minneapolis.

Let's put all of this digital zero chatter aside for a moment and talk about subcode. At our mastering facility, I receive many DATs that contain fine audio, but are hard to work with. They are often missing such simple things as absolute time, ID numbers and program length information. In an attempt to make things easier, I've gathered together a few guidelines that should save time for the end-user and mastering charges for the client.

1. Absolute Time: All you have to do is rewind virgin DATs before recording or cue partially recorded DATs to a point after the last program but before ABS ends. This is covered in the user's manual.

2. Start IDs: Each song should be assigned one ID and listed on a track sheet such as the one below.

ID	START	TITLE	LENGTH	END
1.	0:00:10	Tone (-18dB)	0:00:35	0:00:45
2.	0:01:05	Song A	0:02:07	0:03:12
3.	0:03:15	Song B	0:03:14	0:06:29
4.	0:06:33	Song C	0:07:39	0:14:12

3. Record Mute: At the end of a recording, press the record mute rather than the stop button. This allows you to record the next track and maintain ABS. This is also explained in the manual.

4. Removal of the DAT: It's always a good idea to rewind the DAT before removing it from the deck. This will minimize the possibility of the mechanism wrinkling the tape in a vital area.

I realize that this is simple stuff, but many engineers out there just don't seem to get it. Other mastering engineers could surely add to this list, but these are my most frequent complaints. For further information on the proper use of DAT subcode contact your pro audio dealer. Use your gear to its full potential, and you'll be a step ahead.

P.S. Many thanks to R•E•P for shortening the DAT learning curve.

In Haas' Own Image

From: James Cunningham, Highland Park, IL.

I would like to offer one small correction to your excellent National Audio Test. The correct answer to Number 3 is, I believe, D: "The Haas Effect doesn't deal with imaging." Helmut Haas' paper was published in *Acustica* in 1951 and was a study of the effect that a single echo had on speech intelligibility in auditoriums. It was in German and, although an English translation was available from the Building Research Station in London, only a small number of people in the recording industry knew what it really said until 1972 when the AES journal pub-

lished it. As a result, I think some of us extrapolated the data beyond reasonable limits, so perhaps now is the time to put it in a historical perspective.

Actually the effect has been known since 1849 when J. Henry presented a paper to the American Association for the Advancement of Science. In 1948 L. Cremer called the effect "The law of the first wavefront" in his textbook on acoustics. It can be demonstrated by using two loudspeakers in the usual stereophonic arrangement, then delaying the sound to one of them in small increments. After the first millisecond, the sound moves to the undelayed speaker and stays there until eventually two separate sound events are heard. With speech, as much as 50 milliseconds of delay can be inserted before an echo is perceived, (as presented in the Haas paper) but with clicks the interval can be as short as 2 milliseconds. This leaves the first millisecond open for any possibility that imaging can occur by delay differences between loudspeakers. In 1978 (*Acustica* 39) Blauert and Cobben showed that bursts of broadband noise did indeed show smooth transition to the undelayed speaker during the first millisecond. With bursts of $1/3$ -octave noise, however, the smooth transition falls apart. Depending on the frequency, the movement is either in the wrong direction or extends beyond the undelayed speaker. Since the $1/3$ -octave bursts are more representative of musical sounds, I would conclude that imaging in a stereophonic setup is totally a function of intensity differences, which Bauert calls "summing localization." I was able to confirm Blauert's results using synthesizer samples of musical instruments and sequencer software to implement delays.

Let's this argument give strength to the folks who would use only coincident microphones or pan pots for stereo, there is another aspect of delay that contributes to the spatial effect and is far more important to good stereo than imaging. But then, that's another story.

Nameless Irritation

From: Jack D. Harrison, HCJB World Radio, Carol Stream, IL.

Time doesn't permit me to expound the greatness of and the value we receive from your magazine, mainly because I just took a couple of hours to read through the September 1991 issue.

Though I could dwell on the assistance that our people have derived from the information disseminated in R•E•P in the past, the "Digital Domain" article in the September issue was very disturbing and frustrating in the information it *did not* divulge! Beginning with the paragraph subtitled "The Hidden Filter," and continuing through the end, the article is riddled with concrete problems found in "mystery machines," some of which your readers currently own or may be contemplating purchasing soon.

Which machine had the digital high-pass filter that affected jitter? Which one of the "...best selling DAT recorders on the market right now" has problems locking to the stable clock on the System One? I realize the article was not intended to be a review on the problems of certain digital tape machines, but to withhold that kind of revealing information only made the article weak and the reader frustrated at your refusal to divulge information directly pertaining to one of the main reasons we read your magazine: to make informed, intelligent purchases of equipment, partially based upon criteria that we don't have the capability to evaluate ourselves. Actually, for the first time in my experience with this magazine, you sounded like you were trying to "protect" (potential) advertisers by not telling the whole truth.

Please, stick to the journalistic credibility that we have come to respect and appreciate, and don't make us play guessing games with your articles.

Rick Schwartz replies:

Thank you for your response to my September "Digital Domain" column. Although I regret the fact that you felt teased by the article, I'm afraid you may have missed the point. The article was about digital testing and *not* a product comparison. I used concrete examples to prove my point that digital devices are not always as perfect as some would like us to believe. I challenge you to find a DAT review from any pro-sound magazine that mentions the conditions I alluded to. If you've read any of my product reviews in the past, you'll find that they can be very revealing. I invite you to re-read a feature I did with Mike Joseph titled "Reality Check." (R•E•P March, 1991).

I strongly disagree with your assertion that I may have been trying to protect advertisers. Although I have no connection whatsoever with the sales department of R•E•P, I *do* have journalistic responsibility to accurately inform our readers. However, a series of bad reviews can literally kill a basically good product (or a company). This is not a game. These are people's livelihoods we're talking about, so we try to remain constructive when possible.

Back to your original point. I recently completed a comprehensive evaluation of DAT machines that will appear in a future issue of R•E•P. I can assure you that no one single device escapes without a few cuts and bruises. I hope it gives you what you're looking for and helps you to make more intelligent purchasing decisions. Keep reading. ■

Send letters to R•E•P, Box 12901, Overland Park, KS 66282; or fax 913-541-6697. Letters must be signed and may be edited for length and clarity.



We asked Phil Ramone
to field test our new
AT4033 studio
condenser microphone.

He wouldn't
give it
back!

Phil Ramone photos by Michael Bloom

AT4033
Studio Condenser
Microphone

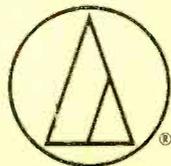
Phil Ramone knows exactly what he wants from a studio microphone. And when he tested a sample of our new AT4033 cardioid condenser microphone, he knew it was right for him and ideal for the artists he records.

He liked being able to concentrate on getting the right music from the musicians, rather than first spending time experimenting with EQ to get the right sound.

What Phil Ramone heard was the result of new condenser technology inside the AT4033. The diaphragm is only 2 microns thick, with a vapor-deposited gold conductive coating just 50 angstroms thick. This sophisticated, very low-mass diaphragm is aged in a five-step process that insures unchanging performance for years.

The high head-room and wide dynamic range, plus low noise floor, make the AT4033 ideal for the most demanding digital recordings. And the maximum input SPL is an awesome 140 dB, so important when recording high-output instruments and very close-up vocals. In addition, transformerless design contributes to overall sonic transparency. The AT4033 also includes a switchable 10 dB pad and lo-cut filter, plus a built-in pop filter and internal shock mounting.

We're not certain we'll ever get the sample AT4033 back from Phil Ramone, but no matter. We're busy making your AT4033 right now. For more details on this impressive new microphone, ask your A-T sound specialist to schedule a test of the AT4033 today.



audio-technica®

Available in Canada and the U.S.A. from Audio-Technica U.S., Inc.
1221 Commerce Drive, Stow, Ohio 44224
(216) 686-2600 • FAX (216) 686-0719

Circle (6) on Rapid Facts Card

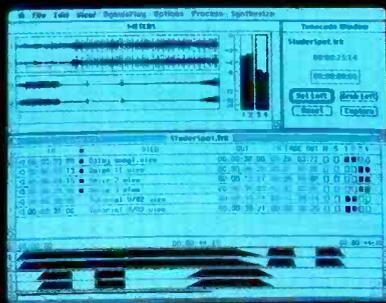
POWER. PERFORMANCE. AND PROFIT.

What do you really need in a digital audio hard disk system?

Simple operation, total creative control, a high level of recording and editing power, and lower cost?

Yes, Studer Dyaxis exactly.

The Dyaxis 2 + 2. Now providing 4-channel simultaneous playback, Dyaxis is the ideal tool for production and post facilities where multichannel applications are required. Advanced features include overdub, multi-take record and programmable in/out, faster time-scaling, EQ and level change. (Original Dyaxis owners can upgrade!)



Synchronization Is Easy. With the System Synchronizer and Timecode option, Dyaxis (and Dyaxis 2 + 2) is a master of sample accurate timecode-based slave applications. With a click of the mouse, Dyaxis locks to SMPTE, EBU, VITC, video, and film tach.

Superb Audio Quality. Through Studer Editech Corporation's own proprietary A/D/E-A converter implementation, anti-aliasing filter and analog circuit designs, Dyaxis has achieved a world-wide reputation for outstanding sound quality.

RDAT Backs Up More. Dyaxis integrated data RDAT subsystem stores all soundfiles along with their precise editing instructions.

Digital Compatibility. Dyaxis communicates with and transcodes between all major digital audio formats such as DASH, AES-EFU, SPDIF, PD, SDIF, 601 and more.

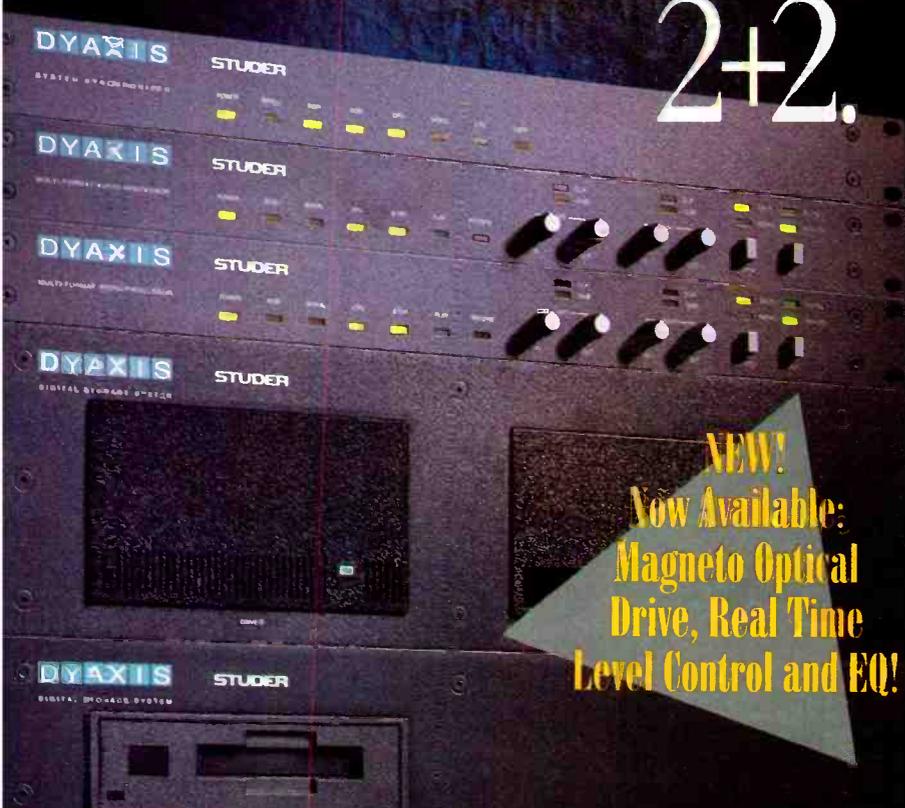
Studer Dyaxis — Designed For You. Discover digital technology that's flexible, powerful and easy to use — all the right stuff at a price that might pleasantly surprise you. With Studer's legendary technical support and financial capabilities, Dyaxis is a sound investment in your future. Call us toll free at 1-800-776-3833 for our new 12-page color brochure on Studer Dyaxis, or call our office for a demonstration.

Picture your sound. On Dyaxis.
From Studer, a name you can trust.

STUDER

Studer Revox America, Inc.
1425 Elm Hill Pike - Nashville, TN 37210
Tel: 615-254-5651 Fax: 615-255-7619
New York 212/255-4462 • Los Angeles 818/780-4234
Studer Revox Canada Ltd., Toronto 416-510-1347
Circle (7) on Rapid Facts Card

STUDER DYAXIS 2+2.



NEW!
Now Available:
Magneto Optical
Drive, Real Time
Level Control and EQ!

PEOPLE

Richard Trump was elected SPARS president at the general membership meeting held during the 1991 AES Convention in New York ... **Dr. Floyd Toole** has been elected president of the AES for 1992; Dr. Toole was also appointed vice president of acoustical research at Harman International ... EAW has hired **Michael Chamness** as senior design engineer ... **Rick Kamlet** has been appointed product manager specializing in research and development for JBL Professional; **Mark Terry** has assumed the new position of executive vice president for marketing and sales at JBL International ... Telex professional audio has named **Jeff Peters** national sales manager; Telex also announced three sales-related appointments: **Garry Bosiacki** is western regional sales manager; **Mike Rangitsch** is the eastern sales manager; **Frank Olson** assumes sales specialist duties ... **Fred Yando** has joined Nakamichi America as vice president of sales and marketing; **Dereck Davis** is Nakamichi's new vice president of operations ... **John DeBrocke** has joined HME as midwest regional sales manager ... Bi-amp Systems announced the promotions of **Ron Camden** to vice president of sales and **Tom Lippel** to engineering manager ... **Ferdinand Boyce** was appointed vice president of marketing at DOD Electronics ... **Roy Yokelson** has relocated his Antland Productions into Howard Schwartz Recordings' renovated Studio East ... **Colleen Eoannou** has assumed the sales manager position at Eastern Standard Productions ... Bakery Recording Studio of North Hollywood has added **Keith Blake** as studio manager/staff engineer ... **Tim Cuthbertson** is TimeLine's new director of sales and marketing ... **Thomas Jenny** was appointed vice president and general manager of the Studer division of Studer Revox America ... Soundcraft USA has added **Ed Bigger** to its staff in the new position of market support specialist ... **Daniel Lear** has been named director of marketing, sales and service for the North American division of Balzers high vacuum products. ■

Trend Watch

Tell the Truth: A preliminary ruling by a Chicago judge in a class-action suit filed against Arista Record's artists Milli Vanilli found against the record company. The suit was instigated after Rob Pilatus and Fabrice Morvan admitted that they didn't actually sing on their album "Girl You Know It's True." The proposed settlement would stipulate a \$1 refund for Milli Vanilli singles, a \$2 refund for cassettes and albums, and a \$3 refund for CDs to any party with a valid proof-of-purchase. Estimates by industry observers suggest that Arista might be liable for over \$20 million.

Hope it Pans Out: The PAN Network, a music industry computer forum with 3,000 members worldwide, has initiated a Music Industry Credentials service. PAN will be compiling a database of resumes, collected from performing and production talent looking for short- or long-term projects, and make them available over the network to industry companies and production facilities. There is no charge for a resume listing, which can be sent electronically (via fax or modem), or on computer disk. Listings are updated daily, and are available on-line or via disk.

Categories include arrangers, record producers and engineers, sound designers, video directors, computer programmers, performers, songwriters, composers, tour techs and session players, among others. PAN can be contacted at (voice) 215-584-0300; or (modem) 800-877-0726.

H.A.R.P. About It: The Hollywood Association of Recording Professionals, once in the news over the home vs. professional studio issue in Los Angeles county, has moved on to subjects of major importance to the industry. Made up of L.A. members such as Cherokee, Conway, Lion Share, Oceanway, Record Plant and Sunset Sound, the organization is formulating a program to address the ever-important issue of workman's compensation rates. Recording studios currently pay the same rates as video stages and production facilities (with their higher voltage equipment, lighting grids and catwalks), yet log a fraction of the claims. Other areas of attention include subjects such as manufacturer/end user interface. H.A.R.P. can be contacted at 213-655-2452 for more information. ■

"Want to know where the action in a culture is? Watch where the new language is turning up and where the lawyers collect, usually in that sequence."

- Stewart Brand, publisher of the Whole Earth Catalog

RAISING THE STANDARD FOR ENGINEERING SOPHISTICATION

EX SERIES

From the beginning we wanted it all: massive power, high efficiency and performance combined with unmatched flexibility and reliability. Together they represented the ultimate statement — amplifiers far more sophisticated than any available today. Our engineers accepted the challenge. **The result is the EX Series.**

MASSIVE OUTPUT POWER. The EX 4000 supplies 1,100 watts per channel at 4 ohms, enough power to drive today's most demanding speaker systems. No duty cycle lightweights, each model will deliver massive output power under high duty cycle conditions.

HIGH EFFICIENCY. QSC engineers developed an advanced high efficiency stepped linear output circuit to dramatically lower waste heat and AC current consumption. As a result, the EX 4000 can operate on a normal 15 amp AC plug. It's the only amplifier in its power class to do so!

CLOSED LOOP PROTECTION. A sophisticated closed loop thermal management and protection system measures actual operation and smoothly and progressively intervenes

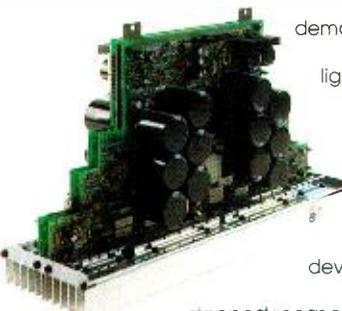
only to the degree necessary. This eliminates harsh clipping, false triggering chatter, shut down, and other forms of protection distortion.

OPEN INPUT ARCHITECTURE.™

Open Input Architecture provides the ability to interface with computers, digital audio, and

fiber optic systems. It also allows you to incorporate signal processing capabilities within the amp. No matter what your needs will be, an EX Series amp has the flexibility to meet your requirements.

YOU CAN HAVE IT ALL. At QSC, our high standards of quality and value have remained the same for over two decades. We have also earned a legendary reputation for reliability. And we've done it the hard way, by performing flawlessly in the world's most demanding sound systems. Now, with the EX Series, we have raised the standard for engineering sophistication. It will change what you think a power amplifier should be.



To learn more about the EX Series, contact an authorized QSC dealer for the EX Series White Paper.

Circle (5) on Rapid Facts Card

By Dan Levitin

In recognition of superior achievement in the area of audio recording, R•E•P proudly presents its first Fresh Tracks Focus Awards. Acknowledging audio recordings released during the past year, awards represent our judges' choices of albums, companies and individuals responsible for the most innovative, unusual or exceptional quality in music engineering and production for 1991.

The judges include the R•E•P editors and guest panelists Neil Dorfsman, Mitchell Froom, Danny Kortchmar, Chris Lord-Alge and Tom Lord-Alge. (The panelists were prohibited from voting for any album on which they worked.)

R•E•P congratulates the following winners:

EDITOR'S CHOICE AWARD: BEST MIX

Dire Straits, "On Every Street." Award to Neil Dorfsman. This album had all of us in unanimous admiration. Dorfsman once again pushes through the barriers we thought possible — he gets sounds we've never heard before. (Warner Bros.)

BEST USE OF COMPRESSION ON GUITARS

Steve Lillywhite, "The La's." Great album, great tones. (Go! London).

REMASTERING ENGINEER

Phil Delancie, for his work with Fantasy/Contemporary reissues.

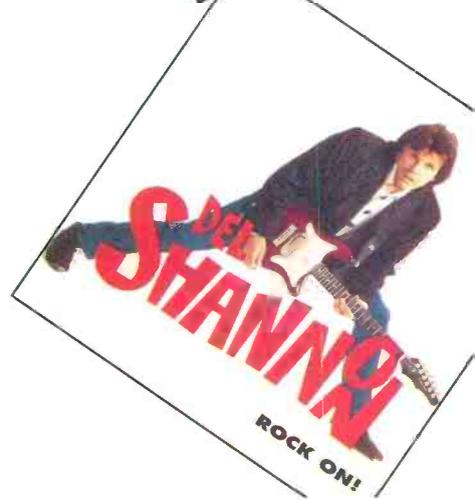
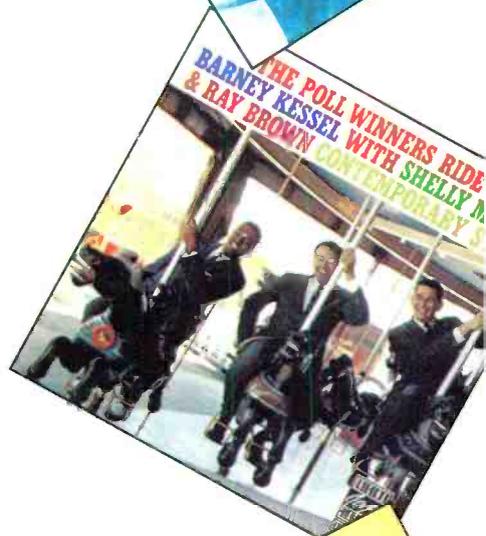
BEST ELECTRIC LIVE RECORDING

Neil Young & Crazy Horse, "Weld." Award to Neil Young, Billy Talbot, David Briggs (producers) and Dave Hewitt, Tim Mulligan, John Nowland and John Hanlon (engineers). (Reprise).

BEST ACOUSTIC LIVE RECORDING

Paul McCartney, "Unplugged." Award to Geoff Emerick. (Capitol).

Dan Levitin is R•E•P's music production editor and a producer based in Stanford, CA.



FOCUS: Awards

A&R VISION AWARD

Novus/RCA Records, for cornering the market on bright, young jazz geniuses, such as Christopher Hollyday, Roy Hargrove, Warren Hill and Antonio Hart. Award to Steve Backer, series director.

BEST DRUM SOUND

Van Halen, "For Unlawful Carnal Knowledge." Award to Andy Johns, Michael Scott, Lee Herschberg and Ted Templeman (engineers). (Warner Bros.)

MOST VALUABLE COUNTRY PRODUCER

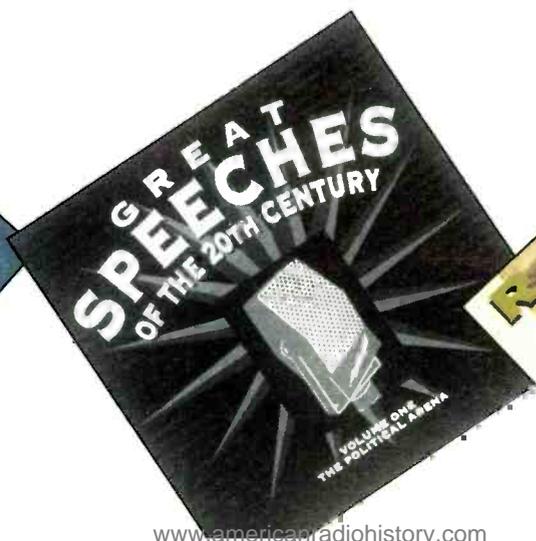
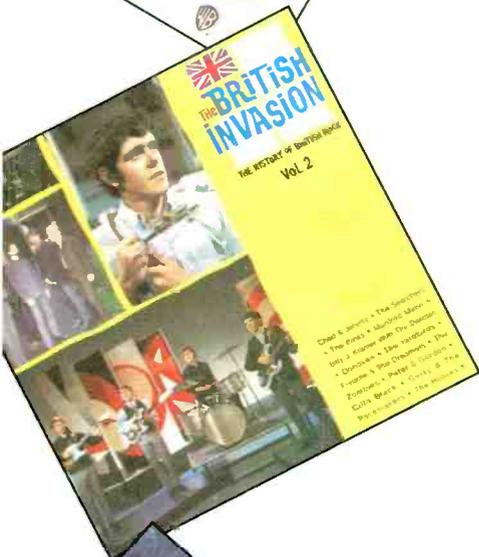
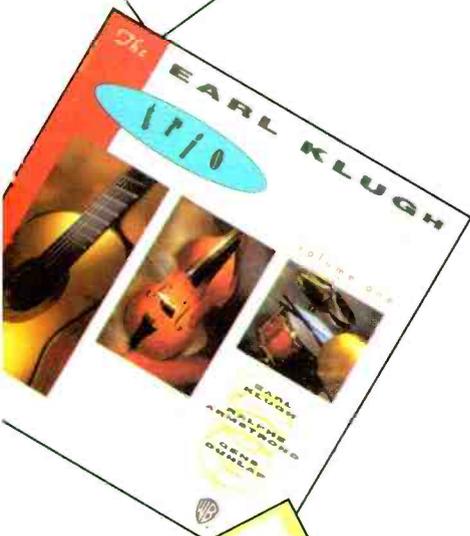
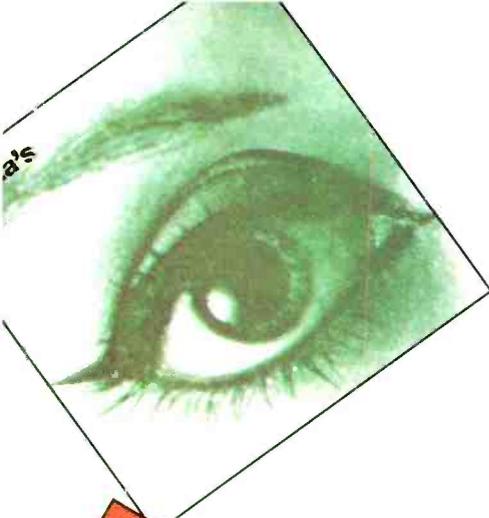
Tony Brown. MCA's Brown has had his hands in many of the great country albums of the year: Patty Loveless, Marty Brown, Mark Collie, Marty Stuart, Kelly Willis, Reba McEntire, Lionel Cartwright and the Desert Rose Band, to name a few. All are models of tasteful production and engineering.

BEST REISSUE LABEL

Rhino Records, for the sheer variety and breadth of their catalog, many titles of which are indispensable. Releases this year include George Jones, B.J. Thomas, Bob Wills, Johnny Rivers, Alex Chilton, Sparks, Gilbert O'Sullivan, The Monkees, not to mention the terrific Guitar Player series, Soul Hits of the '70s, and the excellent 9-volume British Invasion series.

BEST USE OF MODERN PRODUCTION TECHNIQUES

Public Enemy, produced by Hank Shocklee, Keith Shocklee, Carl Ryder and Eric Sadler. (Def Jam/Columbia).



FOCUS: Awards

CHRISTMAS ALBUM OF THE YEAR

Tuck Andress, "Hymns, Carols and Songs About Snow." This release has great guitar tone and terrific playing; a gem, sonically and artistically. (Windham Hill).

BEST BLUES REISSUE SERIES

Columbia/Legacy Records, for their series including Bessie Smith, Leadbelly, last year's Robert Johnson, and various blues compilations going back to the beginning of the century.

BEST BOXED SET PRODUCTION

"Crosby, Stills and Nash." Award to Graham Nash and Gerry Tolman, (producers). This collection of rare sides, alternate versions and standards was carefully assembled with great attention to detail. It features nice packaging, liner notes and comments on individual cuts, and is overall the best assembled box of the year. (Atlantic).

BEST SPOKEN WORD ALBUM

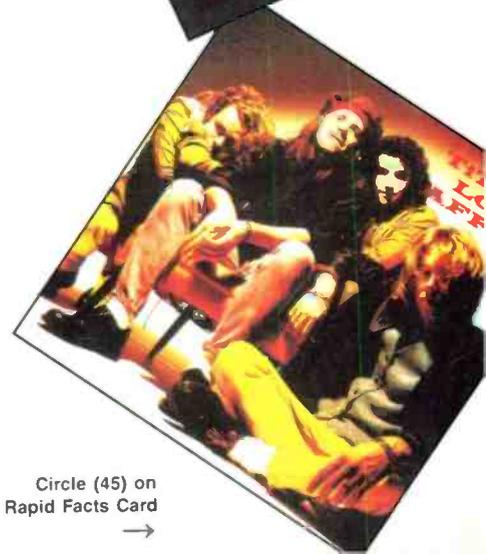
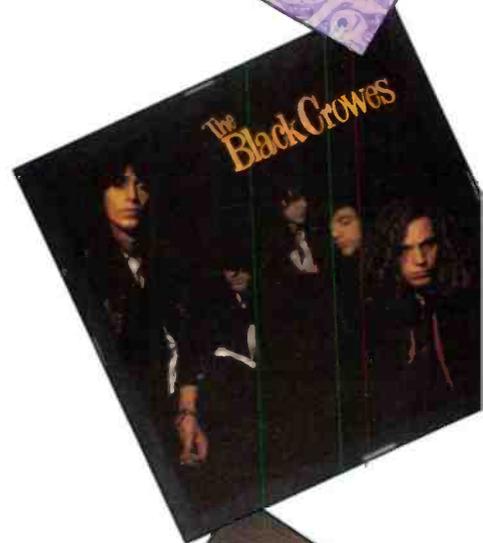
Rhino's, "Great Speeches of the 20th Century." One of the best uses of recording technology this century is demonstrated in capturing these speeches. Amazing in its scope and power, this is like taking a step back into history. It is sometimes inspiring, sometimes chilling. Nixon's "Checkers" speech, Hitler, Churchill, Teddy Roosevelt, Martin Luther King's "I Have A Dream" speech ... It will probably be the most sampled CD of 1992, but for sheer historical value it is a must-have. Award to Gordon Skene (producer) and Richard Foos (concept).

BEST BLUES REISSUE OF THE YEAR

T-Bone Walker, "The Complete Imperial Recordings." Pete Welding, producer. (EMI).

BEST USE OF ROOM REVERBS

Xtreme, "Pornograffitti." Mixing engineer Michael Wagener. (A&M).



Circle (45) on
Rapid Facts Card



SOUND SOLUTIONS



News and Information for the Concert Community

New "Raw Frame" Components Are First For Klipsch

Klipsch has entered the component speaker market with the K-1200, K-1500, and K-1800 Series, a line of extremely efficient professional-grade 12-in., 15-in., and 18-in. woofers. Higher frequency drivers will be added within the next 12 months.



All of the woofers are manufactured by Klipsch in its Hope, Arkansas, facilities and utilize advanced materials and massive magnet structures to produce superior performance and high efficiency. The result is a speaker that converts more of the amplifier's electrical output into sound.

For example, the K-1800 Series 18-in. woofers generate 104 dB SPL with 1 W of power measured at 1 m from the cone. The 18-in. woofers will handle 300 W of continuous pink noise from 40 Hz to 2 kHz for 8

hours, with peaks to 3 kW.

For example, the 12-in. speakers have 77 oz. magnets and the 15-in. and 18-in. speakers have 96 oz. magnets and employ Kapton voice coil forms for high temperature-handling capability, advanced adhesives for strength under varying conditions, and cast aluminum frames with vented backs for light weight, rigidity, heat dispersion, and less power compression.

The K-1200 Series speakers are 8-ohm designs and the K-1500 and K-1800 Series speakers are available in 4-ohm or 8-ohm designs. The 15-in. and 18-in. speakers are also available in models for small bass reflex enclosures as well as horn enclosures.

The woofers are supported by mounting accessories as well as application support from Klipsch, and are backed by a 5-year warranty. All models are available for immediate delivery.



New Orleans Picks Klipsch

When the New Orleans Convention Center inaugurated the second phase of its massive expansion with an exclusive engagement of Harry Connick, Jr., the sound was delivered by 36 Klipsch KP-600 speaker systems.

The six-block convention center doubled its contiguous exhibit space to 700,000 sq. ft., which doesn't include 200,000 sq. ft. of meeting rooms, lobbies, and ballrooms throughout the facility.

Jack Shirk, the center's production manager, says the portable Klipsch system will be used for shows ranging from general sessions up to 12,000 people, to concerts and Mardi Gras parades.

The KP-600 speakers were appealing to Shirk because of their light weight. Klipsch demonstrated that the speakers are easier to fly than any other system.

The KP-600 also saves money in rigging thanks to an aluminum frame and composite cabinet materials.

New KP-480-SW 18-in. Subwoofer Sets

Performance Standard

Klipsch has introduced the KP-480-SW, a professional 18-in. bass-reflex speaker system that delivers high output, handles high power levels, and has very low distortion.

This high-efficiency speaker system utilizes a 15-in. passive radiator that provides a much larger radiating area than a typical vent in order to couple better to the air at low frequencies. The result is extremely high output and low distortion at low frequencies.

The speaker has an 8-ohm impedance and frequency response of 44 Hz to 200 Hz +/-4 dB; -10 dB at 34 Hz (measured at 3 meters, half space anechoic), and there is usable response to 2.5 kHz. The KP-480-SW will handle 300 W of continuous pink noise from 40 Hz to 2 kHz for 8 hours, with peaks to 3 kW. Maximum continuous output is 126 dB at



1 m with 300 W input. Sensitivity is 104 dB SPL at 1 meter with a 2.83 V input.

The KP-480-SW measures 26 29/32-in. high x 23 7/8-in. wide x 24 1/16-in. long and weighs 85 lb. (99 lb. shipping weight). An internal passive crossover is available as an option. The speaker is the same width as a Klipsch LSI three-way system, which will stack neatly on top of it. Turn the KP-480-SW on its side and it is as wide as a KP-450. The KP-480-SW is available for immediate delivery.



KLIPSCH NOTES

Revenue Verifies a Sound Decision

Less than a year ago, Advanced Media Services, Livonia, MI, focused primarily on large screen video presentations. But when its clients increasingly asked for sound reinforcement, the company moved fast. With the addition of a quality sound system including Klipsch KP-600 and KP-250 systems, Advanced Media Services has increased its revenue and opened up a broad, new market.

"Everyone in technical operations likes the speakers," says Jim Ruona, the company's director of operations. "Although we still have some speakers from another manufacturer, they tend to sit around a lot more now. The Klipsch speakers are handling an average of one project a week." Recent projects include a Ford Motor Company stockholders meeting, and two major press conferences for Detroit Diesel.

Those Old Chunky Blues

Haven't heard of the Chunky Blues Festival? No wonder. Only 5,000 people attend the one-day event, rain or shine. But don't let the attendance fool you. This popular local festival draws blues talent like Buddy Guy, the Nighthawks, Lucky Peterson, and Wet Willie.

It might have a lot to do with the sound, because for the last three years, Ram Sound, a sound reinforcement company from Mary Esther, FL, has been beaming the blues to the crowd via Klipsch speakers. Bob McTyre of Ram Sound uses Klipsch speakers and provides a 20-box KP-600 Series system for the event.

So if you missed it this year, there's always next year...

Klipsch Lights Up the Lone Star

People looking for top notch rock and roll and R&B acts (and some fine ribs too) have been packing Manhattan's Lone Star Roadhouse for years.

And now, two Klipsch KP-600 stacks are making the acts an even more enlightening experience. Klipsch demonstrated the system at AES in October with a night of "Strange Indeed", best described as part ragga, part rock and roll.

If you're in New York City, give the Lone Star a call at (212) 245-2950.

SOUND SOLUTIONS

News and Information for the Concert Community

Titanium Compression Driver Debuts In February

Klipsch will be delivering the K-1132, a 3-in. compression driver, beginning in February. The driver features a 2-in. throat, optimized high-frequency performance, and adaptability to horns and manifolds from nearly all major manufacturers.

The driver was designed and is being manufactured by Klipsch at its facilities in Hope, Arkansas, and is one of the initial component speaker products that will be introduced by Klipsch in



the next year.

The K-1132 is a large-format driver with a 3-in. titanium diaphragm. Standard throat size is 2-in. and 1.4 in. is available as an option. The driver makes use of several other sophisticated materials and

weighs less than 16 lb. The driver is extremely efficient and handles large amounts of power with very low levels of distortion.

A Feast For The Eyes...And Ears

When William Norred talks about his company's latest sound investment, he's referring not only to Sportsman's Lodge, a Los Angeles landmark acquired last year by Quor Inc., but to his commitment to delivering superb audio in the facility as well.

Quor chose Klipsch speakers for each of its main banquet rooms at Sportsman's Lodge. The largest banquet room seats up to 1,000 people and is designed to envelope the audience in sound via the spatial enhancement properties of a digital effects processor. Two KP-650 four-way systems frame the 40-ft. wide stage and are supported at the low end by a KP-680 subwoofer hidden below the stage. To locate the vocals in the center, a KP-450 horn is mounted in the ceiling.

In the smaller "cabaret" room that seats 450 people, Norred has designed the speakers to be as inconspicuous as possi-

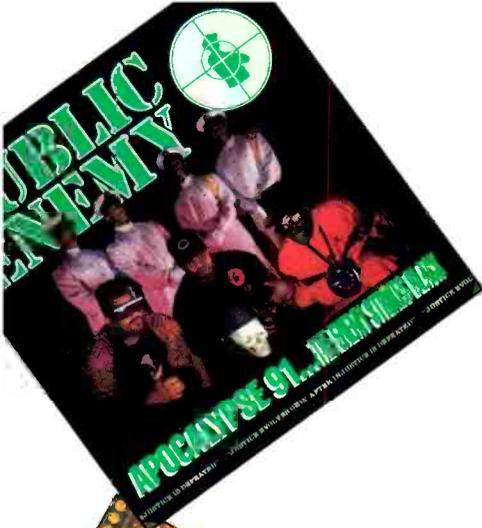


ble. In fact, none are even visible from the seats. The two KP-450 and three KP-115 subwoofers used as low-frequency drivers, and two KP-480-AG subwoofers are heard (and felt) but not seen.

So far, Sportsman's Lodge has hosted press conferences, corporate meetings, weekly performances by the house salsa band — and the monthly meetings of the Los Angeles Chapter of the Audio Engineering Society. As Norred and company put the finishing touches on the facility, they'll be featuring more live acts as well as DJs.



Sound Solutions is published four times per year by Klipsch & Associates, Inc., PO Box 688, Hope, ARK 71801, (501) 777-6751; FAX: (501) 777-6753. Story ideas and other comments should be addressed to The ANR Group, 350 Main Rd., Montville, NJ 07045, (201) 299-8000, FAX: (201) 299-7937.



SONIC IMPACT

Jesus Jones. Mike Edwards, Martyn Phillips and Andy Ross (producers), Clive Goddard, Martyn Phillips, John Fryer, Phil Harding and Ian Curnow, (engineers). (SBK).

MOST LAUGHABLE REMAKE

Guns 'n Roses, "Knockin' On Heaven's Door."

COOLEST GENRE SHIFT

Earl Klugh Trio. A great traditional jazz album from someone better known for "pop" jazz. Great tones. (Warner Bros.).



BEST LINER NOTES

Arthur Levy, "Songs of the Civil War." (Columbia/Legacy Records).

BEST PRODUCTION BY A FORMER BEE GEES PRODUCER

Albhy Galuten, "Titanic Love Affair." (Charisma)

BEST PRODUCTION OF A BAND WITH NO TALENT

Russ Irwin. Phil Ramone, producer.

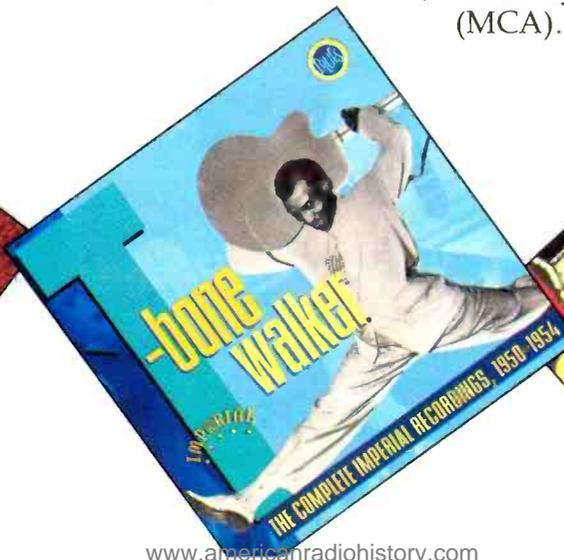


OVERBLOWN PHASE-SHIFTER AWARD

Q-Sound

ANNUAL WILBURY'S SOUND-ALIKE AWARD

Jeff Lynne (producer) for Del Shannon's "Rock On." It really does sound like a Wilbury's record with a new brother, 'Runaway' Wilbury, on vocals. (MCA).



Welcome to the Club

By Guy Costa

Whether you commute 60 miles a day to your studio or just slip into a pair of shorts and meander over to your console, the bottom line is still the same. Everyone is working harder than ever to earn a living in the highly competitive and recently recessive recording industry.

Welcome to the realities and obligations of having to turn a profit in a mature industry where fortunes shift with the everchanging technological and creative tides. Welcome to the world of the professional techno-creative entrepreneur. Welcome to the club.

To get a better grasp of today's hard realities, let's look to the past and see what we can project for the future. First of all, what happened to many of the "big" recording studios like CBS, RCA, and MGM? And what happened to the great independent operations like Gold Star, A&R and Bell Sound? Simply put, they didn't control that bottom line, and they missed the opportunities to invest wisely in the right people and the right emerging technologies. No longer competitive, they disappeared into the everchanging market structure of the modern recording industry.

How can you, today's professional, avoid the pitfalls that will inevitably appear? Here's the key: Stay in touch with reality, and know your market. Some of the old rules still apply. Be professional, know your limitations and maintain the highest levels of quality and service. And if you can't afford to keep up with the technology, change your level of service or get into a different line of work.

Success is not achieved by rushing out and buying the latest console or DAW and then trying to find the clients and/or product to record. Success comes to those who find the right niche and fill it. A state-of-the-art recording studio may require the newest technology to attract the big budget artists, but a demo studio might get along just fine with a 4-track recorder. A jingle house might need a simple 8-track system, while a video post facility might require a synchronizer, video playback, sampler and multiple sound libraries. Remember, one has to "pay" to "play". Unless you have a backer

with very deep pockets, the only way to play is to have clients or projects that generate more money than they cost.

Although technical and support facilities vary with the client base, the operational needs of all businesses are fundamentally the same: To create, make, and sell a product or service — competitively, consistently and at a profit.

Owning and operating a recording facility has typically been a labor of love fueled by a passion for music. But there is often not enough attention given to the administrative, financial and marketing aspects of building a successful business. SPARS fully realizes its obligation to the industry and continually strives to provide the information and the networking that can keep your business alive and well. On January 25 and 26, 1992, SPARS will host a studio business conference in association with UCLA Extension entitled "The Business of Operating a Recording Studio: Realities and Opportunities in the '90s."

Welcome to the realities and obligations of having to turn a profit in a mature industry where fortunes shift with the everchanging technological and creative tides.

We are assembling a group of working pros to discuss topics ranging from the effective use of cash, working with your competitors, protecting your assets, advertising and marketing, accounting, pricing and long-range planning, to building a business. We will also try to provide our best predictions for future trends.

To be successful, a studio must generate enough cash to pay the owner and employee salaries, set aside reserves for repairs and maintenance, meet current and long term obligations for supplies, leases and rentals, as well as emergency reserves in case of illness or major breakdowns. We'll cover these needs, as well as funding for retirement programs, building and maintaining assets for future sale, maintaining a financial status that will allow for purchase or leasing of new or upgraded equipment and expansion, and handling the cost of liabilities and comprehensive insurance.

These issues may at first seem simple and obvious, but there are many considerations commonly overlooked. Take, for example, the question of insurance. A homeowner's insurance policy does not normally cover business equipment, especially if the equipment is owned by a corporation. More important, in the case of a project or home studio, someone who gets injured while visiting or working at your facility might not be covered by your individual insurance policy.

While your business is young and flourishing, it's nice to have a great cash flow, but how long will you be able to, or even want to, keep working? If you're like most of us and would like to retire before you're 84, you need to plan your business very carefully.

The structure of the audio industry, the technology, and the facility businesses are entirely different from what they were just a few years ago. At the upcoming SPARS business conference, we will get together with working professionals and experts from every facet of the industry to take a hard look at survival in the years to come:

- Controlling the Bottom Line — Lease vs. Own, Bank Loans, Depreciation
- Pricing — Reality vs. Competition
- Personnel — Loyalty, Longevity, Training
- Legal Issues — Liabilities, Personal vs. Corporate Structure, Insurance
- Marketing — Advertising, Public Relations, Diversification vs. Specialization
- Project Studios — Friend or Foe?

This conference is designed to meet the needs of every audio business, from the multi-million dollar recording complex to the professional project studio. We at SPARS encourage you to attend, and most important, to participate in this meeting of optimistic achievers. For more information, contact Shirley Kaye, our Executive Director at 800-771-7727. You have nothing to lose, and much to gain: Legitimate deductions for membership in SPARS, travel costs, accommodation expenses, car rental charges, and much more! ■

Guy Costa is a member of the SPARS Board of Directors and president of Quadim Corp., Los Angeles.

The Society of Professional Audio Recording Services is the industry's best source of business information. For details on activities or membership, contact SPARS at 4300 10th Ave. N., Lake Worth, FL 33461; 407-641-6648; fax 407-642-8263.

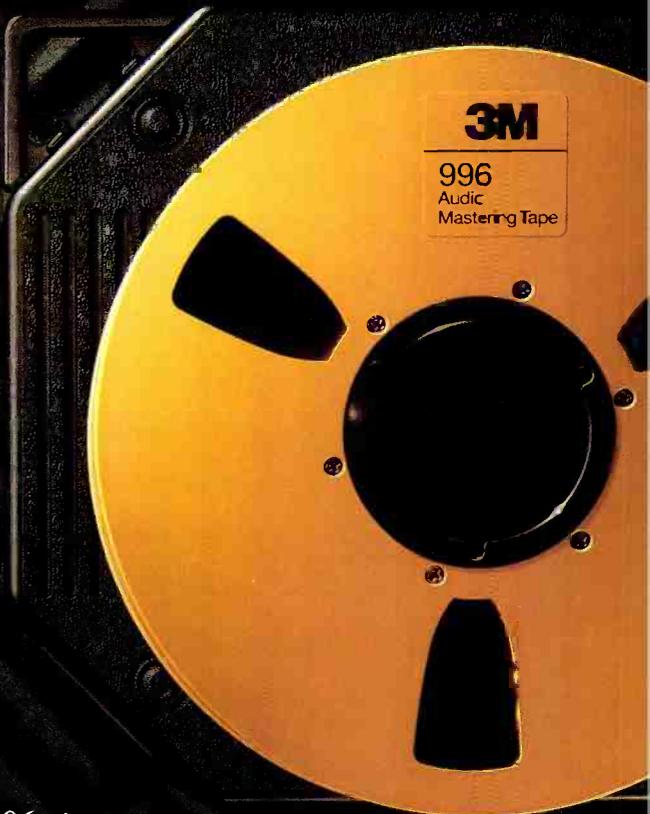
NO AUDIO TAPE HAS EVER RATED SUCH INCREDIBLE RESPONSE.

"I love the extra headroom it gives you. Different types of music call for you to hit the tape differently. I've hit it light and I've hit it hard, and the 3M 996 will definitely take the level." —Ed Cherney,
independent producer

"You can hit it 3 dB hotter without any distortion or bottom-end modulation. It's a mirror image of the source material!" —Tom Tucker, Paisley Park Studios

"A lot of engineers and producers want to really be able to slam levels to achieve a certain sound. 3M 996 gives them more options and opens more doors, sonically speaking." —Barry Bongiovi, Power Station

Clear. Dynamic. Musical. Exciting. That's the response recording engineers are giving 3M 996 Audio Mastering Tape. Because 3M 996 audio tape is giving them the performance they've always wanted: The ability to record as hot as you want (level +9) with virtually no distortion. A signal-to-noise ratio of 79.5 dB. Print-through level of -56.5 dB. And maximum output level of +14 dB (at 1 kHz.). So 3M 996 audio tape returns every note, every nuance, every thrill exactly as you put it down. Call 1-800-245-8332 for full information. **We won't be satisfied until you are.**



In celebration of an old friend.

60 YEARS OF ABBEY ROAD

By Richard Buskin

There's a little bit less fun and more finance now, which is typical of every industry. I think somewhere down the line people have forgotten that studios exist for music and not for making money."

Having been at Abbey Road Studios since 1954, Ken Townsend has seen and been involved with many changes in the recording industry, in terms of the approach to work and the technology used to deal with it. He has progressed from technical engineer to managing director, and he has witnessed his studio evolve from an insular, cottage industry-type setup whose sole purpose was to serve its parent record company, to a world famous, state-of-the-art facility competing on the open market with hundreds of independent studios.

November 12, 1991 marked the 60th anniversary of the place which, for most of its life, was simply known as EMI Studios, before a certain well-known album by a certain well-known quartet encouraged a change of name to match that of the street on which it is located.

"People unfortunately still only think of one particular group that ever came here," says Townsend. "We painted the wall outside only a matter of weeks ago, and it is now totally covered again in graffiti contributed by people from all over the world. There again, when

they're not busy scribbling, they are holding up the traffic, posing for photos as they walk across that zebra crossing. So, for many people, Abbey Road is the only studio they've ever heard of, the only one they think exists, whereas the artists and clients, of course, know of lots of alternatives in lots of areas."

Matters were not always so complicated, of course. Originally a private residence boasting nine bedrooms, five reception rooms, two servants' rooms, a wine cellar and a 250-foot garden, the property situated at number 3 Abbey Road, in the select North London area of St. John's Wood, was purchased by the Gramophone Company Ltd. for the then-huge sum of £16,500 (less than \$30K) on December 3, 1929. This was at a time when no record company anywhere in the world had its own custom-built studio, and it was seen as a considerable step forward from having to hire large halls in order to record orchestral performances.

During the next two years, at a total cost of £100,000 (\$175K), the house was converted into the world's largest studio, while, in accordance with local regulations, the exterior of the original building remained the same. With the inside being utilized for offices, reception areas and Studio 3, the 94' x 55' x 42' Studio 1, capable of accommodating 150 musicians, was built in the rear garden area, adjacent to the 58' x 37' x 28' Studio 2. A garage was constructed to house a mobile recording unit, and the general intention was for Studio 1, the big one, to be used primarily by orchestras, Studio 2 to be used by big bands and popular solo

artists of the day, and Studio 3 to specialize in piano recitals.

By the time of the opening ceremony on November 12, 1931, the Gramophone Company had merged with Columbia to form Electrical & Musical Industries (EMI), and the occasion was officially marked by Sir Edward Elgar conducting the London Symphony Orchestra in a recording of his own Falstaff Suite. An EMI press release, headed "London's Latest Wonder," described how, "Just over four and a half miles of electric cable connect the three studios with the central control room. Six microphones can be used at any one time in each studio and each microphone has separate control. This will ensure that all records will be recorded with the correct balance of instruments and vocalists. There are waiting and retiring rooms for artistes and special departments for the scientific maintenance of the whole installation."

TECHNICAL INNOVATION

Indeed, it would be Abbey Road's technical staff who would play a decidedly significant role in the studio's success during the coming years. In 1925, the Western Electric Company of America had introduced the first electrical recording system using microphones to pick up sound, but as this was protected by various patents in both the U.S. and the U.K., EMI decided to develop its own system and thus avoid paying large royalties to WE. The result was that Alan Dower Blumlein's mic system, consisting of a moving coil recorder and flexible

Richard Buskin is a free-lance music and film journalist based in London.



Abbey Road's infamous wall of graffiti, where fans come to worship.

wide-range equalizer, was soon installed, and this would remain in full use until 1948. Indeed, as far back as 1931, Blumlein also began experimenting with stereo.

The moving coil mics, smoother in sound than those produced by Western Electric, proved to be ideally suited to piano recordings, and so in this respect, Abbey Road led the way for many years. Yet, while the acoustics in Studios 2 and 3 were satisfactory, those in Studio 1 proved to be less so. The roof and walls had been packed with damping material which completely deadened the sound. This was replaced with resonating material during the late '40s, which would improve matters.

Still, Abbey Road steadily forged a solid reputation for itself throughout the '30s, and a steady stream of internationally famous names passed through its doors in order to make use of its trend-setting facilities; Paul Robeson, Fred Astaire, Fats Waller and Noel Coward, to name but a few. By 1939, the studio had also assembled for itself a team of world-class producers, including David Bicknell, Walter Legge, Leonard Smith and Laurence Collingwood. Although World War II led to a reduction in both staff and workload, things began to pick up immediately thereafter.

Research was carried out to extend the range of the moving coil system, and in 1946 a team of British and American sound engineers — including Abbey Road's Berth Jones — visited Berlin to learn more about German developments in the field of magnetic recording. Adapting the technology found in a military intelli-

gence monitoring system, which used magnetic tape when cracking codes, EMI was able to manufacture its own tape and recorders, leading to the BTR series, utilized at Abbey Road for more than 25 years. The introduction of tape, which could be cut and spliced using non-magnetic scissors, meant that takes could now be edited together, and combined with other state-of-the-art, in-house equipment including a £1,000 (\$1.7K) mixing console, and a lacquer mastering system for the new 33rpm and 45rpm microgroove records.

By 1950, multitrack recording was being introduced, a 4-track version of which was developed by EMI in conjunction with Siemens Telefunken, and installed in Abbey Road. This was also the year in which an aspiring pianist by the name of George Martin undertook what he regarded as a stopgap job at the studio, assisting Oscar Preuss in the running of EMI's Parlophone record label.

Stereo equipment was installed in Abbey Road in 1956, comprising racked mixers with six inputs — two crossed pairs and two mono injections — but at this stage their use was confined mainly to classical recordings. Initial pop excursions into this field amounted to straightforward pairings of the mics, balanced in a remote stereo control room, but when pop sessions highlighted the differences of level between open and muted brass instruments, 4-way pre-mix boxes were added to each left, right and center injection.

For the most part, however, pop records were recorded live in mono, necessitating neither

mixing nor overdubbing, and as this kind of work increased, Studio 1 became the sole preserve for classical recordings. Yet, the troublesome acoustics in there meant that with a large orchestra, the absorption dried up the mid- and top-end reverb time, causing an imbalance with low-end frequencies. As a result, in 1958 the Abbey Road research division designed a series of magnetic delay drums, in conjunction with 100 loudspeakers which were fitted symmetrically to all four walls. The intention was to customize the acoustics according to particular recording setups, by way of feeding specific banks of speakers with variously delayed signals. The results were only partially successful, nevertheless, Studio 1 remained the place for large-scale classical recordings.

THE SIXTIES

These were the years when audio equipment innovations became an EMI/Abbey Road forte, and the late '50s saw the introduction of such devices as noise limiters, single tape echo and echo delay (STEED) units, faded isolated tape echo (FITE) units, tape looping and numerous improvised effects, courtesy of engineers such as Stuart Eltham, Malcolm Addy, Peter Bown and Gwyn Stock, as well as several of the producers and artists.

The introduction of 2-track machines meant that groups could now overdub, while mixing consoles containing smaller valves switched from fixed racks to desk-tops. Microphones were also changing, with condensers produced by the likes of AKG and Neumann vastly improving on frequency response, and so this was pretty much the state of affairs when The Beatles arrived on the Abbey Road scene in June of 1962.

Over the next seven years, the group, by way of their innovative music and unconventional approach — as well as the greater freedom afforded them due to their staggering success — would help usher in many changes at the EMI Studios in North-West London. Not the least of these would be the dissipation of many of the strict rules and regulations that had characterized the British recording industry in general, and Abbey Road in particular, since the very beginning.

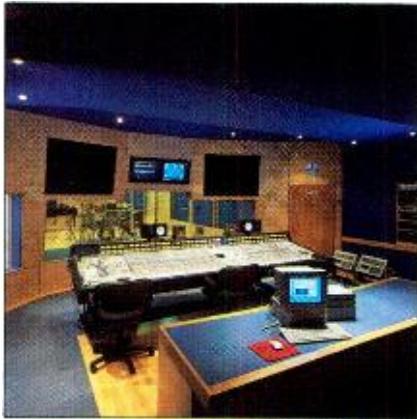
For many years, all staff had had to wear shirts and ties with regulation white coats at all times, once prompting Sir Winston Churchill to comment during a visit, "My God, I thought I'd come to the wrong place. It looks like a hospital!"

"For many people, Abbey Road is the only studio they've ever heard of, the only one they think exists."

- Ken Townsend

Recording sessions ran in 3-hour blocks — 10:00 a.m. to 1:00 p.m., 2:00 p.m. to 5:00 p.m., and 7:00 p.m. to 10:00 p.m. — and with 'pop' work, the normal practice was to record four songs during any one session. The advent of The Beatles, however, soon changed all of this.

Initially, of course, they reported to the studio in suits, shirts and ties, and recorded the required amount in the stipulated time. But as time wore on and their power grew, sessions began to merge into one another, and the smart attire was replaced by the psychedelic look. The studio (for the most part Studio 2, although all three were utilized for projects such as "The White Album") became a refuge for them from the frenzy of the outside world, and by the mid '60s they were working there through the early hours of the morning.



Studio 3 control room, designed by Sam Toyoshima, with the 64-input Calrec/AMS UA8000 console and Quested monitors.

The console that they used during these years was the Abbey Road-developed REDD, fitted with EMI's own tone controls and filters, as well as the provision for an EQ box to be plugged in. This had the settings 'pop' and 'classical', the assumption then being that the high top-end reached by orchestras could not be attained on pop records. There again, there were many assumptions and guidelines laid down by the EMI research division, which were either disproved or ignored by innovative recording engineers such as Norman Smith and Geoff Emerick, and technical engineers such as Ken Townsend, who, in attempting to create the 'outlandish' sounds that The Beatles and their contemporaries described/demanded, were inadvertently inventing new industry standards.

So it was that the world was introduced to the likes of Artificial Double Tracking (ADT), flanging, tape saturation and feeding vocal and instrumental sounds through the rotating Leslie cabinets in Hammond organs; anything — not to mention a wealth of sound effects from Abbey Road's comprehensive tape collection — to attain a 'far-out' result, and all of this for musicians who, in 1963, had been greatly impressed with just echo and double-tracking!

REEL-TO-REEL

The 4-track tape machines — initially Telefunken and then Studer — had been used at Abbey Road for classical purposes since 1960, the orchestra being laid on two tracks, while soloists and chorus were on the other two. The Beatles, et. al., then got around to using them in late '63, the year in which 15 of the 19 records which topped the British pop charts were recorded at the St. John's Wood studio, while Parlophone was transformed from the joke label into the new pride of EMI.

During the mid-'60s, the Harvest label was also formed to accommodate the fast-emerging 'underground' music, characterized by Pink Floyd, who started out using Abbey Road's 4-track equipment before 8-track was introduced

in 1968, and then 16-track a year later.

Another break with the past occurred in 1976, when a 36-channel Neve console replaced the existing 24-channel desk in Studio 3; the first non-EMI board to find its way into Abbey Road. Then, in 1980, a 48-channel Neve was installed in the all-new Penthouse studio constructed on the top floor of the building. This was aimed at accommodating more tightly budgeted projects, but at the same time it took up space that had until then been used for equipment storage. October 15 and 16 of that year, Studio 1 was turned into an auction room as more than £1/2 million (\$875K) of gear came under the hammer, including prized items such as the two Studer J37 4-track recorders used by The Beatles for the 'Sgt. Pepper' album. Times had changed; this was also the year when EMI's prototype 8-track digital machine went into operation at Abbey Road.



Spacious and comfortable lounging space contributes to the overall Abbey Road recording environment.

While the '70s had been a decade largely of consolidation and adapting to the accelerating technological advances, the '80s heralded in a whole new era for the studio. 56-input SSL 4000Es found their way into the Studio 1 and 2 control rooms, and a 48-channel Calrec into Studio 3.

"In the old days, when a piece of auxiliary equipment was purchased it would first go off to the Technical Department for assessment before anybody used it," says Abbey Road's post-production manager, Chris Buchanan. "Every parameter was measured and tested over a long period of time, and I can remember, for example, when we got the first Studer A80 2-track machine in here it was with the 'expert' for at least six months. He did detailed drawings of each printed circuit board and analyzed each separate circuit, measuring every single parameter! In some ways that was beneficial, but there again it was also way over the top, and that's all changed now because we're no longer dictating to clients what they should use."

MODERN TIMES

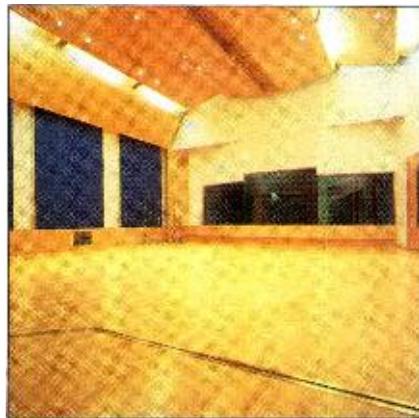
In 1988, Ken Townsend embarked on streamlining the facility, starting with the main entrance area and the adjacent office areas and hallways. Studio 3 was also completely reconstructed according to the design of Sam Toyoshima, and fashioned into a self-contained state-of-the-art facility, boasting a 28' x 26' control room, a 28' x 23' x 24' studio area, a 6' x 6' iso-room and a 13' x 19' fully mirrored live room. A completely equipped lounge, kitchen and bathroom, located above the con-

trol room, was added. The console in there is a 64-input Calrec/AMS UA8000 with TASC automation, operating in conjunction with two Mitsubishi 32-track digital machines and Quested monitoring.

"As a project, that has probably been the most successful one that we've tackled," says Abbey Road's manager of technical operations, Neil Aldridge. "There again, it's also the biggest that we've tackled, and really the first we've tackled using an outside adviser. Up to that point, EMI tended to do its studio installations itself, and while our acoustic engineers based at Hayes were very good, they perhaps lacked the flair that was required for a studio of the '80s and '90s."

Today, 60 years young and proud of its distinguished past, Abbey Road is prepared to forgo nostalgia in order to invest in its future. So it is that Studio 2, the 'Beatles Studio' as it is often referred to by fans and musicians the world over, is to undergo a complete facelift, with the famous upstairs control room being superseded by a much larger new construction, to be located in the gardens currently adjoining the recording area.

"You see, from a working point of view, the only problem with Studio 2 is the control room," says Mike Jarratt. "I mean, I know the studio



Studio 3's recording space, redesigned in the late '80s to contemporary specs.

area looks a bit tired, but it sounds great, and so the changes that it requires are only really cosmetic. It's a difficult task changing Studio 2 at all, because we still get a lot of people saying, 'No, you can't touch that!'"

Abbey Road is a major attraction on the studio scene, not only because of its illustrious past, but also because of the diversity of in-house services that it has to offer: recording, film and video post-production, disc cutting/mastering, digital mastering, tape copying, editing, CD preparation, and the Cedar and Sonic Solutions computerized de-noising systems.

"Apart from the famous name, we really do have the major attraction of all-round facilities that set us apart from the rest," says Ken Townsend. "We have the staff here to deal with every facet, they're all individual experts, and people very often come here to do things that they can't do elsewhere. They want good service, a good atmosphere and good results, and it's incredible to think that for the last 60 years Abbey Road has been providing all that." ■

We built our woofer and tweeter a better home.



DMT AND TRANSDUCER HOUSINGS —

All Cabinets used in the new Tannoy Monitor Series represent considerably more thought and design than the average 'chipboard cabinet of the correct volume'.

Cabinets are constructed from a high density space-frame with rounded corners and edges, supporting MDF/high pressure twin laminated walls

Rounded corners and edges greatly inhibit sound reflections and diffractions from cabinet boundaries. These can be major sources of irregularities in the reproduced sound, particularly in terms of the perceived placement of instruments within the sound stage. For the high frequency unit to make an effective job of launching all the detail that it can generate into the listening space, it must be held rigidly in the cabinet throughout its operational frequencies.

This is the key to the Tannoy cabinets. If a 'rigid' cabinet

is used, the redundant energy from the rear of the bass unit and frame cause endless resonance problems within the cabinet. Differential Material Technology provides the answers by using a variety of different adhesives between the rear of the drive unit and brace, the cabinet walls and the brace and within the layers of the MDF laminate.

The lossy couplings effectively transmit and absorb energy in a frequency selective way. Put more simply, at low frequencies the drive unit sees the cabinet as a rigid structure and at higher frequencies as a resonance absorbing/damping structure.

DMT provides an ideal cabinet solution for the complete frequency range, eliminating unwanted loudspeaker biases.

The overall result is a true representation of the mix, unequaled referencing capability, guaranteeing what you hear is what you get — *every time*.

Tannoy / TGI North America Inc. • c/o Bill Calma • 300 Gage Ave., Unit 1, Kitchener, Ontario, Canada N2M 2C8 • (519) 745-1158 • Fax (519) 745-2364



Not your average woofer and tweeter.

Circle (10) on Rapid Facts Card

www.americanradiohistory.com

"MIMICKING A TIME-HONORED CELEBRITY, THE FOSTEX PORTABLE DAT BECAME AN OVERNIGHT SENSATION."



The portable Fostex PD-2's advanced DAT technology lets you stay in the digital domain from location start to post production finish.



The back-lit LCD shows all function data, including internally generated SMPTE timecode and A-Time, plus levels, program number, battery condition and error indications.

The new Fostex PD-2 is the first-ever professional portable timecode DAT recorder with all the features and functions familiar to location recordists. But the ruggedly engineered PD-2 is more than a mimic.

It features a built-in timecode generator/reader with jam sync capability. Word and composite video sync let you lock to vital external references. It has I/O connectors for both +4dBm analog as well as AES/EBU digital signals. You

can choose T-12 or 48V phantom powering. Select any of four filters, a limiter or phase reverse.

Our four-head design gives you off-the-tape confidence monitoring. There's a built-in speaker and the headphone monitor can be switched to mono, A/B or stereo—even M/S stereo with our built-in decoder.



Yet, with all of these features, the PD-2

weighs less than 10 pounds, with your Betacam™ battery pack installed.

To find out more about this new DAT sensation, call 1-800-7-FOSTEX. A DAT technician is ready to answer your questions, provide you with literature or schedule an on-site demonstration.

Fostex

1991 R-E-P ARTICLE INDEX

MONTHLY ARTICLE INDEX

January 1991	Page
R•E•P Interview: Jack Renner	28
Profitable Coexistence with Desktop Production	34
The Future of Audio Test Technology	42
Producing For New Technologies	48
Five Questions: The Modern World	53
Hands On: Drawmer M500 Dynamics Processor	63
Hands On: Lexicon 300 Digital Effects System	68
February 1991	Page
Developments in Analog Tape Recorder Technology	30
Stalking The Magnesauros	36
The Large Console Commitment	42
Five Questions: Consoles and Connections	47
Sound Image: A Big-Time Success Story	50
Hands On: Soundcraft 3200	58
March 1991	Page
Taking it Tapeless	26
Tapeless Technology	28
Re: Sources	38
Reality Check	42
Digital Storage Technology	52
Hangin' High	60
Hands On: Roland SN-550	64
April 1991	Page
R•E•P Interview: Bob Clearmountain	20
Modern Digital Broadcast Production	26
NBC Goes SSL	32
DAT In The Real World: Part 1	38
Five Questions: Data Digital	44
Quality Theater Sound	48
Hands On: Mark of the Unicorn Video Time Piece	58
May 1991	Page
The 1991 Grammy Awards	24
Coherent Transfer	32
Amping Up: Figuring Power Requirements	38
DAT In The Real World: Part 2	48
Hands On: Crown SASS	55
Upgrading the Dolby 363 SR	62
June 1991	Page
The Peter and Mary Story	26
Ed Long: Breakthroughs & Developments	32
Where's the Zero?	38
Audio Noise and AC Systems	42
Slow Hand In Singapore	46
Hands On: Audio Precision Portable One	56

Continued on page 69

THE 1992 R•E•P RESOURCE



The definitive pro audio guide to manufacturer contact numbers, products and trade associations.

Welcome to the 1992 R•E•P Resource, an industry-wide listing of names, addresses and contact numbers for manufacturers supplying pro audio equipment and services. Information listed in the resource was compiled by R•E•P staff members from questionnaires returned by manufacturers, distributors and dealers.

Included in the listings are the following sections of information:

- 1991 R-E-P ARTICLE INDEX 25
- MANUFACTURER PRODUCT DIRECTORY 26
- TRADE ASSOCIATIONS 48
- MANUFACTURERS ADDRESSES 49
- FAX DIRECTORY 65
- 1992 INDUSTRY EVENTS CALENDAR 64

Manufacturer's names that have been highlighted in color represent advertisements placed in this issue. For more information on these companies, circle the Rapid Facts Card number listed on their ad. The Rapid Facts Card is valid all year long for your convenience.

If your company was not included in this year's directory, contact Pat Blanton, Directory Issues Editor, R•E•P, P.O. Box 12901, Overland Park, KS 66282; fax 913-541-6697, to be included in next year's mailing.



PRODUCT DIRECTORY

ACOUSTIC DESIGN AND CONSTRUCTION

Acoustic Systems
Acoustical Physics Labs
Acoustics Design Group
Alpha Audio/Acoustical Solutions Inc.
ARcoustics, Inc.
ASC/Tube Traps
ATM Audio/Visual
AZ-USA
Russ Berger Design Group Inc.
DLC Design
Galaxy Design Group
Get Smart Protection
C.D. Hart Designs
Hybrid Cases
Illbruck, Inc. Sonex Acoustical Div.
The Joiner-Rose Group, Inc.
Lakeside Associates, Inc.
Modular Wood Systems Inc.
New York Technical Support, Ltd.
Northeastern Communications Concepts
Quad Eight Electronics, Inc.
Quested Monitoring Systems
Rainbow Sound & Lighting Rainbow Recording Studios Inc.
Renkus-Heinz, Inc.
RMS-Results in the Management of Sound
Rosati Acoustics
RPG Diffusor Systems, Inc.
Scantek, Inc.
Skylabs Inc.
Sonic Image Ltd.
Sound Technology, Inc.
Soundtrax Recording
State of The Art Elektronik
Synergetic Services, Inc.
Sypha Digital Audio Consultants
Systems Development Group
Technical Service Specialists Inc.
Techron Div. of Crown Int'l.

ACOUSTIC TREATMENT MATERIALS

Acoustical Physics Labs
Alpha Audio/ Acoustical Solutions Inc.
ARcoustics, Inc.
ASC/Tube Traps
AZ-USA
Ferrofluidics Corp.
Get Smart Protection
C.D. Hart Designs
Illbruck, Inc. Sonex Acoustical Div.
InConcert
Island Cases
Markertek Video Supply
Modular Wood Systems Inc.
National Foam
RMS-Results in the Management of Sound
Rosati Acoustics
RPG Diffusor Systems, Inc.
Soundtrax Recording
Systems Development Group
Technical Service Specialists Inc.
Trend Textiles Inc.

A/D AND D/A CONVERTERS, STAND-ALONE

Analog Devices, Inc.
Apogee Electronics Corp.
Ariel Corp.
Bec Technologies, Inc.
COLOSSUS: By The Numbers
Gotham Audio Corp.
Lake People
The Mastering Lab Studio Products
MTU-Micro Technology Unlimited
Nakamichi America Corp.
Natel Engineering Co., Inc.
Neve
NVision, Inc.
Pygmy Computer Systems, Inc.
Roland Pro Audio/Video Group
S.E.M. Co.
Singular Solutions
Sony Business & Professional Group
Soundtrax Recording
Spectral Synthesis Inc.
Steinberg/Jones Corp.

STUDER

Studer
Sypha Digital Audio Consultants
UltraAnalog, Inc.
Vacuum Tube Logic
Yamaha Corp. of America Pro Audio Div.

AMPLIFIERS

AB International Electronics
Acoustech Corp.
ADA Amplification Systems
Aerco
Alesis Corp.
Altec Lansing Corp.
Analog Devices, Inc.
Anchor Audio, Inc.
API-Audio Products Inc.
Apogee Sound, Inc.
ARX Systems
Ashly Audio, Inc.
ATI-Audio Technologies, Inc.
Audio Centron
AUDISAR
Audra International
Australian Monitor (Pty) Ltd.
Benchmark Media Systems, Inc.
BGW Systems Inc.
Biamp Systems
Boulder Amplifiers, Inc.
Broadcast Audio Corp.
Bryston/Bryston Vermont Ltd.
BSS Audio Ltd.
Carver Corp.
Cello Ltd.
Court Acoustics Ltd.
Crest Audio
Crown International Inc.
DAX

DB Systems
Demeter Amplification
Innovative Audio Systems
Duplitrans, Inc.
Dynacord
Dynair Electronics
Electro-Voice, Inc.
Electron Processing, Inc.
ESE
FM Acoustics of Switzerland
Frazier

FURMAN

Furman Sound, Inc.
Gallien-Krueger, Inc.
Genelec
Gentner Communications Corp.
Get Smart Protection
Grass Valley Group
Hafler Professional Rockford Corp.
The John Hardy Co.
HEDCO
Hill Audio Div. of IMC
Hot House Professional Audio
InConcert
Innovative Electronic Designs, Inc.
Intercity Equipment & Engineering
IRP, A Knowles Div.
Ivie Technologies, Inc.
JBL Professional
Jensen Transformers, Inc.
Korg USA Inc.
Lake People
Larking Audio
Lectrosonics Inc.
Leitch Inc.
The Mastering Lab Studio Products
McCurdy Radio Industries Ltd.
Modular Sound
Morenz Development Corp.
MTX
Nady Systems, Inc.
Opamp Labs, Inc.
Optim Audio
Oxmoor Corp.
Panasonic Communications & Systems Co.
Panasonic Pro Audio/Ramsa
Peavey Electronics Corp.
Audio Media Research Div.
Plitron Mfg. Inc.
Protech Audio Corp.
QSC Audio Products, Inc.
Ram Broadcast Systems Inc.
Rane Corp.
Renkus-Heinz, Inc.

REVOX

ReVox
Rocktron Corp.
ROH Div. of Portland Instrument
Rolls Corp.
Ross Systems/ Div. of IMC
RSP Technologies
RTS Systems
SCS/Sound Code Systems
S.E.M. Co.

Sescom, Inc.

SHURE®

Shure Brothers Inc.
Shure HTS
Sonic Image Ltd.
Sonic Perceptions, Inc.
Sonosax S.A.
Sontec Electronics
Soundcraftsmen Inc.
Spectra Sonics/Spectra Sound
Stewart Electronics

STUDER

Studer
Symetrix Inc.
Target Technology Inc
Technics
THAT Corp.
TOA Electronics, Inc.
U.S. Audio
Vacuum Tube Logic
Velodyne Acoustics
Video Accessory Corp.
Ward-Beck Systems Ltd.
Wheatstone Corp.
Yamaha Corp. of America Pro Audio Div.
Yorkville Sound Inc.

CABLE AND CONNECTORS

ACE Sound & Lighting
ADC Telecommunications
Arcor Broadcast Products
Audio-Technica US, Inc.
Auteri Associates, Inc.
Bec Technologies, Inc.
beyerdynamic
Bi-Tronics Inc.
Black Audio Devices
Boulder Amplifiers, Inc.
Canare
David Carroll Electronics
Cello Ltd.
Cliff Electronics
Connectronics Corp.
Cooper Industries/ Belden Div.
CTI Audio, Inc.
DB Systems
FM Acoustics of Switzerland
Gepco International, Inc.
Get Smart Protection
Gotham Audio Corp.
HAVE, Inc.
InConcert
Kimber Kable
Larking Audio
Markertek Video Supply

MOGAMI

Marshall Electronics

NEW MQ™ SERIES. MASTER QUALITY DIC//DAT™ FOR THE ULTIMATE QUALITY MASTER.



DIC//DAT introduces its new MQ Series DAT tape. Master Quality media crafted with second-generation technical improvements based on extensive R&D and feedback from audio pros in the field. The one DIC//DAT perfected for professional use.

- ▶ **NEW MQ "Formulation Finish"** reduces friction and provides more efficient tape-to-head contact for superb performance even in the face of high search and rewind speeds.
- ▶ **NEW MQ proprietary DIC MicroFinity metal particle technology** creates a consistently high quality magnetic medium for uncompromising professional DAT recording.
- ▶ **NEW MQ exclusive DIC//DAT tape lengths** include an extra two minutes for tone recording, test signals and pre-roll identification—as well as the industry's only 15–30 minute DAT cassettes for small programs, demos and test tapes.
- ▶ **NEW MQ dust-busting cassette design** virtually eliminates recording errors and tape jamming due to environmental contamination.
- ▶ **NEW MQ unique window calibrations** for easier reading and more accurate time judgment.
- ▶ **NEW MQ extra-strong DIC//DAT cassette shell** made in the U.S., with new window ribs for increased stability, 100% anti-static plastic, and the industry's only fiber-filled slider for structural integrity, stands up to the most rigorous studio use.

DIC//DAT™

MQ™ SERIES

TAKING MUSIC TO THE *N*th DEGREE.
222 Bridge Plaza South, Fort Lee, NJ 07024 • 1/800-DAT-I-DIC (in NJ, 201/224-9344)

Circle (12) on Rapid Facts Card
www.americanradiohistory.com

© DIC DIGITAL SUPPLY CORPORATION, 1991 

Neutrik USA, Inc.
New York Technical Support,
Ltd.
OptoDigital Design, Inc.
Pearson Technologies
Peavey Electronics Corp.
Audio Media Research Div.
Plasmec Systems Ltd.
Pro Co Sound
Re-An Products USA
Sennheiser Electronic Corp.

SHURE®

Shure Brothers Inc.
Signet
Soundtrax Recording
Switchcraft, Inc.
TDK Electronics Corp.
3M Sound Products
Troupier Industries, Ltd.
Vacuum Tube Logic
Westlake Audio, Inc.
Whirlwind, Inc.
Wireworks Corp.
Yorkville Sound Inc.

COMPACT DISC PLAYERS, PLAYBACK ONLY

AIWA America, Inc.
Court Acoustics Ltd.
Gefen Systems
Gotham Audio Corp.
KABA Research & Development
Leonardo Software
Nakamichi America Corp.
Numark Electronics
Optical Media International
Panasonic Communications &
Systems Co.

REVOX

ReVox
**Sony Business & Professional
Group**

STUDER

Studer
TASCAM
Technics
Yamaha Corp. of America
Pro Audio Div.

COMPACT DISC PLAYERS, RECORDABLE

Gotham Audio Corp.
Optical Media International

STUDER

Studer
Sypha Digital Audio Consultants

COMPUTER HARDWARE AND PERIPHERALS

Analog Devices, Inc.

Ariel Corp.
Calzone Case Co.
Computer Dynamics
Current Music Technology
Digidesign, Inc.
Duplitrronics, Inc.
Ediflex Systems
Eltekon Technologies
Dave Fant Co.
Gefen Systems
Harmonic Research, Inc.

JL COOPER ELECTRONICS

JLCooper Electronics
The Russ Jones Marketing Group
Marshall Electronic
Micro Express
Microtech International
Midiland
Midisoft Corp.
NDG Phoenix Inc.
New York Technical Support, Ltd.
Opcode Systems, Inc.
Optronics Technology
Panasonic Communications &
Systems Co.
Pinc Link Inc.
Richmond Sound Design Ltd.
Sennheiser Electronic Corp.
Singular Solutions
Sonic Perceptions, Inc.
Soundmaster USA Inc.
Spectral Synthesis Inc.
Spectrum Signal Processing

STUDER

Studer
System-Y by Yellowtec GmbH
Technical Service Specialists Inc.
Titus Technological Labs
Video Design Pro

COMPUTER MEDIA, HARD DRIVE

Digidesign, Inc.
Eltekon Technologies
Dave Fant Co.
Frontera Electronics
Gentner Communications Corp.
Lexicon Inc.
Microtech International
NDG Phoenix Inc.
Pinc Link Inc.
Richmond Sound Design Ltd.
Soundmaster USA Inc.

STUDER

Studer
Sypha Digital Audio Consultants
System-Y by Yellowtec GmbH
360 Systems

COMPUTER MEDIA, REMOVABLE

Augan Instruments BV
Digidesign, Inc.
Eltekon Technologies
Dave Fant Co.

Microtech International
NDG Phoenix Inc.
Pinc Link Inc.
Richmond Sound Design Ltd.
Soundmaster USA Inc.

STUDER

Studer
Sypha Digital Audio Consultants
System-Y by Yellowtec GmbH
360 Systems

COMPUTER SOFTWARE, BUSINESS

Bose Corp.
Dave Fant Co.
Gibson Research Corp.
Intelix Corp.
Loran Cassettes & Audio Products
Midisoft Corp.
NDG Phoenix Inc.
Pristine Systems, Inc.
Prosonus
RIX Softworks, Inc.
Scientific Design Software
Sennheiser Electronic Corp.
Soundmaster USA Inc.
SpeakEasy
System-Y by Yellowtec GmbH
Words & Deeds Inc.

COMPUTER SOFTWARE, MIDI

Aesthetic Engineering
Auricle Control Systems
Coda Music Software
Computer Music Supply
Digidesign, Inc.
Dr. T's Music Software, Inc.
East Coast MIDI Information Systems
East West Communications
Eye & I Productions
Fostex Corp. of America
Interval Music Systems

JL COOPER ELECTRONICS

JLCooper Electronics
Larking Audio
Magnetic Music
Mark of the Unicorn Inc.
Midiland
Midisoft Corp.
MUSICODE
NDG Phoenix Inc.
Northstar Productions
Opcode Systems, Inc.
Optronics Technology
Passport Designs Inc.
Plasmec Systems Ltd.
Prosonus
Bill Rase Productions, Inc.
Richmond Sound Design Ltd.
Roland Pro Audio/Video Group
Sound Quest Inc.
Soundmaster USA Inc.
Soundtrax Recording
Steinberg/Jones Corp.
Subliminal Studios
Turtle Beach Systems Inc.
27th Dimension Inc.

COMPUTER SOFTWARE, STUDIO APPLICATIONS

Aesthetic Engineering
AQ Design
Ariel Corp.
Audio Kinetics UK Ltd.
Audio Teknology Inc.
Auricle Control Systems
Digidesign, Inc.
DLC Design
Dr. T's Music Software, Inc.
East West Communications

EASTCO PRO AUDIO/VIDEO CORPORATION

Eastco Pro Audio Video Corp.
Fostex Corp. of America
FutureVideo Products, Inc.
Gefen Systems
Gentner Communications Corp.
Gotham Audio Corp.
C.D. Hart Designs
Horita
Interval Music Systems

JL COOPER ELECTRONICS

JLCooper Electronics
Larking Audio
Leonardo Software
Magnetic Music
Marshall Electronic
Midisoft Corp.
Motionworks Ltd.
MUSICODE
NDG Phoenix Inc.
Opcode Systems, Inc.
Optronics Technology
Panasonic Pro Audio/Ramsa
Passport Designs Inc.
Peavey Electronics Corp.
Audio Media Research Div.
Pristine Systems, Inc.
Prosonus
Bill Rase Productions, Inc.
Renkus-Heinz, Inc.
Roger Rhodes Music, Ltd.
Scantek, Inc.
Singular Solutions
Sonic Perceptions, Inc.
Soundmaster USA Inc.
SpeakEasy
Spectral Synthesis Inc.
Steinberg/Jones Corp.

STUDER

Studer

t.c. electronic

t.c. electronic
360 Systems
Trident Audio USA
True Image Audio
Video Design Pro
White Instruments/ Div. C Van R Inc.

CONSOLES, AUTOMATION SYSTEMS

Amek/TAC US Operations

**A HEADSET
THAT TOOK THIS
MANY YEARS TO
PERFECT, WILL
BE A CLASSIC
FOR YEARS
TO COME.**

**Get this new classic today
and avoid the rush.**

No one knows exactly what makes a product a classic but everyone knows which products quality. We do know that "standards" of the industry always excel in technical performance, comfort, durability and appearance, so with these as our criteria the V Series was designed to be superior to any headset on the market. By all accounts, after years of development, we succeeded.

Technically, the V Series specs are a cut above the rest.



Earcup fits any head shape or size.

But classics are created over time by the people who use them, not by manufacturers' claims, so let your own ears confirm our data. The revolutionary floating earcup conforms to any head shape or size for a more comfortable fit. But, of course, you'll realize that after one of those long, grueling production days. We know the materials and workmanship are second to none, but only time can tell about its durability. However, when enough time has passed to be a fair test, the V Series will already be a classic.

For complete details about the unique V Series modular ordering concept, outstanding specs and the comfortable



Model V220 with MB-11 Dynamic Mic option.

new earcup design write to Telex Communications, 9600 Aldrich Av. So., Minneapolis, MN 55420, (612) 887-5550.

© 1991 Telex Communications, Inc.

TELEX®

Circle (14) on Rapid Facts Card

www.americanradiohistory.com

AMS Industries Inc
API-Audio Products Inc.
Audio Kinetics UK Ltd.
Audiomation Systems Ltd.
Biamp Systems
CTI Audio, Inc.
DDA



D&R USA
Euphonix, Inc.



GML, Inc.
Harrison by GLW, Inc.



JLCooper Electronics
The Russ Jones Marketing Group
Larking Audio
Marshall Electronic
McCurdy Radio Industries Ltd.
Neotek Corp.
Neve
Otari Corp.
Panasonic Pro Audio/Ramsa
Peavey Electronics Corp.
Audio Media Research Div.
Quad Eight Electronics, Inc.
Ram Broadcast Systems Inc.
Richmond Sound Design Ltd.
R-Tec Systems
Saje
Sellmark USA
Audiomation Systems Ltd.
Solid State Logic
Sonosax S.A.
Sony Business & Professional Group
Soundcraft Electronics
Soundtracs PLC
c/o Samson Technologies
Spatial Sound Inc.
Steinberg/Jones Corp.



Studer
Studiomaster Inc.
System-Y by Yellowtec GmbH
TASCAM
Total Audio Concepts Ltd.
Trident Audio USA
21st Century Ltd.
Yamaha Corp. of America
Pro Audio Div.
Zero Stantron Cabinets

CONSOLES, DIGITAL

AMS Industries Inc
Euphonix, Inc.
Gotham Audio Corp.
Harrison by GLW, Inc.



JLCooper Electronics

Lexicon Inc.
Marshall Electronic
Numark Electronics
Peavey Electronics Corp.
Audio Media Research Div.
Richmond Sound Design Ltd.
Sonosax S.A.



Studer
Sypha Digital Audio Consultants
TOA Electronics, Inc.
Total Audio Concepts Ltd.
Yamaha Corp. of America
Pro Audio Div.
Zero Stantron Cabinets

CONSOLES, RECORDING AND PRODUCTION

Alesis Corp.
Altec Lansing Corp.
Amek/TAC US Operations
AMS Industries Inc
API-Audio Products Inc.
Auditronics Inc.
Aguan Instruments BV
Biamp Systems
Broadcast Audio Corp.
Broadcast Electronics, Inc.
CTI Audio, Inc.
DAX
DDA



D&R USA
Dynacord
Electro-Voice, Inc.
Euphonix, Inc.
Fostex Corp. of America



GML, Inc.
Goutam Electronics Products Ltd.
Grass Valley Group
Harrison by GLW, Inc.
Hill Audio Div. of IMC
Intercity Equipment & Engineering
Larking Audio
Lexicon Inc.
Mackie Designs
Neotek Corp.
Neve
Orban, Div. of AKG Acoustics, Inc.
Otari Corp.
Pacific Recorders & Eng. Corp.
Panasonic Pro Audio/Ramsa
Peavey Electronics Corp.
Audio Media Research Div.
Quad Eight Electronics, Inc.
Ram Broadcast Systems Inc.



ReVox
Solid State Logic
Sonic Image Ltd.
Sonosax S.A.
Sontec Electronics

Sony Business & Professional Group
Soundcraft Electronics
Soundtracs PLC
c/o Samson Technologies

Soundtrax Recording
Spectra Sonics/Spectra Sound

Studer
TASCAM

TOA Electronics, Inc.
Total Audio Concepts Ltd.
Trident Audio USA
Ward-Beck Systems Ltd.
Wheatstone Corp.
Zero Stantron Cabinets

CONSOLES, SOUND REINFORCEMENT

Altec Lansing Corp.
Amek/TAC US Operations
API-Audio Products Inc.
Audio Centron
Audio Teknology Inc.
Auditronics Inc.
Biamp Systems
Crest Audio
CTI Audio, Inc.
DAX
DDA



D&R USA
Electro-Voice, Inc.
Euphonix, Inc.
Goutam Electronics Products Ltd.
Harrison by GLW, Inc.
Hill Audio Div. of IMC
Intercity Equipment & Engineering



JLCooper Electronics
Klark-Teknik
Mackie Designs
Midas
Modular Sound
Neotek Corp.
Numark Electronics
Otari Corp.
Panasonic Pro Audio/Ramsa
Peavey Electronics Corp.
Audio Media Research Div.
Ram Broadcast Systems Inc.
Richmond Sound Design Ltd.
Ross Systems/ Div. of IMC
Saje
Sonosax S.A.
Soundcraft Electronics
Soundtracs PLC
c/o Samson Technologies
Southern Thunder Sound Inc.
Spectra Sonics/Spectra Sound
TASCAM
TOA Electronics, Inc.
Total Audio Concepts Ltd.
Ward-Beck Systems Ltd.
Wheatstone Corp.
Yamaha Corp. of America
Pro Audio Div.
Yorkville Sound Inc.
Zero Stantron Cabinets

CROSSOVERS AND FREQUENCY DIVIDERS

Acoustech Corp.
Adamson Acoustic Design Corp.
Altec Lansing Corp.
API-Audio Products Inc.
Artefx
Ashly Audio, Inc.
Audio Centron
Audio Digital Inc.
Audio Logic
AUDISAR
Biamp Systems
Bryston/Bryston Vermont Ltd.
BSS Audio/ Div. of AKG Acoustics
BSS Audio Ltd.
Cello Ltd.
Court Acoustics Ltd.
DAX
DB Systems
DDA
DOD Electronics Corp.
Electro-Voice, Inc.
FM Acoustics of Switzerland



Furman Sound, Inc.
Gold Line
InConcert
IRP, A Knowles Div.
JBL Professional
Madisound Speaker Components
The Mastering Lab
Studio Products
McCauley Sound, Inc.
Modular Sound
Numark Electronics
Panasonic Pro Audio/Ramsa
Peavey Electronics Corp.
Audio Media Research Div.
Quested Monitoring Systems
Rane Corp.
Renkus-Heinz, Inc.
S.E.M. Co.
Sescom, Inc.
Soundscape
Spectra Sonics/Spectra Sound
State of The Art Elektronik
Symetrix Inc.
TOA Electronics, Inc.
Wheatstone Corp.
White Instruments/ Div. C Van R Inc.
Yamaha Corp. of America
Pro Audio Div.
Yorkville Sound Inc.

DELAYS, ANALOG AND DIGITAL

Altec Lansing Corp.
AMS Industries Inc
ART-Applied Research & Technology
Audio Digital Inc.
Audio Logic
BSS Audio/ Div. of AKG Acoustics
BSS Audio Ltd.
DigiTech
DOD Electronics Corp.
Eventide, Inc.
Gotham Audio Corp.
IRP, A Knowles Div.
JBL Professional
Klark-Teknik
Larking Audio
Lexicon Inc.
Marshall Electronic
Nvision, Inc.
Orban, Div. of AKG Acoustics, Inc.

**NEW
EXPANDED
SERIAL CAPABILITY**

Music To Your Eyes

JVC's DS-DT900N R-DAT recorder is designed to integrate perfectly into any video post production environment. All of the features needed by audio and video professionals are standard on the DS-DT900N, but optional on other machines. Features like video sync and SMPTE time code for pinpoint synchronization with video, parallel and serial remote control, and AES/EBU digital inputs and outputs.

With a manufacturer's suggested list price of less than \$4,500, no other professional R-DAT recorder gives you the features and performance of the DS-DT900N.

For more information about the DS-DT900N, call 1-800-JVC-5825 or write JVC PROFESSIONAL PRODUCTS COMPANY, 41 Slater Drive, Elmwood Park, New Jersey 07407.

JVC[®]
PROFESSIONAL



Panasonic Pro Audio/Ramsa
Peavey Electronics Corp.
Audio Media Research Div.
 Publison S.A.
 Rocktron Corp.
 Roland Pro Audio/Video Group
 RSP Technologies
 S.E.M. Co.
Sony Business & Professional Group
 Spectra Sonics/Spectra Sound

t.c. electronic

t.c. electronic
 White Instruments/ Div. C Van R Inc.
 Yamaha Corp. of America
 Pro Audio Div.

DIGITAL AUDIO WORKSTATIONS

Adamson Acoustic Design Corp.
 AIWA America, Inc.
 Akai Professional/IMC
 AKG Acoustics Inc.
 AMS Industries Inc
 AQ Design
 Ariel Corp.
 Augan Instruments BV
Cipher Digital, Inc.
 COLOSSUS: By The Numbers
 CompuSonics Corp.
 Digidesign, Inc.
 Digital Audio Labs
 Digital Audio Research
 Doremi Labs, Inc.
 Ediflex Systems
 E-Mu Systems Inc.
 Fairlight ESP Pty Ltd.
 Gentner Communications Corp.
 Gotham Audio Corp.
 Hybrid Arts, Inc.
 International Tapetronics Corp.

JL COOPER ELECTRONICS

JLCooper Electronics
KABA Research & Development
 Korg USA Inc.
 Lester Audio Labs
Lexicon Inc.
 Marshall Electronic
MTU-Micro Technology Unlimited
 New England Digital Corp.
 Numark Electronics
 Opcode Systems, Inc.
 Otari Corp.
 Pinc Link Inc.
 Pristine Systems, Inc.
 Publison S.A.
 Roland Pro Audio/Video Group
 Singular Solutions
 Solid State Logic
 Sonic Perceptions, Inc.
 Soundmaster USA Inc.
 Soundtracker Pty. Ltd.
 Spectral Synthesis Inc.

STUDER

Studer
 Symetrix Inc.
 Sypha Digital Audio Consultants
 360 Systems
 Turtle Beach Systems Inc.

21st Century Ltd.
 WaveFrame Corp.
 Wheatstone Corp.
 Yamaha Corp. of America
 Pro Audio Div.

DRUM MACHINES

ACE Sound & Lighting
 Aka: Professional/IMC
Alesis Corp.
 Future Sales Inc.
 Kawai America Corp.
 Panasonic Communications & Systems
 Co.
 Yamaha Corp. of America
 Pro Audio Div.

EDITING SYSTEMS

AMS Industries Inc
 Ariel Corp.
 Audio Kinetics UK Ltd.
 Augan Instruments BV
Cipher Digital, Inc.
 COLOSSUS: By The Numbers
 Ediflex Systems
 For:A Corp. of America
Fostex Corp. of America
 FutureVideo Products, Inc.
 Get Smart Protection
 Horita
 Hybrid Arts, Inc.
KABA Research & Development
 Korg USA Inc.
Lexicon Inc.
 Paltex Editing Systems
 Panasonic Communications &
 Systems Co.
 Pinc Link Inc.
 Publison S.A.
 Roland Pro Audio/Video Group
 R-Tec Systems
 Skotek Corp.
Sony Business & Professional Group
 Soundmaster USA Inc.
 Soundtracker Pty. Ltd.
 Spectral Synthesis Inc.
 Steinberg/Jones Corp.
 Symetrix Inc.
 TimeLine Vista Inc.
 Turtle Beach Systems Inc.
 21st Century Ltd.
 Xedit Corp.

EDUCATIONAL COURSES AND PROGRAMS

Berklee College of Music
 Creative Input
 First Light Video Publishing
 Five Towns College/
 Audio Recording Dept.
 Full Sail Recorders, Inc.
 Institute of Audio Research
 Midiland
 New Ear Productions
 Pearson Technologies
 Pinc Link Inc.
 Porkpie Productions
 The Recording Workshop
 Transtector Systems

EQUALIZERS

AB International Electronics
Alesis Corp.
 Altec Lansing Corp.

Amek/TAC US Operations
 API-Audio Products Inc.
 ART-Applied Research & Technology
 ARX Systems
 Ashly Audio, Inc.
 ATI-Audio Technologies, Inc.
 Audio Centron
 Audio Logic
 AudioTechniques, Inc.
 AUDISAR
 Audionics Inc.
 Audra International
 Biamp Systems
 BSS Audio/ Div. of AKG Acoustics
 BSS Audio Ltd.
 Cambridge Signal Technologies, Inc.
 Court Acoustics Ltd.
 DAX
 DB Systems
 dbx, Div. of AKG Acoustics Inc.
 DigiTech
 DOD Electronics Corp.



D&R USA
 Dynair Electronics
 Electro-Voice, Inc.
 Esoteric Sound

FURMAN

Furman Sound, Inc.



GML, Inc.
 Gotham Audio Corp.
 Intercity Equipment & Engineering
 IRP, A Knowles Div.
 Ivie Technologies, Inc.
 JBL Professional
JVC Professional Products Co.
 Kawai America Corp.
 Klark-Teknik
 Larking Audio
 Lectrosonics Inc.
 Marshall Electronic
 Maselec c/o QMI
 Meyer Sound Labs, Inc.
 MicroAudio Inc.
 Modular Sound
 MTX
 Neve
 Orban, Div. of AKG Acoustics, Inc.
Oxmoor Corp.
 Pacific Recorders & Eng. Corp.
Peavey Electronics Corp.
Audio Media Research Div.
 Quad Eight Electronics, Inc.
 Rane Corp.
 Rocktron Corp.
 Roland Pro Audio/Video Group
 Rolls Corp.
 Ross Systems/ Div. of IMC
 Scantek, Inc.
 SCV Audio c/o QMI
 S.E.M. Co.
 Sescom, Inc.



Cambridge Signal Technologies, Inc.

SigTech Cambridge Signal Technologies, Inc.

Solid State Logic
 Sonic Image Ltd.
 Sonic Perceptions, Inc.
 Sontec Electronics
Sony Business & Professional Group
 Soundcraftsmen Inc.
 Spectra Sonics/Spectra Sound
 Summit Audio Inc.
 Symetrix Inc.
 Target Technology Inc

t.c. electronic

t.c. electronic
 Technics
 TOA Electronics, Inc.
 Trident Audio USA
 Tube Tech
 Vacuum Tube Logic
 Valley International, Inc.
 Ward-Beck Systems Ltd.
 Wheatstone Corp.
 White Instruments/
 Div. C Van R Inc.
 Yamaha Corp. of America
 Pro Audio Div.
 Yorkville Sound Inc.

EQUIPMENT CASES

ACE Sound & Lighting
 Anvil Cases/ (Subsidiary of
 Zero Corp.)
 Calzone Case Co.
 Dago Cases
 Hybrid Cases
 Island Cases
 Jan-Al Innerprizes, Inc.
 Layered Audio
 Penn Fabrication NJ Inc.
 Pinc Link Inc.
 Star Case Mfg. Co., Inc.
 Thermodyne International
 Top Notch Audio (TNA Case Co.)

EQUIPMENT RENTAL AND LEASING

ATM Audio/Visual
 Audio Analysts USA Inc.
 Audio Resource Honolulu
 Century Financial Services Group, Ltd.



Digital Dispatch, Inc.
 Ediflex Systems
 C.D. Hart Designs
 Hi-Tech Audio Systems Inc.
 Hot House Professional Audio
 Landmark Financial Group
 MAC Cassettes
 The Mastering Lab
 Studio Products
 Pinc Link Inc.
 Posthorn Recordings/Schoeps
 Rack Attack
 Ray Pro Sound
 Rent FX
 The Rubber Dubbers
 Scantek, Inc.
 Sound Art Productions
 Southern Thunder Sound Inc.
 A Total Effect
 The Toy Specialists
 Trax Audio & Music



T H E I N D U S T R Y
R E F E R E N C E



Into the world of digital recording comes an amplifier that far surpasses all existing standards.

The Macro Reference. Constituting one of the true technological advances in sonic purity, this revolutionary amplifier is an investment in long-term performance. It anticipates technology and achieves the next step in professional sound reproduction demanded by studios.

With a signal-to-noise ratio greater than 120 dB—a dynamic range equivalent to 20 bit digital—its ultra-low noise makes sound so transparent, so true, it's as if you were experiencing the performance live.

The Reference is the ultimately damped, high excursion amplifier. A superior damping factor of more than

20,000 (10 Hz-200Hz into 8 ohms) provides phenomenal motion control of loudspeakers. Low-end response is tight, well-defined and incredibly natural.

To deliver such uncompromising pure audio amplification, the Macro Reference's power supply was designed around a sophisticated toroidal low-field transformer which virtually eliminates electromagnetic interference. A revolutionary convection cooling system with computerized, proportional fan assist prevents thermal overload in high-demand situations, ensuring that Reference is quiet enough to use in the most discriminating environment.

One listen will tell you. The Macro Reference is *the* industry reference.



SPECIFICATIONS

Feature Summary

Selectable Input Sensitivity: 0.775 V for full rated output or a voltage gain of 26 dB.

Function 1 & 2 ODEP Support: Provides ODEP protection (function 1) to keep amplifier running under adverse conditions without risk of damage. Provides valuable information (function 2) about the reserve energy status with ODEP indicators and P.I.P. compatibility.

Distortion Indicator: Advanced IOC* (Input/ Output Comparator) alerts the user in the unlikely event that distortion exceeds 0.05%.

P.I.P. Compatibility: Accommodates P.I.P. (Programmable Input Processor) accessories to custom tailor the amplifier for specific applications.

Low Distortion: Patented *grounded bridge*™ configuration with *Multi-mode* design and *direct coupled* output transistors result in exceptionally low distortion.

Selectable Mono Modes: Bridged Mono mode is provided for double output voltage and Parallel Mono mode is provided for double output current.

No-Fault Warranty: Macro Reference comes with a full six years of our exclusive "No-Fault" warranty. Fully transferable, it includes round-trip shipping¹.

Performance

Maximum average power output measured in Stereo mode, with no more than 0.02% THD, both channels driven.

760 watts into 8 ohms.

1160 watts into 4 ohms.

1525 watts into 2 ohms.

Hum and noise: >120 dB (A-weighted, 26 dB gain, input open-circuited).

DC output offset: ±2 mV (shorted input).

Power requirements: 100, 120, 200, 220/230, 240 VAC, 50/60 Hz, 70 watts at idle.

Frequency response: ±0.1 dB, 20 Hz-20 kHz at 1 watt into 8 ohms.

Harmonic distortion: Less than 0.05% from 20 Hz-1 kHz and increasing linearly to less than 0.1% at 20 kHz delivering rated continuous average power into 8 ohms, per channel.

IM distortion: Less than 0.005% from full output to -10 dB increasing to a maximum of 0.025% at -40 dB into 8 ohms, per channel, at 26 dB gain.

Damping factor: Greater than 20,000, 10 Hz-200 Hz into 8 ohms; 1,800 at 1 kHz into 8 ohms.

Bandwidth: 3 Hz to 100 kHz ± 1.5 dB.

Input sensitivity: 26 dB/0.775V unbalanced for rated output.

Cooling: Four-speed fan (off, low, medium, high) controlled by ODEP computer. Fan stays off until needed and immediately returns to off when no longer required.

Indicators

Enable: An amber indicator which shows the unit has been turned on and the low-voltage power supply and cooling system are operating.

ODEP: A green indicator for each channel shows the reserve energy status, normally brightly illuminated. In the rare event there is no energy reserve, they will dim or blink in proportion to ODEP limiting. They also turn off to indicate a tripped breaker or temporary thermal shutdown.

dB/Dynamic Range: Two sets of green LED indicators (5 per channel) which show output signal level or dynamic range, switchable internally.

IOC: A yellow indicator which flashes if distortion of any kind exceeds 0.05%.

Input Signal: A green indicator that flashes synchronously with the input signal to show its presence.

Input/Output

Input Connector: Balanced ¼-inch phone jacks on rear chassis. Optional balanced 3-pin female XLR connectors available on standard P.I.P. modules.

Input Impedance: Nominally 10 K ohms, balanced. Nominally 5 K ohms, unbalanced.

Output Connector: Gold plated, color coded binding posts (banana jacks).

Output Impedance: <5 milliohms in series with <2.5 microhenries.

Construction

Black splatter-coated steel chassis with specially designed "flow-through" ventilation system and forced-air cooling.

Dimensions: 19 in. (48.3 cm) wide, 7 in. (17.8 cm) high, 16 in. (40.6 cm) deep behind front mounting surface.

Weight: 62 lbs. (28.25 kg).

Mounting: Standard EIA 310 front-panel rack mounting.

¹Please contact a Crown authorized dealer for full details.

© 1991 Crown International, Inc. • Crown International, Inc. reserves the right to make changes in specifications or products without prior notice. Grounded Bridge is a trademark and Crown, Amcron, IOC, ODEP, P.I.P. and Multi-mode are registered trademarks of Crown International, Inc.

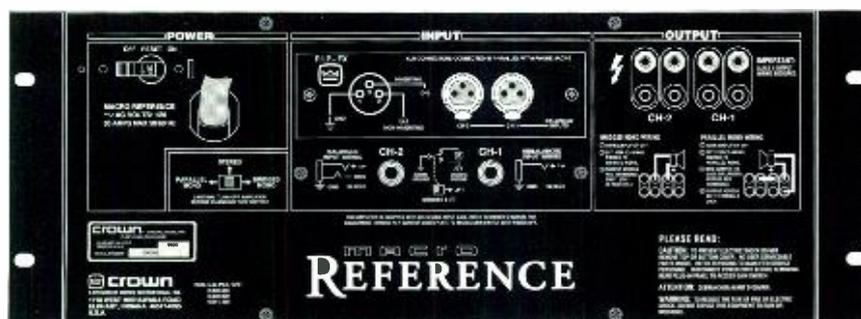
With 760 watts per channel into 8 ohms, this amplifier has the power to faithfully reproduce even the most demanding transients.

Wide internal bandwidth ensures that Macro Reference will never be driven into transient intermodulation or slewing-induced distortion. Crown has also enhanced ODEP™ (Output Device Emulator Protection) circuitry for Macro Reference, creating precise transfer function which is monitored by IOC® (Input/ Output Comparator) for additional proof of sonic accuracy.

For the most critical studio applications and for all who desire authentic sound, there simply is no comparable amplifier available today.

Incomparable Protection with Crown's Exclusive No-Fault Warranty

Macro Reference is backed by six years of Crown's exclusive No-Fault Warranty. This fully-transferable warranty guarantees that each Reference amplifier will meet or exceed specifications for a full six years or Crown will repair it or replace it free. Crown even pays for round-trip shipping for all warranty service work performed by the factory. See your Crown representative for full warranty details.



 **crown**
Guaranteed Excellence

Made in U.S.A. Exported as Amcron
P. O. Box 1000
Elkhart Indiana 46515-1000
219/294-8000
FAX: 219/294-8329

Trident Audio USA
Underground Sound, Inc.
Zero Music

FADERS

Auditronics Inc.



GML, Inc.
Penny & Giles, Inc.
Selco Products Co.
Sellmark USA
Audiomation Systems Ltd.

FILTERS, REPLACEMENT

Apogee Electronics Corp.
Circuit Research Labs, Inc.
Orban, Div. of AKG Acoustics, Inc.
Spectra Sonics/Spectra Sound

HEADPHONE MIXING SYSTEMS

Alphaton Elektroakustik
Artefx
ATI-Audio Technologies, Inc.
Digital Process



Furman Sound, Inc.
Gentner Communications Corp.
Gold Line
Intercity Equipment & Engineering
Lake People
Layered Audio
J.S. LoBianco Enterprises
Protech Audio Corp.
Rane Corp.
ROH Div. of Portland Instrument
Simon Systems Engineering, Inc.
Sonic Perceptions, Inc.
Symetrix Inc.
U.S. Audio

HEADPHONES AND HEADSETS

AIWA America, Inc.
AKG Acoustics Inc.
Audio-Technica US, Inc.
beyerdynamic
Clear-Com Intercom Systems
Design Acoustics
Fostex Corp. of America
Nady Systems, Inc.
Nakamichi America Corp.
Numark Electronics
ROH Div. of Portland Instrument
RTS Systems
Sennheiser Electronic Corp.
Sonic Perceptions, Inc.
Sony Business & Professional Group
Stanton Magnetics Inc.
Technical Projects Inc.
Telex Communications, Inc.
TOA Electronics, Inc.
Yamaha Corp. of America
Pro Audio Div.

INTEGRATED CIRCUITS

Analog Devices, Inc.
Crystal Semiconductor Corp.
Intelix Corp.
Motorola, Inc.
THAT Corp.
UltraAnalog, Inc.

INTERCOM SYSTEMS

Auditronics Inc.
Clear-Com Intercom Systems
Get Smart Protection
HM Electronics, Inc.
McCurdy Radio Industries Ltd.
Portland Instrument
Protech Audio Corp.
Ram Broadcast Systems Inc.
ROH Div. of Portland Instrument
RTS Systems
Technical Projects Inc.
Telex Communications, Inc.
3M Sound Products
TOA Electronics, Inc.
Vega Wireless
Ward-Beck Systems Ltd.
Wheatstone Corp.

LIBRARIES, MUSIC PRODUCTION

Aircraft Music Library
Ariel Corp.
Associated Production Music
Audio Action
Audio Resource Honolulu
Augan Instruments BV
Capitol Production Music
COLOSSUS: By The Numbers
DeWolfe Music Library
Digidesign, Inc.
East West Communications
FirstCom/Music House/Chappell
Gefen Systems
Get Smart Protection
Gotham Audio Corp.
Killer Tracks
Larking Audio
Leonardo Software
Manhattan Production Music
MC Production
Midisoft Corp.
Musicon
New York Technical Support, Ltd.
Omnimusic
Otari Corp.
Panasonic Pro Audio/Ramsa
Promusic Inc.
Prosonus
Quested Monitoring Systems
Bill Rase Productions, Inc.
Sonic Perceptions, Inc.
SoperSound Music Library
Sound Ideas
Soundmaster USA Inc.
TASCAM
3M Sound Products
TRF Production Music Libraries
27th Dimension Inc.
Valentino, Inc.
Voice Over L.A., Inc.
Ward-Beck Systems Ltd.
Yamaha Corp. of America
Pro Audio Div.

LIBRARIES, SAMPLED SOUNDS

Augan Instruments BV

Digidesign, Inc.
Ear Works
East West Communications
Eye & I Productions
Frontera Electronics
Gefen Systems
Northstar Productions
Optical Media International
Peavey Electronics Corp.
Audio Media Research Div.
Prosonus
Roland Pro Audio/Video Group
Sonic Boon Digital Sound Effects
Sound Ideas
Tayo Industries
3M Sound Products
Valentino, Inc.

LIBRARIES, SOUND EFFECTS

Aircraft Music Library
Associated Production Music
Audio Action
Audio Resource Honolulu
Augan Instruments BV
COLOSSUS: By The Numbers
DeWolfe Music Library
East West Communications
Gefen Systems
Hollywood Edge
Leonardo Software
Manhattan Production Music
Musicon
Northstar Productions
Omnimusic
Optical Media International
The Producers Sound Effects Library
Promusic Inc.
Prosonus
Bill Rase Productions, Inc.
The Rubber Dubbers
Sonic Boon Digital Sound Effects
SoperSound Music Library
Sound Ideas
Tayo Industries
3M Sound Products
TRF Production Music Libraries
27th Dimension Inc.
Valentino, Inc.
Voice Over L.A., Inc.

LIGHTING EQUIPMENT

Littlite/CAE, Inc.
LTM Corp. of America
Peavey Electronics Corp.
Audio Media Research Div.
Penn Fabrication NJ Inc.
Penn Fabrication Inc.
Richmond Sound Design Ltd.
Southern Thunder Sound Inc.
Spectrum Design & Development
Titus Technological Labs
Ultimate Support
Yorkville Sound Inc.
Zero Music

LIMITERS/COMPRESSORS

Alesis Corp.
Altec Lansing Corp.
Aphex Systems Ltd.
API-Audio Products Inc.
ART-Applied Research & Technology
ARX Systems
Ashly Audio, Inc.
ATI-Audio Technologies, Inc.
Audio Developments, Ltd.
Audio Logic
AudioTechniques, Inc.

Auditronics Inc.
Biamp Systems
BSS Audio/ Div. of AKG Acoustics
BSS Audio Ltd.
Circuit Research Labs, Inc.
CTI Audio, Inc.
dbx, Div. of AKG Acoustics Inc.
DigiTech
DOD Electronics Corp.
Dorrrough Electronics



D&R USA
Drawer
Drawer c/o QMI



Furman Sound, Inc.



GML, Inc.
Inovonics Inc.
IRP, A Knowles Div.
Ivie Technologies, Inc.
JBL Professional
Klark-Teknik
Lake People
Larking Audio
Lectrosonics Inc.
Marshall Electronic
Orban, Div. of AKG Acoustics, Inc.
Pacific Recorders & Eng. Corp.
Protech Audio Corp.
Publison S.A.
Quad Eight Electronics, Inc.
Rane Corp.
Richmond Sound Design Ltd.
Rocktron Corp.
RSP Technologies
S.E.M. Co.
Sescom, Inc.
Sonic Image Ltd.
Sontec Electronics
Sony Business & Professional Group
Spectra Sonics/Spectra Sound
Summit Audio Inc.
Symetrix Inc.
Trident Audio USA
UREI
Vacuum Tube Logic
Valley International, Inc.
Wheatstone Corp.
Yamaha Corp. of America
Pro Audio Div.

LOUDSPEAKER SYSTEMS, ELECTRONICALLY CONTROLLED

Adamson Acoustic Design Corp.
Altec Lansing Corp.
Apogee Sound, Inc.
ARX Systems
ATM Audio/Visual
Audio System Design USA Inc.
AUDISAR
Audra International
Bag End Loudspeaker Systems
Bose Corp.
BSS Audio/ Div. of AKG Acoustics

CELESTION

Celestion Industries, Inc.
 Community Light & Sound, Inc.
 Court Acoustics Ltd.
 Dynacord
 EAW
 Electro-Voice, Inc.
 Formula Audio, Inc.
Genelec
 JBL Professional
 Macpherson Loudspeakers
 Meyer Sound Labs, Inc.
 Nady Systems, Inc.
Peavey Electronics Corp.
Audio Media Research Div.
 Professional Audio Systems
 Quested Monitoring Systems
 Renkus-Heinz, Inc.
 ROH Div. of Portland Instrument
 Shure HTS
 Sonosax S.A.
 Soundscape
 Soundtrax Recording
 Spectra Sonics/Spectra Sound
 State of The Art Electronik
 Technics
 TOA Electronics, Inc.
 Turbosound Div. of AKG Acoustics
 Woodworx Audio Systems
 Yamaha Corp. of America
 Pro Audio Div.

LOUDSPEAKERS, COMPONENT

Acoustech Corp.
 Adamson Acoustic Design Corp.
 Altec Lansing Corp.
 ARX Systems
 Atlas/Soundolier
 ATM Fly-Ware, Inc.
 AUDISAR
 Audra International
 Auernheimer Labs & Co.
 Auratone Corp.
 Bag End Loudspeaker Systems
 Boston Acoustics, Inc.

CELESTION

Celestion Industries, Inc.
 Cliff Electronics
 Community Light & Sound, Inc.
 Court Acoustics Ltd.
 Design Direct Sound, Inc.
 Electro-Voice, Inc.
 E3MC Inc.
 Fane Acoustics
 Ferrofluidics Corp.
 Formula Audio, Inc.
Fostex Corp. of America
 Frazier
 Gauss
 JBL Professional
Klipsch & Associates, Inc.
 Macpherson Loudspeakers
 Madisound Speaker Components
 McCauley Sound, Inc.
 MTX
 Neutrik USA, Inc.
 Numark Electronics
 OWI Inc.
Peavey Electronics Corp.
Audio Media Research Div.
 Penn Fabrication Inc.
 Polydax Speaker Corp.
 Professional Audio Systems

Quested, A Div. of AKG Acoustics
 Quested Monitoring Systems
 Radian Audio Engineering Inc.
 Renkus-Heinz, Inc.
 Ross Systems/ Div. of IMC
 Sellmark USA
 Audiomation Systems Ltd.
 Soundtrax Recording
TAD-Technical Audio Devices
Pioneer Electronics USA Inc.
 Technics
 TOA Electronics, Inc.
 Trend Textiles Inc.
 Velodyne Acoustics

LOUDSPEAKERS, SOUND REINFORCEMENT

ACE Sound & Lighting
 ADA Amplification Systems
 Adamson Acoustic Design Corp.
 Altec Lansing Corp.
 Apogee Sound, Inc.
 ARX Systems
 Atlas/Soundolier
 ATM Audio/Visual
 Audio Centron
 Audio System Design USA Inc.
 AUDISAR
 Audra International
 Auernheimer Labs & Co.
 Auratone Corp.
 Bag End Loudspeaker Systems
 Bose Corp.

CELESTION

Celestion Industries, Inc.
 Cerwin-Vega Inc.
 Community Light & Sound, Inc.
 Court Acoustics Ltd.
 DAX
 Design Acoustics
 Design Direct Sound, Inc.
 Dynacord
 EAW
 Electro-Voice, Inc.
 E3MC Inc.
 Fane Acoustics
 Ferrofluidics Corp.
 Formula Audio, Inc.
Fostex Corp. of America
 Frazier
 Galaxy Audio
 Intersonics, Inc.
 JBL Professional
Klipsch & Associates, Inc.
 Macpherson Loudspeakers
 Madisound Speaker Components
 Martin Audio, Ltd.
 McCauley Sound, Inc.
 Meyer Sound Labs, Inc.
 Modular Sound
 MTX
 Numark Electronics
 OAP Audio
 Optim Audio
 OWI Inc.
 Panasonic Pro Audio/Ramsa
Peavey Electronics Corp.
Audio Media Research Div.
 Penn Fabrication NJ Inc.
 Perma Power Electronics Inc.
 Polydax Speaker Corp.
 Professional Audio Systems
 Quested, A Div. of AKG Acoustics
 Quested Monitoring Systems
 Radian Audio Engineering Inc.
 Rainbow Sound & Lighting
 Rainbow Recording Studios Inc.
 Renkus-Heinz, Inc.

Ross Systems/ Div. of IMC
 Sonic Systems Inc.
 Soundscape
 Soundtrax Recording
 Southern Thunder Sound Inc.
 Spectra Sonics/Spectra Sound
TAD-Technical Audio Devices
Pioneer Electronics USA Inc.
Tannoy-T.G.I. North America
 TOA Electronics, Inc.
 Top Notch Audio (TNA Case Co.)
 Turbosound Div. of AKG Acoustics
 U.S.A. Audio
 Velodyne Acoustics
 Woodworx Audio Systems
 Yamaha Corp. of America
 Pro Audio Div.
 Yorkville Sound Inc.

LOUDSPEAKERS, STUDIO MONITORING

Acoustech Corp.
 Acoustical Physics Labs
 Altec Lansing Corp.
 Atlas/Soundolier
 Audio System Design USA Inc.
 AUDISAR
 Audix Corp.
 Auernheimer Labs & Co.
 Auratone Corp.
 Bag End Loudspeaker Systems

CELESTION

Celestion Industries, Inc.
 Cello Ltd.
 Cerwin-Vega Inc.
 Clear-Com Intercom Systems
 Court Acoustics Ltd.
 Digital Designs International
 Electro-Voice, Inc.
 Fane Acoustics
 Formula Audio, Inc.
Fostex Corp. of America
 Frazier
 Genelec c/o QMI
Genelec
 C.D. Hart Designs
 JBL Professional
 Klark-Teknik
 KRK Monitoring Systems
 Lakeside Associates, Inc.
 Larking Audio
 Madisound Speaker Components
 The Mastering Lab
 Studio Products
 Meyer Sound Labs, Inc.
 Numark Electronics
 Panasonic Pro Audio/Ramsa
Peavey Electronics Corp.
Audio Media Research Div.
 Polydax Speaker Corp.
 Professional Audio Systems
 Quested, A Div. of AKG Acoustics
 Quested Monitoring Systems
 Radian Audio Engineering Inc.
 Renkus-Heinz, Inc.
 Shure HTS
 Smithline Audio Inc.
 Sonosax S.A.
 Soundscape
 Soundtrax Recording
 State of The Art Electronik

TAD-Technical Audio Devices
Pioneer Electronics USA Inc.
Tannoy-T.G.I. North America
 TOA Electronics, Inc.
 True Image Audio
 21st Century Ltd.
 Vacuum Tube Logic
 Velodyne Acoustics
 Westlake Audio, Inc.
 Yamaha Corp. of America
 Pro Audio Div.
 Yorkville Sound Inc.

MAINTENANCE, TEST AND MEASURING EQUIPMENT

Aerco
 Amber Electro Design
 Div. of Coreco Inc.
 Applied Innovation America
 Ariel Corp.
 ASC/Tube Traps
 Audio Precision, Inc.
AudioControl Industrial
 A/Z Associates
 Basic Measuring Instruments
 B&B Systems Inc.
 Black Audio Devices
 Bruel & Kjaer Instruments
 BSS Audio Ltd.
 Calculated Industries
 Concept Design Electronics & Mfg., Inc.
 Cory Instrument Products
 DAX
 DB Systems
 Delta Electronics Inc.
 Dorrrough Electronics
 Enterprise Corp. of America
 John Fluke Mfg. Co., Inc.
 Galaxy Audio
 Get Smart Protection
 Gold Line
 Hartmann & Associates
 Horita
 Inovonics Inc.
 Ivie Technologies, Inc.
 Jasoni Electronics
 Jeanius Electronics
 Jensen Tools Inc.
 Leitch Inc.
 Lindos Electronics
Magnetic Reference Lab
 MCM Electronics
 McCurdy Radio Industries Ltd.
 Musonix, Ltd.
 New York Technical Support, Ltd.
Peavey Electronics Corp.
Audio Media Research Div.
 Quested Monitoring Systems
 RCA Test Tapes
 Research Technology International
 R-Tec Systems
 Scantek, Inc.
 Sencore Inc.
 Simpson Electric
 Sonic Perceptions, Inc.
 Sound Technology, Inc.
 Standard Tape Lab, Inc.
 Studiomaster Inc.
 System-Y by Yellowtec GmbH
 Tape Automation America
 Tatum Labs, Inc.

t.c. electronic

t.c. electronic
 Techron Div. of Crown Int'l.
 Tektronix Television Div.
 Tentel Corp.
 3M Sound Products
 Transtector Systems

STUDER

Studer

A DASH MORE PURE.



From Day One, digital audio has been synonymous with superb sound. Superb, yet marred by the "harshness" inherent in the normal A/D and D/A conversion process.

Enter the TASCAM DA-800. A 24-channel DASH machine with a significant sonic advantage. Our exclusive ZD circuit, which dramatically reduces the digital distortion created by converter non-linearity, produces an extraordinarily pure, natural sound.

Now, having heard all this, you may still choose to purchase a competitor's digital machine without first listening to the DA-800.

Pity.

To arrange for a personal demonstration, please call (213) 726-0303. Or write TASCAM, 7733 Telegraph Road, Montebello, CA 90640.

TASCAM.

© 1991 TEAC America, Inc.

Circle (17) on Rapid Facts Card

www.americanradiohistory.com

Soundtrax Recording
Telex Communications, Inc.
 TOA Electronics, Inc.
 Vega Wireless
 Williams Sound Corp.

MIDI HARDWARE

Akai Professional/IMC
Alesis Corp.
Audio-Technica US, Inc.
 Audiomation Systems Ltd.
 Auricle Control Systems
 Clarity
 COLOSSUS: By The Numbers
 Computer Music Supply
 Digidesign, Inc.
 Digital Music Corp.
 Dr. T's Music Software, Inc.
 East Coast MIDI Information Systems
 Eltekon Technologies
 Eye & I Productions
Fast Forward Video
Fostex Corp. of America

JL COOPER ELECTRONICS

JLCooper Electronics
 The Russ Jones Marketing Group
 Kawai America Corp.
 Larking Audio
Lexicon Inc.
 Lone Wolf
 Mackie Designs
 Mark of the Unicorn Inc.
 Midiland

Midisoft Corp.
 Musonix, Ltd.
 Nady Systems, Inc.
 NDG Phoenix Inc.
 New England Digital Corp.
 Opcode Systems, Inc.
 Optronics Technology
Peavey Electronics Corp.
Audio Media Research Div.
 Plasmec Systems Ltd.
 Richmond Sound Design Ltd.
 Roland Pro Audio/Video Group
 R-Tec Systems
 Soundtrax Recording
 Spatial Sound Inc.
 Steinberg/Jones Corp.
 Technics
 360 Systems
 21st Century Ltd.

MISCELLANEOUS EQUIPMENT AND SERVICES

ACE Sound & Lighting
 ACO Pacific Inc.
 Adams-Smith
 Aerco
 Alphonon Elektroakustik
 American Recorder Technology
 AMX Corp.
 Analog Devices, Inc.
 Anderson Graphics
 ANT Telecommunications Inc.
 Apex Machine Co.
 Apollo Masters
 The Archon Co.
 Atlas/Soundolier
 ATM Fly-Ware, Inc.
 Audio Resource Honolulu

Audiolab Electronics, Inc.
 Audiomation Systems Ltd.
 AUDISAR
 Auteri Associates, Inc.
 Bec Technologies, Inc.
 Black Audio Devices
 Brainstorm Electronics, Inc.
 Broadcast Electronics, Inc.
 Calculated Industries
 Calzone Case Co.
 Century Financial Services Group, Ltd.
 Connectronics Corp.
 Cory Instrument Products
 Creative Input
 CST Mfg. & Sales Inc.
 Demeter Amplification
 Innovative Audio Systems
Denecke Inc.
 Dorrough Electronics



D&R USA
 Duplication Equipment Brokerage
 East Coast MIDI Information Systems
 El Mar Plastics
 ENAK Microphone Repair
 ENDECO Div. of Leads Metal Products, Inc.
 ESE
 Evertz Microsystems Ltd.
 Exchange National Funding
 Fairlight ESP Pty Ltd.
 Dave Fant Co.
 First Light Video Publishing
 FSR Inc.
 General Devices Co., Inc.
 Get Smart Protection

Gold Line
 Grass Valley Group
 C.D. Hart Designs
 Hot House Professional Audio
 Intelix Corp.
 Jeanius Electronics
Jensen Transformers, Inc.

JL COOPER ELECTRONICS

JLCooper Electronics
 Josephson Engineering
 JRF Magnetic Sciences Inc.
 Lake People
 Larking Audio
 Layered Audio
 Lease Financing Consultants, Inc.
 J.S. LoBianco Enterprises
 LT Sound
 Magna-Tech Electronic Co., Inc.
 Mag-Tags, Inc.
 MC Production
 Media Technologies, Ltd.
 MicroAudio Inc.
 Monster Cable Products
 MorTronics
 Music Box Productions
 Nady Systems, Inc.
 Neutrik USA, Inc.
 New York Technical Support, Ltd.
 Omnimount Systems
 Opamp Labs, Inc.
 OptoDigital Design, Inc.
Oxmoor Corp.
 Pacific Recorders & Eng. Corp.
Peavey Electronics Corp.
Audio Media Research Div.
 Pinc Link Inc.

M-1
MICROPHONE PREAMPLIFIER
 SUPERIOR SOUND QUALITY. RE-DISCOVER YOUR MICROPHONES!

[ACTUAL SIZE]

- THE BEST JENSEN INPUT TRANSFORMER: THE JE-16-B.
- THE BEST OP-AMP: THE 990 DISCRETE OP-AMP.
- DC-SERVO ELIMINATES ALL COUPLING CAPACITORS.
- THE BEST JENSEN OUTPUT TRANSFORMER OPTION: THE JE-11-BM.
- ILLUMINATED SWITCH BUTTONS.
- TOROIDAL POWER TRANSFORMER.
- UNIVERSAL POWER SUPPLY.
- XLR CONNECTORS. GOLD OPTIONAL.
- TWO METER OPTIONS. VU-1 SHOWN.
- CUSTOM KNOB & PUSH BUTTONS.

THE JOHN HARDY COMPANY

P.O. Box AA531 Evanston, IL 60204 (708) 864-8060 Telex: 910-380-4670 (JOHN HARDY CO)

Circle (19) on Rapid Facts Card

DISC MAKERS

Get The Most Out
 Of Your Studio Recording

**Complete Cassette
 & CD Manufacturing**

Complete packages for:
 Cassette
 Duplication,
 Record
 Pressing,
 Compact Disc
 Replication
 In-house
 art department
 for design,
 typesetting,
 film work
 and printing
 In-house
 mastering
 department
 for a great
 sounding
 product.

Club Series:
 300 C-45
 HX Pro Cassettes
 with B&W Inserts
\$550
Includes design and typesetting

**SAVE MONEY!
 DEAL DIRECTLY
 WITH THE
 MANUFACTURER**

Call TODAY for this
 free, full color catalog:
1-800-468-9353
Call us toll free and we'll tell you how to get started.

1328 N. 4th Street
 Philadelphia, PA 19122
 215-232-4140 FAX: 215-236-7763

Circle (20) on Rapid Facts Card

The Alesis 3630...

a compressor that sounds great,
does everything and is affordable



When we blueprinted the new **Alesis 3630 Compressor Limiter** we had a hard time cutting out features. So we left them all in.

Threshold, attack and release controls.



Hard knee or soft knee, and peak or RMS compression. All the options you need to custom configure the 3630 for any recording application... especially necessary for digital recording.

A great metering system tells you exactly what's happening to the signal, with separate meters for gain reduction and input or output. The 3630 uses the industry standard dbx® VCA for low noise and great sound. There's a side chain for keying and ducking, adjustable noise gate, -10 or +4 dB operation. All this for a price that's like getting one channel free.

Retail price of the 3630 is \$299.*
Read the headline again. Then go hear the 3630 at your Alesis dealer today.

**Slightly higher in Canada*

dbx® is the registered trademark of Carillon Electronics Corporation.



LOS ANGELES: Alesis Corporation • 3630 Holdrege Avenue • Los Angeles, CA 90016

LONDON: 17 Letchworth Point • Letchworth, Hertfordshire SG6 1ND

Circle (33) on Rapid Facts Card

www.americanradiohistory.com

Plasmec Systems Ltd.
Precision Monolithics Inc. SSM Audio Products
Prosonus
Quad Eight Electronics, Inc.
RCA Test Tapes
Richmond Sound Design Ltd.
RPG Diffusor Systems, Inc.
RPS Communications
SCV Audio c/o QMI
SeamTech
Selco Products Co.

Sennheiser Electronic Corp.
Sescom, Inc.

Sonic Perceptions, Inc.
Spectra Sonics/Spectra Sound
Stewart Electronics
Storeel Corp.
Studio Technologies, Inc.
Talent Associates Narrations, Inc.
Tape Automation America
Technical Service Specialists Inc.
THAT Corp.
3M Sound Products
Titus Technological Labs
Tobin Cinema Systems
The Toy Specialists
UREI
U.S. Audio
Veetronix Inc.
Whirlwind, Inc.
Williams Sound Corp.
Wireworks Corp.
Yeagley Productions
Zero Music

**NOISE GATES/
EXPANDERS**

ACE Sound & Lighting
Aphex Systems Ltd.
API-Audio Products Inc.
ART-Applied Research & Technology
Ashly Audio, Inc.
ATI-Audio Technologies, Inc.
Audio Developments, Ltd.
Audio Logic
Auditronics Inc.
Biamp Systems
BSS Audio/ Div. of AKG Acoustics
BSS Audio Ltd.
C-T Audio Marketing Inc.
CTI Audio, Inc.
dbx, Div. of AKG Acoustics Inc.
DigiTech
DOD Electronics Corp.



D&R USA
Drawmer
Drawmer c/o QMI
Euphonix, Inc.

FURMAN

Furman Sound, Inc.
Gold Line
Gotham Audio Corp.
JVC Professional Products Co.
Klark-Teknik
Lake People
Larking Audio
Layered Audio
Marshall Electronic
Pacific Recorders & Eng. Corp.

Peavey Electronics Corp.
Audio Media Research Div.

Protech Audio Corp.
Quad Eight Electronics, Inc.
Rane Corp.
Rocktron Corp.
Ross Systems/ Div. of IMC
Sescom, Inc.
Sonic Image Ltd.
Symetrix Inc.
Trident Audio USA
Valley International, Inc.

**NOISE REDUCTION
SYSTEMS**

Acoustic Systems
Analog Devices, Inc.
ART-Applied Research & Technology
Audio Developments, Ltd.
AZ-USA
BSS Audio/ Div. of AKG Acoustics
Circuit Research Labs, Inc.
dbx, Div. of AKG Acoustics Inc.
DigiTech
DOD Electronics Corp.
Dolby Labs, Inc.



D&R USA
Drawmer
Drawmer c/o QMI
Euphonix, Inc.
For.A Corp. of America
Gotham Audio Corp.
Hush Systems
JVC Professional Products Co.
Klark-Teknik
Larking Audio
Marshall Electronic
MTU-Micro Technology Unlimited
Nady Systems, Inc.
Numark Electronics
Pacific Recorders & Eng. Corp.
Packburn Electronics Inc.
Peavey Electronics Corp.
Audio Media Research Div.
Pinc Link Inc.
Ram Broadcast Systems Inc.
Rocktron Corp.
Roland Pro Audio/Video Group
Ross Systems/ Div. of IMC
RSP Technologies
Sonic Image Ltd.
Symetrix Inc.
Tayo Industries
Technics
THAT Corp.
Valley International, Inc.

**PATCHBAY AND JACK
PANELS**

ADC Telecommunications
Arcor Broadcast Products
Artefx
Audio Accessories, Inc.
Canare
David Carroll Electronics
Connectronics Corp.
CTI Audio, Inc.
Digital Music Corp.



D&R USA

DW Labs, Inc.
Fostex Corp. of America

FURMAN

Furman Sound, Inc.
Gentner Communications Corp.
Get Smart Protection
HAVE, Inc.
Markertek Video Supply



Marshall Electronics
McCauley Sound, Inc.
Mosses & Mitchell
Neutrik USA, Inc.
New York Technical Support, Ltd.
Peavey Electronics Corp.
Audio Media Research Div.
Penny & Giles, Inc.
Plasmec Systems Ltd.
Pro Co Sound
Quad Eight Electronics, Inc.
Ram Broadcast Systems Inc.
Richmond Sound Design Ltd.
Switchcraft, Inc.
TASCAM
360 Systems
Trident Audio USA
Ward-Beck Systems Ltd.
Whirlwind, Inc.
Wireworks Corp.

**PHONOGRAPH
CARTRIDGES AND
ACCESSORIES**

Apollo Masters
ATI-Audio Technologies, Inc.
Audio-Technica US, Inc.
Calzone Case Co.
DB Systems
Esoteric Sound
Gotham Audio Corp.
InConcert

SHURE®

Shure Brothers Inc.
Signet
Stanton Magnetics Inc.

**PHONOGRAPH
TURNTABLES**

Esoteric Sound
Gotham Audio Corp.
Technics
Telex Communications, Inc.

PITCH SHIFTERS

ART-Applied Research & Technology
DigiTech
DOD Electronics Corp.
Eventide, Inc.
Korg USA Inc.
Larking Audio
Lexicon Inc.
Marshall Electronic

Rocktron Corp.
RSP Technologies

t.c. electronic

t.c. electronic

**POWER CONDITIONING/
STANDBY POWER SYSTEMS**

Basic Measuring Instruments
Electron Processing, Inc.

FURMAN

Furman Sound, Inc.
Get Smart Protection
Juice Goose c/o Whinton Industries Inc.
Kalgio Electronic Co. Inc.
New York Technical Support, Ltd.
Perma Power Electronics Inc.
Pulizzi Engineering Inc.
Rocktron Corp.
Simon Systems Engineering, Inc.
Sola, A Unit of General Signal
Tripp Lite

RACKS AND STANDS

Atlas/Soundolier
Bag End Loudspeaker Systems
BGW Systems Inc.
EFXX Products Co.
General Devices Co., Inc.
Get Smart Protection
Larking Audio



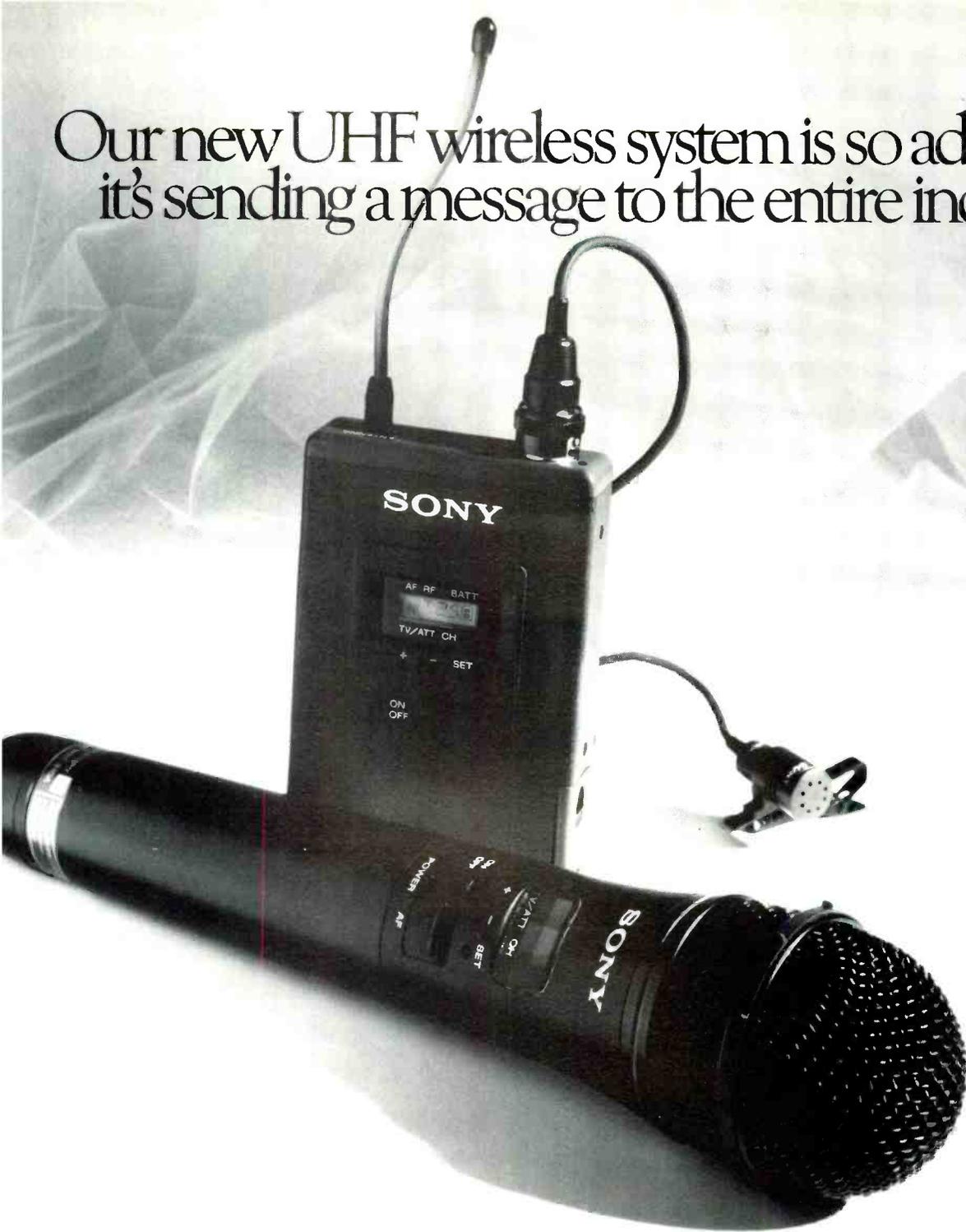
Middle Atlantic Products
Modular Sound
Modular Wood Systems Inc.
Peavey Electronics Corp.
Audio Media Research Div.
Penn Fabrication NJ Inc.
Penn Fabrication Inc.
Pinc Link Inc.
Plasmec Systems Ltd.
Ram Broadcast Systems Inc.
Research Technology International
Sellmark USA

Audiomation Systems Ltd.
Soundtrax Recording
Spectra Sonics/Spectra Sound
Technics
Tek Media Supply Co.
Thermodyne International
3M Sound Products
TOA Electronics, Inc.
Ultimate Support
VGS California Nigel B Furniture Div.
Wheatstone Corp.
Winsted Corp.

**RECORD/CD
MANUFACTURING
SERVICES**

Aligned Audio Inc.
American Helix Technology Corp.

Our new UHF wireless system is so advanced,
it's sending a message to the entire industry.



People aren't just talking into our new microphone system. They're talking about it. And they're saying it may forever change the way we think of wireless microphones.

That's because the 800 Series is the first to use a micro-processor to control virtually all of its functions. So it's more reliable and easier to use than other systems. It's also the first to give you 94 selectable channels in the UHF band. And it's the first microphone system to use an LCD display



The 800 Series Wireless Microphone System

on the transmitters as well as the receivers.

But that's not the end of our remarkable innovations. The 800 Series is also the first to store pre-programmed multi-channel selections. It's even the first to operate in the 794-806 MHz band for uncluttered transmission:

To learn more about our new wireless system, call 1-800-635-SONY, ext. 800. You'll discover that with all these firsts it's doing more than getting a lot of people talking. It's leaving the competition speechless.

SONY

American Recorder Technology
Anderson Graphics
COLOSSUS: By The Numbers
The Cutting Edge Disc
Mastering
DB Plus Digital Services
D&G Mastering
Digital Brothers
Digital House Ltd.
Disc Makers /Div. of Audio & Video Lab

RECORDING HEADS, REPLACEMENT, SALES AND SERVICE

Auteri Associates, Inc.
Electro-Magnetic Components IEM
International Electro-Magnetics, Inc.
JRF Magnetic Sciences Inc.
Saki Magnetics, Inc.
Sprague Magnetics, Inc.
Teccon Enterprises Ltd.

Panasonic Communications & Systems Co.
Panasonic Pro Audio/Ramsa Shape Inc.
Solid Sound, Inc.
Sony Business & Professional Group
Sony Magnetic Products Co.
Professional Tape Div.
Soundtrax Recording
Sprague Magnetics, Inc.
Studio Magnetics Co., Inc.
Sunkyoung Magnetic/America, Inc.
TDK Electronics Corp.
Technics
3M Professional Audio/Video & Specialty Products Div.
3M Sound Products

Sprague Magnetics, Inc.
TDK Electronics Corp.
3M Professional Audio/Video & Specialty Products Div.
3M Sound Products

REVERB DEVICES

ACE Sound & Lighting
Alesis Corp.
AMS Industries Inc
ART-Applied Research & Technology
Brick Audio
Clarity
dbx, Div. of AKG Acoustics Inc.
DigiTech
DOD Electronics Corp.



Eastco Pro Audio Video Corp.
Eastern Standard Productions, Inc.
Europadisk, Ltd.
Eva-Tone Inc.
Future Disc Systems
Kenwood USA
Optical Media International
Prosonus

RECORDING TAPE, AUDIO

AIWA America, Inc.
Ampex Recording Media Corp.
Audico Chicago, Inc.
Audio Cassette Duplicator Co.
BASF Corp. Information Systems
Cintas VAC
Custom Cassette, Inc.

RECORDING TAPE, VIDEO

AIWA America, Inc.
Ampex Recording Media Corp.
Audico Chicago, Inc.
BASF Corp. Information Systems

RECORD/CD MANUFACTURING SYSTEMS

COLOSSUS: By The Numbers
Gotham Audio Corp.
Larking Audio
ODME-Optical Disc Mfg. Equipment
Optical Media International



Eastco Pro Audio Video Corp.
Esoteric Sound
Fidelipac Corp.
HRC Magnetics
International Tapetronics Corp.
Loran Cassettes & Audio Products
Mann Endless Cassette Industries
Musicon
Nakamichi America Corp.



Eastco Pro Audio Video Corp.
HRC Magnetics
Panasonic Communications & Systems Co.
Sony Business & Professional Group
Sony Magnetic Products Co.
Professional Tape Div.



D&R USA
Dynacord
Eventide, Inc.
Gotham Audio Corp.
Klark-Teknik
Korg USA Inc.
Larking Audio
Lexicon Inc.
Marshall Electronic
Orban, Div. of AKG Acoustics, Inc.
Peavy Electronics Corp.
Audio Media Research Div.
Pinc Link Inc.
Publison S.A.

STUDIO QUALITY
Direct-To-Disk Audio Editing on PC/ATs with
MICRO SOUND™

- 2 or 4-track analog 16-bit A/D and 18-bit D/A 64x/8x oversampling converters
- Direct-digital transfers to/from DAT or CD
- Windows 3.0 based graphic waveform editor
- Record from 8KHz to 48KHz rates
- Rearrange segments in any order using crossfading or butt-splicing for linear arrangements playing in real-time
- Disk-Layering™ will mix overlapped segments with unique fade/gain settings, from up to 20 files to play 4, 6, 8...32-track simultaneous mixes
- Zoom from sample level to track-hours to make edits (undoable anytime)
- Hear edits using Play mark, Scrub, Audition and more
- SMPTE/MIDI Chase-Lock to incoming timecode, locking and playing within 1 second
- Overdubbing optional
- Ready-to-use MicroSound™ WorkStations also available



You CAN have a Digital Audio Studio NOW!

To find out how – CALL WRITE or FAX today - for a free brochure that explains how to meet your audio needs.

156 Wind Chime Court
Raleigh, NC 27619
Phone: (919) 870-0344
Fax: (919) 870-7163



Circle (23) on Rapid Facts Card

F22

SMPTE Time Code

- Generator
- Reader
- Character Inserter

\$995.00



SMPTe to MIDI Conversion

"Window Dubs" time code on video **Regenerates** and **Jam Syncs** to existing code

1/30 to over 10 times play speed
Forward and reverse
Automatic error bypass
Preset hours, minutes, seconds
User Bits

Call **Fast Forward Video**
1-800-755-TIME (8463), 1-714-852-8453
for a dealer near you

Dealer inquiries invited.

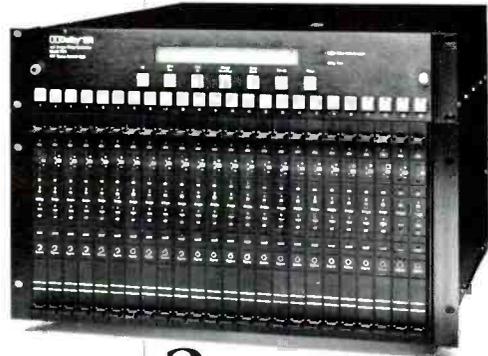
Circle (24) on Rapid Facts Card

SEVEN REASONS WHY DOLBY IS NUMBER ONE FOR HIGH QUALITY AUDIO PRODUCTION.

- 1.** The **Model 363 Series** two-channel unit incorporates Dolby SR, Dolby A-type, or switchable SR/A-type modules in a compact 1 U-high chassis.



- 2.** The **XP Series** multitrack unit contains up to 24 Dolby SR or A-type modules.



- 3.** The **MT Series** provides up to 24 switchable Dolby SR/A-type modules under software control for channel grouping and automatic alignment.

- 4.** The **NEW Model 430** is a playback-only processor based on Dolby SR for cleaning up noisy field recordings in film and video post-production.



- 5.** The **Model 422 Series** is a reference encoder/decoder with four channels of Dolby B-type, C-type, and S-type for mastering and monitoring in audio and video cassette duplication.

- 7.** The **Model SDU-4** is a 2:4 reference decoder for monitoring Dolby Surround and Dolby Stereo program material in broadcast,

video, music recording, and some film applications.

- 6.** The **DP500 Series** digital encoder/decoder units provide two channels of high-quality audio in only 256 kbits/sec for high spectrum efficiency in satellite, T1, and ISDN applications.



Dolby Laboratories Inc. • 100 Potrero Avenue San Francisco, CA 94103-4813 • Telephone 415-558-0200 • Telex 34409 • Facsimile 415-863-1373
346 Clapham Road London SW9 9AP • Telephone 071-720-1111 • Telex 919109 • Facsimile 071-720-4118
Dolby and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation © 1991 Dolby Laboratories S91 9274

Dolby[®]

Rocktron Corp.
Roland Pro Audio/Video Group
RSP Technologies
Sellmark USA
Audiomation Systems Ltd.
Sony Business & Professional Group

Gotham Audio Corp.
Grass Valley Group
Harrison by GLW, Inc.
HEDCO
Innovative Electronic Designs, Inc.
International Tapetronics Corp.
IRP, A Knowles Div.
Ivie Technologies, Inc.
Layered Audio
Leitch Inc.
McCurdy Radio Industries Ltd.
Nvision, Inc.
Opamp Labs, Inc.
Optronics Technology
Oxmoor Corp.
Pacific Recorders & Eng. Corp.
Plasmec Systems Ltd.
Protech Audio Corp.
Quad Eight Electronics, Inc.
Ram Broadcast Systems Inc.
Richmond Sound Design Ltd.
Rocktron Corp.
R-Tec Systems
S.E.M. Co.
Target Technology Inc
360 Systems
Titus Technological Labs
Yamaha Corp. of America
Pro Audio Div.

Steinberg/Jones Corp.

JL COOPER ELECTRONICS

JLCooper Electronics
Nvision, Inc.
Sony Business & Professional Group
Soundmaster USA Inc.

SIGNAL PROCESSORS, OTHER

ACE Sound & Lighting
Adamson Acoustic Design Corp.
Alesis Corp.
Altec Lansing Corp.
AMS Industries Inc
Analog Devices, Inc.
Aphex Systems Ltd.
API-Audio Products Inc.
Ariel Corp.
Artefix
ARX Systems
Ashly Audio, Inc.
Audio Centron
Audio Logic
AudioControl Industrial
Audra International
Avalanche Effects Inc.
Bag End Loudspeaker Systems
B.A.S.E.
BBE Sound, Inc.
Biamp Systems
BSS Audio/ Div. of AKG Acoustics
BSS Audio Ltd.
Cambridge Signal Technologies, Inc.
Circuit Research Labs, Inc.
Clarity
Court Acoustics Ltd.
CTI Audio, Inc.
DAX
DB Systems
dbx, Div. of AKG Acoustics Inc.
DigiTech
DOD Electronics Corp.
Dolby Labs, Inc.

t.c. electronic

t.c. electronic
Yamaha Corp. of America
Pro Audio Div.

t.c. electronic

t.c. electronic
WaveFrame Corp.

ROUTING SWITCHERS, AUDIO

Analog Devices, Inc.
API-Audio Products Inc.
ATI-Audio Technologies, Inc.
Audiomation Systems Ltd.

SEQUENCERS

Akai Professional/IMC
Alesis Corp.
Dr. T's Music Software, Inc.
For.A Corp. of America
Kawai America Corp.
Larking Audio
Midisoft Corp.
New England Digital Corp.
Opcode Systems, Inc.
Optronics Technology
Peavey Electronics Corp.
Audio Media Research Div.
Publison S.A.
Pulizzi Engineering Inc.
Richmond Sound Design Ltd.
Roland Pro Audio/Video Group
Soundtrax Recording



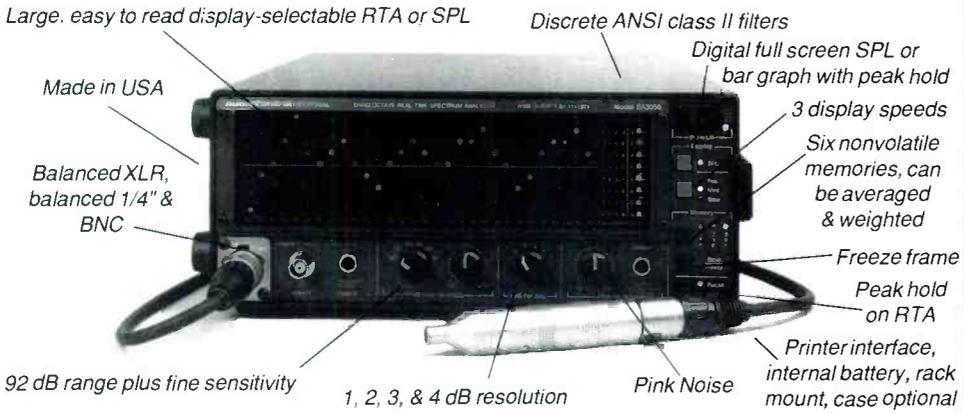
AutoPatch

AutoPatch Div. of NN Technologies, Inc.
Benchmark Media Systems, Inc.
DW Labs, Inc.
Dynair Electronics
ESE
FSR Inc.
Gentner Communications Corp.
Get Smart Protection

SAMPLING RATE CONVERTERS

Analog Devices, Inc.
COLOSSUS: By The Numbers
Digital Audio Research
Gotham Audio Corp.

World's Most Popular RTA
Affordable, 1/3 Octave, Real Time Analyzer With Memories & SPL Display SA-3050A



Also available: Plug-in A & C Weighting Filter, Prosonus SRD Test Compact Disc, Accurate measuring devices

Call today for more information!

AudioControl Industrial

22313 70th Ave West • Mountlake Terrace, WA 98043 • (206)775-8461 • FAX (206)778-3166
Circle (26) on Rapid Facts Card

RTA 4000

- ✓ Spl Display
- ✓ RS232 Port
- ✓ RRC Mode
- ✓ Peak Hold
- ✓ 2-Uncorrelated Pink Noise Generators
- ✓ Easy to Read Bar Graph Display On CRT With .3dB Resolution
- ✓ Easy to Use With On Line Help Screens
- ✓ 16 Graph Memories & Overlay Function
- ✓ Digital Frequency & Level Readout
- ✓ Cursor allows Individual and Wide Band Measurements In Real Time
- ✓ ANSI Class III Filters
- ✓ 4 Line Level Inputs & 2 MIC Inputs with Phantom
- ✓ Calibrate Any Input To MIC And Or Preamp
- ✓ EGA Color Monitor Port
- ✓ A, C & CCIR Weighting Filters
- ✓ Printer Port
- ✓ IBM Software
- ✓ RT 60 (Optional)
- ✓ 3 Average Modes

Call today for more information
HARTMANN & ASSOCIATES
4NO51 Kenwood Avenue
West Chicago, IL 60185
1-800-524-4528

Circle (27) on Rapid Facts Card

Sennheiser Microphones



Excellence Needs No Explanation.

To learn more about the Sennheiser excellence in design and engineering,
please call or write.



6 Vista Drive, P.O. Box 987
Old Lyme, CT 06371

Tel # 203-434-9190 FAX # 203-434-1759

Circle (28) on Rapid Facts Card

MICROPHONES • HEADPHONES • BOOM SETS • RF WIRELESS • INFRA-RED TECHNOLOGY

Manufacturing Plant: D-3002 Wedemark, Federal Republic of Germany

www.americanradiohistory.com



D&R USA
 Drawmer c/o QMI
 DW Labs, Inc.
 Dynacord
 Eventide, Inc.
 For.A Corp. of America
 FSR Inc.
 Gentner Communications Corp.
 Innovative Electronic Designs, Inc.
 Inovonics Inc.
 IRP, A Knowles Div.
 Ivie Technologies, Inc.
 JBL Professional
JVC Professional Products Co.
 Klark-Teknik
 Korg USA Inc.
 Lake People
 Larking Audio
 Layered Audio
 Lectrosystems Inc.
 Leitch Inc.
Lexicon Inc.
 Marshall Electronic
 Midiland
 Motorola, Inc.
 Nady Systems, Inc.
 Neve
 NVision, Inc.
 Opamp Labs, Inc.
 Optim Audio
 Orban, Div. of AKG Acoustics, Inc.
Peavey Electronics Corp.
Audio Media Research Div.
 Pinc Link Inc.
 Protech Audio Corp.
 Publison S.A.
 Ram Broadcast Systems Inc.
 Rane Corp.
 Renkus-Heinz, Inc.
 Rocktron Corp.
 Roland Pro Audio/Video Group
 RSP Technologies
 Scantek, Inc.
 SCV Audio c/o QMI
 S.E.M. Co.
 Shure HTS



SigTech Cambridge Signal Technologies, Inc.
 Simon Systems Engineering, Inc.
 Sonic Image Ltd.
 Sonic Perceptions, Inc.
 Sontec Electronics
 Sound Concepts Inc.
 Spatial Sound Inc.
 Tayo Industries

t.c. electronic

t.c. electronic
 THAT Corp.
 Titus Technological Labs
 TOA Electronics, Inc.
 U.S.A. Audio
 Vacuum Tube Logic
 Ward-Beck Systems Ltd.
 Wheatstone Corp.
 White Instruments/
 Div. C Van R Inc.
 Yamaha Corp. of America
 Pro Audio Div.
 Zoom Corp.

SOUND SAMPLERS

Akai Professional/IMC
 Analog Devices, Inc.
 Ariel Corp.
 CompuSonics Corp.
 Digidesign, Inc.
 DigiTech
 DOD Electronics Corp.
 East Coast MIDI Information
 Systems
 Eltekon Technologies
 Larking Audio
MTU-Micro Technology Unlimited
Peavey Electronics Corp.
Audio Media Research Div.
 Pinc Link Inc.
 Publison S.A.
 Roland Pro Audio/Video Group
 Spectral Synthesis Inc.

t.c. electronic

t.c. electronic
 WaveFrame Corp.
 White Instruments/
 Div. C Van R Inc.
 Yamaha Corp. of America
 Pro Audio Div.

SYNCHRONIZER SYSTEMS

Adams-Smith
 AMS Industries Inc
 Audio Kinetics UK Ltd.
 Auricle Control Systems
 Brainstorm Electronics, Inc.
Cipher Digital, Inc.
 Evertz Microsystems Ltd.
Fast Forward Video
Fostex Corp. of America
 Gotham Audio Corp.

JLCOOPER ELECTRONICS

JLCooper Electronics
 The Russ Jones Marketing
 Group
 JRF Magnetic Sciences Inc.
 Motionworks Ltd.
 Mursion, Ltd.
Peavey Electronics Corp.
Audio Media Research Div.
 Roland Pro Audio/Video Group
 Singular Solutions
 Steinberg/Jones Corp.
TASCAM
 Tektronix Television Div.
 TimeLine Vista Inc.
 Tobin Cinema Systems
 21st Century Ltd.

SYNTHESIZERS AND KEYBOARDS

Clarity
 E-Mu Systems Inc.
 Ensoniq Corp.
 Kawai America Corp.
 Korg USA Inc.
 Kurzweil Music Systems
 Larking Audio
Peavey Electronics Corp.
Audio Media Research Div.
 Pinc Link Inc.

Soundtrax Recording
 Steinberg/Jones Corp.
 Technics
 Yamaha Corp. of America
 Pro Audio Div.

TAPE DUPLICATION, MANUFACTURING SERVICES

American Recorder Technology
 Anderson Graphics
 Audio Cassette Duplicator Co.



Bauer Communications, Inc.
 Cassette Tek, Inc.
 Dwight Cavendish Co.
 Custom Cassette, Inc.
 Davkore Co.
 Digital Brothers
 Digital House Ltd.
Disc Makers /Div. of Audio & Video Lab
 Duplitrronics, Inc.



Eastco Pro Audio Video Corp.
 Eastern Standard Productions,
 Inc.
 Europadisk, Ltd.
 Eva-Tone Inc.
 HAVE, Inc.
KABA Research & Development
 King Instrument Corp.
 Klarity Cassette, Inc.
 MAC Cassettes
 Magnefax International, Inc.
 Majestic Duplicating Service
 Musicon
 Otari Corp.
 Panasonic Communications &
 Systems Co.
 Quadim Corp.
 Bill Rase Productions, Inc.
 RCA Test Tapes
 Shape Inc.
 Solid Sound, Inc.
 The Sterling Group
 Studio Magnetics Co., Inc.
 Sunkyoung Magnetic/America, Inc.

TAPE DUPLICATION, MANUFACTURING SYSTEMS

Accurate Sound Corp.
 Applied Innovation America
 The Archon Co.
 Concept Design Electronics
 & Mfg., Inc.
 Duplitrronics, Inc.



Eastco Pro Audio Video Corp.
 Electro Sound, Inc.
 Gauss
KABA Research & Development
 Media Technologies, Ltd.
 Otari Corp.

Paktek Automation
 Roldex Industries
 R-Tec Systems
 Tape Automation America
TASCAM
Telex Communications, Inc.
 Versadyne International, Inc.
 Weircliffe

TAPE MACHINES, ANALOG

Accurate Sound Corp.
Fostex Corp. of America
 Gotham Audio Corp.
 Larking Audio
 MAC Cassettes
 Mann Endless Cassette Industries
 Otari Corp.
 Panasonic Communications &
 Systems Co.

REVOX

ReVox
Sony Business & Professional Group
 Soundtrax Recording
 Sprague Magnetics, Inc.
 Stellavox Digital Audio
 Technologies, Lt

STUDER

Studer
TASCAM
 Technics
 Uher of America

TAPE MACHINES, CASSETTE AND CARTRIDGE

AIWA America, Inc.
 Apex Machine Co.
 Audio Cassette Duplicator Co.
 Broadcast Electronics, Inc.
 Cassette Tek, Inc.
 Concept Design Electronics & Mfg., Inc.
 Duplitrronics, Inc.



Eastco Pro Audio Video Corp.
 Fidelipac Corp.
Fostex Corp. of America
 IEM
 International Tapetronics Corp.
KABA Research & Development
 Mann Endless Cassette Industries
 Nakamichi America Corp.
 Otari Corp.
 Pacific Recorders & Eng. Corp.
 Panasonic Communications &
 Systems Co.

REVOX

ReVox
Sony Business & Professional Group

Soundtrax Recording

STUDER

Studer
TASCAM
Technics
TOA Electronics, Inc.
Uher of America
Yamaha Corp. of America
Pro Audio Div.

TAPE MACHINES, DAT

AIWA America, Inc.
Apex Machine Co.
Audio Cassette Duplicator Co.
Bryco Products
Fostex Corp. of America
Gotham Audio Corp.
JVC Professional Products Co.
Larking Audio
Nakamichi America Corp.
Otari Corp.
Panasonic Communications & Systems Co.
Panasonic Pro Audio/Ramsa
Scantek, Inc.
Sony Business & Professional Group
Soundtrax Recording
TASCAM
Technics
Yamaha Corp. of America
Pro Audio Div.

TAPE MACHINES, DIGITAL

Akai Professional/IMC
Alesis Corp.
Apex Machine Co.
Audio Cassette Duplicator Co.
Duplitronics, Inc.
Fostex Corp. of America
JVC Professional Products Co.
Larking Audio
Neve
Otari Corp.
Panasonic Communications & Systems Co.
Sharp Electronics Corp.
Professional Products Div.
Sony Business & Professional Group
Soundtrax Recording
Stellavox Digital Audio Technologies, Lt

STUDER

Studer
TASCAM
Yamaha Corp. of America
Pro Audio Div.

TAPE SUPPLIES AND ACCESSORIES

Audico Chicago, Inc.
Audio Cassette Duplicator Co.
Audiolab Electronics, Inc.

Benjamin International, Inc.
Bryco Products
Cassette Tek, Inc.
Davkore Co.
DIC Digital



Eastco Pro Audio Video Corp.
Fidelipac Corp.
JRF Magnetic Sciences Inc.
KABA Research & Development
King Instrument Corp.
Magnetic Reference Lab
Mag-Zon Inc.
PolyQuick
RCA Test Tapes
Research Technology International
Solid Sound, Inc.
Sony Magnetic Products Co.
Professional Tape Div.
Soundtrax Recording
Sprague Magnetics, Inc.
Studio Magnetics Co., Inc.
Swire Magnetics Co. Professional Products Div.
TDK Electronics Corp.
Tek Media Supply Co.
3M Professional Audio/Video & Specialty Products Div.
Weirliffe

THREE-DIMENSIONAL AUDIO PROCESSORS

Analog Devices, Inc.

Circuit Research Labs, Inc.
Lake People
Prosonus
Roland Pro Audio/Video Group
layo Industries

t.c. electronic

t.c. electronic

TIME COMPRESSION, EXPANSION

Akai Professional/IMC
AMS Industries Inc
ART-Applied Research & Technology
Eventide, Inc.
Gotham Audio Corp.
Larking Audio
Lexicon Inc.
Marshall Electronic
MTU-Micro Technology Unlimited
Neve
Peavey Electronics Corp.
Audio Media Research Div.
Publison S.A.
Steinberg/Jones Corp.

t.c. electronic

t.c. electronic
WaveFrame Corp.



Chameleon

POWER AMPLIFIER

Expanding upon the successful DX Series Power Amplifiers, we have created an amplifier which produces a full 2000 watts of sonically transparent audio power in a housing only one unit high.

Like its namesake, Chameleon can instinctively adapt to an altered environment, optimising its power to suit the workload.

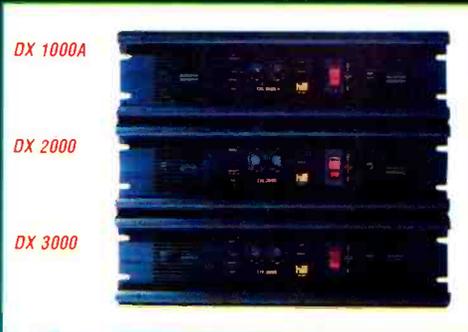
A new era in professional audio amplification has dawned — the parameters have all changed. **THERE IS NO GOING BACK!**

TOTAL PROGRAM POWER* (RMS 10ms/100ms):	8Ω dual channel	1200W
	4Ω dual channel	2000W
	8Ω bridge mono	2000W
SINEWAVE POWER PER CHANNEL (RMS):	8Ω single channel	500W
	4Ω single channel	800W
	8Ω both chs. driven	400W
	4Ω both chs. driven	600W

DX 1000A

DX 2000

DX 3000



Hill Audio • P.O. Box 2344 Fort Worth, TX 76113
Ph. (817) 336-5114 Fax: (817) 870-1271

Circle (29) on Rapid Facts Card

TRANSFORMERS, AUDIO

Alphaton Elektroakustik
Altec Lansing Corp.
Audio Teknology Inc.
AUDISAR



Bauer Communications, Inc.
FSR Inc.
Jensen Transformers, Inc.
Lake People
Layered Audio
Neutrik USA, Inc.
Opamp Labs, Inc.
Panasonic Pro Audio/Ramsa
Peavey Electronics Corp.
Audio Media Research Div.
Plitron Mfg. Inc.
Pro Co Sound
Protech Audio Corp.

Reichenbach Engineering Co., Inc.
Sescom, Inc.



Shure Brothers Inc.
Spectra Sonics/Spectra Sound
Toroid Corp. of Maryland
Whirlwind, Inc.

VIDEO EQUIPMENT, ALL

Apex Machine Co.



AutoPatch Div. of XN Technologies, Inc.

Canare
Dynair Electronics
Ediflex Systems
ESE
Fast Forward Video
For.A Corp. of America
FSR Inc.
FutureVideo Products, Inc.
Grass Valley Group
HEDCO
Horita
JVC Professional Products Co.
King Instrument Corp.
Klark-Teknik
Leitch Inc.
MAC Cassettes
Mark of the Unicorn Inc.



Marshall Electronics

Nady Systems, Inc.
ODME-Optical Disc Mfg.
Equipment
Panasonic Communications & Systems Co.
Pinc Link Inc.
Plasmec Systems Ltd.
Ram Broadcast Systems Inc.
Research Technology International
Roldex Industries
R-Tec Systems
S.E.M. Co.
Sharp Electronics Corp.
LCD Products Div.
Sony Business & Professional Group
Soundtrax Recording
Target Technology Inc
Technical Service Specialists Inc.
Tek Media Supply Co.
Tektronix Television Div.
Tobin Cinema Systems
21st Century Ltd.

TRADE ASSOCIATIONS

American Federation of Musicians
1501 Broadway, Suite 600
New York, NY 10036
212-869-1330
Fax 212-764-6134

Acoustical Society of America
c/o American Institute of Physics
335 E. 45th St.
New York, NY 10017
212-661-9404
Fax 516-349-7669

American Society of Composers, Authors and Publishers (ASCAP)
One Lincoln Plaza
New York, NY 10023
212-595-3050
Fax 212-274-9064

66 Music Square West
Nashville, TN 37203
615-320-1211
Fax 615-327-0314

6430 Sunset Blvd., Suite 200
Hollywood, CA 90028
213-466-7681
Fax 213-466-6677

Association of Professional Recording Services (APRS)
2 Windsor Square
Silver Street
Reading, Berks RG1 2TH, England
0734 756218
Fax 0734 756216

Audio Engineering Society (AES)
60 E. 42nd St.
New York, NY 10165
212-661-8528
Fax 212-682-0477

Broadcast Music International (BMI)
320 W. 57th St.
New York, NY 10019
212-586-2000
Fax 212-489-2368

10 Music Square East
Nashville, TN 37203
615-291-6700
Fax 615-291-6707

8730 Sunset Blvd.
Third Floor West
Los Angeles, CA 90069
310-659-9109
Fax 310-657-6947

Canadian Recording Industry Association (CRIA)
1255 Young Street, Suite 300
Toronto, Ontario M4T 1W6 Canada
416-967-7272
Fax 416-967-9415

International MIDI Association (IMA)
5316 W. 57th St.
Los Angeles, CA 90056
310-649-MIDI
Fax 310-215-3380

MIDI Manufacturers Association (MMA)
5316 W. 57th St.
Los Angeles, CA 90056
310-649-MIDI
Fax 310-215-3380

Nashville Entertainment Association (NEA)
Box 121948
Nashville, TN 37212
615-256-4435

National Academy of Recording Arts & Sciences (NARAS)
303 N. Glenoaks Blvd., Suite 140
Burbank, CA 91502
818-843-8233
Fax 213-849-2529

National Association of Broadcasters (NAB)
1771 N St. NW
Washington, DC 20036
202-429-5300
Fax 202-429-5343

National Association of Music Merchants (NAMM)
5140 Avenida Encinas
Carlsbad, CA 92008
619-438-8001
Fax 619-438-7327

National Sound & Communications Association (NSCA)
10400 Roberts Road
Palos Hills, IL 60465
708-598-7070
Fax 708-598-4888

Recording Industry Association of America
1020 19th St. N.W., Suite 200
Washington, DC 20036
202-775-0101
202-775-7253

Society of Motion Picture & Television Engineers (SMPTE)
595 W. Hartsdale Ave.
White Plains, NY 10607
914-761-1100
Fax 914-761-3115

Society of Professional Audio Recording Services (SPARS)
4300 10th Ave. North
Lake Worth, FL 33461
407-641-6648
Fax 407-642-8263



THE CDI-4815 PHANTOM II VTR EMULATOR

Interface your audio tape deck to a video editor using the Phantom II to emulate a VTR. The Phantom II can emulate a VPR-3 or a BVU-800 and control many parallel audio and video transports.

The Phantom II has a high-speed time code reader and tach input plus all parallel control lines. With the proper cable, your audio tape recorder can be tied directly to your video editing system, giving you increased audio capability.

Your VO-5850 can also be controlled directly by the Phantom II, making it appear to the editor as a BVU or VPR-3.

Both protocols are available in the Phantom II and are switch-selectable — no software to change — you get both versions. The Phantom is a universal controller and needs only the correct interface cable to control a different machine.

- Sony and Ampex protocols resident
- NTSC and PAL operation
- Automatic transport calibration
- Direct interface to the VO-5850

Price: \$1,495.

FOR THE FIRST TIME:



LOW, FACTORY DIRECT PRICING FROM CIPHER DIGITAL.



cipher digital, inc.
5350 PARTNERS COURT PO BOX 170
FREDERICK, MD 21701
TOLL FREE 1-800-331-9066
(301) 695-0200 FAX (301) 694-5152



THE CDI-5000 SOFTOUCH II AUDIO EDIT/CONTROLLER

The Softouch II makes audio-for-video editing easy by giving you disk storage, a CRT display, and cue-tone output. All this at a much lower price than other edit/controllers.

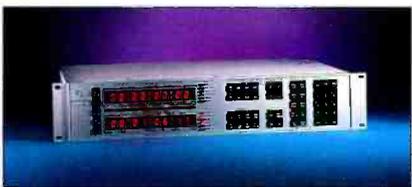
With the Softouch II, you can control up to four machines, using the Phantom II to interface to ATRs and VTRs. You can even tie in a CDI-750 for full time code and event control right from the keyboard.

The Softouch II also comes with a 3.5" disk drive to store your edit data, making it easy to go back later and make changes. Compare all the features of the Softouch II to other edit/controllers and you'll see the difference.

- 16 SoftKeys for building user routines
- Master assignable from keyboard
- 3.5" Disk Drive
- Menu driven set for transports
- fully-adjustable cue tone output
- Preview edits before recording

Price: \$3,295.

3 YEAR WARRANTY ON ALL PRODUCTS



THE CDI-750 GENERATOR/ READER/EVENT CONTROLLER

The CDI-750 combines a full-function time code generator with a hi-speed reader in a single package. The reader and generator function independently giving you the flexibility normally found only in separate units.

The 750 also has a 16 output Event Controller. Each output is configurable for pulsed or continuous operation. Front panel LEDs indicate activity for each event channel, and programming is displayed on the character inserter as well as the front panel.

The character inserter displays Time Code, and/or User Bits in selectable size, position, and background. It will also display the entire list of Event Outputs and configurations.

Serial control of the CDI-750 is possible through an RS-232 interface. All functions of the Generator, Reader, and Event Controller are accessible through the control port.

- Reader, Generator, Character Inserter, Event Controller in a single package
- Reader and Generator operate independently and simultaneously

- Momentary and Continuous JAM modes
- Internal Crystal or external video reference
- 16 Event Outputs
- Character inserter with selectable size and background
- Time-of-day clock
- Reads 1/30th to 80x play speed

Price: \$2,650.

**CALL TODAY
FOR OUR
MONTHLY SPECIAL!**

ORDER NOW: 1-800-331-9066



THE CDI-825 SONY-TO-LTC CONVERTER

Dub from your HI-8 and take the time code with you. The CDI-825 connects to the Sony EVO-9800 via the 9 pin RS-422 control port and outputs longitudinal time code taken from the serial data. Using the 825 allows you to recover the time code when you dub to another format.

The CDI-825 operates in 2 modes: stand-alone mode, or monitor mode. In stand-alone, the 825 requests time code information from the deck each frame and outputs the data in LTC form. In monitor mode, the 825 is inserted between the deck and a controlling device.

- Automatic mode selection
- Contains no sodium
- Bi-directional

Price: \$495.



THE CDI-1000 VTC READER/TRANSLATOR

Read VTC or LTC with the same unit. The CDI-1000 automatically selects LTC or VTC inputs — you determine the hierarchy. It even updates from touch or control track in the absence of time code.

In addition to the front panel LED display and full-function character inserter, the CDI-1000 outputs longitudinal time code for use by editors or for dubbing.

- 1 frame compensation for on-time display
- Reads line 10-21 (NTSC) or 7-22 (PAL)
- User or automatic line selection
- Flexible character inserter
- RS-232 output
- Parallel output available

Price: \$1,495.



THE CDI-1200 TIME CODE READER

The CDI-1200 is Cipher's newest Longitudinal Time Code Reader. It reads from 1/30th to 50x play speed and has a front panel LED display plus a character inserter for video burn-in.

An RS-232 output is now standard equipment on the 1200, and outputs the time code stream as ASCII data. It can also interface to a standard printer for logging purposes.

The 1200 offers selectable size and position of the video window, plus the ability to display Time Code, User bits or both. The 1200 operates at all standard frame rates.

- Re-shaped time code output
- Wide range, bi-directional reader
- Tach/Control Track input
- RS-232 output
- Optional BCD output

Price: \$1,295.



THE CDI-1400 TIME CODE GENERATOR

Generate SMPTE or EBU Time Code at 30, 29.97, 25 or 24 FPS with the CDI-1400. Also generate time code in forward or reverse at normal or double speed.

The 1400 has a JAM function which allows you to read time code and generate new code in either CONTINUOUS, or MOMENTARY modes. Allows you to repair damaged time code or even offset new time code from the original time code.

- Generates 30, 30 Drop Frame, 25, and 24 frame code
- Generates in forward or reverse
- Momentary and Continuous JAM modes
- JAM Time Code to User Bits
- Reference to external video or internal crystal

Price: \$1,295.



FOR ORDERS & INFORMATION

800-331-9066

FAX:

301-694-5152



cipher digital, inc.

5350 PARTNERS COURT, P.O. BOX 170
FREDERICK, MD 21701
TOLL-FREE 1-800-331-9066
(301) 695-0200 FAX: (301) 694-5152



ADDITIONAL ITEMS

CDI-4825 Shadowpad-Mini Controller for Shadow synchronizers	485.00
CDI-4835 Shadowpad-Maxi Controller for Shadow synchronizers	695.00
CDI-5002P Softouch II System package (1 CDI-5000P and 2 CDI-4815's)	6,495.00
CDI-5003P Softouch II System package (1 CDI-5000P and 3 CDI-4815's)	7,795.00
CDI-5004P Softouch II System package (1 CDI-5000P and 4 CDI-4815's)	9,095.00

(System packages include RS-232 cables and transport cable allowance of 175.00)

Transport Interface Cables - Audio

3502 AEG M20	160.00
3507 AKAI MG1214 (4800 only)	160.00
3507 AKAI MG14D	160.00
3207 AMPEX ATR 100/104/102	275.00
3211 AMPEX MM 1100/MM 1200	275.00
3503 FOSTEX E2,E4,E8 (FREQUENCY)	175.00
3372 MITSUBISHI X800	175.00
3501 MITSUBISHI X850	175.00
3505 MITSUBISHI X86	175.00
3220 OTARI MTR 10C MTR 12	195.00
3209 OTARI MTR 90	210.00
3228 OTARI MTR 90-2	175.00
3248 OTARI MX 5050 MK III Version 2	175.00
3363 OTARI MX 5050 MK III Version 3	195.00
3237 OTARI MX 7800	175.00
3420 OTARI MX 70 MTR-10 II/MTR-12 II/DTR900	175.00
3500 OTARI MTR-20/MX-80/MX-55	175.00
3208 SONY/MCI JH 110/JH 16/JH 24	175.00
3229 SONY/MCI JH 110B/JH 110C	195.00
3370 SONY PCM-3324	625.00
3506 SONY APR-5000/PCM3102/3202	160.00
3504 SOUNDRAFT SATURN	160.00
3201 STUDER A 80 VU MK II/III Frequency	195.00
3202 STUDER A 80 VU MK II/III Voltage	195.00
3350 STUDER A 810	260.00
3378 STUDER A 800 MK III	225.00
3515 STUDER A 820	175.00
3341 TASCAM/TEAC 42,44,48,52,58	195.00
3206 TASCAM/TEAC 85-16	250.00
3446 TASCAM/TEAC MS-16/388 STUDIO 8/ATR 60	195.00
3523 TASCAM/TEAC TSR-8/BR20T	195.00

Transport Interface Cables - Video

3340 AMPEX VPR-28/VPR-80/VPR-6 (4800)	325.00
3314 JVC 8200/JVC 6600/JVC 5500 (4800 Master only)	225.00
3351 JVC 8250/6650/5550/8600 (CR850U MASTER)	195.00
3357 JVC 50 Series Y Cable	395.00
3327 PANASONIC NV 9600/AU 700 (4800 Master only)	195.00
3508 PANASONIC AU-650	225.00
3365A SONY BVU 800 BVW 10/40	225.00
3366 SONY BVH 2000 (4800 Master)	195.00
3518 SONY VO 5850/5800 (for 4815)	215.00
3364A SONY VO 5850/5800 (for 4800)	900.00
3304 SONY VO 5600/2860/2260 (4800 Master only)	175.00

MANUFACTURERS ADDRESSES



AB International Electronics

1830-6 Vernon St.
Roseville, CA 95678
916-783-7800

Ac-Cetera, Inc.

3120 Banksville Road
Pittsburgh, PA 15216
412-344-1520
800-537-3491

Accurate Sound Corp.

3475-A Edison Way
Menlo Park, CA 94025
415-365-2843

ACE Sound & Lighting

P.O. Box 1183
Bellmawr, NJ 08099
609-456-2774

ACO Pacific Inc.

2604 Read Ave
Belmont, CA 94002
415-595-8588

Acoustech Corp.

306 Maple Ridge, Unit 2
Ann Arbor, MI 48103
313-663-7013

Acoustic Systems

P.O. Box 3610
Austin, TX 78764
512-444-1961
800-749-1460

Acoustical Physics Labs

3877 Foxford Drive
Doraville, GA 30340
404-934-9217

Acoustics Design Group

30 Pewley Hill
Guildford, Surrey, England GU1 35N
44-483-503681

ADA Amplification Systems

7303-D Edgewater Drive
Oakland, CA 94621
415-632-1323
800-241-8888

Adams-Smith

34 Tower St.
Hudson, MA 01749
508-562-3801

Adamson Acoustic Design Corp.

850 Brock Road, Suite 1
Pickering, Ont., Canada L1W 1Z8
416-420-6279

ADC Telecommunications

4900 West 78th St.
Minneapolis, MN 55435
612-938-8080
800-366-3891

AEA-Audio Engineering Associates

1029 N. Allen Ave.
Pasadena, CA 91104
818-798-9127

Aerco

P.O. Box 18093
Austin, TX 78760
512-451-5874

Aesthetic Engineering

175 Duane St.
New York, NY 10013
212-925-7049

Aircraft Music Library

77 N. Washington St.
Boston, MA 02114
617-367-4962
800-343-2514

AIWA America, Inc.

800 Corporate Drive
Mahwah, NJ 07430-2048
201-512-3600
800-BUY-AIWA

Akai Professional/IMC

1316 E. Lancaster
Fort Worth, TX 76102
817-336-5114

AKG Acoustics Inc.

1525 Alvarado St.
San Leandro, CA 94577
510-351-3500
800-243-7885

Alesis Corp.

3630 Holdrege Ave.
Los Angeles, CA 90016
213-467-8000

Aligned Audio Inc.

151 22nd St.
Brooklyn, NY 11232
718-788-6969
800-869-6561

Alpha Audio/Acoustical Solutions Inc.

P.O. Box 5403
Richmond, VA 23220
804-358-3852
800-782-5742

Alphaton Elektroakustik

Fischbacher St. 27
D-6233 Kelkheim, Germany
49-6185-74032

Altec Lansing Corp.

P.O. Box 26105
Oklahoma City, OK 73126-0105
405-324-5311

Amber Electro Design

Div. of Coreco Inc.
6969 Trans-Canada Highway, Suite 113
St. Laurent, Que., Canada H4T 1V8
514-333-8748
800-361-3697

Amek Systems & Controls Ltd.

New Islington Mill
Regent Trading Estate
Oldfield Road
Salford, England M5 4SX
44-61-834-6747

Amek/TAC US Operations

10815 Burbank Blvd.
North Hollywood, CA 91601
818-508-9788

American Helix Technology Corp.

1857 Colonial Village Lane
Lancaster, PA 17601
717-392-7840

American Recorder Technology

P.O. Box 3592
Simi Valley, CA 93063
805-527-9580
800-777-9580

Ampex Recording Media Corp.

401 Broadway M/S 3A-01
Redwood City, CA 94063
415-367-3809

AMS Industries Inc

7 Parklawn Drive
Bethel, CT 06801
203-792-4997

AMX Corp.

12056 Forestgate Drive
Dallas, TX 75243
214-644-3048
800-222-0193

Analog Devices, Inc.

One Technology Way
Norwood, MA 02062-9106
617-329-4700

Anchor Audio, Inc.

913 West 223rd St.
Torrance, CA 90502
213-533-5984

Anderson Graphics

458 N. 300 W.
Salt Lake City, UT 84103
801-531-0306
800-955-5273

ANT Telecommunications Inc.

205 Perry Parkway
Gaithersburg, MD 20877
301-670-9777

Anvil Cases/(Subsidiary of Zero Corp.)

P.O. Box 1202
La Puente, CA 91749
818-968-4100
800-359-2684

Apex Machine Co.

3000 N.E. 12th Terrace
Fort Lauderdale, FL 33334
305-566-2739

Aphex Systems Ltd.

11068 Randall St.
Sun Valley, CA 91352
818-767-2929

API-Audio Products Inc.

7951 Twist Lane
Springfield, VA 22153
703-455-8188

Apogee Electronics Corp.

2103 Main St.
Santa Monica, CA 90405
213-399-2991

Apogee Sound, Inc.

1150 Industrial Ave., Suite C
Petaluma, CA 94952
707-778-8887

Apollo Masters

101 W. Lincoln St.
Banning, CA 92220
714-849-8831
800-432-4450

Applied Innovation America

PO Box 340
West Kennebunk, ME 04094
207-985-2892

AQ Design

902 Broadway, Suite 1400
New York, NY 10010
212-713-5662

The Archon Co.

7647 W. Yucca St.
Peoria, AZ 85345
602-979-4451

Arcor Broadcast Products

1821 Elmdale Ave.
Glenview, IL 60025
708-724-2820

ARCoustics, Inc.

720 Greenwich St., Suite 2C
New York, NY 10014
212-727-9645

Ariel Corp.

433 River Road
Highland Park, NJ 08904
908-249-2900

ART-Applied Research & Technology

215 Tremont St.
Rochester, NY 14608
716-436-2720

Artefx

203 Morningsun, Suite 3
Mill Valley, CA 94941
415-383-1350

ARX Systems

P.O. Box 842
Silverado, CA 92676-0842
714-649-2346

ASC/Tube Traps

P.O. Box 1189
Eugene, OR 97440
503-343-9727
800-ASC-TUBE

Ashly Audio, Inc.

100 Fernwood Ave.
Rochester, NY 14621
716-544-5191
800-828-6308

Associated Production Music

6255 Sunset Blvd., Suite 820
Hollywood, CA 90028
213-461-3211
800-543-4276

ATI-Audio Technologies, Inc.

328 W. Maple Ave.
Horsham, PA 19044
215-443-0330

Atlas/Soundolier

1859 Intertech Drive
Fenton, MO 63026
314-349-3110
800-876-3333

ATM Audio/Visual

20960 Brant Ave.
Carson, CA 90810
213-639-8282

ATM Fly-Ware, Inc.

20960 Brant Ave.
Carson, CA 90810
213-639-8282

Audio Chicago, Inc.

7206 W. Grand Ave.
Elmwood Park, IL 60635
708-456-0003

Audio Accessories, Inc.

Mill St.
Marlow, NH 03456
603-446-3335

Audio Action

4444 Lakeside Drive, Suite 340
Burbank, CA 91505
800-533-1293

Audio Analysts USA Inc.

3286 N. El Paso
Colorado Springs, CO 80907
719-632-8855

Audio Animation Inc.

6632 Central Ave. Pike
Knoxville, TN 37912
615-689-2500

Audio Cassette Duplicator Co.

12426 1/2 Ventura Blvd.
Studio City, CA 91604
818-762-2232

Audio Centron

1400 Ferguson Ave.
St. Louis, MO 63133
314-727-4512
800-727-4512

Audio Developments, Ltd.

Hall Lane, Walsall Wood
Walsall West Midlands
England WS9 9AU
44-0543-375351

Audio Digital Inc.

8500 Balboa Blvd.
Northridge, CA 91329
818-893-8411

Audio Intervisual Design

1032 N. Sycamore Ave.
Los Angeles, CA 90038
213-469-4773

Audio Kinetics UK Ltd.

Kinetic Centre, Theobald St.
Borehamwood, Herts
England WD6 4PJ
44-81-953-8118

Audio Logic

5639 S. Riley Lane
Salt Lake City, UT 84107
801-268-8400
800-453-7484

Audio Precision, Inc.

P.O. Box 2209
Beaverton, OR 97075
503-627-0832
800-231-7350

Audio Resource Honolulu

1084 Young St.
Honolulu, HI 96814
808-526-3733

Audio System Design USA Inc.

P.O. Box 4656
Chatsworth, CA 91313-4656
818-368-4642

Audio-Technica US, Inc.

1221 Commerce Drive
Stow, OH 44224
216-686-2600

Audio Teknology Inc.

7556 SW. Bridgeport Road
Portland, OR 97224
503-624-0405

Audio Visual Assistance

565 Sherwood Road
Shoreview, MN 55126
612-481-9715

AudioControl Industrial

22313 70th Ave. W.
Mountlake Terrace, WA 98043
206-775-8461

Audiolab Electronics, Inc.

5831 Rosebud Lane, Building C
Sacramento, CA 95841
916-348-0200

Audiomation Systems Ltd.

96 Dudley Road
Sudbury, MA 01776
508-443-8053

Audiomation Systems Ltd.

Rockwood House, Barn Hill, Stanley
Durham, England DH9 8AN
44-207-282880

AudioTechniques, Inc.

1600 Broadway, Suite 803
New York, NY 10019
212-586-5989

AUDISAR

P.O. Box 1561
Bellevue, WA 98009
206-454-2040

Auditronics Inc.

3750 Old Getwell Road
Memphis, TN 38118
901-362-1350

Audix Corp.

19439 SW. 90th Court
Tualatin, OR 97062
415-463-1112, 800-966-8261

Audra International

P.O. Box 38
Silverado, CA 92676
714-649-2207

Auernheimer Labs & Co.

4561 E. Florence Ave.
Fresno, CA 92725
209-442-1048

Augan Instruments BV

Wilhelmina Straat 31
6881 LH Velp, Holland
31-85-648966

Auratone Corp.

P.O. Box 180698
Coronado, CA 92178-0698
619-297-2820

Auricle Control Systems

3828 Woodliff Road
Sherman Oaks, CA 91403
818-990-8442

Australian Monitor (Pty) Ltd.

53 College St.
Gladesville, NSW 2111, Australia
61-2-816-3544

Auteri Associates, Inc.

53 Foreston Circle
Manorville, NY 11949
516-878-6421

**AutoPatch****AutoPatch Div. of XN Technologies, Inc.**

14 Calispell
Cheney, WA 99004
509-235-2636
800-622-0246

Avalanche Effects Inc.

Box 582, Postal Station C
Toronto, Ont., Canada M6J 3R9
416-536-0409

Avalon Design

c/o Developing Technologies
1032 N. Sycamore
Los Angeles, CA 90038
213-469-4773

A/Z Associates

P.O. Box 357
Needham, MA 02192
617-444-0191, 800-441-3179

AZ-USA

1401 West 76th St.
Minneapolis, MN 55423
612-861-2290, 800-842-9790

**Bag End Loudspeaker Systems**

PO Box 488
Barrington, IL 60011
708-382-4550

B.A.S.E.

1631 16th St.
Santa Monica, CA 90404
213-392-3493
800-999-1343

BASF Corp. Information Systems

Crosby Drive
Bedford, MA 01730
617-271-4000
800-225-4350

Basic Measuring Instruments

335 Lakeside Drive
Foster City, CA 94404-1147
415-570-5355

**Bauer Communications, Inc.**

6887 Farmland Ave., Building 12
North Hollywood, CA 91605
818-891-9983, 800-627-7277

What you see is what you get...

For a catalog and a list of over 60
dealers in the USA and Canada, contact

Magnetic Reference Laboratory, Inc.
229 Polaris Ave., Suite 4
Mountain View, CA 94043
(415) 965-8187

The MRL Calibration Graph is your proof of the quality control that goes into every MRL Reproducer Calibration Tape. We guarantee each one to exceed the performance requirements of IEC, NAB, AES, and EIA Standards.

MRL Calibration Tapes are designed and supported by experts in magnetic recording and audio standardization... we helped write the standards. Each tape comes with detailed instructions and application notes.

The MRL catalog includes tapes for all studio applications. In addition to the usual spot-frequency tapes, we make single-tone tapes, rapid-sweep frequency tapes, wideband or 1/3rd octave-band pink random noise tapes, and difference-method azimuth-setup tapes. Most are available from stock.

Circle (31) on Rapid Facts Card

B&B Systems Inc.
28111 N. Ave. Stanford
Valencia, CA 91355
805-257-4853
800-345-1256

BBE Sound, Inc.
5500 Bolsa Ave., Suite 245
Huntington Beach, CA 92649
714-897-6766
800-233-8346

Bec Technologies, Inc.
1727 Orlando Central Parkway, #108
Orlando, FL 32809
407-855-8181

Benchmark Media Systems, Inc.
5925 Court St. Road
Syracuse, NY 13206
315-437-6300
800-262-4675

Benjamin International, Inc.
16 Newtown Plaza
Plainview, NY 11803
516-753-0700
800-572-8989

Russ Berger Design Group Inc.
4004 Beltline, Suite 110
Dallas, TX 75244
214-661-5222

Berklee College of Music
1140 Boylston St.
Boston, MA 02215
617-266-1400

beyerdynamic
5-05 Burns Ave.
Hicksville, NY 11801-2689
516-935-8000

BGW Systems Inc.
13130 Yukon Ave.
Hawthorne, CA 90250
213-973-8090
800-468-AMPS

Biamp Systems
14270 N.W. Science Park Drive
Portland, OR 97229
503-641-7287
800-826-1457

Bi-Tronics Inc.
P.O. Box 125
Tuckahoe, NY 10707
914-961-2004
800-666-0996

Black Audio Devices
P.O. Box 106
Ventura, CA 93002
805-653-5557

Bose Corp.
The Mountain
Framingham, MA 01701-9168
508-879-7330

Boston Acoustics, Inc.
70 Broadway
Lynnfield, MA 01940
617-592-9000

Boulder Amplifiers, Inc.
4850 Sterling Drive
Boulder, CO 80301
303-449-8220

Brainstorm Electronics, Inc.
1515 Manning Ave., Suite 4
Los Angeles, CA 90024
213-475-7570

Brick Audio
102 S. Porter
Elgin, IL 60120
708-742-7425

Broadcast Audio Corp.
11306 Sunco Drive
Ranch Cordova, CA 95742
916-635-1048

Broadcast Electronics, Inc.
4100 North 24th St.
Quincy, IL 62301
217-224-9600

Bruel & Kjaer A/S
Skodsborgvej 307
Naerum, Denmark 2850
45-42-800500

Bruel & Kjaer Instruments
185 Forest St.
Marlborough, MA 01752
508-481-7000

Bryco Products
13444 Moorpark St., Suite 23
Sherman Oaks, CA 91423
818-783-9133
800-9-DATRAX

Bryston/Bryston Vermont Ltd.
979 Franklin Lane
Maple Glen, PA 19002
215-628-4255
800-673-7899

BSS Audio
Div. of AKG Acoustics
1525 Alverado St.
San Leandro, CA 94577
510-635-3500
800-243-7885

BSS Audio Ltd.
Unit 5, Merlin Centre, Acrewood Way
St. Albans, England AL4 0JY
44-0727-45242



Calculated Industries
22720 Savi Ranch Parkway
Yorba Linda, CA 92687
714-921-1800
800-854-8075

Calzone Case Co.
225 Black Rock Ave.
Bridgeport, CT 06605
203-336-4406
800-243-5152

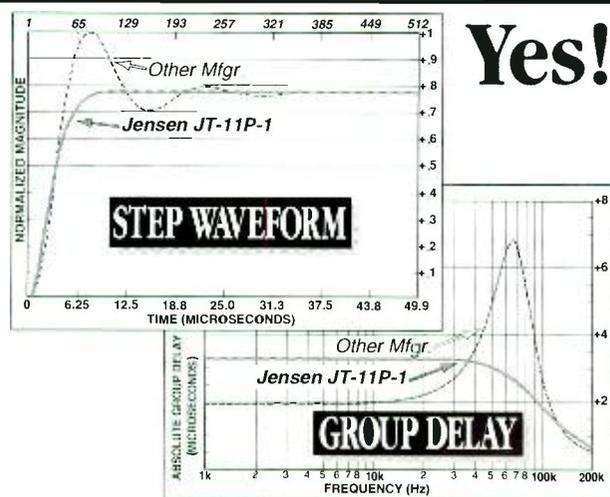
Cambridge Signal Technologies, Inc.
One Kendall Square, Building 300
Cambridge, MA 02139
617-225-2499

Canare
511 Fifth St., Suite G
San Fernando, CA 91340
818-365-2446

Capitol Production Music
6922 Hollywood Blvd., Suite 718
Hollywood, CA 90028
213-461-2701
800-421-4163

David Carroll Electronics
805 Gilman St.
Berkeley, CA 94710
510-528-8054

Do Jensen Transformers Have a Clearer Midrange and Top End?



Yes! ...but Why?

The high frequency rolloff of a Jensen Transformer is computer-optimized to fit the Bessel Low Pass Filter response. This produces minimum overshoot and ringing, as well as flat group delay, for best time alignment of all spectral components of the musical waveform. In other words, the harmonics arrive at exactly the same time as the fundamental frequency.

The result is a clear midrange and top end without the harsh, edgy sound which has previously characterized many transformers.

Only Jensen uses sophisticated COMTRAN optimization technology, plus ultra-high precision Swiss winders, custom alloy cores, and exhaustive, computerized quality control procedures. That's why our transformers have no midrange smear. Just pure, clean, accurate sound plus superior isolation and noise rejection.



Visitors by appointment only. Closed Fridays.

10735 Burbank Boulevard
North Hollywood, California 91601
FAX (818) 763-4574 • Phone (213) 876-0059

The World's Leading
Maker of High-Tech
Audio Transformers

Carver Corp.
20121 48th Ave. W.
Lynnwood, WA 98036
206-775-1202

Cassette Tek, Inc.
1605 Thomaston Ave.
Waterbury, CT 06704
203-757-4848

Dwight Cavendish Co.
6444 N. Ridgeway Ave.
Chicago, IL 60645
708-673-0937

CELESTION

Celestion Industries, Inc.
89 Doug Brown Way
Holliston, MA 01746
508-429-6706

Cello Ltd.
315 Peck St., Building 23
New Haven, CT 06513
203-865-1237

**Century Financial Services
Group, Ltd.**
15455 Conway Road, Suite 350
Chesterfield, MO 63017
314-537-0330
800-593-9300

Cerwin-Vega Inc.
555 E. Easy St.
Simi Valley, CA 93065
805-584-9332

Cintas VAC
P.O. Box 350390
Palm Coast, FL 32135
904-445-5545

Cipher Digital, Inc.
P.O. Box 170
Frederick, MD 21701
301-695-0200
800-331-9066

Circuit Research Labs, Inc.
2522 W. Geneva Drive
Tempe, AZ 85282
602-438-0888
800-535-7648

**Clarity
Nelson Lane**
Garrison, NY 10524
914-424-4071

Clear-Com Intercom Systems
945 Camelia St.
Berkeley, CA 94710
415-527-6666

Cliff Electronics
9821 Whithorn Drive
Houston, TX 77095
713-855-6685

CMX Corp.
2230 Martin Ave.
Santa Clara, CA 95050
800-932-3400

Coda Music Software
1401 East 79th St.
Bloomington, MN 55425-1126
612-854-1288
800-843-2066

COLOSSUS: By The Numbers
P.O. Box 8359
Incline Village, NV 89450-8359
702-831-4459

Community Light & Sound, Inc.
333 E. Fifth St.
Chester, PA 19013
215-876-3400
800-523-4934

CompuSonic Corp.
744 San Antonio Road, Suite 4
Palo Alto, CA 94303
415-494-1184

Computer Dynamics
107 S. Main St.
Greer, SC 29650
803-877-8700

Computer Music Supply
382 N. Lemon Ave.
Walnut, CA 91789
714-594-5051
800-322-6434

**Concept Design Electronics
& Mfg., Inc.**
1105-A Pomeroy St.
Graham, NC 27253
919-229-6500

Connectronics Corp.
300 Long Beach Blvd.
Stratford, CT 06497
203-375-5577
800-322-2537

Cooper Industries/Belden Div.
P.O. Box 1980
Richmond, IN 47375
317-983-5200

Cooper Sound Systems
31952 Paseo de Tania
San Juan Capistrano, CA 92675
714-248-1361

Cory Instrument Products
21704 Devonshire St., Suite 274
Chatsworth, CA 91311
818-341-6357
800-552-CORY



In a world of "or equals," Oxmoor Corporation introduces the DEQ-I and DEQ-II—high-resolution, programmable equalizers that simply have no equal.

Exceptional security. Set them and walk away, because Oxmoor's sophisticated system is more than just an easily removed front panel.

Comprehensive control. Both the DEQ-I and DEQ-II feature 29 constant-Q, minimum-phase, 1/3 octave combining filters, plus sweepable second-order low- and high-pass filters. Adjustment of third-octave filters and output gain is in precise 1/2 db steps over a

TWO EQUALIZERS. NO EQUALS.

(±)12 dB range. Store up to eight equalization curves and other settings in non-volatile memory presets for rapid recall. The DEQ-II's large LCD display and versatile front-panel controls make programming simple, while the DEQ-I's numerical read-out assists in programming through internal controls. Rear ports allow programming either model by a PC, a Macintosh, a PA-422 compatible controller system, or another DEQ-II.

Unequaled value. An unbeatable combination of security, flexibility, and performance—all at an affordable price.



OXMOOR

Oxmoor Corporation, 2111 Parkway Office Circle, Birmingham, AL 35244
(205) 985-7040 Fax: (205) 985-9966

Circle (38) on Rapid Facts Card

Countryman Associates Inc.
417 Stanford Ave.
Redwood City, CA 94063
415-364-9988
800-669-1422

Court Acoustics Ltd.
831 Oakley Green Road
Windsor, Berks. England SL4 4EZ
44-628-38555

Creative Input
4029 S. Pacific Ave., Suite 5
San Pedro, CA 90731
213-548-0218

Crest Audio
150 Florence Ave.
Hawthorne, NJ 07506
201-423-1300

Crown International Inc.
P.O. Box 1000
Elkhart, IN 46515-1000
219-294-8000

Crystal Semiconductor Corp.
P.O. Box 17847
Austin, TX 78749
512-445-7222
800-888-5016

CST Mfg. & Sales Inc.
6679 Peachtree Ind'l. Blvd., Suite J
Norcross, GA 30092
404-449-4903

CT Audio Marketing Inc.
3050 SW. 14th Place, Suite 3
Boynton Beach, FL 33426
800-CTAUDIO

CTI Audio, Inc.
P.O. Box 120
Conneaut, OH 44030
216-593-1111
800-421-3161

Current Music Technology
146 Paoli Pike
Malvern, PA 19355
215-647-9426

Custom Cassette, Inc.
2124 W. Broadway
Minneapolis, MN 55411
612-529-7707
800-373-2834

The Cutting Edge Disc Mastering
P.O. Box 217
Ferndale, NY 12734
914-292-5965

dbx/Div. of AKG Acoustics Inc.
1525 Alvarado St.
San Leandro, CA 94577
510-351-3500
800-243-7885

DDA
200 Sea Lane
Farmingdale, NY 11735
516-249-3660

Delta Electronics Inc.
5730 General Washington Drive
Alexandria, VA 22312
703-354-3350
800-8-DELTA-8

**Demeter Amplification
Innovative Audio Systems**
1907 Parnell Ave.
Los Angeles, CA 90025
310-470-6426

Denecke Inc.
5417 Cahuenga, Suite B
North Hollywood, CA 91601
818-766-3525
800-426-2226

Design Acoustics
1225 Commerce Drive
Stow, OH 44224
216 686-2600

Design Direct Sound, Inc
9320 15th Ave. S., Suite C-E
Seattle, WA 98108
206-527-4371

DeWolfe Music Library
25 West 45th St.
New York, NY 10036
212-382-0220
800-221-6713

D&G Mastering
P.O. Box 175
Englishtown, NJ 07726
201-446-2411



Dago Cases
6945 Indiana Court, Suite 600
Golden, CO 80403
303-421-7912
800-342-3246

Davkore Co.
1300 Space Park Way
Mountain View, CA 94043
415-969-3030

DAX
2373 N.W. 185th, Suite 286
Hillsboro, OR 97124
503-297-5312

DB Plus Digital Services
P.O. Box 694
Lynbrook, NY 11563
516-872-2325

DB Systems
P.O. Box 460
Rindge Center, NH 03461
603-899-5121

Dreaming Digital?
Now you can have it.

This tapeless, multitrack, digital audio production center will pay for itself. Call KABA to find out how.

KABA
Research & Development

1-800-231-TAPE

24 Commercial Blvd., Novato, CA 94948 (415) 863-5041
1-800-231-TAPE FAX (415) 863-5222

Circle (39) on Rapid Facts Card

DIC Digital

222 Bridge Plaza S.
Fort Lee, NJ 07024
201-224-9344

Digidesign, Inc.

1360 Willow Road, Suite 101
Menlo Park, CA 94025
415-688-0600

Digital Audio Labs

6311 Wayzata Blvd., Suite 200
St. Louis Park, MN 55416
612-559-6104

Digital Audio Research

2 Silverglade Business Park
Leatherhead, Chessington
Surrey, England KT9 2QL
44-372-742848

Digital Brothers

1125 Victoria St., Unit C
Costa Mesa, CA 92627
714-645-9702

Digital Designs International

100 N. Quapah, Suite K
Oklahoma City, OK 73107
405-946-4500

DIGITAL
dispatch

Digital Dispatch, Inc.

P.O. Box 4426
Burbank, CA 91503
818-952-FAST, 800-446-FAST

Digital House Ltd.

101 West 57th St.
New York, NY 10019
212-333-5950

Digital Music Corp.

5312-J Derry Ave.
Agoura Hills, CA 91301
818-991-3881

Digital Process

31501 Bluff Drive
South Laguna, CA 92677
714-499-5164, 800-835-1533

DigiTech

5639 S. Riley Lane
Salt Lake City, UT 84107
801-268-8400, 800-453-7484

Disc Makers

1650 Broadway, Suite 1010
New York, NY 10019
212-265-6662

Disc Makers/Div. of Audio & Video Lab

1328 N. Fourth St.
Philadelphia, PA 19122
215-232-4140, 800-468-9353

DLC Design

24166 Haggerty Road
Farmington Hills, MI 48335
313-477-5534

Dr. T's Music Software, Inc.

100 Crescent Rd.
Needham, MA 02194
617-455-1454

DOD Electronics Corp.

5639 S. Riley Lane
Salt Lake City, UT 84107
801-268-8400, 800-453-7484

Dolby Labs, Inc.

100 Potrero Ave.
San Francisco, CA 94103-4813
415-558-0200

Doremi Labs, Inc.

4927 N. Glen Arden Ave.
Covina, CA 91724
818-966-2454

Dorough Electronics

5221 Collier Place
Woodland Hills, CA 91364
818-999-1132

D&R Electronica b.v.

Rynkade 15B
1382 GS Weesp, Holland
312940-18014

D&R
mixing consoles

D&R USA

Route 3 Box 184-A
Montgomery, TX 77356
409-588-3411

Drawmer

Charlotte St. Business Centre
Charlotte, West Yorkshire
England WF1 1UH
44-924-378669

Drawmer c/o QMI

15 Strathmore Rd.
Natick, MA 01760
508-650-9444

Duplication Equipment Brokerage

1501 W. Tufts, Suite 102
Englewood, CO 80110
303-781-1132

Duplitronics, Inc.

160 Abbott Drive
Wheeling, IL 60090
708-459-6610

DW Labs, Inc.

P.O. Box 882
Millburn, NJ 07041
201-376-8453, 800-542-2454

Dynacord

200 Sea Lane
Farmingdale, NY 11735
516-249-3660

Dynair Electronics

5275 Market St.
San Diego, CA 92114
619-263-7711, 800-854-2831

E

Ear Works

780 Frontage Road
Northfield, IL 60093
708-446-4263

East Coast MIDI Information Systems

21 September St.
Coram, NY 11727
516-928-4284

East West Communications

302 W. Ocean View Ave.
Del Mar, CA 92014
619-755-0599

EASTCO PRO
AUDIO/VIDEO CORPORATION

Eastco Pro Audio/Video Corp.

91 Haller Ave.
Buffalo, NY 14211
716-892-0768, 800-365-TAPE

Eastern Standard Productions, Inc.

26 Baxter St.
Buffalo, NY 14207
716-876-1454, 800-527-9225

EAW

One Main St.
Whitinsville, MA 01588
800-992-5013

Ediflex Systems

1225 Grand Central Ave.
Glendale, CA 91201
818-502-9100

EFXX Products Co.

22134 Romar St.
Chatsworth, CA 91311
818-341-4193
800-468-3399

El Mar Plastics

840 E. Walnut St.
Carson, CA 90746
213-327-3180

Electro-Magnetic Components

5160 Mercury Point, Suite C
San Diego, CO 92111
619-279-9110

Electro Sound, Inc.

130 Glenoaks Blvd.
Sun Valley, CA 91352
818-504-3820

Electro-Voice, Inc.

600 Cecil St.
Buchanan, MI 49107
616-695-6831

Electron Processing, Inc.

P.O. Box 68
Cedar, MI 49621
616-228-7020

Eltekon Technologies

37491 Schoolcraft Road
Livonia, MI 48150
313-462-3155
800-243-8651

E-Mu Systems Inc.

P.O. Box 660015
Scotts Valley, CA 95067-0015
408-438-1921

ENAK Microphone Repair

420 Carew Ave.
Pitman, NJ 08071
609-589-6186

ENDECO Div. of Leads Metal Products, Inc.

1125-C Brookside Ave.
Indianapolis, IN 46202-2748
317-631-7200

Ensoniq Corp.

155 Great Valley Parkway
Malvern, PA 19355
215-647-3930
800-553-5151

Enterprise Corp. of America

1200 35th St., Suite 120
West Des Moines, IA 50265
515-223-1290

ESE

142 Sierra St.
El Segundo, CA 90245
213-322-2136

Esoteric Sound

4813 Wallbank Ave.
Downers Grove, IL 60515
708-960-9137

E3MC Inc.

1620 Missile Way
Anaheim, CA 92801
714-449-7779
800-421-7071

Euphonix, Inc.

10647B Riverside Drive
North Hollywood, CA 91602-2341
818-909-9934

Europadisk, Ltd.

75 Varick St.
New York, NY 10013
212-226-4401

Eva-Tone Inc.

P.O. Box 7020-R
Clearwater, FL 34618
813-572-7000
800-EVA-TONE

Eventide, Inc.

1 Alsan Way
Little Ferry, NJ 07643
201-641-1200

Evertz Microsystems Ltd.

3465 Mainway
Burlington, Ont., Canada L7M 1A9
416-335-3700

Exchange National Funding

2425 N. Central, Expressway #241
Richardson, TX 75080-2700
800-342-2093

Eye & I Productions

930 Jungfrau Court
Milpitas, CA 95035
408-945-0139

F

Fairlight ESP Pty Ltd.

30 Bay St.
Broadway, Sydney NSW, Australia 2007
61-2-2126111

Fane Acoustics

286 Bradford Road
Batley, West Yorkshire
England WF17 5PW
0924-476431

Dave Fant Co.

113 S.W. 141st
Oklahoma City, OK 73170
405-794-6707

Fast Forward Video

18200-C W. McDermott
Irvine, CA 92714
714-852-8404
800-755-TIME

Ferrofluidics Corp.

40 Simon St.
Nashua, NH 03061-2009
603-883-9800

Fidelipac Corp.

P.O. Box 808
Moorestown, NJ 08057
609-235-3900

FirstCom/Music House/Chappell

13747 Montfort Drive, Suite 220
Dallas, TX 75240
214-934-2222
800-858-8880

First Light Video Publishing

8536 Venice Blvd.
Los Angeles, CA 90034
213-558-7880
800-777-1576

Five Towns College

Audio Recording Dept.
2165 Seaford Ave.
Seaford, NY 11783
516-783-8800

John Fluke Mfg. Co., Inc.

P.O. Box 9090
Everett, WA 98206
206-347-6100
800-443-5853

FM Acoustics of Switzerland

Tiefenhofstrasse 17
CH-8820 Wadenswil, Switzerland
41-1-780-64-44

Manufacturers Addresses

For.A Corp. of America
313 Speen St.
Natick, MA 01760
508-650-3902, 800-TBC-FORA

Formula Audio, Inc.
P.O. Box 14610
Raleigh, NC 27620-4610
919-231-3466

Fostex Corp. of America
15431 Blackburn Ave.
Norwalk, CA 90650
213-921-1112

Frazier
Route 3 Box 319
Morrilton, AR 72110-9532
501-727-5543, 800-422-7757

Frontera Electronics
1318 E. Mission Road, Suite 202
San Marcos, CA 92069
619-727-3410

FSR Inc.
244 Bergen Blvd.
West Paterson, NJ 07424
201-785-4347, 800-332-FSR1

Full Sail Recorders, Inc.
3300 University Blvd.
Winter Park, FL 32792
407-679-0100

FURMAN

Furman Sound, Inc.
30 Rich St.
Greenbrae, CA 94904
415-927-1225

Future Disc Systems
3475 Cahuenga Blvd. W.
Hollywood, CA 90068
213-876-8733

Future Sales Inc.
7126 180th Ave. N.E., Suite C-103
Redmond, WA 98052
206-861-9100

FutureVideo Products, Inc.
28 Argonaut, Suite 150
Laguna Hills, CA 92656
714-770-4416

Genelec
Tehtaantie 17
SF-74100 Iisalmi, Finland
358-77-13311

General Devices Co., Inc.
P.O. Box 39100
Indianapolis, IN 46239
800-626-9484

Gentner Communications Corp.
1825 Research Way
Salt Lake City, UT 84119
801-975-7200

Gepeo International, Inc.
2225 W. Hubbard St.
Chicago, IL 60612-1613
312-733-9555, 800-966-0069

Get Smart Protection
10 Cherry Lane
Mahopac, NY 10541
914-621-1111

Gibson Research Corp.
22991 La Cadena
Lagune Hills, CA 92653
714-830-2200, 800-736-0637



GML, Inc.
7821 Burnet Ave.
Van Nuys, CA 91405
818-781-1022

Gold Line
P.O. Box 500
West Redding, CT 06896
203-938-2588

Gotham Audio Corp.
1790 Broadway
New York, NY 10019-1412
212-765-3410

Goutam Electronics Products Ltd.
Unit 3B 6-24 Southgate Road
London, England N1 3JW
44-071-249-5306

Grass Valley Group
P.O. Box 1114
Grass Valley, CA 95945
916-478-3000



Hafler Professional Rockford Corp.
P.O. Box 1860
Tempe, AZ 85280-1860
800-366-1619 Ext

The John Hardy Co.
P.O. Box AA631
Evanston, IL 60204
708-864-8060

Harmonic Research, Inc.
193 Villanova Drive
Paramus, NJ 07652
201-652-3277

Harrison by GLW, Inc.
437 Atlas Drive
Nashville, TN 37211
615-331-8800

Hartmann & Associates
4N051 Kenwood Ave.
West Chicago, IL 60185
800-524-4528

**OUR
MACINTOSH AND IBM
SOFTWARE MAKES
POST PRODUCTION
AN EASY PRODUCTION.**

THE M&E LIBRARY

- Database application program to search and locate Production Music and Sound Effects Libraries.
- Organizes CDs, Tapes & DATs etc.
- Searches by word, category, synonym, style, catalog number or description.
- Cross Referencing easily identifies the library source, CD#, length of time and Track/Index #.

THE M&E ORGANIZER

- Controls playback of the NSM 3101-AC and SONY CDK-006 CD Changers.
- Creates an automatic transfer to the AKAI DD-1000 Optical Disk Recorder and the AMS AUDIOFILE Hard Disk Recorder.
- Multi M&E networks between all rooms.

AKAI DD-1000

Gefen Systems is now an authorized AKAI Dealer for the DD-1000. Call for a demo.

SOUND EFFECTS LIBRARIES

We have the most comprehensive list of sound effects libraries on CD for sale. In stock. Under one roof.

- BBC
- DIGIEFFECTS
- SOUND IDEAS 1000, 2000, 3000, 4000, 5000
- LUCASFILM/SOUND IDEAS
- THE HOLLYWOOD EDGE Premiere Edition, Edge Edition, Cinitrax & Super Single.
- VALENTINO
- SONIC BOON Dynamic Range, The Works
- DIMENSION
- OTHERS (call for complete list)

SOUND EFFECTS CATALOG

- The *only* comprehensive listing of all the commercially available sound effects libraries on the market to date in **one** book.
- ALPHABETIC LISTING by CATEGORY and SUB CATEGORY
- SEQUENTIAL LISTING by each CD and by each LIBRARY.

For information call:
818-884-6294
800-545-6900
FAX: **818-884-3108**



6261 VARIEL AVENUE SUITE C, WOODLAND HILLS, CA 91367



Galaxy Audio
625 E. Pawnee
Wichita, KS 67211
316-263-2852, 800-369-7768

Galaxy Design Group
625 E. Pawnee
Wichita, KS 67211
316-263-2852, 800-369-7768

Gallien-Krueger, Inc.
1355 Dell Ave.
Campbell, CA 95008
408-379-3344

Gauss
9130 Glenoaks Blvd.
Sun Valley, CA 91352
213-875-1900

Gefen Systems
6261 Variel Ave., Suite C
Woodland Hills, CA 91367
818-884-6294, 800-545-6900

Genelec c/o QMI
15 Strathmore Road
Natick, MA 01760
508-650-9444

C.D. Hart Designs

223 15th St.
Brooklyn, NY 11215
718-965-1143

HAVE, Inc.

309 Power Ave.
Hudson, NY 12534-2448
518-828-2000
800-999-HAVE

HEDCO

825K Greenbrier Circle
Chesapeake, VA 23320
804-424-0896
800-433-2648

Hill Audio Div. of IMC

P.O. Box 2344
Fort Worth, TX 76113
817-336-5114

Hi-Tech Audio Systems Inc.

325 Corey Way, Suite 112
South San Francisco, CA 94080
415-742-9166

HM Electronics, Inc.

6675 Mesa Ridge Road
San Diego, CA 92121
619-535-6060

Hollywood Edge

7060 Hollywood Blvd., Suite 700
Hollywood, CA 90028
213-466-6723
800-292-3755

Horita

P.O. Box 3993
Mission Viejo, CA 92690
714-489-0240

Hot House Professional Audio

275 Martin Ave.
Highland, NY 12528
914-691-6077

HRC Magnetics

1611 Herring
Waco, TX 76708
800-443-8457

Hush Systems

2870 Technology Drive
Rochester Hills, MI 48309
313-853-3055
800-432-7625

Hybrid Arts, Inc.

8522 National Blvd.
Culver City, CA 90232
213-841-0340

Hybrid Cases

1121-20 Lincoln Ave.
Holbrook, NY 11741
516-563-1181
800-645-1707

**IEM**

350 N. Eric Drive
Palatine, IL 60067
708-358-4622
800-227-4323

Illbruck, Inc. Sonex Acoustical Div.

3800 Washington Ave. N.
Minneapolis, MN 55412
612-521-3555
800-662-0032

InConcert

12919 Earhart Ave.
Auburn, CA 95603
916-888-0600

Innovative Electronic Designs, Inc.

9701 Taylorsville Road
Louisville, KY 40299
502-267-7436

Inovonics Inc.

1305 Fair Ave.
Santa Cruz, CA 95060
408-458-0552
800-733-0552

Institute of Audio Research

64 University Place
New York, NY 10003
212-677-7580

Intelix Corp.

5618 Odana Road
Madison, WI 53719-1208
608-273-6333

Intercity Equipment & Engineering

1652-2 Hakonegasaki Mizuho
Nishi-Tama, Tokyo 190-12, Japan
81-425-56-2550

International Electro-Magnetics, Inc.

350 N. Eric Drive, Unit B
Palatine, IL 60067
708-358-4622
800-227-4323

International Tapetronics Corp.

P.O. Box 241
Bloomington, IL 61702-0241
309-828-1381
800-447-0414

Intersonics, Inc.

3453 Commercial Ave.
Northbrook, IL 60062
708-272-1772

Interval Music Systems

12335 Santa Monica Blvd., Suite 244
Los Angeles, CA 90025
213-478-3956

IRP, A Knowles Div.

321 Bond St.
Elk Grove Village, IL 60007
708-439-3600
800-255-6993

Island Cases

1121-1 Lincoln Ave.
Holbrook, NY 11741
516-563-0633
800-343-1433

Ivie Technologies, Inc.

1366 W. Center St.
Orem, UT 84057
801-224-1800

**Jan-Al Innerprizes, Inc.**

3339 Union Pacific Ave.
Los Angeles, CA 90023
213-260-7212
800-73JAN-AL

Jasoni Electronics

3149 E. Desert Inn Road., #94
Las Vegas, NV 89121
702-791-3394

JBL Professional

8500 Balboa Blvd.
Northridge, CA 91329
818-893-8411

Jeanius Electronics

2815 Swandale Drive
San Antonio, TX 78230
512-525-0719
800-880-8776

Jensen Tools Inc.

7815 South 46th St.
Phoenix, AZ 85044
602-968-6241

Jensen Transformers, Inc.

10735 Burbank Blvd.
North Hollywood, CA 91601
213-876-0059

JL COOPER ELECTRONICS**JLCooper Electronics**

13478 Beach Ave.
Marina Del Rey, CA 90292
213-306-4131

The Joiner-Rose Group, Inc.

4125 Centurion Way
Dallas, TX 75244
214-392-7800

The Russ Jones Marketing Group

17700 Raymer St., Suite 1001
Northridge, CA 91325
818-993-4091

Josephson Engineering

3729 Corkerhill Way
San Jose, CA 95121
408-238-6062

JRF Magnetic Sciences Inc.

249 Kennedy Road
Greendell, NJ 07839
201-579-5773

Juice Goose c/o Whitenton

Industries Inc.
7320 Ashcroft, Suite 104
Houston, TX 77081
713-772-1404

JVC Professional Products Co.

41 Slater Drive
Elmwood Park, NJ 07407
201-794-3900
800-582-5825

**KABA Research & Development**

24 Commercial Blvd., Suite E
Novato, CA 94949-9959
415-883-5041
800-231-TAPE

Kalglo Electronic Co. Inc.

6584 Ruch Road
Bethlehem, PA 18017-9359
215-837-0700

Kawai America Corp.

2055 E. University Drive
Compton, CA 90220
213-631-1771
800-421-2177

Kenwood USA

2201 E. Dominguez St.
Long Beach, CA 90801
213-761-8295

Killer Tracks

6528 Sunset Blvd.
Hollywood, CA 90028
213-957-4455
800-877-0078

Kimber Kable

2752 South 1900 West
Ogden, UT 84401
801-621-5530

King Instrument Corp.

P.O. Box 1070
Westboro, MA 01581
508-366-9141

Klarity Cassette, Inc.

Post Office Square, Main St.
Waterville, ME 04901
207-873-3911
800-458-6405

Klark-Teknik

200 Sea Lane
Farmingdale, NY 11735
516-249-3660
800-249-3660

Klark-Teknik

Walter Nash Road
Kidderminster, Worcs.
England DY11 7HJ
44-562-741515

Klipsch & Associates, Inc.

P.O. Box 688
Hope, AR 71801
501-777-6751

Korg Canada

378 Isabay
St. Laurent, Que., Canada H4T 1W1
514-738-3000

Korg USA Inc.

89 Frost St.
Westbury, NY 11590
516-333-9100
800-645-3188

KRK Monitoring Systems

16462 Gothard St., Unit D
Huntington Beach, CA 92647
714-841-1600

Kurzweil Music Systems

13336 Alondra Blvd.
Cerritos, CA 90701
213-926-3200

**Lake People**

Haidel Moosweg 52
D-7750 Konstanz, Fed. Rep. Germany
49-7531-73678

Lakeside Associates, Inc.

9272 Jeronimo Road, Suite 123C
Irvine, CA 92718
714-770-6601

Landmark Financial Group

800 E. Campbell Road, Suite 199
Richardson, TX 75081
214-644-3297

Larking Audio

15 Cam Square
Hitchin, Herts, England SG4 0TZ
44-462-422466

Layered Audio

3718 Oxford Blvd.
St. Louis, MO 63143
314-644-0404

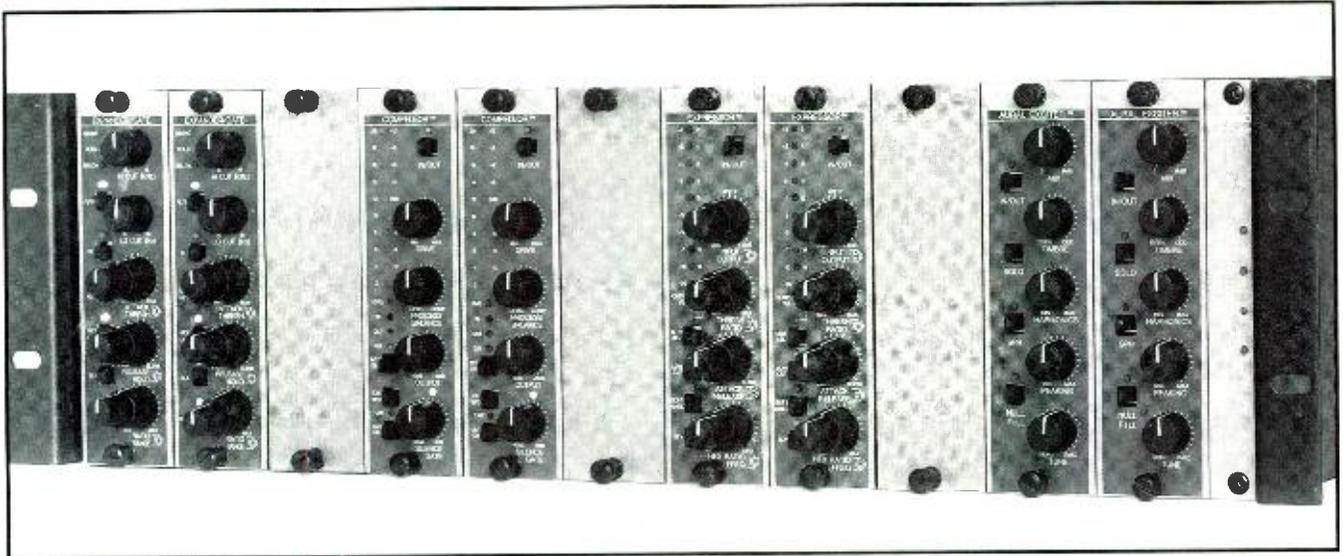
Lease Financing Consultants, Inc.

7059 Taylor Road
Clinton, OH 44216
216-882-6503

Lectrosomics Inc.

P.O. Box 15900
Rio Rancho, NM 87174
505-892-4501
800-821-1121

Space Saver...



Aphex Modular System

Once hooked on Aphex signal processing, people have an insatiable appetite for more and more. Space then may become a problem. That is why we shrank four of our best ... the Aural Exciter[®], Compellor[®], Expressor[™] and Expander/Gate.

These modules feature all the processing power and performance of their standalone counterparts including our servo-balanced inputs and outputs. You can fit 11 modules in our 3RU Model 9000 rack* (or nine in the compatible dbx 900 Series rack).

Here's a brief rundown on these powerful tools:

- ❖ Aural Exciter- the signal enhancer that increases intelligibility, presence, clarity, and detail.
- ❖ Compellor - the "intelligent" compressor/leveler that controls levels as if a mixer were riding faders.
- ❖ Expressor - a full featured compressor/limiter that lets you tailor the sound your way.
- ❖ Expander/Gate - simply the world's finest gate, no one ever met our \$10,000 challenge to find a better one!
- ❖ And, more to come.

See your nearest professional audio dealer to rack up more processing power per inch than ever before.

Circle (21) on Rapid Facts Card

APHEX
SYSTEMS

11068 Randall Street • Sun Valley, CA 91352 • (818) 767-2929 • FAX (818) 767-2641

Aphex is proudly American ... 100% owned, engineered and manufactured in the U.S.A.

* Unpowered, separate power supply available

Leitch Inc.
825-K Greenbrier Circle
Chesapeake, VA 23320
804-424-7920
800-231-9673

Leonardo Software
10378 Holman Ave.
Los Angeles, CA 90024
213-277-5161

Lester Audio Labs
1122 N. Windomere Ave.
Dallas, TX 75208
214-943-7300

Lexicon Inc.
2323 Cornith Ave.
West Los Angeles, CA 90064
213-479-2771

Lexicon Inc.
100 Beaver St.
Waltham, MA 02154
617-736-0300

Lindos Electronics
Saddlemakers Lane, Melton
Woodbridge, Suffolk, England IP12 1PP
44-394-380307

Littlite/CAE Inc.
P.O. Box 430
Hamburg, MI 48139
313-231-9373

J.S. LoBianco Enterprises
36 Park Ave.
Oyster Bay, NY 11771
516-922-3958

Lone Wolf
1509 Aviation Blvd.
Redondo Beach, CA 90278
213-379-2036

Loran Cassettes & Audio Products
10-48 Clark St.
Warren, PA 16365
814-723-8600
800-633-0455

LT Sound
7980 LT Parkway
Lithonia, GA 30058
404-482-4724

LTM Corp. of America
11646 Pendleton St.
Sun Valley, CA 91352
818-767-1313
800-762-4291



MAC Cassettes
3965 Investment Lane, Suite A6
Riviera Beach, FL 33404
407-845-2722
407-845-2811

Mackie Designs
16130 Woodinville-Redmond Road N.E.,
Suite 2
Woodinville, WA 98072
206-487-4333
800-258-6883

Macpherson Loudspeakers
3351 Remy Drive
Lansing, MI 48906
517-321-0700

Madisound Speaker Components
P.O. Box 4283
Madison, WI 53711
608-831-3433

Magna-Tech Electronic Co., Inc.
630 Ninth Ave.
New York, NY 10036
212-586-7240

Magnefax International, Inc.
Route 1, Box 764
Rogers, AR 72756
501-925-1818

Magnetic Music
647 W. Orange Grove
Pomona, CA 91768
714-865-0407

Magnetic Reference Lab
229 Polariss Ave., Suite 4
Mountain View, CA 94043
415-965-8187

Mag-Tags, Inc.
2531 W. Tharpe St.
Tallahassee, FL 32303
904-386-5611
800-677-TAGS

Mag-Zon Inc.
16134 Wyandotte St.
Van Nuys, CA 91406
818-989-2059

Majestic Duplicating Service
1208 W. Isabel St.
Burbank, CA 91506
818-843-1806
800-423-7779

Manhattan Production Music
311 West 43rd St., Suite 702
New York, NY 10036
212-333-5766
800-227-1954

Mann Endless Cassette Industries
P.O. Box 1347
San Francisco, CA 94101
415-221-2000

Mark of the Unicorn Inc.
222 Third St.
Cambridge, MA 02142
617-576-2760

Markertek Video Supply
145 Ulster Ave.
Saugerties, NY 12477
914-246-3036
800-522-2025

Marshall Electronic
P.O. Box 438
Brooklandville, MD 21022
301-484-2220



Marshall Electronics
P.O. Box 2027
Culver City, CA 90230
213-390-6608
800-800-6608

Martin Audio, Ltd.
19 Lincoln Road, Cressex Ind. Estate
High Wycombe, Bucks, England
44-494-35312

Maselec c/o QMI
15 Strathmore Road
Natick, MA 01760
508-650-9444

**The Mastering Lab
Studio Products**
6031 Hollywood Blvd.
Los Angeles, CA 90028
213-466-3528

MC Production
55 Flatbush Ave.
Brooklyn, NY 11217
800-225-0256

MCM Electronics
650 Congress Park Drive
Centerville, OH 45459
513-434-0031
800-543-4330

McCauley Sound, Inc.
13608 94th Ave. E.
Puyallup, WA 98373
206-848-0363

McCurdy Radio Industries Ltd.
108 Carnforth Road
Toronto, Ont., Canada M4A 2L4
416-751-6262
212-772-0719

Media Technologies, Ltd.
2201-K Fifth Ave.
Ronkonkoma, NY 11779
516-467-1200

Meyer Sound Labs, Inc.
2832 San Pablo Ave.
Berkeley, CA 94702
415-486-1166

Micro Express
1801 Carnegie Ave.
Santa Ana, CA 92705
714-852-1400
800-642-7621

MicroAudio Inc.
3025 SW. Canby St.
Portland, OR 97219
503-293-1782
800-445-1248

Micron Audio Products, Ltd.
210 Westlake Drive
Valhalla, NY 10595
914-761-6520

Microtech International
158 Commerce St.
East Haven, CT 06512
203-468-6223
800-626-4276

Midas
200 Sea Lane
Farmingdale, NY 11735
516-249-3660



Middle Atlantic Products
P.O. Box 29
Riverdale, NJ 07457
201-839-1011

Midiland
P.O. Box 161
Ashland, OR 97520
503-488-1023
800-888-MIDI

Midisoft Corp.
P.O. Box 1000
Bellevue, WA 98009
206-881-7176

Milab
200 Sea Lane
Farmingdale, NY 11735
516-249-3660

Modular Sound
1380 S. Pennsylvania Ave., Suite C
Morrisville, PA 19067
215-736-8727

Modular Wood Systems Inc.
736 12th St.
Wilmette, IL 60091
708-251-6401
800-772-4101

Monster Cable
28664 Mandelieu Drive
Murrieta, CA 92562
714-677-4668

Monster Cable Products
274 Wattis Way
South San Francisco, CA 94080-6761
415-871-6000

Morenz Development Corp.
2790 Loker Ave. W., Suite 105
Carlsbad, CA 92008
619-431-8077
800-878-7967

MorTronics
2567 38th Ave.
Oakland, CA 94601
800-962-1962

Mosses & Mitchell
Weydon Lane
Farnham, Surrey, England GU9 8QL
44-252-721236
44-252-734444

Motionworks Ltd.
The Step Centre
Osney Mead, Oxford, England OX2 0ES
44-865-794577

Motorola, Inc.
6501 William Cannon Drive W.
Austin, TX 78735-8598
512-891-2030

MTU-Micro Technology Unlimited
156 Wind Chime Court
Raleigh, NC 27619
919-870-0344

MTX
555 W. Lamm Road
Freeport, IL 61032
815-232-2000
800-223-5266

Music Box Productions
1006 N.W. 51st St.
Vancouver, WA 98663
503-283-2981

MUSICODE
5575 Baltimore Drive, Suite 105-127
La Mesa, CA 92042
619-469-7194
800-448-3601

Musicon
27501 S.W. 95th Ave.
Wilsonville, OR 97070
503-682-8668
800-637-9493

Musonix, Ltd.
2537 N. Ontario St.
Burbank, CA 91504
818-845-9622



Nady Systems, Inc.
6701 Bay St.
Emeryville, CA 94608
415-652-2411

Nakamichi America Corp.
19701 S. Vermont Ave.
Torrance, CA 90502
213-538-8150
800-421-2313

Natel Engineering Co., Inc.
4550 Runway K St.
Simi Valley, CA 93063
805-581-3950

National Foam
6311 Desoto, Suite A
Woodland Hills, CA 91367
213-650-8906
800-247-4497

NDG Phoenix Inc.
1595 Spring Hill Road
Vienna, VA 22182
703-749-0416

Nemal Electronics International
12240 N.E. 14th Ave.
North Miami, FL 33161
305-899-0900
800-522-2253

Neotek Corp.
1154 W. Belmont Ave.
Chicago, IL 60657
312-929-6699

Network Technologies Inc.
7322 Pettibone Rd.
Chagrin Falls, OH 44022
216-543-1646
800-742-8324

Neutrik USA, Inc.
195-S3 Lehigh Ave.
Lakewood, NJ 08701
908-901-9488

Neve
7 Parklawn Drive
Bethel, CT 06801
203-744-6230

New Ear Productions
1033 Euclid Ave.
Syracuse, NY 13210-2661
315-425-0048

New England Digital Corp.
Rivermill Commercial Center
Lebanon, NH 03766
603-448-5870

New York Technical Support, Ltd.
35 Hardscrabble Hill
Chappaqua, NY 10514
914-238-4171

Northeastern Communications Concepts
P.O. Box 1853
New York, NY 10017
212-972-1320

Northstar Productions
13716 Southeast Ramona
Portland, OR 97236
503-760-7777

Numark Electronics
503 Raritan Center
Edison, NJ 08837
201-235-3222

NVision, Inc.
P.O. Box 1658
Nevada City, CA 95959
916-265-1000



OAP Audio
310 Peachtree Industrial
Buford, GA 30518
404-945-1028

ODME-Optical Disc Mfg. Equipment
Rekvelde 15
Veldhoven, Holland
31-40-543815

Omnimount Systems
10840 Vanowen St.
North Hollywood, CA 91605
818-766-9000

Omnimusic
52 Main St.
Port Washington, NY 11050
516-883-0121
800-828-6664

Opamp Labs, Inc.
1033 N. Sycamore Ave.
Los Angeles, CA 90038
213-934-3566

Opcode Systems, Inc.
3641 Haven Drive, Suite A
Menlo Park, CA 94025-1010
415-369-8131

Optical Disc Corp.
12150 Mora Drive
Santa Fe Springs, CA 90670
213-946-3050

Optical Disc Mastering
8000 Corporate Center Drive
Charlotte, NC 28226
704-542-5303

Optical Media International
180 Knowles Drive
Los Gatos, CA 95030
408-376-3511

Optim Audio
733 Canal St.
Stamford, CT 06902
203-324-2224

OptoDigital Design, Inc.
8920 Business Park Drive, Suite 135
Austin, TX 78759
512-338-4707

Optronics Technology
P.O. Box 3239
Ashland, OR 97520
503-488-5040

Orban, Div. of AKG Acoustics, Inc.
1525 Alvarado St.
San Leandro, CA 94577
510-351-3500
800-243-7885

Otari Corp.
378 Vintage Park Drive
Foster City, CA 94404
415-341-5900

OWI Inc.
1160 Mahalo Place
Compton, CA 90220
213-638-4732
800-638-1694

Oxmoor Corp.
2111 Parkway Office Circle
Birmingham, AL 35244
205-985-7040



Pacific Recorders & Eng. Corp.
2070 Palmas Drive
Carlsbad, CA 92009
619-438-3911

AEC 1000

New Technology for Compensation of Loudspeaker/Room Interaction, delivering Incredibly Accurate Tonal Balance and Stereo Imaging.

- ★ Automatically measures direct sound and room reflections.
- ★ Adaptively designs precise FIR digital filter.
- ★ Compensates separately for early response and delayed reflections.
- ★ Makes up to 100 corrections within an octave band.

SigTech
Cambridge Signal Technologies, Inc.

Cambridge Signal Technologies

One Kendall Square
Cambridge, MA 02139
(617) 225-2499

Circle (40) on Rapid Facts Card

CIPHER DIGITAL LOWERS PRICES!

FACTORY DIRECT

Prices reduced on Time Code, Synchronizer, and Controller products.



CDI-1000 VITC Reader/Translator

- Reads VITC, LTC, and TACH and outputs LTC
- Bi-directional
- Also Functions as Time Code Reader

\$1,495



CDI-1200 Time Code Reader

- Wide-band, bi-directional reader
- Re-shaped time code output
- Character inserter plus front panel display

\$1,295



CDI-1400 Time Code Generator

- Generates and Jams fwd or reverse time code
- Generates Code at 2 X Play-speed
- External or Internal Reference

\$1,295



cipher digital, inc.
5350 PARTNERS COURT, P.O. BOX 170
FREDERICK, MD 21701

800-331-9066

Call or write for full line catalog



Circle (41) on Rapid Facts Card

Packburn Electronics Inc.

P.O. Box 335
Dewitt, NY 13214-0335
315-472-5644

Paktec Automation

28130 Ave. Crocker, Unit 308
Valencia, CA 91355
805-257-7616

Paltex Editing Systems

2752 Walnut Ave.
Tustin, CA 92680
714-838-8833

Panasonic Communications & Systems Co.

One Panasonic Way
Secaucus, NJ 07094
800-553-7222

Panasonic Pro Audio/Ramsa

6550 Katella Ave.
Cypress, CA 90630
714-373-7277

Passport Designs Inc.

625 Miramontes, Suite 103
Half Moon Bay, CA 94019
415-726-0280

Pearl Microphone Lab

P.O. Box 98
265 01 Astorp, Sweden
46-42-58810

Pearson Technologies

4671 Hickory Bend Drive
Acworth, GA 30101
404-591-2484

Peavey Electronics Corp.

Audio Media Research Div.
P.O. Box 2898
Meridian, MS 39302-2898
601-483-5365

Penn Fabrication NJ Inc.

P.O. Box 506
Hawthorne, NJ 07506
201-423-4404

Penn Fabrication Inc.

5316 Kazuko Court
Moorpark, CA 93021
805-529-4962

Penny & Giles, Inc.

2716 Ocean Park Blvd., Suite 1005
Santa Monica, CA 90405-5209
310-393-0014
310-452-4995

Perma Power Electronics Inc.

5601 W. Howard Ave.
Chicago, IL 60648
312-763-0763
800-323-4255

Pinc Link Inc.

11684 Ventura Blvd., Suite 946
Studio City, CA 91604
818-760-4539

Plasmec Systems Ltd.

Weydon Lane
Farnham, Surrey, England GU9 8QL
44-252-721236
44-252-7344444

Plitron Mfg. Inc.

250 Wildcat Road
Downsview, Ont., Canada M3J 2N5
416-667-9914

Polydax Speaker Corp.

10 Upton Drive
Wilmington, MA 01887
508-658-0700

PolyQuick

1243 Rand Road
Des Plaines, IL 60016
708-390-7744

Popper Stoppers

P.O. Box 6010-658
Sherman Oaks, CA 91413
818-788-3635
800-446-7677

Porkpie Productions

P. O. Box 176
Colchester, CT 06415-0176
203-347-3865
203-666-1541

Portland Instrument

6120 San Fernando Road
Glendale, CA 91201
818-500-0137

Posthorn Recordings/Schoeps

142 West 26th St.
New York, NY 10001
212-242-3737

Precision Monolithics Inc.

SSM Audio Products
1500 Space Park Drive
Santa Clara, CA 95052-8020
800-843-1515

Pristine Systems, Inc.

8489 W. Third, Suite I017
Los Angeles, CA 90048
213-852-0737

Pro Co Sound

135 E. Kalamazoo Ave.
Kalamazoo, MI 49007
800-253-7360

The Producers Sound Effects Library

8033 Sunset Blvd., Suite 289
Hollywood, CA 90046
818-707-3397
800-826-3397

Professional Audio Systems

660 N Twin Oaks Valley Road #101
San Marcos, CA 92069
619-591-0360

Promusic Inc.

6555 N.W. Ninth Ave., Suite 303
Fort Lauderdale, FL 33309
305-776-2070
800-322-7879

Prosonus

11126 Weddington St.
North Hollywood, CA 91601
818-766-5221
800-999-6191

Protech Audio Corp.

Flowerfield Building 1
St. James, NY 11780
516-584-5855

Publison S.A.

18. Ave. DeLa Republique
Bagnole, France 93170
33-1 4360 8464

Pulizzi Engineering Inc.

3260 S. Susan St.
Santa Ana, CA 92704
714-540-4229

Pygmy Computer Systems, Inc.

13501 SW. 128th St., Suite 204
Miami, FL 33186
305-253-1212

**QSC Audio Products, Inc.**

1926 Placentia Ave.
Costa Mesa, CA 92627
714-645-2540
800-854-4079

Quad Eight Electronics, Inc.

27771 Ave. Hopkins
Valencia, CA 91355
805-295-1324

Quadim Corp.

31542 Rustic Oak Drive
Westlake Village, CA 91361
818-706-8843

Quested, A Div. of AKG Acoustics

1525 Alvarado St.
San Leandro, CA 94577
510-351-3500
800-243-7885

Quested Monitoring Systems

59 Maltings Place, Bagleys Lane
London, England SW62BX
44-71-731-7434

**Rack Attack**

3249 Cahuenga Blvd. W.
Hollywood, CA 90068
213-851-9000

Radian Audio Engineering Inc.

4520 Eisenhower Circle
Anaheim, CA 92807
714-693-9277

Rainbow Sound & Lighting Rainbow Recording Studios Inc.

2322 South 64th Ave.
Omaha, NE 68106
402-554-0123

Ram Broadcast Systems Inc.

P.O. Box 3100
Barrington, IL 60011-3100
800-779-7575

Rane Corp.

10802 47th Ave. W.
Mukilteo, WA 98275
206-355-6000

Bill Rase Productions, Inc.

955 Venture Court
Sacramento, CA 95825
916-929-9181

Ray Pro Sound

1902 Wharton Road
Jenkintown, PA 19046
215-885-8885

RCA Test Tapes

108 Monticello Road
Weaverville, NC 28787
704-658-2067

Re-An Products USA

16 Passaic Ave., Building 9
Fairfield, NJ 07006
201-808-0063
800-828-7266

The Recording Workshop

455 Massievile Road
Chillicothe, OH 45601
614-663-2544
800-848-9900

Reichenbach Engineering Co., Inc.

6887 Farndale Ave., Building 10
North Hollywood, CA 91605
818-765-6040

Renkus-Heinz, Inc.

17191 Armstrong Ave.
Irvine, CA 92714
714-250-0166

Rent FX

2500 North 77th Court
Elmwood Park, IL 60635
708-452-5594

Research Technology International

4700 Chase Ave.
Lincolnwood, IL 60646
708-677-3000
800-323-7520

REVOX

ReVox

1425 Elm Hill Pike
Nashville, TN 37210
615-254-5651

Roger Rhodes Music, Ltd.

Box 1550, Radio City Station
New York, NY 10101
212-245-5045

Richmond Sound Design Ltd.

1234 W. Sixth Ave.
Vancouver, BC, Canada V6H 1A5
604-732-1234

RIX Softworks, Inc.

18552 MacArthur Blvd., Suite 200
Irvine, CA 92715
714-476-8266
800-345-9059

RMS-Results in the Management of Sound

230 S. Orange
Glendale, CA 91204
818-545-7561

Rocktron Corp.

2870 Technology Drive
Rochester Hills, MI 48309
313-853-3055
800-432-ROCK

ROH Div. of Portland Instrument

6120 San Fernando Road
Glendale, CA 91201
818-500-0137

Roland Pro Audio/Video Group

7200 Dominion Circle
Los Angeles, CA 90040
213-685-5141

Roldex Industries

9980-A Glenoaks Blvd.
Sun Valley, CA 91352
818-504-6294

Rolls Corp.

6995 South 400 West
Midvale, UT 84047
801-562-5628

Rosati Acoustics

3 Hanson St.
Boston, MA 02118
617-423-5546

Ross Systems/Div. of IMC

P.O. Box 2344
Fort Worth, TX 76113
817-336-5114

RPG Diffuser Systems, Inc.

12003 Wimbledon St.
Largo, MD 20772
301-249-5647

RPS Communications

3 Bittersweet Court
Centerport, NY 11721
516-754-3300

RSP Technologies

2870 Technology Drive
Rochester Hills, MI 48309
313-853-3055
800-432-7625

R-Tec Systems

1032 N. Sweetzer Ave., Suite 212
West Hollywood, CA 90069
213-650-5256

RTS Systems
1100 W. Chestnut St.
Burbank, CA 91506
818-566-6700

The Rubber Dubbers
626 Justin Ave.
Glendale, CA 91201
818-241-5600

203-434-9190

Sescom, Inc.
2100 Ward Drive
Henderson, NV 89015
702-565-3400

Shape Inc.
P.O. Box 366
Biddeford, ME 04005
207-282-6155, 800-462-4165

Sharp Electronics Corp.
LCD Products Div.
Sharp Plaza, M/S One
Mahwah, NJ 07430-2135
201-529-8731

Sharp Electronics Corp.
Professional Products Div.
Sharp Plaza
Mahwah, NJ 07430
201-529-8662

Shure HTS
222 Hartrey Ave.
Evanston, IL 60202-3696
708-866-2510

Signet
4701 Hudson Drive
Stow, OH 44224
216-688-9400

SHURE®

Shure Brothers Inc.
222 Hartrey Ave.
Evanston, IL 60202-3696
708-866-2200

SigTech

Cambridge Signal Technologies, Inc.

SigTech Cambridge Signal Technologies, Inc.



Saje
222/226 Rue de Rosny
93100 Montreuil, France
33 1 48707560

Saki Magnetics, Inc.
26600 Agoura Road
Calabasas, CA 91302
818-880-4054

Samson Technologies Corp.
262 Duffy Ave.
Hicksville, NY 11801
516-932-3810, 800-328-2882

Sanken c/o Developing Technologies
1032 N. Sycamore
Los Angeles, CA 90038
213-469-4773

Scantek, Inc.
916 Gist Ave.
Silver Spring, MD 20910
301-495-7738

Schmid Telecom AG
Binzstrasse 35
Zurich, Switzerland CH-8045

Schoeps GmbH
Postbox 410970
D-7500 Karlsruhe, Germany
49-721-943200

Scientific Design Software
P.O. Box 3248
Chatsworth, CA 91313
818-718-1201

SCS/Sound Code Systems
P.O. Box 2198
Garden Grove, CA 92642
714-554-0903

SCV Audio c/o QMI
15 Strathmore Road
Natick, MA 01760
508-650-9444

SeamTech
P.O. Box 77394
San Francisco, CA 94107
415-543-0170

Selco Products Co.
7580 Stage Road
Buena Park, CA 90621
213-921-0681, 800-257-3527

Sellmark USA
Audiomation Systems Ltd.
96 Dudley Road
Sudbury, MA 01776
508-443-8053

S.E.M. Co.
#17-636 Clyde Ave.
West Vancouver, BC, Canada V7T 1E1
604-922-0526
2300002

Sencore Inc.
3200 Sencore Drive
Sioux Falls, SD 57107
605-339-0100, 800-SENCORE

Sennheiser Electronic Corp.
P.O. Box 987
Old Lyme, CT 06371



PROFESSIONAL

INNOVATIVE SOLUTIONS FOR PROFESSIONALS

- DESIGN • SALES
- SERVICE • PARTS
- INNOVATIVE
- FINANCING PLANS
- RUSH DELIVERY



AKAI A.D.A.M. 12-TRACK DIGITAL AUDIO RECORDER

A FEW EXAMPLES:

- SOUNDTRACS II48/ERIC/CMX/MRX STUDIO CONSOLES • AMEK MAGNUM/TAC SCORPION II/BULLET CONSOLES • C.A.D. 16 TO 48 INPUT, DC SERVO POWERED MIXING CONSOLES • EVENTIDE H-3000S & B • T.C. ELECTRONICS DEALER FEATURING THE T.C. 2290 • AKG ADR 68K DIGITAL REVERB • ROLAND R-880 DIGITAL REVERB & E660 DIGITAL E.Q. • CONDENSOR MICS BY JOSEPHSON, AKG, CROWN, NEUMANN, SONY & SENNHEISER • APPLE MACINTOSH COMPUTERS (NY'S ONLY APPLE MUSIC DEALER) • SOUNDTOOLS DIGITAL AUDIO RECORDING & EDITING SYSTEM • TASCAM MSR-24 1" 24-TRACK BREAKTHROUGH PRICE RECORDER • MONITORS BY TANNOY, EV, JBL & UREI

NEW YORKS LARGEST PRO AUDIO INVENTORY

- PROCESSORS BY EVENTIDE, LEXICON, DBX, SYMETRIX, VALLEY PEOPLE, T.C. ELECTRONICS & AUDIO LOGIC • D.A.T. FEATURING SONY, TASCAM, CASIO AND OTHER LEADING PROFESSIONAL BRANDS • SAMPLERS FEATURING THE AKAIS-1000 & S1000HD, THE ROLAND S-770, S-550, & S-330, THE EMU EMAX II, EIII & PROTEUS • INTRODUCING D.A.R. DIGITAL WORKSTATION—POSTPRODUCTION POWER TOOL.



TASCAM ATR-80 JAPAN'S FINEST 2" 24-TRACK

723 SEVENTH AVENUE (THIRD FLOOR)
NEW YORK CITY • 10036 • (212) 719-2640

Circle (42) on Rapid Facts Card



DCODE™ Studio Time Code Readers

Reads SMPTE/EBU longitudinal time code with large 4" LEDs

DENECKE, INC.
5417-B Cahuenga Boulevard
N. Hollywood, California 91601
(818) 766-3525 or FAX (818) 766-0269

TC-MAXI \$1,650
8 digit

TC-MAXI \$1,550
6 digit

TC-MIX \$1,450
4 digit



Circle (43) on Rapid Facts Card

One Kendall Square, Building 300
Cambridge, MA 02139
617-225-2499

Simon Systems Engineering, Inc.
707 Clear Haven Drive
Agoura Hills, CA 91301
818-707-9980

Simpson Electric
853 Dundee Ave.
Elgin, IL 60120
708-697-2260

Singular Solutions
959 E. Colorado Blvd.
Pasadena, CA 91106
818-792-9567

Skotel Corp.
3730 Matte Blvd.
Brossard, Que., Canada J4Y 2Z2
514-444-2088
800-361-4999

Skylabs Inc.
2200 Bridgeway
Sausalito, CA 94965
415-332-6100

Smithline Audio Inc.
7766 Burnet Ave.
Van Nuys, CA 91405
818-786-7324

Sola, A Unit of General Signal
1717 Busse Road
Elk Grove Village, IL 60007
708-439-2800
800-289-7652

Solid Sound, Inc.
P.O. Box 7611
Ann Arbor, MI 48107
313-662-0669
800-365-0669

Solid State Logic
320 West 46th St., 2nd Floor
New York, NY 10036
212-315-1111

Solid State Logic
Begbroke
Oxford, England OX5 1RU
44-0865-842300

Sonic Boon Digital Sound Effects
2453 E. Virginia Ave.
Anaheim, CA 92806
714-535-3344
800-735-4366

Sonic Image Ltd.
1100 Wheaton Oaks Court
Wheaton, IL 60187
708-653-4544

Sonic Perceptions, Inc.
28 Knight St.
Norwalk, CT 06851
203-838-2650

Sonic Systems Inc.
737 Canal St., Building 23B
Stamford, CT 06902
203-356-1136

Sonosax S.A.
Au Glapin
1162 St-Prex, Switzerland
41-21-806-02-02

Sontec Electronics
Audio Drive
Goldbond, VA 24094
703-626-7256

Sony Business & Professional Group
3 Paragon Drive
Montvale, NJ 07645
201-358-4197

Sony Magnetic Products Co.
Professional Tape Div.
Sony Drive, MD 3-2
Park Ridge, NJ 07656-8038
201-930-6080

SoperSound Music Library
P.O. Box 498
Palo Alto, CA 94301
415-321-4022
800-227-9980

Sound Art Productions
134 Brentford Road
Winnipeg, Man., Canada R2M 5B9
204-253-9420

Sound Concepts Inc.
27 Newell Road
Brookline, MA 02146
617-566-0110

Sound Ideas
105 W. Beaver Creek Road, Suite 4
Richmond Hill, Ont., Canada L4B 1C6
416-886-5000

Sound Quest Inc.
66 Broadway Ave., Suite 1207
Toronto, Ont., Canada M4P 1T6
416-322-6434
800-387-8720

Sound Technology, Inc.
1400 Dell Ave.
Campbell, CA 95008
408-378-6540
800-359-5080 Sal

Soundcraft Electronics
Cranbourne Road
Cranbourne Industrial Estate
Potters Bar, Herts, England EN6 3JN
44-0707-66500

Soundcraft Electronics
8500 Balboa Blvd.
Northridge, CA 91329
818-893-4351

Soundcraftsmen Inc.
2200 S. Ritchey
Santa Ana, CA 92705
714-556-6191

Soundmaster USA Inc.
900-A Hampshire Road
Westlake Village, CA 91361
805-494-4545

Soundscape
P.O. Box 3511
Champaign, IL 61821
217-352-1342

Soundtracker Pty. Ltd.
169 Bank St.
South Melbourne, Victoria
Australia 3205
61-3-690-8488

Soundtracs PLC
c/o Samson Technologies
P.O. Box 9068
Hicksville, NY 11802-9068
516-952-3810

Soundtrax Recording
Route 2, Box 435
Johnson City, TN 37601
615-926-3986
800-554-7767

Southern Thunder Sound Inc.
2814 Washington Ave. N.
Minneapolis, MN 55411
612-521-2356

Spatial Sound Inc.
743 Center Blvd.
Fairfax, CA 94930
415-457-8114

SpeakEasy
46 Cook St.
Newton, MA 02158
617-969-1460

Spectra Sonics/Spectra Sound
3750 Airport Road
Ogden, UT 84405
801-392-7531

Spectral Synthesis Inc.
18568 142nd Ave. N.E.
Woodinville, WA 98072
206-487-2931

Spectrum Design & Development
6265 Hamilton Blvd.
Allentown, PA 18106
215-395-6934

Spectrum Signal Processing
301-3700 Gilmore Way
Burnaby, BC, Canada V5G 5M1
604-438-7266
800-663-8986

Sprague Magnetics, Inc.
15720 Stagg St.
Van Nuys, CA 91406
818-994-6602
800-553-8712

Standard Tape Lab, Inc.
26120 Eden Landing Road, Suite 5
Hayward, CA 94545
415-786-3546

Stanton Magnetics Inc.
101 Sunnyside Blvd.
Plainview, NY 11803
516-349-0235

Star Case Mfg. Co., Inc.
648 Superior Ave.
Munster, IN 46321
219-922-4440

State of The Art Electronik
43-1010 Polytek St.
Ottawa, Ont., Canada K1J 9J3
613-745-2003

Steinberg/Jones Corp.
17700 Raymer St., Suite 1001
Northridge, CA 91325
818-993-4091

Stellavox Digital Audio Technologies, Lt
Puits-Godet 20
CH-2000 Neuchatel, Switzerland
41 38 244 400

The Sterling Group
16120 Haven Ave.
Orland Hills, IL 60477
708-349-6456

Stewart Electronics
11460 Sunrise Gold Circle
Rancho Cordova, CA 95742
916-635-3011

Storeel Corp.
3337 W. Hospital Ave.
Atlanta, GA 30341
404-458-3280

STUDER

Studer
1425 Elm Hill Pike
Nashville, TN 37210
615-254-5651

Studer Eastern Regional Offices
161 Avenue of the Americas, Suite 901
New York, NY 10013
212-255-4462

Studer Western Regional Offices
16102 Hart St.
Van Nuys, CA 91046
818-780-4234

Studio Magnetics Co., Inc.
12 Long Island Ave.
Holtsville, NY 11742
516-289-3400
800-874-2202

Studio Technologies, Inc.
5520 W. Touhy Ave.
Skokie, IL 60077
708-676-9177

Studiomaster Inc.
3941 Miraloma Ave.
Anaheim, CA 92807
714-524-2227

Subliminal Studios
P.O. Box 2596
New York, NY 10185
212-620-0799

Summit Audio Inc.
644 N. Santa Cruz Ave., Suite 2
Los Gatos, CA 95030
408-395-2448

Sunkyoung Magnetic/America, Inc.
4041 Via Oro Ave.
Long Beach, CA 90810
213-830-6000

Swire Magnetics Co. Professional Products Div.
301 E. Alondra Blvd.
Gardena, CA 90248
213-515-0494
800-421-2448

Swire Magnetics Co. Professional Products Div.
6701-I Northpark Blvd.
Charlotte, NC 28216
704-597-7145
800-777-7947

Switchraft, Inc.
5555 N. Elston Ave.
Chicago, IL 60630
312-792-2700

Symetrix Inc.
4211 24th Ave. W.
Seattle, WA 98199
206-282-2555
800-288-8855

Synergetic Services, Inc.
1926 N.E. 151st St.
North Miami Beach, FL 33162
305-947-7372

Sypha Digital Audio Consultants
216-A Gipsy Road
London, England SE27 9RB
44-81-761-1042

System-Y by Yellowtec GmbH
Konrad-Adenauer-Platz 6-8
Langenfeld, West Germany W-4018
49-2173-72627

Systems Development Group
18601 Darnestown Road
Poolesville, MD 20837
301-972-7355
800-658-8975

TAD-Technical Audio Devices Pioneer Electronics USA Inc.
2265 East 220th St.
Long Beach, CA 90810
213-816-0415

Manufacturers Addresses

Talent Associates Narrations, Inc.

935 Pennsylvania, Suite 10
Denver, CO 80203-3159
303-830-2228

Tannoy-T.G.I. North America

300 Gage Ave., Unit 1
Kitchener, Ont., Canada N2M 2C8
519-745-1158

Tape Automation America

P.O. Box 340
West Kennebunk, ME 04094
207-985-2892
800-388-2892

Target Technology Inc

P.O. Box 609
Penn Valley, CA 95946
916-639-2102

TASCAM

7733 Telegraph Road
Montebello, CA 90640
213-726-0303

Tatum Labs, Inc.

3917 Research Park Drive, Suite B-1
Ann Arbor, MI 48108
313-663-8810

Tayo Industries

7510 Sunset Blvd., Suite 537
Hollywood, CA 90046
818-765-0782

t.c. electronic A/S

Grimhojvej 3
DK-8220 Brabrand, Denmark
45 86 26 2800

t.c. electronic

t.c. electronic

717 Lakefield Road, Suite C
Westlake Village, CA 91361
805-373-1828

TDK Electronics Corp.

1411 West 190th St.
Gardena, CA 90248
213-538-5259

Teccon Enterprises Ltd.

P.O. Box 38
San Dimas, CA 91773
714-599-0817

Technical Projects Inc.

P.O. Box 3247
Barrington, IL 60010
708-381-5350
800-562-5872

Technical Service Specialists Inc.

Route 9N, Box 540
Rhinebeck, NY 12572
914-876-3999

Technics

One Panasonic Way, IC-7
Secaucus, NJ 07094
201-348-7000

Techron Div. of Crown Int'l.

1718 W. Mishawaka Road
Elkhart, IN 46517
219-294-8300

Tek Media Supply Co.

4700 Chase Ave.
Lincolnwood, IL 60616
708-677-3000
800-323-7520

Tektronix Television Div.

P.O. Box 500 M/S 58-699
Beaverton, OR 97077
503-627-1555

Telex Communications, Inc.

9600 Aldrich Ave. S.
Minneapolis, MN 55420
612-884-4051

Tentel Corp.

4475 Golden Foothill Parkway
El Dorado Hills, CA 95630
916-939-4005
800-538-6894

THAT Corp.

15 Strathmore Road
Natick, MA 01760
508-653-6335

Thermodyne International

20850 S. Alameda St.
Long Beach, CA 90810
213-603-1976

3M Professional Audio/Video & Specialty Products Div.

3M Center, 223-5N-01
St. Paul, MN 55144
612-736-9568

3M Sound Products

3M Center, 551-1W-01
St. Paul, MN 55144-1000
612-733-0571

360 Systems

18740 Oxnard St.
Tarzana, CA 91356
818-342-3127

TimeLine Vista Inc.

2401 Dogwood Way
Vista, CA 92083
619-727-3300

Titus Technological Labs

77 Krieger Lane
Glastonbury, CT 06033
203-633-5472

TOA Electronics, Inc.

601 Gateway Blvd., Suite 300
South San Francisco, CA 94080
415-588-2538

Tobin Cinema Systems

3227 49th Ave. SW.
Seattle, WA 98116
206-932-3444

Top Notch Audio (TNA Case Co.)

P.O. Box 403
Highlands, NJ 07732
201-493-3979

Toroid Corp. of Maryland

608 Naylor Mill Road
Salisbury, MD 21801
301-860-0300
800-274-5793

Total Audio Concepts Ltd.

Unit 17, Bar Lane Ind. Park
Bassford, Nottingham
England NG0 0HU
44-602-783306

A Total Effect

P.O. Box 18401
Encino, CA 91416-8401
818-345-4404

The Toy Specialists

333 West 52nd St.
New York, NY 10019
212-333-2206
800-445-3330

Transtector Systems

P.O. Box 300
Hayden Lake, ID 83835-0300
208-772-8515
800-829-2901

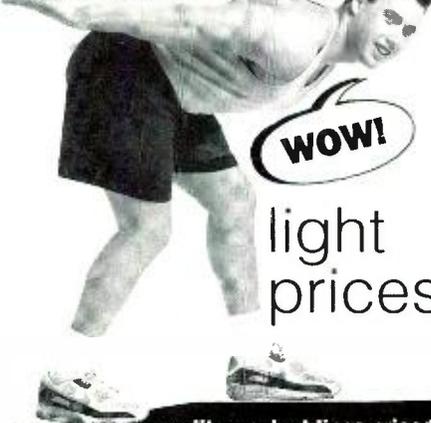
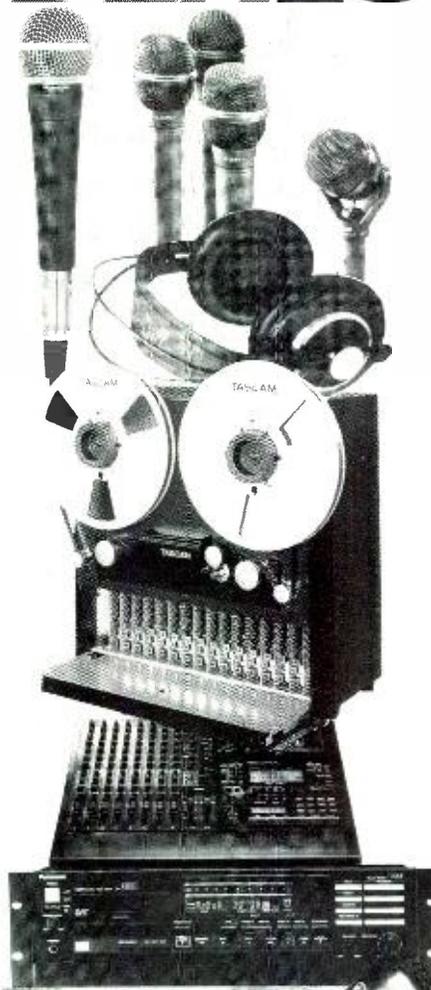
Trax Audio & Music

332 Martin Lane
Salt Lake City, UT 84107
801-262-3601

Trend Textiles Inc.

9509 Foster
Schiller Park, IL 60176
708-678-8300

HEAVY DEALS



light
prices

Over 300 top quality product lines priced
so low we promised not to print them!

1-800-356-5844

AUDIO • VIDEO • LIGHTS

FULL COMPASS

Consultation: 608/271-1100

5618 Odana Rd., Madison, WI 53719

Circle (34) on Rapid Facts Card

December 1991 R • E • P 63

TRF Production Music Libraries
1619 Broadway
New York, NY 10019
212-265-8090
800-899-MUSIC

Trident Audio USA
2720 Monterey St., Suite 403
Torrance, CA 90503
213-533-8900

Tripp Lite
500 N. Orleans
Chicago, IL 60610-4188
312-329-1777

Trouper Industries, Ltd.
20960 Brant Ave.
Carson, CA 90810
213-639-8281

True Image Audio
349 W. Felicita Ave., Suite 122
Escondido, CA 92025
619-480-8961

Tube Tech
1600 Broadway
New York, NY 10019
212-586-5958

Turbosound Div. of AKG Acoustics
1525 Alvarado St.
San Leandro, CA 94577
415-351-3500
914-635-9000 Sales

Turtle Beach Systems Inc.
P.O. Box 5074
York, PA 17405
717-843-6916

21st Century Ltd.
2002 N. Beachwood Drive
Los Angeles, CA 90068
213-465-2002

27th Dimension Inc.
P.O. Box 1149
Okeechobee, FL 34974-1149
813-763-4107
800-634-0091



Uher of America
7067 Vineland Ave.
North Hollywood, CA 91605
818-764-1120

Ultimate Support
2506 Zurich Drive
Fort Collins, CO 80524
303-493-4488
800-525-5628

UltraAnalog, Inc.
47747 Warm Springs Blvd.
Fremont, CA 94539
415-657-2227

Underground Sound, Inc.
1802 Grand Ave.
Nashville, TN 37212
615-321-4081
615-664-7368

UREI
8500 Balboa Blvd.
Northridge, CA 91329
818-893-8411

U.S. Audio
100 Boxart St.
Rochester, NY 14612
716-663-8820

U.S.A. Audio
Route 1, Box 70-B
East Bernstadt, KY 40729
606-843-7425



Vacuum Tube Logic
4774 Murietta St., Suites 9&10
Chino, CA 91710
714-627-5944

Valentino, Inc.
151 West 46th St.
New York, NY 10036
212-869-5210
800-223-6278

Valley International, Inc.
616 Bradley Court
Franklin, TN 37064
615-370-5901

Vetronix Inc.
1600 West 13th St.
Lexington, NE 68850
308-324-4600
800-445-0007

Vega Wireless
9900 Baldwin Place
El Monte, CA 91734
818-442-0782
800-877-1771

Velodyne Acoustics
1746 Junction Ave.
San Jose, CA 95112
408-436-0688
800-835-6396

Versadyne International, Inc.
504-D Vandell Way
Campbell, CA 90058
408-379-0900
800-367-6909

VGS California Nigel B Furniture Div.
10655 Vanowen St.
Burbank, CA 91505
818-769-9824

Video Accessory Corp.
2450 Central Ave., Suite H
Boulder, CO 80301
303-443-4950
800-821-0426

Video Design Pro
749 Carver Road
Las Cruces, NM 88005
505-524-8959
800-VIDCAD-6

Voice Over L.A., Inc.
1717 N. Highland Ave., Suite 620
Hollywood, CA 90028
213-463-8652



Ward-Beck Systems Ltd.
841 Progress Ave.
Scarborough, Ont., Canada M1H 2X4
416-438-6550

WaveFrame Corp.
4730 Woodson Ave., Suite 405
Sherman Oaks, CA 91423
818-981-9235

Weircliffe
2752 Walnut Ave.
Tustin, CA 92680
714-838-8833

Westlake Audio, Inc.
2696 Lavery Court, Suite 18
Newbury Park, CA 91320
805-499-3686

Wheatstone Corp.
6720 VIP Parkway
Syracuse, NY 13211
315-455-7740

Whirlwind, Inc.
100 Boxart St.
Rochester, NY 14612
716-663-8820
800-772-9997

White Instruments/Div. C Van R Inc.
1514 Ed Bluestein Blvd., Suite 108
Austin, TX 78721
512-389-3800

Williams Sound Corp.
10399 West 70th St.
Eden Prairie, MN 55344-3459
612-943-2252
800-328-6190

Winsted Corp.
10901 Hampshire Ave. S.
Minneapolis, MN 55438
612-944-8556
800-447-2257

Wireworks Corp.
380 Hillside Ave.
Hillside, NJ 07205
908-686-7400
800-MIC-WIRE

Woodworx Audio Systems
3714 Alliance Drive, Suite 303
Greensboro, NC 27407
919-855-5600

Words & Deeds Inc.
4480 Sunnycrest Drive
Los Angeles, CA 90065
213-255-2887



Xedit Corp.
218-31 97th Ave.
Queens Village, NY 11429
718-464-9400

Yamaha Corp. of America
Pro Audio Div.
6600 Orangethorpe Ave.
Buena Park, CA 90620
714-522-9011

Yeagley Productions
P.O. Box 442
Magnolia, OH 44643
216-866-5355

Yorkville Sound Inc.
4600 Witmer Industrial Estate
Niagara Falls, NY 14305
716-297-2920

Zero Music
R.R. 1 Box 132A
New Albin, IA 52160
319-544-4656

Zero Stantron Cabinets
777 Front St.
Burbank, CA 91502
818-841-1825
800-821-0019

Zoom Corp.
385 Oyster Point Blvd., Suite 7
South San Francisco, CA 94080
415-873-5885

1992 INDUSTRY EVENTS CALENDAR

Jan. 17-19
National Association of Music Merchants (NAMM), Anaheim, CA.

Feb. 7-8
Society of Motion Picture and Television Engineers (SMPTE), Winter Conference, San Francisco.

March 11-15
Frankfurt Music Messe, Frankfurt, Germany.

March 24-27
Audio Engineering Society (AES), Vienna, Austria.

April 13-16
National Association of Broadcasters (NAB), Las Vegas.

April 27-29
National Sound & Communications Association (NSCA), Anaheim, CA.

May 11-15
National Council of Acoustical Consultants (NCAC), Salt Lake City.

May 11-15
Acoustical Society of America (ASA), Salt Lake City.

June 2-5
Association of Professional Recording Studios (APRS), London.

July 8-10
Pro Audio Asia/Sound & Light Asia, Singapore.

July (dates TBA)
New Music Seminar, New York.

October 1-4
Audio Engineering Society (AES), San Francisco.

Oct. 31-Nov. 4
National Council of Acoustical Consultants (NCAC), New Orleans.

Oct. 31-Nov. 4
Acoustical Society of America (ACA), New Orleans.

Nov. 10-13
Society of Motion Picture and Television Engineers (SMPTE), Toronto.

FAX DIRECTORY

A

AB International
Electronics 916-784-1050
Ac-Cetera 412-344-0818
Accurate Sound 415-365-3057
ACE Sound &
Lighting 609-456-2774
ACO Pacific 415-591-2891
Acoustech 313-663-2877
Acoustical Physics
Labs 404-934-9217
Acoustic Systems 512-444-2282
Acoustics Design
Group 44-0483-303217
ADA Amplification
Systems 415-632-9358
Adams-Smith 508-568-0404
Adamson Acoustic
Design 416-420-0813
ADC
Telecommunications 612-946-3292
AEA-Audio Engineering
Associates 818-798-2378
AEG 516-467-1258
Aircraft Music Library 617-367-1521
AIWA America 201-512-3702
Akai/IMC 817-870-1271
AKG Acoustics 510-351-0500
Alesis 213-836-9192
Alpha Audio 804-358-9496
Alphaton
Elektroakustik 49-6195-8484
Altec Lansing 405-324-8981
Amber Electro
Design 514-333-1388
Ameek Systems &
Controls Ltd 44-61-834-0593
Ameek/TAC US
Operations 818-508-8819
American Helix
Technology 717-392-7897
American Recorder
Technology 805-527-1433
Ampex Recording
Media 415-367-4132
AMS Industries 203-730-8549
AMX Corp 214-907-2053
Analog Devices 617-821-4273
Anchor Audio 213-533-6050
Anderson Graphics 801-531-8306
ANT
Telecommunications 301-670-3992
Anvil Cases 818-968-1703
Apex Machine Co 305-563-2844
Aphex Systems Ltd 818-762-2641
API-Audio Products
Inc 703-455-4240
Apogee Electronics 213-399-7665
Apogee Sound 707-778-6923
Apollo Masters 714-849-1374
Applied Innovation
America 207-985-4917
APRS 44-734-756216
AQ Design 212-529-1944
Archon Co., The 602-878-5791
Arcor Broadcast
Products 708-724-7833
ARcooustics 212-206-7320
Ariel 908-249-2123

ART-Applied Research &
Technology 716-436-3942
Artefx 415-383-0539
ARX Systems 714-649-3064
ASC Audio Video
Corp 818-842-8945
ASC/Tube Traps 503-343-9245
Ashly Audio 716-266-4589
Associated Production
Music 213-461-9102
ATI-Audio Technologies
Inc 215-443-0394
Atlas/Soundolier 314-349-1251
ATM Audio/Visual 213-639-8284
ATM Fly-Ware 213-639-8284
Audio Accessories 603-446-7543
Audio Action 818-845-8039
Audio Analysts USA 719-632-3638
Audio Animation 615-689-7815
Audio Cassette
Duplicator Co 818-508-8077
Audio Centron 314-727-8929
AudioControl
Industrial 206-778-3166
Audio Developments
Ltd 44-0543-361051
Audio/Digital 818-893-3639
Audio Innovators 412-621-9887
Audio Intervisual
Design 213-962-2603
Audio Kinetics UK
Ltd 44-81-953-1118
Audiolab Electronics 916-348-1512
Audio Logic 801-262-4966
Audiomation Systems
Ltd 508-443-4844
Audiomation Systems
Ltd UK 44-0207-232023
Audio Precision 503-641-8906
Audio Resource
Honolulu 808-944-9089
Audio System
Design USA 818-368-9062
Audio-Technica US 216-688-3752
AudioTechniques 212-489-4936
Audio Teknology 503-624-0194
Auditronics 901-365-8629
Auidx Corp 415-463-2149
Audra International 714-649-3064
Aujan Instruments BV 31-85-644785
Auratone 619-296-8734
Auricle Control
Systems 818-990-0226
Australian Monitor
Ltd 61-2-817-4303
Auteri Associates 516-878-6421
ext. fax
AutoPatch 509-235-2646
Avalanche Effects 416-537-6853
Avalon Design 213-962-2603
A/Z Associates 617-444-0757
AZ-USA 612-861-2103

B

Bag End Loudspeaker
Systems 708-382-4551
B.A.S.E. 213-392-9271
BASF Corp. Info.
Systems 617-271-0608

Basic Measuring
Instruments 415-574-2176
Bauer
Communications 818-894-0715
B&B Systems 805-257-8065
BBE Sound 714-895-6728
Bec Technologies 407-856-7516
Benchmark Media
Systems 315-437-8119
Benjamin
International 516-753-0839
Russ Berger Design
Group 214-934-3935
Berklee College of
Music 617-247-6878
beyerdynamic 516-935-8018
BGW Systems 213-676-6713
Biamp Systems 503-626-0281
Bi-Tronics 914-961-4244
Black Audio Devices 806-653-5557
Bose 508-872-6540
Boston Acoustics 617-592-6148
Boulder Amplifiers 303-449-4806
Brainstorm
Electronics 213-329-9895
Broadcast Audio 916-638-0512
Broadcast Electronics 217-224-9607
Bruel & Kjaer
Instruments 508-485-0519
Bruel & Kjaer A/S 45-42-801-405
Bryco Products 818-783-9318
Bryston/Bryston
Vermont Ltd 215-628-2970
BSS Audio 415-351-0500
BSS Audio Ltd 44-727-452277

C

Calculated Industries 714-921-2799
Calzone Case Co 203-336-4406
Cambridge Signal
Technologies 617-225-9034
Canare Cable 818-365-0479
Capitol Production
Music 213-461-1543
Capri Digital Studios 081-8375141
David Carroll
Electronics 510-526-1982
Carver 206-778-9453
Dwight Cavendish Co 708-673-1389
Celestion Industries 508-429-2426
Cello Ltd 203-624-3679
Century Financial
Services Group 314-537-4026
Cerwin-Vega 805-583-0865
Cintas VAC 904-446-0964
Cipher Digital 301-694-5152
Circuit Research
Labs 602-438-8227
Clarity 914-424-3467
Clarity Cassette
Duplication 207-873-3924
Clear-Com Intercom
Systems 415-527-6699
Cliff Electronics 713-855-6684
CMX 408-988-2000
Coda Music Software 612-854-4631
COLOSSUS: By The
Numbers 702-831-4485

Community Light &
Sound 215-874-0190
CompuSonic 415-494-3040
Computer Dynamics 803-879-2030
Computer Music
Supply 714-594-7033
Concept Design Equip.
& Mfg 919-229-0063
Connctronics 203-375-5811
J.L. Cooper
Electronics 213-822-2252
Cooper Industries 317-983-5294
Cooper Sound
Systems 714-248-5256
Cory Instrument
Products 818-718-7488
Countryman
Associates 415-364-2794
Court Acoustics Ltd 44-628-784706
Creative Input 213-548-0116
Crest Audio 201-423-2977
Crown International 219-294-8329
Crown Magnetics 717-274-3615
Crystal
Semiconductor 512-445-7581
CST Mfg. & Sales 404-449-5013
CT Audio Marketing 407-738-0319
CTI Audio/Astatic 216-593-5395
Current Music
Technology 215-644-9426
Custom Cassette 612-529-9187
Cutting Edge Disc
Mastering, The 914-292-2313

D

Dago Cases 303-421-7916
Davkore Co 415-969-0140
DAX 503-690-0794
DB Systems 603-899-6415
dbx Professional
Products 415-351-0500
DDA 516-420-1863
Delta Electronics 703-354-0216
Demeter
Amplification 310-470-8817
Denecke 818-766-0269
Design Acoustics 216-688-3752
Design Direct Sound 206-762-8682
DeWolfe Music
Library 212-382-0220
DIC Digital 201-224-9363
Digidesign 415-327-0777
Digital Audio Labs 612-544-5573
Digital Audio
Research 44-372-743532
Digital Brothers 714-642-7249
Digital Designs Int'l 405-946-4544
Digital House Ltd 212-262-5631
Digital Music 818-991-4185
DigiTech 801-262-4966
Disc Makers 215-236-7763
Dr. T's Music
Software 617-455-1460
DOD Electronics 801-262-4966
Dolby Labs 415-863-1373
Doremi Labs 213-622-1225
Dorrrough Electronics 818-998-1507

D&R Electronica by
 Drawmer Distribution
 Ltd0924-290460
 Drawmer c/o QMI508-650-9476
 Duplication Equip
 Brokerage303-781-1277
 Duplitratics708-459-6615
 Dynacord516-420-1863
 Dynair Electronics619-264-4181

E

Eastern Acoustic Works...508-234-6158
 Eastern Standard
 Productions716-877-6395
 East West
 Communications619-793-1491
 Edge Distribution914-677-6287
 Ediflex Systems818-502-0052
 Editall914-668-0719
 EFX Products Co818-341-0520
 Electro-Magnetic
 Components619-279-5583
 Electro Sound818-504-3828
 Electro-Voice616-695-1304
 El Mar Plastics213-327-0491
 Eltekon Technologies313-462-5922
 E-Mu Systems408-438-8612
 ENAK Microphone
 Repair515-223-7749
 ENDECO317-631-7237
 Ensoniq215-647-8908
 Enterprise Corp. of
 America515-223-7749
 ESE213-322-8127
 E3MC Inc.714-449-0507
 Euphonix818-909-0803
 Europadisk Ltd212-966-0456
 Eva-Tone813-572-6214
 Eventide201-641-1640
 Evertz Microsystems
 Ltd416-335-3573
 Eye & I Productions408-945-5712

F

Fairlight ESP Pty Ltd61-2-2815503
 Fane Acoustics44-924-471799
 Dave Fant Co405-794-0519
 Fast Forward Video714-852-1226
 Ferrofluidics603-883-2308
 FirstCom/Music House/
 Chappell214-404-9656
 First Light Video
 Publishing213-558-7891
 Five Towns College516-783-0568
 John Fluke Mfg. Co206-356-5116
 FM Acoustics of
 Switzerland41-1-780-04-88
 For.A Corp of America508-651-8729
 Postex Corp. of
 America213-802-1964
 Frazier501-727-5402
 FSR201-785-3318
 Full Sail Recording407-678-0070
 Furman Sound415-927-4548
 Future Disc Systems213-876-8143
 Future Sales206-861-9119
 FutureVideo Products714-770-4667

G

Galaxy Audio316-263-0642
 Galaxy Design Group316-263-0642

Gallien-Krueger408-379-0247
 Gauss, A Mark IV Co... ..818-767-4179
 Gefen Systems818-884-3108
 Genelec358-77-12267
 Genelec c/o QMI508-650-9476
 General Devices Co317-898-2917
 Gentner Electronics801-977-0087
 Gepco International312-733-6416
 Get Smart Protection914-628-1509
 Gibson Research714-830-0300
 GML818-781-3828
 Gold Line203-938-8740
 Gotham Audio212-265-8459
 Gautam Electronics
 Products Ltd44-071-249-0252

H

Hafner Professional
 Rockford602-894-1528
 The John Hardy Co708-864-8076
 Harmonic Research201-652-3277
 Harrison by GLW615-331-8883
 C.D. Hart Designs718-965-1143
 HAVE518-828-2008
 HEDCO804-366-0522
 Hill Audio Div. of IMC817-870-1271
 Hi-Tech Audio Systems415-742-6112
 HM Electronics619-552-0139
 Hollywood Edge213-463-3972
 Hot House Professional
 Audio914-691-6822
 HRC Magnetics817-756-0082
 Hush Systems313-853-5937
 Hybrid Arts213-841-0348
 Hybrid Cases516-563-1390

I

IEM708-358-4623
 Illbruck/Sonex Div612-521-5639
 Industrial Research
 Products312-640-9607
 Innovative Electronic
 Designs502-267-9070
 Inovonics408-458-0554
 Institute of Audio
 Research212-677-6549
 Intelix608-273-5483
 Intercity Equipment &
 Engineering81-425-56-2802
 International Electro-
 Magnetics708-358-4623
 International
 Tapetratics309-828-1386
 Intersonics708-272-9324
 Interval Music Systems213-478-5791
 IRP/Knowles Div708-640-9607
 Island Cases516-563-1390
 Ivie Tech.
 A Mark IV Co801-224-7526

J

Jan-Al Innerprizes213-260-4696
 JBL Professional818-893-3639
 Jeanius Electronics512-344-3299
 Jensen Transformers818-763-4574
 JLCoooper Electronics213-822-2252
 The Joiner Rose Group214-991-3781
 The Russ Jones
 Marketing Group818-701-7452
 Josephson Engineering408-238-6022
 JRF Magnetic Sciences... ..201-579-6021

Juice Goose713-772-9124
 JVC Professional
 Products201-523-2077

K

KABA Research &
 Development415-883-5222
 Kalglo Electronic Co215-837-7978
 Kawai America213-604-6913
 Kenwood USA213-761-8246
 Killer Tracks213-957-4470
 Kimber Cable801-627-6980
 Klarity Cassette207-873-3924
 Klark-Teknik (US)516-420-1863
 Klark-Teknik (UK)44-562-745371
 Klipsch & Associates501-777-6753
 Korg USA516-333-9108
 KRK Monitoring
 Systems714-841-1600
 Kurzweil Music Systems310-404-0748

L

Lake People49-7531-74998
 Lakeside Associates714-770-6575
 Lambchops Studios602-257-8104
 Landmark Financial
 Group214-699-7893
 Larking Audio66-662-621171
 Latin Recording
 Brokerage212-874-6018
 Leitch804-424-0639
 Leonardo Software213-277-9086
 Lester Audio Labs214-941-8800
 Lexicon617-891-0340
 Lexicon Inc213-479-6279
 Lindos Electronics44-394-385156
 Littlelite/CAE313-231-1631
 J.S. LoBianco
 Enterprises516-922-6764
 Lone Wolf213-379-2496
 Lorán Cassettes &
 Audio Products818-767-1313
 LTM Corp. of America

M

Mackie Designs206-487-4337
 Macpherson
 Loudspeakers517-321-6385
 Madisound Speaker
 Components608-831-3771
 Magna-Tech Electronic
 Co212-265-3638
 Magnefax International501-925-1841
 Magnetic Music714-625-0894
 Magnetic Reference
 Lab415-965-8548
 Mag-Tags904-385-5710
 MAG-ZON818-989-2103
 Majestic Duplicating
 Service818-954-0770
 Manhattan Production
 Music212-262-0814
 Mann Endless Cassette
 Industries415-387-2425
 Mark of the Unicorn617-576-3609
 Marshall Electronic301-486-0280
 Marshall Electronics213-391-8926
 Martin Audio Ltd44-494-35312
 Maselec c/o QMI508-650-9476
 The Mastering Lab213-465-7570
 MCM Electronics513-434-6959

McCauley Sound206-841-3050
 McCurdy Radio
 Industries Ltd416-751-6455
 Media Technologies
 Ltd516-467-1258
 Mellotron Digital526-944-6356
 Meyer Sound
 Laboratories415-486-8356
 MicroAudio503-293-0562
 Micron Audio Products
 Ltd914-761-5608
 Micro Express714-852-1225
 Microtech International203-468-6466
 Micro Technology
 Unlimited919-870-7163
 Midas516-420-1863
 Middle Atlantic
 Products201-839-1976
 Midiland714-595-4106
 Midisoft206-883-1368
 Milab516-420-1863
 Modular Sound215-736-1262
 Modular Wood
 Systems708-251-6441
 Monster Cable714-677-2604
 Monster Cable
 Products512-794-9997
 Morenz Development619-431-5077
 Mosses & Mitchell44-252-712718
 Motionworks Ltd44-865-794179
 Motorola512-891-2947
 MTU-Micro Technology
 Unlimited919-870-7163
 MTX815-233-2124
 MUSICODE619-469-7194
 Musicon503-682-3043
 Musonix Ltd818-841-5927

N

Nady Systems415-652-5075
 Nakamichi America213-324-7614
 Natal Engineering Co805-584-4357
 NDG Phoenix703-749-0418
 Nema Electronics Int'l305-895-8178
 Neotek Corp312-975-1700
 Network Technologies216-543-5423
 Neutrik USA908-901-9608
 Neve203-792-7863
 New England Digital603-448-3684
 Northeastern Communication
 Concepts212-972-1595
 Northstar Productions503-760-4342
 Northwestern Digital
 Recording508-753-1270
 Numark Electronics201-287-2155
 NVision916-265-1010

O

OAP Audio404-945-1843
 ODME-Optical Disc
 Mfg. Equip31-040-541985
 Omnimot Systems818-766-9437
 Opamp Labs213-462-6490
 Opcode Systems415-369-1747
 Optical Disc213-946-6030
 Optical Disc Mastering704-542-5309
 Optical Media International
 Optimal Audio203-324-2077
 OptoDigital Design512-794-9997
 Orban A Div. AKG
 Acoustics415-351-0500
 Otari415-341-7200
 OWI213-638-8347
 Oxmoor205-985-9966

P

- Pacific Recorders & Eng 619-438-9277
- Packburn Electronics 315-445-2051
- Paktec Automation 805-257-9474
- Paltex Editing Systems 714-838-9619
- Panasonic Communications & Systems Co
- Panasonic Pro 714-373-7903
- Audio/Ramsa 415-726-2254
- Passport Designs 46-42-59890
- Pearl Microphone Lab 404-591-7528
- Pearson Technologies 601-484-4278
- Peavey Electronics 805-529-0232
- Penn Fabrication 201-423-4603
- Penn Fabrication NJ 310-450-9860
- Penny & Giles
- Perma Power Electronics 312-763-8330
- Perreux 714-677-6412
- Pine Link 818-505-0341
- Plasmec Systems Ltd 252-712718
- Pitron Manufacturing 416-667-8928
- Polydax Speaker 508-658-0703
- PolyQuick 708-390-9886
- Popper Stoppers 818-788-7195
- Porkpie Productions 203-665-7531
- Portland Instrument 818-240-1828
- Posthorn Recordings/Schoeps 212-924-1243
- Precision Monolithics 408-727-1550
- Pristine Systems 213-655-6207
- Pro Co Sound 616-388-9681
- The Producers Sound Effects Library 818-707-2643
- Professional Audio Services & Supply Co 818-843-5754
- Professional Audio Systems-PAS 619-591-3602
- Professional Sound 818-980-9911
- Promusic 305-776-2074
- Prosonus 818-766-6098
- ProTech Audio 516-584-5904
- Publison S.A. 4360-8031
- Pulizzi Engineering 714-641-9062
- Pygmy Computer Systems 305-255-1876

Q

- QMI 508-650-9471
- QSC Audio Products 714-645-7927
- Quad Eight Electronics 805-295-1399
- Quested, A Div of AKG Acoustics 510-351-0500
- Quested Monitoring Systems 44-071-731-3280

R

- Rack Attack 213-851-5228
- Radian Audio Engineering 714-693-9278
- Rainbow Sound & Lighting 402-554-0978
- Ramware Designs 416-866-7968
- Rane 206-347-7757
- Bill Rase Productions 916-929-4751
- RCA Test Tapes 704-658-2008
- Re-An Products USA 201-808-6517
- Recording Workshop, The 614-663-2427

SPARS



Society of Professional Audio Recording Services

and UCLA Extension

Announce...

The Studio Business Conference

"The Business of Operating a Recording Studio: Realities and Opportunities in the '90s"

January 25-26, 1992

University of California, Los Angeles

A focused look into the BUSINESS of studio recording, the conference is designed to meet the needs of every studio business, from the multi-million dollar complex to the professional project studio.

The two-day seminar addresses the requirements necessary to establish, operate and maintain a financially sound, professionally-run recording studio.

Tips, case studies and good advice will be the emphasis of panel discussions by specialists, experts and managers representing a diverse cross section of the recording studio industry.

REGISTRATION

Registration will be limited!

NAME _____

COMPANY _____

ADDRESS _____

CITY, STATE, ZIP _____

TELEPHONE _____

CREDIT CARD # _____

EXPIRATION DATE _____

SIGNATURE _____

DATE _____

Questions? Call SPARS at 800/771-7727

Non-members \$250, SPARS members \$195
 SPARS members(after Jan.23) \$250

Make checks payable to SPARS. Return to SPARS, 4300 10th Ave. North, Lake Worth, FL 33461

For special hotel rate of \$72 per night, call Holiday Inn Westwood Plaza, 800/472-8556

For special airline fares, call American Airlines, 800/433-1790 Ask for SPARS Starfile 10Z24H

- ANALYSIS
- BUDGETING
- LEASING VS. LOANS
- PRICING
- MARKETING
- PERSONNEL
- LEGAL
- COMPETITION
- EXPANSION
- COST CONTROL
- COMPUTERIZATION
- HIRING
- TRAINING
- INSURANCE
- ADVERTISING
- DIVERSIFICATION

Reichenbach
 Engineering
 Reliable Music 704-332-4829
 Renkus-Heinz 714-250-1035
 Research Technology
 International 708-677-1311
 ReVox 615-256-7619
 Richmond Sound
 Design Ltd 604-734-3901
 RIX Softworks 714-476-8486
 RMS-Results in the
 Mgmt of Sound 818-545-8249
 Rocktron 313-853-5937
 ROH Div. of Portland
 Inst 818-240-1828
 Roland Pro Audio/
 Video Group 213-722-0911
 Roldex Industries 818-504-6833
 Rolls 801-562-5655
 ROSATI Acoustics 617-423-5884
 Ross Systems/
 Div of IMC 817-870-1271
 RPG Diffusor Systems 301-249-3912
 RPS Communications 516-754-8168
 RSP Technologies 313-853-5937
 R-Tec Systems 213-650-6639
 RTS Systems 818-843-7953

S

SAJE 33-1-42-870181
 Saki Magnetics 818-880-6242
 Samson Technologies 516-932-3815
 Sanken c/o Developing
 Tech 213-962-2603
 Sano International 201-808-6517
 Scantek 301-495-7739
 Schoeps GmbH 049-727-495750
 Scientific Design
 Software 818-349-6076
 SCS/Sound Code
 Systems 714-554-5643
 SCV Audio c/o QMI 508-650-9476
 SeamTech 415-777-9868
 Selco Products Co. 714-739-1507
 Sellmark USA/Automation
 Systems Ltd 508-443-4844
 Sencore 605-335-6379
 Sennheiser Electronics 203-434-1759
 Sescom 702-565-4828
 Sharp Electronics,
 LCD Products Div 201-529-9636
 Sharp Electronics,
 Pro. Products Div 201-512-2015
 Shure Brothers 708-866-2279
 Shure HTS 708-866-2279
 Signet 216-688-3752
 SigTech Cambridge
 Signal Tech 617-225-9034
 Simon Systems
 Engineering 818-991-5326
 Simpson Electric 708-697-2272
 Singular Solutions 818-792-0903
 Skotel 514-444-2083
 Smithline Audio 818-786-6433
 Sola, A Unit of
 General Signal 800-626-6269
 Solid Sound 313-662-0997
 Solid State Logic 212-315-0251
 Solid State Logic UK 44-856-842118
 Sonic Boon 714-535-0383
 Sonic Image Ltd. 708-665-4966
 Sonic Perceptions 203-854-5702
 Sonic Solutions 415-394-8099
 Sonic Source 413-584-7944
 Sonocraft 212-564-9488
 Sonosax S.A. 41-21-806-02-99
 Sontec Electronics 703-626-7257
 Sony Business & Professional
 Group 201-358-4907
 Sony Magnetic
 Products Co 201-930-6806
 SoperSound Music
 Library 415-321-9261

Sound Art Productions .. 204-257-4087
 Sound Concepts 617-566-0110
 Sound Ideas 416-886-6800
 Sound Quest 416-322-6451
 Sound Technology 408-378-6847
 Sound Wave Productions . 809-328-1501
 Sound Workshop Pro.
 Audio Products 516-932-6573
 Soundcraft Electronics .. 818-893-3639
 Soundcraft Electronics
 UK 44-070-662353
 Soundcraftsmen 714-662-0750
 Soundmaster USA 805-494-4936
 Sound Quest 416-256-0458
 Soundracker Pty Ltd. 613-696-4864
 Soundtracs P.L.C 516-932-3815
 Soundtrax Recording 615-926-3986
 Spatial Sound 415-457-6250
 SpeakEasy 617-969-1460
 Spectra Sonics 801-392-7531
 Spectral Synthesis 206-487-3431
 Spectrum Design &
 Development 215-395-7735
 Sprague Magnetics 818-994-2153
 Standard Tape Lab 415-786-1180
 Stanton Magnetics 516-349-0230
 Stantron 818-841-8892
 Star Case Mfg Co 219-922-4442
 Steinberg/Jones 818-701-7452
 Stellavox Digital Audio
 Tech 0041-038-253-230
 The Sterling Group 708-349-7345
 Stewart Electronics 916-635-178
 Storeel Corp 404-457-5585
 Studer Eastern
 Regional Office 212-255-0177
 Studer Editech 415-326-7039
 Studer Revox America 615-256-7619
 Studer Western
 Regional Office 818-780-4797
 Studio Equipment Dist .. 0462-421171
 Studio Magnetics Co 516-289-1604
 Studiomastr 714-524-5096
 Studio-Sonics 708-843-7493
 Studio Technologies 708-982-0747
 Summit Audio 408-395-1403
 Sunkyong Magnetic/
 America 213-830-0646
 Swire Magnetics Co 213-515-0371
 Swire Magnetics/Prof.
 Prod. Div 704-597-7152
 Switchcraft 312-792-2129
 Symetrix 206-283-5504
 Synergetic Services 305-685-0879
 Sypha Digital Audio
 Consultants 44-081-761-1042
 System-Y by Yellowtec
 GmbH 49-2173-81497
 Systems Development
 Group 301-349-5043

T

TAD-Technical Audio
 Devices 213-816-5941
 Talent Associates
 Narrations 303-894-9033
 Tannoy/T.G.I. North
 America 519-745-2364
 Tape Automation
 America 207-985-4917
 Target Technology 916-639-2212
 TASCAM 213-727-7656
 Tatum Labs 313-663-3640
 Tayo Industries 818-787-0419
 t.c. electronic 805-379-2648
 t.c. electronic A/S 45-8626-2928
 TDK Electronics 213-538-3368
 Tecon Enterprises Ltd .. 714-592-2408
 Technical Projects 708-381-4360
 Technical Service
 Specialists 914-876-8632
 Technics 201-348-7954

Techron/Div Crown Int'l . 219-294-8329
 Tek Media Supply Co ... 708-677-1311
 Tektronix/Television Div 503-627-4486
 Telex Communications ... 612-884-0043
 THAT 508-653-5334
 Thermodyne
 International 213-603-1929
 3M Pro. Audio/Video ... 612-736-1246
 3M Sound Products 612-736-7614
 360 Systems 818-342-4372
 TimeLine Vista 619-727-3620
 TOA Electronics 415-588-3349
 Tobin Cinema Systems .. 206-932-7280
 Toroid Corp of Maryland . 301-860-0302
 Total Audio Concepts
 Ltd. 44-0602-785112
 A Total Effect 818-345-4244
 Touch Technologies 416-868-6419
 The Toy Specialists 212-262-4095
 Transtector Systems 208-772-6619
 Trax Audio & Music 801-269-8886
 Trend Textiles 708-678-8300
 TRF Prod. Music
 Libraries 212-956-3039
 Trident Audio USA 213-533-7072
 Tripp Lite 312-644-6505
 Trouper Industries Ltd .. 213-639-8284
 True Image Audio 619-480-8961
 Tube Tech 212-489-4936
 Turbosound/Div of
 AKG Acoustics 914-635-9022
 Turtle Beach Systems ... 717-854-8319
 21st Century Ltd 213-463-1209
 27th Dimension 813-763-0410

UVW

Uher of America 818-764-1129
 Ultimate Support 303-221-2274
 UltraAnalog 415-657-4225
 Underground Sound 615-327-9285
 UREI 818-893-3639
 U.S. Audio 716-865-8930
 U.S.A. Audio 606-843-7423
 Vacuum Tube Logic 714-627-6988
 Valentino 212-869-6259
 Valley International 615-370-5907
 Veetronix 308-324-4985
 Vega Wireless 818-444-1342
 Velodyne Acoustics 408-436-0311
 Vercelletto Special
 Services 914-876-8632
 Versadyne International . 408-379-0902
 VGS California 818-769-9965
 Video Accessory 303-440-8878
 Video Design Pro 505-524-9669
 Voice Over L.A. 213-463-5443
 Ward-Beck Systems Ltd . 416-438-3865
 WaveFrame 818-981-9239
 Weircliffe 714-838-9619
 Westlake Audio 805-498-2571
 Wheatstone 315-454-8104
 Whirlwind 716-865-8930
 White Instruments 512-389-1515
 Williams Sound 612-943-2174
 Winsted 612-944-1546
 Wireworks 908-686-0483
 Woodworx Audio
 Systems 919-855-1488
 Words and Deeds 213-255-6291

XYZ

Xedit 718-464-9435
 Yamaha Corp
 of America 714-739-2680
 Yorkville Sound 716-297-3689
 Zero Stantron Cabinets . 818-841-8892
 Zoom 415-873-5887

**M
O
V
I
N
G
?**

Take us with you.

Just peel off your subscription mailing label and attach it to the address change card inside this issue. Please allow 6-8 weeks to process your address change.

Continued from page 25

July 1991	Page
R•E•P Interview: Barney Perkins	20
Posting Cornell's "Ida"	26
A&R: Understanding a Record Deal	32
Independent Record Distribution: A Primer	38
Oscar's Audio: The 63rd Annual Academy Awards	44
Hands On: Amek Mozart RN	53
August 1991	Page
Audio Education Now and For the Future	24
National Audio Test	27
Is The More to Life Than Headroom?	39
Working With Stadium Acoustics	48
Hands On: Tube-Tech CL 1A Compressor	56
September 1991	Page
AES Exhibitor Listings	22
AES Exhibitor Product Directory	42
AES Product Review	54
Part One: The Moscow Symphony with Electric Light Orchestra Part II	72
October 1991	Page
R•E•P Interview: Obie O'Brien	26
Studio Owner's Handbook	30
Hands On: Genelec S30NF Loudspeaker	54
Part Two: The Moscow Symphony with Electric Light Orchestra Part II	72
November 1991	Page
R•E•P Interview: Keith Cohen	26
Balancing the World	32
Power Station	36
Designing the MTSU Media Complex	38
GTN: A Full-Scale Facility	44
Upscale Festival Sound Reinforcement	49
Hands On: Meyer Sound Laboratories HD-1	54
December 1991	Page
60 Years of Abbey Road	20
1991 R•E•P Article Index	25
R•E•P Resource Introduction	25
R•E•P Resource Manufacturer Product Directory	26
Trade Associations	48
R•E•P Resource Manufacturers Addresses	49
1992 Industry Events Calendar	64
R•E•P Resource Fax Directory	65

ARTICLE SUBJECT INDEX

Acoustics	Mth/Pg
Poor Acoustics in Sports Arenas	Jan/54
Working With Stadium Acoustics	Aug/48
Audio for Video and Film	Mth/Pg
Posting Cornell's "Ida"	Jul/26
Audio Testing and Education	Mth/Pg

Audio Education Now and For the Future	Aug/24
National Audio Test	Aug/27

Broadcast Production	Mth/Pg
Modern Digital Broadcast Production	Apr/26
NBC Goes SSL	Apr/32
Oscar's Audio: The 63rd Annual Academy Awards	Jul/44

Consoles	Mth/Pg
Cutting Edge Consoles	Aug/46
The Large Console Commitment	Feb/42

Convention Coverage	Mth/Pg
AES Exhibitor Listings	Sep/22
AES Exhibitor Product Directory	Sep/42
AES Product Review	Sep/54
1992 Industry Events Calendar	Dec/64

Engineer Spotlight	Mth/Pg
David Morgan	Sep/80

Equipment Reviews	Mth/Pg
Amek Mozart RN	Jul/53
Audio Precision Portable One	Jun/56
Coherent Transfer-Clair Bros. CTS	May/32
Crown SASS	May/55
Drawmer M500 Dynamics Processor	Jan/63
Genelec S30NF Loudspeaker	Oct/54
Lexicon 300 Digital Effects System	Jan/68
Mark of the Unicorn Video Time Piece	Apr/58
Roland SN-550	Mar/64
Soundcraft 3200	Feb/58
Tube-Tech CL 1A Compressor	Aug/56
Meyer Sound Laboratories HD-1	Nov/56
Upgrading the Dolby 363 SR	May/62

Gain Structures	Mth/Pg
Balancing the World	Nov/32
Is The More to Life Than Headroom?	Aug/39
Where's the Zero?	Jun/38
Music Business	Mth/Pg
A&R: Understanding a Record Deal	Jul/32
Independent Record Distribution: A Primer	Jul/38

Profiles	Mth/Pg
Ed Long: Breakthroughs & Developments	Jun/32
The Peter and Mary Story	Jun/26
R•E•P Interview	Mth/Pg
Borthwick, Ron	May/34
Clearmountain, Bob	Apr/20
Cohen, Keith	Nov/26
O'Brien, Obie	Oct/26
Perkins, Barney	Jul/20
Renner, Jack	Jan/28

R•E•P Pro Audio Resource	Mth/Pg
R•E•P Resource Introduction	Dec/25
R•E•P Resource Manufacturer Product Directory	Dec/26
Trade Associations	Dec/48
R•E•P Resource Manufacturers Addresses	Dec/49
1992 Industry Events Calendar	Dec/64
R•E•P Resource Fax Directory	Dec/65

Sound Reinforcement	Mth/Pg
Audio Noise and AC Systems	Jun/42
Amping Up: Figuring Power Requirements	May/38
Guns and Riots	Sep/70
Hangin' High	Mar/60
Lean and Mean: Schubert Systems Group	Jan/58
Part One: The Moscow Symphony with Electric Light Orchestra Part II	Sep/72
Part Two: The Moscow Symphony with Electric Light Orchestra Part II	Oct/46
Quality Theater Sound	Apr/48
Slow Hand In Singapore	Jun/46
Sound Image: A Big-Time Success Story	Feb/50
The 1991 Grammy Awards	May/24
Touring Sound Technology in Permanent Installations	Nov/48
Upscale Festival Sound Reinforcement	Nov/49

Studio Design	Mth/Pg
Designing the MTSU Media Complex	Nov/38
GTN: A Full-Scale Facility	Nov/44
Power Station	Nov/36

Studio Owner's Handbook	Mth/Pg
Analog Alignment	Oct/32
Digital Interface	Oct/36
Functional Forms	Oct/42
Taxing Details	Oct/40
Tempo Conversion	Oct/34
Time Code	Oct/44
Video Basics	Oct/38

Tape Machines	Mth/Pg
Developments in Analog Tape Recorder Technology	Feb/30
Stalking The Magnasaurus	Feb/36
DAT In The Real World: Part 1	Apr/38
DAT In The Real World: Part 2	May/48

Testing Technology	Mth/Pg
The Future of Audio Test Technology	Jan/42

Workstations	Mth/Pg
Profitable Coexistence with Desktop Production	Jan/34
Producing for New Technologies	Jan/48
Taking it Tapeless	Mar/26
Tapeless Technology	Mar/28
Re: Sources	Mar/38
Reality Check	Mar/42
Digital Storage Technology	Mar/52

DEPARTMENT AND COLUMN INDEX

Digital Domain	Mth/Pg
Diversifying Your Future	Jan/24
Standards, Part 2	Feb/26
The Audio WAN	Mar/24
Master of Code	Apr/18
Building a Better (Digital) Mousetrap	May/22

Continued on page 70

The Mod Squad	Jun/24
Software Solutions, Part 1	Jul/18
Lessons to Learn	Aug/22
Digital Speak	Oct/24
Un-Conventional	Nov/24

First Look	Mth/Pg
Roland Slips A Disk	Jan/74
Save for the Future	Feb/65
DAT's the Story	Mar/68
Promises, Promises	Apr/63
Are You a "Mod" or a "Rocker"?	May/65
Three From A&H	Jun/60
Ready or Not Here They R	Jul/60
Future Format Wars	Aug/61
Get Worked Over	Oct/61

Five Questions	Mth/Pg
The Modern World	Jan/53
Consoles and Connections	Feb/47
Data Digital	Apr/44

From the Top	Mth/Pg
Lessons We Should Know	Jan/7
The New Viability	Feb/7
Welcome To Your Future	Mar/7
What It is	Apr/5
Live Ain't Jive	May/7
What Makes a Magazine Sing?	Jun/5
Life After Sampling	Jul/5
Tomorrow's Lesson	Aug/5
How We Buy: Past Perfect/Present Tense	Sep/5
It's in the Book	Oct/5
How Much Detail is Too Much?	Nov/5
Rehearsing in Red	Dec/5

Hands On	Mth/Pg
Drawmer M500 Dynamics Processor	Jan/63
Lexicon 300 Digital Effects System	Jan/68
Soundcraft 3200	Feb/58
Roland SN-550	Mar/64
Mark of the Unicorn Video Time Piece	Apr/58
Crown SASS	May/55
Audio Precision Portable One	Jun/56
Amek Mozart RN	Jul/53
Tube-Tech CL 1A Compressor	Aug/56
Genelec S30NF Loudspeaker	Oct/54
Meyer Sound Laboratories HD-1	Nov/56

R•E•P Interview	Mth/Pg
Jack Renner	Jan/28
Bob Clearmountain	Apr/20
Barney Perkins	Jul/20
Obie O'brien	Oct/26
Keith Cohen	Nov/26

Live & Direct	Mth/Pg
Poor Acoustics in Sports Arenas	Jan/56
Save Your Ears	Feb/48
Hearing Aids for the Stars	Mar/56
International Touring	Apr/46
Tools of the Trade	May/42
Shopping the Job Market	Jun/50
Creative Survival	Jul/42
Cutting Edge Consoles	Aug/46
Linking-Up the Amps	Sep/68
Equipment for Concert Sound Systems	Oct/45
Touring Sound Technology in Permanent Installations	Nov/48

Random Access	Mth/Pg
Who Owns What: 1991 Update	Jan/10
Master Rock Collapses	Feb/12
DAWs: Mastering The Curve	Mar/10
Grammy-Go-Round	Apr/8
AES Changes Fall Dates	May/8
Suit Focuses on Recording Techniques	Jun/8
Lyric Debate Shifts	Jul/6
Education	Aug/8
DAWs: Of tools, toys, and tail wagging	Oct/8

Sound Business/SPARS Perspectives	Mth/Pg
Diversifying Your Future	Jan/24
Publishing A Newsletter	Feb/24
Future Prospects	Mar/22
On The Floor Again	Apr/16
The Middle Echelon Shrinks	May/20
Image and Reality	Jun/22
The Southern Perspective	Jul/16
Keeping Abreast of High Technology	Aug/18
The Politics of Cheese	Sep/18
Speaking from the Heartland	Oct/22
The More Things Change	Nov/22
Welcome to the Club	Dec/18



Interested in ordering article reprints out of this or another issue?* Reprints can be excellent learning tools for your technical staff and great marketing tools for your sales staff. Call or write Intertec Publishing Corp., P.O. Box 12901, Overland Park, KS 66212; (913) 888-4664.

***Minimum order 500 copies.**

Classified

FOR SALE

STUDIOWORKS

Recording & Broadcast Equipment

FACTORY DIRECT PRICES ON 3M & AMPEX TAPE

ADAMS-SMITH	LEXICON
ALLEN & HEATH	NEUMANN
FOSTEX	OTARI
HAFLER	SENNHEISER
JBL/UREI	SOUNDTRACS

J. L. COOPER

Over 70 Professional Lines!

SONY

Professional Audio

(800)438-5921

(704)375-1053

Sony used & demo sale

Sony 3036 loaded 32/non-auto. \$52K w/warranty.
Sony 3036 loaded 36 w/auto & hard drive \$80K w/warranty.

*
* **CAD PF-8 FOR SALE**
* **\$ 500.00US ea.**
*
* Brand new fully loaded units still under
* warranty loaded with your choice of 1002
* compressor or 1004 noise-gate cards.
*
* Call: (514) 595-3966
*
* *****

Power supplies

for almost any tube microphone.

If you want your mic to sound the very best,
get it a new power supply. From \$275.

Call Bill Bradley

(216) 723-6494

Fax (216) 723-6595

NED 8-Track PostPro Digital Audio Workstation

Model D CPU, Time Compression,
Universal Digital Transfer, Software
Update Agreement, NEDcare
Service Contract.

Hollis Halford 615-244-9305

NEW, USED, DEMO EQUIPMENT

LARGEST SELECTION OF DIGITAL/ANALOG
RECORDERS, CONSOLES, OUTBOARD
PRO TOOLS, SOUND TOOLS, APPLE
MACS, DAT RECORDERS, TUBE GEAR,
24TK RECORDERS, TRIDENT 24, OTARI
54, SOUNDCRAFT 6000 AUTO, EVENTIDE
H3000, LEXICON REVERBS, TANNOY
MONITORS, ROLAND R880, APOGEE DIG-
ITAL INTERFACES, ALESIS ADAT, ROLAND
SAMPLERS.

EQUIPMENT LEASING AND SYSTEMS
SPECIALISTS—NEW AND USED COMPONENTS

CALL FOR CURRENT FAX LISTING OF EQUIPMENT

EAR PROFESSIONAL AUDIO (602) 267-0600

WHAT COULD YOU HAVE IN COMMON WITH:

HIT FACTORY-NY, HIT FACTORY-LONDON, POWER STATION, RECORD PLANT-L.A.,
LARRABEE SOUND, ELECTRIC LADY, RIVER SOUND (Donald Fagen/Gary Katz),
BATTERY STUDIOS, TOKYUFUN, THE TOY SPECIALISTS, RACK ATTACK, Lafox,
DREAMHIRE, STUDIO FX (SYDNEY), GLENN FREY, JON BON JOVI, AND MANY
OTHER OF THE WORLD'S FINEST STUDIOS, RENTAL COMPANIES, AND ARTISTS?



IN STOCK AND WAITING FOR A NEW HOME...

REINDEER (12), ELVES (43), OLD MAN W/WHITE BEARD OPTION (1),
REALLY COOL TOYS (MANY)...

WISHING YOU THE BEST THIS HOLIDAY SEASON

THE CONNECTION, THE SOURCE, THE PROFESSIONALS

TEL: 617-784-7610 FAX: 617-784-9244

SKB ATA Rack Mounts at an Affordable Price



Meets ATA class 300, Cat 1 Spec. available in 2U - 12U sizes and is
half the weight of conventional wooden racks. Call your local dealer
for a demo or fax for the name of your nearest distributor.

434 West Levers Place, Orange, CA 92667 (817) 847-5400 FAX (817) 847-6319



AVOID OBSOLESCENCE CHOOSE AUDIO UPGRADES

Replace the IC's, transistors,
and caps in your console;
tape machine and outboard gear
and achieve better than new specs!

AUDIO UPGRADES

Box 7551 Mission Hills, CA 91346
(818) 780-1222 FAX (818) 892-7785

The Studio POP Filter

A Great Improvement on a Good Idea!



Open up the sound of your vocals
and voice overs without annoying
"POPS" ruining your best take!

- Standard mic stand adaptor with threaded brass insert

Only
\$2400

- One piece plastic rims, 4", 5" & 6" diameter-in cream or black

With optional
Clamp and
Gooseneck
\$4495

ONE YEAR GUARANTEE plus shipping

AUDIO VISUAL ASSISTANCE
565 Sherwood Road,
Shoreview, MN 55126
Phone: 612-481-9715



Circle (60) on Rapid Facts Card

Classified

FOR SALE

The Speaker Design Toolbox™

Analysis

- Calculate Response **⌘F**
- Clear & Calculate Response **⌘G**
- Frequency Response **⌘H**
- Phase Response **⌘I**
- Group Delay Response **⌘K**
- Excursion Response **⌘L**
- Impedance Response **⌘M**

Delay Range = 1.5 msec
 Delay Range = 3.0 msec
 Delay Range = 7.5 msec
 Delay Range = 15 msec
 Delay Range = 30 msec

Excursion Range = 1.5
 Excursion Range = 3.0
 Excursion Range = 7.5
 Excursion Range = 15
 Excursion Range = 30

Impedance Range = 15
 Impedance Range = 30

Design

- 1st Order Butterworth
- 2nd Order Butterworth
- 3rd Order Butterworth Calculator
- 1st Order Series Calculator
- Resonance Compensator Calculator
- Inductance Compensator Calculator
- Tweeter Attenuator Calculator

Software & Manual \$249.00
To Order Call 619-480-8961

MacSpeakerz™ Loudspeaker Design Software for the Macintosh
 from True Image™ 349 West Felicita Avenue, Suite 122, Escondido, CA 92025

Circle (61) on Rapid Facts Card

TUBE MICS

Only the finest in tube mics bought and sold.

Call Bill Bradley

(216) 723-6494
 FAX (216) 723-6595

HARDLY-EVER-USED AUDIO GEAR LIKE NEW - ALL 20 HRS. OR LESS USE

2-Otari MX5050 BQII 4-trks.
 Otari MX5050 MKIII 8-trk.
 2-EV667A's with booms. DBX 160X and DBX 180 Type I.

Call: (814) 563-7403

TUBE DIRECT

NEW-STEREO TUBE DIRECT!



ALL TUBE DESIGN, JENSEN DBE TRANSFORMERS, VARIABLE GAIN (IN STEREO MODEL), LOW THD (<.05%), LOW NOISE (>85 dB), 30 MEG Ω INPUT Z, 150 Ω BALANCED OUTPUT Z—THE BEST SOUNDING DI MADE
 USED BY: THE WHO, HUGH PADGHAM (STING), RY COODER, GEORGE MASSENBURG, LYLE LOVETT, BONNIE RAITT, MICHAEL HEDGES, STANLEY CLARKE, CAPITOL RECORDS, A&M RECORDS, SKYWALKER RANCH, THE COMPLEX, OCEANWAY, CLAIR BROS. & OTHERS

DEMETER AMPLIFICATION • INNOVATIVE AUDIO

(213) 470-6426 FAX (213) 470-8817
 1907 PARNELL AVENUE, LOS ANGELES, CA 90025

Circle (83) on Rapid Facts Card

MIC-EZE™ "The Incredible Clamp"



- Unbreakable
 - Slip Proof
 - Lock Design
 - Quick Release
 - Telescopic Adjustment Arm
- Unlimited Positioning
 - Shock Absorption Pads

1-800-537-3491 Fax 412-344-0818

RUBBER-NECK™



SIZES:
 10"
 16"
 20"

- No Creak
- No Glare
- No Ridges
- Smooth Texture
- Black Finish
- Stable Positioning
- Standard Mic Threads

Products by: **Ac-cetera, Inc.**
 3120 Banksville Rd.
 Pittsburgh, PA 15216

Circle (62) on Rapid Facts Card

Synclavier. 56 voice, 24 sampling, 32 FM, 9 Meg RAM, 260 Meg Disk, Mac II. Release "0" software. **Neve 8048.** 32 inputs, 24 monitors, 1081 EQ/Pre amps, 3 2254e comp/limiters. **Studer A-80 VU MK IV 1/2"** 1202 hrs.
201-656-7023

CUSTOM LENGTHS RECORDED OR BLANK
 ALSO TELEPHONE ON-HOLD SYSTEMS



MADE IN U.S.A.

OUR 15th YEAR

MANUFACTURER DIRECT

MANN ENDLESS CASSETTE INDUSTRIES
 P. O. BOX 422093, SAN FRANCISCO, CA 94142-2093
 (415) 221-2000 FAX (415) 387-2425

USE R-E-P CLASSIFIEDS

FOR SALE, con't.

**Now You Can Afford
THE WORLD'S FINEST
AUDIO TRANSFORMERS**

REICHENBACH ENGINEERING is now marketing their
Legendary audio transformers through
BAUER COMMUNICATIONS INC.
Reichenbach pioneered the technology giving you flat
group delay, and the besel response, with no over-
shoot or ringing. Our low distortion core material
eliminates that muddy bottom end.

	1	25	100
RE-115K-E	\$49.01	40.46	31.26
RE-11P-1	\$46.66	38.69	29.75
RE-MB-C	\$39.58	32.82	25.24
RE-MB-D	\$69.23	57.41	44.15

ACCEPT NO SUBSTITUTES
**INSIST ON A
REICHENBACH!**



Phone (800) 627-7277 Fax (818) 894-0715
(formerly marketed as Jensen transformers)

**" DON'T EVEN THINK CONSOLE "
UNTIL YOU CALL US !**

**OCEAN AUDIO INC
THE TECHNOLOGY TRADERS**

- | | |
|---------------------------|---|
| 19 - SSL Consoles | 90 - 24 Track Recorders |
| 51 - Neve Consoles | 58 - 16 Track Recorders |
| 19 - Trident Consoles | 20 - 32 Track Recorders |
| 20 - Souncraft Consoles | 288- Professional Video Recorders, Etc. |
| 20 - Amek Consoles | 390 - EQ's, Limits, Delays, Reverbs |
| 150 - Additional Consoles | THOUSANDS OF ADDITIONAL PIECES |

**IN ORDER TO LOOK FOR OR LIST USED EQUIPMENT IN THE
LARGEST ACTIVE DATA BASE, CALL OCEAN AUDIO INC. AT
(213) 459-2743 OR FAX (213) 454-6043,**

CHESHIRE FOR SALE

WORLD FAMOUS CHESHIRE SOUND STUDIOS
ATLANTA, GA
2 SSL ROOMS, 48 TRK - 32 TRK DIGITAL
Owner retiring. Serious inquiries only.
404-321-3886

Circle (64) on Rapid Facts Card

**THE BEST VALUES IN
USED EQUIPMENT**

Yamaha DMP7 and Sony MXP 3000 mixers
Ramsa WR8420 21 mono, 7 stereo, 4 tape
Adam Smith 2600 series, large selection Call
Akai S1000 Digital Sampler
Otari MTR9024 24 track JBL 4430 speakers
Fostex 8 & 2 trk ATRs, Sync, TC & mixers
Equalizers, compressors, amps & more!
The Best Values in quality, used audio equipment are
in our FREE catalog! Call Fax or Write today!

MICOR VIDEO EQUIPMENT

5545 N. Clark Street, Chicago, Illinois 60640-1222
312-334-4300 Telex 910-240-9449 Fax 312-334-4385

POST ENG/EFP

Audio Services Corp.
specializing in...
Everything for Sound!

Los Angeles, CA
(818) 980-9891 (800) 228-4429
Orlando, FL
(407) 649-6444 (800) 486-6444

COMMUNICATIONS

**SINGERS! REMOVE VOCALS!
Unlimited Backgrounds™**
From Standard Records & CD's with the
Thompson Vocal Eliminator™ Call for Free
Catalog & Demo Record.
Phone: (404) 482-4189 Ext 22
Singer's Supply, Dept RP-1
7982 Hightower Trail
Lithonia, GA 30058
24 Hr. Demo Request
Line (404) 482-3485 Ext 22
Singer's Supply - We Have Anything & Everything For Singers

**NFI SUPERCOUSTIC
ACOUSTIC FOAM**

GUARANTEED LOWEST PRICES IN THE COUNTRY.
WE'LL BEAT ANY DEAL.

48" x 48"
IMMEDIATE SHIPPING
2" - \$15.50
3" - \$23.50
4" - \$27.50



Medium Blue or Custom Charcoal Colors.
Stop Sound Now! With the Highest Density
Polyurethane Foam available anywhere.
Excellent sound proofing for all applications.
Custom colors and sizes, also available.
Warning - Don't buy low density bed size matt-
ress foam that has no sound absorbing prop-
erties or specs. Buy from the only company that
specializes in foam and Guarantees satisfaction!
Call now for FREE Catalog, Specs. & Samples

NATIONAL FOAM, INC.

1-800-247-4497
IN CA (213) 650-8906
6311 De Soto Ave., Suite A Woodland Hills, CA 91367
MasterCard VISA Check C.O.D.

Circle (65) on Rapid Facts Card

**Blevins Audio Exchange
(B.A.E. Inc.)**

Nashville's Only Full
Service Brokerage Company

Currently Buying and Selling
Only the Best in Used Audio/
Video Equipment

'91 Clearance Sale

Call or FAX for Our
Latest List
(615) 242-0596
(615) 242-0599 FAX

**THE
ULTIMATE
WRAPPER**



FAST • EASY • TIDY
Velcro Cable Wraps

RIP-TIE

800-348-7600

Seam Tech

P.O. Box 77394 San Francisco, CA 94107 • FAX: 415-777-9868

Circle (66) on Rapid Facts Card

Classified

FOR SALE

D.A.T. In Stock!

BASF

- Digital Audio Tape In Stock
- Analog Tape, Audio Accessories
- Phone In Order, Ship Same Day
- Great Quality — Great Price

Call us at

(313) 662-0669

for prices on tapes & duplicating

World Class Tapes

Audio Tape Distributors & Duplicators

670 Airport Blvd., Suite 1
P.O. Box 7611

Ann Arbor, Michigan 48107
(313) 662-0669

(1-800-365-0669 outside Michigan)

Circle (67) on Rapid Facts Card

Best Prices Best Service Best Names

SONY
FOSTEX
BASF
MAXELL
AMPEX
Switchcraft
NEUTRIK
FUJI
3M



309 Power Ave, Hudson, NY 12534

Professional Tape, Equipment,
Accessories & Supplies
Call for our FREE catalog:

518/828-2000

MILAM AUDIO

"THE SOURCE"

SINCE 1967

CONSOLES
MULTI-TRACKS
MONITORS

D.A.T. • AMPS
EFFECTS • MICS
USED EQUIPMENT

1470 Valle Vista Blvd.
Pekin, IL 61554
(309) 346-3161
800-334-8187
FAX 309-346-6431



ENGINEERING

214 Lincoln St.
Suite 103C
Boston, MA 02134

The oldest East
Coast broker !!

(617) 782-4838
fax (617) 782-4935

Otari & Tascam
factory service.

New specials on Hafler & Ashly amps, Sony DAT, Aphex,
Eventide, TC Electronic, Tannoy monitors, AKG &
Adams-Smith Zeta III. dbx noise reduction in stock.

SSL 4040, \$75K; 4056E/G, \$195K; Neve 8024, \$35k; 8068,
\$75K; 8108, 48in, \$75K; Trident 80B, \$30K; Trident 24,36/24,
\$17K; Amek Angela, \$25K; Harrison Raven 32/12/24 VCA,
\$23K. CALL for prices on API, DDA, TAC & Soundcraft.

Tape; Otari MTR90 II, \$25K; MX80, \$19.5K; Studer A800,
\$33K; MCI JH24, \$17K; 3M M79, \$11K. Otari MX70 16tr, \$9K.

Processing; Sony PCM601 conv, \$850; AMS RMX16, \$4.5K;
1580, \$2.8K; Eventide H3000B, \$2.2K; Pultec Mavec, \$1.4K;
Mics; Neumann U67 tube, \$2.5K; AKG C12A (tube), \$1.4K.

Circle (68) on Rapid Facts Card

USE R-E-P CLASSIFIEDS

POP FILTERS

An absolute necessity
for every studio

\$59.95 includes screen,
clamp, gooseneck and shipping

CALL NOW TO ORDER

Outside CA (800) 446-7677
Inside CA (818) 788-3635

POPPER STOPPERS

P.O. Box 6010-658, Sherman Oaks, CA 91413

DON'T SETTLE FOR LESS, GET THE BEST!
THE ORIGINAL POPPER STOPPER
NOW DOUBLE THICK FOR XTRA PROTECTION

WE'VE GOT THE GOODS!!

We offer a line of unique products described by
many as the most eclectic in the industry. Many
are our own design and manufacture. When you
need something special, call us.

The Mic Pole
Cable Keepers
AKG Boom Parts
Tall Mic Stand
RFI Trap
Boom Weight

The Mic Clamp
Super Cable Keepers
Atlas Stand Parts
Really Tall Mic Stand
Line to Mic Adapter
and so much more!!

Call or write for a free catalog!

BLACK AUDIO DEVICES

Box 106
Ventura, CA 93002
(805) 653-5557

CUSTOM AUDIO CABLES

Interconnect, Adapters, Patch-
Cords, Snakes...Pre-wire Assy
For Studio Installations — We
specialize in the odd size & Type
cable. Great Prices & Delivery
Dealer Inquiries Invited

REDCO AUDIO

917 Post Road,
Fairfield CT 06430
(203) 256-0532



SONEX-SOURCE

58 Nonotuck St., Northampton, MA 01060
'Your Source for Sonex Acoustical Foam'

Best Prices — Nationwide Delivery

800-484-1003 Ext. 0032 413-584-7944
Order Credit Cards Accepted Fax or info

Newest Name in Compressor/Limiter is
the ADL 1000. Hand-Built from High-
Quality Components; This LA-2A Type
Design is QUIETER, PUNCHIER AND
MORE TRANSPARENT.

ANTHONY DeMARIA LABS
818-340-0228

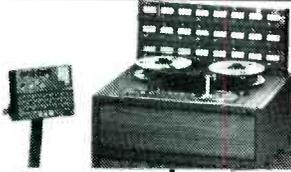
PAQUITO & SONS

Since 1952

PROFESSIONAL AUDIO & ELECTRONICS
ACCESSORIES FOR THE
DISCRIMINATING AUDIO PROFESSIONAL
CALL OR WRITE FOR YOUR FREE CATALOG
P.O. BOX 540596 DEPT. R
MERRITT ISLAND, FLORIDA 32954
407-453-8120

FOR SALE, con't.

American Pro Audio



- Sony/MCI • Trident •
- Tannoy • Eventide •
- Yamaha • Tubetech •
- Fostex • Soundtracs •
- Beyer • Roland • Akai •
- Ramsa • Panasonic •

Mini Lease Program

New or used, trade-ins 24-60 months with buyout option \$5K-25K **no** financials required min. 2 yrs in business.

1-800-333-2172

In 1989, Madisound Speaker Components processed 20,000 orders.

- | | |
|---------------------|-----------------|
| VIFA | DYNAUDIO |
| FOCAL | MB QUART |
| PHILIPS | AUDAX |
| EUROPA | PEERLESS |
| MOREL | SOLEN |
| KEF | ETON |
| PERFECT LAY | |
| SIDEWINDER | |
| ELECTROVOICE | |
| SLEDGEHAMMER | |

Shouldn't your business take advantage of these fine product lines?



Madisound Speaker Components
 8608 University Green
 Box 4283 Madison WI 53711
 Phone: 608-831-3433
 Fax: 608-831-3771

★ UPGRADE YOUR PLATES ★
 ★ To digital signal to noise ratios. New pick-up kit gives 20 db more output with better frequency response than the old pickups. Price \$75 for stereo kit. Call Jim Cunningham for Brochure.
 ★ **708-831-5628**
 ★*****

SALE! PLUS FREE ADHESIVE!

MARKERFOAM™ ACOUSTIC FOAM GIANT 54" x 54"



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 & is proven in studios worldwide. Request Foam-Buyers Guide Catalog specs & free samples today. VISA, MC, AMEX, COD, PO's, QUANTITY DISCOUNTS

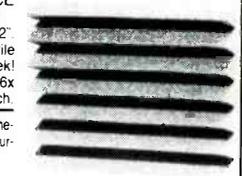


MARKERTEK JUMBO SOUND ABSORB BLANKETS

Heavy-duty 72"x80" 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 BLADE TILES™

HIGH PERFORMANCE **LOW, LOW COST!**
 \$2.99 per tile. 16x16x2" America's best acoustic tile value, only from Markertek! Charcoal. Also available 16x16x3" as shown, \$3.99 each.



MARKERSTIK™ foam adhesive. FREE with any Foam purchase in this ad! Limited offer. A \$5.95 per tube value.



SONEX
 All the colors and sizes plus great prices!

Get our **FREE 150-page catalog** of over 5,000 exclusive and hard-to-find supplies for audio & video.

800-522-2025 America's most unique catalog for audio & video!
MARKERTEK™
 145 Ulster Ave., Saugerties, NY 12477 U.S.A.
VIDEO SUPPLY

Circle (70) on Rapid Facts Card

BUY • SELL CONSIGN
NEW & USED AUDIO & VIDEO EQUIPMENT
 Full Line Dealer
 JVC • Sennheiser Audio-Technica AKG

In Stock:
 • JVC DS-DT 900
 • Otari MTR 90/MTR 12/MX 5050
 • Studer A-801/A-810
 • Tascam M-50/M-216/112/48.
 • Graham Patton 612/D-Esam 800
 • Sound Workshop Series 30
 CALL BARRY 818-845-7000 818-845-9483 FAX:
Broadcast Store, Inc.

TEKCOM CORP.

SOUND REINFORCEMENT, MULTI-TRACK RECORDING AND DIGITAL AUDIO SPECIALISTS
COMPETITIVE PRICES EXPERT TECHNICAL SUPPORT & SERVICE DESIGN AND INSTALLATION

TekCom sells virtually every product on the market with mid-Atlantic exclusives on the full line of Otari tape recorders, Trident and DDA consoles, Disk Mix & J.L. Cooper automation systems, and ProDisk direct to disk recording/editing system.

(215) 426-6700
 1020 N. Delaware Ave.
 Philadelphia PA

The **Lowest Industry Rate** of \$50/column inch gets your ad message in the **Second-Highest-Read Section** of R•E•P where over 52,000 potential readers see it!

USE R•E•P CLASSIFIEDS

Classified Advertising is available by the column inch (Classified Display): \$40 per inch, per insertion, with frequency discounts available. 1" minimum, billed at ¼" increments thereafter. 10" maximum per ad. Blind ads (replies sent to R•E•P for forwarding) \$25 additional. Reader Service number \$25 additional. Ads 4" and larger will receive a free reader service number and your company's name listed in the Advertiser's Index. Spot color (determined by magazine) \$150 additional. No agency discounts are allowed for classified advertising.

Contact Renée Hambleton, 913-541-6745, for information on frequency and pre-payment discounts, or send your order and materials to:

Renée Hambleton
R•E•P
 9221 Quivira Rd.
 Overland Park, KS 66215
 Fax your ad to:
 913-541-6697

WHY GO ANYWHERE ELSE FOR ANYTHING AUDIO WHEN WE HAVE IT ALL ?

Some of our high quality product lines...

- AKAI • AKG • API • BRUEL & KJAER • DDA
- DEMETER • DRAWMER • EVENTIDE • FOCUSRITE
- GENELEC • GML • KLARK-TEKNIK • LEXICON
- SONTEC SONY • SOUNDTRACS • SUMMIT AUDIO
- TANNOY • TC ELECTRONICS • TUBE-TECH

anything audio
 professional audio and video services

CALL 800-788-2875 • FAX 617-426-2763

63 MELCHER STREET, BOSTON, MA 02210 • 617-426-2875

Circle (75) on Rapid Facts Card

Classified

FOR SALE



AVR
AUDIO VIDEO RESEARCH

PROUDLY OFFERING:

Adams-Smith ■ ADC ■ Aircraft ■ Aiwa-HHB ■ Akai ■ AKG ■ Allen & Heath ■ Ampex ■ Anchor Audio ■ Annis ■ Anvil Cases ■ Aphex ■ API ■ ART ■ Ashly ■ Atlas/Soundolier ■ Audio Control ■ Audio Technica ■ BBE ■ BeyerDynamic ■ Biamp ■ Bose ■ Brainstorm Elect. ■ Bryco ■ Bryston ■ BSS ■ CAD ■ Calzone ■ Carver ■ Casio ■ Community ■ Countryman ■ Crest Audio ■ Crown ■ Cutting Wedge ■ dbx ■ DDA ■ Demeter ■ Denon ■ Digidesign ■ Drawmer ■ Dr. T's ■ EAW ■ EFX ■ Electro-Voice ■ Eltekon ■ EMU Systems ■ Eventide ■ Fishman ■ Focusrite ■ Fostex ■ Furman ■ Gauss ■ Gentner ■ Goldline ■ Hafler ■ Harrison ■ Hollywood Edge ■ Horizon ■ Hosa ■ Hybrid Arts ■ Innovative Audio ■ Intractan ■ JBL/UREI ■ Jeanius ■ J.L. Cooper ■ John Hardy ■ Juice Goose ■ Klark Teknik ■ Klipsch ■ Latin Percussion ■ Lexicon ■ Littlelite ■ Mackie Designs ■ Mark of the Unicorn ■ Meyer Sound ■ Microtech ■ Midas ■ Middle Atlantic ■ Midiman ■ Milab ■ Mogami ■ Monster Cable ■ MRL ■ Nakamichi ■ Neve (Prism) ■ Numark ■ Omnimount ■ Opcode ■ Orban ■ Otari ■ Panasonic ■ PLI ■ ProCo ■ ProSonus ■ ProTek Cases ■ Ramsa ■ Rane ■ Rapco ■ Servo Drive ■ Sennheiser ■ Shure ■ Simon Systems ■ Sony ■ Soundcraft ■ Sound Ideas ■ Studiomaster ■ Summit Audio ■ Switchcraft ■ Symetrix ■ TAD ■ Tannoy ■ Tascam ■ TC Electronics ■ TDK ■ Telex ■ 3M ■ Threshold ■ Timeline ■ Trident Audio ■ Turbosound ■ Turtle Beach ■ Ultimate ■ Support ■ Whirlwind ■ White ■ Zoom

Otari's full-line Analog and Digital Dealers for New England & Brazil.

Plus a large selection of warranted used equipment; studio and control room design; technical and maintenance service

Para O Brasil.
Oferecendo assistencia tecnica e instalacao no rio e em Sao Paulo: Akai, AKG, dbx, JBL/UREI, SSL, Otari, Shure.

QUALITY VINTAGE EQUIPMENT

ELAM — NEUMANN — RCA — PULTEC — LANG
NEVE — FAIRCHILD — AKG — UREI

USED 24 TRK's AVAILABLE

MCI — SONY — OTARI — STUDER

ALL WARRANTIED AND CALIBRATED TO FACTORY SPECS OR YOUR \$ BACK

WE BUY, TRADE AND LIST YOUR ITEMS FOR FREE

VISIT OUR 3000 SQ. FT. SHOWROOM

65 MAIN STREET, WATERTOWN, MA 02172
TEL: (617) 924-0660 - FAX (617) 924-0497
In Connecticut Area Call:
203-289-9475

Circle (71) on Rapid Facts Card

MISCELLANEOUS

AUDIO EFFECTS

STUDIO EQUIP. FOR HIRE
Technician on staff 7 a.m. - 1 a.m.

Open 7 days a week
Digital Tape Machines,
Synclavier Systems,
Effects Processors, Reverbs
(213) 871-1104 (818) 980-4006
Ask For Mark

HELP WANTED

AUDIO ENGINEER

Christian Television Ministry has an opening for a 2nd shift **AUDIO SWEETENING ENGINEER**. Applicant must have automated mixing experience and a minimum of 2 years audio for video post-experience. S.S.L., MTR-90 II. Adams Smith.

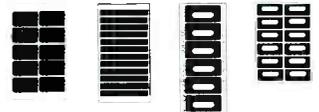
For application call: (214) 620-1586, ext. 6267 or mail resume to: Robert Tilton Ministries, Attn: Personnel, P.O. Box 819099, Dallas, TX 75381-9099

Invest Your Advertising Dollars in R•E•P's Classifieds!

LABELS

AUDIO/VIDEO LABELS

The highest quality professional labels



- Pinfeed VHS Face • VHS Spine
- Pinfeed VHS Spine • VHS Face
- Pinfeed Audio Cassette • Audio Cassette
- VHS Combo • BETA Face
- • UMATIC Face

Available in 7 Colors and 2 Parchments
Quality Pricing, Same Day Shipping



audico label corp.

8343 W. Grand Ave.
River Grove, IL
60171

Free Samples

For more information call 708/456-0003

Circle (72) on Rapid Facts Card

INSTRUCTION

BOOKS, VIDEOS & TAPES

Recording • Live Sound • Music Business
Composition • MIDI • and more!

Over 550 titles

FREE CATALOG (800) 233-9604

6400 Hollis St. #12, Emeryville, CA 94608

MIX BOOKSHELF

ACOUSTICAL CONSULTING

BUILDING A STUDIO??

STUDIO & ACOUSTICAL DESIGN
COMPLETE STUDIO PLANS
WIRING SYSTEM DESIGN
STUDIO INSTALLS & PRE-WIRING
OTARI & TASCAM SERVICE

Have your new room or facility designed & built by audio professionals with over 20 years experience as mixers, producers, musicians & studio owners.

db ENGINEERING
Boston, MA (617) 782-0648

LEASING/FINANCING

CFS Century Financial
Services Group, Ltd.

LEASE FINANCING

Specializing in Professional
Audio Equipment.
New and Used.

Transactions Approved Nationally.
Ask us about our Mini-lease.

Tom Roche
1-800-593-9300
or
314-537-0330
Fax 314-537-4026

Circle (73) on Rapld Facts Card

LFCI Equipment Leasing

- Up to \$75,000 with credit application only
- Provides:
Off-balance sheet financing
Tax benefits
- New & used equipment
- Generate capital by selling & leasing back equipment
- Nationwide
- Dealers welcome
- Over 10 yrs in the A/V industry

Apply by phone
(800) 626-LFCI

Your ad could be **HERE**
for just \$40!
Call or fax
Renée Hambleton
(913) 541-6745
FAX (913) 541-6697



OPUS
RECORDING
& EQUIPMENT
COMPANY WOULD
LIKE TO TAKE THIS
TIME TO WISH YOU ALL
THE HAPPINESS OF THE HOLI-
DAY SEASON. TO SHOW
OUR APPRECIATION, MENTION
THIS AD WHEN YOU PLACE YOUR
ORDER AND RECEIVE A GIFT. OPUS
STOCKS A COMPLETE LINE OF AMPEX,
AGFA, 3M & MAXELL TDK TAPES. CALL
(708) 336-OPUS OR WRITE 4262 GRAND
AVENUE, GURNEE, IL 60031.

OPUS

EQUIPMENT FINANCING "LOANS BY PHONE"

- NO FINANCIALS REQUIRED FOR TRANSACTIONS UNDER \$50,000
- NEW OR USED EQUIPMENT
- \$2,000 TO \$200,000
- NO DOWN PAYMENT
- SALE-LEASEBACK EQUIPMENT FOR WORKING CAPITAL
- WE DO START-UP BUSINESSES

TO APPLY OR REQUEST
ADDITIONAL INFORMATION
CONTACT MARK WILSON

(800) 275-0185

FAX: (214) 235-5452



EQUIPMENT WANTED

EQUIPMENT WANTED

BUY OR TRADE
YOUR USED MULTITRACK RECORDERS
AND CONSOLES
EAR PROFESSIONAL AUDIO/VIDEO
(602) 267-0600

WANTED

NEVE-SSL-API-TELEFUNKEN-SONY
NEUMANN-OTARI-MCI-PULTEC-URIE-AMS
OR ANY USED CONSOLE, TAPE MACHINE,
VINTAGE MIC OR PROCESSOR YOU WANT
TO SELL—CALL ANYTHING AUDIO
617-426-2875

DUPLICATION SERVICES



CD'S AND TAPES
COMPLETE
PACKAGES

- CD REPLICATION
- HIGH SPEED CASSETTES
- AUDIOPHILE REAL TIME CASSETTES ON TDK-SA
- COMPLETE PRINTING AND PACKAGING

EASTERN
STANDARD
PRODUCTIONS, INC.

26 BAXTER STREET
BUFFALO, N.Y. 14207

TEL 716-876-1454
FAX 716-877-6395
1-800-527-9225

1000 CD'S
\$2300.00

COMPLETE
PACKAGE

1-800-527-9225
FOR A FREE BROCHURE

DISC MAKERS

- Cassette Duplication
 - Record Pressing
 - CD Replication
 - Video Duplication
- Complete Packages



CALL FOR OUR FREE FULL COLOR CATALOG
1-800-468-9353 (In PA: 215-232-4140)

DISC MAKERS

1328 North 4th Street
Philadelphia, PA 19019

AUDIO & VIDEO CASSETTE DUPLICATION

- Every Tape Checked for Quality Control!
- Real Time & High Speed • Complete Packaging •
- 3/4", VHS, Hi-Fi, S-VHS, DAT •

1-800-365-TAPE (8273)

EASTCO PRO • Free Catalog •
AUDIO/VIDEO CORPORATION BUFFALO, N.Y.

Sell Your Clean Used Gear!
List For-Sale Items Free !!

WANTED; UREI, Teletronix, Lexicon,
Neve, Trident, AMS & dbx. All tube
mics. Clean multitracks & consoles.

db ENGINEERING Inc.

Tel:(617) 782-4838 Fax:(617) 782-4935

Wanted: Dead or alive

Pultec, ITI, Lang, Sontec EQs, Telefunken,
Neumann, AKG or RCA mics. UREI, dbx, UA,
Teletronix, Fairchild limiters and other gear.
Boxes or tubes; API or Neve consoles and old
guitars.

Dan Alexander

5935 Market St. Oakland, CA 94608
415-644-2363 Fax 415-644-1848

Classified

SERVICES

ALIGNED AUDIO INC.
SUPER QUALITY

- ▶ Audiophile Record Pressing
- ▶ CD Replication
- ▶ Real Time and High Speed Cassette Duplication
- ▶ Direct On-Shell Imprint in Colors

COMPLETE PACKAGES
Call Today for your Free Catalogue

☎ **1-800-869-6561**
OR **1-718-788-6969**
FAX **1-718-499-0421**

Circle (74) on Rapid Facts Card

JBL **LOUDSPEAKERS—EXCLUSIVE**
Warranty/Non Warranty Repair.
Factory Authorized Center
Professional-High Fidelity
Four Day Turnaround For Stocked Kits.
All Work Done By Factory Trained Technicians.

PS ★ AR
PRICE STEVENSON ACOUSTIC RESEARCH
1591 Broad Run Rd., Downingtown, PA 19335 (215) 383-1063

LA-2A LA-3A OWNERS
Before you buy a new T4B optical attenuator, why not consider having your old opto rebuilt at a fraction of the cost.
FOR MORE INFORMATION - Please Call
ADL 914-255-7229

E-K VIDEO
AUDIO & VIDEO DUPLICATION SERVICE

800/729-4455

High Speed Loop-Bin Audio Duplication System
Custom Tape Loading & Packaging
Highest Quality Audio & Video Duplication Available

with facilities in:
Los Angeles • Salt Lake City • Chicago
Houston • Atlanta • Boston



Western Sales
1233-C Amethyst
Redondo Beach, CA
90277
213/372-8880
213/379-8900 fax

Southern Sales
11605 Idlebrook drive
Houston, TX 77070
713/370-9196
fax: 713/251-0166

Eastern Sales
892 Worcester St.
Wellesley, MA
02181
617/235-7260
fax 617/235-5312

Invest Your Advertising Dollars in R•E•P's Classifieds!

COMPLETE CD AND CASSETTE PRODUCTION

DIGITAL HOUSE
212-333-5950

MASTERING REPLICATION
PRINTING TOTAL PACKAGING
POSTERS GRAPHIC DESIGN STUDIO
PERSONALIZED EXPERT SERVICE

101 WEST 57TH ST. NEW YORK, N.Y. 10019
"FOR THOSE WHO HEAR THE DIFFERENCE"

MAGNETIC RECORDING HEADS
RELAP/REPLACEMENT for Audio, Video, Time Code, Duplication.

30+ years of head design experience.

iem 350 N. Eric Dr.,
Palatine, IL 60067
800-227-4323

*Full Color
Cassette Inserts
Only \$109*

1-800-95J-KARD
Free Catalog Anderson Graphics

AUDIOPHILE QUALITY...

EUROPADISK, LTD.
US' MOST COMPLETE FACILITY!

- Cassette Duplication
- Compact Disc Production
- DMM Vinyl Pressing • Custom Graphics • Mastering Studios

COMPLETE PACKAGES with state-of-the-art Neve Digital Mastering for CD, Studer & Lyrec HX Pro Cassette Duplication, DMM Mastering for Vinyl and a complete in-house art department - design, layout, typesetting, color separation. Get THE BEST at no extra cost!

For a Complete Brochure, call or write
EUROPADISK, LTD.
75 Varick Street, New York, NY 10013
☎ (212) 226-4401 FAX (212) 966-0456



RCA MICROPHONES—Repair service on all models. Complete sound and cosmetic restoration. We also repair other ribbon types. ENAK Microphone Repair, 420 Carew Avenue, Pitman, NJ 08071. (609) 589-6186.

VIDEO PRODUCTION MUSIC

GET SOME GUTS!

If you're tired of "Generic" Production Music, **River City Sound Productions** has the cure. **ALL ON A BUY-OUT BASIS.** Call toll free (800) 755-8729
GET SOME GUTS!

TRAINING

WORLD'S BEST AUDIO SCHOOLS
are in *New Ears* - Unique guide profiles 84, lists 324 college/vocational programs. 208 pages of career, scholarship info, & helpful hints. \$11.95 postpaid, \$16.95 air.

"Great little book! I love it!" - Bruce Swedien
New Ears, 1033 Euclid Avenue, Ste. 1R,
Syracuse, NY 13210-2661, ph: 315-425-0048

Don't Miss It!

R•E•P's New Sound Reinforcement Supplement "Live Sound! and Touring Technology"

Your Best Source to reach 5,000 SR Specialists... only \$30!*

Starting in January 1992

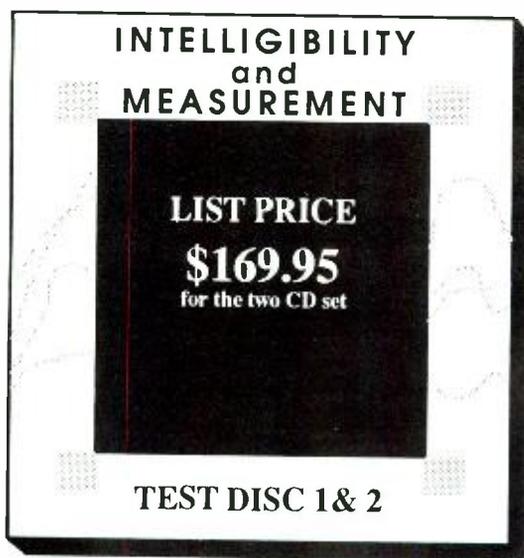
Call **Renée Hambleton** for space reservation!

913-541-6745
or fax your ad to **913-541-6697**

*column inch rate. \$22 for currently scheduled contract classified advertisers.

USE R•E•P CLASSIFIEDS

A sound investment for those who make noise.



By popular demand, we would like to introduce the answer to your sound quality nightmares...The Intelligibility and Measurement Test Disc, 1 and 2.

This invaluable tool will help when your work involves: new installations, evaluations of existing systems, performance testing and verification, coverage analysis...and more.

This easy-to-use, two-CD set allows accurate, repeatable speech intelligibility measurements to be made quickly and efficiently. Also included are necessary test signals to conduct complete, accurate sound system performance evaluations.

For more information about this powerful and unique tool contact Prosonus direct.

Phone: 1-800-999-6191 or Fax: 1-818-766-6098.



CONTINUITY ADVERTISING IS THE NAME OF THE GAME

Why? Because...

- Readers quickly forget one-time-only ads*
- Your prospect base is *always* changing
- Most prospects aren't persuaded to buy from a *single* ad

Improve your odds of reaching buyers while they're in the buying frame of mind...

Practice CONTINUITY ADVERTISING in R•E•P Magazine!

*American Business Press Inc.

RENTAL EQUIPMENT

New Year's Rental Resolution.

Fostex G16S plus Fostex 820 20x8 board - \$242/mo.

Akai A*DAM 12-track digital recorder plus a Soundcraft Delta 8 24-channel deluxe input- \$789/mo.

Lexicon 300-\$115/mo.

Fostex G24S with Dolby S noise reduction plus Soundcraft Delta 8 24-channel deluxe input-\$559/mo.

Above prices are based a 60-month lease. Other lease packages available between \$5,000 and \$75,000.

Subject to credit approval, minimum 2 years in business.

OPUS

4262 Grand Ave., Gurnee, IL 60031
708•336•OPUS

Rent FX Rents

Aphex	Lexicon	Roland
Drawmer	Massenberg	Sony
Eventide	Orban/dbx	Otari
Focusrite	Panasonic	Yamaha

And much more!

Office 708-452-5594

Pager 312-294-1137

RENT FX

SOUND REINFORCEMENT CONSOLE & FX RENTALS

ATI Paragon	Soundcraft Europa
Midas XL-3	Soundcraft Series 4
TAC SR6000	Soundcraft 800B
Yamaha PM3000	Soundcraft Venue
Gamble EX56	Ramsa WR-S852
Gamble EX48	Ramsa WR-S840
Gamble HC40	TAC Scorpion II
Gamble SC32	TAC Scorpion
Yamaha 2408	TOA RX-7-328

Lexicon • Klark Teknik • t.c. electronic
Eventide • Yamaha • dbx • Panasonic
Roland • Drawmer • Aphex • Symetrix

- * FREE travel and shop setup time
- * World's largest live console inventory
- * 10 yrs of console rental specialization
- * Tours - Weekly - Daily - Long Term
- * **Extremely Competitive Prices!**

Hi-Tech Audio

(415) 742-9166

Advertisers Index Sales Offices

	Page Number	Rapid Facts Number	Advertiser Hotline
Ac Cetera	72	62	412-344-1520
Alesis	39	33	213-467-8000
Aligned Audio	78	74	718-788-6969
Anything Audio	75	75	617-426-2875
Aphex Systems Ltd	57	21	818-767-2929
Sam Ash Professional	61	42	212-719-2640
Audico Label Corp.	76	72	708-456-0003
AudioControl Industrial	44	26	206-775-8461
Audio-Technica U.S., Inc.	9	6	216-686-2600
Audio Video Research	76	71	617-924-0660
Audio Visual Assistance	71	60	612-481-9715
Cambridge Signal Technologies	59	40	617-225-2499
Century Financial Services	77	73	314-537-0330
Cipher Digital, Inc.	48C-D,59	48,41	800-331-9066
Crown International	IFC, 32A-B	1,46	219-294-8000
DB Engineering	74	68	617-782-4838
Denecke	61	43	818-766-3525
Dic Digital Supply	27	12	201-224-9344
Disc Makers	38	20	216-232-4140
Dolby Labs Inc.	43	25	415-558-0200
Fast Forward Video	42	24	800-755-TIME
Fostex Corp of America	24	11	213-921-1112
Full Compass Systems	63	34	800-356-5844
Gefen Systems	55	32	800-545-6900
Genelec	37	18	508-650-9444
Hardy Co.	38	19	708-864-8060
Hartmann & Associates	44	27	800-524-4528
Hill Audio Inc.	47	29	817-336-5114
Innovative Audio Systems	72	63	213-470-6426
Jensen Transformers Inc.	51	37	213-876-0059
JVC Professional Products Co.	31		800-JVC-5825
KABA Research & Development	53	39	800-231-TAPE
Klipsch	16A-B	45	
Lexicon Inc.	3	4	617-736-0300
Magnetic Reference Lab Inc.	50	31	415-965-8187
Markertek Video Supply	75	70	914-246-3036
Mercenary Audio	71		617-784-7610
3M/Magnetic Media Division	19	9	612-733-1110
M.T.U.	42	23	919-870-0344
National Foam Inc.	73	65	213-650-8906
Ocean Audio	73	64	213-459-2743
Oxmoor	52	38	205-985-7040
Peavey Electronics Corp.	IBC	2	601-483-5365
QSC Audio Products	13	8	714-645-2540
Seam Tech	73	66	415-543-0170
Sennheiser Electronics Corp.	45	28	203-434-9190
Sony Professional Audio	7,41		800-635-SONY
Soundcraft U.S.A.	BAC		818-893-8411
Soundtracs Div. Samson Tech.	1	3	516-932-3810
SPARS	67	44	
Studer Revox America Inc.	11	7	615-254-5651
Tannoy North America Inc.	23	10	519-745-1158
Tascam	35	17	213-726-0303
Technical Audio Devices	4	5	213-816-0415
Telex Communications, Inc.	29	14	612-887-5596
True Image Audio	72	61	619-480-8961
World Class Tapes	74	67	313-662-0669

CLASSIFIEDS

Renée Hambleton
913-888-4664
9221 Quivira Road
Shawnee Mission, KS 66215
Telefax: 913-541-6697

SANTA MONICA, CA

Herbert A. Schiff
310-393-9285
Jason Perlman
310-458-9987
Kelly Daugherty
310-451-8695
501 Santa Monica Blvd., Ste. 401
Santa Monica, CA 90401
Telefax: 310-393-2381

CHICAGO, IL

David Ruttenberg
312-435-2360
55 East Jackson Blvd.
Chicago, IL 60604
Telefax: 312-922-1408

NEW YORK, NY

Stan Kashine
212-332-0634
38th Floor
888 Seventh Ave.
New York, NY 10106
Telefax: 212-332-0663

OXFORD, ENGLAND

Richard Woolley
Unit 3, Farm Business Centre
Clifton Road
Deddington, Oxford
OX15 4TP England
Telefax: +44(0) 869-38040
Telephone: +44(0) 869-38794
Telex: 837469 BES G

FREWVILLE, SOUTH

AUSTRALIA

John Williamson
Hastwell, Williamson, Rep.
Pty. Ltd.
109 Conyngham Street
Frewville 5063
South Australia
Phone: 799-522
Telefax: 08 79 9735
Telex: AA87113 HANDM

TOKYO, JAPAN

Mashy Yoshikawa
Orient Echo, Inc.
1101 Grand Maison
Shimomiyabi-Cho, 2-18
Shinjuku-ku, Tokyo 162, Japan
Tel: (3) 3235-5961
Telex: J-33376 MYORIENT
Fax: (3) 3235-5852

MORE POWER TO YOU!



VERSION
3

In November of 1989, the first DPM® 3 rolled off the production line and into the synthesizer market — a market historically filled with over-priced, gadget-oriented keyboards having a service life of about fifteen months. Peavey's goal was to develop a superior instrument that offered more features than comparably priced units, plus allowed for an infinite number of upgrades, making it virtually impossible for the DPM 3 to enter the "cycle of obsolescence." The DPM 3 successfully established itself as the model for synthesizer architecture of the future.

With the expanded editing functions of the DPM® 3^{SE} and its 16-bit sampling capabilities, the SE proved that the DPM design for limitless software upgrades was truly the wave of the future.

Now, as promised, we continue the evolution of the DPM 3^{SE} with the new **Version 3** software upgrade. **Version 3** doubles the memory capacity of the on-board sequencer. It also offers extended programming features making the SE even more flexible and easy to use. Expand your musical horizons with the DPM 3 with **Version 3** software upgrade from Peavey.

FEATURES

- ◆ Doubled sequencer capacity to 40,000 notes, 100 sequences, 20 songs
- ◆ Loopable Envelopes: 0→3, 1→3, 2→3, 0<->3, 1<->3, 2<->3; sustain only, sustain plus release looping
- ◆ Programmable filter settings for each drum in a Drum Kit
- ◆ Programmable Pan per linked program in COMBI programs
- ◆ Enhanced editing from the keyboard of parameters that are note or velocity-based
- ◆ Drum piece selection from the keyboard

Remember, you can update your DPM® 3^{SE} with the affordable Version 3 upgrade. Contact your local authorized Peavey dealer or call the DPM Hotline: (601) 483-5370





For The Artist In Every Engineer.

In recent years, recording methods have changed drastically. In today's studio, you're the artist, the engineer and producer. Designing today's professional recording or production studio presents unique challenges, like finding a flexible full featured console that fits your space, budget and audio requirements.

Soundcraft's Sapphire lets you create both music and a recording environment the way you want it. Sapphire gives you 32 track performance normally found in consoles many times the price. A noise gate on every channel. Great sounding four band EQ. A variety of modules to suit the way you record. And five frame sizes.

Sapphire. Its unique, flexible routing and design approach puts everything you need where you need it. Direct to tape routing with grouping to any channel provides total creative flexibility. The in-line design takes up less space than conventional consoles and is as intuitive to use as any split console. Whether you're building a home studio, adding a video post suite or designing Studio Two, Sapphire will bring out the artist in you.

Now you can afford the best. Hear Sapphire today at your authorized Soundcraft dealer.

Soundcraft

Soundcraft USA/JBL Professional
 10000 Balboa Boulevard, Northridge, CA 91329
 An International Company



Sapphire