

October 1989

Recording

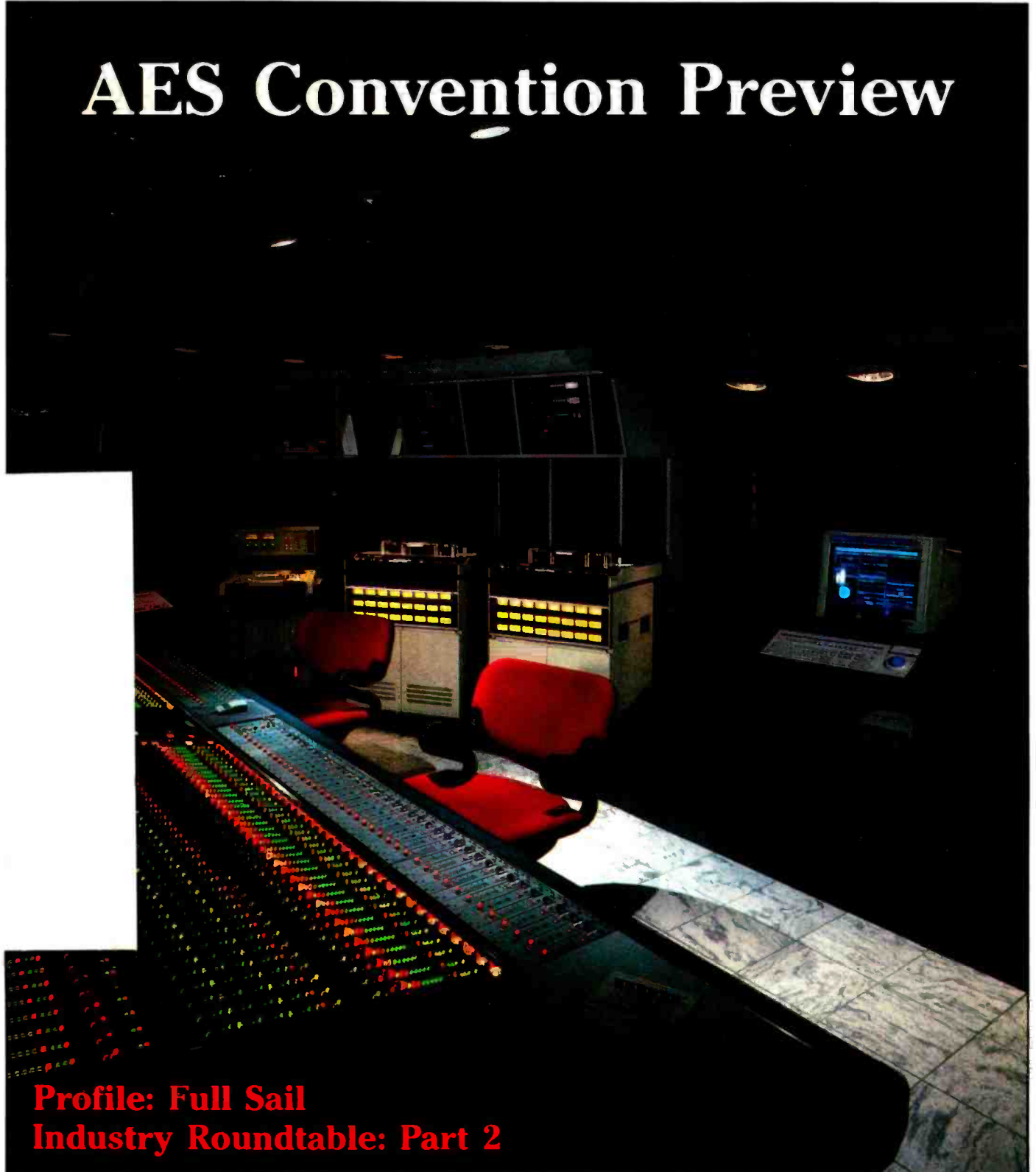
ENGINEER/PRODUCER

The Applications Magazine for Audio Professionals

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AES Convention Preview



Profile: Full Sail
Industry Roundtable: Part 2

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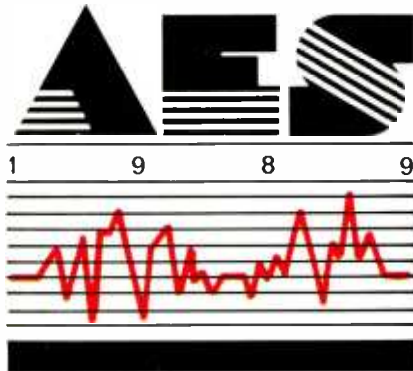
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Studio A of Platinum Post, which is the commercial division of Full Sail Center for the Recording Arts, Winter Park, FL. Facility design by John Storyk.

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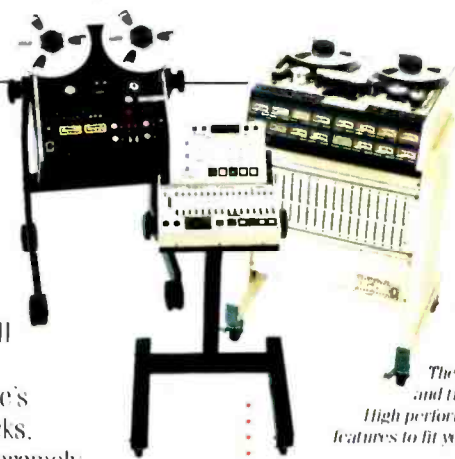
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EDITORIAL

Pay now, pay later

As you're reading this, there's a chance that you're either preparing to attend the Audio Engineering Society convention in New York, or you're actually there. Or, if you're planning to skip the festivities, there's a chance you might do something else productive this month, like do a session or talk to your wife.

I say this somewhat in jest. AES is, after all, one of the premier audio shows in this country. Look through our preshow coverage in the following pages, and you'll see that the show is shaping up to be interesting.

As we entered into this fall convention season, there was a lot of talk about trade shows in general, most of it negative. I always get a little wary when this happens. Trade shows can be a pain, but they are easy targets. Something always goes wrong at them—gear doesn't arrive on time, elevators don't work, booths are too crowded (or not crowded enough), demos don't go as planned.

With apologies to Mark Twain, everyone talks about trade shows but no one does anything about them—until now. When business was good, it didn't seem to be much of an issue. In this less-than-banner year, two groups of manufacturers are beginning to make some serious noises about trade shows, which could result in some positive changes.

During the last day of the National Association of Music Merchants' Summer Expo, more than 100 manufacturers signed a petition asking NAMM to abolish the summer show, or at least change its implied policy of having to book space at both the summer and winter show to maintain booth preference.

Although NAMM claims there is no policy requiring companies to exhibit at both shows, there's some pretty convincing evidence that there is at least an implicit policy. Even if this flap turns out to be nothing more than a communication problem, the summer show's credibility, from a pro audio viewpoint, may have been permanently damaged.

The second group, the Professional Audio Exhibitors Group, is comprised of 30 European-based (for now) manufacturers that will boycott next March's European Audio Engineering Society convention in Montreux, Switzerland.

You may have heard of some of these companies. Tannoy. Soundtracs. Amek/TAC. Neve. Solid State Logic. Almost a third of the PAEG are sustaining members of the AES.

Plans are being made to enlist the support of U.S.-based manufacturers, and there's even talk of forging an alliance with SPARS. With that sort of firepower, the PAEG has the potential to force some major changes.

From a magazine's standpoint, fewer shows would be great. We go to almost all of them, and it would certainly make our lives easier. Manufacturers, certainly, stand to gain. But everyone in this industry would benefit if trade organizations, either by choice or by force, limited the number of shows.

As this issue begins to heat up, there are several points to consider.

1. There *are* too many trade shows. According to the PAEG, 26 were scheduled for 1989. That's an average of more than two a month, but there's four each in April, June and October. That doesn't begin to take into account seminars, workshops, and local or regional shows.

Are all of these shows offering something unique that can't be gained at the other shows? Something has to give.

2. Trade organizations need to look beyond their own self-interest and to the industry as a whole. The interests of a trade organization, and its corresponding show, are no longer unique.

The manufacturers in the PAEG, which spend large sums of money to know their markets, have it right: While the technology is converging, the marketplace is diverging. It's no longer unusual to have recording engineers attend the National Association of Broadcasters' convention, or broadcast engineers attending the AES.

The result is that while the technical papers portion of a trade show may be unique to the organization, its corresponding equipment exhibition is largely redundant. And it makes no sense at all to have two domestic shows in a year, as NAMM does.

It's time to consider joint technical and equipment exhibitions, such as a fall AES/SMPTE convention here in the States and European AES/APRS confab in the

spring. Although technical sessions could continue to be held separately, there's no real reason why even those should be separate.

An AES/SMPTE show would offer a unique opportunity for each camp to learn more about each other. As for Europe, what point is there in having two pro audio shows two months apart?

3. You're paying for all these shows. There are those who may look at the glass as being half-full: Having many opportunities to view equipment is beneficial to the industry. Look again; you're paying for all those choices. Manufacturers can absorb only so much of trade show expenses. After that, they pass it on.

4. Fewer shows would slow down the proliferation of vaporware. Because manufacturers spend so much money on trade shows, there is enormous pressure to make each show a major event. Everyone's heard stories where a Company X showed an empty box or fudged a demo, just so something big would be there.

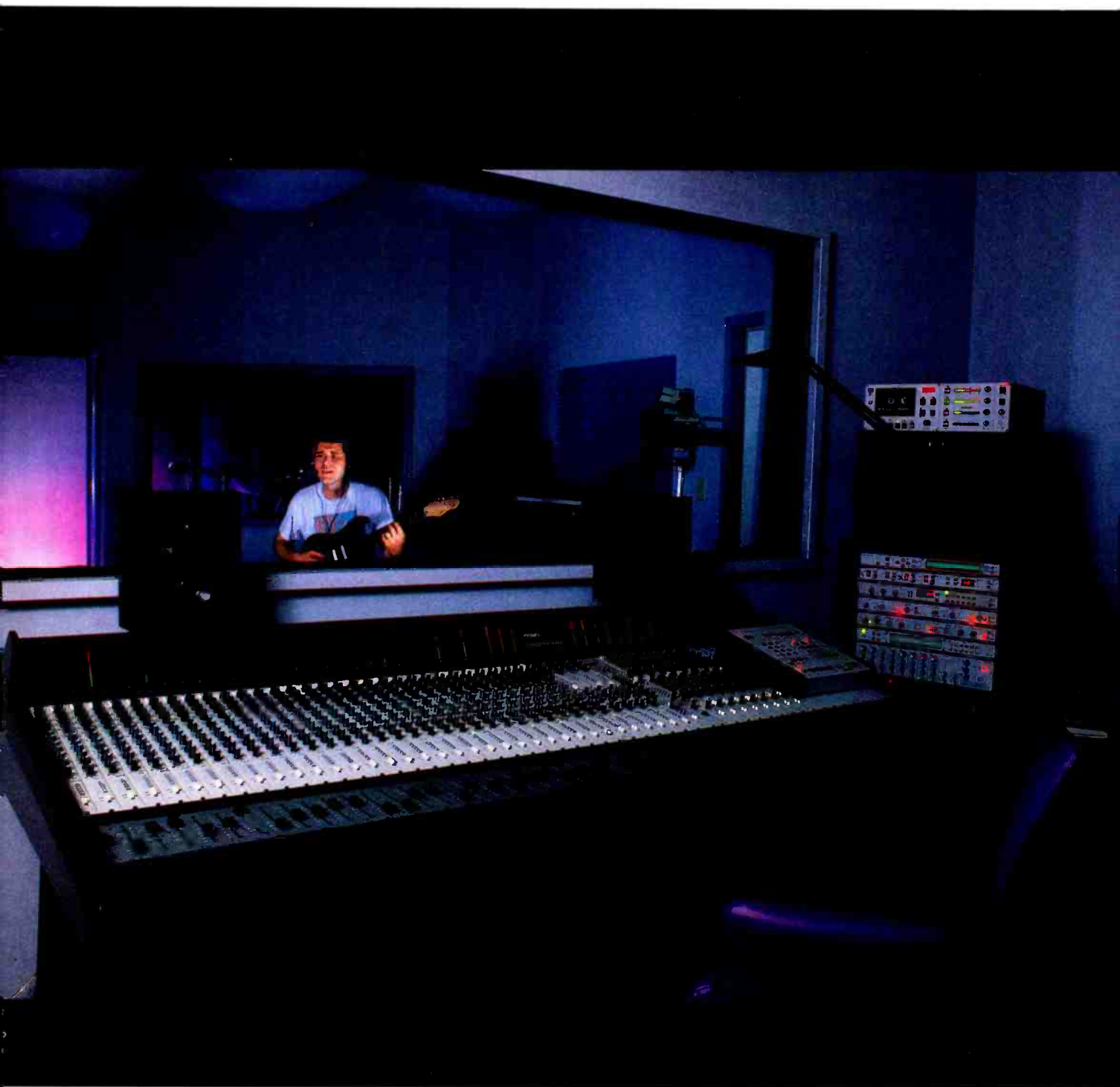
Fewer trade shows would mean fewer opportunities to create a splash, but companies would be spending less money, so the pressure would be off. Companies would be able to create realistic R&D cycles, resulting in products that actually exist when they are exhibited.

5. As the buyers of this equipment and members of the organizations, you can influence the situation. If you agree with the PAEG, let AES know that you support the concept of fewer trade shows. If you have business relationships with PAEG-member companies, let them know you support their activities.

RE/P wholeheartedly supports the efforts of the PAEG and the NAMM group to try and change the status quo. While our support of the professional societies has been strong, all associations must re-evaluate their trade show policies and choose what is best for the entire industry.

Without a healthy manufacturing community, the efforts of the best association will be wasted. Given the sort of year the manufacturers have had—acquisitions, liquidations, flat sales and a general feeling of uncertainty—a climate where trade shows continue to proliferate has to be questioned.

Dan Torchia
Staff Editor



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NEWS

Otari purchases Sound Workshop and Digital Creations

All assets, inventories and interests of Sound Workshop Professional Audio Products, Sound Workshop and Digital Creations have been acquired by Otari Corporation. The company now directs its worldwide sales and marketing from its California offices. All personnel have been retained for the new Console Products Group and Digital Creations Products department.

Also, Lee Pomerantz, former national sales manager for Sound Workshop and Digital Creations, has been named console products manager.

Chris Stone leaves Record Plant

Chris Stone has sold his percentage of the Record Plant, Los Angeles, to Chrysalis, which purchased a 50% partnership in 1987.

After founding the Record Plant with Gary Kellgren in New York in 1967, Stone moved the company to Los Angeles in 1969. The present facilities have been in existence since 1986.

David Ellman has been appointed executive vice president and CEO; Bill Dooley has been named general manager/chief engineer; Rose Mann, studio operations executive; Norman Dlugatch, director of technical engineering; Mark Eselman, manager of remote division; and Dan Moskey, manager of rental division.

DDA receives Queens Award

For the second time in the last three years, DDA has received the Queens Award for Technical Excellence. The honor is given to a company who exhibits intelligence in design and implementation of advanced technologies. The award was presented at a ceremony on the Royal yacht Britannia to Dave Deardon, technical director, Gerald Squires, products manager, and Karen Gude.

News notes

New England Digital has increased its production staff by more than 25% as part of a year-long program to enhance and expand its production capabilities. According to the company, the move will accommodate the demand for its digital audio workstations. A record \$1.5 million in sales was posted by NED's New York office for the month of May.

Tannoy will give away more than \$5,000 in studio reference monitors at the AES convention in New York. Drawings will take place at the end of each day at Tannoy's booths H-221 and H-226. Ballots will be available at the booths and at Tannoy's demo room (D-624) in the Hilton.

AMS Industries has appointed Comlog its AudioFile representative for Southern California, Nevada and Arizona. Synchrotec Systems has been named the AMS distributor for Australia and New Zealand.

Ashley Audio has awarded its "Dealer of the Year" plaque to AST, New York. Brighton Sound, Rochester, NY, was runner-up for the honor.

During its 3-month 25th anniversary tour, The Who used a **Tascam** ATR 60/4 multitrack recorder/reproducer, a **Soundcraft** Series 200SR drum mixer and Soundcraft Series 200Bs for stage mixers.

Adams Smith has opened a demonstration and training studio at 123 S. Victory Blvd., Burbank, CA; 818-840-9588.

Gentner Electronics is expecting 55% growth in earnings this year compared with 1988. Revenues for the fiscal year represent growth of approximately 50%.

Silver Peak Marketing has been named the representative for **Klark-Teknik** in the western United States. The territory includes Colorado, Utah, New Mexico, Wyoming, eastern Montana and eastern Idaho. Silver Peak will also represent DDA, Midas and Milab products.

Apogee Sound has introduced its Apogee Access database, which includes the rental inventory of Apogee speakers worldwide. The program enables rental companies to temporarily supplement their stock of Apogee loudspeakers. For more information, call Mark Ockenfels at 707-778-8887.

Studiomaster Inc. has relocated to 3941 E. Miraloma Ave., Anaheim, CA 92807; 714-524-2227.

International Video Entertainment has contracted **B&B Systems** to redesign and move its post-production facility from Newbury Park to Van Nuys, CA. The move, installation, integration, testing and

commission will be done over only two days, according to B&B Systems.

Agfa PEM 469 studio mastering tape is being supplied by The Pro Audio Shop, Nashville, with the purchase of Tascam tape machines in order to establish customer familiarity with the new tape formula.

The first **Agfa** Pancake Award was presented to Tom Wells, manager of manufacturing for MCA Tape, for contributions to the technology and development of audio and video duplication.

MacPherson Loudspeakers has moved its factory and sales office to 3351 Remy Drive, Lansing, MI 48906; 517-321-0700.

Farras has duplicated its extensive Los Angeles ROH stock at its head offices in Kingston, Surrey, England. Available for hire or purchase are 240 ROH audio distribution amplifier racks.

Quadim Corporation, Westlake Village, CA, has purchased 108 units of the **Nakamichi** MR-1 professional cassette deck for use in a real-time cassette duplication system.

People

Recent appointments at ProShow USA include **Mike Miller** and **Rob Hughbanks**.

Ampex Recording Media has elected its new company officers: **Richard Antonio**, vice president, sales and customer service, United States; **George Armes**, general manager, instrumentation products; **Clara Munley**, corporate controller; **Eugene Nyland**, vice president, operations; and **Phillip Ritti**, general manager, audio/video products.

Richard Salter has been appointed development director at Focusrite Audio Engineering Ltd.

Doug Di Giacomo has been named Midwest regional manager for Digital F/X.

Andrew Brent has joined Audio Inter-visual Design to organize its new service group.

B&B Systems has named **David N. Bartolone** its Systems Division project manager.

REP

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Let to right: Barry Bongiovi, Studio manager, Bob Walters, President, Tony Bongiovi, Technical Director

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MANAGING MIDI

By Paul D. Lehrman

Up from MIDI

People who write MIDI software for a living tell me that one question they are asked a lot is, "Which version of MIDI will it work with?" Friends, I'm here to tell you that this question is about as intelligent as asking about a microphone, "What kind of sounds does it pick up?"

There is only one MIDI Specification, and it is known as 1.0. There will be no 2.0; in fact, there will be no 1.1. MIDI will not change. What it will do, however, is be added to. There are a number of holes in the MIDI spec, numeric commands that were assigned no specific function in the original spec, and these can be used for new types of commands, like MIDI Time Code, Sample Dumps and Non-registered controllers.

The old commands don't change, and the spec itself doesn't change—the command set just becomes enlarged. The MIDI Specification therefore has several published addenda that explain the various additions (along with some clarifications)

Paul Lehrman is RE/P's electronic music consulting editor and is a Boston-based producer, electronic musician and free-lance writer.

that have occurred since the standard was born. But we all know that for some of the things we would like MIDI to do, it just isn't good enough. Transferring samples over it, if they are any length at all, takes forever. Running a large studio full of mixing and processing gear can tax its bandwidth enormously.

A new communications format has to be developed, a musical LAN, which will include MIDI as a subset.

Sixteen channels can seem like very few when you're using half a dozen 32-voice polytimbral synths and samplers. These problems were beyond most of our comprehension back at the dawn of MIDI, but now they are becoming commonplace. So how can MIDI survive the next few years?

The answer is not to speed up MIDI, tempting as that might seem. That would make billions of dollars of equipment in the hands of millions of users obsolete overnight. No thanks. Instead, what has to happen is that a new communications format has to be developed, a kind of mu-

sical Local Area Network (LAN) protocol, which will include MIDI as a subset.

Picture this: you have a fast, powerful computer handling sequencing, sound-effects triggering, mixing and processing automation, tape transport control, and synchronization. It is spewing out 100,000 instructions every second, going to dozens of devices right next to it, across the room from it, and down the hall. The instructions, obviously, are not going out over any MIDI cable we would recognize, but instead over a high-speed coaxial cable, or even better, a fiber-optic cable.

The cable runs the entire length of the studio complex and back again. When it goes past a rack of synthesizers, it runs through a little box, which has a few MIDI In and Out jacks on it. The synthesizers, familiar models all, are plugged into these. When it goes past the console, it runs through another box with MIDI jacks on it. The same thing happens at the processing rack, and in the machine room. Each of the MIDI jacks is labelled with its own unique number. Each jack can address up to 16 channels and is totally separate from all the others.

What you have here is a MIDI LAN—a cable with a number of independent MIDI data streams flowing on it, multiplexed to-

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gether. While MIDI only requires 31.25 kilobits per second, today's computers can input and output data in the megabit-per-second range; for each MegaBaud, you can have the equivalent of 32 MIDI cables. Each box is a "tap"; a junction box in which one or more MIDI lines are split off from the main cable, and connected to ordinary MIDI devices.

And while we're at it, as long as we have this multi-MegaBaud line connecting everything in the building, why not use it to accommodate a SCSI line or two, so that we can do sample dumps in something close to real time, loading instruments and sound effects from a central library into banks of samplers, over the same length of cable? How about SMPTE time code—the real thing, with 80-bit phase-locked-loop precision, not just the quarter-frame-based MIDI Time Code? And if there's room, maybe we can include a couple of channels of digital audio, to do on-line recording and editing.

All of these signals can come from different places—with speed of transmission no longer a problem, you don't need to worry about loading up the line with too much data. Instead of just one input device or computer dumping data into a line, you can have multiple sources feeding it simultaneously.

If all this seems like a pipe dream, be assured it's not. The idea of a MIDI LAN has been kicking around for a couple of years, and in a private hotel suite at Summer NAMM, a small Southern California company called Lone Wolf showed a prototype of a protocol that may just be the one the industry goes for. Called MediaLink, Lone Wolf's idea puts multiple MIDI streams plus various other digital data on a fiber-optic cable running (for now) at 2MBaud. The hardware box that connects to the system, called a MidiTap, contains four discrete MIDI lines, as well as a serial connector to hook it up to a computer.

The beauty of MediaLink is that it is both upward- and downward-compatible. It recognizes that MIDI is going to be around for a while, and accommodates everything that the MIDI spec can throw at it, assuring us that none of our hard-won and beloved MIDI equipment will become obsolete. In the other direction, data speeds of up to 100MBaud are envisioned for the same piece of cable, which will be able to also carry SCSI and several chan-

nels of digital audio. The protocol is meant to be "frequency-agile"—several data streams going at various rates of speed will be able to co-exist on one cable.

Makers of devices like giant mixing consoles and video editors, which have so far resisted MIDI-fication because of the perceived limitations of MIDI, will now have no excuse for leaving their products out of the MIDI revolution, because the gargantuan bandwidth of MediaLink can contain enough information to run any conceivable piece of equipment with perfect precision. (If one MIDI line isn't enough to run a console, they can use several, or even a direct MediaLink input.)

MediaLink is still in its infancy, and the first commercial units won't be in the hands of adventurous users until the end of the year. It will be a while before anyone can say for sure whether this will catch on as *the* new standard. Reportedly, there has been some discussion within the MIDI Manufacturers Association (MMA) over whether or not to endorse it.

***We all know that for
some of the things we
would like MIDI to do, it
just isn't good enough.***

The pro side says that, yes, it really does work, and therefore we should get behind it, while the con side says that unlike MIDI, MediaLink is privately owned and therefore should be left to survive on its own devices. Besides, the reasoning goes, it's not really MIDI, and therefore beyond the organization's bailiwick. Lone Wolf has said it will license the MediaLink protocol to other manufacturers for a pittance, just to get it happening, and the company plans to make its money on MidiTap and related hardware.

With or without MMA approval, MediaLink looks like an idea whose time is about to come. Not to sound too corny, it charts the future without denying the past. Granted, I don't know all there is to know about it, and there may yet turn out to be some hidden fatal flaws, but at this point I doubt it. I think it's worth quite a bit of attention.

REP

LISTEN

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SPARS ON-LINE

By Bruce Merley

Audio first, business second

This month, as I pass the torch, I'd like to take this opportunity to comment on my term as president of SPARS, look back on our first decade and reflect on future aspirations. My thoughts and comments have reflected a SPARS point of view, with optimism about our organization and the audio industry in general. Now, I would like to give some of my personal opinions.

When I assumed the presidency, it seemed to me that SPARS had to speak for the entire recording community to be a vital force in the audio industry. My first goal was to increase membership and generate increased revenues to support expansion of our various national programs. A second priority was to revitalize or reactivate programs developed by our founders, which are the basis of value that members receive.

I felt that accomplishing these two goals would provide a solid foundation for the next decade. Membership has grown steadily, and communication among our members, and between the organization and its membership, has definitely improved. Our newsletter, Datatrack, is back in operation, thanks to Pete Caldwell. Our national studio exam program is regularly scheduled and fully functional. The manufacturer (advisory) members are again actively involved. We've done well, but I must confess that the year has slipped by too quickly.

When SPARS was founded 10 years ago, a group of industry leaders gathered together and discovered that they had a lot of common problems and issues that seemed to be more easily addressed collectively than individually. Communication with manufacturers was a major problem, as well as issues of taxation and insurance. Common cause spawned the initial success and development of SPARS.

There was a second cause of our organization's early strength: leadership. Industry legends like Bob Liftin, Bill Putnum,

Bruce Merley is the outgoing president of SPARS and president of Clinton Recording Studios in New York.

Wally Heider, Jeep Harned and our first nine presidents shared dynamic leadership talents that were critical in the creation and development of SPARS. These people were committed—even obsessed—with the importance of audio and the potential it implied for industry growth and maturity. They pursued excellence for its own sake and never had second thoughts about motivation or rewards.

Inventors, artists, tinkerers—the Thomas Edisons of our industry—they had the necessary commitment to support our long-term goals. This selfless attitude fostered rewards and success that have been shared by many of us now active in the industry. But where are the young lions? Who will be the next generation of leaders?

*It seems that the
entrepreneurial spirit is
becoming an endangered
species.*

In much of our industry, commitment to audio excellence and economic return no longer go hand-in-hand. The bottom line and the pursuit of riches has become the sole motivation—an end unto itself. The MBA vision of wealth that has had such a powerful influence in the '80s has become a driving force in the recording industry as well.

Perhaps this trend has developed in our industry more insidiously because it has grown without the depth of business skills brought to bear elsewhere. Meanwhile, it seems to me that the entrepreneurial spirit, the inventive genius, the musically creative engineer, is becoming an endangered species.

Who will lead us today? Who will surface in the future? I heard a joke recently about Dan Quayle offering his opinion of Roe vs. Wade: both are acceptable ways to cross the Delaware. It is somewhat a caricature of the intellectual prowess of the current administration, but the satire is well-taken.

We live in a society of marginal intellectual depth that we have created in our aggressive struggle for personal democracy. I don't envision the industry leaders of the next decade coming from traditional recording studios. Everyone wants a piece of the action, but is everyone making the

real investments that will create an action to share? Are we really making the commitments to creating, building and improving our future?

Recording studios used to be partners with artists and producers, all working together with a shared vision. This relationship has become increasingly adversarial, and the studio goal is to win more business. Once that business has been won, I hope there is a staff that can keep the long-range goals on-track. But the fact remains that a priority shift has taken place. Someone else is leading the parade.

Technology plays a major role in this drama. More than ever before, the artist is able to realize a personal vision, consequently changing the role of the recording studio. The manufacturers work with both the artist and the studio, often failing to realize that they have become pilots of a course that may support one side while proving destructive to the other. But at least they are leading.

In some ways, the recording industry is being driven by manufacturers (perhaps of necessity, perhaps unwittingly) in a precarious market to which they are third party, and one that may become the grandiose creation of our own Wizard of Oz. This great big, thriving industry that demands half-million-dollar mixing consoles is not the recording studio business we once knew. Things have changed!

Meanwhile, in the corporate offices of Mrs. Fields' Cookies, Debbi Fields is asked how to make a million dollars. "If you chase money," she says, "you'll never catch it."

You must first and always be committed to the perfection and improvement of your product and service. When sales are down in one of her stores, she advises management not to cut costs, but to give away free cookies and try new ideas. If the product is excellent and commitment to service is there, financial return will follow.

I contend that the leadership for the recording industry in the next decade is already in place and needs only to be awakened and inspired to a larger, greater role. As technology has created a new breed of musicians, programmers, engineers and recording businesses, SPARS has been focusing on the hard-boiled facts of conducting a serious business in a time of industrywide transformation.

Perhaps we have overlooked the fact that the current generation of leaders (like George Massenburg, Bob Clearmountain, Bruce Swedien and many others) have

been hard at work doing what they love to do and what they do best: making great audio.

At the same time, another generation of future industry leaders is developing all across the country. Some are self-trained, some are learning through the traditional apprentice system and some are being cultivated in educational institutions. We may have focused too much on the *business* of being SPARS. We might take a tip from Mrs. Fields and direct our attention to giving great service to the audio industry.

The current generation of leaders, whether they are members of SPARS, need to get together and plan. The visionaries need to understand that their collective strength in a group like SPARS is a potent force for them individually, as well as for the industry as a whole. SPARS needs to accept the fact that as a voice of the industry, it must speak for it as a whole. To work for the good of the industry, we must support the pursuit of excellence across the board.

SPARS' next goal for the next decade must go beyond the business. We must return to the search for audio excellence. In that spirit, let's be inspired by the legends who made our industry what it is today. SPARS should be a source of inspiration that keeps their contributions in our collective consciousness and passes on the skills and knowledge they have shared with the world. To the visionaries and luminaries of today, I say, let SPARS be your forum, your meeting ground, your collective voice. To the leaders of the next decade, I encourage you to come forward now and dare to work in this volatile period, in the tradition our founders began.

SPARS is at a turning point. The next decade could see the organization thrive and grow, and serve the industry with an energy and combined force that its founders could never have imagined. Or, the next few years could see the decline of what we have achieved.

The answer lies not in the abstract image of SPARS, but in the actual membership, and those who might join us. For itself, SPARS has no reason for being. It exists to serve our industry. The choice is yours. I hope you accept my challenge to participate and shape a great future for audio, and for yourselves.

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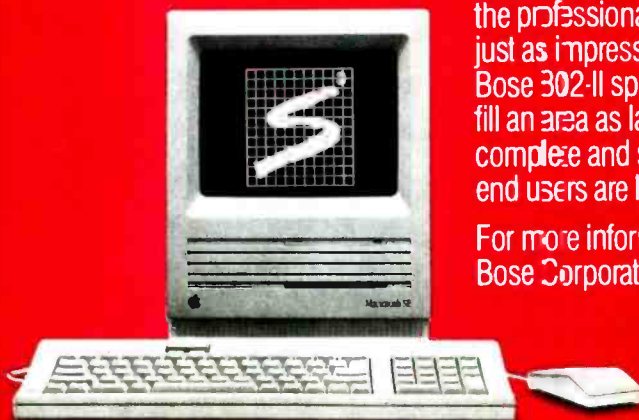
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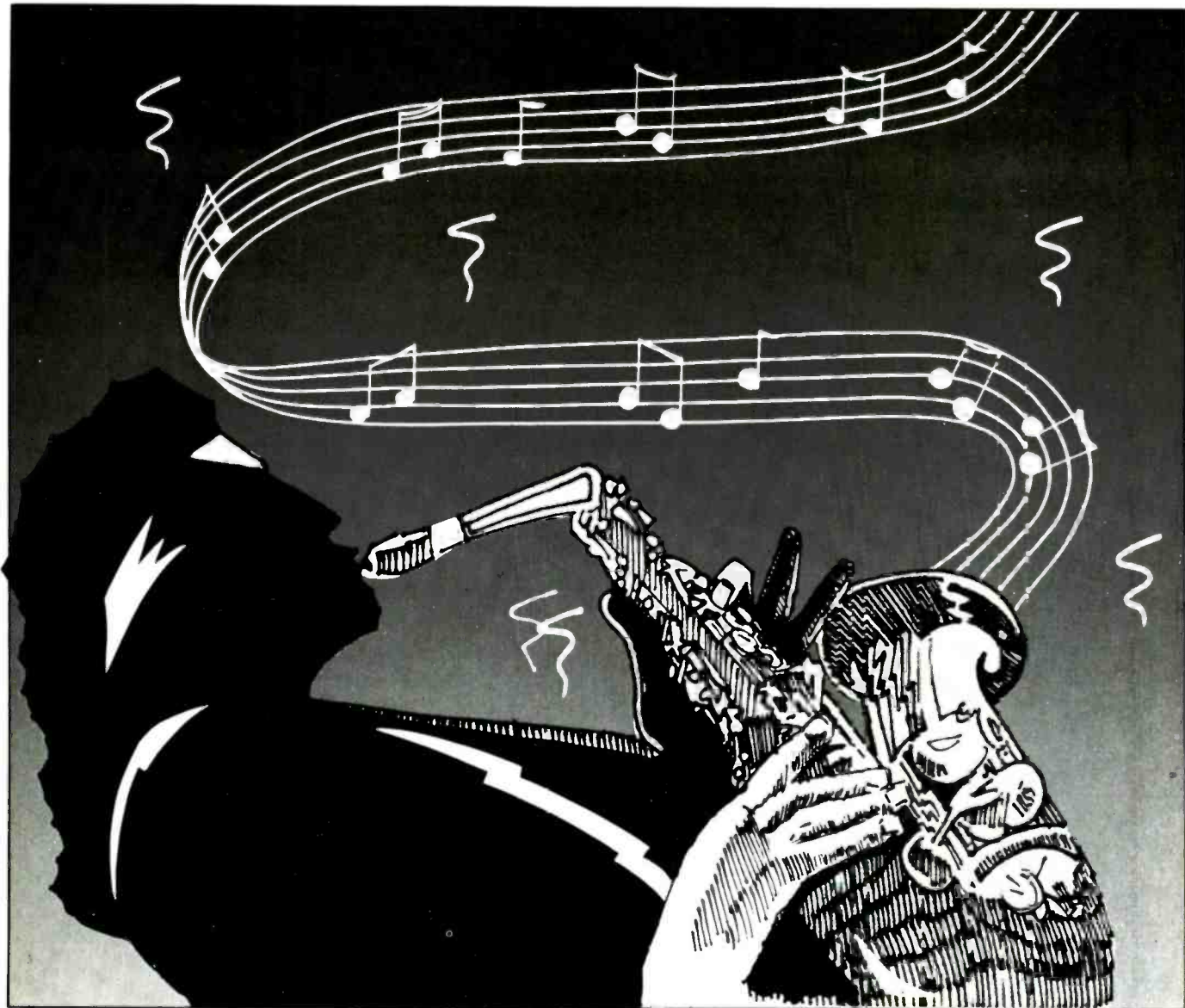
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Facility Profile: Full Sail

By Joe Schick



Full Sail's new facility features a versatile design that allows teaching and client sessions to co-exist without interfering with each other.

On the outskirts of Orlando, FL, in the suburb of Winter Park, a 24,000-square-foot recording/teaching complex is up and running as the new home of Full Sail Center for the Recording Arts. The facility, which opened in May, is expected to employ more than 60 people and admit more than 400 students in the next year.

Full Sail is an official teaching/training facility for New England Digital and Neve. The new 7-studio complex includes four Synclavier suites and possibly the first fully realized VARMS complex (an interconnected configuration of video/audio re-

ording and mixing suites—hence the acronym).

A place in the sun

After California and New York, Florida is now the third most active state in film and video production. Disney's production schedule has doubled since 1984 and MCA/Universal's Orlando studio will be in full operation later this year. But it wasn't keen business savvy that brought Full Sail founder Jon Phelps and his core group of five associates to central Florida more than 10 years ago.

Says Phelps, "The truth is, we were all living in Ohio, and Orlando was the cheapest, warmest place we could find. If

it was OK for us, we thought it would be OK for our students."

For the new facility, Full Sail's requirements went beyond those of the traditional recording studio. Unlike many studios that can supplement hard-use, profit center rooms with simple lounge/shop/reception/office spaces, Full Sail needed to accommodate a complete administrative staff and a student population that could exceed 200 a day.

Also, it was crucial that the studio complex be isolated from the "student world" during client sessions, yet easily accessible during teaching ones. These considerations called for either a special site or ground-up construction, which is cost-

Joe Schick is the former owner of Blue Rock Studio in New York, a producer and free-lance writer.

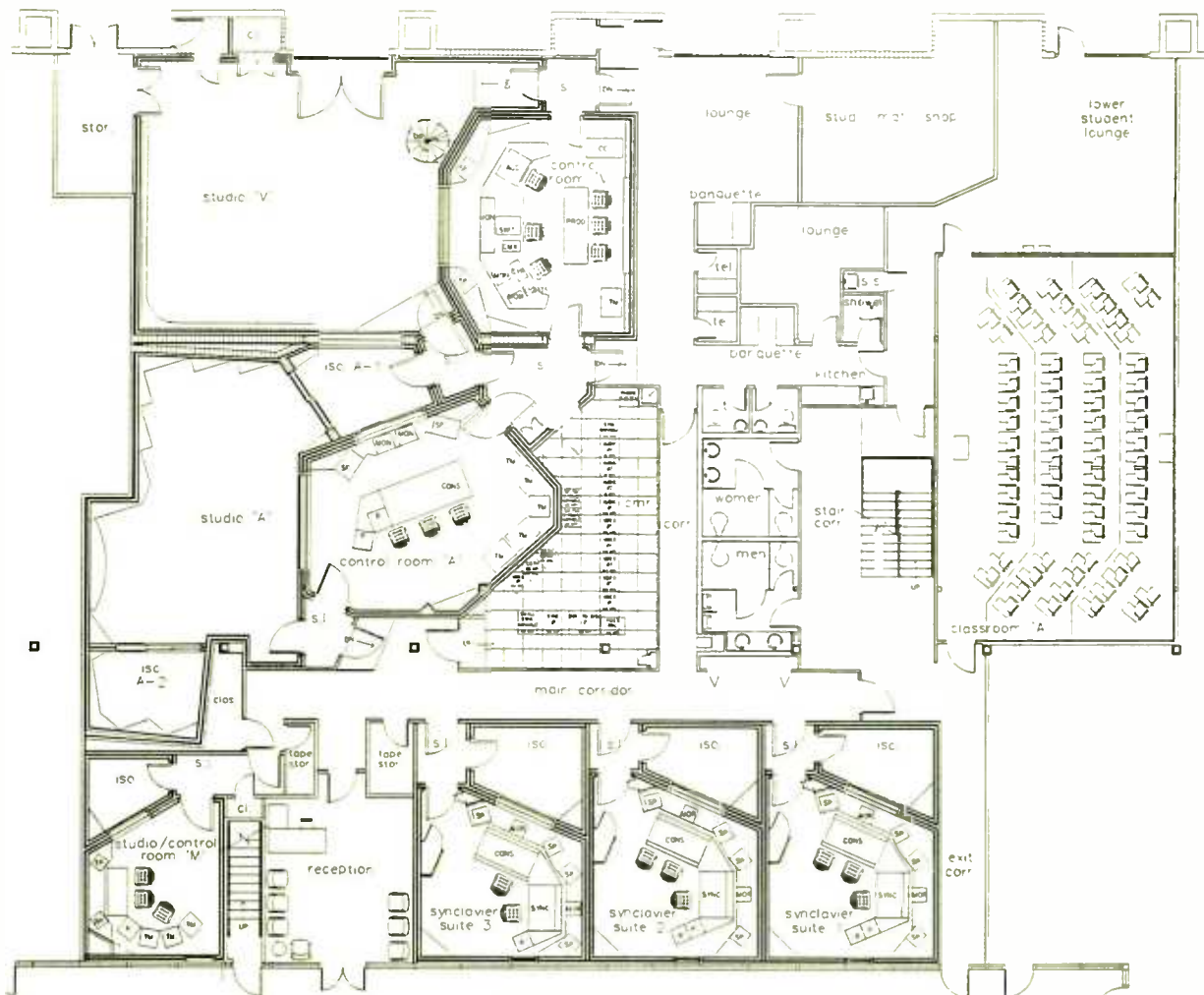


Figure 1. Floor plan of the first floor, containing all seven studios. The second floor contains administrative offices, observation areas, labs and conference areas.

prohibitive in Orlando. Eventually, space was found in the uncompleted wing of a modern 2-story office building on University Place.

Initial design phase

Architect/designer John Storyk, whose portfolio of more than 300 communications facilities includes Electric Lady in New York, Different Fur in San Francisco, Criteria in Miami and Whitney Houston's studio in New Jersey, has been involved with Full Sail for six years. In addition to working on the center's existing plant, he's also lectured at Full Sail on studio design and served on its board of directors.

"I lived with the design of the new fa-

cility for a lot longer than usual," says Storyk. "Instead of starting by roughly laying out the studio spaces and then structuring flow and support space around them, I worked backward. I had to figure out how to marry two essentially incompatible worlds—student and production—without making them feel or act like strangers. The key is the free-standing central staircase.

"The staircase is the ergonomic fulcrum of the design. It serves as both boundary and gateway between the two worlds. At the same time, two doors control the passage of traffic so that client sessions can be isolated from the school, and still allow students access to other rooms, such

as the Synclavier suites.

"Once I got the staircase, the design process became more of the traditional—a jigsaw puzzle—get all the pieces in the right place, solve the specific acoustic problems and bring in aesthetic elements, such as natural light to unify the space."

VARMS configuration

At the heart of the commercial operation is the VARMS concept, which Storyk developed. In essence, this arrangement allows two control rooms to tie into one or more studios. In this case, Studio V is a 30' x 35' x 25' video studio with a 16-foot light grid, soft cyclorama and drive-in capability. A camera loft, accessible



Photo 1. One of three Synclavier suites in the Full Sail facility.



Photo 2. Studio V under construction.

from the studio floor by a spiral staircase or from the second floor, offers both supplemental camera placement and a vantage point for students and guests.

The studio floor is made of Dex-o-tex, a self-leveling epoxy compound that both disperses and resists weight. Control Room V is relatively straightforward. As is the current fashion, the window is small (eight feet wide), which helps speaker placement for ear-level monitoring. The facility uses Tannoy Gold series monitors.

"Given video monitoring configuration," Storyk says, "it's now almost unnecessary to see into the video studio. I'm not sure

I entirely like that, so I tried to keep the emotional connection between the rooms by using door access from both sides. It allows technicians and, in this case, students to slip in without disturbing the shoot."

An unusual aspect of the control room is that it is designed to house both recording and post-production functions. The connective nature of VARMS is established via the sound lock/iso booth network that links Studios V and A. The double sound locks permit free movement while maintaining at least 60dB of isolation, now the minimum requirement for digital record-

ing. The congruent doors are all out-sized, solid core (3"×40"), and the walls are triple and quadruple combined concrete block, with multiple gypsum board, metal stud, floating floor construction.

The critical glass wall between Iso Booth A-1 and Studio V is approximately eight feet wide and triple glazed to allow what Storyk calls "simultaneous, non-related uses," such as a live tracking session using Studios A and V, and a disparate video mix in Control Room V. Two 3/4-inch and one 5/8-inch glass plates, sealed with neoprene, are used.

Studio A will, of course, often function on its own. The 600-square-foot space has room within room construction supported by a floating floor of Peabody Kinetics isolators—a roll-out vibration eliminator material covered by multi-layered 3/4-inch plywood, cross-seamed and attached. The finished floor is terrazzo stone, a durable marble-like material.

The studio's non-parallel soffit design offsets the basic orthogonal shape of the building shell and creates pathways for HVAC ductwork, low voltage wiring and maintenance lighting. The soffits also provide perimeter low- and mid-frequency trapping.

Splayed "clouds," angled at 8°, accomplish several functions. They are mid- and high-frequency reflectors, while the area above them is a low-frequency trap. Lighting is incorporated into each "fin" of the clouds.

Control Room A is a large, symmetrical room, with the console angled to face the smaller window that opens onto Iso A-1 and Studio V. As with Control Room V, there are two access points: one to the sound lock, one to the main corridor.

"Control A is quite complex," Storyk says. "I'd call it frequency-dependent, with compound geometry. It expands from front to back. To maintain a 'tightness,' I'm using extensive, full-frequency rear wall dispersion, with two kinds of RPG diffuser units (the QRD-734 and QRD 734w). It also is a complete room-within-room construction, and these floors really do float. When Mike Walker, the construction manager, added the perimeter wall, he called me and somewhat anxiously asked if I had expected a 1/4-inch to 5/16-inch give on the floor."

The front of the control room is carpeted. The monitors are positioned at ear-level, which Storyk calls compulsory. The floors are the same travertine tile as the studio, which continues Phelps' non-wood motif and is also a concession to the high traffic nature of the room. Control Room A will be a hands-on teaching center when not in use by clients. Both its size (it can accommodate 15 people) and layout (tape

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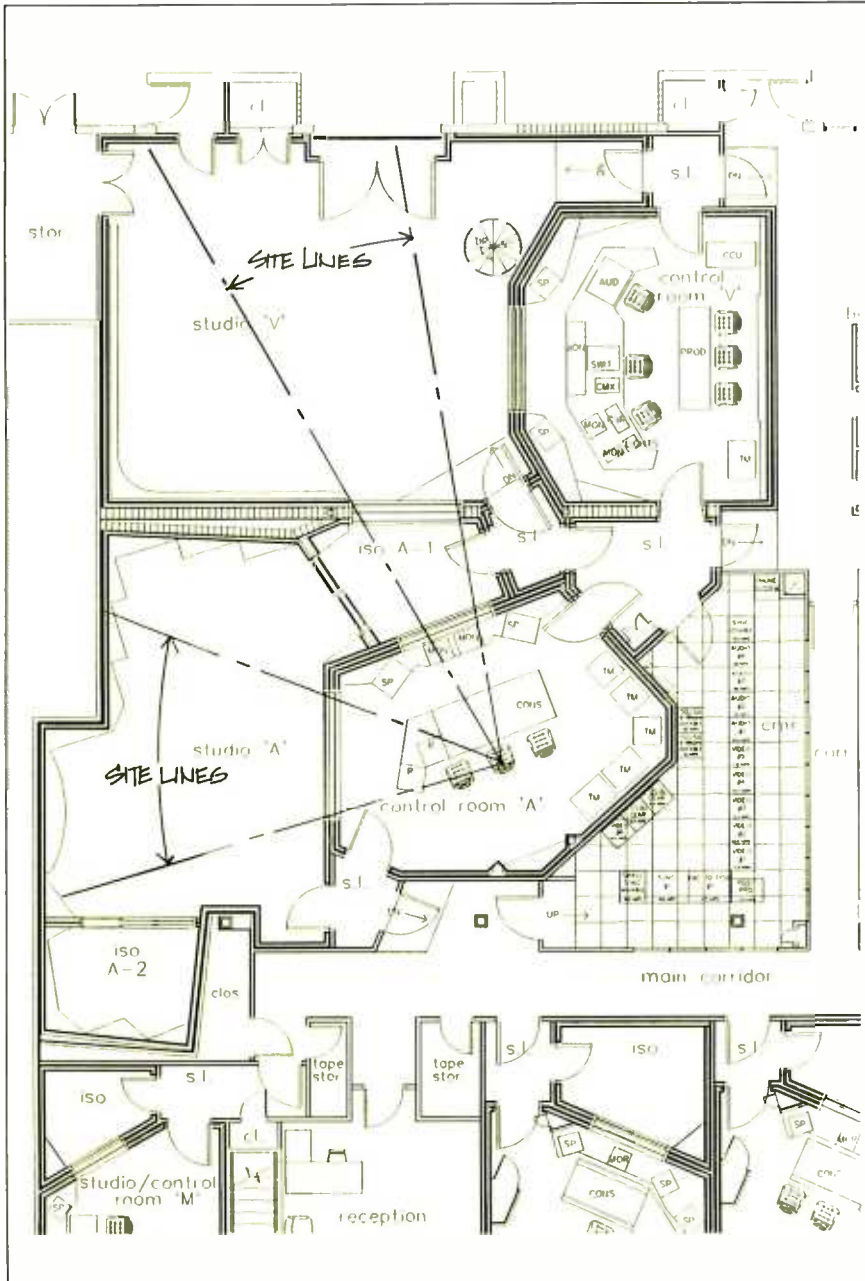


Figure 2. Floor plan of sight lines from Control Room A into Studios A and V.

machines will be located in the room, not in the central machine room) are supportive of the classroom function.

Above Control Room A and overlooking Studio V are meeting and conference rooms where students and prospective students may observe the activity below.

Central machine room (CMR)

Dictated by the need for equipment maintenance and protection and interactive communications, the CMR occupies a prominent position in the facility's plan. Wrapping around the central corridors,

the 450-square-foot CMR has walls almost completely made of glass, with dual-access to and from Studios V and A. It has a raised (8-inch) computer floor, and houses the 1-inch VTR equipment, the head ends and related packages from the four Synclavier rooms, and a full Neve console rack.

Ten tons of air conditioning—about a third of that located in the floor to cool the racks—maintain a temperature-stable atmosphere with continuous 50% to 70% humidity control. The room will draw 250A of continuous power and will have

dual lighting systems. One is a low-ambient system, the other a bright fluorescent work system.

Synclavier suites

Originally designed for three rooms, Full Sail added a fourth when advance training commitments from New England Digital and student interest exceeded expectations. Each room is self-contained, including post-production electronics, allowing users hands-on experience with all the aspects of tapeless recording. To expand their teaching capabilities, the rooms will also contain a variety of traditional features, such as consoles with up to 36 inputs, vocal/iso booths and, when required, provisions for standard tape machines.

Says Phelps, "The suites are designed to be similar enough that a student will have no problem working in one suite one day and another the next. But there is variation, so that they can learn on different ancillary equipment. The consoles are different, for example, as are the speakers."

Storyk had to contend with a problem that has become endemic to synth rooms: where to locate the listening center. Speaker placement almost always "favors" the console position, usually leaving the synth operator out of the speaker field. To overcome this monitoring favoritism, Storyk designed a system of dual speaker placements around an "phantom center line."

"Two speakers mount almost back-edge to back-edge," says Storyk. "They are the right speaker for one listening position, the left for the other. Either system can be used and both will have identical acoustic characteristics. This way, you won't see the Synclavier operator straining to hear balance."

Lighting, wiring and HVAC systems

Although the existing 1,600A/240V power supplied by the building was adequate for Full Sail's requirements, extensive relocation of the main power panels was necessary to arrive at a detailed network of clean and dirty power. In the final configuration, each recording module has its own sub panel, brought into the sound lock adjoining each control room. Lighting, HVAC and audio-signal wiring are integrated into this power grid.

"In a space of this complexity," Storyk says, "the final test of the systems is that, when you're done, the client never thinks about them. If the place looks great, but there's hum from the dimmers, or you can't keep the studio cool in the summer, then I've missed it. That's why I tend to overkill on the behind-the-scenes designs. It's also why I've used the same team for 15 years."

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Photo 3. Multiple ceiling conduits contain audio, video, MIDI, Synclavier, telephone and spare wiring.

Full Sail's central nervous system is its low-voltage interface connections. In the CMR, the low-voltage carrying computer floor created special problems. Using the cavity below the floor as an air-handling plenum would require expensive, harder-to-find Teflon wiring to conform to strict code specifications. However, proper air distribution in the room demanded a third of the air conditioning be distributed under the equipment racks.

The solution was a Halon 1301 fire suppression system throughout the CMR, including the plenum, which literally suffocates a fire without water. The Halon system obviates the need for Teflon wiring and also protects the \$2 million equipment investment; a sprinkler system would probably damage equipment more than smoke from a light fire.

The main corridor carries a computer cable tray above the removable ceiling. The complicated room to room connections are made through this channel. Wherever there is a passage made through sound isolation walls, there are multiple connecting conduits, typically a minimum of six, ranging in diameter from 1½ inches to 3½ inches, in which audio, video, MIDI, special Synclavier, telephone and spare wiring are transported. In addition, all high-voltage systems are carried in separate conduits.

"We're running cable lengths significantly longer than the manufacturer's recommended limit," says Ted Rothstein, who did the audio wiring and panel design. "To accomplish it, I'm using 'extended distance data cables'—borrowed from the computer industry."

With the density created by the wiring and compounded by the extremely complicated air conditioning system, little room was left in the first floor ceiling cavity. An early decision abandoned recessed

Originally designed for three rooms, Full Sail added a fourth when advance training commitments and student interest exceeded expectations.

lighting and placed corridor lighting on the walls, or surface-mounted on ceilings. For the most part, control rooms have task lighting on Lutron Nova series dimmers. To avoid glare on the video monitors, special attention was paid to fixture placement.

"I now use the Lutron dimmers almost exclusively," says Bob Wolsh, who did the

lighting. "They're quiet and clean, but the biggest difference is dependability; the company backs them up. Nothing bothers a client more than having to replace a dimmer after four months. Otherwise, Full Sail was an opportunity to use the latest down lighting technology—long-life PL fluorescent lamps, which have a color temperature approximating incandescent."

The HVAC ductwork system is, according to Storyk, "always the most difficult to design and work into the complex." Noise control requirements for studios compel HVAC designers to reduce air velocity in order to eliminate turbulence and sound pressure level build-up. Because air is moving through the ducts at up to four times slower speeds than in conventional buildings, ducts must be up to four times bigger.

According to Marcy Ramos, who did the HVAC, this design drives contractors crazy, particularly if they've never done a studio before. The ducts at Full Sail are all metal, which Ramos thinks are much better acoustically than fiberglass, and lined with 1-inch duct liner. Whenever a duct crosses an acoustic boundary partition, acoustic silencers (minimum 3-foot) are used.

As Ramos points out, "Digital recording and its corresponding noise floors are very difficult." The worst-case NC specifications for the studios are NC 20, with diffuser face velocities never in excess of 250 feet per minute.

Measuring success

Storyk considers Full Sail to be among his most satisfying work.

"There were a number of specific design elements that required novel solutions—the staircase, the wall construction, the CMR, the configuration for housing and linking the mobile unit," he says. "For me, there are two points by which I measure the success of a project, architecturally, after satisfying the client. One is when it's completely done and I walk in and can say, 'I like the way this came out,' and I can only think of 10 or so things that I would have done differently. Well, I got that one.

"The second thing occurs about two years later. Can I walk in and say the same thing? I'll let you know."

REP



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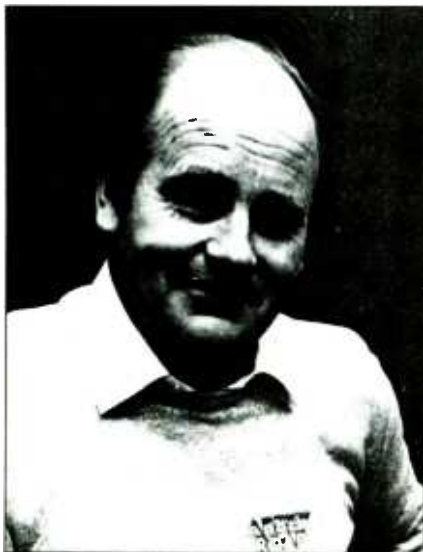
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 **PRODIGI**

State of the Industry: the British Perspective. Part 2

By the RE/P staff

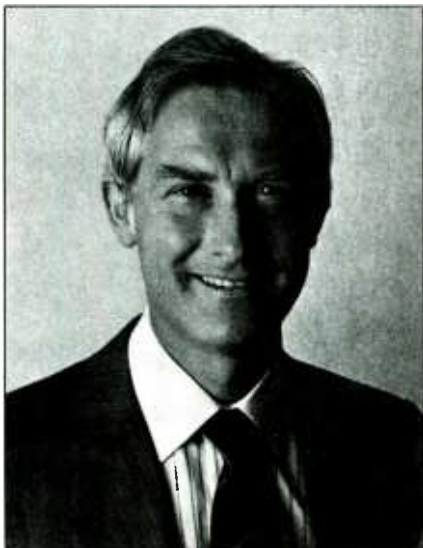
Four key members of the British professional audio community continue the discussions covering free-lance engineers, art vs. business and new technology.



Ken Townsend



Robin Miller



Colin Sanders



Phil Dudderidge

Last month, the members of our British roundtable tackled a variety of topics, including studio price wars, trade organizations and the growing need for professional business practices in studio management. The conversation continues this month, covering such topics as getting in the business, free-lance engineers, art vs. business, the role of APRS and the pace of emerging technology.

The panel consists of Ken Townsend, general manager of Abbey Road Studios; Robin Millar, CEO of the Power Plant and Maison Rouge Studios, and an Association of Professional Recording Studios and British Record Producers Guild board member; Colin Sanders, chairman of Solid State Logic and a director of Quantel; and Phil Dudderidge, managing director of Focusrite Audio Engineering Ltd. RE/P conducted the interview in June at Abbey Road Studios during the APRS exhibition.

RE/P: If you had to start over today with your knowledge and experience, but no track record, how would you go about getting into the business?

Townsend: I think you've always got to go for the high-end. If you're going to run any business, you've got to make it a facility where there's no reason why anybody couldn't come and use it. You've got to go for the high-end and possibly even a little of the low-end. The middle is no-man's land.

You've got to be consistently changing what you are doing and getting in new equipment. It's the most modern technology, things like using hard disk recorders, that you can usually charge most money

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Until now, there have been only two choices for stereo microphones.

Mid side and X-Y mics gave good mono compatibility but produced wishy-washy imaging and sacrificed ambience. The second choice, near-coincident pairs, produced sharper imaging at the expense of poor mono compatibility and required awkward stands and field assembled parts.

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for, and of course not everybody else has those capabilities.

Millar: What I wouldn't do is try to fill a gap in the market. In such a fashion-conscious industry as ours, it is not cost-effective to make a fairly advanced and irreversible decision on the construction and design of a building. You may find a gap in the market in 1990 and that gap may simply not be there by the end of 1991, however carefully you look. There are just too many people ready to jump in.

I think I would do one of two things. I would set myself up as a production company and establish a relationship with a sufficient number of people involved in production, writing and distribution. Then I would build my own facility directed very much at saving money by doing those productions in-house—modified slightly so there was a certain amount of outside business that could come in and use this fairly specific facility.

Or, if I had no interest or expertise in making or selling records, I would try to raise a fairly large amount of money and open four or five very low-cost, very clean, Holiday Inn-style, decently equipped, identical studios. They would be identically priced and all have the same name.

All this would be done to try to identify a realistic, cost-effective, standard way of recording. Clients would come in and pay some kind of standard rate and know exactly what they're getting when they walk in the room.

There would be extremely well-trained assistant engineers. There could be a guarantee that they would know how to work the equipment. I certainly wouldn't be pouring money into the top end unless I had a captive client list.

Dudderidge: I'm still intrigued by the whole thing about free-lance engineers as opposed to house engineers. I think we're now at a turning point. At one end of the market things are becoming highly professional with re-investment taking place. One would expect house engineers as part of the service. Not to exclude the free-lancer, but to help so the free-lancer is not just walking into a sort of dry situation.

I think Robin has confessed that it's producers like him who have created some of the problems that we were talking about earlier. A large number of the studios that are in the market today are owned by producers and are substantially generating their own work. The engineer-run studios, which provide a facility for producers, are wondering where all the work's gone. The other thing is that people are building very sophisticated facilities in their homes. These days, they come into the studio with the job 70% done.

Millar: Of course, the free-lancer is a new cost. Now the record companies have to build the free-lancer into the budget. The problem that we have now is that of high expectations on the part of inexperienced free-lancers. Now there are young guys that tape-op for a couple of months, engineer for another couple of months and then walk out of staff studio gig and hire themselves out at 350 pounds a day.

I am taking a very long term, very hard line on people working for me, and explaining to them very carefully about the advantages, from their point of view, of being a house engineer and being in a protected environment as they learn their

Top-end studios will evolve into more of a niche approach.

trade. I tell them that they don't realize that they might have six months of hay-making and then be one of the million free-lancers who left too early and ended up on the scrap heap.

RE/P: Ken, do you use house or free-lance engineers?

Townsend: We use a combination of house and free-lance engineers. It's the client's decision. Most of the free-lance engineers we see are with major groups who can afford to pay them.

There is also the question of training, which is an industry problem that we haven't touched on at all. Free-lance engineers and producers have a finite working life. One of the dangers that some of these producer-owned studios face is that when they are no longer flavor-of-the-month with a record company, they are going to find it hard to keep their facility going unless they change the way they operate.

RE/P: In England, is there sufficient communication between manufacturers, engineers, producers and studios? Do you think that these groups are telling their stories or airing their gripes to the point where things are accomplished?

Townsend: I think there is very good communication between studios, manufacturers and all the people. Our studio will often send an engineer out to manufacturers; if they have some new design or development coming up, we will actually go along and sign a letter of non-disclosure. We will actually try to help them in development.

Millar: It is disappointing sometimes that our communication with manufacturers doesn't turn into application. There is the opportunity there.

Dudderidge: By nature, both the studio operators and manufacturers are open people. I think that one of the important roles of the association is to be a catalyst, to recognize when communication at an organized level is necessary and to create the forum for it.

Townsend: There is also very friendly rivalry in this country; I mean the fact that Robin can be sitting next to me. There's very good communication and I think that is excellent. At the moment, this temporary glitch we have with studio prices going down is being addressed by the people themselves.

RE/P: Does the AES come into play?

Townsend: No, the AES tends to be viewed as purely a technical place where people go along and sit on their backsides and listen to some lectures and go back home. It seems that the AES doesn't figure in the same way SPARS or APRS does.

RE/P: Is there any affiliation between APRS and SPARS?

Townsend: We have regular meets. We also do discuss with the European audio organization on a reasonably friendly basis. Obviously, we're trying hard to protect the British industry. What we tell them is not quite what you'd tell your own members, but there is quite a good liaison.

RE/P: What do you think about the pace of new technologies and new equipment?

Millar: Some sort of technology, when applied, can be the most artistically stimulating factor in development of new areas of popular music. I'd be the last one, from a musical point of view, to discourage anyone from investigating new technology and developing new technology, particularly when it applies itself in a creative way to do what we do.

Townsend: I think at this point in time there is no manufacturer forcing equipment on people. I think we, as studio managers, have the choice of buying or not buying. The days are gone where people rush out to buy the latest thing just to be trendy.

I think we've just gone through a stage of digital multitrack, where one of my pet peeves is this complete lack of standardization. We've got two completely different standards, and this isn't good for the business in the long run.

Sanders: I think even the manufacturers concerned would agree that it is absolutely wrong that the industry should end up with two different standards, or more, of digital tape machines. The only reason for having it is pure commercial motivation.

Townsend: In our new Studio 3, which we have wanted to be a purely digital facility, we've been forced to put analog ma-

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chines there for quite a few artists because they prefer analog. What this means very often is that you've actually got two sets of investment standing parallel with each other, only one set being used. The digital machines are standing there gathering dust, not earning any money.

Millar: Can I ask Colin and Phil a question? Do you look at the recording industry as a technical business, as an art, or as a service business? Here's the reason I ask. I would describe the endeavor that Phil Dudderidge is involved in as addressing the classic requirement of a classic business, applying modern manufacturing techniques to embody a classic product of an industry that has come of age.

His approach seems to be, "What you need to make a great record is this and no more. We'll build it by hand and give it to you in the most beautiful form possible, and it will cost you an arm and a leg. But you'll have it for the rest of your life."

SSL, on the other hand, is constantly advancing technically and changing the perception of what you require and how you go about the business of making a record, and what techniques you employ to record it. What techniques you employ go from there onto your storage medium, and even the very nature of the control sur-

face. You are constantly seeking to lead people gently forward.

Sanders: We see the industry as art and business, and that is the real dilemma. The technology is secondary in our view. The technology is actually the simplest part of it. The difficult part is to get it so that it helps people in an artistic way and yet keeps them at the forefront of what's going on so that they in turn can answer their industry's needs. But the real dilemma is that it's actually an artistic process and a business. How the hell can you combine those two? Anything that's arty is difficult to look at in a business sense because your emotions have got to be involved. I think art comes first, business second and technology third.

RE/P: Phil?

Dudderidge: If somebody asked me what industry I'm in, my instinctive answer would be the music industry. Of course, it gets sort of gray when you're getting into broadcast or whatever, but clearly the focus is music. It may be the application of music to other mediums, but it's still mostly music at the end of the day.

Whether a studio is there as a facility for hire, or whether it's being established to attain creative objectives, as with your

studio. Robin, it was first there as your creative environment. You do sell time, but I think that we are in the music industry.

As far as the technological or engineering approach is concerned, I think it is appropriate that there should be a range of choice, because no two people are the same.

I think that top-end studios will evolve into more of a niche approach, where a given studio is clearly identified by its package of environment and equipment that distinguishes it from another facility. It will develop client loyalty through the particular character and flavor of the overall studio. We'll get away from this near-homogenization of studios, with the same kind of acoustics, same kind of console.

That's how I think studio time, particularly at the high end, should be sold. It should be about choosing which studio you want and then talking about the rate, rather than talking about the rate and finding out what studio you end up with.

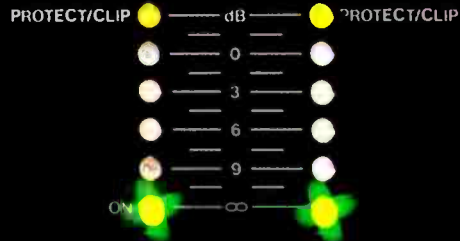
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The MR Series console comes in three configurations—eight, 12 or 16 inputs. Each input accepts mic, line and tape sources. It has a three-band channel equalizer with sweepable mid-band for tone adjustments. Three aux sends so you can set up mixes to headphones, stage monitors or effects processors. Two stereo aux returns. A cue buss to monitor inputs and outputs without skipping a beat.

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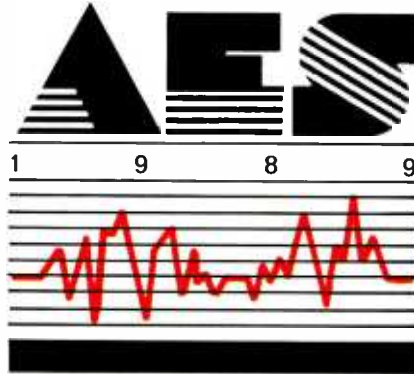
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87th AES Convention Preview

This year, the AES looks toward a new century and a new decade in advancing the art and science of audio.

If 1988 was a year to access the first century of recording and audio, then 1989 is a year to look squarely ahead. This year's Audio Engineering Society convention is doing just that. Whereas the theme for last year's convention looked at the first 100 years of audio, this year's convention will look at "Audio for the Next Decade and Beyond."

The convention is scheduled for Oct. 18-21 at the New York Hilton and New York Sheraton Centre hotels. According to the AES, the papers, workshops and exhibits have been designed to showcase audio engineering on the cutting edge of technology.

If you're planning on attending the convention, this section will give you a good idea of what to expect. And even if you're not attending, you should be able to get a good idea of what equipment and technologies you'll be working with in the coming months and years.

RE/P's convention coverage is divided into four sections:

1. Technical Sessions and Workshops.
2. Exhibitor Listings: New products and product lines that manufacturers will be exhibiting, listed alphabetically.
3. Product Directory: An alphabetical listing of individual products and the companies that make them.
4. Product Preview: A special version of the New Products section, containing only products that will be introduced at the convention.

As you refer to the information, keep in mind that because of our printing deadlines, the information is current as of early August. Undoubtedly, changes and additions will have been made since then. Refer to the convention program for updated information.

At A Glance

Event:

87th AES Convention

Theme:

"Audio for the Next Decade and Beyond"

Dates:

Oct. 18-21, 1989

Venues:

**New York Hilton Hotel,
New York Sheraton
Centre**

Number of exhibitors:

220+

Estimated attendance:

12,000

Convention chairman:

Glen Ballou

Papers chairman:

Ted Uzzle

Workshops chairman:

Mary Gruszka

More information:

**Contact AES at
212-661-8528,
fax 212-682-0477**

RE/P's Convention Coverage

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and Workshops**

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56 Product Directory

72 Product Preview



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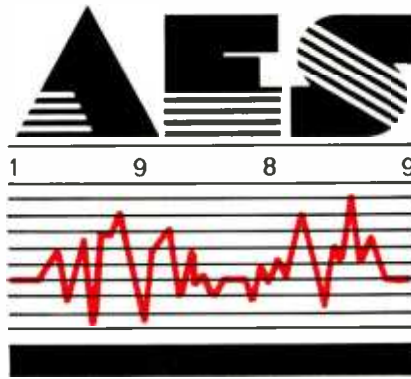
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Technical Sessions and Workshops

The heart of any AES Convention is its technical sessions and workshops. Technical sessions are where the cutting edge of audio is often introduced, and the workshops offer lively sessions on topics of current interest.

The following schedule combines technical sessions and workshops by date and time. Where scheduled, special events are also included. Note that as of press time, the titles of individual papers were not available. Check the official show information for those titles and any additional changes.

Wednesday, Oct. 18

Technical sessions

8 a.m.-12 p.m.: "New Directions in Audio," Tim Smith, Altec Lansing Corp., chairman.

1 p.m.-5 p.m.: "Broadcast Sound," Bob Dixon, chairman.

7 p.m.-10 p.m.: "Audio Electronics," Dennis A. Bohn, Rane Corp., chairman.

Workshops

9 a.m.-12 p.m.: "Capturing the Live Sound" and "Fiber Optics: the New Medium for Audio."

1 p.m.-5 p.m.: "Optimizing the Listening Environment," "A Tribute to Charles Bilello" and "Video Sweetening Basics for Audio Engineers."

7 p.m.-10 p.m.: "Design for Studios and Facilities" and "Optimizing the Listening Environment."

Thursday, Oct. 19

Technical sessions

8 a.m.-12 p.m.: "Speech Perception and Quality of Music," Dr. Anna K. Nabelek, University of Tennessee, chairman.

1 p.m.-5 p.m.: "Acoustics of Loudspeaker Arrays," Neil Shaw, Veneklasen & Associates, chairman.

7 p.m.-10 p.m.: "Recording," Chips Davis, Paoletti Lewitz Associates, chairman.

Workshops

9 a.m.-12 p.m.: "Loudspeaker Design" and "Optimizing the Listening Environment—Subjective Evaluation of the Listening Environment."

1 p.m.-5 p.m.: "Preserving our Audio Heritage: A Multidimensional View" and "Optimizing the Listening Environment."

7 p.m.-10 p.m.: "Teleconferencing and Boardroom Audio" and "Optimizing the Listening Environment."

Technical Tour No. 1

12 p.m.: A visit to the new American Museum of the Moving Image, devoted to the history of motion picture craft and art. Also included is a visit to Master Sound Astoria, which like the museum is located at Kaufman Studios in Astoria, Queens.

Friday, Oct. 20

Technical sessions

9 a.m.-12 p.m.: "Transducers," Mark Gander, JBL Professional, chairman.

1 p.m.-5 p.m.: "Sound Reinforcement," Clay Powers, Showco, chairman.

7 p.m.-10 p.m.: "Concert Sound Systems: Reinforcement or Enhancement—the Horns of a Dilemma," Ronald Streicher, Pacific Audio-Visual Enterprises, chairman.

Workshops

9 a.m.-12 p.m.: "Education in Audio," "Theater Sound" (off-site) and "Optimizing the Listening Environment—Home Listening Rooms."

1 p.m.-5 p.m.: "Ones and Zeros in the '90s" and "Optimizing the Listening Environment—Arenas and Performing Arts Facilities."

7 p.m.-10 p.m.: "Sound in Difficult Environments" and "Optimizing the Listening Environment—Automobiles and Movie Theaters."

Technical Tour No. 2

10 a.m.: A visit to the Rodgers and Hammerstein Recording Archives at Lincoln Center. A limited number of attendees may attend.

Saturday, Oct. 21

Technical sessions

8 a.m.-12 p.m.: "Audio and Acoustic Tests and Measurements," G.R. Thurmond, G.R. Thurmond & Associates, chairman.

1 p.m.-5 p.m.: "Architectural Acoustics," Cyril M. Harris, Columbia University, chairman.

Workshops

9 a.m.-12 p.m.: "Bruce Swedien, a Lifetime in the Recording Arts and Sciences" (NARAS educational workshop) and "Optimizing the Listening Environment."

1 p.m.-5 p.m.: "Bruce Swedien, Part 2."

Technical Tour No. 3

10 a.m.: A backstage tour of Radio City Music Hall.

Other activities and events

- Special activities for companions of convention attendees are scheduled for Thursday and Friday, Oct. 12 and 20.

- As it did last year in Los Angeles, the AES will present the Jack Mullin Recording Archive, which displays the history of audio recording via a collection of machines used throughout the years.

- The AES will conduct three drawings for free economy class air fair to the March 1990 AES European Convention in Montreux, Switzerland, May 1990 AES Conference in Washington, DC, or to next year's U.S. convention in Los Angeles. The awards are based on attendees walking through all the exhibition areas. Details will be available at the registration desk.

- The annual AES Awards Banquet is 7 p.m. Saturday, Oct. 21.

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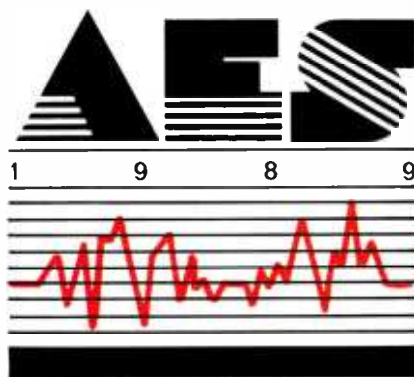
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Exhibitor Listings

Who's at the show? What are the new products? Whether or not you're attending the show, this alphabetical exhibitor listing is the best place to start sorting out this year's show.

This listing is the result of more than three month's worth of work and planning. We solicited information from the exhibiting companies, asking for new products that will be introduced and the product lines that will be exhibited. From the forms that were returned to us, as well as from phone calls to some companies, we obtained the information that is presented here.

Companies that were able to submit new product information have a new products entry, containing the model name or number and a short description. Product lines are listed below the new products.

Because this year's show is separated into two venues, before each booth number there is a letter signifying the particular venue. "H" refers to the Hilton, "S" to the Sheraton Centre, and "D" to the demo rooms.

Each entry has been assigned a circle number. If you want more information on any of the companies, circle the appropriate number on the Rapid Facts Card, which is bound into the back of this issue.

For companies that have advertised in this issue, the company names are listed in blue. On the same line as the circle number, also in blue ink, is the page number where the ad appears.

Although this list is as comprehensive as possible at press time, there are changes and additions occurring every day. Every effort has been made to ensure that the listings are as up-to-date as possible. For final show information, refer to the official show program at the convention site.

If you are looking for a specific piece of equipment and want to find out which companies make it, refer to the Product Directory, which begins on page 56. And for more additional information on many of the products listed in this directory, refer to Product Preview, which begins on page 72.

AB International (H-178)
Electronics

New products _____
1200 C 2-channel power amp.
Product line _____
Amplifiers; crossovers and frequency dividers; equalizers.
Circle (360)

ACO Pacific (H-105)

New products _____
MK2XX family Type 1 Electret Measurement Microphone; sound level calibrators; electrostatic actuators; sound intensity probe; microphone accessor; PS9201 portable measurement amp; power supply.
Product line _____
Maintenance, test and measuring equipment; metering devices; microphone mixers; microphones, pre-amplifiers; microphones, studio and PA; power conditioning/standby power systems.
Circle (361)

Adams-Smith (H-212)

New products _____
Model 2600 A/V audio-for-video editor; Zeta-Three "B" audio-video-MIDI synchronizer.
Product line _____
Computer, hardware and peripherals; editing systems; MIDI hardware; synchronizer systems.
Circle (362)

AEG Corporation (H-216)

New products _____
Automatic cassette loaders, Tachos 90 and Kronos 4; Lyrec audio cassette duplicating system; P-4409 master loop-bin.
Product line _____
Tape duplication, systems and accessories; tape machines, cassette.
Circle (363)

Agfa-Gevaert (H-168)

Product line _____
Recording tape, audio; recording tape, video.
Circle (364) **See ad page 9**

Akai Professional (D-504)

New products _____
A-DAM digital multitrack recorder; S1000PB playback-only version of S1000 stereo digital sampler.
Product line _____
Consoles, recording and production; delays, analog and digital; drum machines; MIDI hardware; reverb devices; routing switchers, audio; sequencers; sound samplers; synthesizers and keyboards; tape machines, analog; tape machines, cassette and cartridge; tape machines, digital.
Circle (365)

AKG Acoustics (H-428)

New products _____
DSE 7000 digital workstation.
Product line _____
Headphone and headsets; microphone booms, stands and accessories; microphones, studio and PA; microphones, wireless and RF; signal processors, other.
Circle (366)

Alesis Corporation (H-192)

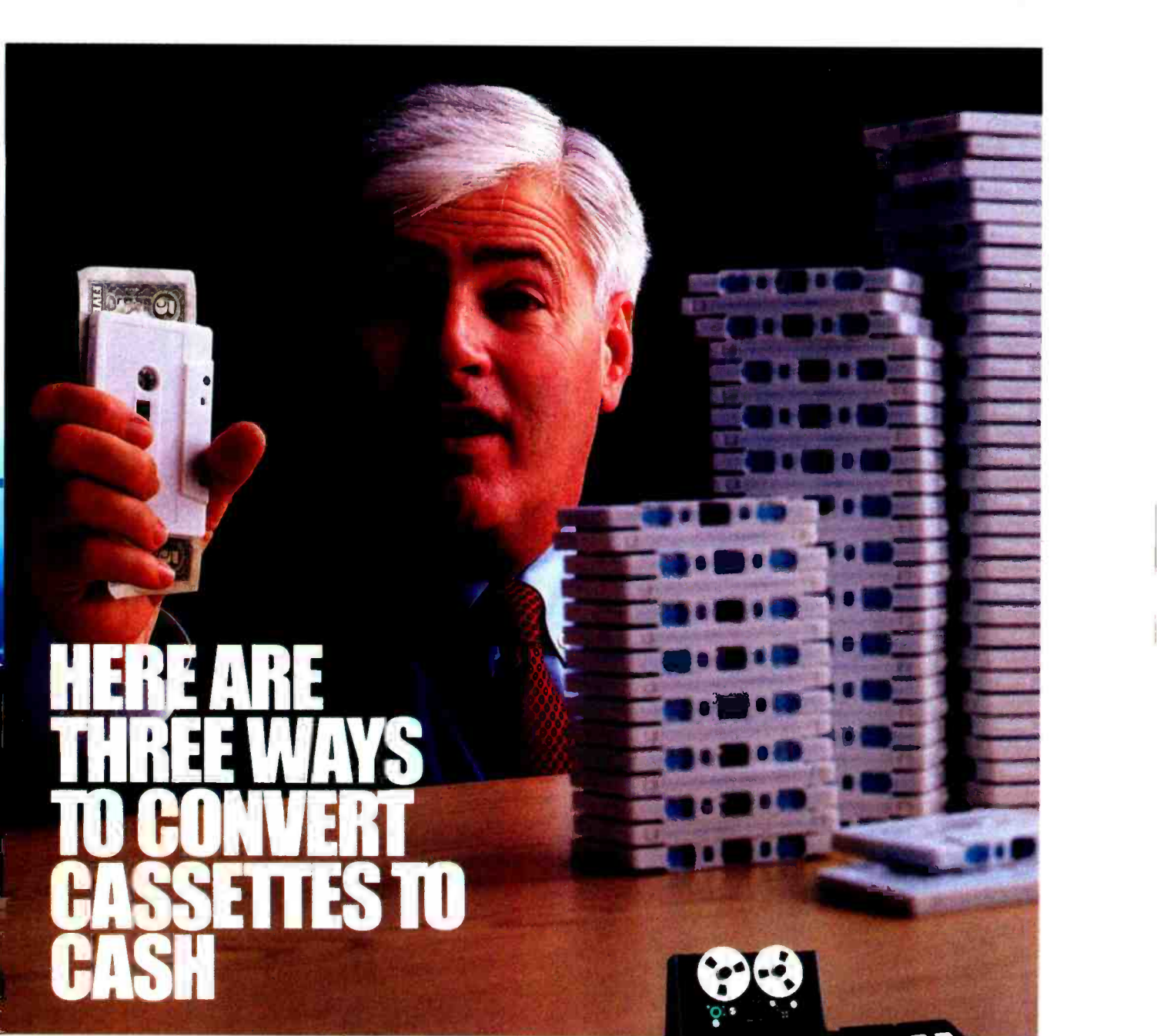
New products _____
1622 mixer; MEQ-230 Dual 1/3-octave precision room EQ system; Midiverb III digital effects processor; DataDisk Direct MIDI to Disk Universal Data Storage system.
Product line _____
Equalizers; headphones and headsets; limiters/compressors; noise gates/expanders; pitch shifters; reverb devices; sequencers; signal processors, other.
Circle (367) **See ad page 39**

Allen & Heath (H-450)

New products _____
SC-Plus version of SC module series consoles.
Product line _____
Microphone mixers; MIDI hardware.
Circle (368) **See ad page 87**

Alpha Audio (H-112)

New products _____



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Alpha Audio, continued

TCR Timecode Reader Module; DR-2 digital disk-based recorder.

Product line

Acoustic treatment materials; editing systems; recorders, hard disk; synchronizer systems.

Circle (369)

See ad page 96

Amber Electro Design (H-207)

New products

AudioCheck 2 software program; model 5500 Programmable Audio Measurement System.

Product line

Maintenance, test and measuring equipment.

Circle (370)

Amek/TAC (H-228)

New products

Amek Mozart multitrack console; Amek APC1000 assignable production console; Amek G2520 master production console; Amek Classic broadcast console system; Amek BCII broadcast console system with ESM32 serial interface; TAC Bullet 10/4/2 compact-format mixing console; TAC Scorpion multitrack recording console; TAC Matchless 2 recording console; TAC SR9000 sound reinforcement superconsole.

Product line

Consoles, automation systems; consoles, recording and production; consoles, sound reinforcement; signal processors, other.

Circle (371)

American Helix (H-315)

Product line

Record/CD manufacturing.

Circle (372)

American Multimedia/Concept Design (S-863)

New products

Dual fast feeder; 10:1 load for DAAD system.

Product line

Maintenance, test and measuring equipment; recorders, hard disk; tape duplication, systems and accessories; tape machines, analog; tape supplies and accessories.

Circle (373)

Ampex Recording Media Corporation (H-106)

New products

472 Studio Audio Cassette; 467 DAT cassette.

Product line

Recording tape, audio.

Circle (374)

See ads pages 97, 99

AMS Industries (H-511)

New products

Logic 1 automated digital mixing console; AudioFile software program; ST250 stereo microphone.

Product line

Consoles, automation systems; consoles, digital; consoles, recording and production; delays, analog and digital; digital audio workstations; editing systems; microphones, booms stands and accessories; microphones, studio and PA; recorders, hard disk; reverb devices; signal processors, other; sound samplers; time compression/expansion.

Circle (375)

See ad page 63

Apex Machine Company (H-136)

New products

Rotoscreen Machine system; CA-15 On-Cassette printer; new version of CA-30 On-Cassette printer.

Product line

Equipment rental and leasing; tape duplication, systems and accessories.

Circle (376)

Aphex Systems (H-504)

New products

Model 150 dual-channel remote-controlled VCA; model 175 digital wall-mount control with display for model 150; model 800 studio clock-SMPTE/MIDI converter.

Product line

Limiters/compressors; MIDI hardware; noise gates/expanders; signal processors, other.

Circle (377)

See ad page 51

API Audio Products (H-181)

New products

All Discrete In-line recording console.

Product line

Amplifiers; consoles, automation systems; consoles, recording and production; disc mastering systems; equalizers; limiters/compressors; metering devices; noise gates/expanders; patchbay and jack panels; signal processors, other; transformers, audio.

Circle (378)

Apogee Electronics (H-176)

New products

DAT portable reference standard A/D converter; DAT portable reference standard D/A converter.

Product line

Filters, replacement; metering devices; MIDI hardware.

Circle (379)

Apogee Sound (H-109)

New products

AE-4 loudspeaker system.

Product line

Equalizers; loudspeakers, sound reinforcement.

Circle (380)

Applied Research and Technology (H-191)

New products

Model 360 MultiVerb II digital reverb; model 370 Multiverb EXT reverb and sampler; model 380 SGE multi-effects processor; model 390 Delay System V; model 400 Delay System VII.

Product line

Delays, analog and digital; equalizers; pitch shifters; reverb devices; signal processors, other.

Circle (381)

See ad page 81

Ariel Corporation (H-86)

New products

DM-N digital microphone for NeXT computer system; SYSid PC-based acoustic test system; SDI digital audio recording and editing system.

Product line

Computers, hardware and peripherals; digital audio workstations; editing systems; microphones, studio and PA; signal processors, other.

Circle (382)

Sam Ash Professional (H-253)

Product line

Miscellaneous equipment and services.

Circle (383)

See ad page 89

Ashly Audio (H-126)

New products

FET 1000 MOSFET power amp; FET 1000M MOSFET power amp with meter; FET 1500 MOSFET power amp; FET 1500M MOSFET power amp with meter; FET 2000 MOSFET power amp; FET 2000M MOSFET power amp with meter; CL 100 half-rack compressor/limiter; SG 100 half-rack noise gate; XR 100 half-rack electronic crossover.

Product line

Amplifiers; crossovers and frequency dividers; equalizers; limiters/compressors; microphone mixers; noise gates/expanders; signal processors, other.

Circle (384)

Audio Accessories (H-124)

New products

WP-KR series pre-wired patchbays.

Product line

Patchbay and jack panels.

Circle (385)

See ad page 100

Audio Animation (H-247)

New products

The Muse digital mastering console.

Product line

Consoles, automations systems; consoles, digital; consoles, recording and production; delays, analog and digital; digital audio workstations; equalizers; noise gates/expanders; record/CD manufacturing.

Circle (386)

Audio Control Industrial (H-318)

New Products

SA 3050A 1/3-octave real-time analyzer; AC-10 A- and C-weighting filter.

Product line

Maintenance, test and measuring equipment; metering devices.

Circle (387)

See ad page 64

Audio/Digital (D-549)

New products

PAD-300/18 delay system.

Product line

Delays, analog and digital.

Circle (388)

Audio Kinetics (H-186)

New products

MasterMix II automation system; PENTA 5-machine controller for the ES 1.11.

Product line

Consoles, automation systems; editing systems; faders; synchronizer systems.

Circle (389)

Audio Logic (H-456)

New products

SC610 rack-mounted mixer; SC131 1/3-octave graphic equalizer.

Product line

Consoles, recording and production; consoles, sound reinforcement; equalizers; limiters/compressors; noise reduction systems; reverb devices; signal processors, other.

Circle (390)



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Audio Devices

Professional Products Division of Pioneer Electronics (USA) Inc.
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Circle (21) on Reader Facts Card

Audio Precision (H-134)*New products*

SYS-322A System One Dual Domain audio test set.

Product line

Maintenance, test and measuring equipment.

Circle (391) See ad page 85

Audio-Technica (H-151)*New products*

ATW-1031 UniPak and ATW-1032 hand-held wireless microphone systems; ATM25 high-SPL dynamic instrument microphone; CP8506 48V 4-channel microphone power supply.

Product line

Cable and connectors; consoles, recording and production; headphones and headsets; microphones, booms, stands and accessories; microphones, studio and PA; microphones, wireless and RF.

Circle (392) See ad page 79

AudioTechniques (H-613)*Product line*

Miscellaneous equipment and services.

Circle (393)

Audio Video Consultants (H-160)*New products*

Tapematic SAM Static Audio Master; Tapematic Slave 5128 servo control system; Tapematic 2002 audio cassette winder; Tapematic 3003 video loading system.

Product line

Tape duplication, systems and accessories; tape machines, digital; video equipment, all.

Circle (394)

Audio Video Research (H-323)*Product line*

Miscellaneous equipment and services.

Circle (395)

Australian Monitor Ltd. (H-119)*New products*

1K1/AM1100 and K7/AM700 MOSFET amps; AM 1200 quad 4-channel amp; AM 1600 2-channel amp.

Product line

Amplifiers.

Circle (396)

BASF Information Systems (H-213)*Product line*

Recording tape, audio; recording tape, video; tape supplies and accessories.

Circle (397)

Berklee College of Music (H-125)*Product line*

Educational courses and programs.

Circle (398)

Beyer Dynamic (H-148)*New products*

TG-X 180, 280, 480 and 580 hypercardioid dynamic Tour Group microphones; MCE 86 short shotgun microphone; S186 handheld supercardioid wireless microphone system; TS 190 body-pack lavalier wireless microphone system; DT990PRO semi-open ear monitoring headphone; DT770PRO sealed ear monitoring headphone.

Product line

Cable and connectors; headphones and headsets; microphones, booms, stands and accessories; microphones, studio and PA; microphones, wireless and RF.

Circle (399)

BGW Systems (H-179)*New products*

Bi-amp Grand Touring Amp compact series; GTA Grand Touring Amp.

Product line

Amplifiers.

Circle (400)

Bose (H-92)*New products*

Sound System software computer programs for system designers.

Product line

Computer software, business.

Circle (401) See ad page 14

Brainstorm Electronics (H-312)*New products*

SR-1 time code reshaper; VP-90 VSO for Ampex MM1200 and ATR100 series; TD-24 tachidir converter for Sony APR-24 synchronizer.

Product line

Miscellaneous equipment and services.

Circle (402)

Broadcast Electronics (H-118)*Product line*

Dura Trak 90 cartridge machine; Splice Trak 90 splice finder/eraser; Phase Trak 90 cartridge machine; AX-10 C-Quam AM stereo generator; AS-10 C-Quam modulation monitor; "B" series FM transmitters; FX-50 FM exciter.

Product line

Consoles, recording and production; phonograph turntables; tape machines, cassette and cartridge.

Circle (403)

Bruel & Kjaer Instruments (H-152)*New products*

Series 4000 professional microphones; recording kit for Series 4000; portable R-DAT recorder.

Product line

Maintenance, test and measuring equipment; microphones, studio and PA; recorders, hard disk; sound samplers.

Circle (404) See ad page 11

Bryston (H-325)*Product line*

Amplifiers; noise reduction systems.

Circle (405)

Canare Cable (H-121)*New products*

MR202-32AT audio cable; L-2E5 miniature mic cable; V*-3C component video cable; F-09 RCA plug, gold contacts; L-4E4-AT Star Quad multichannel cable.

Product line

Cable and connectors; patchbay and jack panels; video equipment, all.

Circle (406) See ad page 90

Carver Corporation (H-88)*New products*

PM 120 and PM 300 single rack-space stereo power amplifiers.

Product line

Amplifiers.

Circle (407) See ad page 28

Dwight Cavendish (H-301)*New products*

Video cassette duplicating systems.

Product line

Video equipment, all.

Circle (408)

Cintas Vac (S-850)*New products*

CMX-60 and CMX-90 ferric oxide cassette duplicating tape; CRX-60 and CRX-90 pure chrome cassette duplicating tape.

Product line

Tape duplication, systems and accessories; tape supplies and accessories.

Circle (409) See ad page 15

Cipher Digital (H-406)*New products*

CDI-4810 Phantom II VTR emulator; CDI-5000 Softouch II audio edit/controller.

Product line

Editing systems; synchronizer systems.

Circle (410)

Clarity (H-211)*New products*

XLV effects interface.

Product line

Signal processors, other.

Circle (411) See ad page 84

Community Light & Sound (H-116)*New products*

RS880 3-way trapezoidal full-range speaker system; VBS415 vented subwoofer speaker system; 880EQ dedicated dynamic equalizer/controller for 880/415 system; RS220 3-way compact trapezoidal speaker system; M4COAX coaxial horn/driver system.

Product line

Loudspeakers, component; loudspeakers, sound reinforcement.

Circle (412) See ad page 95

Connectronics (H-405)*New products*

JB8016 and JB8008 Splitter patchbays.

Product line

Cable and connectors; patchbay and jack panels.

Circle (413)

J.L. Cooper (H-613)*New products*

MAGI II fader and mute automation system; FaderMaster MIDI command controller.

Product line

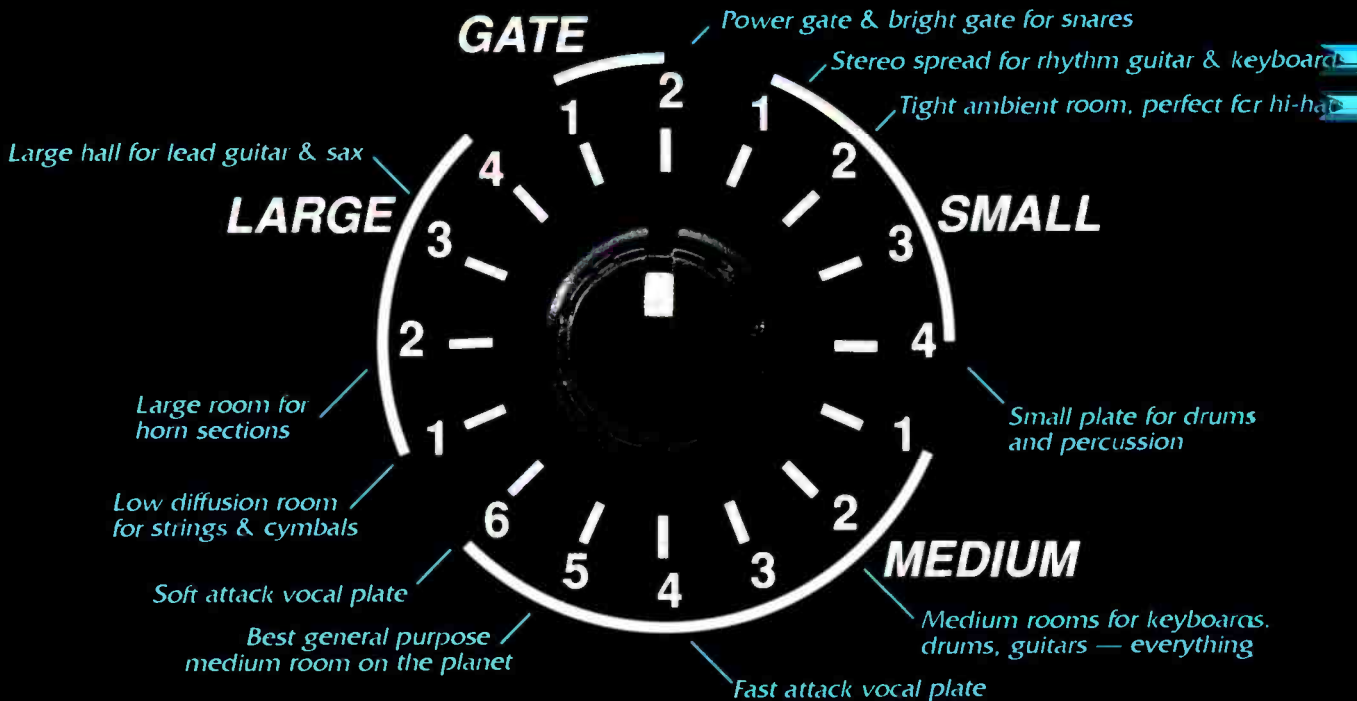
Computers, hardware and peripherals; computer software, MIDI; computer software, studio applications; consoles, automation systems; faders; MIDI hardware; miscellaneous equipment and services; routing switchers, audio; synchronizer systems; synthesizers and keyboards.

Circle (567) See ad page 66

Countryman Associates (H-248)*Product line*

Headphones and headsets; microphones,

"Professional reverb, \$200... Unbelievable!"



That's what professional studio owners, record producers and experienced engineers are saying about the Alesis MICROVERB® II Digital Reverb. They're used to spending \$2000 to \$10,000 on a digital reverb. But it's not expensive reverb they're after...it's great *sounding* reverb. Deep, rich, dense. Full of character. The sound that MICROVERB® II delivers in dead quiet 16 bit stereo.

One simple knob chooses MICROVERB® II's 16 classic reverb programs. Each one carefully crafted. Each one worth the full price alone. This is not only one of the greatest all purpose reverbs ever made, it's also the greatest value. Simple, direct, timeless. MICROVERB® II is a front line, master quality digital processor that will dramatically improve the sound of your music.

Don't be fooled. There's plenty of cheap reverbs out there. But they *sound* cheap. Don't trash your music and waste your money

with a wimpyverb, or try to make do with a captured reverb in a keyboard, when you can have MICROVERB® II. Use it on your next demo tape. Wrap it around your next hit record. Isn't it great when price isn't an issue for the very best?



MICROVERB® II is the first and last word in professional reverb. Believe it.

We can prove it. Call 1-800-5-ALESIS toll free, and we'll send you "The MICROVERB® II Demo Tape" so you can hear a classic professional reverb in action.

Then see your Alesis dealer.



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Countryman Associates, continued

booms, stands and accessories; microphones, studio and PA; microphones, wireless and RF; miscellaneous equipment and services.

Circle (414) See ad page 90

Crest Audio (H-134)

New products

Gamble series EX mixing console; FA 2401, FA 1201 and FA 601 power amplifiers; 6001, 4801, CC301 and CC151 professional power amplifiers.

Product line

Amplifiers; consoles, sound reinforcement.
Circle (415)

Crown International (H-510)

New products

SASS-P microphone.

Product line

Amplifiers; microphones, studio and PA.

Circle (416) See ads pages 25, 91

Crystal Semiconductor Corp. (S-849)

Not available at press time.

Circle (417)

CST Sales (H-122)

New products

2100 cassette plain paper label machine; PP 2000 cassette, imprinter; PP 2000V video cassette imprinter.

Product line

Miscellaneous equipment and services.

Circle (418)

H.L. Dalis (H-249)

Product line

Miscellaneous equipment and services.

Circle (419)

DDA (H-226)

New products

Q Series Mute Group; Arena VCA; Arena monitor; DCM 232 with Alpha Bass Editor.

Product line

Consoles, automation systems; consoles, recording and production; consoles, sound reinforcement; crossovers and frequency dividers.

Circle (420)

DIC Digital (H-132)

New products

15XR, 30XR, 46XR, 60XR, 90XR and 120XR DAT cassettes; 15MPX, 30MPX, 60MPX, 90MPX and 120MPX 8mm video cassettes.

Product line

Recording tape, audio; recording tape, video; tape supplies and accessories.

Circle (421)

See ad page 65

Digidesign (H-100)

New products

DAT I/O digital interface for Sound Tools digital recording and editing system.

Product line

Computers, hardware and peripherals; computer software, MIDI; computer software, studio applications; digital audio workstations; recorders, hard disk; time compression/expansion.

Circle (422)

Digital Audio Research (H-98)

New products

WordFit automatic dialogue synchronization software; 16-channel upgrade for SoundStation II.

Product line

Digital audio workstations; recorders, hard disk.

Circle (423)

Digital Audio Technologies (H-205)

New products

Stelladat professional portable R-DAT recorder; Stellalock III chase synchronizer.

Product line

Synchronizer systems; tape machines, DAT.

Circle (424)

Digital Dynamics (H-320)

New products

ProDisk 464 digital audio recording and editing system.

Product line

Digital audio workstations; recorders, hard disk.

Circle (425)

DigiTech (H-456)

New products

MEQ 28, MEQ 14 and MEQ 7 programmable graphic equalizers; DSP 256 digital multi-effects signal processor; HM 4 harmony machine, single harmony generator.

Product line

Delays, analog and digital; equalizers; MIDI hardware; reverb devices; signal processors, other.

Circle (426)

Diless Ltd. (H-156)

Product line

Intercom systems.

Circle (427)

DOD Electronics Corporation (H-456)

New products

4315 real-time audio analyzer.

Product line

Consoles, recording and production; consoles, sound reinforcement; crossovers and frequency dividers; delays, analog and digital; equalizers; limiters/compressors; maintenance, test and measuring equipment; signal processors, other.

Circle (428)

Dolby Laboratories (H-132)

New products

Model 363 noise reduction unit; Model SDU4 reference monitor.

Product line

Noise reduction systems; signal processors, other.

Circle (429)

See ad page 31

Dorrough Electronics (H-137)

New products

Model 1200 stereo signal test set.

Product line

Consoles, sound reinforcement; limiters/compressors; maintenance, test and measuring equipment; metering devices.

Circle (430)

Drawmer Distribution (H-129)

New products

DS301 dual expander/noise gate; DF320

universal noise filter.

Product line

Noise gates/expanders; noise reduction systems; signal processors, other.

Circle (431)

Duplitronics (H-306)

New products

DM 400 digital tapeless bin loop mastering system; MM 100 A/D mastering machine.

Product line

Digital audio workstations; tape duplication, systems and accessories; tape machines, digital.

Circle (432)

Eastern Acoustic Works (H-190)

New Products

KF300 nearfield system; FR253HR high-definition nearfield system.

Product line

Loudspeakers, sound reinforcement.

Circle (433)

**Edge Distribution/
BSS Audio (H-222)**

New products

AR-416 4-channel active DI unit; DPR-504 4-channel noise gate.

Product line

Crossovers and frequency dividers; limiters/compressors; MIDI hardware; noise gates/expanders; signal processors, other; transformers, audio.

Circle (434)

**Edge Distribution/
Turbosound (H-222)**

New products

Flashlight System horn-loaded enclosure; TXD-560 dispersion enclosures.

Product line

Loudspeakers, component; loudspeakers, sound reinforcement; maintenance, test and measuring equipment.

Circle (435)

Emilar (H-508)

New products

EM10, EM12 and EM15 low-profile monitors with coaxial speakers and related passive crossovers.

Product line

Loudspeakers, component; loudspeakers, sound reinforcement; loudspeakers, studio monitoring.

Circle (436)

See ad page 98

E-mu Systems (D-613)

Product line

Digital audio workstations; sound samplers; synthesizers and keyboards.

Circle (437)

Euphonix (H-402)

New products

Crescendo audio mixing console.

Product line

Consoles, automation systems; consoles, recording and production.

Circle (438)

Eventide (H-455)

New products

H3000-SE enhanced studio UltraHarmonizer;

JBL Has High Performance Audio Down To A System.



We helped pioneer the concept of graphic equalizers in the early '70s, introducing the 527 for creative EQ and the first "cut only" room equalizer, the 529. Today, using the latest in CAD/CAM technology, the performance advantages of our 5547A Graphic and 5549A Room Equalizers have made them the working tools of audio professionals.

5547A Graphic Equalizer

With a boost/cut range of ± 12 dB, 30 boost/cut filters on ISO center frequencies from 25 Hz to 20 kHz, and tunable high and low frequency end cut filters, the 5547A is truly high performance, highly flexible and definitely studio quality.

5549A Room Equalizer

Room EQ is corrective EQ, and to successfully meet the control requirements found in both fixed and portable sound systems, the 5549A gives you 15 dB of cut at each of 30 one-third octave bands, and separate end cut filters.



Hybrid circuitry, unique to our 5547A Graphic Equalizer and 5549A Room Equalizer, gives you unprecedented low noise, superior headroom and 112 dB dynamic range.

Both products are minimum phase active filters to produce smooth, seamless combining action and superior audio quality. The discrete transistors in our proprietary active filters carry the transients that add color and dimension to your work. You can use just the right amount of corrective or creative equalization to create a total sense of sonic realism. Hybrid circuitry, unique to the 5547A and 5549A, assures you of unprecedented low noise. Plus, both equalizers give you superior headroom and 112 dB dynamic range.

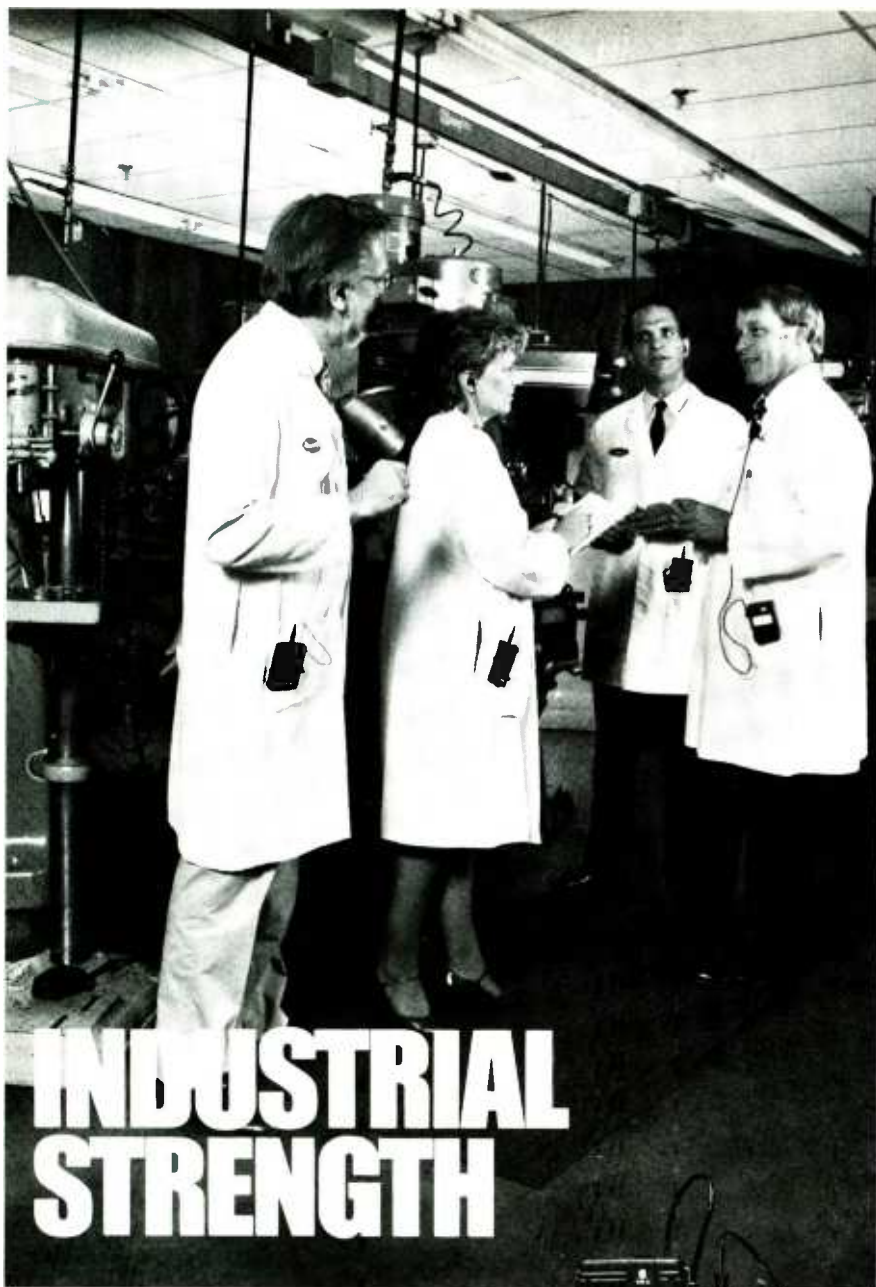
Putting the 5547A Graphic and 5549A Room Equalizers and other high performance JBL components to the test is as simple as stopping by your authorized JBL UREI dealer.



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Circle (23) on Rapid Facts Card

Circle (24) on Rapid Facts Card



INDUSTRIAL STRENGTH

Sound Enhancement For Tours

For personal, portable communications with small or large groups, especially industrial tours and training presentations in areas surrounded by high machine noise, affordable Telex Sound Enhancement is a necessity. Crystal clear communications, even in adverse conditions, are now possible with the Telex direct-to-the-ear wireless Sound Enhancement System.

The tour guide wears the TW-6AA wireless belt-pack transmitter with attached lapel microphone and the spoken message is transmitted to any number of pocket-sized, single channel or tunable personal receivers. Sound then travels from the personal receiver

directly to the listener's ear via a comfortable foam cushioned ear button.

If your plan calls for a portable sound enhancement system for any tour application, make Telex part of the plan.

For more information, contact the Professional Audio Department, Telex Communications, Inc., 9600 Aldrich Avenue South, Minneapolis, MN 55420.

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TELEX®

Circle (25) on Rapid Facts Card

Intersonics, continued

New products

Contra Bass extended-range subwoofer; SDL-5 and SDL-4 high-power horn-loaded subwoofers; 2-15 compact direct-radiating subwoofer.

Product line

Loudspeakers, sound reinforcement; loudspeakers, studio monitoring.

Circle (462)

Ivie, a Mark IV company (H-201)

New products

RT-60 software; PC-40-to-PC software.

Product line

Maintenance, test and measuring equipment.

Circle (463)

Jaffe Acoustics/ (D-543)

HEAD Acoustics North America

New products

HRS II Aachen HEAD recording system.

Circle (464)

Japan America Electronics (H-153)

Product line

Miscellaneous equipment and services.

Circle (465)

JBL Professional (H-709, D-608)

New products

2206, 2226 and 2241 low-frequency loudspeakers with Vented Cap Cooling; CADP Central Array Design Program, version II; "A" versions of various Concert Series models.

Product line

Amplifiers; crossovers and frequency dividers; equalizers; limiters/compressors; loudspeakers, component; loudspeakers, sound reinforcement; loudspeakers, studio monitoring; microphone mixers; signal processors, other.

Circle (466)

See ad page 41

Josephson Engineering (S-828)

Not available at press time.

Circle (467)

JRF Magnetic Sciences/ (H-164)

Reel-Tek Incorporated

New products

JRF/PAW Model PTC-50TT-15 and PTC-50TT-P test tapes; TC-50 Time Code/FM Processor.

Product line

Maintenance, test and measuring equipment; miscellaneous equipment and services; recording heads, replacement, sales and service; synchronizer systems; tape duplication, systems and accessories.

Circle (468)

See ad page 84

JVC of America (D-529)

New products

DS-LC900 digital parametric controller; prototype of professional DAT.

Product line

Digital audio workstations; tape machines, DAT.

Circle (469)

KABA Research and Development (H-188)

New products

Turnkey system; Recording Studio System.

Product line

Tape duplication, systems and accessories.

Circle (470)

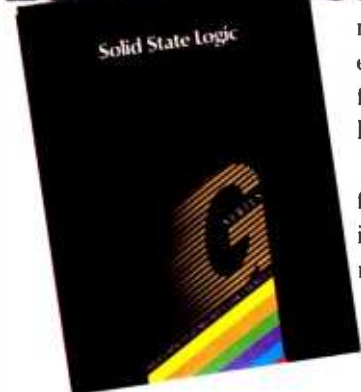
See ad page 80

“No one will ever buy a console with a television in it”

Visitor to AES, 1977

It is hard to believe that a modest VDU could attract much attention. Today, even effects processors use visual displays. Why have they become so necessary?

Quite simply, the greater the number of functions in a system, the more flexibility there must be in showing its status. In the recording studio the central piece of creative hardware is the console. To unlock its full potential, Solid State Logic gave engineers digital control of its facilities. The VDU was a side effect of this plan.



In the intervening years our designs were enhanced, incorporating the suggestions of the many leading studios who had adopted our system. Ultimately, the G Series Master Studio System evolved.

G Series offers the fastest execution of complex commands by storing the entire operating program in 2Mbytes of on-board RAM. Its removable Data Cartridges preserve mobility of data, without the capacity limitations of floppy disks. Each cartridge holds 20Mbytes of removable RAM—the equivalent of 80 floppy disks.

Because G Series software represents over ten years of evolution in some of the busiest

recording studios in the world, it incorporates an unparalleled degree of user experience. Advanced facilities like Selective Rollback and Group Set make mixing faster. Rapid comparison can be made between mixes. Large or complex mixes can be handled effortlessly on or off-line.

Throughout, SSL has preserved compatibility with earlier systems, creating a functional standard for the industry. By providing a realistic upgrade path, the investment of studio owners has also been protected. Most importantly, G Series remains at the forefront of audio production technology.

Solid State Logic

MASTER STUDIO SYSTEMS

Begbroke, Oxford, England OX5 1RU (0865) 842300

London (01) 706 4948 • Paris (1) 34 60 46 66 • Milan (2) 612 17 20 • New York (212) 315 1111 • Los Angeles (213) 463 4444

• Toronto (416) 363 0101 • Tokyo (03) 320 1101

U.S. Toll Free Number 800 343 0101

King Instrument Corp. (H-182)

New products

Model 2797 dual-supply audio cassette loader; model 2500 dual-supply VHS videocassette loader.

Product line

Tape duplication, systems and accessories; video equipment, all.

Circle (471)

Klark-Teknik (H-202)

New products

DN504 quad compressor/limiter; DN500 dual compressor/limiter/expander; DN514 quad auto gate; DN510 advanced dual gate.

Product line

Crossovers and frequency dividers; delays, analog and digital; equalizers; limiters/compressors; loudspeakers, studio monitoring; noise gates/expanders; reverb devices.

Circle (472)

See ad page 13

Klotz & Co./ (S-848)

Elektronik GmbH

Not available at press time.

Circle (473)

Korg USA (D-534)

New products

T1 and T3 keyboards; S3 rhythm workstation; Q1 MIDI workstation; RE1 remote editor; M3R music soundstation.

Product line

Delays, analog and digital; drum machines; MIDI hardware; sequencers; signal processors, other; sound samplers; synthesizers and keyboards.

Circle (474)

Lester Audio Laboratories (H-303)

New products

DAS-1016 Digital Snake with CPU-controlled Soft Patch System.

Product line

Digital audio workstations.

Circle (475)

Lexicon (H-717)

New products

Opus/e digital audio editing system; model 300 digital effects system; LXP-5 multi effects processing module; MRC MIDI Remote Controller software version 3.00.

Product line

Delays, analog and digital; digital audio workstations; editing systems; MIDI hardware; pitch shifters; recorders, hard disk; reverb devices; signal processors, other; time compression/expansion.

Circle (476)

Lone Wolf (H-317)

Not available at press time.

Circle (478)

Magnifax International (H-310)

Product line

Recording tape, audio; tape duplication, cassette and reel-to-reel.

Circle (479)

Marshall Electronic (H-421)

Product line

Computer software, studio applications; crossovers and frequency dividers; delays, analog and digital; equalizers; limiters/compressors;

noise gates/expanders; reverb devices; signal processors, other; sound samplers.

Circle (480)

Marshall Electronics (H-127)

New products

Mogami Quad Quad multiconductor mic and signal cable; E2 ID series snake multi-pair mic cables.

Product line

Cable and connectors; patchbay and jack panels; racks and stands.

Circle (481)

Martin America (H-206)

New products

F2 2-box horn-loaded sound reinforcement system.

Product line

Loudspeakers, sound reinforcement.

Circle (482)

Martin Audio Video Corp (H-409)

Product line

Miscellaneous equipment and services.

Circle (483)

See ad page 78

Meyer Sound Laboratories (H-701)

New products

HD-1 compact, self-powered closefield studio reference monitor; MS-2 and MS-3 2-channel power amps.

Product line

Amplifiers; equalizers; loudspeakers, sound reinforcement; loudspeakers, studio monitoring.

Circle (484)

Middle Atlantic Products (H-203)

New products

RSH custom rackmounting service; D2-4 rack-mounted storage drawers; CD compact disc holder; SS sliding shelf.

Product line

Miscellaneous equipment and services.

Circle (485)

Milab (H-202)

New products

VM-44 small diaphragm cardioid condenser; BM-75 handheld cardioid condenser.

Product line

Microphones, studio and PA.

Circle (486)

Minim Electronics Ltd. (H-234)

Not available at press time.

Circle (487)

Monmentum Data Systems (S-840)

Not available at press time.

Circle (488)

Monster Cable (H-243)

New products

Light Speed 12 fiber optic digital cable; Microphon Footer mic stand isolation pads; PROLINK Musician, Rock Musician and Player instrument cables.

Product line

Cable and connectors.

Circle (489)

Motorola (H-401)

New products

DSP56001RC27 24-bit general purpose digital signal processor chips; DSP56ADC16 16-bit sig-

ma delta A/D converter.

Product line

Signal processors, other.

Circle (490)

Nady Systems (S-837)

New products

650 VHF wireless sound system; 750 VHF system with two receivers; 1200 HT wireless system with handheld mic.

Product line

Amplifiers; microphones, wireless and RF.

Circle (491)

Nagra Magnetic (H-235)

Recorders

Not available at press time.

Circle (492)

Nakamichi America (H-116)

New products

1000 Digital Audio Recording System.

Product line

Headphones and headsets; tape duplication, systems and accessories; tape machines, cassette and cartridge; tape machines, DAT.

Circle (493)

See ad page 47

Neutrik USA (H-246)

New products

FP-1 Series female panel mount; G Series metal/plastic panel mount; A-1 audio spectrum generator and analyzer; Infomatic digital message repeating system.

Product line

Cable and connectors; loudspeakers, component; maintenance, test and measuring equipment; miscellaneous equipment and services; patchbay and jack panels; transformers, audio.

Circle (494)

Neve (H-725)

New products

Neve VR60 with Flying Faders automation; Mitsubishi X-880 and X-850 digital tape recorders; Mitsubishi X-86 open-reel digital recorder; Mitsubishi XE2 digital editing computer console.

Product line

Consoles, automation systems; consoles, recording and production; tape machines, digital.

Circle (495)

See ad page 21

New England Digital (H-600)

New products

Synclavier 6400 digital audio workstation.

Product line

Digital audio workstations; MIDI hardware; recorders, hard disk.

Circle (496)

Nimic (H-517)

Not available at press time.

Circle (497)

Novation International (S-826)

Not available at press time.

Circle (498)

Orban Associates (H-432)

New products

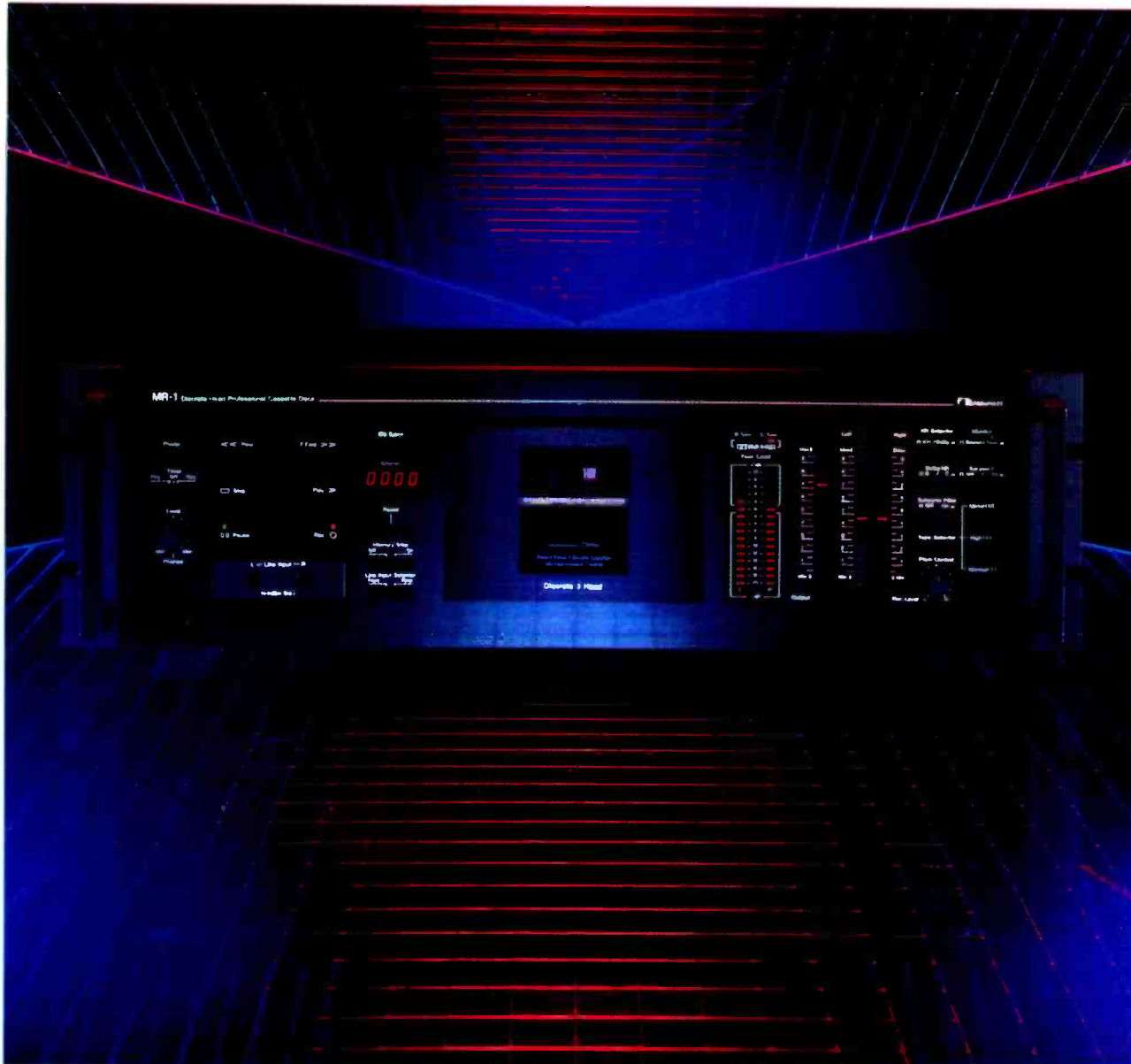
290Rx dual-channel adaptive signal enhancer; 764A digitally controlled programmable parametric equalizer system.

Product line

Equalizers; limiters/compressors; signal processors, other.

Circle (499)

Focus On Excellence



Introducing the MR-1 Discrete Head Professional Cassette Deck—
From Nakamichi—the company that created the cassette revolution!

The MR-1—a *professional* deck with front and rear
balanced inputs, unbalanced inputs, balanced and unbalanced outputs,
linear-scale peak-reading meters, independent
Tape and EQ selection, Dolby-B and -C NR, provision for external NR,
remote control, EIA rack mount and more!

The MR-1—with an Asymmetrical Dual-Capstan Direct-Drive Transport with
less than 0.027% flutter, an exclusive pressure-pad lifter that eliminates
scrape flutter and modulation noise, and a Motor-Driven-Cam operating
system that ensures gentle tape handling, automatic slack takeup,
and long-term reliability.

The MR-1—with the legendary Nakamichi Discrete 3-Head recording system
for 20—20,000 Hz \pm 3 dB response, absolute azimuth accuracy,
and incredible headroom.

The MR-1 Discrete Head Professional Cassette Deck—
From Nakamichi—the company whose profession is recording!



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Circle (26) on Rapid Facts Card

Otari (H-412)*New products*

Sound Workshop Series 54 24-bus audio record/mix console; Diskmix III Moving Faders automation.

Product line

Consoles, automation systems; consoles, recording and production; faders; recording heads, replacement, sales and service; tape duplication, systems and accessories; tape machines, analog; tape machines, digital; tape supplies and accessories.

Circle (500) See ad page 3

Oxmoor (H-91)*New products*

MDA-16 and MDA-26 distribution amplifiers.

Product line

Equalizers; routing switchers, audio; signal processors, other.

Circle (501)

Panasonic Industrial/Ramsa (D-537)*New products*

SV-255 portable DAT recorder; WR-C900 S.R. mixing console; WZ-9375 digital signal delay; WS-A500 loudspeaker system; WS-A550 subwoofer system.

Product line

Amplifiers; compact disc players; consoles, recording and production; consoles, sound reinforcement; crossovers and frequency dividers; delays, analog and digital; loudspeakers, sound reinforcement; loudspeakers, studio monitoring; microphone mixers; microphones, booms, stands and accessories; microphones, studio and PA; recording tape, audio; tape machines, DAT; video equipment, all.

Circle (502) See ad page 57

Peavey/Audio Media Research (D-551)*New products*

Q-Factor dual-channel, single-ended noise-reduction processor; SyncLoc machine synchronization system.

Product line

Amplifiers; consoles, recording and production; delays, analog and digital; equalizers; headphone mixing systems; limiters/compressors; loudspeakers, studio monitoring; microphones, studio and PA; MIDI hardware; noise gates/expanders; noise reduction systems; patchbay and jack panels; reverb devices; signal processors, other; synchronizer systems; tape machines, cassette and cartridge.

Circle (503) See ad page 7

Penny & Giles (H-459)*New products*

Endless Belt Fader 2-channel optical incremental encoder module; motorized rotary fader.

Product line

Faders; patchbay and jack panels.

Circle (504)

Pro Co Sound (H-106)*New products*

PM-148 48-point unbalanced single-space patchbay with Selectapatch switching system; AVP-1 A/V wall-plate interface unit; DBP-1 wall-plate instrument/amp interface.

Product line

Cable and connectors; miscellaneous equip-

ment and services; patchbay and jack panels.

Circle (505)

Professional Audio Systems (H-435)*New products*

TOC Studio Monitor 3; TOC SW-2 coaxial stage monitor with modular processing; TOC RS-2 coaxial reinforcement system with modular processing; TOC EB-2 subwoofer with modular processing.

Product line

Crossovers and frequency dividers; loudspeakers, component; loudspeakers, sound reinforcement; loudspeakers; studio monitoring.

Circle (506)

Professional Sound Corporation (H-417)*New products*

ModuPak battery pack; Sound Assist tape counter and electronic control unit for Nagra; Mini Quad Box.

Product line

Consoles, recording and production; intercom systems; microphone mixers; microphones, booms, stands and accessories.

Circle (507)

Publison (H-501)

Not available at press time.

Circle (508)

QSC Audio Products (H-244)*New products*

MX 1000 power amplifier.

Product line

Amplifiers; crossovers and frequency dividers; limiters/compressors; microphone mixers.

Circle (509) See ad page 27

Quested Monitoring Systems (S-825)*Product line*

Loudspeakers, studio monitoring.

Circle (510)

Ramware Designs Corporation (D-510)*New products*

SlaveDriver control system software; SearchFX sound effect search and audition program, companion product to SlaveDriver.

Product line

Compact disc players; editing systems; libraries, sound effects; synchronizer systems.

Circle (511)

Rane Corporation (H-246)*New products*

MPE 28 and MPE 14 programmable equalizers; SM 82 stereo 8-channel line mixer; FAC 28 48dB/octave crossover; FMI 14 mixer input channel; FMM 42 mixer master module; FPE 13 1/2-rack 3-band parametric; FME 15 1/2-rack 2/3-octave graphic equalizer; DC 24 dynamic controller.

Product line

Amplifiers; crossovers and frequency dividers; equalizers; limiters/compressors; microphone mixers; microphones, pre-amplifiers; noise gates/expanders.

Circle (512) See ad page 19

Recording Engineer/Producer (H-521)

Stop by booth 521 to meet RE/P's sales and editorial staff, including Cameron Bishop, group vice president; Dennis Milan, publisher; Dan Torchia, staff editor; Stan Kashine, East Coast sales representative; David Ruttenberg, Midwest sales representative; West Coast sales representatives Herb Schiff, Jason Perlman and Chris Leonard; and Nick McGeachin, International sales representative.

The sales and editorial staff of Sound & Video Contractor and Broadcast Engineering will also be at booth 521. All three magazines are Intertec publications.

Renkus-Heinz (H-166)*New products*

CMS Series wedge-shaped ceiling speakers, CMS-121 and CMS-151; C-1 Concert Coax.

Product line

Amplifiers; loudspeakers, component; loudspeakers, sound reinforcement; signal processors, other.

Circle (513)

Roland Corp. US (D-622)*New products*

S-770 digital sampler; R-880 digital reverb; GC-8 reverb remote controller; E-660 digital parametric equalizer.

Product line

Equalizers; reverb devices; sound samplers.

Circle (514)

RPG Diffusor Systems (H-404)*New products*

Sweet Spot transportable, free-standing acoustic room treatment system.

Product line

Acoustic design and construction; acoustic treatment materials.

Circle (515)

RTS Systems (H-233)*New products*

Model BP325 portable user station; Model MCE325 programmable user station; Model 2528 dual-channel remote control mic pre-amp; Model CCD214 crosstalk cancellation device.

Product line

Amplifiers; headphones and headsets; intercom systems; microphones, pre-amplifiers.

Circle (516)

Saki Magnetics (H-163)*New products*

BVH-2000 ferrite audio record/playback head; ITC Delta Cart replacement head.

Product line

Recording heads, replacement, sales and service.

Circle (517) See ad page 88

Samson Technologies (H-128)*New products*

MR-1 receiver; Soundtracs SPA console; Soundtracs 24-bus recording console.

Product line

Consoles, recording and production; microphones, wireless and RF.

Circle (518)

Sanken/Audio Intervisual Design (H-121)*New products*

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A three-room Tour De Force in Midtown Manhattan!"

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Battery sets new standards in client comfort..."

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Sanken/AID, continued

New line of 4mm microphones; studio microphone for general applications.

Product line

Microphones, studio and PA.

Circle (568)

See ad page 59

Schmid Telecommunications (H-304)

New products

SIAT-NET Audio Transmission Measuring System.

Product line

Maintenance, test and measuring equipment.

Circle (519)

Schoeps/Posthorn Recordings (H-242)

Product line

Acoustic treatment materials; consoles, recording and production; equipment rental and leasing; maintenance, test and measuring equipment; metering devices; microphone mixers; microphones, booms, stands and accessories; microphones, pre-amplifiers; microphones, studio and PA; microphones, wireless and RF; miscellaneous equipment and services; racks and stands; signal processors.

Circle (520)

Selco/Sifam (H-150)

Product line

Metering devices.

Circle (521)

Sellmark Electronic Services (H-119)

New products

MF100 Series motorized faders; Outboard UK range of software for automation of recording consoles; demos of automated systems.

Product line

Consoles, automation systems; faders.

Circle (522)

Sennheiser (H-507)

New products

HD 25 sealed monitor headphone; MKH 50 supercardioid; WM 1 portable wireless mixer; active noise compensation headsets.

Product line

Headphones and headsets; microphone mixers; microphones, booms, stands and accessories; microphones, studio and PA; microphones, wireless and RF.

Circle (523)

Sescom (H-128)

New products

RK-Rack power supply system hardware; RK-PS-1 rack power supply; RK-DA 6-channel audio DA; RK-LA single line amp; RK-DAADJ 6-channel adjustable DA; RK-AGDA automatic gain DA; RK VCADA voltage control DA; RK-MLD dual mic-line driver; RK-SB stereo buffer; RK-SC stereo combiner.

Product line

Amplifiers; microphones mixers; microphones, pre-amplifiers; miscellaneous equipment and services; signal processors, other; transformers, audio.

Circle (524)

Shure Brothers (H-422, D-620)

New products

BETA 58 and BETA 57 supercardioid dynamic microphones; LS13/839 wireless microphone system; LS14/839 Marcad diversity wireless microphone system.

Product line

Headphones and headsets; limiters/compressors; microphone mixers; microphones, booms, stands and accessories; microphones, pre-amplifiers; microphones, studio and PA; microphones, wireless and RF; phonograph cartridges and accessories; transformers, audio.

Circle (525)

Society of Professional Audio Recording Services (H-89)

Product line

SPARS is a non-profit professional trade organization whose members include prominent studios, manufacturers of professional equipment, recording schools and colleges, small personal home-use studios, individual engineers and producers. The goal of SPARS is to promote worldwide communication among all those who make and use professional audio equipment, to foster high-quality educational programs for future engineers and producers, and to promote the economic well-being of the recording service industry as a whole. SPARS is celebrating its 10th Anniversary at this AES convention.

Circle (526)

Solid State Logic (H-113)

New products

Logic FX 9383 dual mic amp and equalizer; Logic FX 9384 quad/stereo compressor; G Series Lynx Synchronizer Controller.

Product line

Consoles, automation systems; consoles, digital; consoles, recording and production; digital audio workstations; editing systems; equalizers; limiters/compressors; noise gates/expanders; recorders, hard disk.

Circle (527)

See ad page 45

Sony (H-138)

New products

MXP-3056VH 56-input console with automated stereo echo returns; TCD-D10PRO professional portable DAT recorder; MU-R201 digital reverb unit; ECM-MS5 stereo MS microphone; WRR-28/WRT-28 ultra-miniature UHF wireless system.

Product line

Compact disc players; consoles, automation systems; consoles, recording and production; disc mastering systems; editing systems; educational courses and programs; headphones and headsets; microphone mixers; microphones, studio and PA; microphones, wireless and RF; recording heads, replacement, sales and service; recording tape, audio; recording tape, video; reverb devices; tape duplication, systems and accessories; tape machines, analog; tape machines, DAT; tape machines, digital; video equipment, all.

Circle (528) See ads pages 4, 5, 52, 67, 68, 69

Soundcraft (H-709, D-608)

New products

3200 recording console.

Product line

Consoles, recording and production; consoles, sound reinforcement.

Circle (529)

See ad back cover

Sound Ideas (H-418)

New products

Series 4000 Hollywood Edition sound effects library.

Product line

Libraries, music production; libraries, sound effects.

Circle (530)

Soundmaster USA (H-168)

New products

Integrated Audio Editing System with System Integrated Random Access Digital Audio.

Product line

Digital audio workstations; editing systems; recorders, hard disk; sound samplers; synchronizer systems.

Circle (531)

Sound Technology (S-830)

New products

3100B audio signal generator; 3200B audio transmission signal analyzer; 1510A audio test system; 1530A MTS audio test system.

Product line

Maintenance, test and measuring equipment.

Circle (532)

Spatial Sound (S-831)

New products

SP-1 Spatial Sound Processor.

Product line

MIDI hardware; signal processors, other.

Circle (533)

Steinway and Sons (D-513)

New products

Model B Grand 7-foot studio grand piano.

Product line

Equipment rental and leasing; synthesizers and keyboards.

Circle (534)

Stewart Electronics (H-111)

New products

MM4-S mic/line mixer; PA50U and PA50B 2x25W 1/2-rack power amps; PA100U and PA100B 2x50W 1/2-rack power amps.

Product line

Amplifiers; microphone mixers.

Circle (535)

Strand Magnetics (H-208)

Product line

Tape supplies and accessories; video equipment, all.

Circle (536)

Studer Revox America (H-733)

New products

Studer A827-24 multichannel recorder; Studer A807 2/2 TC VUK professional recorder with SMPTE center track time code; Revox C270-TC professional 2-channel recorder with SMPTE center-track time code; Studer A729 CD system controller; Revox C270 autolocator/channel remote; Studer A723 active studio monitor; Studer A779 professional compact mixing console.

Product line

Compact disc players; consoles, recording and production; consoles, sound reinforcement; editing systems; loudspeakers, studio monitoring; synchronizer systems; tape machines, ana-

Confused About "Exciters"?

Read the Facts.

Seems like a good thing always leads to imitators. Which is why there seems to be a rash of so-called "brightness enhancers," "phase correctors" and "exciters."

The Aphex Aural Exciter® is a *patented* audio process that will recreate and restore missing harmonics. When added, they restore *natural* brightness, clarity and presence, and actually extend audio bandwidth. All without adding any appreciable power to the signal.

As a result, the Aural Exciter has become a standard tool in the recording, film, broadcast and sound reinforcement industries around the world. It has been licensed for use in prod-

ucts sold by Yamaha, Numark, AKG, Proton, Gentner Engineering, MacKenzie Labs, and Vestax.

Other "brightness enhancers" only boost existing high frequencies, pumping as much as an additional 12dB, which can distort the amp or even blow your speakers... in addition to sounding unnatural. In fact, you could probably achieve the same effect more flexibly and economically by using any equalizer.

Don't be confused by hype. Listen to any device claiming to do what only an Aphex Aural Exciter does, then listen to the real thing. Your ears will hear the difference.



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SYSTEMS

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11068 Randall Street
Sun Valley, CA 91352
(818) 767-2929

Circle (28) on Rapid Facts Card

Studer Revox America, continued

log; tape machines, cassette; tape machines, digital.

Circle (537) **See ad inside front cover**

Success Specialty Sales Corp. (H-305)

Not available at press time.

Circle (538)

Summit Audio (S-836)

New products

EQF-100 4-band vacuum tube equalizer.

Product line

Equalizers.

Circle (539)

Swire Magnetics (H-311)

New products

CL-1 clear premium C-O cassette; HTI Precision Series cassette.

Product line

Recording tape, audio.

Circle (540)

Symetrix (H-419)

New products

Model 111 adaptive hybrid digital telephone in-

terface; SX205 precision audio meter; SX206 multi-dynamics processor.

Product line

Amplifiers; digital audio workstations; equalizers; limiters/compressors; metering devices; microphones, pre-amplifiers; noise gates/expanders; noise reduction systems; recorders, hard disk; time compression/expansion:

Circle (541) **See ad page 86**

Tannoy North America (H-221, D-618)

New products

NFM-8-DMT concentric studio reference monitor.

Product line

Loudspeakers, studio monitoring.

Circle (542) **See ad page 75**

Tape Automation Ltd. (S-842)

Not available at press time.

Circle (543)

Tape Duplication Technology (S-855)

Not available at press time.

Circle (544)

Tascam/TEAC Professional (H-94)

New products

644 and 688 MIDiStudio self-contained production systems; MTS 1000 MIDiZER 2-machine synchronizer; DA 800/24 DASH machines; M 3500 Series automated and non-automated mixing consoles.

Product line

Compact disc players; consoles, recording and production; consoles, sound reinforcement; tape machines, analog; tape machines, cassette and cartridge; tape machines, DAT; tape machines, digital.

Circle (545) **See ads pages 76, 77**

Technics (D-541)

New products

SL-P1300 professional CD player.

Product line

Compact disc players; equalizers; phonograph turntables.

Circle (546)

Techron (H-509)

New products

TEF 12; TEF 12+ acoustic analyzer.

Product line

Computers, hardware and peripherals; computer software, studio applications.

Circle (547)

Telex Communications (H-219)

New products

Wireless Intercom System; TR-200 belt pack transceiver; BTR-200 base station.

Product line

Headphones and headsets; headphone mixing systems; intercom systems; microphones, booms, stands and accessories; microphones, studio and PA; microphones, wireless and RF; tape duplication, systems and accessories.

Circle (548) **See ads pages 35, 44**

3M Magnetic Media Division (H-101)

New products

RDAT cassettes; AUD 80+ U-matic tape; 3M 186 low-noise open reel tape.

Product line

Recording tape, audio; recording tape, video.

Circle (549) **See ad page 43**

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- Records at 44.1kHz as well as 48kHz
- Has professional SDIF-2, AES/EBU and S/P DIF interfaces
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- Less than 0.005% Total Harmonic Distortion at +4dB
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360 Systems (H-157)*New products*

AM-16/B audio crosspoint switcher; AM-16/E expander modules; AM-16/R remote control stations; Series 2000 and 4000 permanent playback digital message systems.

Product line

MIDI hardware; routing switchers, audio; sound samplers.

Circle (550)

TimeLine (H-144)*New products*

Lynx keyboard control unit for multi-machine synchronization and audio editing; Lynx System Supervisor; Lynx VSI film module.

Product line

Synchronizer systems.

Circle (551)

Times One/Technisonics (S-860)

Not available at press time.

Circle (552)

Toa Electronics (S-824)

Not available at press time.

Circle (553)

Toroid (S-888)

Not available at press time.

Circle (554)

Trident Audio USA (H-138)*New products*

Vector 432 audio production console.

Product line

Consoles, digital; consoles, recording and production; consoles, sound reinforcement; noise gates/expanders; signal processors, other; synchronizer systems.

Circle (555)

See ad page 73

UltraAnalog (H-177)*New products*

DAC D18400, DAC D20200 and DAC D20400 D/A conversion modules; AFE 20048 analog front-end and original dbx D20C10 decimator A/D converter; CTI/dbx high-resolution A/D converter IC set.

Product line

Signal processors, other.

Circle (556)

UREI (H-709, D-608)*Product line*

Amplifiers; crossovers and frequency dividers; equalizers; limiters/compressors; loudspeakers, studio monitoring; microphone mixers; signal processors, other.

Circle (557)

Vega, a Mark IV company (H-201)*Product line*

Intercom systems; microphones, wireless and RF.

Circle (558)

WaveFrame (H-243)*New products*

Disk Recording Module (DRM) for AudioFrame.

Product line

Consoles, digital; digital audio workstations; disk mastering systems; editing systems; recorders, hard disk; signal processors, other; sound

samplers; synthesizers and keyboards.

Circle (559)

Westlake Audio (D-616)*New products*

BBSM-4 high-accuracy portable reference; BBSM10VF symmetrical monitor.

Product line

Cable and connectors; crossovers and frequency dividers; loudspeakers, studio monitoring.

Circle (560)

Whirlwind/U.S. Audio (H-158)*New products*

Whirlwind MICPOWER phantom power supply; Whirlwind MIDI Cable Tester; U.S. Audio MIX-5S mixer.

Product line

Amplifiers; cable and connectors; headphones mixing systems; maintenance, test and measuring equipment; microphones, booms, stands and accessories; patchbay and jack panels; routing switchers, audio; transformers, audio.

Circle (561)

Wireworks (H-204)*New products*

Access computerized electronic store.

Product line

Cable and connectors; miscellaneous equipment and services; transformers, audio; video equipment, all.

Circle (562)

Words & Deeds (S-889)

Not available at press time.

Circle (563)

Xedit Corporation (H-185)*Product line*

Editing systems; tape supplies and accessories.

Circle (564)

Yamaha (H-180)*New products*

AM802, AM602, PM1200 and MV1602 professional mixing consoles; MR Series professional mixing consoles; PM2800M-32/40C professional mixing consoles; RTC1 remote control for digital mixing processors; MT3X Studio mixer/recorder; Mark III speaker systems; SPX900 and SPX1000 digital multi-effects processors; FX500 simul-effects processor; DDL3 commercial digital audio delay.

Product line

Amplifiers; consoles, recording and production; consoles, sound reinforcement; crossovers and frequency dividers; delays, analog and digital; equalizers; limiters/compressors; loudspeakers, component; loudspeakers, sound reinforcement; loudspeakers, studio monitoring; microphones, booms, stands and accessories; microphones, studio and PA; MIDI devices; reverb devices; signal processors, other; sound samplers; tape machines, cassette and cartridge.

Circle (565)

See ad page 29

Zoom Corporation (H-250)*New products*

9010 advanced sound processor; 9002 advanced guitar effects processor and amplifier simulator.

Product line

Reverb devices; signal processors.

Circle (566)

This directory is current as of Aug. 16, 1989, and is compiled from information supplied by exhibiting companies as of that date. For changes and additions after Aug. 16, consult the official program at the convention.

Last minute additions**Acoustical Physics Laboratories (D-531)**

Circle (570)

Acoustics Design Group (H-136)

Circle (571)

Adamson Acoustic Design (H-310)

Circle (572)

ADx Systems (H-309)

Circle (573)

AirCRAFT Music Library

Circle (574)

AKY Recording Supplies (S-862)

Circle (575)

Analog Devices (H-321)

Circle (576)

Anchor Audio (H-519)

Circle (577)

APRS (H-237)

Circle (578)

ARSONIC U.S. (H-404)

Circle (579)

Audio Teknology (H-307)

Circle (580)

C:T Audio Marketing (H-520)

Circle (581)

Casio (S-839)

Circle (582)

Conneaut Audio Devices (S-852)

Circle (583)

Rolls Corporation (S-861)

Circle (584)

SoundSphere (D-548)

Circle (586)

Studer Editech (D-609)

Circle (587)

Sunkyong International (H-522)

Circle (588)

This directory is current as of Aug. 16, 1989, and is compiled from information supplied by exhibiting companies as of that date. For changes and additions after Aug. 16, consult the official program at the convention.

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DEPENDABLE

"Reliability is a major concern in day to day operation. The GML system has been nearly flawless."

TETSU TAKAHASHI, SEDIC STUDIOS, TOKYO

PRECISION

"Fader and Mute accuracy so precise, my confidence in the system to reproduce every detail is unquestioned."

BRUCE SWEDIEN, MIXER, CA

COMPATIBILITY

"GML's ability to convert SSL and Necam mix disks allows us to maintain compatibility, assuring room to room flexibility for our clients."

STEVEN BRAMBERG, ATLANTIC STUDIOS, NYC

ENGINEER ENGINEERED

"For the mixer, the operation is effortless and intuitive. When complex problems do need to be addressed, the Editor provides an easy to use off-line function for any eventuality."

MICK GUZAUSKI, MIXER, CA

PALETTE-ABILITY

"It provokes an environment that enhances the creative process..."

CHICK COREA, ARTIST, PRODUCER, CA

ORTHOGENETIC

"GML's system architecture assures that our investment will remain on the cutting edge of technology for years to come."

STEPHEN FLOOD, MASTERROCK STUDIOS, LONDON

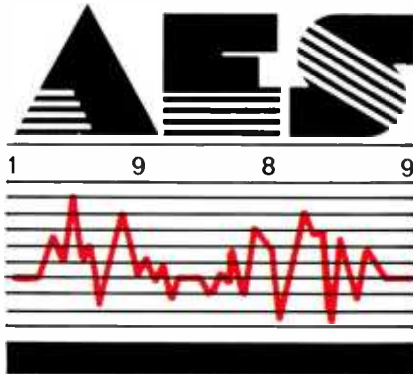


THE AUTOMATION STANDARD

7821 BURNET AVENUE, VAN NUYS, CALIFORNIA 91405, FAX 818-781-3828, TELEPHONE 818-781-1022

Circle 31 on Reader Service Card





Product Directory

This directory lists exhibiting companies that manufacture equipment or offer services in 70 categories. To use the directory, find the appropriate category listed in boldface type. The companies are listed in alphabetical order.

To simplify things, similar product categories that were separate in past years have been combined. Product headings are intended as general product guidelines, and may not reflect what all companies manufacture.

For example, not all companies listed under the "Limiters/compressors" category will manufacturer both products.

Basic information on all exhibiting companies is contained in the Exhibitor Directory, which begins on page 34. Detailed information on many new products is contained in Product Preview, which begins on page 72.

Because of our press deadlines, last-minute exhibitors or AES booth changes may not be included. Check your convention program for additional information.

Acoustic design and construction

RPG Diffusor Systems

Acoustic treatment materials

Alpha Audio
Hybrid Cases/FM Tubecraft
RPG Diffusor Systems
Schoeps/Posthorn Recordings

Amplifiers

AB International
API Audio Products
Ashly Audio
Australian Monitor Ltd.
BGW Systems
Bryston
Carver Corporation
Crest Audio
Crown International
FM Acoustics
Gentner Electronics

Industrial Strength Industries
Innovative Electronic Designs
JBL Professional
Meyer Sound Laboratories
Nady Systems
Panasonic Industrial/Ramsa
Peavey/Audio Media Research
QSC Audio Products
Rane Corporation
Renkus-Heinz
RTS Systems
UREI
Sescom
Stewart Electronics
Symetrix
U.S. Audio
Yamaha

Cable and connectors

Audio-Technica
Beyer Dynamic
Canare Cable
Connectronics
FM Acoustics
Marshall Electronics
Monster Cable
Neutrik USA
Pro Co Sound
Westlake Audio
Whirlwind
Wireworks

Compact disc players

Gefen Systems
Panasonic Industrial/Ramsa
Ramware Designs Corporation
Sony
Studer Revox America
Tascam/TEAC Professional
Technics

Computers, hardware and peripherals

Adams-Smith
Ariel Corporation
J.L. Cooper

Digidesign
Fostex Corporation of America
Hybrid Arts
Innovative Electronic Designs
Techron

Computer software, business

Bose
Fostex Corporation of America
Groupe Andre Perry Software

Computer software, MIDI

J.L. Cooper
Digidesign
Fostex Corporation of America

Computer software, studio applications

J.L. Cooper
Digidesign
Fostex Corporation of America
Gefen Systems
Hybrid Arts
Marshall Electronic
Techron

Consoles, automation systems

Amek/TAC
AMS Industries
API Audio Products
Audio Animation
Audio Kinetics
J.L. Cooper
DDA
Euphonix
Fostex Corporation of America
GML
Harrison/GLW Enterprises
Neve
Otari
Sellmark Electronic Services
Solid State Logic
Sony

The Digital Master.



If the music is going to end up on a CD, it only makes sense to master on a Panasonic SV-3500 Recorder.

Unlike "consumer" DAT machines, the fully professional SV-3500 offers a sampling rate of 44.1 kHz—the rapidly emerging standard for digital audio. In fact, if you use any other sampling rate, you'll eventually have to go through a sampling rate converter, (a degenerative process) to master your CD.

The SV-3500 is a full-function studio DAT recorder with both 44.1 (from analog) and 48kHz sampling rates. And it's from a company known for its full-service support of audio professionals.

Take a look around your studio. Are you equipped to answer your customer's demands for the new standards of this digital era? If not, visit a Panasonic dealer and hear the SV-3500.

For the name of the nearest dealer, call 714-373-7278. Or, write to Panasonic AVSG, 6550 Katella Avenue, Cypress, CA 90630.

Panasonic
Professional Audio Systems

Circle (32) on Rapid Facts Card

Consoles, digital

AMS Industries
Audio Animation
Solid State Logic
Trident Audio
WaveFrame

Consoles, recording and production

Akai Professional
Amek/TAC
AMS Industries
API Audio Products
Audio Animation
Audio Logic
Audio-Technica
Broadcast Electronics
J.L. Cooper
DDA
DOD Electronics
Euphonix
Focusrite Audio Engineering
Fostex Corporation of America
Harrison/GLW Enterprises
Neve
Otari
Panasonic Industrial/Ramsa
Peavey/Audio Media Research
Professional Sound Corporation
Samson Technologies
Schoeps/Posthorn Recordings
Solid State Logic
Sony
Soundcraft
Studer Revox America
Tascam/TEAC Professional
Trident Audio
Yamaha

Consoles, sound reinforcement

Amek/TAC
Audio Logic
Crest Audio
DDA
DOD Electronics
Dorrrough Electronics
Panasonic Industrial/Ramsa
Soundcraft
Studer Revox America
Tascam/TEAC Professional
Trident Audio
Yamaha

Crossovers and frequency dividers

AB International
Ashly Audio
DDA
DOD Electronics
Edge Distribution/BSS Audio
Fane Acoustics
FM Acoustics
Gold Line/Loft
Industrial Strength Industries
JBL Professional
Klark-Teknik
Marshall Electronic
Panasonic Industrial/Ramsa
Professional Audio Systems
QSC Audio Products
Rane Corporation
UREI
Westlake Audio

Yamaha

Delays, analog and digital

Akai Professional
AMS Industries
Applied Research and Technology
Audio Animation
Audio/Digital
DigiTech
DOD Electronics
Eventide
Industrial Strength Industries
Klark-Teknik
Korg USA
Lexicon
Marshall Electronic
Panasonic Industrial/Ramsa
Peavey/Audio Media Research
Yamaha

Digital audio workstations

AMS Industries
Ariel Corporation
Audio Animation
Digidesign
Digital Audio Research
Digital Audio Technologies
Digital Dynamics
Duplitronics
E-mu Systems
Hybrid Arts
JVC of America
Lester Audio Laboratories
Lexicon
New England Digital
Solid State Logic
Soundmaster USA
Symetrix
WaveFrame

Disc mastering systems

API Audio Products
Sony
WaveFrame

Drum machines

Akai Professional
Industrial Strength Industries
Korg USA

Editing systems

Adams-Smith
Alpha Audio
AMS Industries
Ariel Corporation
Audio Kinetics
Cipher Digital
Fostex Corporation of America
Lexicon
Ramware Designs Corporation
Solid State Logic
Sony
Soundmaster USA
Studer Revox America
WaveFrame
Xedit Corporation

Educational courses and programs

Berklee College of Music
Full Sail Center for the Recording Arts
Sony

Equalizers

AB International
Alesis Corporation
API Audio Products
Apogee Sound
Applied Research and Technology
Ashly Audio
Audio Animation
Audio Logic
DigiTech
DOD Electronics
Focusrite Audio Engineering
GML
Industrial Strength Industries
JBL Professional
Klark-Teknik
Marshall Electronic
Meyer Sound Laboratories
Orban Associates
Oxmoor
Peavey/Audio Media Research
Rane Corporation
Roland Corp. US
Solid State Logic
Summit Audio
Symetrix
Technics
UREI
Yamaha

Equipment cases

Hybrid Cases/FM Tubecraft

Equipment rental and leasing

Apex Machine Company
Schoeps/Posthorn Recordings
Steinway and Sons

Faders

Audio Kinetics
J.L. Cooper
Fostex Corporation of America
GML
Otari
Penny & Giles
Sellmark Electronic Services

Filters, replacement

Apogee Electronics

Headphones and headsets

AKG Acoustics
Alesis Corporation
Audio-Technica
Beyer Dynamic
Countryman Associates
Fostex Corporation of America
Gold Line/Loft
HM Electronics
Nakamichi America
RTS Systems
Sennheiser
Shure Brothers
Sony
Telex Communications

Headphone mixing systems

Gentner Electronics
Industrial Strength Industries
Peavey/Audio Media Research
Telex Communications
U.S. Audio

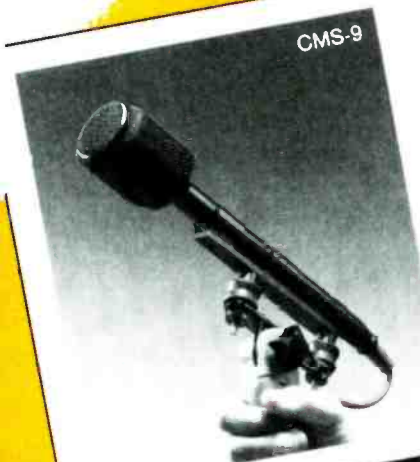
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FULL-DIMENSIONAL • TRANSPARENT • ACCURATE IMAGING

In Japan, Sanken dominates the world of professional audio with over 50,000 microphones in daily use. Now the Sanken line of precision mics is available worldwide. The hand-crafted titanium diaphragm found in every model and such unique features as dual-capsule design have made Sanken the recognized leader in microphone technology.



Sanken is the only mono microphone in the world with dual-capsules. For an unprecedented capture of the full audio spectrum, even off-axis, compare a Sanken with the old standards and hear a new way.



For pure Stereo, just "point and shoot" a Sanken — the first line of professional portable MS-Stereo mics in the world. TV and radio broadcasting, location filmmaking, or in the studio — try our Stereo image with your visuals and get the real picture.

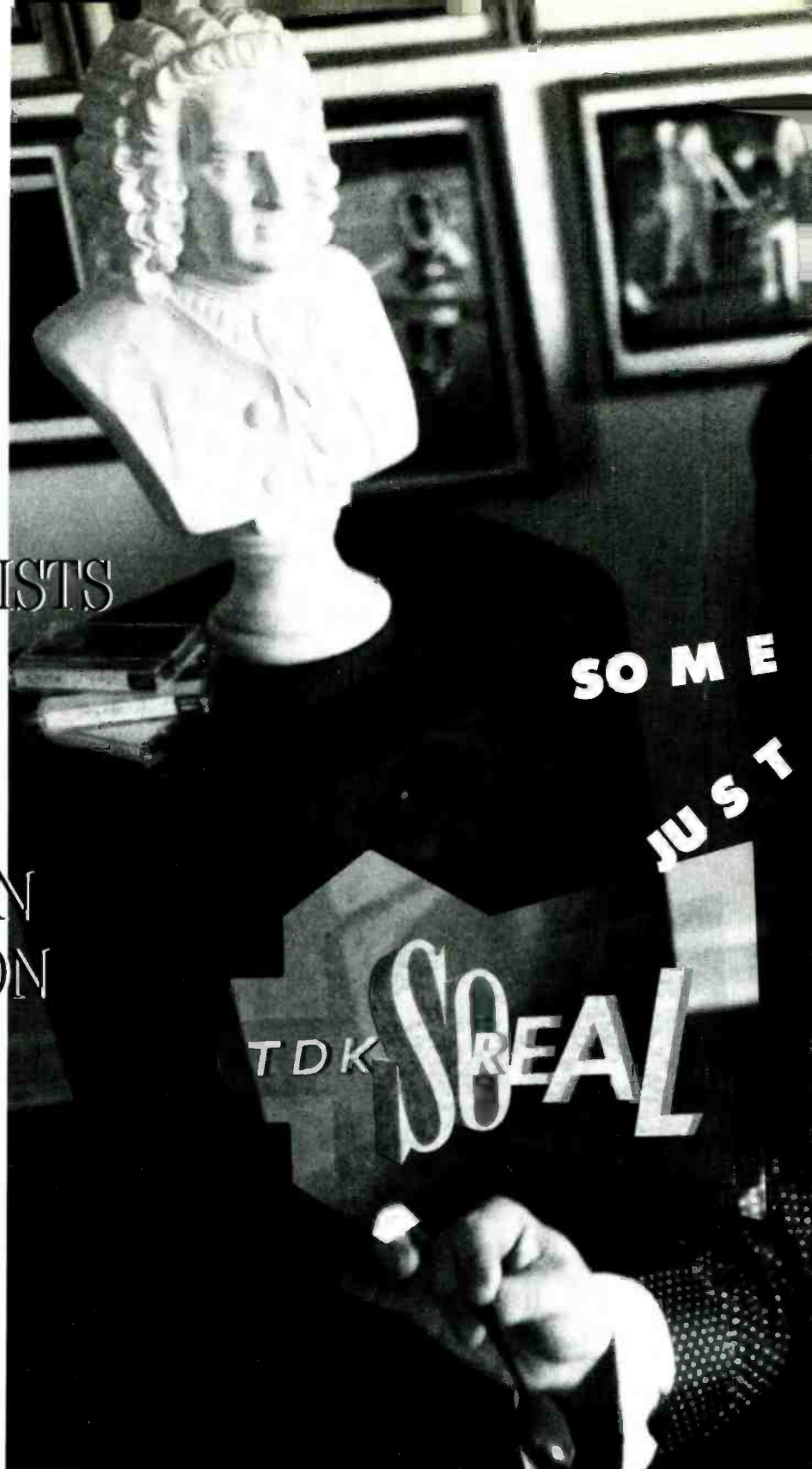


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SOME
LOVE
THE FACT
THAT
THE AUDIO
PERFECTIONISTS
AT **TELARC**
CHOSE
TDK'S
SUPER AVILYN
FORMULATION
FOR THEIR
DIGITALLY
RECORDED
CASSETTE
SERIES.



SOME

JUST

TDK SO REAL

LOVE
THE
MUSIC



TDK **SO REAL**

Intercom systems

Diless Ltd.
HM Electronics
Professional Sound Corporation
RTS Systems
Telex Communications

**Libraries,
music production**

Sound Ideas

**Libraries,
sound effects**

Gefen Systems
Ramware Designs Corporation
Sound Ideas

Limiters/compressors

Alesis Corporation
Aphex Systems
API Audio Products
Ashly Audio
Audio Logic
DOD Electronics
Dorrrough Electronics
Edge Distribution/BSS Audio
Focusrite Audio Engineering
GML
Gold Line/Loft
JBL Professional
Klark-Teknik
Marshall Electronic
Orban Associates
Peavey/Audio Media Research
QSC Audio Products

Rane Corporation
Shure Brothers
Solid State Logic
Symetrix
UREI
Yamaha

**Loudspeakers,
component**

Community Light & Sound
Edge Distribution/Turbosound
Emilar
Fostex Corporation of America
Gauss, a Mark IV company
JBL Professional
Neutrik USA
Professional Audio Systems
Renkus-Heinz
Yamaha

**Loudspeakers,
sound reinforcement**

Apogee Sound
Community Light & Sound
Eastern Acoustic Works
Edge Distribution/Turbosound
Emilar
Fane Acoustics
Fostex Corporation of America
Intersonics
JBL Professional
Martin America
Meyer Sound Laboratories
Panasonic Industrial/Ramsa
Professional Audio Systems

Renkus-Heinz
Yamaha

**Loudspeakers,
studio monitoring**

Emilar
Fane Acoustics
Fostex Corporation of America
Intersonics
JBL Professional
Klark-Teknik
Meyer Sound Laboratories
Panasonic Industrial/Ramsa
Peavey/Audio Media Research
Professional Audio Systems
Quested Monitoring
Studer Revox America
Tannoy North America
UREI
Westlake Audio
Yamaha

**Maintenance, test
and measuring equipment**

ACO Pacific
Amber Electro Design
Audio Control Industrial
Audio Precision
Bruel & Kjaer Instruments
Concept Design Electronics and Manufacturing
DOD Electronics
Dorrrough Electronics
Gold Line/Loft
Ivie, a Mark IV company
JRF Magnetic Sciences/Reel-Tek

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ELECTRONICS CORPORATION

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FAX (801) 977-0087

Circle (35) on Rapid Facts Card

When there is no compromise there is no choice.

quote ...

"Over the years we have compiled a list of the best features and the worst nightmares that we have encountered with every console: the AMS/Calrec UA8000 incorporates the BEST of the BEST.

In terms of ease of use, superb ergonomics, elegant electronic design, ease of maintenance, style of construction and sonic quality, the UA8000 console is a dream come true."

*Gary Brandt & Denny Shaw,
Alpha Studios, Los Angeles.*

"Studio 3 has been designed with our clients very much in mind, to provide them not just with the best facility in London but the best in the world."

*Ken Townsend,
EMI Abbey Road Studios, London.*

...unquote

UA8000 with TASC simply the best of the best.



AMS Industries plc

Circle (36) on Rapid Facts Card

Alpha Studios, Los Angeles.



Abbey Road Studios, London.



Music
Recording
Consoles



Hard Disc
Editor



Digitally
Assignable
Consoles



DMX RMx
Digital
Audio Processors



Calrec Standard
and SoundField
Microphones



Custom Broadcast
Consoles



Digital Mixing
Consoles



Three Queen's Awards for Export Achievement 1984, 1985 and 1986
AMS Industry plc 1986, in July 1985 E.Tender, 1986, in the AMN Industry

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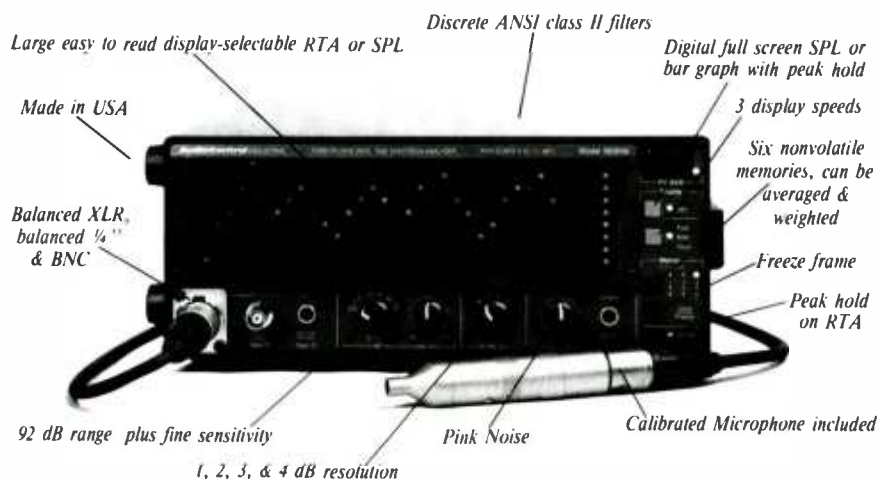
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Circle (38) on Rapid Facts Card

*Maintenance, test and measuring
equipment, continued*

Neutrik USA
Schmid Telecommunications
Schoeps/Posthorn Recordings
Sound Technology
Whirlwind

Metering devices

ACO Pacific
API Audio Products
Apogee Electronics
Audio Control Industrial
Dorrrough Electronics
Schoeps/Posthorn Recordings
Selco/Sifam
Symetrix

Microphone mixers

ACO Pacific
Allen & Heath
Ashly Audio
Fostex Corporation of America
Innovative Electronic Designs
JBL Professional
Panasonic Industrial/Ramsa
Professional Sound Corporation
QSC Audio Products
Rane Corporation
Schoeps/Posthorn Recordings
Sennheiser
Sescom
Shure Brothers
Sony
Stewart Electronics
UREI

Microphones, booms, stands and accessories

AKG Acoustics
AMS Industries
Audio-Technica
Beyer Dynamic
Countryman Associates
Fostex Corporation of America
Panasonic Industrial/Ramsa
Professional Sound Corporation
Schoeps/Posthorn Recordings
Sennheiser
Shure Brothers
Telex Communications
Whirlwind
Yamaha

Microphones, pre-amplifiers

ACO Pacific
Focusrite Audio Engineering
GML
Innovative Electronic Designs
Rane Corporation
RTS Systems
Schoeps/Posthorn Recordings
Sescom
Shure Brothers
Symetrix

Microphones, studio and PA

ACO Pacific
AKG Acoustics
AMS Industries
Ariel Corporation
Audio-Technica

JEFF BAXTER AND DIC//DAT

TAKE MUSIC TO THE Nth DEGREE.

THE DIC//DAT Musician's Musicians Series #1



PHOTOGRAPH: KOPITCHINSKI
LOCATION: SOUNDTRACK NY.

The title on the album read "Can't Buy a Thrill." But the music inside proved just the opposite. Steely Dan gave the world a thrill for the price of a record. And the guitar player that gave Steely Dan its thrills through three gold albums was Jeff "Skunk" Baxter.

Behind the console or in front of the mike, Skunk Baxter lets nothing get between him and his music. That's why his trademark clear plexi guitar synthesizer clearly isn't just for show. Its thermoplastic body means virtually zero resonance. Which means virtually zero interference. The purest sound. Music to the Nth Degree.

Like DIC//DAT. The definitive digital audio tape. The surface: Ultra-high density metal particles. The dispersion: Ultra-uniform. The result: Unsurpassed digital signal receptivity. And an unbelievable range and clarity way beyond vinyl. Beyond analog cassette. Beyond any way you've ever heard recorded music before.

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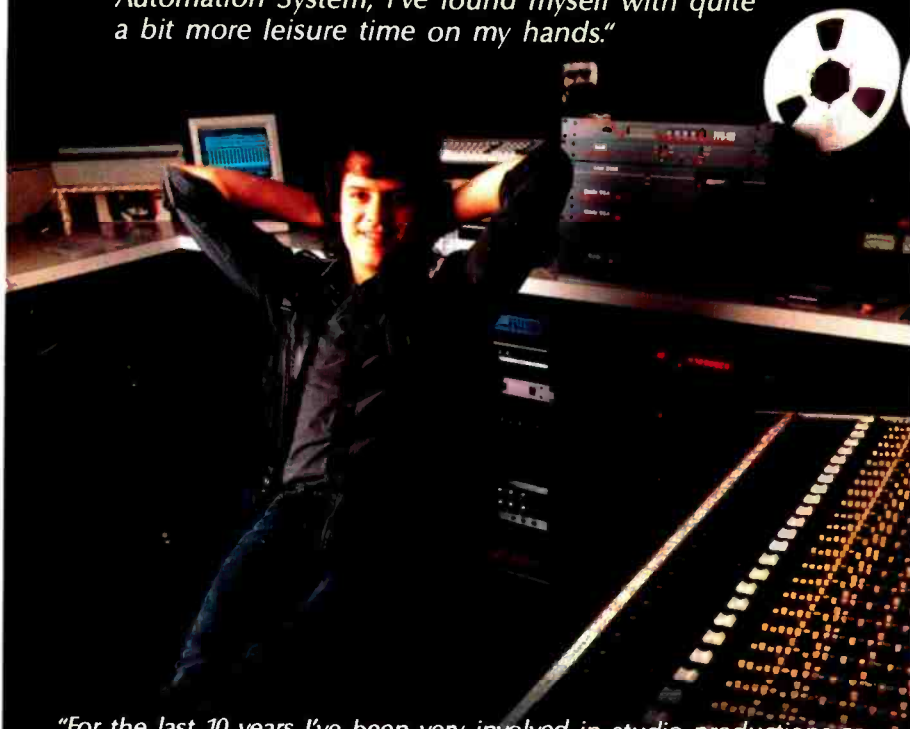
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DIC Digital **DAT**
Digital Audio Tape

"...Right now, I'm mixing my record"

Trevor Rabin of "YES"
on J.L. Cooper Automation

"Since I installed J.L. Cooper's MAGI Mixdown Automation System, I've found myself with quite a bit more leisure time on my hands."



"For the last 10 years I've been very involved in studio productions as both producer and engineer. These projects have involved a number of very high priced and sophisticated automated recording consoles. I am amazed at the flexibility and simplicity of J.L. Cooper's automation system. They have managed to design a real user-friendly system at a more than reasonable price. I'm also astounded by the quietness of the VCA units. The bottom line is that it works perfectly, without the need of a sequencer or sync box. MAGI has saved me numerous hours mixing."

The MAGI System is comprised of several components which can be mixed and matched to meet your individual requirements. High quality automation for the 16 to 56 input console has never been more affordable. Prices start at just \$3468.00!

Also available from J.L. Cooper is MixMate! Eight channel, self contained fader and mute automation for the 8 to 16 track studio and audio/video post production facility. Many applications, one low price - \$995.00!



See and hear what automation can do for your mixes!

JL COOPER ELECTRONICS

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Microphones, studio and PA, continued

Beyer Dynamic
Briel & Kjaer Instruments
Countryman Associates
Crown International
Fostex Corporation of America
Gold Line/Loft
HM Electronics
Milab
Panasonic Industrial/Ramsa
Peavey/Audio Media Research
Schoeps/Posthorn Recordings
Sennheiser
Shure Brothers
Sony
Telex Communications
Yamaha

Microphones, wireless and RF

AKG Acoustics
Audio-Technica
Beyer Dynamic
Countryman Associates
HM Electronics
Nady Systems
Samson Technologies
Schoeps/Posthorn Recordings
Sennheiser
Shure Brothers
Sony
Telex Communications

MIDI hardware

Adams-Smith
Akai Professional
Allen & Heath
Aphex Systems
Apogee Electronics
J.L. Cooper
DigiTech
Edge Distribution/BSS Audio
Fostex Corporation of America
Korg USA
Lexicon
New England Digital
Peavey/Audio Media Research
Spatial Sound
360 Systems
Yamaha

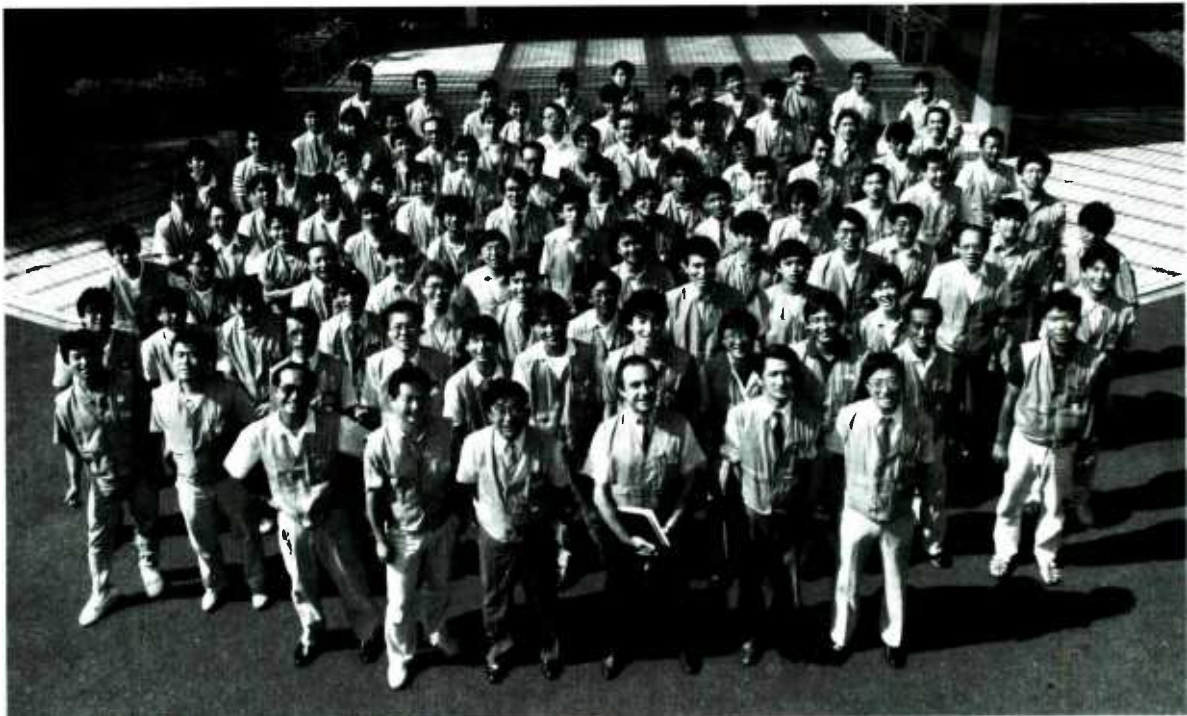
Miscellaneous equipment and services

Sam Ash Professional
AudioTechniques
Audio Video Research
Brainstorm Electronics
J.L. Cooper
Countryman Associates
CST Sales
H.L. Dalis
Gentner Electronics
Gotham Audio
Groupe Andre Perry Software
Hybrid Cases/FM Tubecraft
Industrial Strength Industries
Japan America Electronics
JRF Magnetic Sciences/Reel-Tek
Martin Audio Video Corp.
Middle Atlantic Products
Neutrik USA
Pro Co Sound
Schoeps/Posthorn Recordings

Circle (40) on Rapid Facts Card

Thanks

For making Sony DASH the leading digital multitrack format in the world.



The Sony Professional Audio Engineering Team. Atsugi, Japan.

Exactly one year ago at the AES Convention in Los Angeles, Sony introduced the PCM-3348, the world's first 48-channel digital multitrack recorder.

The world hasn't been the same since.

The response from recording engineers and artists has been tremendous. Not simply because the technology is state-of-the-art. *But because the technology complements the way music is made.*

Existing 24-track tapes playback flawlessly on the PCM-3348 and are undisturbed as 24 more tracks are



added to the original recording. The creative possibilities are astounding.

Now that the technology has been introduced and accepted by you, our job grows. We're strengthening our support organization to meet the needs of the most demanding clientele in the world—the professional recording community.

Sony stands committed to bring you that level of support today and into the future. In product development, in sales, in service, in training—in the United States and around the world. And that's the best way we can say, "Thanks."

SONY[®]

PROFESSIONAL AUDIO



United States DASH Multitrack Facilities

- 3M**
St. Paul, MN
- Acme Recording Studio**
Sherman Oaks, CA
- Alpha Studios Digital, Ltd.**
Burbank, CA
- Audio Intervisual Design**
Hollywood, CA
- AME, Inc.**
Burbank, CA
- Atlantic Recording Corp.**
New York, NY
- Audioforce**
New York, NY
- John Barnes Productions**
Hollywood, CA
- George Benson Studios**
Englewood, NJ
- BMG/RCA Studios**
New York, NY
- Bronese Recording Studios**
St. Martin, N.A.
- CBS Records**
New York, NY
- Bob Clearmountain/
Fast Forward Productions**
New York, NY
- CMS Digital, Inc.**
Pasadena, CA
- Compact Video**
Burbank, CA
- Creation Audio Recording Inc.**
Minneapolis, MN
- Cypress Records**
Los Angeles, CA
- Dallas Sound Labs**
Irving, TX
- Design FX Audio**
Culver City, CA
- Devonshire Studios**
N. Hollywood, CA
- Digital Magnetics**
Hollywood, CA
- Digital Recorders**
Nashville, TN
- Digital Services Recording**
Houston, TX
- Discovery Systems**
Dublin, OH
- Editel**
New York, NY
- EFX Systems**
Burbank, CA
- Electric Lady Studios**
New York, NY
- Fire Station Studios**
San Marcos, TX
- Forge Recording Studios**
Valley Forge, PA
- Georgetown Masters, Inc.**
Nashville, TN
- Todd AO/Glen Glenn Sound**
Los Angeles, CA
- Goodnight Dallas**
Dallas, TX
- Goodnight LA**
Van Nuys, CA
- Merle Haggard/
Hag, Inc.**
Palo Cedro, CA
- Calvin L. Harris & Associates**
Hollywood, CA
- Hillside Sound Studio**
Englewood, NJ
- Hip Pocket Recording Studio**
New York, NY
- Hit Factory/The Hit Factory Times Square**
New York, NY
- Hollywood Sound Recorders**
Hollywood, CA
- Don Hughes Productions, Inc.**
Tampa, FL
- Denny Jaeger/
Creative Services, Inc.**
Oakland, CA
- Tim Jordan Rentals**
Los Angeles, CA
- Kashif/Marathon Recording**
New York, NY
- Lahaina Sound**
Maui, HI
- Levay Enterprises**
Hollywood, CA
- Magno Sound & Video, Inc.**
New York, NY
- Master Sound Astoria**
Astoria, NY
- Masters Touch Sound Studio**
Nashville, TN
- Media Associates/
New Age Sight & Sound**
Atlanta, GA
- Middle Tennessee State University**
Murfreesboro, TN
- Modern Videofilm**
Hollywood, CA
- NBC**
Burbank, CA
- NBC-NY**
New York, NY
- National Public Radio**
Washington, D.C.
- New York Digital**
New York, NY
- Oasis Studios**
Universal City, CA
- OMNIMUSIC**
Port Washington, NY
- The Post Group at the Disney/MGM Studios**
Orlando, FL
- Power Station**
New York, NY
- Premore Video**
North Hollywood, CA
- Professional Media Services**
Gainesville, FL
- The Record Plant**
New York, NY
- Record Plant**
Los Angeles, CA
- Right Track**
New York, NY
- Rock Video International**
New York, NY
- Nile Rodgers Productions**
New York, NY
- Sage Arts, Inc.**
Arlington, WA
- VRI Scharff Rentals**
New York, NY
- Howard Schwartz Recording**
New York, NY
- Sheffield Audio Video Productions**
Phoenix, MD
- Sound Design**
Santa Barbara, CA
- Soundmirror, Inc.**
Boston, MA
- Sound Trax**
Burbank, CA
- Soundworks**
New York, NY
- Soundworks West**
West Hollywood, CA
- Sync Sound**
New York, NY
- Tamarand Digital Recording Studios**
Garnerville, NY
- John Tesh**
Hollywood, CA
- The Toy Specialists**
New York, NY
- Transcom Digital**
New York, NY
- Rudy Van Gelder Studio**
Englewood, NJ
- The Village Recorder**
W. Los Angeles, CA
- Vintage Recorders/
Southwest Institute of Recording Arts & Sciences**
Phoenix, AZ
- Westlake Audio**
Los Angeles, CA
- Windham Hill Productions, Inc.**
Mill Valley, CA
- Stevie Wonder/
Wonderland**
Burbank, CA
- Yanni**
N. Hollywood, CA
- Neil Young/Redwood Digital**
Woodside, CA
- Frank Zappa/Utility Muffin Research Kitchen**
N. Hollywood, CA
- Zeitgeist**
Los Angeles, CA
- Zomba**
New York, NY

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IRCAM
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LA CORDEE
LAGIGNY (ALTIS)
MARCADET
MEGA
ONCLE SAM
PHASE AUDIO
PHILIPPE SARDE

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POLYGONE
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SIS
STUDIO DAVOUT
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THETA STUDIOS

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PRODUCTIONS
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POLYHYMNIA
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WISSELOORD STUDIOS

ITALY

FONIT CETRA
FORUM STUDIO
SONOPRINT

JAPAN

ALFA RECORDS
AOI STUDIO
ART PLAZA 1000
AZABU PLAZA
BURNISH STONE STUDIO
CBS SONY ROPPONGI
STUDIO
CBS SONY SHINANOMACHI
STUDIO
CROSS STUDIO
CROW STUDIO
CUE TECH
DELTA STUDIO
FARM STUDIO
FM TOKYO
FREE PORT STUDIO
FUJI TELECASTING CO.
GOLD RUSH STUDIO
HITOKUCHIZAKA STUDIO
IMAGICA
KAO CORP.
KEYSTONE
KYODO TV
MAINICHI BROADCASTING
STATION
MARINE STUDIO
MEDIA PLAZA
MUSIC INN
NHK
NICHION STUDIO
NIKKATSU STUDIO CENTER
NISHI NIHON CABLE TV
NTV EIZO CENTER

ONKYO HOUSE
PENINSULAR
ROPPONGI VIDEO CENTER
SEDIC CORP.
SMILE GARAGE
SONY PCL
SOUND ATELIER
SOUND CITY CO., LTD.
SOUND CREATORS INC.
SOUND INN
SOUND VALLEY
STUDIO BIRDMAN
STUDIO JIVE
STUDIO SHANGRI-LA
STUDIO SOMEWHERE
STUDIO Z'D INC.
SUNRISE STUDIO
TAMUCO
TBS BROADCASTING
TBS TELEVISION FILMS
TDK KORE
TEICHIKU KOGYO
TOKYO TV CENTER
TOKYU FUN
TOSHIBA-EMI LTD.
TOYO KAGAKU
TOYO RECORDING
TVT AKASAKA
VAP
VICTOR MUSICAL
INDUSTRIES INC.
VIDEO PACK JAPAN
VIDEO SUNMALL
VIDEO TECH
VINCENT STUDIO
VITT
WARNER PIONEER
WEST LAKE
YAMAHA EPICURUS STUDIO
YAMAHA MEGURO STUDIO
YOKOHAMA CINEMA LAB
YOMIURI STUDIO

KOREA

JIGU RECORD

MEXICO

MASS CASSETTES S.A.

NORWAY

SCAN DIGITAL

RUSSIA

GOSTELE RADIO

SPAIN

ALTO FRECUENCIA
CINEARTE
DOUBLEWTRONICS
ESTUDIOS GEMA
EUROSONICS
PANOLETTA STUDIOS

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TORRES SONIDO
TRAK

SWEDEN

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FALTERMEYER
KANGAROO
KOCH RECORDS
OLYMPIA STUDIO
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POLYGRAM
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Miscellaneous equipment and services, continued

Sescom
Wireworks

Noise gates/expanders

Alesis Corporation
Aphex Systems
API Audio Products
Ashly Audio
Audio Animation
Drawmer Distribution
Edge Distribution/BSS Audio
Focusrite Audio Engineering
Gold Line/Loft
Klark-Teknik
Marshall Electronic
Peavey/Audio Media Research
Rane Corporation
Solid State Logic
Symetrix
Trident Audio

Noise reduction systems

Audio Logic
Bryston
Dolby Laboratories
Drawmer Distribution
Peavey/Audio Media Research
Symetrix

Patchbay and jack panels

API Audio Products

Audio Accessories
Canare Cable
Connectronics
Fostex Corporation of America
Gentner Electronics
Marshall Electronics
Neutrik USA
Peavey/Audio Media Research
Penny & Giles
Pro Co Sound
Whirlwind

Phonograph turntables

Broadcast Electronics
Shure Brothers
Technics

Pitch shifters

Alesis Corporation
Applied Research and Technology
Eventide
Lexicon

Power conditioning/ standby power systems

ACO Pacific

Racks and stands

Fostex Corporation of America
Marshall Electronics
Schoeps/Posthorn Recordings

Record/CD manufacturing

American Helix
Audio Animation

Recorders, hard disk

Alpha Audio
AMS Industries
Bruel & Kjaer Instruments
Concept Design Electronics and Manufacturing
Digidesign
Digital Audio Research
Digital Dynamics
Hybrid Arts
Lexicon
New England Digital
Solid State Logic
Soundmaster USA
Symetrix
WaveFrame

Recording heads, replacement, sales and service

JRF Magnetic Sciences/Reel-Tek
Otari
Saki Magnetics
Sony

Recording tape, audio

Agfa-Gevaert
Ampex Recording Media Corporation
BASF Information Systems
DIC Digital
Magnefax International
Panasonic Industrial/Ramsa
Sony
Swire Magnetics
3M Magnetic Media Division

Recording tape, video

Agfa-Gevaert
BASF Information Systems
DIC Digital
Sony
3M Magnetic Media Division

Reverb devices

Akai Professional
Alesis Corporation
AMS Industries
Applied Research and Technology
Audio Logic
DigiTech
Eventide
Gold Line/Loft
Industrial Strength Industries
Klark-Teknik
Lexicon
Marshall Electronic
Peavey/Audio Media Research
Roland Corp. US
Sony
Yamaha
Zoom Corporation

Routing switchers, audio

Akai Professional
J.L. Cooper
Gentner Electronics
Innovative Electronic Designs
Oxmoor
360 Systems
Whirlwind

Sequencers

Akai Professional

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Circle (42) on Rapid Facts Card

Sequencers, continued

Alesis Corporation
Korg USA

Signal processors, other

AKG Acoustics
Alesis Corporation
Amek/TAC
AMS Industries
Aphex Systems
API Audio Products
Applied Research and Technology
Ariel Corporation
Ashly Audio
Audio Logic
Clarity
DigiTech
DOD Electronics
Dolby Laboratories
Drawmer Distribution
Edge Distribution/BSS Audio
Eventide
Focusrite Audio Engineering
Industrial Strength Industries
Innovative Electronic Designs
JBL Professional
Korg USA
Lexicon
Marshall Electronic
Motorola
Orban Associates
Oxmoor
Peavey/Audio Media Research
Renkus-Heinz
Schoeps/Posthorn Recordings
Sescom
Spatial Sound
Trident Audio
UltraAnalog
UREI
WaveFrame
Yamaha
Zoom Corporation

Sound samplers

Akai Professional
AMS Industries
Bruel & Kjaer Instruments
E-mu Systems
Eventide
Korg USA
Marshall Electronic
Roland Corp. US
Soundmaster USA
360 Systems
WaveFrame
Yamaha

Synchronizer systems

Adams-Smith
Alpha Audio
Audio Kinetics
Cipher Digital
J.L. Cooper
Fostex Corporation of America
JRF Magnetic Sciences/Reel-Tek
Peavey/Audio Media Research
Ramware Designs Corporation
Soundmaster USA
Studer Revox America
TimeLine
Trident Audio

Synthesizers and keyboards

Akai Professional
J.L. Cooper
E-mu Systems
Korg USA
Steinway and Sons
WaveFrame

Tape duplication, systems and accessories

AEG Corporation
American Multimedia/Concept Design
Apex Machine Company
Audio Video Consultants
Cintas Vac
Concept Design Electronics and Manufacturing
Duplitronics
Gauss, a Mark IV company
Heino Ilseman
JRF Magnetic Sciences/Reel-Tek
KABA Research and Development
King Instrument
Magnefax International
Nakamichi America
Otari
Sony
Telex Communications

Tape machines, analog

Akai Professional
Concept Design Electronics and Manufacturing
Fostex Corporation of America
Otari
Sony
Studer Revox America
Tascam/TEAC Professional

Tape machines, cassette and cartridge

AEG Corporation
Akai Professional
Broadcast Electronics
Fostex Corporation of America
Nakamichi America
Peavey/Audio Media Research
Studer Revox America
Tascam/TEAC Professional
Yamaha

Tape machines, DAT

Fostex Corporation of America
JVC of America
Nakamichi America
Otari
Panasonic Industrial/Ramsa
Sony
Tascam/TEAC Professional

Tape machines, digital

Akai Professional
Audio Video Consultants
Duplitronics
Neve
Otari
Sony
Studer Revox America
Tascam/TEAC Professional

Tape supplies and accessories

BASF Information Systems
Cintas Vac
Concept Design Electronics and Manufacturing
DIC Digital

Otari

Strand Magnetics
Xedit Corporation

Time compression/expansion

AMS Industries
Digidesign
Eventide
Lexicon
Symetrix

Transformers, audio

API Audio Products
Edge Distribution/BSS Audio
Neutrik USA
Sescom
Shure Brothers
Whirlwind
Wireworks

Video equipment, all

Audio Video Consultants
Canare Cable
Dwight Cavendish
King Instrument
Panasonic Industrial/Ramsa
Sony
Strand Magnetics
Wireworks

This directory is current as of Aug. 16, 1989, and is compiled from information supplied by exhibiting companies as of that date. For changes and additions after Aug. 16, consult the official program at the convention.

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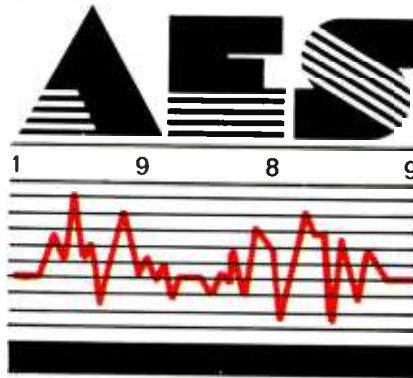
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Product Preview

Product Preview is designed to supplement the basic information supplied in the Exhibitor Listings.

When we asked exhibiting companies for basic show information, we invited them to submit additional press releases concerning their new products. This information is arranged here in alphabetical order; each has been assigned a circle number. For more information, circle the appropriate number on the Rapid Facts Card.

The length of the entry is a direct result of amount of information each company sent in. In some cases, several products have been combined to make one entry.

Keep in mind that these are only a part of the products that will be introduced. For a variety of reasons, some companies chose to wait until the show to release any product information. Future editions of RE/P's New Products department will feature additional products that will debut in New York.

AB International 1200C amp

The 1200C is a 2-channel power amplifier, modular in design, that is rated at 1,400W per channel into 4 Ω .

Circle (200) on Rapid Facts Card

Adams-Smith product updates

The 2600 A/V audio-for-video editor contains several new features, including a motion control knob, audio track management, list management for MIDI, varispeed lock for audio time expansion/compression and mixed frame rate editing. The Zeta-Three B is a new version of the MIDI synchronizer at a substantial price reduction. It is for use with the Zeta Remote autolocator/controller.

Circle (201) on Rapid Facts Card

Akai introductions

The A-DAM is a 12-track digital recorder that

uses 8mm tape as the recording medium. An analog track is included for time code, and a 105-memory autolocator/controller is included. The complete system is rack-mountable. Price for a 12-track system has been reduced to \$24,999.95. The 24-track system costs \$47,499.95, and a 36-track system costs \$69,999.95. The S1000PB is a playback-only version of the S1000 sampler.

Circle (202) on Rapid Facts Card

Alesis 1622 mixer

The 1622 contains a 2-bus console featuring 16 line inputs on 1/4-inch jacks, eight XLR mic inputs and eight direct outs on Channels 1-8. High- and low-shelving filters provide ± 12 dB of boost/cut at 100Hz and 10kHz. Also included are inserts on every channel, as well as on the subs and masters, six aux sends and eight returns, configurable as four stereo pairs. List price is \$799.

Circle (203) on Rapid Facts Card

Alesis MEQ-230 EQ

The 1/3-octave room equalization system is a dual 30-band, 1/3-octave system in a single rack space. Interface is provided through 1/4-inch and RCA jacks on the rear panel. Center frequencies range from 25Hz to 20kHz, with each band providing ± 12 dB cut/boost. Center frequencies are set to ANSI/ISO standards. List price is \$199.

Circle (204) on Rapid Facts Card

Alesis Midiverb III

The latest version of the Midiverb is a programmable 16-bit stereo, 15kHz simultaneous digital effects processor capable of generating up to three effects at the same time, as well as HF rolloff for tonal shaping. Effects include reverb, delay, chorus and flange. A total of 100 non-erasable factory programs and 100 user-programmable memory locations, real-time MIDI parameter control, MIDI mapping and sysex dump capability is also included.

Circle (205) on Rapid Facts Card

Alesis DataDisk storage system

DataDisk is a direct MIDI-to-disk universal data storage system. The system takes up a single rack space and is capable of storing up to 800K of MIDI sysex data to a 3.5-inch floppy disk. It is compatible with all MIDI instruments and recognizes the MIDI Sample Dump. Files are automatically identified by manufacturer, device and an 8-character, user-definable file name.

Circle (206) on Rapid Facts Card

Allen & Heath SC-Plus console

The SC-Plus is an advanced version of the SC modular series consoles, available in 16-, 24- and 32-input formats. It may be configured by intermixing fixed EQ, sweep EQ and second stereo input modules. Also available is matrix out or tape group monitoring modules.

Circle (207) on Rapid Facts Card

Alpha Audio time code module

The TCR time code reader module is designed to work with 3/4-inch video machines such as the JVC CR-850 or the Sony BVU-800. The module has a wide-band time code reader and connects in-line with the serial data port, which enables the unit to supply the either with code from either the address track or an audio channel. Machines do not have to be modified to use the module.

Circle (208) on Rapid Facts Card

Alpha Audio DR-2 disk recorder

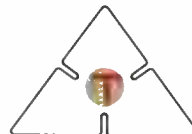
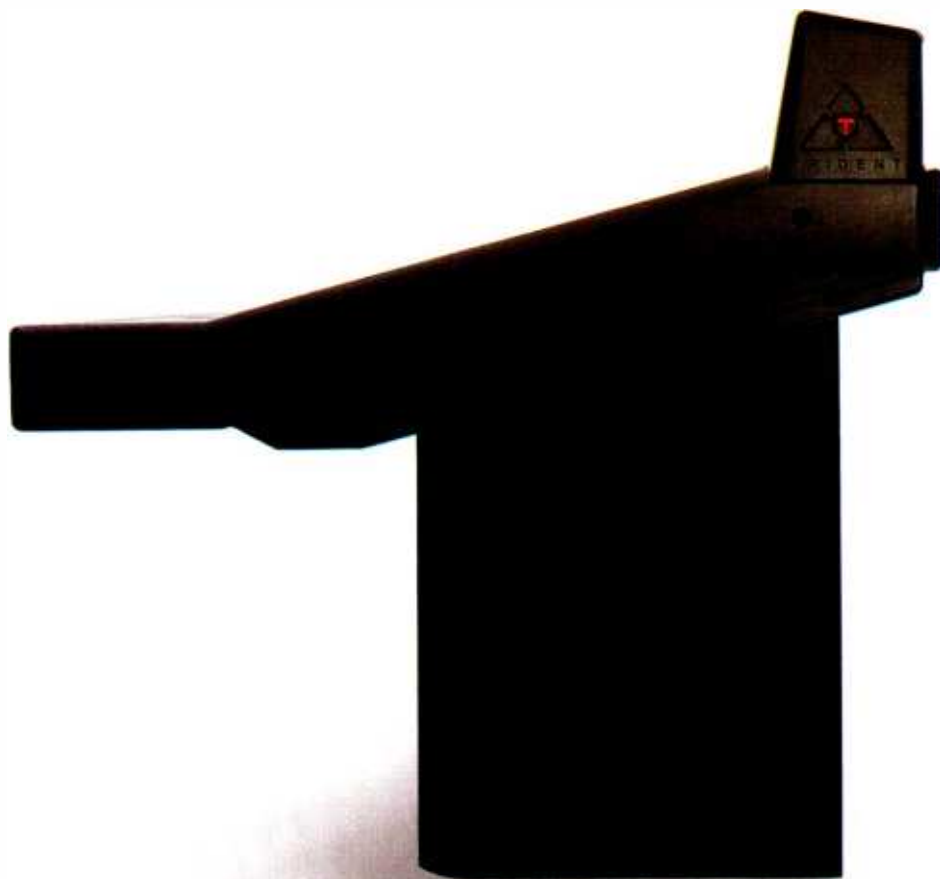
The DR-2 is a hard disk recorder that can emulate VTRs, simplifying the interface to existing editing systems and eliminating the costly learning curve associated with typical disk-based recording systems, the company says. The system is available in configurations of either 35- or 70-minutes of 16-bit, 44.1kHz ster-

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eo audio. The unit can also be used in a single-channel configuration.

Circle (209) on Rapid Facts Card

Amber audio measurement system

The company's Total Solution Audio Measurement package has been updated with the AudioCheck2 software program, containing enhanced graphic capability, an improved user interface, full-color graphs in real time, extensive communications capability and simplified disk save and loads.

Circle (210) on Rapid Facts Card

Amek Bullet console update

The Bullet console now has a larger chassis size. The 28/8/2 console has the same modules as the previous 10/4/2 version but now has 8-bus routing on the inputs. Additional new features include electronically balanced stereo, group and aux outputs, a VU version, a remote back panel to allow for easy access to connects for rack-mounting consoles, stereo modules with both stereo line inputs and RIAA gram inputs, and an AFV interface.

Circle (211) on Rapid Facts Card

New options for Amek/TAC Matchless

The Matchless 24-bus in-line console is now available with 27 VU or 27 LED bargraph meters as standard. An input reverse switch en-

hances the routing system when it is coupled with both line and tape monitor inputs on the jackfield. Users needing to use the console with a 32-track tape machine may order the Matchless with eight additional meters and an additional tape/input return on the patchbay.

Circle (212) on Rapid Facts Card

Ampex tape introductions

The 472 Studio Audio Cassette is available in normal and high bias versions, and is designed for such applications as studio, dubs and client copies. Available lengths are five, 10, 15, 30, 60 and 90 minutes. The 467 DAT cassette features an advanced metal particle formulation and the company's DATpak Mastering Storage System, which provides a large write-on area and a special tray design that allows two DAT cassettes and track sheets to be stored. Available lengths are 45, 60, 90 and 120 minutes.

Circle (213) on Rapid Facts Card

Apex Machine product introductions

Apex Machine Co. is introducing three products. The Rotoscreen Machine automatically feeds, prints and UV-dries audiocassettes, videocassettes, R-DAT cassettes, Norelco boxes, jewel boxes and compact discs at production speeds of up to 100 parts per minute. Also, updated versions of the CA-15 and CA-30 on-cassette printers will be exhibited.

Circle (215) on Rapid Facts Card

AMS introductions

AMS Industries is introducing three products. The Logic 1, a 12-channel digital mixer with full automation, integrates with the AudioFile. The latest software version for the AudioFile will be introduced. The ST250 is a stereo microphone, and can be used in M/S or A/B applications.

Circle (214) on Rapid Facts Card

API recording console

The All Discrete Inline Recording Console, available in configurations up to 96 inputs, provides 48 track assigns, three stereo buses and 10 aux sends per module. The input and monitor sections are identical, allowing for twice the functions in the same module. Standard will be the GML Series 2000 Automation Environment.

Circle (216) on Rapid Facts Card

Apogee Sound AE-4 system

The AE-4 is a single-amped, electronically coupled loudspeaker system designed for high-quality musical or speech applications. It contains a 12-inch high-power cone driver and a 1-inch throat, fluid-cooled compression driver coupled to a molded ultralight HF horn. The AE-4CV version has rigging hardware for permanent installations, while the AE-4AV has rigging hardware, an internal tripod stand fitting and protective steel trim. The accompanying A-4 processor is a dedicated unit providing time

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Circle (82) on Rapid Facts Card

It's Not Just A Phase We're Going Through.

The tremendous success of the Tannoy PBM series of reference monitors is by no means coincidental. Since the introduction of the world renowned NFM-8 nearfield monitor, much time and effort has been spent on discerning the needs of the mixing engineer and the applied requirements of "playback monitors". The PBM Line exemplifies this commitment to excellence in reference studio monitoring. These compact loudspeakers sport robust poly cone mid-bass transducers utilizing efficient long-throw, high power voice coils. The low frequencies are carefully controlled by optimally tuned ports located on the rear of the loudspeakers. Hi frequencies

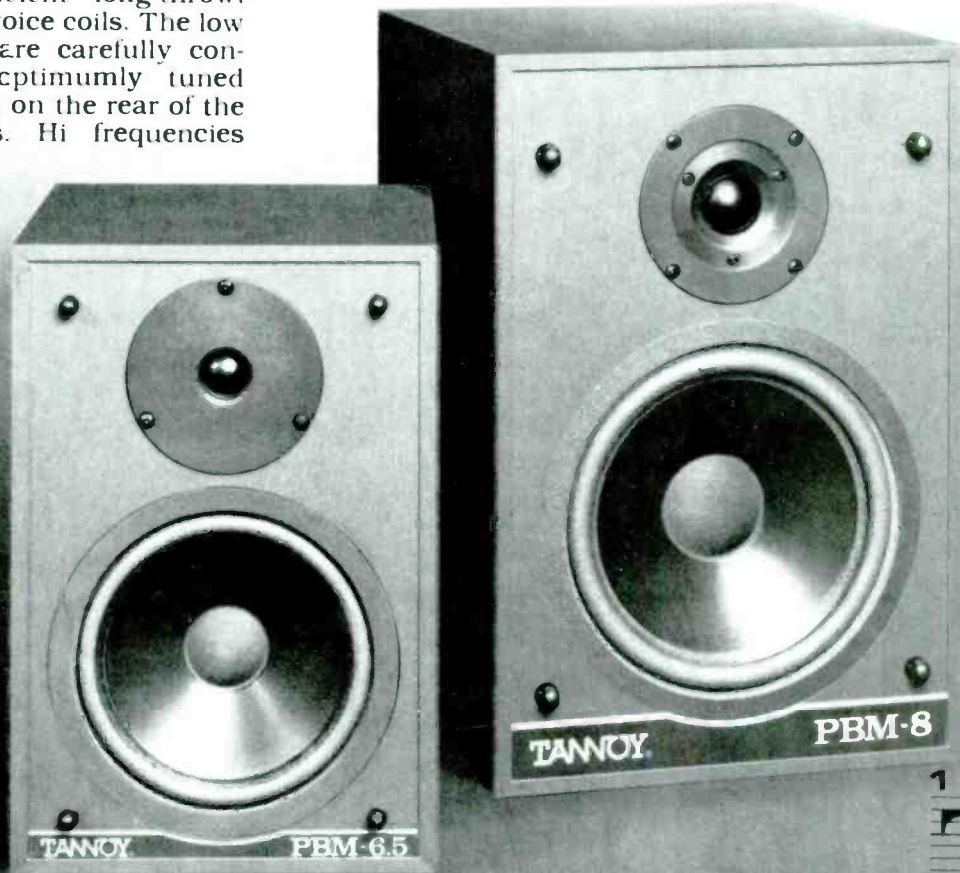
are provided by Hi Power ferro fluid cooled polyamide dome tweeters which extend H.F. bandwidth beyond 20KHZ. The driver accompaniment is knitted together by means of a precision hardwired crossover unit, utilizing robust low loss components, and heavy-duty input terminals which will accept standard 3/4" spaced banana plugs and the majority of high quality, specialist audio cables. Transducers and crossover assemblies are neatly housed in a stylish, high density, partial wrap cabinet,

specially designed to minimize unwanted cabinet resonance, and high frequency reflection. In summarizing, we have left the best feature of all for last "price versus performance."

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Circle (45) on Rapid Facts Card

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domain alignment, fixed EQ points and the company's Positive Amplifier Feedback driver protection system.

Circle (217) on Rapid Facts Card

AudioControl Industrial SA3050A

The unit is a 1/3-octave real-time spectrum analyzer designed for EQ analysis, frequency response testing, absolute SPL measurements and program monitoring in studios and sound reinforcement. The SA 3050A has three display response speeds, six memories with averaging capability and the capability to display SPL numerically. A Centronics-type parallel printer interface and a rechargeable, sealed, lead-acid battery pack are available as a factory-installed option.

Circle (218) on Rapid Facts Card

Audio Kinetics MasterMix II automation

MasterMix II integrates the most important features of the older MasterMix system and the company's Reflex automation. The combination of the Reflex MX844 Mix Computer and color monitor with the AK2 VCA fader units allows engineers to work locally at the desk while the display and computing functions enhance speed and ease of use. Current users of MasterMix and Reflex can upgrade to the new system.

Circle (220) on Rapid Facts Card

Audio-Technica ATM25 microphone

The ATM25 is a wide-range moving coil dynamic mic with a hypercardioid pickup pattern designed for applications involving high SPLs. Response is tailored to provide natural reproduction when used by instrumental performers at very short distances. The hypercardioid polar pattern features a narrow acceptance angle, allowing the mic to "focus" on the desired sound location and reject unwanted sounds outside the pickup pattern.

Circle (221) on Rapid Facts Card

Audio-Technica CP8506 mic power supply

The CP8506 provides 48Vdc phantom power for up to four microphones, prevents channel interaction and provides a constant voltage source, even when heavily loaded or shorted inputs. The unit operates from 100Vac-120Vac, 50Hz-60Hz through an attached 6-foot grounded line cord; a 220Vac-240Vac version is also available. A steel case provides shielding from RF and electrostatic interference.

Circle (222) on Rapid Facts Card

Audio-Technica wireless mic systems

The ATW1031 UniPak and ATW1032 hand-held wireless mic systems are true-diversity units that feature a rack-mount receive with adjustable output and squelch. The transmitters are crystal-controlled and available as a body-pack

with instrument or microphone input, or as a hand-held mic. Battery life is 10 hours continuous, and a special circuit allows silent on and off. A total of 10 VHF frequencies are available.

Circle (223) on Rapid Facts Card

Tapematic SAM

Available from Audio Video Consultants, the Tapematic Static Audio Master is a truly static master, according to the company, and allows the master tape to be loaded from 1:1 to 32:1. Duplication onto standard slaves can be realized at ratios of up to 128:1 with no deterioration. Additional features include instant start, program loading at high speed and simultaneous loading of both sides.

Circle (224) on Rapid Facts Card

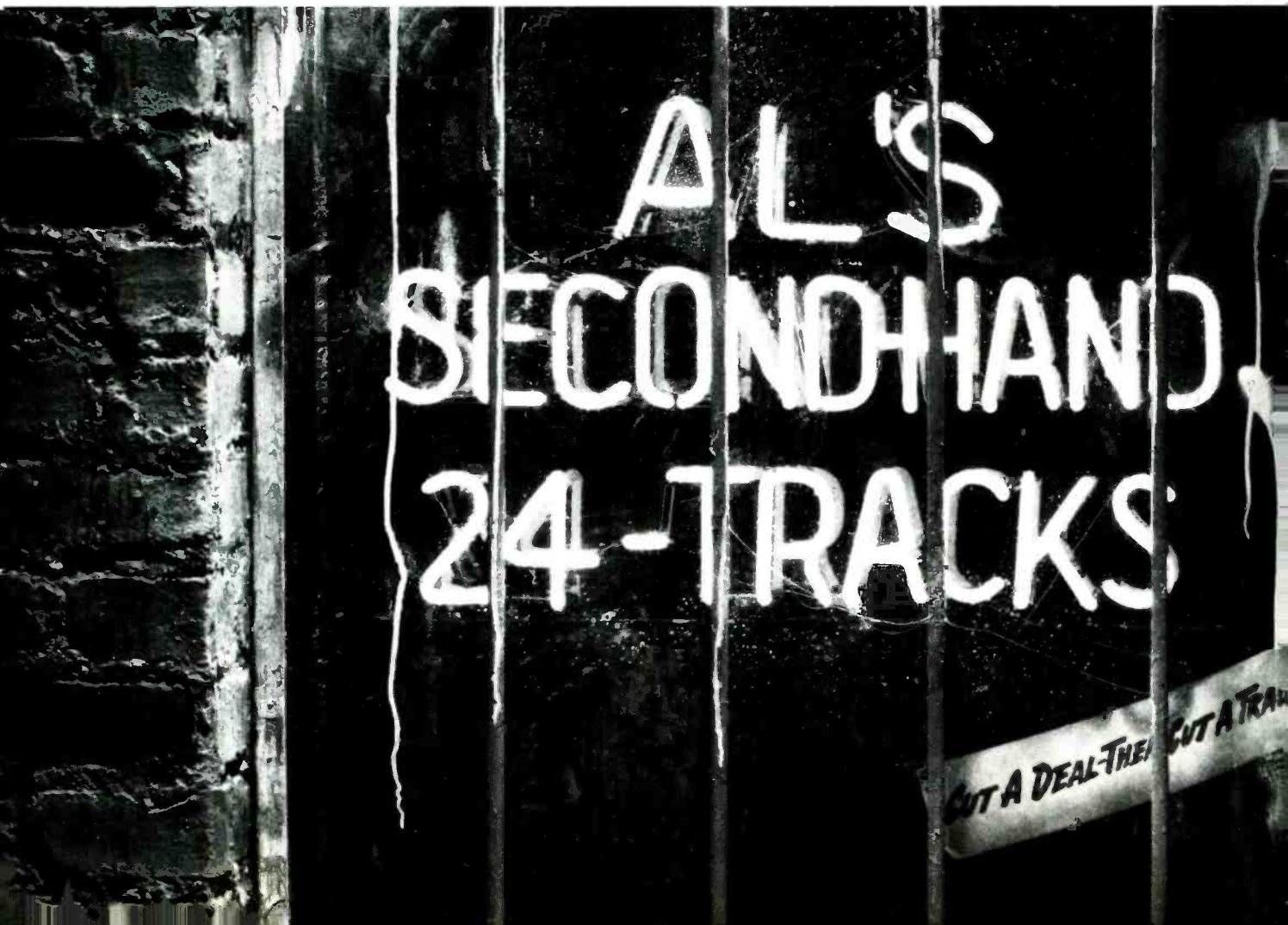
Tapematic 2002 audiocassette winder

Available from Audio Video Consultants, the 2002 features an automatic pre-start cycle that removes any incomplete program material before commencing production. The horizontal stacked output allows control of the last cassettes in rotation and are ready for labeling. A 2-reel system allows for automatic reel changing, eliminating downtime.

Circle (225) on Rapid Facts Card

Australian Monitor MOSFET power amps

The company has introduced two new MOS-



FET amps, both designed for studio or touring use. The K7 features 350W per channel at 4 Ω , while the 1K1 features 550W per channel at 4 Ω . Both are two rack-units high, are fan-cooled and feature a custom-extended chassis for reliability and strength.

Circle (226) on Rapid Facts Card

BGW Grand Touring Tri-amp

The 2U system contains everything needed to drive a three way system, including three separate power amplifiers, Linkwitz-Riley 24dB/octave crossovers, high-pass filter and P-type or Neutrik Speakon connectors. Individual trim controls are located inside the unit, allowing precise, tamper-proof adjustments. Individual level controls for each channel and an overall master level control allows for a simple system checkout.

Circle (227) on Rapid Facts Card

Upgraded Clarity XLV software

The XLV effects interface has been upgraded to enable full automation of Lexicon 224XL, Lexicon 480L and AMS RMX-16 digital delay and reverbs. The software provides full MIDI control of performance parameters and features eight control-voltage ports for automating CV-equipped digital delays, VCA and analog synthesizers. The software automates all page and machine changes available in the LARC controller used with the 224XL and 480L, in

addition to the existing automation of fader moves.

Circle (229) on Rapid Facts Card

J.L. Cooper MAGI II, FaderMaster

The MAGI II console automation system interfaces with any console to provide SMPTE-locked fader and mute automation. The system consists of rack-mounted dbx VCAs, the MAGI II controller unit, a remote fader unit and software, which runs on an Apple Macintosh or Atari ST. Features include fader read, write and update modes, fader sub-grouping, full SMPTE synchronization and automatic disk archiving. The system is available in 16-, 32-, 48- and 64-channel configurations. The company is also introducing FaderMaster. A MIDI command controller. FaderMaster allows any device that can accept MIDI controller or sysex information to be controlled remotely.

Circle (231) on Rapid Facts Card

Crown SASS-P mic

Crown's Stereo Ambient Sampling System (SASS) mic is a stereo condenser unit for such applications as stereo sampling or sound effects recording. It is configured in a near-coincident array featuring two PZM mics mounted on boundaries, making each mic directional. According to the company, the mic is well-suited for situations where tight, realistic placement of sound images in an ambient field is required. Suggested retail price is \$799. For applications

requiring extremely low noise, the SASS-B is available at \$849.

Circle (232) on Rapid Facts Card

DIC Digital tape introductions

The company is introducing a line of DAT cassettes and a line of 8mm tape. The DAT cassette, designated with a length number followed by "XR," is available in lengths of 15, 30, 46, 60, 90 and 120 minutes. The 8mm tape, designated with a length number followed by "MPX," is available in lengths of 15, 30, 60, 90 and 120 minutes.

Circle (233) on Rapid Facts Card

Digidesign DAT I/O interface

The DAT I/O Bi-direction Digital Interface, for use with the company's Sound Tools digital recording and editing system, integrates Sound Tools by adding the capability to record and transfer audio data in the digital domain. It features support for both the AES/EBU and S/PDIF formats for compatibility with most professional digital audio devices. DAT I/O may be used independently or with an AD In A/D converter. Suggested list price is \$995.

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Digital Audio Technologies products

The company is introducing two products. Steladat is a professional, portable R-DAT record-

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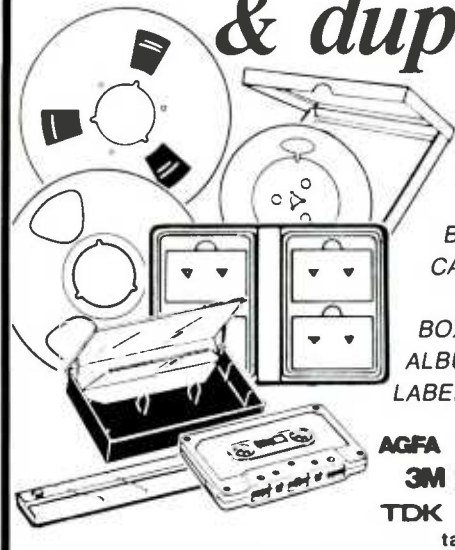
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er with two or four mic inputs. It accepts all existing digital standards. The Stellanlock III, to be shown in prototype form, is a new chase synchronizer.

Circle (235) on Rapid Facts Card

Digital Dynamics ProDisk-464

The ProDisk-464 is a 4- to 64-track digital audio recording and editing system for music recording, video/film post-production, and TV and radio broadcast. The system stores sound on Winchester disks, with 8mm tape used for archiving. A standard Macintosh controls the system, which also is plug-compatible with multitrack tape machines. Dynamic range is 96dB and S/N is 90dB. Prices start at \$25,995.

Circle (236) on Rapid Facts Card

Dolby 363 2-channel noise reduction

The 363 allows Dolby Spectral Recording and A-type noise reduction to be switchable. The unit contains two channels in a 1U frame. Both channels are equipped with a built-in record/playback changeover capability, allowing a single unit to be used in stereo applications. The 363 is normally supplied with two Cat. 300 modules, which contain both SR and A-type. Optional SR-only or A-type-only versions can be ordered.

Circle (237) on Rapid Facts Card

Dolby SDU4

The SDU4 is designed for reference monitoring of Dolby Stereo or Dolby Surround program material in broadcast, audio-for-video, music recording and some film applications. The unit accepts 2-track matrix-encoded signal as its input and generates four output signals: left, center, right and surround.

Circle (238) on Rapid Facts Card

Dorrough stereo signal test set

The Dorrough 1200 is a modern version of the classic "Gain Set," allowing measurement down to -75dB. According to the company, it is the only test set available with the capability of measuring the stereo program signal in both the left and right or sum and difference formats. The test unit uses two Dorrough loudness meters, which indicate peak amplitude and the average on a single simultaneous display. Price is \$1,650.

Circle (239) on Rapid Facts Card

Drawmer DS302 expander/gate

The DS301 is a dual expander/noise gate that features auto attack, peak attack and balanced inputs and outputs. In addition to normal gating tasks, the unit is suited for use on vocal material, the company says. Also new is the DF320 universal noise filter, a singled-ended noise reduction system with an auto-attack expander that reduces noise regardless of the program source.

Circle (240) on Rapid Facts Card

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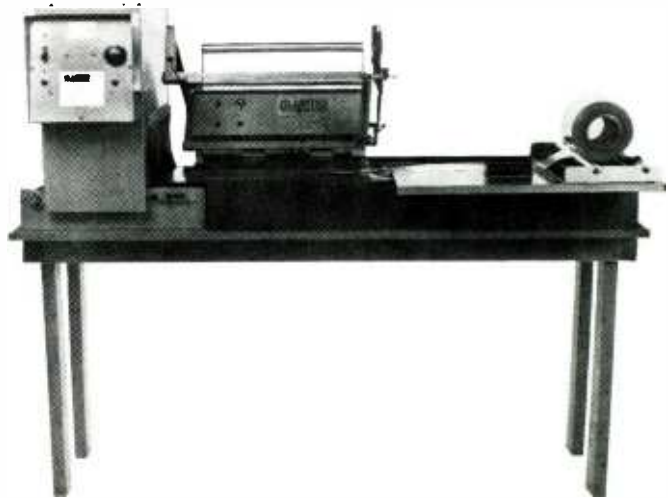
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of-direction (ID) equalization for loudspeaker compatibility, and an ac-line powered version with a separate (ID) EQ/power supply electronics in a 19-inch rack housing. According to the company, the system provides superior stereophony and imaging for loudspeaker playback, improving results in studio and location

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Circle (54) on Rapid Facts Card

Array technology to close-field applications, including stage monitoring, live and motion picture theater sound, video playback, portable PA and fixed installations. According to the company, it is the first system in its class with true 3-way design for higher midband output with lower distortion. The system is capable of

modular architecture that allows for a 16 to 56-channel configuration.

Circle (246) on Rapid Facts Card

Eventide introductions

Eventide is introducing three products. The H3000-SE, the Enhanced Studio UltraHar-

GML Series 2000

The 2000 is an automated graphic front-end environment providing recall of a console work surface. It offers real-time pan and zoom across the console, and multiple channel views of EQs/limiters provide a usable production tool. The system integrates to the company's GML.

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Circle (56) on Rapid Facts Card

tracks such as the Studer A80, Sony/MCI JH110A/B, Ampex ATR102 and Otari MX5050. Also available is the EC-BII, which enables the Otari MX5050 BII to be externally controlled and adaptable for center track time code operation.

Circle (267) on Rapid Facts Card

JRF service center

Reel-Tek Inc. is a newly formed division of JRF Magnetic Sciences that services project studio recording equipment. It is a factory-authorized service center for Otari, Fostex and Teac.

Circle (268) on Rapid Facts Card

JVC DS-LC900, DAT machine

The unit is a digital parametric controller that uses FIR-type digital filters. The DS-LC900 permits linear-phase parametric equalization in digital audio signal processing. Dynamics controlling functions such as limiting, compressing and noise gating are also available. JVC will also show a DAT prototype, whose main features are SMPTE time code recording in the sub-code area and synchronization with video systems.

Circle (269) on Rapid Facts Card

King Instrument 2797 loader

The 2797 is a fully automatic dual-supply audiocassette loader. The unit is designed to wind pre-recorded or blank tape into Philips-type cassettes. A 2-pancake supply provides uninterrupted production. Loaded cassettes are automatically stacked and can be stamp-coded to identify the program or product, if designed.

Circle (270) on Rapid Facts Card

Korg S3 rhythm workstation

The S3 uses the company's Sonic Integrity system, which provides a 16-bit PCM source that allows the same type of editing that is found on a synthesizer. The sequencer song section features four pattern tracks and two real-time tracks. The pattern tracks are assembled the same way as traditional rhythm machines, while the real-time tracks are recorded the same as MIDI sequencers. This allows the unit to overdub parts to the pattern tracks in the song mode. SMPTE functions are also included.

Circle (272) on Rapid Facts Card

Lester Audio DAS-1016 Digital Snake

Lester Audio's DAS-1016 comes with a CPU-controlled Soft Patch System. The input A/D conversion provides extremely low distortion and crosstalk, with zero line loss and interference at the 16 channels' 20MHz serial transmission. Maximum transmission distance is 3,000 feet. The input channels can be delegated or multiplied into any combination of 16 output channels using the Soft Patch function. Also included are balanced inputs, four return lines and 64 stored channel configurations with battery backup.

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Lexicon Opus/e

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Let's compare automated audio test equipment performance:

KEY PERFORMANCE SPECS	AUDIO PRECISION SYSTEM ONE	H-P 8903B	S-T 3100/3200	TEK AA5001/SG5010
Flatness 20-20kHz, gen/analyzer	0.03/0.03 dB	0.06/0.2 dB ¹	0.1/0.1 dB	0.05/0.1 dB
Amplitude accuracy, gen/analyzer	0.1/0.1 dB	0.2/0.2 dB	0.2 dB/no spec	0.2/0.3 dB
Generator amplitude range	+ 30 to -90 dBm	+ 17 to -68 dBm	+30.6 to -90 dBm	+ 28 to -72 dBm
System THD + N 20-20kHz, 80 k BW	0.0015%	0.01%	0.0018% ²	0.0032%
Min. amplitude for THD + N function	25 microvolts	50 millivolts	30 millivolts	60 millivolts
Residual noise (80 kHz BW)	3.0 μV	15 μV	4.0 μV	3.0 μV
Analyzer stereo separation @ 20 kHz	140 dB	function not avail.	100 dB	function not avail.
Common mode rejection ratio	70 dB, 50-20kHz	60 dB, 20-1kHz	100 dB @ 60 Hz	50 dB, @ 50/60 Hz
Speed, THD function (autorange)	10 sec 16-pt sweep	1.5 sec to 1st rdng	2.5 sec to 1st rdng	2.5 sec to 1st rdng
Speed, amplitude function (autorange)	10 sec 30-pt sweep (2 chan simultaneous)	1.5 sec to 1st rdng (1 channel)	1.3 sec to 1st rdng (per channel)	2.0 sec to 1st rdng (1 channel)
PRICE (U.S. DOMESTIC)				
Computer-interfaceable instrument	\$6950	\$5800	\$9985	total
Software package	included	none available	\$575-\$1220	system
Typical controller	\$600-\$3000 ³	\$5750 ⁴	\$1000-\$3400 ⁵	\$16490 ⁶

¹ Analyzer flatness not specified separately, analyzer accuracy 0.2 dB 20 Hz-20 kHz

² Total system THD + N not specified; generator THD plus analyzer distortion specs added together equal 0.0018%.

³ Personal computer. Interface card included in instrument price.

⁴ H-P Model 310M IEEE-488 compatible

⁵ Personal computer plus IEEE-488 interface card

⁶ Total of instruments, software, Tek 4041/4205 IEEE-488 controller

Competitive data compiled from H-P 1988 catalog, S-T data sheet 3000A 1987, Tektronix 1988 catalog.

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format I/O with soft patching and individual channel outputs provide flexibility for interfacing with analog or digital mixers. An internal digital stereo monitor mix allows stand-alone operation as well. The Edit Panel and keyboard can be rack-mounted for installation in existing consoles. The system is fully compatible with Opus systems, and can be expanded to a full system at any time.

Circle (277) on Rapid Facts Card

Lexicon 300 digital effects system

The successor to the model 200, the 300 has a fluorescent display and a menu-driven user interface, and comes with 128 factory programs. Separate keys allow for direct access to most commonly used functions, and a numeral keypad and softknob are provided for data entry. SMPTE code can be used to trigger a program change list with up to 50 events. The company's Dynamic MIDI is also included.

Circle (278) on Rapid Facts Card

Mogami Quad Quad cable

Available from Marshall Electronics, Quad Quad is superflexible 4-pair multiconductor mic and signal cable designed for high-definition, digital and analog signals. The quad design prevents induced noise from electromagnetic fields, and each pair has its own pure copper shield and PVC jacket. The wiring consists of two non-adjacent wires that go to the high side; two go to the low side. Price is \$2.78 per foot.

Circle (280) on Rapid Facts Card

Martin F2 SR system

The F2 is a 2-box, horn-loaded sound reinforcement system. The F2 includes the Top Box, a rack-mount system able to accept several horn combinations for a multitude of frequency bands and coverage angles. The F2 Bass Box is configured as a "mirror image" dual-driver folded hyperbolic bass horn. A proprietary rigging system and flying frame are also included.

Circle (282) on Rapid Facts Card

Nakamichi 1000 DAT machine

The 1000 features a modular design with a dedicated chassis for the recorder and digital processor. The recorder incorporates the company's FAST transport, providing quicker access and superior tape-to-head alignment, the company says. True off-tape monitoring is available via the 4-head design. Available sampling frequencies are 48kHz, 44.1kHz and 32kHz. Two recorders can be supported with a single processor. Key electronics for the recorder and processor reside on plug-in PCBs that provide easy access and accommodate future upgrades.

Circle (284) on Rapid Facts Card

Neve VR console

The console is the latest version of the V Series. At any point during a session, a complete configuration of console controls can be stored under computer control. In addition, individual channels or sections, such as EQ or dynamics, can be stored at any time. An integral hard disk contains 40MBytes of memory; an addi-

tional 1.4MByte 3.5-inch floppy drive can store approximately 140 complete console stores of a 60-channel desk on a single disk. Additional features include a wider center section for increased monitoring facilities, an enhanced aux section and a modified overdub facility.

Circle (285) on Rapid Facts Card

NED Synclavier 6400

New England Digital's latest addition to the Synclavier line features 32 16-bit, 100kHz stereo sampling voices, 63MBytes of sampling RAM and an enhanced 76-note velocity keyboard with improved response and user control. The system will be demonstrated with MIDInet, a MIDI studio integration tool that offers 8-port simultaneous capability, which provides filtering, mapping, channelization, transposition and routing capabilities for up to 128 different MIDI devices, which handles data-intensive applications such as console automation.

Circle (286) on Rapid Facts Card

Otari/Sound Workshop 54 console

The Series 54 is a modular 24-bus record/mix console that features a dual-mix path design. In each module, both paths can be sourced from mic, line, tape and group inputs, allowing up to 72 line returns to the stereo mix bus in a 36-input configuration. Two stereo mix buses may be kept separate or tied together, allowing for maximum flexibility in creating the final product. A new Diskmix III VCA-based automation system also has been developed for the console.



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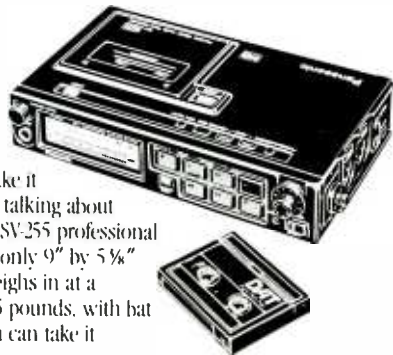
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Whoever said "you can't take it with you" wasn't talking about Panasonic's new SV-255 professional DAT recorder. It's only 9" by 5 1/2" by 1 3/4". And it weighs in at a feather-weight 3.5 pounds. with battery pack. So you can take it *anywhere*.

But here's the really good news.

You don't have to settle for just reading about the amazing new SV-255. You can actually see it, touch it, hear it, and yes, even buy it. But you have to come in soon. A lot of engineers are going on location. And SV-255's are going with them.

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THE CUTTING EDGE

By Laurel Cash

AES Sneak preview

It's that time again, when we in the audio industry get bombarded with all sorts of new toys. (Or should I say products?) Yes, it's *showtime*. Where has this year gone?

Those of you that are lucky enough to attend this year's AES show in New York will no doubt be impressed with what the collective geniuses in the audio industry have accomplished.

Included in this issue is something I'm sure you've already looked through: a complete listing of all the manufacturers and a list of products they are exhibiting at the show. However, since the compiling of this material, two companies have decided to give a sneak preview of two additional products. I have the privilege to reveal them to you in this column.

Soundcraft rolls out the Delta

For the first time anywhere, Soundcraft will display the new 200 Delta multi-purpose mixer. It is designed to replace its highly successful 200B and 200SR workhorses (as opposed to workstations!).

Among the many improvements in the 200 Delta are two new module options—the Deluxe and the Dual Line input modules. There also are Stereo input and Standard input modules available. And you may mix and match these modules to create a console that is the equivalent of an almost custom mixer.

These modules derive much of their improved sonic performance to the technology that was first introduced in the highly successful 6000 series console. The 200 Delta offers significant improvement in signal-to-noise, distortion and crosstalk.

Also included from the 6000 is Soundcraft's unique microphone pre-amp. The 200 has fewer looms and internal connectors for greater field reliability. Also, a new single rear connector panel makes it easier to configure this console to your individual needs. The master module has been separated from the group modules, so the 200 Delta can be offered as a simple stereo mixer that would have many uses in the P.A. world.

Circle (150) on Rapid Facts Card

Laurel Cash is RE/P's executive consultant and a free-lance writer based in Los Angeles.

Trident introduces Vector (Vectoria)

Sorry about that, it was the best I could do. The new Trident Vector console is *much* better than the previous pun.

Even though it has been shown in Europe at APRS, AES will be the site of the U.S. introduction. It is an all new console, not a rehash of older technology, and as such offers some very interesting features.

First of all, it is an in-line design with frame sizes of 32, 40, 48 and 56 inputs. It has four separate stereo mix buses, each with its own output, and 44 VU meters (or optional bargraph) for the 32 group outs, four stereo buses, two for Main outs, and two selectable between auxes, foldback and external sources.

The sonic specifications, including the input and output headroom and noise, exceed digital and broadcast standards. Among its many options are on-board dynamics, VCA grouping with snapshot recall, a wide range of fader automation systems, video interfaces, stereo modules and an integrated machine controller that can locate tape points by either bars or beats, as well as cue points and SMPTE time code, with full MIDI integration.

One of the nicest features of this console is the muting system's control of the auxes, channels and monitors that are then freely assignable to any one or more of 16 auto-mute groups. These auto-mute groups are then triggerable from the console center section either manually, or via MIDI or SMPTE code.

Each of the modules has 32 group outputs, channel and monitor faders directly assignable to all four mix buses, eight aux sends, and splittable EQ which can be used in both the Monitor and Channel faders simultaneously with separate control. There is also Record Ready control on each module for tape machine control, and audio subgrouping capability on each module.

On the Central Facilities Section, there is a stereo bus matrix for combining the mix buses to main output, a compressor/limiter on the stereo bus output, remote control for up to three tape machines, plus switching for three sets of speakers. There is also master electronic switching of console modes, fader reverse and broadcast. The Vector also includes a lockout feature during record.

Circle (151) on Rapid Facts Card

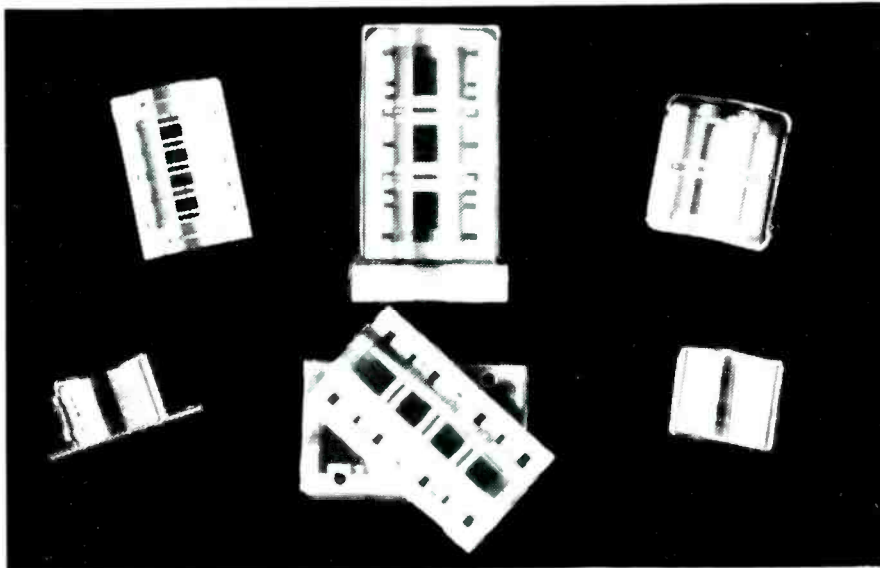
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Circle (289) on Rapid Facts Card

Otari/Diskmix console automation

Diskmix III Moving Faders features faster system speed, higher resolution and precise user controls. The automation system can be installed into any console that has separate fader panels and is available from several manufacturers as a factory option on new orders. The system is time code-driven and will store an unlimited number of mixing on hard disk. Off-line editing and entry facilities are also included. Prices start at \$36,900.

Circle (358) on Rapid Facts Card

Oxmoor distribution amps

The company has introduced two models. The MDA-26 is a 2-in/6-out buffer/mixer/DA. Features include front-panel trimmers with ± 5 dB gain adjustment, a summing bus for an independent mix of the two inputs, internal jumpers for setting various output configurations and built-in RF suppression. The MDA-16 is a 1-in/6-out unit that is identical to the MDA-26, but is without the internal summing and left-right assignment switching.

Circle (290) on Rapid Facts Card

Pro Co AVP-1

The AVP-1 is a standard dual-gang wall plate that allows equipment such as movie projectors, audio and video recorders, and phonographs to be connected to mic inputs of house PA systems.

A load resistor simulates the speaker impedance to prevent damage to the amplifier output stage, allowing the AVP-1 to be connected to older tube-type equipment. Also included are a set of stereo line-level inputs resistively mixed to mono, designed to be used with CD players and cassette recorders.

Circle (294) on Rapid Facts Card

Pro Co DBP-1

The DPB-1 Instrument/Amp Interface is a standard dual-gang wall plate that allows the direct connection of instruments, keyboards, amplifiers and other equipment to the mic inputs of recording mixers of house PA systems. Included is a 1/4-inch phone jack with a 20dB attenuation circuit for line- and speaker-level signals, and is designed to take a feed from the external jack of a guitar amplifier. It also provides the optimum input impedance for professional line-level signals from keyboards, mixers and pre-amps.

Circle (295) on Rapid Facts Card

PSC Sound Assist

Professional Sound Corp.'s Sound Assist is a tape counter and electronic control unit for Nagra recorders. Designed by Danny Natovich, the unit displays tape time remaining, the duration of the last recorded take and privately alerts the mixer when the tape is near its end. It memorizes any playback cue point and automatically locates that point for subsequent playbacks, and can remotely start, stop and pause

the unit.

Circle (297) on Rapid Facts Card

PSC battery packs

ModuPak is a line of modular, rechargeable battery packs for a variety of portable power applications. Three main capacity sizes are available, and each may be set up in as many as eight different voltage and amperage configurations. They are available in two packages: a rack-mount version for use on sound carts or racks, or a conventional, stand-alone rectangular block.

Circle (298) on Rapid Facts Card

PSC Mini Quad Box

The unit is designed to house up to four Vega R33 miniature receivers, and provides RF feeds via a single antenna through an internal multi-coupling system. Mini Quad Box operates off of 12 internal C batteries or from external 12Vdc to 24Vdc. Dimensions are 7" x 8" x 5".

Circle (299) on Rapid Facts Card

Ramware Designs SlaveDriver

SlaveDriver is an intelligent control system for post-production, capable of controlling up to eight audio transports to a common master machine. Features include automatic control of time code points on the fly; built-in diagnostics and maintenance screens; edit log display with full editing and printout feature; detail context-sensitive on-line Help screens; and simultaneous compatibility of all function of the compa-

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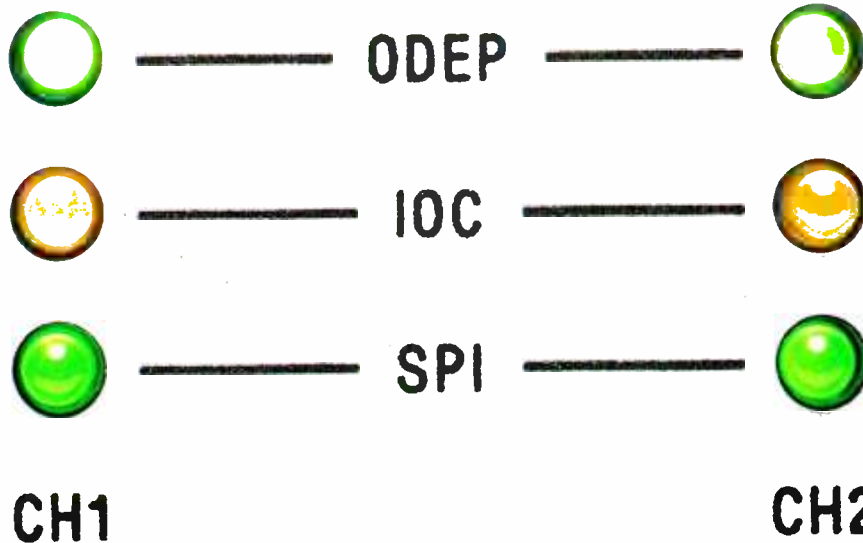
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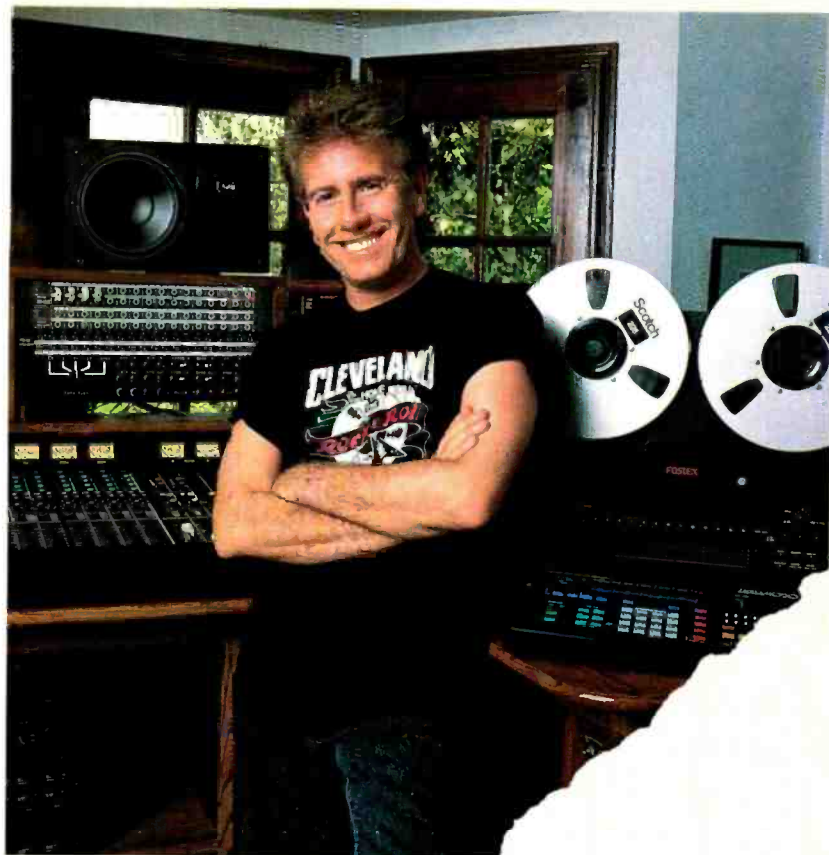


Circle (68) on Rapid Facts Card



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Graham Nash

Member, Rock & Roll Hall of Fame

Fostex Equipment: E-16 MTR, 4050 MIDI Remote, T-20 Headphones.

Recent Projects: Graham's recent solo album, "Innocent Eyes" (Atlantic) was recorded in Los Angeles, Hawaii and Massachusetts. Most of the compositions and arrangements were worked out at home on his E-16. The hit "Shadowland" from CSN&Y's latest album, "American Dream" (Atlantic), was recorded on the E-16.

TIMBUK3

Pat & Barbara K. MacDonald

Fostex Equipment: D-20 Digital Master Recorder, E-8 MTR, 4030/4035 Synchronizer Controller, 4010 SMPTE Time Code Generator, RM-865 and RM-900 Near-Field Reference Monitors, T-20 Headphone

Recent Projects: TIMBUK3's first album, "Greetings from TIMBUK3" (I.R.S.), was recorded on a B-1 (forerunner of the E-16). Their third and newest album, "Edge of Allegiance" (I.R.S.), is the first digital project for the group. They use a D-20

FOSTEX PRO

Tom Scott

Musician/Composer

Fostex Equipment: E-16 MTR (2), E-2 Master Recorder, 4030/4035 Synchronizer / Controller, 4010 SMPTE Time Code Generator, T-20 Headphones.

Recent Projects: Nationally recognized band leader of "The Pat Sajak Show", Tom's latest albums are "Streamlines" and "Flashpoint" (GRP Records). He also scored the NBC TV Movie "American River", and the film "Sea of Love" starring Al Pacino features his distinctive sax.





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Stewart Levin
Musician/Composer

Fostex Equipment: B-16 MTR, 4030/4035 Synchronizer/Controller, 4010 SMPTE Time Code Generator, T-20 Headphones.

Recent Projects: Stewart writes the music for several popular TV shows — "thirtysomething", "The Wonder Years", "The Dick Van Dyke Show '88" — and he scored the feature film "Heathers."

ny's SearchFX companion system. Systems include an AT computer, color monitor, hard drive, software and a Sony CDK 006 multi-loader CD player.

Circle (300) on Rapid Facts Card

Ramware Designs Search FX

The companion system to Ramware's SlaveDriver, SearchFX is a sound effects search and audition program that will control tape transports and up to 64 Sony CDK 006 multi-loader CD players to play, query, manage or archive music and sound effects. Features include search by keyword category, description and media ID; extended searches by effect duration or source library; add/delete individual or tagged effects; and simultaneous capability with the company's SlaveDriver functions.

Circle (301) on Rapid Facts Card

Rane Flex series

Available in the newly proposed half-rack format, the Flex series is a line of modular signal processors, each containing a self-contained processing function. Functions include mixing functions, splitters, crossovers, equalizers, filters, compressors, limiters, program meters, headphone amps, output transformers and power supplies. The units can be mounted vertically or horizontally in a standard 19-inch rack, or can be used alone. They can connect directly to professional equipment using 3-pin, 1/4-inch or terminal strip connectors.

Circle (302) on Rapid Facts Card

Rane programmable EQs

The company has introduced three models in its programmable/MIDI equalizer series. Available is the MPE 28 1/2-octave, the MPE 14 dual 3/8-octave and the MPE 47 4-channel 7-band. All three feature 128 memory locations and a built-in software package that allows such capabilities as curve combining, real-time program changes with variable ramping rate, program copying and tandem control of an unlimited number of units from a master unit or computer.

Circle (303) on Rapid Facts Card

Rane SM 82 line mixer

The unit is a single rack-space unit that has 16 separate balanced/unbalanced line inputs arranged in eight stereo channels. Each channel has a separate stereo level control with 12dB gain available, as well as separate stereo aux send and balance controls. Also included is stereo aux out and return with return level control, master stereo level control, and stereo expand and loop jacks. Suggested list price is \$599.

Circle (304) on Rapid Facts Card

Renkus-Heinz C-1 Concert Coax

The C-1 Smart System features coaxially mounted mid-range and HF compression drivers, and constant beamwidth horns to achieve a true point-source from 300Hz to 17kHz. A digital time delay and the Smart Processor provide time correction, EQ and protec-

tion features. The matching trapezoidal LF cabinet uses four 15-inch woofers, and a rectangular 18-inch bandpass subwoofer is also available.

Circle (306) on Rapid Facts Card

Renkus-Heinz CMS Series

The CMS Series are wedged-shaped ceiling speakers. The CMX-121 has a 12-inch woofer, while the CMS-151 uses a 15-inch woofer. AP-1 attachment points allow easy ceiling or wall mounting. Custom order forms allow users to select the HF horn, horn orientation, cabinet finish, and crossover frequency or biamp plate to tailor the system to the installation requirements.

Circle (305) on Rapid Facts Card

Roland S-770 digital sampler

Incorporating the company's Differential Interpolation technology, the S-770 features sampling rates of 48kHz, 44.1kHz, 24kHz and 22.05kHz. Sample data is modified with 24-bit processing and a 20-bit D/A converter that provides sound resolution comparable to digital multitracks, CD players and DAT machines, according to the company. Standard RAM is 2MBytes, and can be expanded to 16MBytes. With the expanded memory, the unit is capable of a 90-second stereo sample or a 3-minute mono sample.

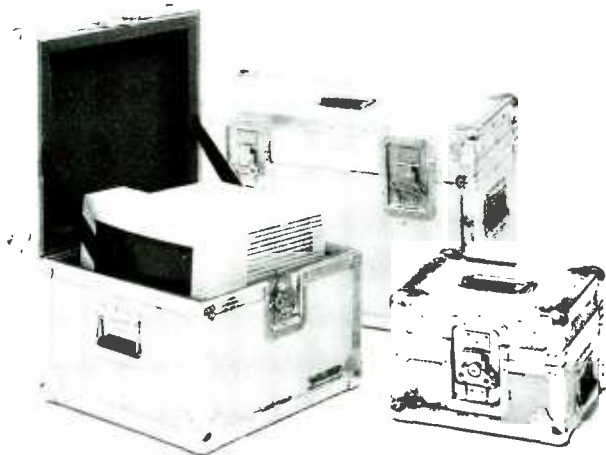
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Circle (71) on Rapid Facts Card

ble, free-standing acoustical room treatment system that transforms rooms into an accurate critical listening environment. The system includes sound absorbers, Abffusor sound diffusers, Diffusor variable acoustic modules, the Triffusor and Korner Killer, a triangular corner-mounted diffusor/LF absorber.

Circle (309) on Rapid Facts Card

RTS BP325

The BP325 is a microprocessor-assisted 2-channel headset station unit that can be user-programmed to incorporate a series of operational options. Primary programming includes call-signal disable, single-channel operation, momentary-action only talk switches, and mono mix to stereo headset. A remote talk-off feature allows for a centrally generated signal to turn off all user station talk gates.

Circle (310) on Rapid Facts Card

RTS MCE325

The unit is a 4-channel, user-programmable intercom station that features modular construction, allowing it to be used in one of five package configurations: self-standing, rack-mount or portable headset station, rack-mount or portable speaker station, and console-mount headset station. Features include 2-channel split talk/listen or 4-channel combo talk/listen, 2-program inputs and volume control, two optional IFB or SA circuits, and remote talk-off signaling.

Circle (311) on Rapid Facts Card

Saki replacement heads

Saki Magnetics has introduced a 1-inch ferrite head designed to work with Sony BVH Series recording units. The BVH-2000 features hot-pressed, glass-bonded ferrite that wears up to 10 times longer than conventional heads, according to the company. List price is \$895. Also new is a ferrite replacement head for ITC Delta cart machines, said to last six to 10 times longer than standard permalloy heads. List price is \$225.

Circle (313) on Rapid Facts Card

Samson MR-1 wireless receiver

The MR-1 is a small and lightweight VHF receiver, powered by a 9V alkaline battery or ac power supply. The receiver weighs approximately 3 ounces and can be attached to a video camera using a strip of Velcro, which is supplied with the unit. Also included is a balanced and unbalanced output, allowing the receiver to be interfaced to any audio system, a headphone output, squelch sensitivity control, dbx noise reduction and a flexible antenna.

Circle (314) on Rapid Facts Card

Schmid SIAT-NET

SIAT-NET is an audio transmission measuring system that measures the transmitted audio signal over lines, microwave or satellite links. A determination can be made in five seconds, according to the company.

Circle (315) on Rapid Facts Card

Out Board Electronics faders

Available from Sellmark Electronic Services, the MF range of motorized faders are designed for sound and lighting mixer automation. The faders use a linear motor, allowing for a smoother, lighter touch than with conventional motorized faders. The range can be supplied with a touch sensor facility, which includes a conductive plastic control knob and through connection to the sensor electronics.

Circle (316) on Rapid Facts Card

Shure Beta Series

Shure has introduced two high-performance dynamic microphones, the Beta 57 and 58. The 58 is designed for vocal applications, while the 57 is designed for musical instruments, particularly drums, cymbals, horns and instrument amplifiers. Both feature a smooth frequency response with upper midrange presence boosts that are tailored for their applications, pneumatic shock-mount systems, die-cast handles, steel grilles and permanently sealed connectors.

Circle (318) on Rapid Facts Card

Shure L series wireless system

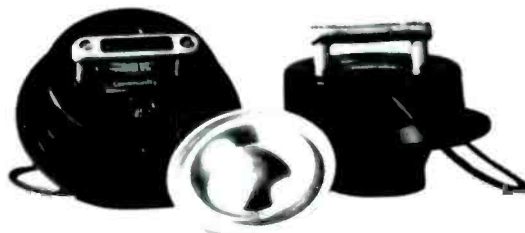
The L series is designed to offer professional features at a moderate price. Four systems are available. Systems LS13 and LS14 are designed for guitars and instruments, and are priced at \$360 and \$495. The LS13/839 and LS14/839 are lavalier systems, and are priced at \$445 and \$580. The systems are available in six stock frequencies, and other frequencies may be special-

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SSL Logic FX

Logic FX, from Solid State Logic, features G Series electronics in 1U, 19-inch rack units. Two units have been introduced. The Logic FX G383 dual-mic amplifier and EQ comprises two identical mic amp/EQ sections. The G384 Quad/Stereo compressor is available either as a quad compressor or a stereo compressor. Both feature external side-chain input switching and an auto-fade VCA control facility.

Circle (320) on Rapid Facts Card

SSL sync controller

SSL has introduced a G Series synchronizer controller, which enables the G Series Studio Computer to control up to five TimeLine Lynx synchronizer modules.

Circle (321) on Rapid Facts Card

Sound Ideas Series 4000

The Series 4000 Hollywood Edition library contains a variety of digitally recorded sounds on compact disc. Categories include comedy, Foley, special, horror, musical and space. Future categories will include transportation, animal sounds, deeps, bells, horns, and vocal and human sounds.

Circle (323) on Rapid Facts Card

Sony introductions

Sony is introducing five products. The MXP-

3056VH is a 56-input console with automated stereo echo returns, improved cue mix output facilities and an enhanced automation user interface. The TCD-D10 Pro is a professional portable DAT recorder. The MU-R201 is a digital reverb unit. The ECM-MS5 is a stereo MS microphone. The WRR-28/WRT-28 is a ultra-miniature UHF wireless system.

Circle (322) on Rapid Facts Card

Studer A723 active studio monitor

The A723 is a powered 3-way speaker that delivers an SPL of more than 106dB, and is designed for applications in small- to medium-sized listening environments. Features include three 200W power amplifiers with negative output impedance, special analog delay elements, XLR-compatible connectors, and coarse and fine trimmer potentiometers for adapting speakers to commonly used operating levels.

Circle (327) on Rapid Facts Card

Studer A779 mixing console

The compact mixing console, 18 inches wide and rack-mountable, features six input channels, VCA faders, a stereo master output with bargraph-type PPM output meters and a versatile monitor section. Input channels can be connected to mic, line or stereo high-level sources. Talkback facility is also available for selective through-connection to the aux or master buses.

Circle (328) on Rapid Facts Card

Symetrix SX 205 audio meter

The SX205 is a 2-channel level display that indicates both voltage and power. A 1kHz sine-wave oscillator is included for calibration and alignment. In either VU or PPM mode, the hold function allows peak levels to be displayed for any length of time. Bargraph or dot format may be selected for each channel. Power levels are displayed in watts, with input switching to establish full-scale at either 100W or 1,000W.

Circle (329) on Rapid Facts Card

Symetrix SX206 processor

In the half-rack format, the SX206 operates as a compressor/limiter, gate, downward expander or ducker. The unit contains exclusive cross-coupled active integrators, allowing attack and release times to be program-sensitive. Also included is a front-panel selectable slave function which allows two units to operate as a tracking stereo pair. For specialized multitrack functions, multiple units may be slaved to a single master.

Circle (330) on Rapid Facts Card

Tannoy NFM-8 close field monitor

The NFM-8 contains a crossed brace from the rear of the drive unit to the rear of the cabinet and uses an 8-inch dual concentric drive unit. Features include an improved roll surround design, to ensure linearity and robustness, and a new HF unit that uses the company's research into Differential Material Technology, which provides the rigidity of titanium without the HF



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Tom Hannaford, Dixieland Productions, Atlanta, GA

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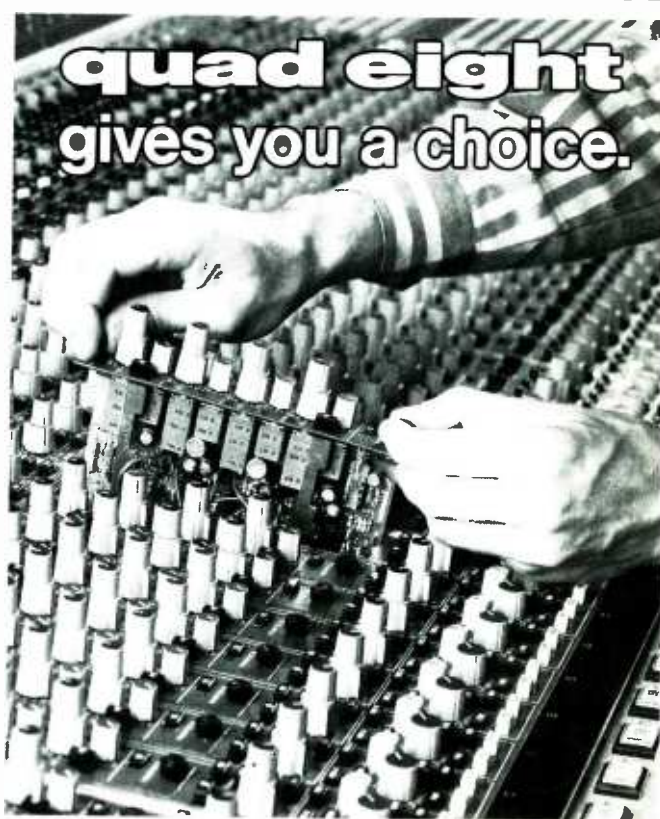
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breakup.

Circle (331) on Rapid Facts Card

Tascam introductions

The company is introducing five products. The 644 and 688 MIDi studios are 4-track, 16-input and 8-track, 20-input self-contained production systems. The MTS 1000 MIDiZER is a 2-machine chase lock synchronizer. The DA 800/24 is a 24-track DASH recorder. The M 3500 series is a mixing console, available in automated and non-automated versions.

Circle (332) on Rapid Facts Card

Telex wireless intercom system

The system is a 4-channel, full-duplex wireless intercom system operating in the 150MHz to 215MHz range with several frequencies available from stock. The TR-200 belt pack transceiver has one transmit and one receive channel. The BTR-200 base station has four receive channels and one common transmit channel. Up to four belt pack transceivers can operate in a network with one BTR-200 base station, although a network of eight belt packs can operate in full duplex by daisy-chaining two base stations together.

Circle (333) on Rapid Facts Card

3M R-DAT tapes

3M's DAT cassettes are designed for all professional decks and are recommended for such applications as mastering, archiving and safety copies. They meet or exceed all DAT cassette

specifications. Available lengths are 30, 40, 60, 90 and 120 minutes.

Circle (334) on Rapid Facts Card

360 Systems AM-16/B switcher

The AM-16/B audio crosspoint switcher is designed for studio, broadcast, film and video post applications, and is field-selectable for 16x16 mono or 8x8 stereo operation. Recall of any routing configuration from non-volatile memory is instantaneous and remote control is available through EIA-422/485 or a MIDI interface. Systems may be configured as mono, stereo or multi-level, and controlled from multiple remote locations. Also available are the AM-16/E Expander Modules and the AM-16/R Remote Control Station to allow more complex matrices and control networks to be created.

Circle (336) on Rapid Facts Card

360 Systems message systems

The Series 2000 and Series 4000 Digital Message Systems are designed for such applications as messages, music and sound effects. Modular systems can be configured to handle any length of message. Features include high-bandwidth capability, digital quality audio and low maintenance.

Circle (337) on Rapid Facts Card

TimeLine Lynx keyboard unit

The Lynx Keyboard Control Unit is designed for multi-machine synchronization and audio editing. The stand-alone configuration provides

comprehensive, programmable machine control for up to six transports via Lynx Time Code Modules. All controls are functionally grouped and intelligently programmed for ease of operation. To expand the number of transports and other devices controlled by the system, the Lynx System Supervisor may be added.

Circle (338) on Rapid Facts Card

TimeLine Lynx System Supervisor

System Supervisor is a flexible communications framework that provides simplified, unified and direct control of multi-transport systems in audio post applications. System developers can use the system for many real-time details of multi-machine control, avoiding device-specific command and control protocols. Two serial controller ports allow control from one or two operator control devices. Each of four device-control serial ports can be configured for direct serial transport control or for control of up to eight Lynx Time Code Modules or Lynx Film Modules. Hardware expansion slots are included to allow for future system development.

Circle (339) on Rapid Facts Card

dbx A/D IC set from UltraAnalog

UltraAnalog is now offering the original dbx A/D converter IC set, including the F410 front-end IC, the D20C10 Decimator IC and the A1520 Precision Resistor Array. The set provides 18- to 20-bit resolution, accommodates standard sampling rates of 32kHz, 44.1kHz and 48kHz and offers an S/N of 114dB. UltraAnalog will

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offer the set in North America and Europe. Carillon Technology, the former parent company of dbx, will offer the products in the Far East.
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UltraAnalog 20-bit D/A converter

The DAC D20400, the company's flagship product, converts with 20-bit resolution at sampling rates up to 400kHz. By offering eight times the standard 48kHz or 44.1kHz rates, the requirements of the low-pass filter that follows the D/A are relaxed, the company says. The DAC D20400 includes two complete D/A converters, a stable bipolar reference, a universal serial CMOS/TTL-compatible digital interface and two distortion-suppressing output deglitcher amplifiers.

Circle (340) on Rapid Facts Card

UltraAnalog 18-bit D/A converter

The DAC D18400, although the lowest-priced model in the product line, offers 18-bit resolution and gives up little performance compared to 20-bit models, the company says. The D18400 also converts at 8x oversampling rates, and other critical parameters such as differential non-linearity, S/N ratio and harmonic distortion are consistent with the product's 18-bit resolution.

Circle (341) on Rapid Facts Card

WaveFrame Disk Recording Module

For use with the AudioFrame, the DRM offers the choice of recording capabilities at the standard 16-bit rate or at 24 bits, called High Definition Digital Audio. In 16-bit mode, the modules are either 4- or 8-track, with additional modules permitting expansion to 32 tracks. The module can also interface through the 24-bit Digital Audio Bus to other modules, providing mixing, signal processing and sampling functions.

Circle (343) on Rapid Facts Card

Westlake Audio BBSM-4 monitor

Designed as a high-accuracy portable reference, the BBSM-4 features a unique combination of drivers, crossover and mounting configuration. The system provides wide bandwidth, low IM distortion, good power handling, pinpoint stereo imaging and a coherent wavefront as close as 18 inches. The BBSM-4 can also be used for small control rooms, mobile recording and home reference.

Circle (344) on Rapid Facts Card

Westlake Audio BBSM10VF monitor

Derived from the BBSM-10, the monitor has a totally symmetrical design that eliminates the need for dedicated left/right units and guarantees a horizontal polar pattern. An internal high-quality, precision crossover can be biwired for additional inter-band isolation.

Circle (345) on Rapid Facts Card

Whirlwind MICPOWER

MICPOWER is a phantom power supply that offers professional performance in a compact size and moderate price. It is housed in a steel case for improved shielding, operates off of two 9V batteries and supplies 12Vdc to 18Vdc to the mic under nominal loads. The unit's output is ac-coupled, eliminating loud popping if equipment is plugged in when it is on.

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The pocket-sized MIDI Cable Tester is designed to check 3- and 5-conductor MIDI cables for open and short circuits. A battery test button is provided with an accompanying LED to indicate proper testing voltage. The LED also indicates cable status.

Circle (347) on Rapid Facts Card

Wireworks Access Electronic Store

Access is a computer-based "store" offering information about the company's audio and audio/video cabling systems, available at all times through a personal computer and modem. Included are detailed product descriptions, applications, product code formation, prices, technical bulletins, ordering instructions and warranty information.

Circle (348) on Rapid Facts Card

Xedit introductions

The company is introducing more than 30 models of splicing blocks and accessories, including a 1/4-inch digital tape splicing block and an edge-clamping block system. Analog models will also be available.

Circle (349) on Rapid Facts Card

Yamaha compact mixers

The company has introduced three compact mixers for a variety of applications. The AM802 has eight inputs, stereo mixing buses and three aux sends. Inputs 1-6 are mix/line selectable

with adjustable gain and have a peak overload LED for optimum level matching. It is priced at \$495. The AM602 has a provision for a separate sub mix I/O and aux mix I/O for advanced signal processing. Also included are two mixing buses and two aux sends from each input. It is priced at \$325. The MV1602 is a rack-mountable 16-input stereo mixer with two mixing buses and four aux sends from each input. Inputs 1-8 are mic/line selectable with adjustable gain and have a peak overload LED for optimum level matching. Its price is \$1,295.

Circle (350) on Rapid Facts Card

Yamaha Mark III speaker systems

The company is introducing four systems to the Mark III line. The S3112MT is a 3-way system with a 12-inch low frequency driver. The S2115HIII is a 2-way stage monitor with a 15-inch low-frequency driver. The S4115HIII is a 2-way system with a 15-inch LF driver. The SW118II is a subwoofer with an 18-inch LF driver. Each system is in a rigid poplar plywood cabinet with metal grilles and are the same width to allow for interlocked stacking. Prices range from \$495 to \$775.

Circle (353) on Rapid Facts Card

Yamaha mixing consoles

Yamaha has introduced three professional mixing consoles. The MR Series is available in three input configurations, and is designed for studio, sound production and sound reinforcement applications. Four mixing buses and a stereo mas-

ter bus are included, and the consoles are available with eight, 12 and 16 inputs. Prices range from \$1,395 to \$1,995. The PM2800M is available in 32- or 40-channel configurations, and features eight mix buses and a stereo master bus. The input channels feature flexible gain structure with a 3-position input attenuator switch, a variable trim control and an LED clip indicator. The 32-input version costs \$31,500, while the 40-input version costs \$36,000. The PM1200 is designed for sound reinforcement and broadcast applications, with each input containing 3-band EQ with a sweepable mid-band, 80Hz high-pass filter, four aux sends and channel mute. The price will be announced.

Circle (351) on Rapid Facts Card

Zoom 9010, 9002 processors

The 9010 uses the original ZFx-1 digital signal processor LSI. The unit has four inputs and outputs, allowing it to be used as a 4-channel mixer or four individual effects. Up to eight effects can be used simultaneously. A ROM/RAM slot is built-in to allow users to load new programs or save custom programs. The 9002 is a guitar effects processor and amplifier simulator the size of a portable cassette case. Effects include distortion, compressor, delay, chorus, reverb, standard pitch-tone generation and metronome.

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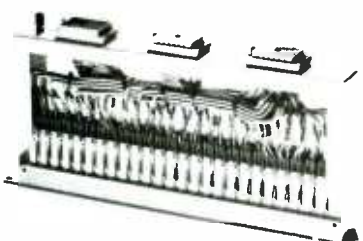
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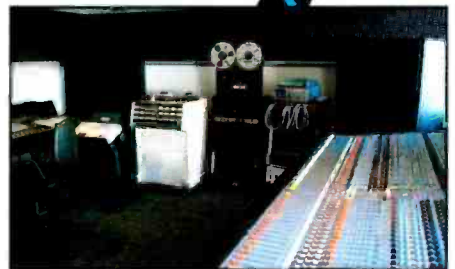
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