

# **SOUND & COMMUNICATIONS**

**26th Edition**

FOR CONTRACTORS, SYSTEM MANAGERS AND SPECIFIERS

AUGUST 1986

# the **blue book**

1986

SGND2MBAL5000 \*GAO 01 000MAY86  
MARK GANDER  
JBL INCORPORATED  
8500 BALBUA BLVD  
NORHRIDGE CA 91329

# Compound Diffraction, Not Compound Distraction

Ray Newman Explains the Advantages of CDP® Design

**T**here are few things as distracting as a loudspeaker that doesn't work well. That's uncomfortably loud for some of the audience, while others strain to hear. It's difficult to follow the action when speech is unintelligible, and music isn't music when the highs are missing. But with compound diffraction, you can end this distraction.

## What's a CDP® ?

*A PA horn that doesn't sound like one.*

CDP stands for:

**Compound Diffraction Projector** "Compound" because sound exits the Horn two ways.

A single diaphragm activates a large horn for low-frequency reproduction and a second, smaller horn, mounted in the mouth of the large horn, reproduces high frequencies efficiently to 10 kHz.

"Diffraction" for how the horn disperses the sound throughout the listening area.

Designed to spread sound in the same manner that optical diffraction slits spread light, CDP's disperse sound through a solid 130° angle (at 2 kHz) when mounted with a long dimension of the horns in a vertical position. Or, if a more concentrated polar pattern is desired, the versatile CDP may be mounted "horizontal," with the short dimension of the horns in a vertical position. (No other competitive horn offers such accurate control.)

**But don't all PA horns really sound about the same?**

*Absolutely not.*

Traditional PA horns are reentrant designs in which the horn is folded back

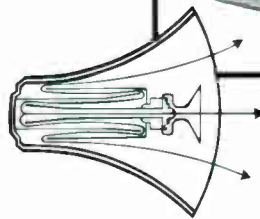


## Ray Newman

- one of the earliest practitioners to recognize and apply Thiele-Small theory to loudspeaker design, introducing optimally vented enclosures to audio
- an early designer of "constant-directivity" horns for uniform coverage angles over a wide frequency range
- a member of AES, IEEE and co-author of Methods of Radar Cross-Section Analysis, Newman has contributed numerous articles to professional organizations

and trade journals, and lectured extensively in the U.S., Europe and Japan

- when not scouring tobacconists' shoppes for Hoyo de Monterrey Excaliburs, enjoying enology in the Province of Burgundy, or contemplating Kliban with his cat Abigail, Newman can be found at Electro-Voice where he is chief engineer of loudspeakers



**CDP Design**

upon itself. This makes the size compact, but performance is compromised because all frequencies are forced around some very tortuous bends. Low frequencies can withstand the bending, but higher frequencies cancel out on the turns. As a result, high frequencies disappear, reducing intelligibility and increasing distortion.

**Does the CDP provide greater intelligibility?**

*Definitely. Bi-Venting provides the critical advantage.*

As in traditional reentrant designs, low frequencies exit through a hole at the rear of the driver, following the extended air column necessary for proper low-frequency production. But a CDP employs a second hole at the front of the driver to send

frequencies above 1000 Hz directly to the listener through a small horn without having to follow any bends. The result is dramatically improved high-frequency response, more controlled dispersion—coverage so accurate that you can do the job with fewer CDP's—and reduced distortion, for a unique combination of high intelligibility and outstanding speech and music reproduction.

**Where can I get a CDP?**

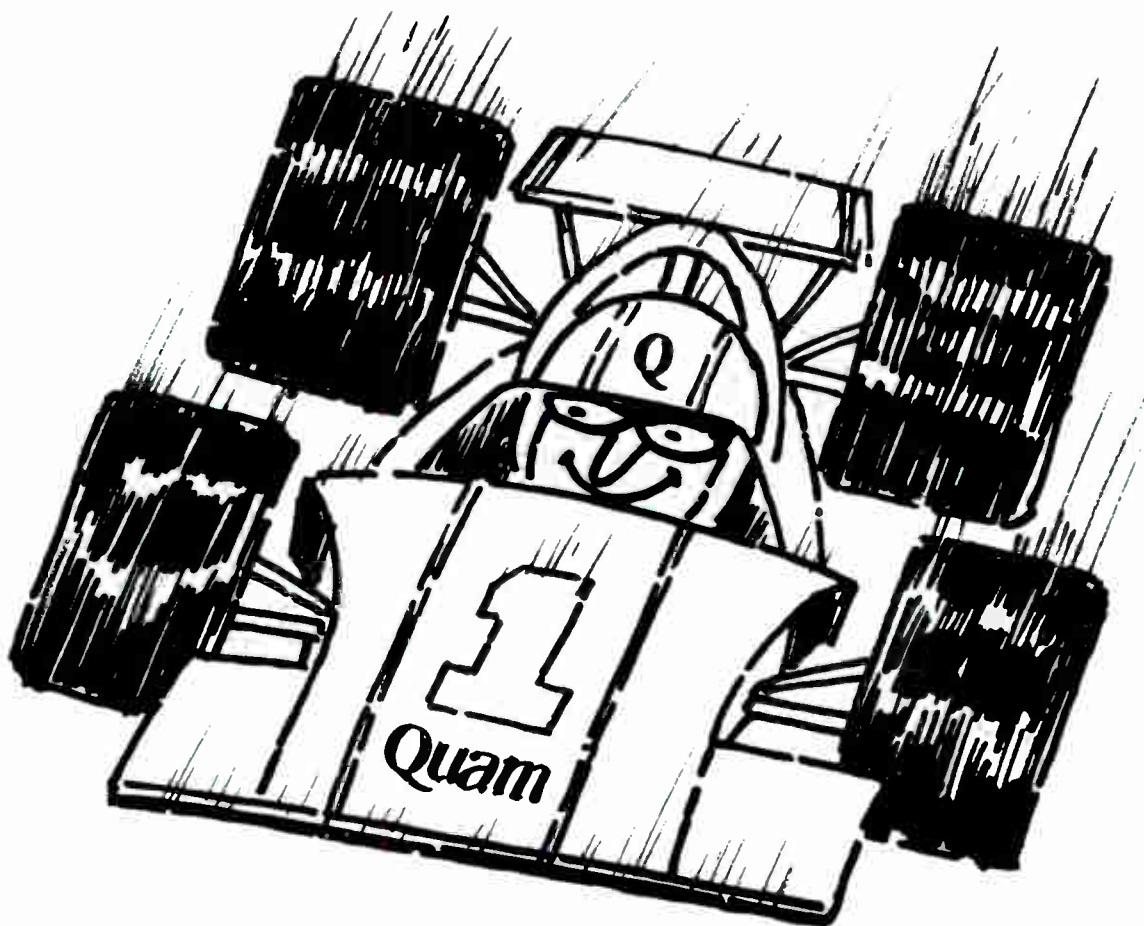
*Only from Electro-Voice.*

The CDP is an Electro-Voice exclusive—a cost-effective, full-range horn that's been in the field sounding better than the competition for over 30 years. Performing in a wide variety of demanding applications—from fairgrounds to football fields, parades to plant paging, major league play-offs to little league practices.

*We would like to send you competitive comparisons that will convince you we're not just blowing our CDP. Just write to Ray Newman at Electro-Voice, Inc., 600 Cecil St., Buchanan, MI 49107*

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The answer to your installation's reverberation problem may be a passive one. Acoustical-modifying materials and treatments can often alleviate echos and reverberations where electromechanical systems fail. A manufacturer's index of companies which specialize in acoustical treatments starts on page 52.

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## ON THE COVER

*Sound & Communications'* 1986 BLUE BOOK directory is the oldest and only complete annual listing of manufacturers compiled. This year's BLUE BOOK is bigger than ever with approximately 20 percent more listings. Keeping up with the new and changing companies is just another way *Sound & Communications* continues to meet your informational needs.

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# WHAT TO LOOK FOR WHEN YOU LISTEN TO A POWER AMPLIFIER.

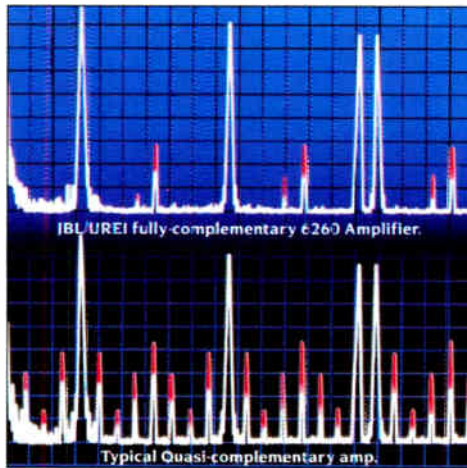
When it comes to evaluating amplified sound, seeing is believing.

In fact, when engineers judge the sound quality of an amplifier, they often rely on *two* precision instruments: the human ear, and the industry-standard Transient Intermodulation Distortion Test, because when measuring sound with T.I.M. what you see is what you get.

And what you see can be eye-opening. Amplifiers that seem to square off evenly spec. for spec., often perform very differently under the scrutiny of T.I.M. Pushed to their limits, many produce brittle, edgy or distorted sound especially during high frequency passages and sharp transients.

Many manufacturers deal with distortion by using massive amounts of feedback through a single overall feedback loop, placing greater demands on the amplifier and producing an inferior sound.

When we built our new JBL/UREI Amplifiers, we committed ourselves to designing the industry's purest-



Red spikes in the TIM Spectrum reveal the dramatic differences in distortion output.

sounding amps that would not only score highest marks on the T.I.M. Test, but deliver the truest amplified sound ever heard.

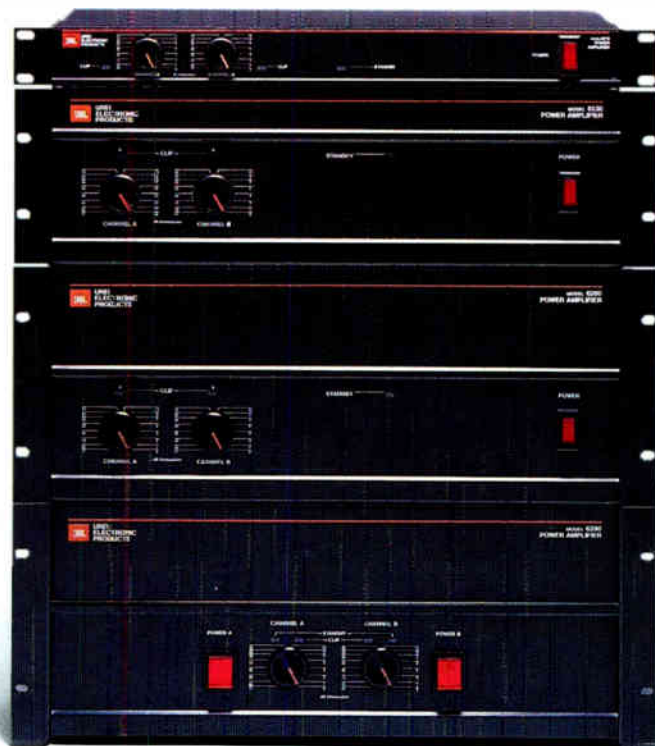
Instead of sloppily force-feeding massive amounts of

output signal back into input stages, and congesting it all into one circuit loop, we've established operating points at *each* gain stage. This allows signal purity to be maintained along the entire circuit. And permits optimized use of the type and amount of feedback for each individual gain stage.

In a simple analogy, the new JBL/UREI Amplifiers do each signal track right the first time, so that you don't have to fix it in the mix. The result is sound far cleaner than typical quasi-complementary and fully-complementary output stages only. And far more pleasing to the ear.

Put JBL/UREI's remarkable new Amplifiers to the test at your local JBL/UREI dealer today. We're confident you'll think it's the finest amplified sound you've ever heard. Or seen.

For an informative Technical Paper on the unique design philosophy behind the new JBL/UREI Amplifiers, please write to:



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Northridge, CA 91329

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PRODUCTS

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**TELECENTER**<sup>®</sup> *IV* Provides multi-link *internal communications* between administrators and between administrators and classrooms, plus full *interconnect* to *outside lines*. Features: Conference call capability, instant schoolwide or "zone" paging, call display in order received, with priority for emergency calls. Includes a wealth of user-programmable features; simple touchpoint operation; fully expandable to meet growing needs. Unmatched for administrative communications management.



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## **Rauland** **RESPONDER**<sup>®</sup> better for health care

**RESPONDER**<sup>®</sup> *III* Selected by more hospitals nationwide since 1982, than any other nurse call system. Offers 24 exclusive new features, including "hold" and "recall" capability, one-button automatic staff search, independent utility display, automatic staff "follow" in code blue, 14 priority levels; includes a host of user-programmable features; microprocessor-controlled; immune to power failure; simple positive touchpoint operation. Designed to be specified with complete confidence.



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# The AT853 UniPoint™ Condenser Cardioid

It's been  
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strapped,  
stood up,  
clamped,  
taped,  
and swung...  
all in the name  
of better,  
less visible  
sound.

The AT853 condenser cardioid is a remarkable microphone. Smaller than your little finger, yet with flat response from 30 to 20,000 Hz, and an effective cardioid pattern, even at the lowest frequencies.

The AT853 is so light (1/2-ounce) it can hang on its own 25-foot cord above a choir or orchestra. The ingenious wire adapter permits pointing it exactly where it's needed without support cables or stays, making the AT853 even less visible.

It also includes a neat stand adapter to instantly convert the AT853 into a desk or floor stand model. Or simply hide it in the bushes, behind props, or wherever superb sound is

needed with minimum visibility.

The AT853 is operated by a single 1.5V "N"

battery or phantom power. The power module also has a low-frequency rolloff option to solve rumble and room noise problems.

The AT853 is one of a family



of six UniPoint ultra-miniature condenser microphones. Each with special features to solve the toughest sound pickup problems, plus professional reliability. And all from the innovators at Audio-Technica.

The AT853 may be hard to see, but it's great to listen to. Arrange for a hands-on test today.

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## IDEAS & VIEWPOINTS

# Throw Out Your Old Blue Book

It's here! The 1986 *Sound & Communications Annual Blue Book* is finally completed. The first thing you've probably noticed is that this year's *Blue Book* is bigger than its predecessors. That's because there are 20 percent more manufacturers listed than ever before—companies whose products you spec and install every day.

The expansion came rather slowly at first. Right after we published the 1985 *Blue Book*, about a dozen or so companies called up and requested information on how they could be listed in the 1986 edition—even though it wasn't going to be published until the next year! Then during the year, calls trickled in periodically and our list grew. And right after we did our first mailing on the 1986 *Blue Book*, the frenzy began. As the updated listings were returned, the phone calls started. "Did you get our form?" "Is it OK?" "I know we missed the deadline, but I was on vacation. I didn't see the form until today. We must be in the *Book* or my boss will fire me." One new company, from the midwest which called for information on being listed in the *Blue Book*, said they had been talking to a local sales rep who told them if they were going to start up in this industry, *they had to be in the Sound & Communications Blue Book*.

Why all the excitement? Well, most manufacturers realized that when you want to know who makes teleconferencing systems or who at a microphone company you should talk to about their wireless microphones, you look in the *Blue Book*. Why the *Blue Book* over any other buyer's guide? Because only the *Blue Book* lists the manufacturers, the products, and the *most importantly* the people essential to your business. Unlike other directories, we list the manufacturers key personnel, because a company is people—not just words embossed on its nameplate.

As a service to you, we also publish a manufacturer's rep network or district offices in their primary listings. We do this because we know that these exterior sales forces are often your primary communications medium with a manufacturer.

So, throw out your old *Blue Book*!. The 1986 *Blue Book* is here!





# Valcom breaks the sound barrier.



When the X-1 flew faster than the speed of sound, it marked the beginning of a new era that would one day take us to the frontiers of space.

Advanced technology, quality, dedication, care and concern. These ingredients were at work when the sound barrier was shattered. They're the same ingredients that have made Valcom the leader in paging for nearly a decade.

Valcom products break through the barriers to selling total communications systems. We provide simple, economical pre-engineered solutions to voice paging and background music applications, large and small. All backed by Valcom quality and dependability.

Most of the Fortune 500 companies use Valcom products. So it's a good bet that we have the right stuff to meet your customer's needs.

---

Brigadier-General Chuck Yeager - USAF Ret. and the V-1030 Horn. Our distributed amp concept allows each 1030 - and all other Valcom speakers - to be adjusted individually for the desired volume level at each location. The entire system is connected using standard telephone wiring which makes installation easy and economical. With Valcom, breaking the sound barrier is a snap.

---

FINDING BETTER WAYS TO COMMUNICATE.

**VALCOM**

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## TOA ANNOUNCES NEW SECURITY GROUP AT ISC SHOW IN NEW YORK

Toa Electronics, Inc. has formed a new sales group directed to the security market, according to Toa president Sam Sakata. Sakata has appointed Barry Rubin as national sales manager for the group. Rubin has extensive industry background in both domestic and foreign electronic corporations. "Toa Electric Company Ltd., our parent company in Kobe, Japan, has been involved in the security industry for nine years, having had considerable success in both Japan and Europe," said Rubin. "The U.S. security market is very competitive, but is still growing about 12 percent a year. We have a fully developed and proven product line which, like all Toa equipment, is designed for high performance, reliability, and durability." New products to be shown at the ISC, in New York, August 26-28, include video observation cameras, monitors, switching equipment, remote control equipment and related accessories, he said.

## PHILIPS & STUDER MAKE CD JOINT VENTURE OFFICIAL

N.V. Philips of Eindhoven, the Netherlands and Dr. Willi Studer AG of Regensdorf, Switzerland have signed the recently announced agreement to form a research and development joint venture to develop and market compact disc-related professional studio systems. Under the agreement, each partner is holding a 50-percent share in the newly founded Studer Philips CD Systems AG, which is headquartered near Studer in Regensdorf, Switzerland. The management is formed on an equal-share basis. Dr. Willi Studer will be the chairman of the board, and Dr. Pieter Berkhout of Philips will hold the post of managing director. The new products will be developed by the joint venture, using resources of both parent companies, pursuing mutually agreed upon product-oriented goals. These will also be the basis of the distribution strategy for future products.

## EKTACOM G



Many call it the world's best direct-select intercom. This premium quality system has been proven in thousands of installations. Six to 1,000 key masters; all light annunciation; solid gold switch contacts; 4" speakers; 45 ohm, balanced lines; plug-in 25 pair cables; in and out volume controls; solid state T/L muting and compression; desk, flush or rack mounting; UL Listed power supplies. Many options including central and group paging; parallel call from one remote to multiple masters; master-to-master annunciation; 11 watt RMS output. The G is used by all branches of the Government from Walter Reed Hospital to the USS Enterprise. Two year Factory warranty.

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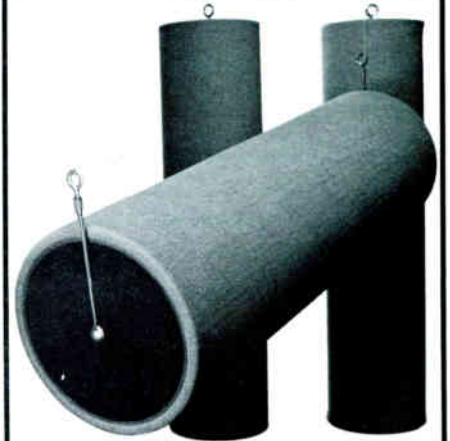
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## JBL MOVING AHEAD WITH SOUNDCRAFT ELECTRONIC & MAGNETIC DISTRIBUTION

JBL Professional executives report that the company is moving forward with its plans for distributing Soundcraft electronics and magnetic products in the U.S. The company's marketing team, including president Ron Means, vice president of marketing Mark Gander, vice president of sales Ken Lopez, and the four regional sales managers, recently returned from England where they toured Soundcraft Electronics Ltd. facilities and met with top executives and engineers. Said Gander, "We're moving ahead, taking strides toward the integration of Soundcraft electronics and magnetic products into the regular line of the JBL Professional products. While we still have a position open at JBL for a field sales manager who focuses directly on Soundcraft products, the four JBL field sales managers (who direct our sales representatives)—Bill Hamilton in the East, Tom Walter in the North Central region (Chicago), Neil Conley in the south central region (Dallas), and Steve Armstrong in the Western region (Southern California)—will continue to report to me on matters concerning Soundcraft products.

## ANCHOR AUDIO PURCHASES ASSETS AND RIGHTS TO ROH INTERCOM SYSTEMS

Anchor Audio of Torrance, CA, has purchased the assets and manufacturing rights of ROH Intercom Systems of Atlanta, GA, which manufactures intercom systems, audio distribution networks and audio line monitors. ROH, now a division of Anchor, will operate out of Torrance, closing its Atlanta facilities. Dan Garrigan, previously West Coast sales manager for ROH, has been appointed national sales manager of the new division. He said the purchase would remove much of ROH's debt, allowing the company, which was otherwise healthy, to profit.

When your intercom leaves you short...  
That other station might as well be on the MOON....



The TSK TL Series of Long Line Intercoms will take you where other systems can't.

The TL Series is a "Zero Level" 2 wire Simplex system for use on very long twisted or leased telephone pairs up to 18 Miles. All Voice, Annunciator, and optional Controls are fed over a single twisted pair of wires. From Master to Master, Master to Remote, even Remote to Remote, the system size can range from one to one to thousands. When you find that your intercom is leaving you short, contact us for more information regarding our unique answers to your needs.

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Until you use it.



**NOW AVAILABLE  
IN FLESH TONE.**

SHOWN ACTUAL SIZE

The job of a good lavalier microphone is to be heard and not seen. So we're introducing the new MKE 2 micro-miniature electret lavalier mic—our smallest ever. It comes with a variety of clothing attachments and can even be taped to the wearer's skin. So whether your talent is fully costumed for an epic or scantily clad they'll hardly know it's there.

You'll know it's there, though. Thanks to Sennheiser back-electret technology and an extremely thin, low-mass diaphragm, the MKE 2 gives you uncanny transient response, and frequency response from 40 to 20,000 Hz, all with low sensitivity to mechanical noises. Which means you hear clear voices, not ruffled clothing. See the MKE 2 for yourself, but be prepared to look closely.

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# TEQ™ A TRANSVERSAL EQUALIZER BY IRPI

# A lot went into



## Transversal Filter Equalizers are the building blocks to better equalization

By including our TEQ Model DG-4017 Equalizer in your system, you avoid compromising your sound with the sound processing. The TEQ equalizer provides transparent sound at all frequencies and all boost/cut settings. It virtually eliminates unnecessary ringing and transient coloration of signals.

Most  $\frac{1}{3}$  octave tuned filter sets respond correctly at their control frequencies but at other frequencies filter interaction creates frequency response ripples. As little as one dB ripple in frequency response can produce audible coloration. Due to its unique design, the TEQ transversal equalizer provides response control *without the ripple associated with tuned filters!*

“... the first genuine step forward in equalizers since ... the original  $\frac{1}{3}$  octave units ...” *Don Davis—Syn-Aud-Con Newsletter*

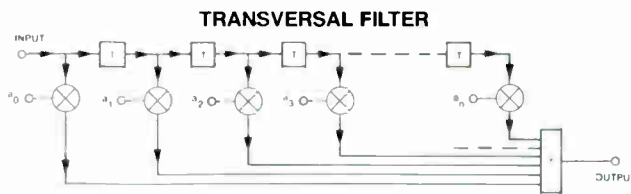


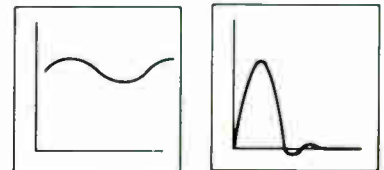
Diagram 1

The input signal is delayed by a chain of  $N$  stages, each stage delaying the signal by amount  $T$ . Each stage output is multiplied by a weighting factor  $a_n$  and summed together for the final output. The frequency response of the filter is determined by the relative values of the weighting factors,  $a_n$ .

The TEQ equalizer produces frequency responses with a single filter. Its transient response is the weighted response of a single tapped delay chain. (See diagram 1)

The response synthesized from the tapped delay chain provides smoother, more even equalization curves (See diagram 2). The resulting frequency response ripple is settable to less than 0.1 dB over 100% of a 20 dB adjustment range!

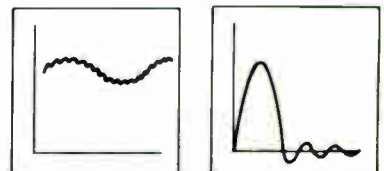
### TRANSVERSAL-TEQ™



FREQUENCY

IMPULSE

### CONVENTIONAL



FREQUENCY

IMPULSE

Diagram 2

# this "overnight success"



controls allows surprisingly easy acoustic equalization. Indeed, a cut or a boost can be produced easily at any frequency between adjacent controls, thus giving quasi-parametric capability. Furthermore, space-saving control knobs make our DG-4017 more compact, and easier to install.

**AFFORDABLE  
STATE-OF-THE-ART  
TECHNOLOGY**

## Precise control with fewer knobs

Over the critical mid-frequency range, control points are  $\frac{1}{3}$  octave apart. At low and high frequencies, we use 1 octave controls—plus a high pass filter at the low end and a shelving filter at the high end for additional tuning ease. The result is 15 tuning points for optimum control, instead of the usual 27.

The predictable interaction between adjacent band

## Exciting new technology with a competitive price tag

The model DG-4017 represents a revolutionary advance in equalizer technology that is rapidly becoming the standard of excellence for the industry. Yet this state-of-the-art equalizer is priced competitively with the leading  $\frac{1}{3}$  octave graphic and parametric equalizers.



1 OCTAVE  
LOW END

$\frac{1}{3}$  OCTAVE  
MID-BAND

1 OCTAVE  
HIGH END



## Adventurous acoustical designers are gaining international recognition with the TEQ

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Circle 204 on Reader Response Card

by S. Ann Earon  
Telemanagement Resources, Int'l, Inc.

## Teleconferencing Systems

# IMPLEMENTING CUSTOMER PROMOS

**P**romotions are an integral part of the installation and ongoing use of any product or service. Most vendors spend time and effort developing brochures or advertisements to sell a product or service, but neglect the sale of that service to the customer's internal organization. Caring for a customer's internal promotions can sell more systems by helping the customer make potential users aware of the features and benefits of a product or service. This type of promotion awareness also educates users. Promotions planning will be discussed here as it relates to successful imple-

***Caring for a customer's internal promotions can sell more systems by helping the customer make potential users aware of the features and benefits of a product or service.***

mentation of a teleconferencing system.

Teleconferencing, defined as two or more people communicating electronically from locations separated by distance or distance and time, is an effective alternative to many face-to-face meetings. A teleconferencing system can be comprised of a variety of components including audio, audiographic,

video, and computer conferencing technology. Each component of the system can benefit from promotions.

A variety of media can be used in a promotions campaign. While it may not be practical or possible to implement all forms of promotion, carefully selected materials introduced over a span of time will help enhance any teleconferencing system.

Common promotion materials include: flyers, newspaper articles, posters, slide presentations, telephone stickers, tent cards, travel inserts, user guides, and videotapes. Give aways such as pens/pointers, pads of paper, buttons, plastic holders, and stationery, are also popular.

To best understand how to implement a successful promotions campaign, consider what might be done for a typical teleconferencing system.

### **Successful Promotions**

A customer has agreed to purchase and install equipment to be used by employees to communicate between two distinct business locations. You want to be sure that users are aware of the system and comfortable with its features.

Since teleconferencing facilities can change the way a company does business and can affect productivity and the user's work style, it is important to properly introduce the facility.

Consider naming the new facility, putting banner teasers in the company newspaper (i.e., "Super

System" is coming!), hanging posters on walls, and/or sending flyers in the mail.

Follow-up the initial efforts with a newspaper or magazine article detailing the elements of the system to be installed.

Have a continuous running videotape in the company cafeteria that generally explains the features and benefits of teleconferencing. The purpose of the tape is to generate interest from potential users.

Put tent cards in conference rooms extolling the benefits of teleconferencing and providing suggestions for successful meetings.

When the system is installed and ready for initial usage hold an open house to introduce the system to employees. Let the employees use the system whenever time permits (lunch hours, before or after work). Be sure to show them that pressing the wrong buttons won't break the system. Make everyone feel comfortable with the technology. The open house is a good time to hand out user guides. This pocket-sized folder is meant to introduce users to the technology and provide them with instructions on reserving and using the facility.

When the company feels comfortable with the system and begins using it on a regular basis, promotions should not cease. Instead, it is important to continue promoting the benefits and applications of the system. If an engineer has used the system successfully for a

particular situation, promote that usage to others. The engineer will enjoy seeing his/her name in print and other engineers may realize a similar application for their type of work.

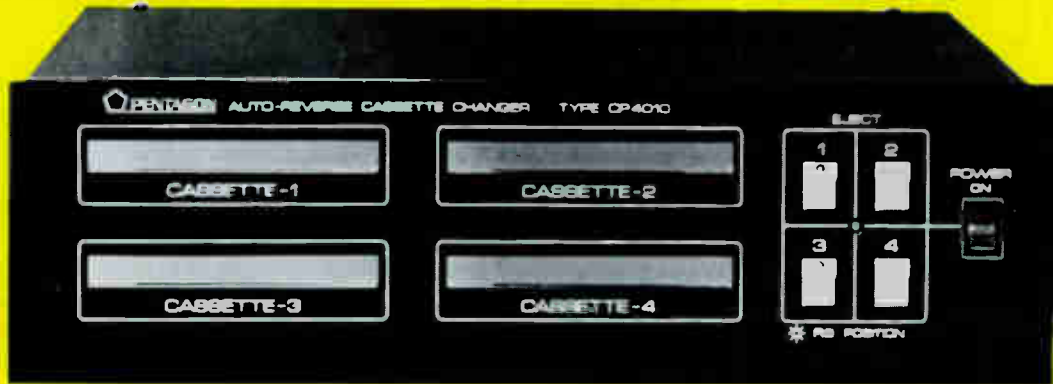
The only time promotions can be dangerous is if there is more usage than can be handled. There is nothing more frustrating than trying to use a facility that is always booked. Promotions at this time would be detrimental, unless the promotions campaign tells users that the system is expanding to meet the increased demand.

As a vendor of a product or service it is up to you to guide your customer to successfully use your product. Internal customer promotions, as an integral part of your business, need not be expensive. Some of the above ideas you may wish to automatically offer with your product (i.e. generic posters, flyers, pads of paper); the other promotional ideas can be presented to the customer as suggestions. If these suggestions are printed in an informative, easy-to-read format, the customer will be impressed with your concern and knowledge.

Remember, you want to be the vendor of choice. Anything you can do to set you apart from the competition and assist the customer will help your bottom line. Customer promotions are another way to add value to the customer and to appear unique in a competitive environment.

# CASSETTE CHANGER

## for background music



**4 auto reversing cassette players for continuous play.**

CP4010 Stereo/Mono Selectable

**Create the ideal mood for—**

- ♪ Restaurants
- ♪ Doctors & Business Offices
- ♪ Factories
- ♪ Retail Stores
- ♪ Super Markets

Low initial cost, easy installation and compatibility with existing or new public address or paging systems makes this unit ideal for your sound system.

To operate the unit, simply insert the cassettes and everything is automatic thereafter. The Auto-Reverse Cassette Changer plays both sides of the cassette, then advances to the next cassette. Each cassette position has an individual eject switch and LED indicator. If a position doesn't contain a cassette, the position will be by-passed to the next position. Simple two-cable connection to an external amplifier... superb performance and styling will meet your needs... and more.

### FEATURES/SPECIFICATIONS:

- Logic controlled endless playback deck
- Auto advance to next cassette, three (3) seconds
- Automatic Gain Control
- Lighted cassette eject buttons
- Frequency Response... 40-12,000 Hz
- DIN and RCA line out connectors
- Dimensions .14.9" x 11.2" x 4.3"
- Switchable 110/220 VAC, 50/60 Hz power supply
- Net Weight... 18.75 lbs.

### ADDITIONAL SPECIFICATIONS:

- Head Configuration ..... Four track in line head
- Frequency Response ..... 40-12,000Hz + 3db
- Line Output ..... 500 mV
- Signal to Noise Ratio ..... Better than 45db
- Wow & Flutter ..... Less than 0.02% WRMS
- Front Panel ..... Power ON/OFF switch
- Back Panel ..... Lighted cassette eject buttons
- Color ..... Line voltage select switch
- Power Consumption ..... Stereo/Mono select switch
- Speed Regulation ..... Auto Gain level control
- Accessories ..... Black cabinet with black front panel with white silk screen lettering, including Pentagon logo
- Power Cord - Twin RCA type cable



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by Marc Benington  
Jaffe Acoustics, Inc.

## BIDDING AS SPECIFIED

For many years, some sound system specifications consisted of a verbal description of the desired system function and level of performance. These "performance specifications" gave the contractor a great deal of latitude in equipment selection and system architecture, depending on what manufacturers' lines the contractor carried. Unfortunately, performance descriptions could not (and still to an extent, cannot) be enforced due to differences in measurement equipment and techniques. Many substandard sound

systems may have been installed because the performance specifications of semi-pro, industrial or even home hifi equipment could not effectively be differentiated from professional equipment.

The situation was exacerbated by the building industry, which placed sound systems in Section 16700 in Communications and PA Systems of the A.I.A. standard specification. This section is the design responsibility of the electrical engineer who usually deals only with performance specifications. After all, performance

standards for circuit breakers, electrical enclosures, wall switches, and AC power outlets have been set and understood for many years. Electrical engineers frequently applied the same concept to sound systems, which resulted in installed systems of varying quality. The latitude in allowable equipment presented a qualified contractor with a dilemma—a proper bid based on appropriate equipment might lose out to a bid from an inexperienced installer using less expensive, substandard gear.

In some situations, a

system designer will indiscretely specify a certain product he may want used in the resulting system.

In their product literature, manufacturers will frequently include a paragraph which is intended to be used in specifications. These descriptions often highlight the features of the product in such a way that perhaps only the described model fully meets the specification. This permits a system designer to specify a particular product without really saying so.

In order to remove the  
(continued on page 89)

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Security cover available

The **Aphex Compellor/Aural Exciter** (Model 303) is a single, one rack height package combining two of your favorite tools. A monaural Compellor for completely automatic gain control, and the circuitry of the Aural Exciter to produce dramatically improved clarity, dimension and detail.

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## A Software Review

# COMPUTER AIDED SPEAKER DESIGN

Over 50 major manufacturers of loudspeaker components make their products available to sound contractors. Even though there are many ready-to-install systems, it is often space and/or aesthetic considerations that will dictate a custom loudspeaker system. There are two obstacles that come into play: how to design the system, and how to build it. Scientific Design Software has taken the mathematical models of low-frequency enclosure design that have evolved over the years, and have put a good working collection of them into a computer program called CASD (computer-aided speaker design).

CASD is a software package that allows one to quickly and efficiently perform various documented calculations for the loudspeaker design process. The software is the product of a group of loudspeaker engineers who found it necessary to write their own program to help in their

daily design tasks. The program is comprehensive and easy to use with its menus and the manual's explanations. CASD affords insights during the design process and decreases the design time. Since many systems are leaning towards direct-radiating type designs, it is the focus of this program.

The program comes in a two-sided disk format along with a file-disk of 24 loudspeaker brands representing about 120 models and their associated parameters. The owner's manual is a good example of how a software manual should be written. Aside from explaining how to use the software, the manual offers explanations of design techniques, loudspeaker and system parameter definitions, helpful design hints and tips, a listing of the computer's operating system error codes (and explanations), and printer/interface instructions. The manual also contains a section on sealed and vented design theory, discus-

sing the relevant aspects of modelling theory, efficiency bandwidth product, enclosure parameters, vents and passive radiators, response and displacement limited curves, B4 and B6 system relationships, and filter parameters.

Upon booting-up of the program, side one of the main menu prompts the user with a choice of Sealed System Graphing, Vented System Graphing, Utilities, File Maintenance Modules, or the user may go to side two. Side two contains a crossover design module which, if desired, can be run independently. The two sides have been segregated in this way to allow for future enhancements and expansion of the crossover section.

The Sealed System Graphing and Vented System Graphing modules are identical in operation. These program segments do not display standard menus, instead, a choice of one of three different dynamic range blank

graphs is displayed. The user then can decide between entering the pertinent data, either manually or from an existing file disk. Entering driver information is accomplished via smart screen prompting.

Next, the program asks if you wish to use an auxiliary boost filter. The resulting graph may now be printed. After the printer routine, the program will prompt you to see if you want a displacement limited power curve. After the displacement graph, one may either return to the main menu or continue analysis. If a displacement plot was not done, a new plot may be computed or even superimposed on the previous plot, yielding stacked plots for comparisons.

The Crossover Design Menu allows you to design one of five types of crossover networks or proceed to the Impedance Correction Menu. After selecting this menu, you may design one of three types of correction networks: resonance or Zobel network, high-frequency rising impedance correction by driver inductance network, or high-frequency impedance correction by driver impedance curve network. Each section allows for reiterative calculations with the option of exiting back to the main menu at any time.

The programs are practically bombproof—they do not allow illegal quantities to be entered. The manual contains an easy-to-follow tutorial on this section.

The Utilities Programs are

```
-----
UTILITIES MENU
-----
A FB FROM VENT DIMENSIONS/VB
B VENT DIMENSION FOR VB/FB
C SPL FROM REF EFF
D REF EFF FROM SPL
E VAS FROM MOVING MASS
F MASS AIR LOAD ON DIAPHRAGM
G PASSIVE RADIATOR MASS FOR FB
H REF EFF FROM THIELE/SMALL PAR.
I APPROX. OPTIMUM BOX INFO

J RETURN TO MAIN MENU (ESC)

SELECT A-J: < >
```

Figure 1

```
-----
FILE MAINTENANCE
-----
BRANDS-----
A LIST BRANDS
B ADD A BRAND NAME
C CHANGE A BRAND NAME
D DELETE A BRAND NAME
MODELS-----
E LIST MODEL NUMBERS IN A BRAND
F ADD MODEL NUMBER TO A BRAND
G UPDATE/READ DATA IN A MODEL
H DELETE A MODEL NUMBER
I READ ALL DATA IN A BRAND
J SEARCH MODELS BY PARAMETER

K MAKE NEW DIRECTORY
L AVAILABLE FILE DISK SPACE
M RETURN TO MAIN MENU (ESC)

SELECT A-M < >
```

Figure 2



Truly great amplifiers are measured by two standards. Sonic quality and reliability. Our new RAMSA 9055, 9110 and 9220 power amplifiers achieve excellence on both counts. And their superb, well-balanced design, combined with Matsushita's manufacturing processes and rigid quality control, gives us the confidence to back them with a 5-year limited warranty.\* This RAMSA warranty and UL listing assures you that we stand behind the 9000 series with everything we've got. And that's saying something. We challenge you to compare these new amps for yourself. But you better be prepared to re-evaluate your standards.

**RAMSA**  
Panasonic  
Industrial Company

\*See terms of warranty for details © 1986 Panasonic

Circle 218 on Reader Response Card  
World Radio History

# Grommes-Precision

## GTE-100 AMPLIFIER



### FEATURES

100 watts RMS power • Low distortion • Wide frequency response • 10 band graphic equalizer • 6 Low impedance microphone channels with built-in transformers • Telephone page input • Music muting for paging • 2 Auxiliary inputs with loudness contour switch • Remote microphone control provision • Volume limiter • Speech filters • Output meter.

### DESCRIPTION

The GTE-100 has 6 microphone channels and 2 auxiliary channels, master gain, 10 frequency equalizer and automatic volume limiter. The music input can be switched to by pass the equalizer. Music channel has muting for microphone precedence. Remote control for each microphone channel can be used for volume control or muting. Meter indicates power output from the 4 ohm, 25 or 70 volt line.

## GT35, GT60 and GT125



### FEATURES

• 4 microphone channels with Hi Z-Low Z switching or 4 high level auxiliary • Plug in balanced low impedance microphone transformers • Telephone page input • 2 switchable auxiliary inputs for tuner, tape, music • Music muting for paging precedence • Separate wide range bass and treble controls • Speech filter for each microphone • In-out connectors for external equalizer or automatic volume control • In-out connectors for each microphone for remote control or reverb • High fidelity circuit with reliable overload and short circuit protection • Heavy duty power supply • Designed for constant duty operation • Low frequency cut-off switch for trumpet speaker protection • Professional female 3 pin latch lock microphone connectors • Barrier strip speaker terminal plus 2 speaker sockets • 25 and 70 volt output line can be balanced or unbalanced • Output for tape recorder or booster amplifier • Illuminated power off-on switch • AC convenience outlet with ground • 3 wire AC cord for safety grounding.

### DESCRIPTION

The GT line solid state integrated amplifiers will control, mix and amplify 4 microphones and two auxiliary inputs. They are capable of delivering full RMS power continuously to speaker voice coils and 25 or 70 volt lines.

## Models GT35A, GT60A and GT125A

same as above except 4 low impedance microphone transformers are built in.

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a group of quick routines which are useful for solving a number of simple, and often frequently used formulae. This section is set up in the same manner as the crossover section. Noteworthy here is the Approximate Box Design information utility. This particular utility is useful as a starting point for a system design with a given driver. After entering the input parameters which define the driver, the utilities calculate:

(a) The box volume for the flattest vented system with the box tuning frequency (Fb) and the -3 dB cutoff frequency (F3).

(b) The box volume for the B6 assisted alignment with the box tuning frequency (Fb), the -3 dB cutoff frequency (F3), and the filter peak-boost frequency (Fp).

(c) The box volume for the flattest unfilled system with the -3 dB cutoff frequency (F3).

With this information, one gains immediate insight into

the suitability of a given driver for various enclosure designs.

After selecting File Maintenance from the main menu, the display will come up on the screen. This set of utilities is comprehensive and easy to use. As with the other utilities, every function is completely explained in the manual. As an extra bonus, there is a database-like feature in this utility, which allows one to search for a model loudspeaker with up to three given parameters. The CASD manual concludes with references which are the standards of the literature in loudspeaker system design.

The CASD program is easy to learn, and can be latched up. The graphs are excellent, and likewise the graphics are laid out clearly and are easily read. The computer-aided speaker design program should be a useful addition to every loudspeaker engineer's PC-based audio workstation.

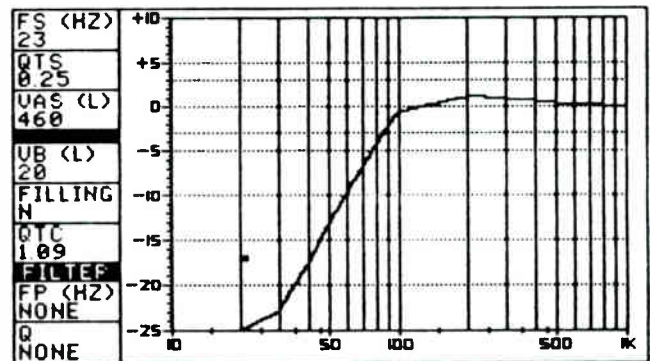


Figure 3

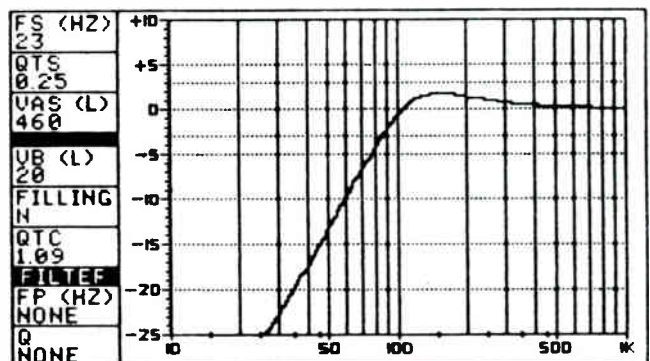


Figure 4

# How to keep your mixing board from holding you back.

Today's technological revolution is a battle fought on two fronts: quality and cost. Recent advances in recording equipment let you do more than you ever could before — And for less money. But what about your mixing console? Can it keep pace with recent giant steps such as the significant advances in the quality of analog and digital recording equipment? Without sacrificing your budget?



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RAMSA's T-Series consoles save you time, too. Each input channel simultaneously accepts Mic, Line and Tape signals. A time-saving feature, the Program Mix

control and stereo Solo switches let you choose the signal source you want without re-patching. So you get from basic tracks to final mix in record time.

Because with the RAMSA T-Series, you get a mixing board that does much more for less without holding anything back.



Pushbutton Input Selection

## RAMSA

Panasonic  
Industrial Company



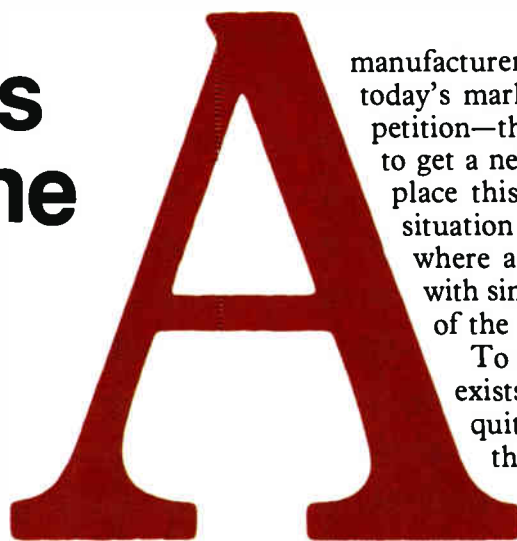
RAMSA WR-T820

Circle 219 on Reader Response Card

# How to Choose the Right Power Amplifier

## Guidelines Beyond the Specs

by Chris Foreman  
*Panasonic/Ramsa*



manufacturer introducing a power amplifier in today's market faces more than just stiff competition—there's a considerable challenge just to get a new power amp noticed in a marketplace this crowded! In theory, this kind of situation should produce a buyer's paradise, where a large number of similar products with similar specs compete for the attention of the relatively small number of buyers.

To some extent, such a buyer's market exists. The primary reason it has not quite reached "paradise" status is that the manufacturers have refused to comply with one major requirement—the need to produce a large group of *similar* products.

In fact, in an attempt to get their products noticed, manufacturers have given buyers a surprisingly diversified choice of power amplifiers with features and specs and even basic design concepts that can differ widely from model to model. The result is a combination of challenge and opportunity for end users and resellers alike. The challenges come from a bewildering array of choices. The opportunity comes from the chance to get a product that's a lot more than simply a good buy.

To help reduce confusion, I will explain a method for making power amplifier purchasing decisions. The method involves expanding the traditional list of power amplifier selection criteria and organizing it into a sort of buyer's checklist. The method should be valuable to a dealer looking for a new power amplifier line and to an end user or specifier involved in a purchase decision.

This article is written to guide those who already know the basics of audio systems and power amplifiers. It might seem that those people wouldn't need any help in making power amplifier purchasing decisions, after all, a power amplifier is a fairly simple component, right?

I used to believe that. I don't anymore! I used to believe there wasn't any hearable difference between any two modern, high-power amplifiers. The evidence, however, is overwhelming that such a difference does exist and that, in some cases, it can be dramatic. There are other reasons for believing that a power amplifier is anything but a simple component. The justification for a buyer's checklist like this is actually quite simple. The incredibly wide variety of available features and specifications means that, while it is probably difficult to make a bad purchase decision, it's certainly possible to make a better purchase decision by carefully considering *all* of the available options.

The decision-making process presented here is divided into six phases which are meant to be taken in order. It is possible to modify the selection criteria and use the method as a general audio system component purchase guide.



Stu Weiss

### PHASE I

**Early Weeding:**  
rough system design  
define application

### PHASE II

**Preliminary Budget**

### PHASE III

**Information Gathering:**  
trade shows  
trade publications  
direct from manufacturer  
local retailers

#### PHASE I: Early Weeding

It's possible to do an early weeding out of obviously inappropriate choices by doing a simple, preliminary definition of needs. This requires that at least a rough system design be finished (using generic components).

From the rough system design, briefly define the power amplifier application. How much power will be required per amplifier channel? Will the system be used primarily for high-fidelity music or primarily for voice with no need for high-fidelity music? Will the system be portable?

By doing this kind of preliminary definition, it's possible to eliminate more choices than might be imagined.

For example, if the system is portable and will be used for music, it's possible to eliminate those large, single-channel, transformer-coupled-output, 70-volt commercial amplifiers. That may be an extreme example, but by doing simple things like this, the field of choices can be narrowed.

#### PHASE II: Preliminary Budget

This is another early weeding exercise. By setting a preliminary, but realistic, budget range, another group of amplifiers may be eliminated. For example, a recording studio monitoring system design might require a very high fidelity power amplifier and allow a high price to achieve that

fidelity (the power amplifier will probably be a small fraction of the overall studio equipment budget). A football stadium sound system design, on the other hand, may require a large number of power amplifiers which make up a significant portion of the overall budget. In this case, a lower dollar amount would be allowed for each individual power amplifier than for the studio monitor system.

#### PHASE III: Information Gathering

Most of the information to be used in the decision process will come from

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The SDL-4 & SDL-5 with

## Power Cooling

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***Our new automatic mixer watches your microphones for you...and***

***Our new school & power intercoms make communications easier for you.***



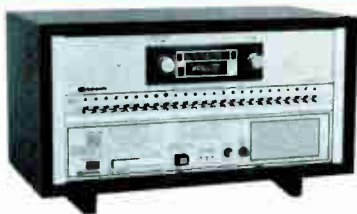
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## The One To Watch!

**PHASE IV  
Selection Criteria:**

**Traditional Economic**  
watts/dollar  
reliability  
warranty

**New Economic**  
sellability

**Traditional Features**  
attenuators  
meters & other indicators  
input balancing  
input & output connectors  
protection circuits  
mono/bridge mode

**New Features**  
method of input balancing  
accessibility of controls  
switches & connectors  
type & action of protection circuits  
grounding method  
metering & indicators (again)

manufacturers' literature. That literature can be gathered at trade shows or by filling-out coupons or reader service cards from trade magazines.

Also check out the buyer's guides that appear each year in the various trade magazines. This *Sound & Communications Blue Book* is a good start.

Another favorite is the *Music and Sound Output's Buyer's Guide* (the 1987 edition is due out in November). This one is useful because it presents data in tabular form which can speed-up the preliminary weeding out process.

You can also get product data direct from calling the manufacturers. Local audio retailers are also good sources and, if they carry several lines of power amplifiers, they may be able to provide a lot of information from one phone call or visit.

Ask for suggested end-user price sheets, warranty information, and dealer lists when requesting literature from a manufacturer. This information, especially the pricing and warranty information, is very important in the decision process and you probably won't get it unless you ask for it.

**PHASE IV:  
Developing Selection Criteria**

Here's where the real checklist begins. Using this list will require some weeding out too, since much of the criteria mentioned here will not apply to a given application.

Power amplifier selection criteria can be divided into five basic categories: economic, features, specifications/performance, subjective, and practical. I've made one more division in each category and that's between what I call traditional selection criteria and new selection criteria. Since this is a list, I have added definitions and discussion as sparingly as possible.

In general, a purchase decision should not be made solely on the basis of any single criterion although some criteria will be more important than others for a given application.

*Traditional Economic Selection Criteria*  
(1) Watts Per Dollar. By this criterion, an amplifier that provides higher

# We Stock



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# FLY FIRST CLASS FLY TURBOSOUND

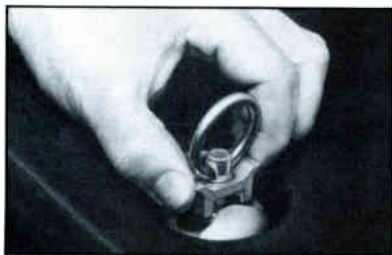
If your clients are as demanding as the engineers at Carnegie Hall, the Apollo Theater, the Grand Ole Opry and the National Convention Center of Japan, you should audition the speakers permanently installed in these and other top clubs and concert halls from New York to Nashville to Kyoto: Turbosound.

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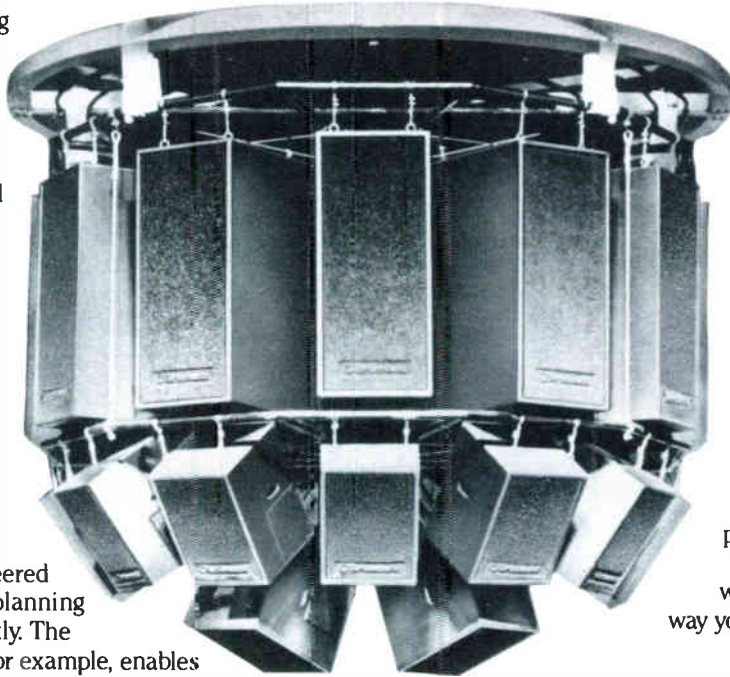
To make your job easier, we design certified, load-rated flying and angling points as an integral element of every Turbosound full-range enclosure. And the innovations we've put inside our pre-engineered speaker modules will cut your planning and installation time significantly. The patented\* TurboMid™ device, for example, enables our proprietary 10" driver to reproduce a seamless midrange from 250–3700 Hz. Its unique internal geometry creates a much higher 'Q' factor than conventional horns of equivalent frontal area. Tighter directivity greatly reduces interaction problems in multiple unit arrays, so planning an installation often involves nothing more complicated than laying coverage patterns over a set of blueprints.

## COMPACT AND EFFICIENT

Because neither you nor your customers should have to compromise sightlines to get full frequency response, every Turbosound full-range enclosure employs both the TurboMid device and the patented\* TurboBass™ device. Our high-velocity partial horn-loading technique enhances cone control and produces high levels of bass projection from astonishingly compact enclosures.

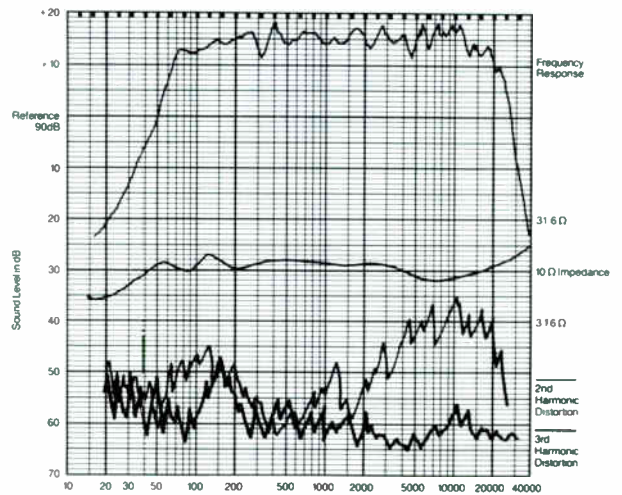


Integral mounting points accept optional flying rings.



## UNPRECEDENTED DESIGN, UNCOMPROMISING EXECUTION

We're equally demanding in the execution of our radically original designs. We use only the highest quality Finnish birch ply because we consider cabinetry an essential element of audio engineering. Virtually all of the drive units in these finely tuned acoustic structures are built exclusively to our specifications. When it comes to creating completely professional sound reinforcement systems, we recognize only one way to go — first class. If that's the way you feel about your work, call Dan Abelson at 212-460-9940.



Turbosound speaker modules like the TMS-2A charted above achieve low distortion levels and naturally correct, transparent sound without the need for unreliable, artificial compensating electronics. Linear dynamic response, phase coherency and optimized impedance curves enable our enclosures to reproduce transients with unflinching accuracy.



Only Turbosound is Turbosound.™

# Turbosound

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\*TurboMid™ and TurboBass™ devices are covered worldwide by Principle Patents, not simple design patents. The concepts embodied in these designs are, therefore, entirely unique. See Turbosound literature for full information.  
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Malaysia: Atlas Hi Fi Sdn Bhd Kuala Lumpur (03) 432104 432077 Norway: Nord-k Equipment a/s Oslo Tel: (02) 231590 Singapore: Atlas Sound (Pte) Ltd. Singapore Tel: 220-4484 Spain: Lexon s.a. Barcelona Tel: (03) 203-4804  
Sweden: Inter Music a b. Skovde Tel: (500) 85260 Switzerland: Studio M + M Schorenwerd Tel: (64) 415722 Thailand: Bangkok Prime/Graphic Center Bangkok Tel: (2) 314-3570 UK: Turbosound Sales Ltd. London Tel: (01) 226-0099  
USA: Turbosound Inc. New York Tel: (212) 460-9940 W. Germany: Acaam Hall GmbH Usingen Tel: (6081) 16031

#### PHASE IV

##### Selection Criteria:

##### Traditional Specifications/Performance

power output  
frequency response  
rise time & slew rate  
hum & noise  
phase response/shift  
circuit design philosophy

##### New Specifications/Performance

reactive load power output specs with optional transformers  
What happens when the amplifier clips?  
power supply type & regulation  
RF & hum susceptibility  
turn on/turn off transient protection  
needed gain/sensitivity  
damping factor/output impedance

##### Traditional Subjective

appearance  
sound quality  
fan noise

##### New Subjective

sound quality under stress  
sound quality with options

##### Traditional & New Practical

Who is the user?  
mechanical criteria

power at the same price is more desirable. Watch the rating methods, since there is still no single standard for rating amplifier power output. Also

watch the load impedance given for the power rating and compare amplifiers based on the same load impedance (as would be appropriate for

your application).

(2) Reliability. I consider this an economic criterion although it is certainly also a practical criterion.

(3) Warranty. In general, a longer or more comprehensive warranty is better although this can be modified by the availability of service and the ability and willingness of the manufacturer or dealer to support the product. Watch the details of warranties; they may vary widely from manufacturer to manufacturer.

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##### New Economic Selection Criteria

(1) Sellability. This one is for dealers. By this selection criteria, an amplifier is more desirable if it is easier to sell. Among other things, sellability is influenced by customer recognition of the brand name, U.L. and other safety listings, warranty provisions and, of course, price.

##### Traditional Features Selection Criteria

(1) Attenuators. Input attenuators (volume controls) have received a lot of attention in the last few years. Some amplifiers have their input attenuators calibrated in dB. Some have no input attenuators at all. Some are on the front of the amplifier, others are on the back. The desirability of any variation on this feature is very application-dependent.

(2) Meters and Other Indicators. If included, meters may be true VU or peak-reading or a combination. Other indicators may show that a signal is present or that output is near or at the peak amplifier capability. Still other indicators show power on and various warning conditions such as thermal shutdown. The desirability of these features is application dependent. In general, accurate meters and indicators are more desirable for portable systems and for systems where a human operator is actively involved in the minute-

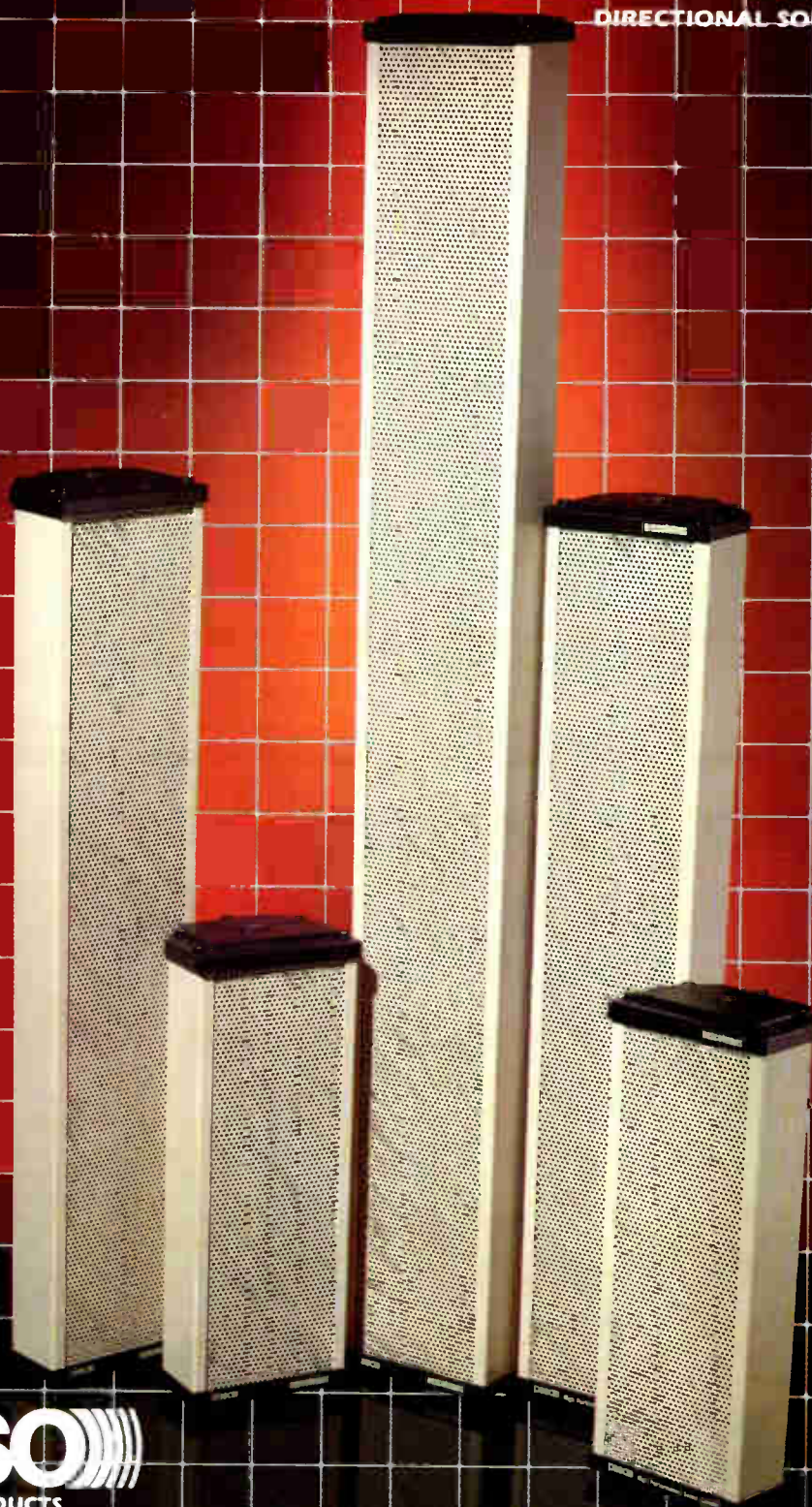
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**PHASE V**  
Second Weeding

**PHASE VI**  
The Final Selection:  
safety & support

to-minute operation. In permanently installed systems where the operator simply monitors the system, the most important indicators are those status indicators which display such things as power on and thermal warning and so on.

(3) Input Balancing. The benefits of balanced lines are well known. If the amplifier offers electronically-balanced inputs or optional transformer-coupled balanced inputs, this is probably a plus. It is possible, however, that a poor-quality input transformer could degrade performance or that a poorly designed, electronically balanced input could allow noise to enter the audio signal.

(4) Input and Output Connectors. The type of input and output connectors may be important but the desirability of any particular type is application-dependent. XLR inputs and five-way binding post (banana) outputs are common and good choices. High-quality phone plug inputs and outputs are acceptable second choices. A permanent installation might call for terminal strips inputs and outputs.

(5) Protection Circuits. The amplifier should protect itself against any conceivable import signal and output load and it should protect the loudspeaker against turn-on/turn-off transients and against catastrophic amplifier failure.

(6) Mono/Bridge Mode. Most two-

channel power amplifiers can be switched into a mono mode where the two channels feed a single loudspeaker load at twice the single-channel output power (load impedance restrictions may apply). This is a desirable feature—if you need it.

(7) Other Power Amplifier Features. You can add your own here. Also see the Subjective and Practical lists.

*New Features Selection Criteria*

(1) Method of Input Balancing. Careful consideration of this feature is appropriate. A well-designed input trans-  
*(continued on page 71)*

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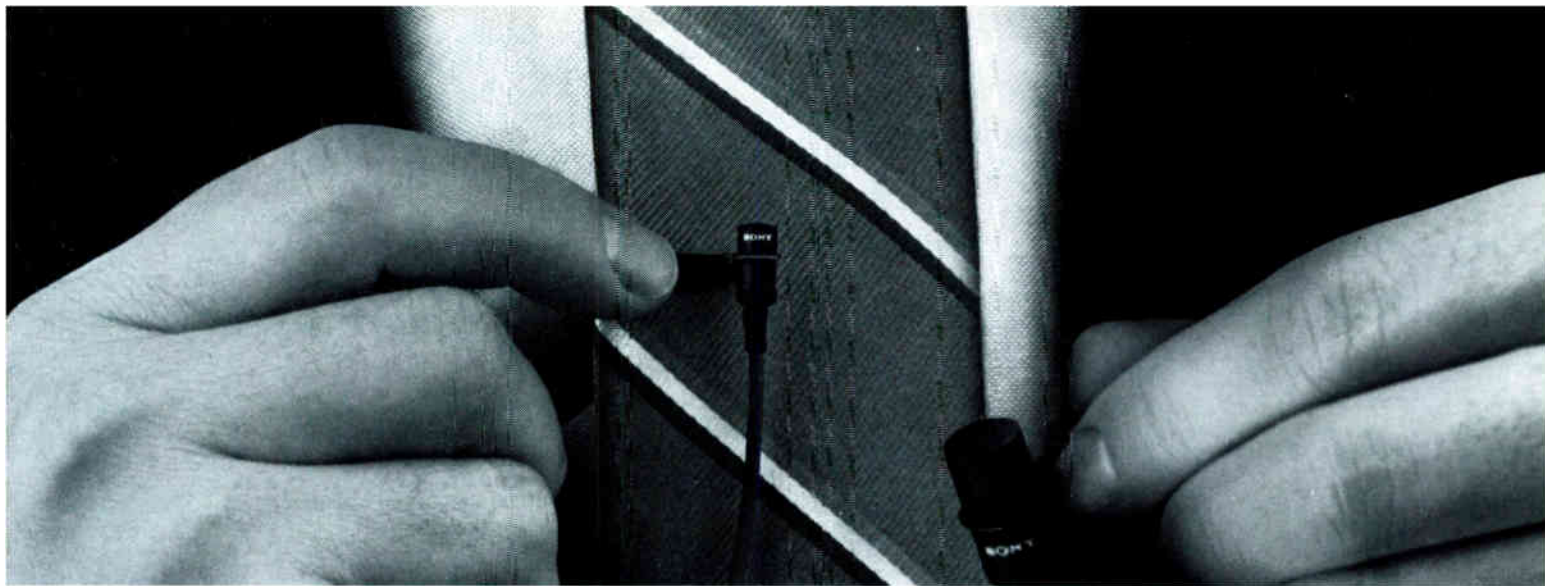
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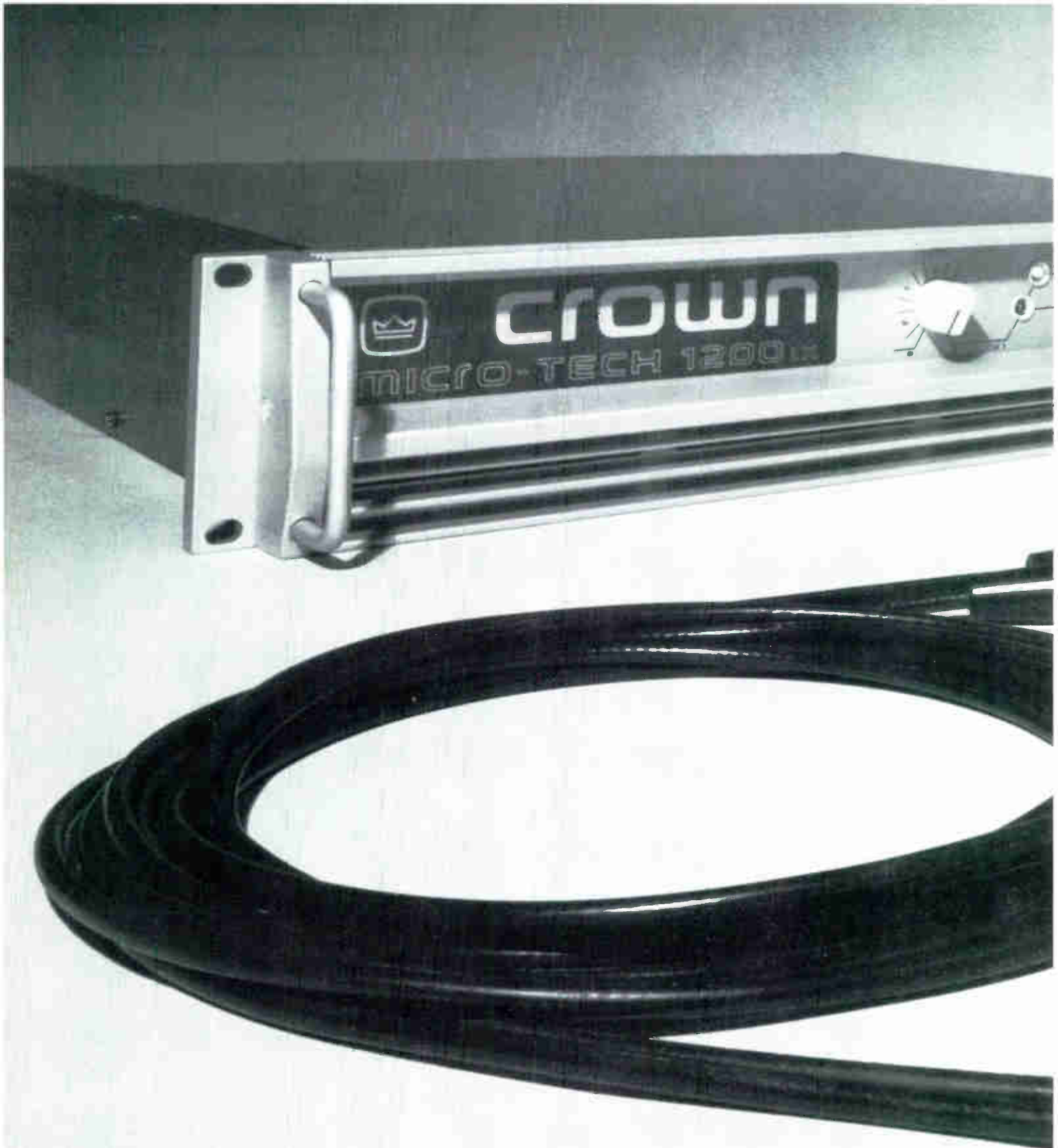
So to see (barely) and hear (very clearly) the results of Sony's refusal to rest upon its laurels, call your Sony representative: Eastern Region, (201) 368-5185; Southern Region, (615) 883-8140; Central Region, (312) 773-6000; Western Region, (213) 639-5370. Or write to Sony Professional Audio Products, Sony Drive, Park Ridge, NJ 07656.

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# FOREGROUND

## Fad or the Future?

**M**ost retailers agree that the longer a customer stays in a store, the more likely he is to make a purchase. The latest method retailers, such as Macy's and The Limited Express, are using to stop customers in their tracks is music videos.

The video pop hits do more than just attract customers; they define a store's or a department's image. Retailers can even change programming to match the spirit of a particular line of clothing.

Unfortunately, because of the narrow scope of current music videos (most of the available software is aimed at 18-to 30-year-olds), the markets that the foreground music videos can reach is limited. Many of the offices, hotels, stores, and restaurants that make up the majority of the business music market would not be appropriate places to play the latest David Lee Roth or Talking Heads videos.

Relatively high costs for both hardware and software also limit the growth of video foreground sales, according to background/foreground music suppliers. But despite these drawbacks, some manufacturers report that they have done well in this small-but-growing market.

After 10 years of supplying the background/foreground music market, EMS/Music in Seattle, WA, decided last year to take the video challenge.

According to EMS Vice President Bernard Kron, it was the dealers who asked for it.

"Our dealers came to us and said, 'We want video.' The dealers said that they thought they could do a lot of business with video. One of the reasons it looked like a lot of business to them is that these are expensive systems. It's a lot in terms of the price of one system. But on a unit basis, it's a small percentage of our volume. The number of client locations that we're serving with the video product

tends to be very small. Video has done well for us, but it's done well as a small part of our total sales. One reason that it's important to us is that it allows us to supply our dealers with a full product line. Video isn't a major profit center, and we don't expect it to be. But we consider it extremely important to offer this service to our dealers."

While EMS has both hardware and software for background/foreground music, the company offers only software for video foreground music. "The hardware side is out of reach for us, or would require a whole different effort," Kron said. "It's being handled by very large industrial manufacturers. From the contractor's point of view, of course, he's always trying to spec competitively and he's going to try to make these consumer-oriented products fit the bill wherever he can."

Kron said his company's dealers have generated video software sales in the course of doing regular foreground music sales. When they encounter very large profit opportunities in the form of hardware sales on the video side, where the systems can be quite costly, they need software. It would be illegal to just hook up to someone's cable dish or wire in the local cable service. If someone had a clothing store where they were using music videos in the same manner that one would use background music, it would be illegal to play MTV over the store's video monitors. So video hardware customers need the software.

According to Kron, the threat of lawsuits is not the only factor influencing a customer's decision to buy video software. "People want the video software for the same reason that they choose audio software instead of the local FM station," he said. "With video software, there are no ads, and the operator has complete control over the product. To increase that control, we provide seven music-series



# MUSIC VIDEOS

by Iver Rose

formats, from Top-100 hits and country to the music of the 50s & 60s and R&B."

EMS charges the end user based on the hours of tape he receives per month. The cost of the service runs from \$100 to \$250 for between one and four hours of music monthly.

The dealer who originally sold the video hardware and the EMS video software gets a monthly commission on the software leasing charge. EMS bills the end user.

"The dealer gets a percentage commission on the user's monthly billing. It's exactly like our foreground music service in that the dealer profits from an ongoing relationship," Kron said. "We handle all the billing and distribution. This benefits our dealers, because they have one working relationship they can deal with. EMS is a company they know from audio foreground sales. A dealer knows he can make a video foreground music sale and, just like on the audio side, he can walk away from it and still get the commissions. He doesn't need to go into the video business."

**A**s one of the pioneers in foreground video, EMS has found a confusing tangle of licensing and loyalty regulations on music videos. Kron said: "If we use a video or audio cut by an artist on CBS, we have to pay a royalty to CBS for the use of that product. We do not, at this time, pay ASCAP or BMI for video rights. This is because a video rate for mass suppliers like us has not been negotiated yet. The retailers and club owners have to pay a fee for the video. It's fairly simple for the end users, because they pay a flat rate based on the size of their operation. But we would much rather pay it on behalf of our subscribers, as we do with audio material. Bulk recorders would end up costing the subscribers less than they're paying individually now. It would be attrac-

tive for us because it would allow us to offer a complete service. It's the one thing they haven't allowed us to do yet. But it will come. It's only a matter of time.

"Video is a fairly limited, though lucrative, market. It's pretty specialized in terms of the environment in which it can work. It has to be either a low-light environment or an environment which has a lot of high-intensity monitors. Our Macy's installation in San Francisco, for example, has 20 high-intensity monitors. So either the system cost is high, or the environment in which it can work is limited. The market that music video appeals to is much more limited than the market for music audio. The video product is simply too expensive for many customers. A local tavern that can afford a foreground music service like ours cannot afford one foreground video service. The cost of the video software is about six times as high as the cost of audio software."

Another Seattle-based background/foreground music supplier, Audio Environments Inc., entered the foreground video market last year. In an agreement with Rockamerica, a video software supplier, AEI has begun to distribute specialized foreground music video programming produced by Rockamerica.

One of AEI's customers, The Express Limited, is a fashion retailer known for using computers to track sales trends and quickly adopting new lines to respond to these trends. With custom video software, The Express Limited changes its video to match changes in merchandise.

Patty Chow, director of creative services at AEI, said, "The Limited Express: themes change a lot. They come to us and let us know what they want. They get an exclusive, custom program. The programming is mostly music videos, but they also insert more eclectic footage,



such as public domain footage.”

While The Express Limited chooses music videos and abstract footage for its programming, the store does not directly advertise itself in its tapes. According to Chow, no AEI/Rockamerica foreground video clients have done this. She said, “As for a store running an ad for itself in its video programming, I don’t feel that the market is sophisticated enough that we can produce that kind of custom programming.”

Other AEI/Rockamerica customers include Holiday Inn hotels and Big Bear restaurants. Chow reported the company has had moderate initial sales of the software. “Sales are pretty good, but it’s one of those programs that takes marketing development and educating the customer. The industry is still young, and people are getting adjusted to the fact that this is a new in-store marketing tool. Many people don’t know how they can take advantage of foreground video. They have to get adjusted to using a visual medium and to paying higher prices than they pay for foreground and background audio.”

Sight & Sound Entertainment of Seattle, WA, offers various types of video programming and customized

promotions and commercials for its end users. According to Michael Dukane, president of Sight & Sound, there is a problem with “generation interpretation” of videos.

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*The cost of a video system installation averages between \$15,000 and \$40,000. On a national level, foreground video is estimated to be a \$20 million industry.*

---

“From a perception standpoint, the older set interprets video to be just rock ‘n’ roll. This is because when most people think of video they think of MTV. But you have to remember that MTV is just like a radio station; they program by what fits their au-

dience,” Dukane said. “We can do all kinds of programs, from country music to nostalgia. But we, and the contractors, have to educate the consumer to this.”

According to Dukane, the market will also expand as the age group which identifies with video gets older. “Because of this fact,” he said, “the argument that video is just a passing trend is getting easier to dispell.”

Admittedly, Dukane said, “Whether foreground *music* videos will stay hot is in question. But, technology is not a fad but a prelude to more advantageous and more profitable arrangements.”

The basis for a company buying a video system is not just music, but merchandising, advertising, and information, Dukane said.

For Sight & Sound, which has experienced over a 100 percent increase in growth every year since its beginning in April 1982, foreground video has been a very profitable market.

And a very profitable market indeed. The average cost of a foreground video installation is \$15,000 to \$40,000, according to Dukane. And, he said, on a national level, foreground video is about a \$20 million a year industry.

## SOUNDSPHERE DISTRIBUTES MUSIC EVENLY



The old seaport of Rowayton, CT is a quaint, contemporary residential area for many commuters who work in New York City advertising and P.R. agencies, law firms, stock brokerage and corporate headquarters. Many of these people often visit M. Robert Ltd. Hair Studio to have their hair coiffed in the latest styles.

The long, narrow space previously had four box speakers that required a volume level that was too loud for people near them and too soft for people at a distance.

Recently, the entire salon was re-decorated with a white-on-white theme blended with soft, warm lighting. To continue the theme, Advanced Audio of Norwalk, CT installed two white #110 Soundpheres on the ceiling for background music. The even dispersion of hi-fi music caused many patrons to question the source of the music because the white #110's blended into the white decor. Mr. Robert and his employees have concurred that the evenly dispersed sound creates a relaxing atmosphere within which to work.

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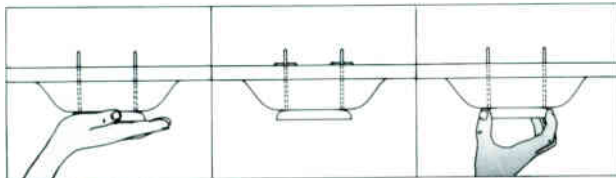
Even with metal or plaster ceilings, installation is simpler than with traditional loudspeaker baffles.

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Insert wires puncture ceiling tile. Retaining clips "lock" speaker into ceiling.

Remove clips, pull downward to release.

puncture the ceiling tile while the retaining clips create a counter tension that "locks" the baffle into the ceiling. To relocate, simply remove the retaining clips and tug firmly in a downward motion and the baffle releases itself.



\*after 1 year, warranty does not cover labor or shipping.

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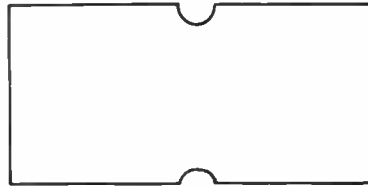
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The downside of all to this is the lack of education within the market. "Not many system contractors have added video to their offerings. And, it is very difficult to come across a video contractor. Therefore, many retail stores are taking the video equipment and monitors from their television departments and doing their own installation. Since these electronics are not made to withstand constant use, there are a lot of problems and breakdowns. All these problems give the end users a bad impression of video," Dukane said.

EMS/Music and Audio Environments have already taken the video plunge, but other background/foreground music suppliers have not yet ventured into the video foreground market.

Rick Barker, marketing communications development manager at Sound Products/3M of St. Paul, MN, said his company is considering video, but sees many problems with the medium.

"We're examining video to see what type of future it has in the marketplace," Barker said. "We haven't decided yet if there's a viable market for it or not. It certainly offers the end user another way to attract customers, and it offers us another way to provide service. But we have to consider the total impact it would have on the customer and the attention video requires. Obviously there is some interest and there has been some success with certain applications. But is that success just a blip on the screen or is it long-term? Since it's basically linked to music videos, foreground video will probably parallel the success of music video. But how long will the interest in music video last?"

William E. Fox, general manager of Seeburg Music Satellite Network in Raleigh, NC, reported that his company has little interest in entering the foreground video field.

"We have not become excited about foreground video," Fox said. "I think a lot of the market is rather limited to fashion retail. There's no application for it at all in offices or restaurants or in a lot of places which background music or foreground music applies."

While some background/foreground music suppliers see little potential in foreground video, other companies have already developed products for this new market. Will foreground video continue to make headway in the business music industry? If it does then profits will go to the innovators.



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# ACOUSTICAL TREATMENTS

## *Principles & Practices*

by Jesse Klapholz

**W**hen a contractor installs a sound system, he is interfacing an active electroacoustical system with a passive acoustical space. Whether using a loudspeaker with a single driver, an all-in-one system, or a custom designed system, the loudspeaker's output will ultimately travel through the room, bouncing off walls, ceilings, floor, and countless other surfaces. While the problems of echos, reverberation, noise, and vibration are well-documented, the contractor may find it useful to understand the basics of acoustical-modification materials and how they may be used as an integral part of any sound system installation.

Armed with sophisticated analyzers and signal processors many designers and installers may go astray from what the old timers taught us about acoustics. Some problems just cannot be solved with electronics. Often, the problem or deficiency found in a sound system or a room may be remedied with a judicious application of acoustical-modification material.

### **Sound & Vibration**

What we know about electrical impedance can be useful here. Electrical energy is transferred from one point to another when the impedances are properly matched. Similarly, in acoustics the efficiency of energy

transferred is dependent upon the impedance of the materials through which the sound and vibrations are travelling. Simply stated, the technique of attenuating the transmission of vibrations and sound from one medium to another is a matter of mismatching the impedances. For example, instead of placing a subwoofer cabinet directly on a concrete floor, a softer material, like rubber, can be placed in between the cabinet and the floor.

Sometimes, there are discrete frequencies that can be perceived as a strange resonance. This is when a spring-suspension system may be employed to de-couple the source-system from the transmitting medium. The spring's construction criteria are based upon the weight of the load and the resonance-frequency that is desired to be de-coupled. Once these parameters are identified, a commercially available unit may be selected.

### **Reflection, Absorption, & Diffusion**

Often when reflection is a problem, absorption is thought of as a first solution. However, a proper balance between the direct field and the reverberant field levels should be maintained. What is absorption? In our high school physics days, we learned that energy can be neither created nor destroyed—it can be only converted from one

form to another. For example, when sound strikes a piece of fiberglass insulation, the fine strands of spun-glass rub against each other and convert the movement of air particles into heat.

The first scientist to observe and quantify the measure of a material's ability to absorb sound energy was Wallace Clement Sabine—the Father of Reverberation. We are all familiar with the Sabin unit of absorption notated as a coefficient. Furthermore, we are also interested in a material's effectiveness in attenuating sound as sound passes through it—or the material's transmission loss (TL). Materials that can be used to absorb and/or attenuate sound include fiberglass, mineral fiber, cellulose fiber, open-cell foam, felt, carpet, and fabric.

### **Applications**

There are two examples of applying sound-attenuating materials to loudspeaker devices: columns and horns. Inherent in the designs of loudspeaker columns or line sources is the interaction of the high-frequency beaming of the individual drivers. Various methods are employed to reduce this effect including electrical tapering and co-

*Vista Sonic mirrored ceiling panels from USG Corp. have absorption characteristics similar to acoustical ceiling panels.*



linear arrays. The only method which reduces high frequency lobing by applying acoustical-modification materials is by Klepper and Steele.

The Klepper and Steele method employs the application of a pair of tapered wedges to the outside of the column. The high-frequency reproduction of the individual loudspeakers is proportionately attenuated with increase in distance from the center of the column. This can be applied to any column that has not been tapered with other means. Thus, two pieces of fiberglass and some cloth may make that

column work that you installed in that church last month when equalization would not remedy this situation.

Most horns have some clearly defined coverage angles with 3, 6, and 9 dB down points, with respect to the on-axis SPL. Usually, when we use these devices, the farthest listener is on-axis with the horn, and the closest listener is on about the -6 dB down point. The object is to place the listener that is 6 dB closer than the farthest listener, at a point in the coverage angle of the horn that is attenuated by 6 dB. But, what do we do

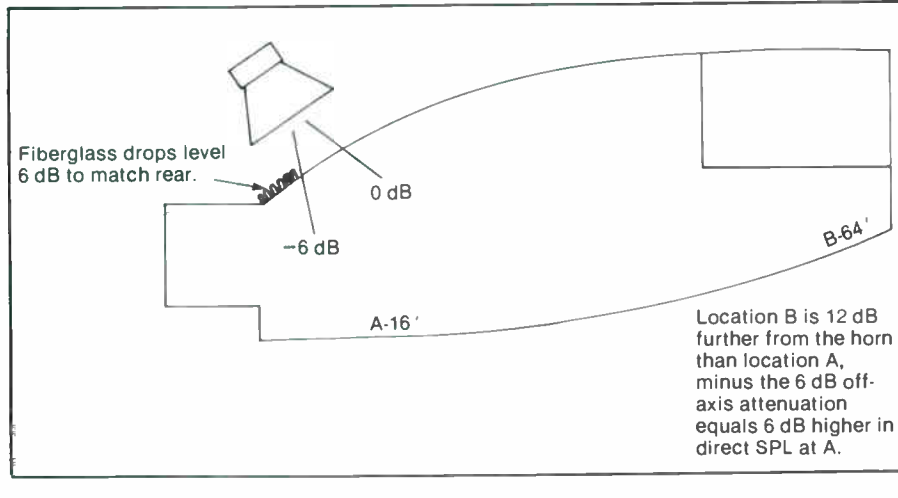
in those situations where the closest listener is at a point that is 6 dB hotter than the farthest listener? What is needed is a horn that has a wide horizontal and a narrow vertical coverage pattern. Since no manufacture makes such a constant-directivity device, we have to physically modify an existing product.

Many sound system designers and installers are quick to overlap horns, re-aim, equalize, etc., when a little fiberglass that will attenuate the near-coverage part of the horn will do the trick. The off-axis response can easily be attenuated to the proper degree by adding thin layers of sound-attenuating fiberglass until the proper coverage-versus-level is achieved. This can be accomplished by simply laying the fiberglass on the inside of the grille when a horn or cluster is behind a cloth speaker grille. When the horns are exposed it is a bit trickier. The fiberglass has to be attached near the mouth of the horn in the form of a wing.

Fiberglass insulation is commonly available in two varieties: thermal and sound. The thermal type is usually pink and is often rated for its "R" value. The sound-attenuating type is usually yellow and is rated with a sound absorption coefficient. The strands of glass in sound-attenuating materials are heavier than those in the thermal-type in order to convert the sound energy into heat energy more efficiently than its pink counterpart. When looking closely at the yellow stuff, the longer, heavier fibers can easily be seen.

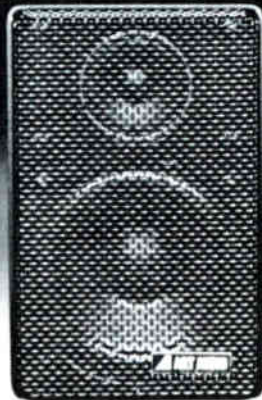
There is one more attribute to sound-attenuating fiberglass that is an important factor—density. Density is specified in pounds/cubic-foot (PCF). Sound attenuating fiberglass materials are at a minimum, twice the density of thermal insulation. Most fiberglass sound-attenuating materials range in densities of .75 to 6 or 8 PCF. The densities of special materials may reach 18 to 20 PCF.

Another common problem source is those superfluously-founded comb-filtered loudspeaker responses. When a discrete early reflection arrives at a listener, such that it is not coherently perceived with the direct sound, frequency-selective cancellations will occur. As much as we try, these cannot be recovered electronically. Usually, absorption using the appropriately chosen material will eliminate this non-coherent source, most commonly encountered when a device is located



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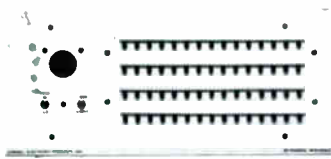
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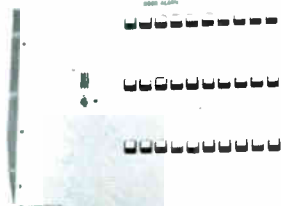
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near a wall or ceiling.

When it is not desirable to alter the reverberant energy level in a room, diffusion of impinging sound waves on a room's surfaces is the proper solution.

nasty echos that have ruined your installation.

Recently, when tuning a sound-reinforcement installation, I found many resonances emanating from the

**T**he contractor may find it useful to understand the basics of acoustical-modification materials and how they may be used as an integral part of any sound system installation.

This was accomplished in traditional architecture with intricate multi-faceted structures and ornaments. Smooth walls and ceilings have taken the place of these ornate designs making diffusion difficult. In smaller rooms, where excessive absorption may deaden a room's reverberant characteristics, diffusion may be installed with specially designed devices or some aesthetically acceptable multi-faceted structure. This diffusion will scatter or break-up a direct reflection without changing the overall reverberant energy level. It will eliminate those

back-boxes. These resonances were the primary peaks in the response and, therefore, were the dominant feedback modes. These modes could have been tuned-out, using a number of the available filter sections, introducing unnecessary noise, and ruining the fidelity of the system. An alternative physical solution was found: cardboard tubes and several cans of expanding insulation foam. The tubes were placed around the outside of the cans as forms, and then the surrounding space was filled up with foam. This stiffening eliminated the



*Varitone Modules from Industrial Acoustics Company control noise by absorbing the sound waves striking the hard reflective surfaces of the block wall and concrete ceilings in this prison installation.*

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resonances in the cans, and minimized the amount of equalization. The system exhibited excellent stability and high fidelity.

Thus far, we have discussed the applications of acoustically modifying materials to the space or loudspeaker



*Varitone Sound-Absorbive Modules are attached to the sidewalls and suspended in squares from the ceiling in Hall A of the Washington (D.C.) Convention Center. The modules reduced the reverberation time in the hall from 6.4 seconds to 2.9 seconds.*

itself. There are also, several off-the-shelf special devices such as the Tube-Trap from ASC Corp, that can be valuable to the contractor. Although Helmholtz resonators and bass-traps are not new, a closer look at these devices may be of interest.

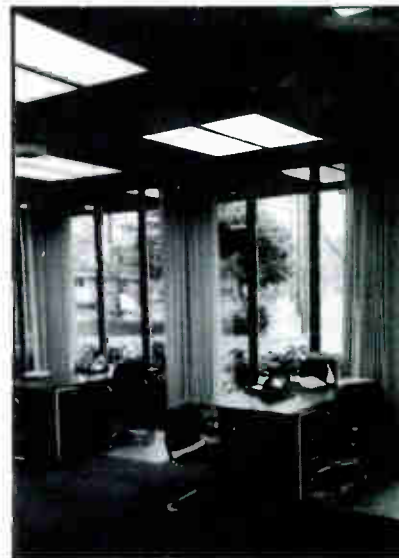
The Tube Trap is primarily constructed around two elements: an internal air chamber and a porous wall. The construction of the trap improves the efficiency of energy transfer (from motion to heat) of 3 PCF fiberglass. The surface of the cylinder is 50 percent reflective at mid/hi frequencies, and 100 percent absorptive at the low-end. This crossover is accomplished by an internal limp-mass panel that covers half of the device, which allows one to tune the trap by simply rotating it.

The traps may be used in the corners of rooms to reduce low-end room resonances, which are inevitably excited by sound systems. The traps may also be placed around the perimeters of the room, on both the walls and ceilings, to improve transient response, comb-filtering, and decay ringing.

The traps do not require sophisticated analysis to tune a room.

Many times the solution to a fold-back/monitor for a performer has been

a sheet of plexiglass fabricated around a mic stand. Another solution may be the RPG Diffusors from RPG Diffusor Systems, Inc. The RPG (reflection phase grating) diffusors consist of a periodic grouping of an array of wells of equal width but varying depths, separated by thin dividers. The depths are based on Manfred Schroeder's mathematical number-theory. A dif-



*Acoustic Sciences Corp. Tube Traps used in a bank application.*

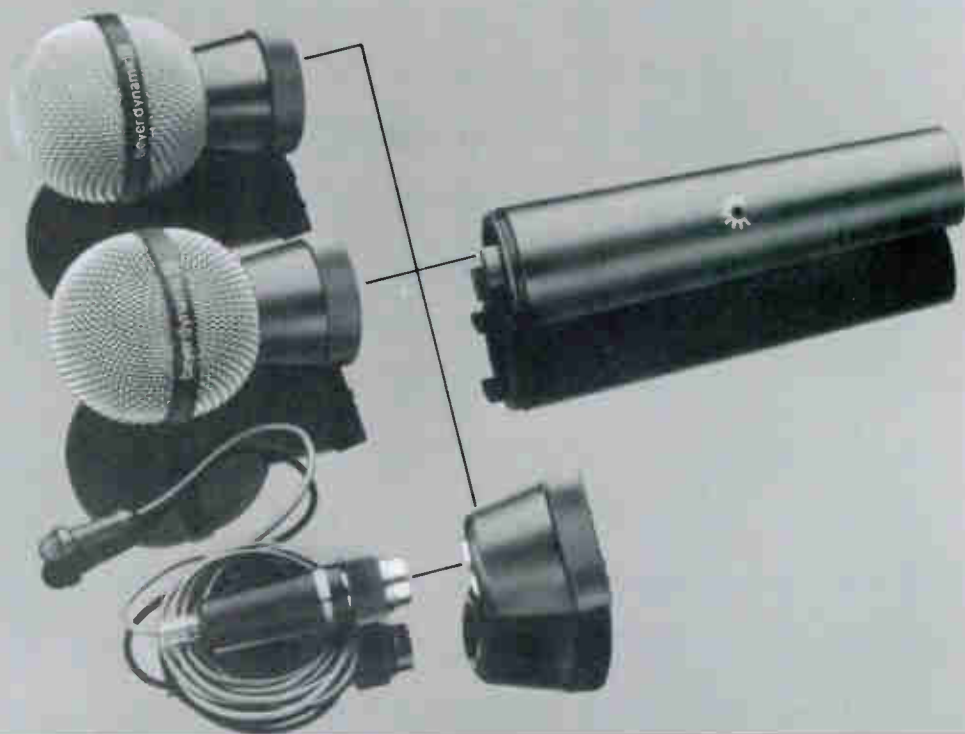
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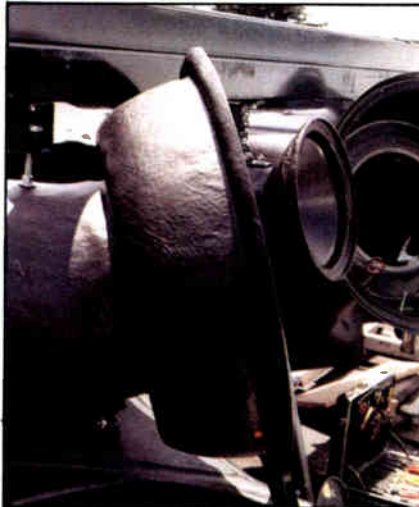


F-885

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**S**ome problems just cannot be solved with electronics. Often, the problem or deficiency found in a sound system or a room may be remedied with a judicious application of acoustical-modification material.

fusor which RPG offers, based on this theory, is called a QRD (quadratic-residue diffusor). These systems afford excellent diffusion properties over five musical octaves by providing uniform temporal characteristics and even frequency distribution. The RPG panels



may be incorporated into any environment as hanging panels, part of a ceiling or wall, or part of an orchestra/ band shell. The panels may also be used to aid communications around a boardroom table, or in conjunction with reinforcement systems to assist in providing uniform coverage and minimizing room interference.

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*IAC's Varitone Modules are also used to correct the acoustics in the band room at the University of Tennessee at Chattanooga.*



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### Acoustical Termination

The problems of interfacing active electroacoustical systems with passive acoustical spaces can be solved with acoustical-modification materials. These materials and their proper applications will help make many installations successful ones that perhaps would otherwise not work at all.

### For Further Information

"Compendium of Materials for Noise Control," NIOSH-Technical Report, available from the U.S. Government Printing Office, Washington D.C. 20402-9325

Alton Everest, *Acoustics Techniques for Home & Studio*, Tab Books.

David M. Egan, *Concepts in Architectural Acoustics*, McGraw-Hill, 1972.

V. Knudsen & C. Harris, *Acoustical Designing in Architecture*, American Institute of Physics for The Acoustical Society of America, 1978.

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803-839-6341  
8

**Monster Cable**  
101 Townsend St.  
San Francisco, CA 94107  
415-777-1355  
6

**National Cellulose Corp.**  
12315 Robin Blvd.  
Houston, TX 77045  
713-433-6761  
5B, 6, 7

**National Gypsum Company  
Gold Bond Building Products**  
325 Delaware Ave.  
Buffalo, NY 14202  
716-852-5880  
1, 6

**Owens Corning Fiberglass Corp.**  
Sound Laboratory  
Bldg. 300  
Grandville, OH 43023  
614-587-9610  
1, 4, 6

**Pittsburgh Corning Corp.**  
800 Presque Isle Dr.  
Pittsburgh, PA 15239  
412-327-6100  
4, 6

**The Proud Foot Company Inc.**  
P.O. Box 9  
Greenwich, CT 06830  
203-869-9031  
6

**RPG Diffusor Systems Inc.**  
12003 Wimbledon St.  
Largo, MD 20772  
301-249-5647  
7

**The Soundcoat Company, Inc.**  
175 Pearl St.  
Brooklyn, NY 11201  
212-858-4100  
2, 5A, 7

**Thermocon Products Co.**  
2508 Marlin Hwy.  
Waco, TX 76705  
817-756-3713  
5B

**USG Corp.**  
101 S. Wacker Dr.  
Chicago, IL 60606  
312-321-3865  
1, 6

**Wenger Corp.**  
P.O. Box 448  
Owatonna, MN 55060-0448  
3, 6, 7

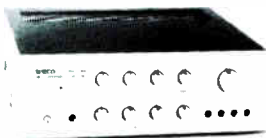
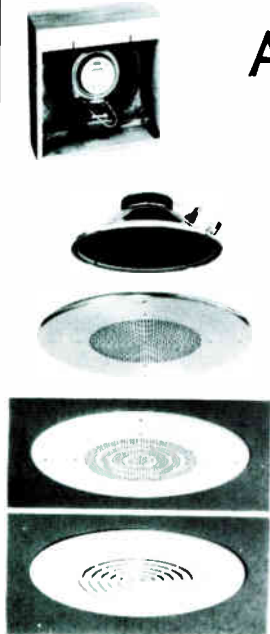
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Our Professional Sound Lab insures the outstanding quality of our products through a series of tests, including Doppler lasers, holography lasers and anechoic chambers. Products are also tested by computer for phase uniformity, transient response and frequency response. Then, using only the finest



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Circle 228 on Reader Response Card

World Radio History

# PRODUCTS IN REVIEW



## JBL ENTERS VIDEO MARKET WITH VIDEO PROJECTOR

JBL Professional has entered the commercial/industrial video projection market with the introduction of the 6810 Video Projector. The unit was developed for restaurants, nightclubs, churches, classrooms, auditoriums, and corporate boardroom facilities.

Without using an external tuner, the JBL 6810 can pick up television broadcasts because the projector contains its own 178-channel cable-ready stereo tuner and amplifier. The unit also automatically decodes stereo broadcasts and second audio programs. In addition, the 178-channel

capability enables direct hookup to many cable distribution systems without the need for an external converter box.

As the stereo tuner delivers clear reception, the highly-refined picture on the screen is provided by extra-wide video bandwidth circuitry, optics and liquid-cooled tubes. For boardroom settings, the video projector can be connected to a computer to display spreadsheets, text and graphics. Superimposing graphics over the picture can be accomplished by utilizing an external character generator.

The JBL 6810 contains three F inputs for antenna, cable or other sources, plus two sets of direct video and stereo inputs to simultaneously accommodate a VCR and videodisc player, and on RGB input, switchable for TTL or analog input signals.

Mounting is simplified, as the JBL 6810 can be positioned on the floor or ceiling, or on a cart, shelf or cabinet. The unit adapts to both front and rear projection on curved or flat screens

ranging in size from five to 15 feet diagonally. Once installed, changing channels, switching to stereo, adjusting the volume and varying the tint is handled with a wireless, 40-function remote control unit.

Circle 3 on Reader Response Card



## 3M MESSAGE REPEATER FOR P.O.P. MERCHANDISING

A new Message Repeater Playback/Record System from 3M, designed for point-of-purchase displays, can broadcast messages automatically at pre-selected intervals without operator attention. The unit can be triggered manually or by remote control.

With the message repeater, Model 456, audio messages can be recorded and monitored on site. The unit also offers messaging services, including scripting, voicing, duplication and distribution. Up to 12 separate messages can be recorded per cassette side. The machine uses cassettes with tone or silence sensing formats.

A digital display indicates the message number/recording time, and LEDs indicate machine mode: search, broadcast, monitor, or record. Message selection switches and an automatic inject timer provide in-store programming.

The unit is designed to interface with 3M Sound Systems or other existing sound systems. It can be rack mounted and has music muting during message injection. It also has a built-in monitor speaker and independent volume controls for message output, auxiliary output, auxiliary mute and monitor.

Circle 4 on Reader Response Card

## TEKTONE OFFERS NEW ALL-PURPOSE INTERCOM SYSTEM

TekTone Sound & Signal Mfg., Inc. has introduced the TekDoor Intercom System featuring the new SM-201 master station.

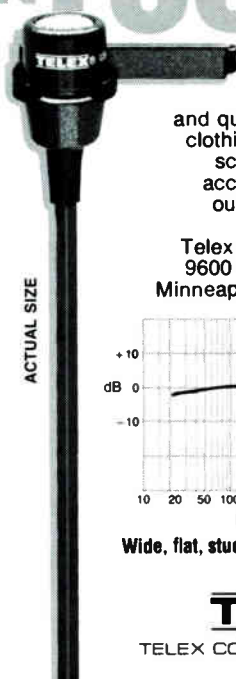
The system is designed for applications where communication and door

## The Telex LM-100 miniature lapel mic system

# TINY but TOUGH!

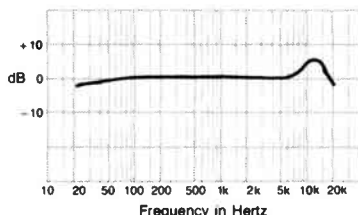
The LM-100 is an omnidirectional condenser microphone system which includes the tiny LM-101 microphone and Telex PS-10 in-line phantom power supply. This microphone was designed for day-in and day-out professional use under the most adverse conditions. In environmental testing, the LM-100 performed perfectly in extremes such as below zero temperatures, snowy television interviews and on location in the boiling heat of a desert Hollywood movie set.

The Telex lapel mic has a non-glare black finish and is supplied with three styles of mounting clips. The microphone has a three foot cord terminated in a TA4F plug. This specially designed cord is extra supplied



and quiet to prevent irritating clothing noise. A foam wind screen is available as an accessory for extra windy, outdoor use. For detailed information write

Telex Communications, Inc.,  
9600 Aldrich Avenue South,  
Minneapolis, Minnesota 55420.



Wide, flat, studio quality frequency response

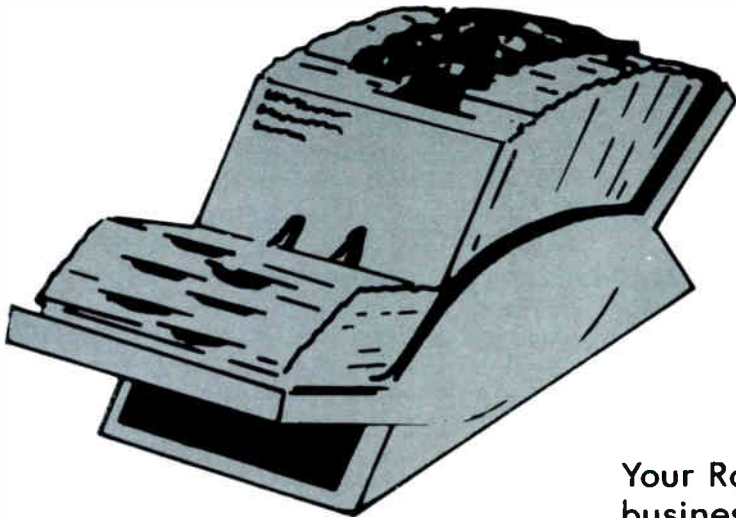
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opening to a single location is desired. The SM-201 master features hands-free reply, distinctive call tone, low voltage wiring, surface or desk mounting, door opening, and talk/listen.

Circle 5 on Reader Response Card



### NEW BOGEN AUDIO SURVEILLANCE SYSTEM

Bogen has introduced Soundguard™, a microprocessor-controlled audio surveillance system. It is designed to monitor sound levels and provide audible and visual alarms when user-programmed threshold levels are exceeded. In prisons, schools, malls, hotels, parking garages and other applications requiring protection of people and property, the system can alert security personnel to disturbances and distress calls.

The Soundguard monitor unit, mod-

el ASM25, scans the ambient sound levels at loudspeakers, which function as pick-up microphones for monitoring purposes. The same speakers can also serve, in conjunction with an intercom unit, to provide either paging or two-way voice communication with the alarm originating location.

Each ASM25 has provision for supervising and selecting 25 speaker circuits. Installations with more speaker circuits can use multiples of the ASM25. The unit mounts in a standard 19-inch equipment rack.

The ASM25 offers two user-adjustable threshold levels for each speaker circuit. (These can serve the differing requirements of day and night.) Each circuit can be set at any of 99 threshold levels for each time segment, according to its area's activity. Soundguard scans each speaker circuit consecutively for four milliseconds, samples its input 32 times and processes the information for comparison with the threshold level.

Circle 6 on Reader Response Card



### VOICE DIALING WITH MICROPROCESSOR PHONE

Voice Dialer™ is the new telephone from Innovative Designs that dials a number when the user speaks a name.

Incorporating the same microprocessor as an Apple II Computer, the telephone makes a wide range of telephone uses convenient and efficient. Upon hearing a name that has been programmed in its memory, Voice Dialer will dial the phone number, automatically choosing between the home number and work number, and will route the call, if

## OUR PRODUCT LINE WON'T LEAVE YOU SHORT ...

A company that can offer you a complete product line is a company that can save you time and money. Whether you're looking for an intercom and security system for a large apartment house, an inter-communication network for the office or an entertainment/intercom system for your home, we have what you need. So, let TekTone be your one-stop source for

fine products such as the EK-804A radio/intercom, IR-204 apartment station, SM-201 two station all-purpose intercom, TE entry control series, SM-210 office intercom, NC-150U nurse call system and the VM-102A video intercom.



EK-804A



TE-100



IR-204



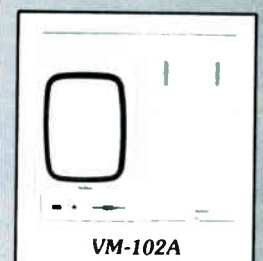
SM-201



SM-210



NC-150U



VM-102A

**TekTone**®

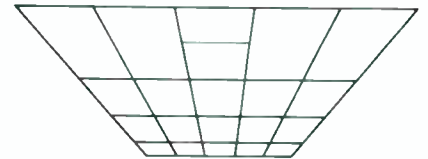
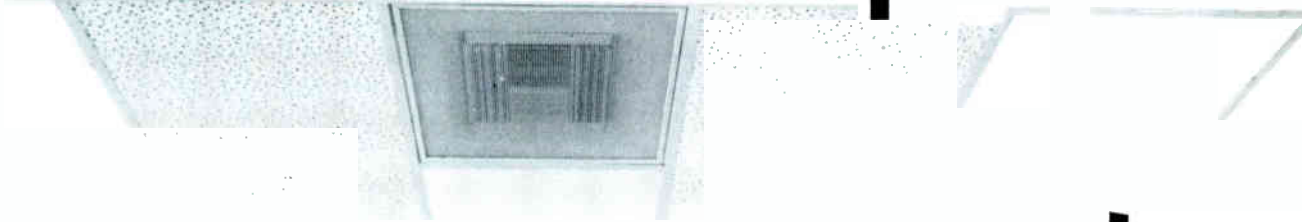
Sound & Signal Mfg., Inc.

1331 South Killian Drive

Lake Park, Florida 33403

305/844-2383

Circle 242 on Reader Response Card

**B.E.S.**

KEY

# Speakers That Are Heard But Not Seen

## The End Of Expensive Cosmetic Covers

With conventional cone speakers, and their unsightly perforated grilles, a room must sometimes be designed in advance to hide or disguise the speaker. This takes careful, long range planning and close cooperation among designers, contractors and manufacturers. The end results are, at best, a compromise: muffling the sound in a clever (and usually costly) plan to hide the ugly duckling.

## Technology Solves The Conflict

Now, it is no longer necessary to grapple with the conflict that exists between what a customer wants and what technology can provide him. The B.E.S. C70, so radically different it is covered by 22 patents worldwide, offers what everyone wants in a ceiling speaker — total invisibility. What B.E.S. does so well sonically, creating a convincing sound field from an inconspicuous flat panel, we can now offer visually — a loudspeaker that not only sounds superior (because it sounds natural) but which becomes virtually *invisible* by blending with the ceiling in which it is installed.

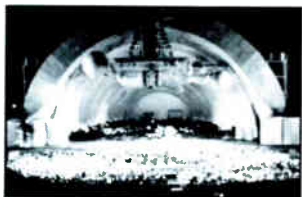
## Where Can You Use Them?

Applications include offices, hotels, restaurants, retail stores, conference rooms, night clubs — literally any environment that is design sensitive. B.E.S. technology has proven itself in a wide variety of applications. Our outdoor speakers are working in installations from Fairbanks, Alaska to Hollywood, California. To establish long term proof of performance, we installed 128 of them to provide sound augmentation for the Hollywood Bowl. After nearly three years of temperature and humidity extremes, we're pleased to report original performance is *unchanged* as they continue to delight demanding audiences.

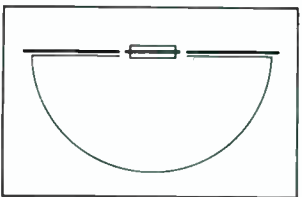
## How To Save Money — While Improving Your Sound

Invisibility is only part of the story. The revolutionary B.E.S. flat diaphragm technology means omnidirectivity — perfectly dispersed sound over a full 180 degree arc at *all* specified frequencies. The results: • Greater intelligibility. • Higher fidelity. • Much smoother coverage using far fewer speakers. (In most installations one B.E.S. C70 will replace four to eight conventional speakers.)

Whatever the application, the B.E.S. C70 can fill it like no other product.

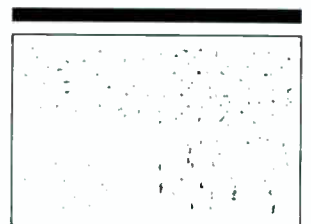


**B.E.S.: THE SOUND AT THE BOWL**  
B.E.S. technology has proven itself in a wide variety of applications. Our outdoor speakers are working in installations from Fairbanks, Alaska to Hollywood, California. To establish long term proof of performance, we installed 128 of them to provide sound augmentation for the world-famous Hollywood Bowl. After nearly four years of temperature and humidity extremes, we're pleased to report original performance is *unchanged* as they continue to delight demanding audiences.



## HOW TO SAVE MONEY — WHILE IMPROVING YOUR SOUND

The revolutionary B.E.S. flat diaphragm technology means perfectly dispersed sound over a full 180 degree arc at all specified frequencies. The results are greater intelligibility, higher fidelity, and much smoother coverage using far fewer speakers. In fact, in most installations, one B.E.S. C70 will do the job of four to eight conventional speakers.



## HOW WE DO IT

B.E.S. has solved the problem where it should be solved — right at the source: the loudspeaker itself.

**FIRST:** B.E.S. speakers are perfectly flat. The thin lightweight design is engineered to drop easily into a T-Bar grid ceiling.

**SECOND:** By using a special image transfer process, we can imprint each C70 with a perfect replica of virtually any acoustical ceiling tile pattern (the four most popular patterns are in stock. Others are available on request).

**RESULTS:** A distributed sound system that preserves a seamless, unbroken ceiling with a perfect visual match.

*Interior Design Series*

**B.E.S.**

COMMERCIAL SOUND PRODUCTS  
DIVISION

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World Radio History

desired, through a low cost telephone network such as MCI or Sprint.

Voice Dialer can store 100 names, with two phone numbers per name, and provides user-friendly spoken directions for most of the 20 built-in features. Voice Dialer's features include a personal password to lock the telephone, limiting outgoing calls to emergency numbers while still accepting incoming calls. A directory feature allows the user to look up phone numbers at any time—even during conversation.

The Voice Dialer has a suggested retail price of \$199.

Circle 15 on Reader Response Card

### INTERCOM & MUSIC SYSTEM FOR MEDICAL OFFICES

Talk-A-Phone Co. has introduced a dual-purpose intercom system for medical offices that enables music and/or announcements to play in the desired office areas.

The master unit, Model K-ML-5WA, is for use with up to five non-

private sub-stations. It can call, listen and talk with the subs individually, selectively, or simultaneously and can receive calls from the subs by tone signal or voice at the master's option.



Conversation continues by voice with persons at sub-locations operating no controls, for labs, surgical areas, or anywhere personnel must be able to answer hands-free. Built-in annunciator lights on the master identify which sub is calling, and remain on until answered.

The master is equipped with a built-in facility to connect, through companion Model K-RW-5WA Relay, any external AM or FM radio receiver or

tape deck for playing music, announcements, or commercials through sub-stations. The music automatically disconnects when stations are communicating, and automatically resumes when conversation is concluded.

In a typical system, background music or announcements are played through sub-stations that can be located in the dental offices, work areas, reception, or anywhere programs are desired. These same sub-stations can be used for music only, or for both music and intercommunication. With an optional origination-of-call unit, you can also call the master unit through a sub-station and receive a reply.

Circle 16 on Reader Response Card

### DUKANE'S EMERGENCY COMMUNICATIONS SYSTEM

Dukane Corporation has introduced its System 500, a supervised emergency audio communications system for improving communications and safety in hotels, hospitals, nursing homes,

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Introducing the latest BSS electronic crossover, the FDS360 is the most complete active frequency dividing system available — incorporating 24dB/oct Linkwitz Riley filters and mid-band limiting techniques pioneered by BSS — and combining them with an unbeatable range of facilities and options:

- Either stereo 2-way or mono 3-4 way. In 3 way mode the 4th band available as a full band mono feed with limiter.

# FDS360

THE AUDIO TOOLKIT



- Built-in mid-band limiters.
- Adjustable crossover point phase alignment.
- Group delay insertion points for each band.
- Filter options for frequency, slope, response and overlap.
- Internal equalisation option to match speaker designs.

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SYSTEMS

**THE NEW ALTERNATIVE!**  
(JUST COMPARE ... BETTER SPECS, QUALITY & VALUE)



At Ross, we recognize that sound reinforcement engineers and musicians require mixing consoles today that do far more and are much better than ever required in the past! Today, mixers are used not only for sound reinforcement, but also for keyboard players and advanced multi-track recording. When the Ross engineers designed the **RX8X2**, they focused on designing an extremely portable console that would easily fit into your 19" rack ... In addition, we designed the **8X2** with a flexibility never before available in this type board, including its wide dynamic range EQ, and highly versatile master section. **The new Ross 8X2** mixing console is designed for virtually every type of live performance, as well as the very demanding requirement of multi-track recording.

Of course, Ross has designed into each and every mixer better specs, quality, and value than the competition! Furthermore, the **8X2** is also available in a **12X2** and **16X2** version in addition to being expandable in four-channel sections, which allows your Ross mixer to fit all of your future needs.

Before you purchase your next mixing console, you owe it to yourself, your budget, and to the quality of your performance and recording to compare Ross against all competition!

**Rx8x2 MINIMUM FACTORY SPECS**

**Frequency Response:** 20Hz - 20kHz + 0.5dB - 1.0dB

**Total Harmonic Distortion:** 0.03%

**Equivalent Input Noise (EIN):** - 125dB Mic  
- 95dB Line

**Maximum Gain:** 70dB

**Crosstalk Adjacent Channels:** Better than 70dB

**19" Rack Adaptors:** Included

**Headphones:** 8 ohms

**List \$599.95**

Another Product of **IMC**

For a free ROSS RX8X2 Spec Sheet and Catalog, write:  
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apartment and office buildings, plants, schools, and other facilities.

Featuring compact modular design, System 500 provides up to 100-watts output for emergency tone and paging, covering up to 18 zones.

The system is compatible with any fire alarm system. When interfaced with a fire alarm, System 500 provides the emergency tone to any given zone or all zones.

In emergency situations, the microphone can be used to override the emergency tone to give evacuation instructions and relay important messages.

In addition to emergency communications, the system can be used for normal zone or all-call voice paging using a microphone, and/or a push button or dial telephone. Optional pro-

visions available for telephone access include a PBX trunk line, a PABX or centrex station line, a key system dedicated key, or a dial intercom unit.

The System 500 is U.L. listed, F.C.C. approved, and self-monitored by a 27-Hz supervisory signal reaching all parts of the system.

Circle 17 on Reader Response Card

### UHER INTRODUCES CR-1601 3-SPEED CASSETTE MONITOR

Uher of America, Inc. has introduced the Uher CR-1601 Monitor portable cassette recorder.

The new four-track mono deck is designed for monitoring, transcription work, court reporting, surveillance, and other specialized applications. The two-channel machine utilizes one track for audio recording and one track for automatic cueing (set and find).

The CR-1601 commercial monitor features three magnetic heads, three three-speed monitor facility, and full logic control with two motors. It also

features three record/playback speeds which permit up to 10 hours of total recording time. Also included is Uher's exclusive Akustomat® (voice activated control with adjustable delay time).

Circle 18 on Reader Response Card

### HAMILTON ELECTRONICS' NEW MIGHTY MITE PA

Hamilton Electronics has introduced Mighty Mite 300 PA.

The Mighty Mite is both compact and lightweight, measuring 9 inches x 9 inches x 9 3/4 inches and weighing 12 pounds. Its Bi-Fet op amplifier develops 12/18 watts through an eight-inch speaker.

The Mighty Mite is powered by AC or, for portability, a 24-volt long-life battery pack with a built-in AC charger.

Circle 19 on Reader Response Card



### AMTEL DEBUTS CARD ACCESS SECURITY SYSTEMS

Amtel Security Systems has introduced Voidex 2000, a compact, stand-alone smart card access control system.

Voidex utilizes a magnetic stripe card (HI-C high energy) which is coded with an individual five-digit code as well as a six-digit facility code.

The Voidex 2000 is provided with a 32-digit back-lit, alpha-numeric display, which instructs the user, as well as allows the programmer to program the unit without the manual.

Options include a help phone which is a single number calling system to provide immediate assistance in the event the system malfunctions.

A printer, which can log the time, day, date, card number, and whether access was granted or denied, is also available.

(continued on page 67)

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## SMART SPEAKERS...

**ENVIRONMENTAL SOUND®** has developed a new class of loudspeaker technology engineered primarily for **SOUND CONTRACTING, CONSULTING, and ARCHITECTURAL FIRMS**

If you haven't already heard, introduce yourself to the **PROFESSIONAL DROP CEILING MONITOR** and **ES SERIES**. Innovative versatility allowing numerous applications so as to shape the future state-of-the-art loudspeaker and to improve cost effectiveness from installation to sound quality. **ENVIRONMENTAL SOUND®** has heard what the sound contractor needs!

The **PRO DROP CEILING MONITOR** and **ES SERIES** represent a brilliant achievement required for today's technology that until now has been overlooked and neglected.

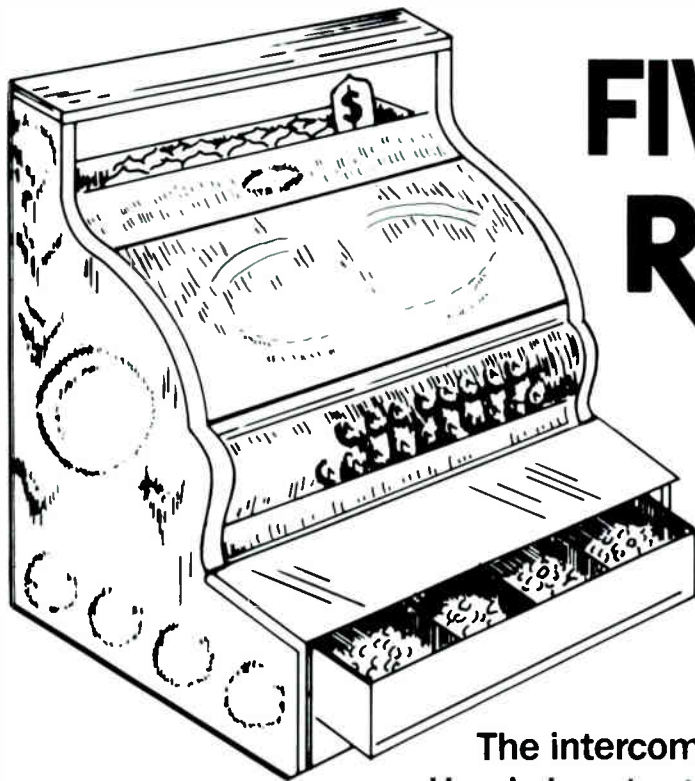


## FOR SOUND THINKERS.



"For Those Who Listen"

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- An improved Ring 3000 internal communications system for schools and institutions
- A new line of speakers, baffles and transformers

## 2. NEVER SAY NO

With Ring's increased technical staff backing you up, you can say "no problem" to almost any request, from special equipment configurations

and custom-designed interfaces to unique product applications.

## 3. OFFER THE BEST PRICES

We offer the competitive edge in pricing. That means you make impressive profits while offering your customers the low prices that close sales.

## 4. MAKE FAST DELIVERIES

We stock an even larger inventory of Ring intercommunications equipment available for immediate shipment. In fact, we can often ship the same day your order is received.

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Circle 214 on Reader Response Card

## a closer look

by gary d. davis

### CRL DYNAFEX DX1 & DX2 NOISE REDUCTION SYSTEMS

CRL Audio has begun to manufacture and distribute the Dynafex line of after-the-fact noise reduction processors. CRL purchased the assets and products of the former MicMix enterprise from the trustees for the company after it ceased operations in 1985. The Dynafex DX1 and DX2 noise reduction units are the first products to be offered from that purchase. Although the reissued Dynafex products are functionally equivalent to the earlier MicMix versions, CRL has made numerous changes in the products' circuitry which are said to improve their sonic performance.

**Comments:** Nowadays, people are becoming accustomed to better and better sound quality. When noise rears

its ugly head, it gets noticed. Therefore, "after-the-fact" noise reduction systems, as CRL calls their DX1 and DX2 (we prefer the term "single-ended"), may be useful for cleaning up a noisy program. How do they work? Ray Updike of CRL explained it to us.

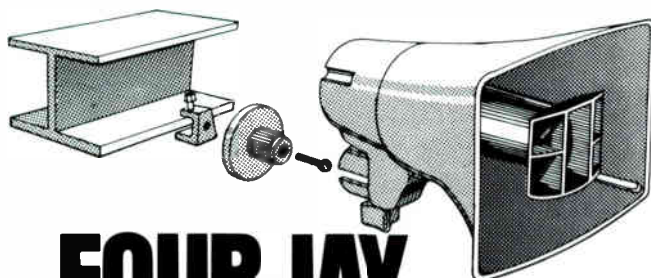
Berwin Labs had developed a system over a decade ago which utilized a sliding filter plus an expander, and these units work on the same principle . . . with a few modern improvements. An integrated circuit now performs most of the work. It includes a 6 dB per octave low pass filter whose "knee" is automatically controlled by a detection circuit. That cutoff can slide from 20 kHz all the way down to 2.4 kHz, depending on the nature of the audio program material; the detector senses the fundamental and related

harmonics when deciding where the filter knee should be located. This has the effect of cutting hiss without doing too much harm to the harmonic structure. In addition, there is a variable ratio downward expander circuit. The user selects a threshold value, below which any sound will be made still lower in level. The ratio varies as follows: for 10 dB below threshold, the expansion ratio equals 1:1.3; at 20 dB below threshold it equals 1:1.6; and at 30 dB below threshold it equals 1:1.93. How much additional noise reduction does this provide? Well, if the threshold is set to -30 dBm and the post-filter signal level is at -60 dBm (most likely representing a residual noise component), the output will be -88 dBm. As you can see, this provides 28 dB of noise reduction (on top of whatever hiss reduction was achieved with the sliding filter).

The DX1 and DX2 were repackaged by CRL, with cosmetic and functional changes. The input and output circuits are now provided with differential amps so they can be operated in balanced or unbalanced, low-Z (600 ohm) or high-Z circuits (internal jumpers set the configuration). Connections are via XLRs. A further change is that the later MicMix units had a brilliance control which used an Aphex Aural Exiter chip. CRL removed that chip and added a circuit which alters the slope of the LPF detector, thus giving back more of the high end to add brilliance without increased distortion. THD is typically 0.1 percent or less. The dynamic range (when the unit is set so it is not reducing noise) is better than 90 dB (20 kHz bandwidth, unweighted noise).

This type of unit should be ideal for cutting the noise on any tape recording, especially the noisy tracks on U-matic or other videocassettes (where the audio tracks suffer due to relatively low tape-to-head speeds and an oxide that is optimized for rotary video heads). This type of circuitry is not much good for tick and pop suppression on records, but it should work

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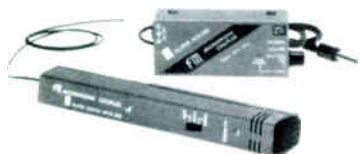
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World Radio History

well for noisy electronic instruments, remote telephone, satellite or broadcast links, etc. If you've got a problem with noisy audio, whether caused by the electronics or storage media over which you have little control, then CRL's DX1 and DX2 bear your closer look.

Circle 1 on Reader Response Card



### MARSHALL ELECTRONICS SR-580 WIRELESS MIC SYSTEM

Designed for professional wireless operation, this quartz-controlled FM Wireless Microphone System from Marshall Electronics, Inc. features a compact transmitter and receiver for easy mobility while eliminating bulky cables.

The SR-580 features advanced noise reduction and squelch systems. And according to Marshall, the high-

fidelity condenser microphone assures maximum clarity and sensitive response under even the most rugged working conditions.

It can be used with video cameras, cassette recorders, PA systems, and audio amplifiers with microphone inputs.

The suggested resale price is \$89.95.

**Comments:** Marshall's SR-580 is a low cost FM wireless mic system, and that's about all we learned from the press release so we phoned Leonard Marshall, who provided additional details. The system operates at 49.89 MHz. This is considered low frequency (as opposed to the VHF high band of 150 to 215 MHz or so, or UHF up around 900 MHz). The microphone is an electret, with omnidirectional sensitivity. Overall mic-thru-receiver frequency response is 100 Hz to 5 kHz (no tolerance specified). There is no noise or distortion spec. Nominal output level is 20 mV into a 600 ohm or higher impedance termination. The receiver comes with a mini phone plug on a short cable, plus an adapter to convert it to a standard one-quarter-inch phone plug. Maximum open-field range is about 300 feet, and indoors

about 100 feet, depending on the layout. Both the integral mic/transmitter and the receiver use 9-volt transistor radio type batteries, from which you can expect 12 hours of continuous operation, according to Marshall. The noise reduction is a single-ended system that uses a sliding (horizontal) low pass filter and expansion to reduce the background hiss. A squelch circuit silences the receiver in the absence of a transmission.

This compact unit is intended for PA voice communication, remote intercom, or for light duty video production (i.e., the wireless mic can be located near the visual subject while the receiver is connected to the camera or recorder's mic input). The installed mini phone plug would seem to support audio or video cassette recorder applications, although the standard phone plug adaptor makes the unit suitable for use with many mixers.

The frequency at which the SR-580 operates is subject to possible interference from nearby wireless telephones, certain business band radios, and possibly even a splattery (read that as over-powered or poorly tuned) CB

(continued on page 89)

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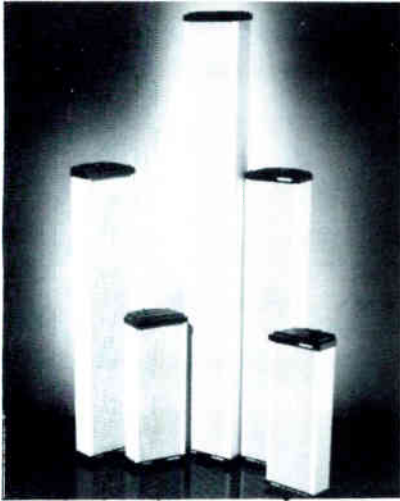
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Circle 250 on Reader Response Card

Sound & Communications

**PRODUCT**

*(continued from page 62)*



**PASO'S NEW HEXCOLUMNS SOUND COLUMNS**

Paso Sound Products has introduced the Series 300 Hexcolumns<sup>SM</sup> sound columns speaker systems. The Hexcolumns are said to provide high directionality, wide frequency response, and efficiency that approaches that of a reflex horn. Models include the C-302, C-304, C-306, C-308, C-322HP, and C-324HP. Power handling capabilities for speakers in the line ranges from 20 to 100 watts. Speaker complements range from the C-302's two five-inch drivers to the C-324HP's four five-inch drivers and single tweeter. Dimensions range from 17-inches high to 33-inches high. Optional floor stands and mounting brackets are available for the Hexcolumns.

*Circle 35 on Reader Response Card*

**NADY SYSTEMS INTRODUCES PORTABLE WIRELESS RECEIVER**

Nady Systems has introduced the 501 VR, a portable wireless receiver on the VHF high-band for use with any Nady 501 or 701 VHF wireless transmitter. Nady's mini-receiver is suitable for video production or stage monitor use.

The unit is housed in a lightweight metal case compact enough to fit into equipment pockets or clip on the operator's belt. Controls and indicators include a switchable combination rf/battery level meter, combination on/off/headset level control, mute adjust, and an LED peak meter to indicate audio over-modulation. Outputs are headset output and audio out (mic level). Both outputs are 3.5-mm mini phone jacks. A DC input is provided for external powering.

Internal power supply is a single 9 V battery. The battery compartment on the back of the housing is easily accessible for quick

battery change. An optional external DC power supply is also available.

*Circle 36 on Reader Response Card*

**TELEX WIRELESS MIC FOR ENG AND VIDEO PRODUCTION**

Designed primarily for ENG broadcast and video production, Telex Communications' introduced its wireless microphone system which features the company's ENG-4 four-channel receiver and the WT-400 two-channel transmitter.

The ENG-4 measures 5 1/4 x 4 x 1 inch and weighs 20 ounces. The ENG-4 runs on four AA-size batteries and operates in the 165-216 MHz band. The unit features a one-quarter-wave antenna and a monitor earphone.

Telex offers 14 standard frequencies and has, with the aid of a computer program, chosen the four most interference-free channels for various geographic areas.

A multi-function VU meter measures the ENG-4's battery condition, RF signal strength, or audio output.

The two-channel WT-400 transmitter works with the Telex WLM-200 miniature lapel microphone or its equivalent.

*Circle 37 on Reader Response Card*



**AUDIO/DIGITAL ANNOUNCES AUTOMATED DIGITAL DELAY**

Audio/Digital has introduced the ADX-2000 Digital Signal Processor and digital delay modules which automate delay control for distributed speaker systems.

Microprocessor control and nonvolatile memory storage for delay settings allow an ADX-2000 user to reconfigure the entire delay system, which may include up to six input channels and 40 output channels. The ADX-2000 is useful for installations where delay settings will be changed frequently, including convention facilities, touring sound systems, and theme park exhibits.

A user can key in and store settings for 12 complete system configurations, then recall any configuration for use in seconds. In addition to delay functions, the modules

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currently available perform channel on/off and output gain functions.

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#### COMMUNITY PORTABLE. CS SERIES

Community Light & Sound has introduced three additions to its CS Series line, the CS45, CS38M, and CS50B. All three utilize a compact, portable design. Features include rugged high-density particle board construction, black-carpeted exteriors, internal speaker protection, and acoustically-transparent removable grilles.

Outfitted with a patented focused array™

using three piezo-electric driven tweeters and twin proprietary ferro-fluid cooled 12-inch drivers, the CS45 loudspeaker is a two-way ported unit. It features its own stand-mounting hardware, steel handles, and a pad switch that allows high-frequency output reduction and the feeding of input signals through either a pair of parallel one-quarter-inch or banana connectors.

Essentially the floor monitor version of the CS35, the CS38M is a low-profile, ported, two-way loudspeaker equipped with a single ferro-fluid cooled 15-inch bass

driver and a piezo-electric tweeter coupled to a molded horn and low-frequency duct assembly.

Built around an 18-inch low-frequency driver, the CS50B sub-woofer has a frequency response of 40 to 300 Hz. Internally, a 6 dB per octave low-pass filter and two high-pass outputs allow the CS50B to operate with other speakers. To permit active biamping, the low pass filter can be switched out.

Circle 25 on Reader Response Card

#### SENTEX SYSTEMS' VISTA TELEPHONE ENTRY SYSTEM

Sentex Systems, Inc. has introduced its new Vista Series of telephone-style entry security systems. The Vista telephone entry system has an integral, lighted directory that handles up to 115 names. The directory is edge-lighted from behind the system's stainless-steel faceplate. The directory and its lights are protected by a gasketed, lexan window making the unit weather and vandal resistant. The Vista simplifies installation and is cost effective because it eliminates the need to purchase and install a separate directory.

The Vista features capacities up to 750 tenants, EEPROM memory, crystal tone detection, sealed metal keypad, lexan display, individual access codes and postal lock. The system has an option that allows it to be remotely programmed from any TouchTone telephone and comes in either handset or hands-free versions.

Circle 33 on Reader Response Card



#### SONIC SYSTEMS ADDS SPEAKER TO SOUNDSPHERE LINE

Sonic Systems has added the 168, a loudspeaker featuring an eight-inch driver with a coaxial tweeter, to its Soundsphere line of spherical-reflector loudspeakers.

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# Now Even the Hearing Impaired Can Hear Clearly Under Any Conditions

At last, hearing impaired persons, including those who wear hearing aids, can hear clearly under virtually any conditions with the wireless Sound Enhancement System from Telex. This personal FM sound system is especially designed for use in places such as churches, theatres, auditoriums, amusement parks or any situation — indoors or outdoors — where hearing can be difficult. It actually brings a speaker's voice, live music or an entertainment sound track directly to the listener's ear, so that distracting noises, reverberation or distance from the sound source no longer interfere with a person's ability to hear. Even persons with normal hearing can benefit from using it.

The system consists of a single-channel base station transmitter and any number of tunable, personal receivers, which are compatible with all FM wide band auditory assistance equipment. The base station transmitter includes inputs for a microphone and a PA system, permitting the transmission of live or recorded messages. Furthermore, it plugs into any existing sound system, so installation is easy. Because of this flexibility, the Telex Sound Enhancement System can either be used in fixed locations or taken anywhere at a moment's notice. A personal, belt-pack transmitter is also available.

For further information, contact the Professional Audio Department, Telex Communications, Inc., 9600 Aldrich Avenue South, Minneapolis, MN 55420. Telephone (612) 887-5550.



Circle 230 on Reader Response Card

According to Sonic Systems, the 168's spherical reflector creates an omnidirectional distribution pattern, thus reducing reverb when the speaker is used in a highly reflective interior. Sonic Systems describes the speaker as suitable for PA systems and background music.

The 168 weighs 20 pounds and measures 19-inches high by 20-inches wide. It has a maximum power handling level of 75 watts and a maximum sound pressure level of 89 dB at one watt, one meter. Impedance is eight ohms and frequency response is 35 Hz to 20 kHz.

Circle 26 on Reader Response Card



## RING VISICALL COMBINES AUTO DIAL & MESSAGE DISPLAY

Ring Group of North America has added the Visicall auto dialer and message display unit to its Ring-Master product line. Similar to a telephone auto dialing unit, the Visicall speeds connections to frequently-dialed intercom stations.

Visicall is available in two configurations, the AE 110 with 16 direct-dial buttons or the AE 111 with 32 direct-dial buttons. Both models feature a two-line LCD message display with up to 16 characters per line.

Visicall's memory will store frequently-dialed numbers. The memory will also store up to 10 pre-programmed, system-wide messages to which the caller can add intercom, telephone or special code numbers. In addition, the memory will store up to 10 incoming messages. A rechargeable battery powers the memory for up to a month if the unit's AC power is lost.

Circle 27 on Reader Response Card

## DOD INTRODUCES RDS 6400 DIGITAL REVERB

DOD has unveiled the RDS 6400, a digital reverb with 64 combinations of presets. The 6400 can be updated with plug-in PROMs as new software becomes available.

The 6400 features a  $-20/+4$  dB switch for line or instrument levels and one-quarter-inch balanced/unbalanced input and output. Left and right may be mixed with no cancellation. Dry out mono jacks are also provided. The 6400's mixer allows the reverb to be used in a stand-alone mode or in an effects loop.

Circle 28 on Reader Response Card

### SHURE UNVEILS COMPUTER VOICE-RECOGNITION MIC

Shure has introduced the Model 503BG close-talk, gooseneck-mountable dynamic microphone. The 503BG was designed for computer voice-recognition applications where accurate voice reproduction and rejection of background noise is crucial to system accuracy. In addition, the 503BG is suitable for paging, talkback, dispatching, and other communications situations.

The Model 503BG has a specially tailored frequency curve that provides an essentially flat response over the 100 Hz to 7,000 Hz frequency spectrum when used close (1 to 5 cm) to the sound source, according to Shure. The microphone also features an integral humbucking coil that essentially eliminates interference from electronic hum such as is encountered around computer terminals (CRTs), fluorescent lights, or power transformers, the manufacturer said.

Circle 29 on Reader Response Card

### ENVIRONMENTAL ADDS TO PRO DROP SPEAKER SERIES

Environmental Sound has added four speakers to its Pro Drop Ceiling Monitor Speakers, the 802, the Video Monitor, the

Pascal I, and the Pascal II. The 802 features an eight-inch polypropylene low-frequency woofer and a three-quarter-inch liquid-filled high-frequency dome tweeter. The Video Monitor features two eight-inch polypropylene woofers and a one-inch liquid-filled high-frequency dome tweeter. The limited edition Pascal I and Pascal II also feature polypropylene woofers and liquid-filled high-frequency dome tweeters.

Circle 30 on Reader Response Card



### STEREO DISTRIBUTION SYSTEM & MESSAGE REPEATER DEBUTS

Yesco Foreground Music has introduced two products, the Adcaster 1200 message repeater and the Multipro 5 stereo distribution system.

Suggested for use in retail stores, the Adcaster 1200 records and plays back up to 12 messages on cassette tape. The unit features message sequence and timing controls. Other features include direct drive

motors, auxiliary input auto mute, message number display, built-in monitor speaker, and microphone.

The Multipro 5 stereo distribution system operates with standard cassette tapes in a four-track configuration. Multipro 5 features include a headphone drive module, DNR noise reduction, frequency response of 50 Hz to 12 kHz, and a cleaning kit. Stereo patch cords allow connection to a stereo receiver or amplifier.

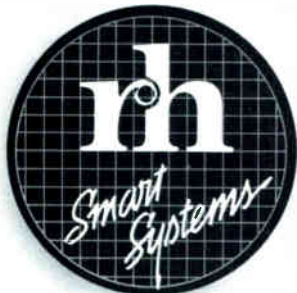
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### NEW ELECTRET CONDENSER CARDIOID MIC FROM ASTATIC

Astatic has introduced the 827 electret condenser cardioid gooseneck microphone. Permanently attached to a flexible gooseneck, the 827 features built-in circuitry for phantom power. Two lengths are available for the gooseneck, 17 or 13 inches. The microphone system features "midnight" black finish, a miniature windscreen to control wind noise and breath "pop" during close talk situations, and an A3M connector at the equipment end of the gooseneck. Astatic suggests the 827 for use in schools, courtrooms, churches, drive-in banks, and lecture halls.

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## POWER AMPS

(continued from page 30)

former can at least equal the performance of a well-designed electronically balanced circuit and may provide superior noise rejection. Such a transformer is likely to be costly, however, and will probably be offered as an option. In addition, the transformer offered for a given amplifier may not be of high quality. Check the amplifier's performance specs *with the input transformer in place* to confirm the transformer quality. If these specs are not given, it is an indication that the specs with the transformer are not as good as the specs without the transformer.

If the input balancing method is electronic (transformerless), ask what happens if the input is accidentally (or purposely) unbalanced. This could cause problems (including a 6 dB gain reduction) in some older designs.

(2) Accessibility of Controls, Switches, and Connectors. These should be very accessible for portable or operator-intensive systems but hidden for permanent systems where the user should not be allowed to alter control settings or repatch the system. Consider control, switch, and connector placement carefully.

(3) Type and Action of Protection Circuits. Early transistor amplifiers caused loudspeakers to sound something like they had been struck by lightning when the amplifier's VI limiters went into operation. Catastrophic amplifier failure could mean high-voltage DC would be fed to the loudspeakers (creating instant catastrophic loudspeaker failure). Those problems have been eliminated in most modern amplifiers, but protection circuit types and actions still differ widely from amplifier to amplifier. In general, the best protection circuits are those that are unobtrusive while still doing their job well.

It is unfortunate that most systems have inadequate headroom, which means that the system power amplifiers are pushed past their rated capacity on a regular basis. It now seems apparent that the performance of the amplifier protection circuits in such a situation is probably the most important factor in the difference in sound quality between two amplifiers. The only way to determine the real performance of an amplifier in such a condition may be to try it and listen. But, in any case, it is probably very important

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Many big names in the entertainment field have been using the Telex dual diversity version of this fine wireless. Shown above is two time Country Music FEMALE VOCAUST OF THE YEAR, Janie Fricke.



Rock and Roll or Rock of Ages—the pulpit or the Palladium... Whether you need a dynamic handheld for the stage or a miniature lapel mike for your church, Telex has an affordable single antenna wireless mike system that will fit your needs. Telex FMR-50 systems have most of the high performance features of the more expensive top-of-the-line wireless microphones and provide a much clearer, stronger and better-sounding signal than competitive units. All-important dynamic range is greatly enhanced because of the system's unique COMPANDER circuit. A special circuit

at the transmitter takes the full dynamic range of the audio, compresses it to RF transmission limits, then restores it to its full strength at the receiver. The result is a full dynamic range with greatly improved signal-to-noise ratio.

Because it operates on high band VHF frequencies there is no danger of picking up interference from low band channels such as CB, cordless telephones, garage door openers and electric toys. And, Telex offers a FREE computerized service to assure the selection of an interference-free frequency based on known channel allocations in each operating area.

To read more about why this improved technology transmits a high quality signal over longer distances, write to: Telex Communications, Inc., 9600 Aldrich Ave. So., Minneapolis, MN 55420.

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to consider the protection circuits carefully in the purchase decision.

Other protection circuits besides the VI limiter are also important. For example, if the amplifier senses a too-high temperature (the thermal light comes on) what happens? Does it shut down? Does it turn on a fan (or increase the fan speed)?

(4) Grounding Method. For years, we have worked at debugging the grounding of our systems while, unknown to us, many manufacturers were doing a truly awful job of grounding inside their products where we, as sound system designers, could do nothing about it. Now most manufacturers pay careful attention to grounding, but it's still possible to get an amplifier with multiple internal ground loops or with a large power transformer that's so poorly shielded it induces hum in mic cables several feet away. I don't know how to judge the grounding inside an amplifier without literally taking it apart; but internal grounding is, nonetheless, a major consideration.

One new feature on some amplifiers is a ground strap that allows lifting of the audio ground from the chassis. I personally question the usefulness of this feature since a proper one-point

ground inside the amplifier and a balanced input should provide correct grounding without the need for a ground lift. In addition, this seems to me to invite poor system grounding practice where the chassis ground is lifted and the safety ground is now in question.

(5) Metering and Indicators Again. Besides considering the usefulness of a particular meter for a given application, consider the real accuracy and precision of the metering offered. Are the meters truly useful or are they primarily a group of blinking lights that help sell the product?

#### *Traditional Specifications/ Performance Criteria*

(1) Power Output. As mentioned before, watch the ratings methods and load impedances. Also, is the power output rating for a single channel or for both channels used at the same time?

(2) Frequency Response. Is 20 Hz to 20 kHz the same from amp to amp? Probably not. Watch the +/- dB ratings. Also watch out for an amplifier that truly works at 5 Hz or below because it might be able to pass DC to your loudspeakers. In addition, ques-

tion the stability of an amplifier whose upper frequency response limit is much above 50 kHz or so. It may be that the fidelity is improved to some ears but the question is, will it oscillate when presented with a reactive load? Will it overheat when RF interference leaks in? What is the real system high-frequency requirement? I am not suggesting that amplifiers with wide frequency responses are prone to problems, but that wide frequency response is not always better. If you can get it in an amplifier that is unconditionally stable and meets your budget, then go for it; otherwise watch out.

(3) Rise Time and Slew Rate. The "faster" the amplifier (lower rise time, faster slew rate), the better the performance. Just make sure the amplifier is stable since some "fast" amplifiers do strange things when presented with a reactive load or an unusual input signal.

(4) Hum and Noise. The rating methods on these specs are far from standard. In addition, hum and noise are very system-dependent. For example, the hum of a poorly-grounded amplifier may get much worse when placed in a system even though its published spec is acceptable.

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(5) Phase Response/Shift. I like to see this in a graph. In general, the lower the amount of phase shift over the frequency band, the better. Transformers, either input or output, can severely degrade this spec.

(6) Circuit Design Philosophy. Personally, I don't much care whether the amplifier is fully complementary symmetry or cascode or MOSFET or magnetic-field or whatever. I care what it sounds like, how it holds up, and what it costs. I recommend that the same selection criteria be applied to an esoteric-design amplifier as to a more conventional amplifier and that the design philosophy itself not be considered as a selection criterion.

One thing to consider with esoteric designs is their effect on other components in the system (input and output impedances and such) and their effect on the AC line. Some esoteric designs have been known to place unusual and even unacceptable demands on AC power supplies and some have even been rumored to place lighting-dimmer type noise on the AC line. This may not happen with a given esoteric design, but find out before making a purchase.

#### *New Specifications/Performance Selection Criteria*

(1) Reactive Load Power Output. How does the amplifier react into a real-life load? Resistive load bench testing is useful for comparisons but it does not really tell us what happens to the amplifier in a real application. Some amplifiers, VI protection circuits begin to work hard when the amplifier sees a 45 degree phase angle load. Since this is a typical loudspeaker load, those amplifiers will be working in protection most of the time. The power spec should indicate the maximum load phase angle the amplifier will accept. This is especially important when the load will be a (highly reactive) 70-volt line.

(2) Specs with Optional Transformers (Input and Output). If these are not published, call the manufacturer and confirm that the amplifier will meet your requirements when you plug in the transformers.

(3) What Happens When the Amplifier Clips? Be honest about the amount of headroom allowed by the budget; if it's not really as much as you'd like, check out carefully what happens to the sound quality and performance of the amplifier when it is pushed beyond its capacity. Ideally, the listenable dif-

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# Phase 2

INTRODUCING

## Now with two channel capability



Intercom technology takes a giant step forward as Telex advances to PHASE 2 of its popular Audiocom Intercom System. What's more, two channel capability and a full duplex audio system for both monaural and binaural systems is only a small part of the story! The new master station/power supply shown above features built-in IFB (interrupt feedback) and easy-to-use color coded line/channel buttons that can correspond with the same color of optional extension cables for convenient visual reference. The master station also features a brand new 20 kHz light signaling system, interlocking push-button channel switches, a listen/volume control, a mike on/off/signal control and a power on/off LED indicator.

#### **Belt-pack headset station has special features**

The new two-channel belt-pack intercom station allows the operator to selectively monitor one channel or both simultaneously. It has a mike on/off switch and separate listen/volume controls for each channel as well as a special carbon headset input and separate sidetone adjustments. There is also a rack mountable version of this unit available with all the same features. Additionally, Telex has developed an entirely new line of intercom headsets to accompany these exciting Phase 2 changes. And, they are lighter and more comfortable than ever before! The new offering consists of single/dual side units, monaural and binaural units, a super lightweight and a new headset.

#### **ANNOUNCING complete compatibility!**

Telex introduces the CCB-1 Clearcom/Telex interface unit. This new interface and others already in the line ends forever any problems in field compatibility between Telex and Clearcom, RTS or Telco.

For complete technical information and specifications write or call Telex today. Write Telex Communications, Inc., 9600 Aldrich Ave. So., Minneapolis, MN 55420. For quick information call toll free 800-328-3771. In Minnesota call 612-887-5550.

# TELEX®

TELEX COMMUNICATIONS, INC.

Circle 232 on Reader Response Card

ference in clipping should be unobtrusive, similar to what a limiter does to the sound. In particular, the amplifier should not shut down, even under severe clipping situations, and if it does shut down, find out how quickly and quietly it recovers (or if it stays off).

(4) Power Supply Type and Regulation. What happens to the AC power when the amplifier is called on to produce its maximum output power? What happens to the amplifier's output power if the AC power drops 10 percent?

(5) RF and Hum Susceptibility. These won't be published but you can find out about RF by keying a CB radio (with full antenna) near the amplifier with a loudspeaker connected and about hum by placing a Weller soldering station (or other large, non-shielded AC transformer) on top of the amplifier. Many amplifiers won't pass these tests and they could be important in some applications.

(6) Turn-on/Turn-off Transient Protection. The amplifier turn-on/turn-off circuit (usually a relay on the loudspeakers) should disconnect until a few seconds after turn on to avoid

passing any turn-on thumps through to the loudspeakers. It should disconnect the loudspeakers immediately when the amplifier is turned off.

(7) Needed Gain/Sensitivity. At one time, the component most likely to precede the amplifier was a passive equalizer. The loss in this equalizer had to be made up by the power amplifier. Passive equalizers are rare today, yet amplifiers typically still have far more gain than they need. While, in general, this is not a problem, an amplifier with less gain may be somewhat more stable, and an amplifier with more gain is certainly not better unless you need that gain.

(8) Damping Factor/Output Impedance. A high damping factor (low output impedance) is supposed to make an amplifier better able to control the loudspeakers. But damping factor is usually rated only at one frequency. In addition, it may be important to consider the reactive component of damping factor in a very high-fidelity conscious application.

#### *Traditional Subjective Selection Criteria*

(1) Appearance. Let's face it, appearance sells, but what makes better appearance depends on the customer.

Better appearance may mean a less visible amplifier in some applications.

(2) Sound Quality. This is so subjective that the only real way to judge it is to do your own listening test. If you read or hear about other listening tests, consider carefully the conditions under which they were performed.

(3) Fan Noise. Where will the amplifier be located? How loud is the fan and over what frequency range (A-scale, etc.)?

#### *New Subjective Selection Criteria*

(1) Sound Quality Under Stress. As mentioned before, it seems more and more apparent that the real differences in sound quality between amplifiers happen when the amplifiers are pushed beyond their capacity. In addition, for budgetary reasons, it is probable that most systems are underpowered and therefore their amplifiers will be pushed beyond capacity on a regular basis. Thus, any listening tests should be performed with the amplifiers pushed into clipping, at least for a portion of the test.

(2) Sound Quality With Options. What does the amplifier sound like with its optional input and output transformers? What about other op-

**“For quality, price, and service,  
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amplifiers to any in the market ...”**



Al Smith, Division Vice President

**“... 3M means business!”**

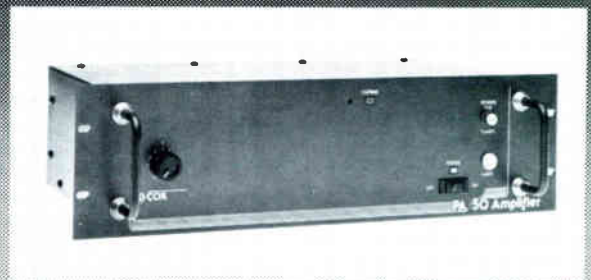
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Sound & Communications

tions like the plug-in crossover card or whatever else is offered?

#### *Traditional and New Practical Selection Criteria*

(1) Who is the user? Is the user likely to abuse the system/amplifier? Is the installation permanent or portable? Will the input source and output load be changed often? Considering questions like these can help in choosing options like hidden controls and switches, heavy-duty rack ears, and stability under difficult loads.

(2) Mechanical Criteria. How is the power transformer mounted? At least one older amplifier had the transformer mounted in such a way that it could literally fall off if placed in a portable rack and trucked around the country.

How about input transformer mounting stability? Other accessories? Rack mounting ear strength? Rear rack mount capability? Are handles included (are they really needed)? What about the electrical contact stability of plug-in options? Are all amplifiers in the series the same depth? This influences rack design in a portable system.

What is the cooling method? Is

space needed between amplifiers? How will the air-flow of the fans affect the rack layout? Is it compatible with the air-flow of other products?

How difficult is it to service the amplifier? Are all parts accessible?

#### **PHASE V:**

##### **Second Weeding**

Given the selection criteria above and those that you have added, it should be possible to narrow down the selection to a dozen or fewer amplifiers. (Yes, there may be that many that meet a given set of criteria.)

#### **PHASE VI: Making the Final Selection—Safety and Support**

Safety is one of those things that is usually considered last, but maybe that's good since it allows safety considerations to work like a veto. In any case, there's no specification for safety, but approval by an agency like U.L. or C.S.A. or the various city safety agencies is a good indication of product safety. Safety approval may be an important selling point when the customer is a government agency or large corporation. It should be an important selling and buying consideration in any application.

#### *Manufacturer and Dealer Support*

A large manufacturer will be able to provide a nationwide chain of service centers, yet a small manufacturer may provide more personal attention. A new dealer may go out of his way to support a system but an established dealer is likely to be around 10 years from now when the product needs service.

Support is not easy to judge. Asking others about their experiences is one way to make this judgement. Reading warranties is another. Asking for a list of service centers is still another.

#### **Conclusion**

I have probably neglected some selection criteria, but I've done my job if I have made it clear that the selection process for a power amplifier is not as simple as it might seem at first glance and if I've made it a bit easier to make a good buy the first time around.

**Chris Foreman is marketing manager for Panasonic/Ramsa. Prior to that, he was with Pierce-Phelps Audio Division and Editorial Director for Sound & Communications.**

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### Wireless microphone system

Combines ease of operation with high performance at an affordable price. Its new audio processor provides very high signal-to-noise ratio and wide dynamic range. Operation is clean and clear up to 1000 feet, line of sight.

#### FEATURING:

##### **TO-93 bodypack transmitter**

Long battery life (up to 10 hours on a 9-V alkaline battery).

##### **Power on/off switch**

Recessed.

##### **Mic level control**

Screwdriver adjustment.

##### **Mic on/off switch**

Silent "no pop" operation.

##### **Miniature XLR mic connector**

Allows use of most lavalier mics.

##### **Extra rugged case**

High-impact Cylolac.

##### **106X mic**

Other lavalier mics are available.

##### **Terminal strip** Line-level output.

##### **XLR connector**

Switchable mic-level and line-level audio outputs (internal switch).

##### **RO-95 receiver** Easy to set up.

##### **Rugged steel case**



REAR VIEW

##### **Power switch**

##### **LED indicators**

Transmitter on, audio overload, and power. For fast, simple setup.

Also available is the TO-92A hand-held transmitter.

The ORATOR III operates on a clear VHF high-band frequency. It is rugged and dependable, and is manufactured in the United States by...

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**Video Super Filter/Suppressor  
Eliminates Flashes & Jitter**  
Electronic Specialists has introduced

its power line Super Filter/Suppressor. Featuring a dual balanced-Pi filter and 2000 amp spike suppressor, this unit is designed to clean-up stubborn picture flashes and jitter from video installation.

Connecting to the 120 V AC line with a standard three-prong plug, the three sockets of the Super Filter/Suppressor can accommodate a 1,250 watt load. The Super Filter/Suppressor is \$75.95.

Circle 7 on Reader Response Card

## Wheelock Introduces Two New Power Supplies

Wheelock, Inc. has introduced two new power supplies, the Series RPS-2406 and EPS 2401. The Series RPS-2406 power supply provides fully regulated and filtered 24 VDC output at up to 600 mA of current to power a wide range of telecommunication equipment. Additional features include: wall mounting with four-foot, AC power cord, and short circuit protection with automatic shut down and reset.

The Series EPS-2401 economy power supply provides filtered 24 VDC output at up to 100 mA of current. It features plug-in mounting to AC receptacles.

Both power supplies were specifically designed to power Wheelock's telephone paging products and audible/visual alerts.

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The Messenger III System is designed for inserting messages in an Environmental Music System for use in Supermarkets, Department Stores, Mass Merchandisers, and others wanting point point of purchase advertising.



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The 702 a Reel-to-Reel Type Tape Playback Unit, the standard of the Industry for Environmental Music and Narrative applications. A truly high reliable system, it is in use at over 100,000 locations. Also available in a rack mounted and a stereo version.



## Soundolier Introduces Stackable Speaker Enclosures

The conical form of Soundolier's new CS95-8 and CS95-8NS backbox loudspeaker enclosures is said to offer stackability, 60 percent warehouse space savings over straight-sided enclosures, and substantial shipping cost reductions. The enclosures, manufactured with heavy-gauge steel and sound absorbent materials to prevent mechanical and acoustic resonance, will work with 17 models of Soundolier speaker baffles.

Each unit features four combination knockouts and standard clips for screw fastening of baffles. The CS95-8NS comes with four perforated straps for ceiling mounting.

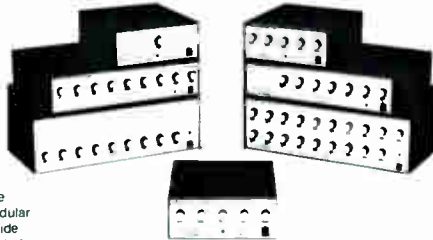
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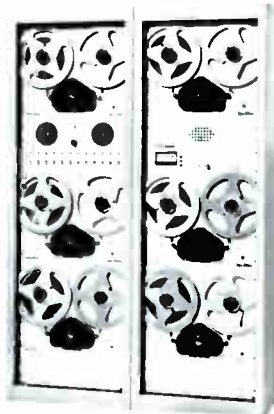
Electronic Tower Chimes are tape transport systems supplied in modular or rack-mounted versions to provide hour strike, followed by an interval of carillon music two, three, or four times per day. Ideal for banks, churches, schools, and similar institutions. Tape-Athon Chimes are a proven builder of good-will and community relations.



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# SUPPLIES

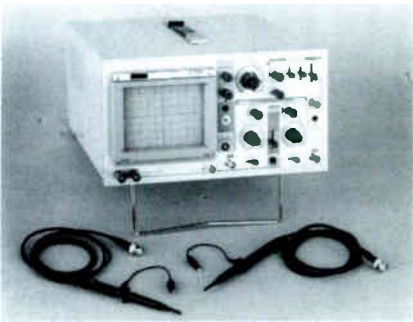


## Technical Projects Debuts Simplex Radio Adaptor

Technical Projects has debuted the AD913 simplex radio adaptor. The AD913 allows communication between a TecPro wired system and a simplex radio system. The adaptor allows transmission of wired-system audio over radio and the reception of radio-system audio via a wired system.

The AD913 features a mic-level output for connection to a transmitter and a phone-level input to accept a receiver. In addition, it has push-to-talk or "transmit on" switching, operated by the signal lamp of out stations on the wired circuit to which the AD913 is connected. Any out station can activate a transmission by depressing the signal-lamp switch. All stations will hear incoming calls when the signal lamp is off. Connections are via six-pole XLR and powered by 24-30 VDC at 15 to 25 mA from the communications system. The resale price is \$350.

Circle 10 on Reader Response Card



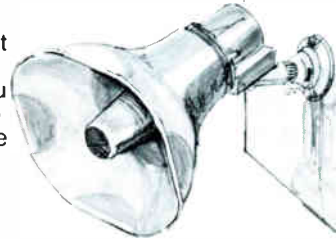
## New Dual Trace Oscilloscope with Probes From Speco




Speco has introduced the Model FS-4820, a dual trace oscilloscope, complete with probes. The unit features: wide bandwidth and high sensitivity, internal graticule rectangular bright CRT, built-in components tester, TV video sync filter, Z axis (intensity modulation), high sensitivity X-Y mode, very low power consumption, and regulated power supply circuit. This unit is priced under \$425.

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# "PAGING SPEAKERS THAT LET YOU TALK BACK"

Whenever you use ATLAS SOUND environment-resistant loudspeakers within your sound or intercom system, you can add an extra dimension to paging, signalling or telephone communications.



 <p><b>AP-Series</b> The world's most appreciated indoor/outdoor loudspeakers, 15 or 30 Watts. Choice of 8 or 45 Ohms, or built-in Vari-Tap control-center for line matching. Sensitivity as microphone: -20 dBm.</p>	 <p><b>SC-Series</b> Economy and reliability with superior intelligibility, 15 or 30 Watts. Weatherproof construction. High impact plastic bell. 4, 8 and 45 Ohms models. Sensitivity as microphone: -21 dBm (Ref.: 1k Hz., 10 dynes/cm<sup>2</sup>).</p>	 <p><b>VT-Series</b> Functional dependability with the advantage of minimum size, 15 Watts. U. L.-listed, vandal resistant and weatherproof. Ambient temperature range from 150°F to -30°F. Sensitivity as microphone: -26 dBm.</p>
--	---	--



ATLAS SOUND,  
DIVISION OF AMERICAN TRADING  
AND PRODUCTION CORPORATION,  
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(201) 887-7800

84



**R-Columbia's 900 Series of Hard Hat/Helmet Headphones**

R-Columbia Prod. Company has introduced the 900 series of headphones

and headphone/microphones, an industrial grade product manufactured for compatibility with helmets, hats and/or protective clothing. Any style of helmet: safety or military, or soft hats worn by hunters, can also be used with these headphones. They are noise attenuating, simple to adjust and maintain, environmentally protected, and can be ordered with a throat microphone in place of the microphone boom.

The R-Columbia 900 series features a "behind-the-head" headband. A cloth

webbing, with velcro for attachment, fits over the user's head and weighs six ounces.

*Circle 12 on Reader Response Card*



**Atlas Sound Introduces Four Professional Mike Booms**

Four microphone boom attachments combining durability, ease of operation, and appearance have been introduced by Atlas Sound.

The boom attachments' design incorporates a threaded swivel (patent pending) suitable for use with any 5/8-inch to 27-inch floor or desk stand. The die cast zinc swivel features oversized, high impact plastic knobs for control of motion, convenient orientation in horizontal and vertical directions, or stationary securing.

This new Porta Series horizontal microphone boom offers two 34-inch long models in choice of chrome or baked ebony epoxy and two telescoping boom assemblies.

*Circle 13 on Reader Response Card*

**Electronic Specialists Debuts Lightning Suppressors**

Electronic Specialists has introduced lightning suppressors for TV and VCR antenna inputs. The suppressors, available in a model for 75-ohm coaxial cable and in a model for use with 300-ohm twin lead, feature a gas discharge tube and an isolated ground. Suggested retail price for either model is \$31.95.

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**1**

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DATE	EVENT/COMMENT	LOCATION	CONTACT
September 8-10	<b>NCC-Telecommunications Conference</b> Program & seminars.	Philadelphia, PA	AFIPS (800) 622-1986
September 17-18	<b>Sound Engineering Seminars</b> in audio & acoustics.	Pheasant Run Resort Chicago, IL	Syn-Aud-Con 714-728-0245
September 23-26	<b>Intelligibility Workshop.</b> Will cover three spaces with low, medium, and high reverberation.	Chicago, IL	Syn-Aud-Con 714-728-0245
September 29-30	<b>9th Kentuckiana Sound Seminar</b> Exhibits & seminars.	Indianapolis, IN	Andy Baker & Assoc. (317) 253-9667
September 30-October 1	<b>Chesapeake ERA Electronics Show</b> Exhibits & seminars.	Greenbelt, MD	ERA (301) 235-1942
October 1-2	<b>Sound Engineering Seminars</b> in audio & acoustics.	Rodeway Inn Minneapolis/St. Paul, MN	Syn-Aud-Con 714-728-0245
October 2-3	<b>ESSC Regional Conference</b> Seminars & products.	Columbus, OH	Bob Barba 312-593-8360



# Versatile.

Uher now gives you a choice of versatile 8-hour long play cassette or 24-hour open-reel recorders.

Introducing the CR-1601 Monitor Portable Cassette Recorder and 6000 Report Universal Open Reel Recorder ■ Both machines are rugged, reliable and perfect for ultra-high quality recordings anywhere.

The CR-1601 commercial monitor features three magnetic heads, 3-speed monitor facility and full logic control with two motors ■ Three record/playback speeds permit up to 8 hours of total recording time ■ Exclusive Akustomat (voice activated control with adjustable delay time) ■ 4-track mono deck, ideal for monitoring, transcription work, surveillance and other specialized applications ■ Full logic system provides remote control functions ■ Speeds are 15/32, 15/16 and 1 7/8 IPS.

The Uher 6000 open reel recorder is ideal for security surveillance work ■ All functions are solenoid controlled, easily adaptable to remote control for playback or long-term monitoring, recording or logging.

■ Record up to 24 hours on triple play tape ■ Built-in, non-stop playback circuitry ■ "Vox on-off" acoustically starts record function through sound pulses, perfect for recording telephone conversations ■ Electronically controlled, 4-speed tape drive system ■ Master fader and switchable ALC ■ Dynamic Noise Reduction (switchable) ■ Record level control and peak reading metering.

Both the 1601 and 6000 are completely portable—powered by dry cells, nickel cadmium rechargeable batteries, 12 volt car battery and 110-240V 50-60Hz current ■ Die-cast aluminum case for heavy-duty use.

Built in West Germany by UHER Werke Munchen GmbH ■ Contact Uher of America, 7067 Vineland Ave., North Hollywood, California 91605, (818) 764-1120 for more information.

# Uher.

# FACES AND PLACES

## Ramsa Announces New Sales and Marketing Appointments

Ramsa, Panasonic Industrial Company's professional audio products operation, has announced several new sales and marketing appointments. Chris Foreman was named to the position of marketing manager; James Murray was named western regional sales manager, and Greg Braithwaite has been named central regional sales manager.

In his new position, Foreman has assumed responsibility for the sound contracting and sound reinforcement segments of the professional audio business. He is directing all of the marketing programs related to the area, and is assisting in the product development process.

Murray will be in charge of the unit's complete sales support network, interfacing with both distributors and end users. Prior to joining Panasonic, he was one of Ramsa's most successful and productive manufacturer's reps for several years. As a result, he possesses thorough knowledge of the product line. In addition, he also served as a vice president for a California-based firm involved in studio design and equipment sales.

Braithwaite will manage Ramsa's entire sales support structure for the central U.S. He will work closely with the sales force as well as distributors and customers. He formerly was national sales manager for a manufacturer of high-quality recording, broadcast, and theater-system consoles.



**RAYMOND  
DITOMAS**



**WILLIAM  
JAMIESON**

## The Antenna Specialists Co. Promotes DiTomas and Jamieson

The Antenna Specialists Co. has promoted Raymond DiTomas to the position of regional sales manager. He will

be responsible for the supervision of sales of all A/S products in the central states region. For the past two years, he was the company's customer service manager. William Jamieson, who joined the A/S Customer Service Department in 1985, will replace DiTomas as customer service manager.

## Sharp Pro Products Division Names Sutton S.W. Sales Manager

Thomas Sutton has been named southwest district sales manager for Sharp Electronics Corporation's Professional Products Division, according to Ron Colgan, the division's national sales manager.

Sutton, who received a Communications Technology Specialist (CTS) designation from the Professional Development Institute of the International Communications Industries Association (ICIA), comes to Sharp from Bauer Audio/Video of Dallas, TX, where he was equipment sales manager.

## Audio-Technica Promotes White To Asst. Pro Products S/M

Jeffrey N. White has been promoted to assistant national sales manager, professional products at Audio-Technica U.S.

White joined the company in 1981 as a loudspeaker systems design engineer. Previously, he held posts in loudspeaker systems engineering and marketing at Electro-Voice Inc.

A graduate of Purdue University with a degree in electrical engineering, White is a member of the Audio Engineering Society.

## Williams Sound Names Peters Commercial Products Manager

Williams Sound Corp. has appointed Jeffrey L. Peters as product line manager for the Commercial Sound Products Division.

Peters brings seven years of sales experience in the audio/video industry to this newly created position. Before joining Williams Sound, he was the audio sales manager for Alpha Video and Audio in Minneapolis, MN. Peters also has several years experience as a commercial sound manufacturer's representative in the midwest.

## Shaver Named President of Cetec Guardian Division

Robert A. Nelson, president and chief executive officer of Cetec Corporation, has announced that Dorwin D. Shaver has been appointed president of Cetec Guardian Division of Cetec Corporation.

Prior to his appointment as president, Shaver served as general manager of Cetec Guardian. Shaver first joined Cetec Corporation as a sales engineer at Guardian in 1977.

## Chambers Joins Bogen as National Accounts Manager

David A. Chambers has been appointed national accounts manager for Bogen, a Lear Siegler Company.

Chambers, who has a B.S. from Susquehanna University, spent the past seven years at Atlas Sound, the last two as national sales manager and previously as distributor sales manager.



**DAVID A.  
CHAMBERS**



**BOB  
RODGERS**

## Rodgers Named Senior Project Engineer at Altec Lansing

Bob Rodgers has been named as senior project engineer of electronics at Altec Lansing Corporation, it was announced by Ed Rusch, vice president of engineering. In his new position he will be responsible for electronic product design and development.

Before joining Altec Lansing, Rodgers worked for Micmix Audio Products where he designed broadcasting and recording equipment. He holds bachelor degrees in science and math from the University of Texas at Arlington, and has two patents issued in his name.

## Ring Appoints Charles Witteck as New ACD Regional Sales Manager

Ring Group of North America has announced the appointment of Charles



E. Witteck to the new position of regional sales manager for the Automatic Call Distributor (ACD) division.

With over 27 years experience in the telecommunications and electronics/data processing industries, Witteck has worked for several major companies including Argo Communications, Northern Telecom, General Dynamics, and A.D.T. He has a B.A. from St. John's University and has taken graduate courses at N.Y.U.



**JIM GLASS**



**DONALD L. GREENLEE**

**NEC Appoints Greenlee, Promotes Glass**

Donald L. Greenlee has been appointed western regional manager, and Jim Glass has been appointed assistant vice president of operations for NEC America, Inc.

Previously, Greenlee was general manager, switching and special service operations for Northwestern Bell Telephone Company, where he held several positions in management during his 25-year tenure. Greenlee will be establishing the western regional office in Denver, CO.

Glass will continue to act as assistant vice president, new product development and implementation. He previously held a director position in the same department, and served as national sales manager and assistant director of telco sales, as well as account manager for the southwest region and project engineer for the company.

His new responsibilities will include customer service, logistics, installation, program management and project engineering. Glass has 12 years prior experience in design engineer-

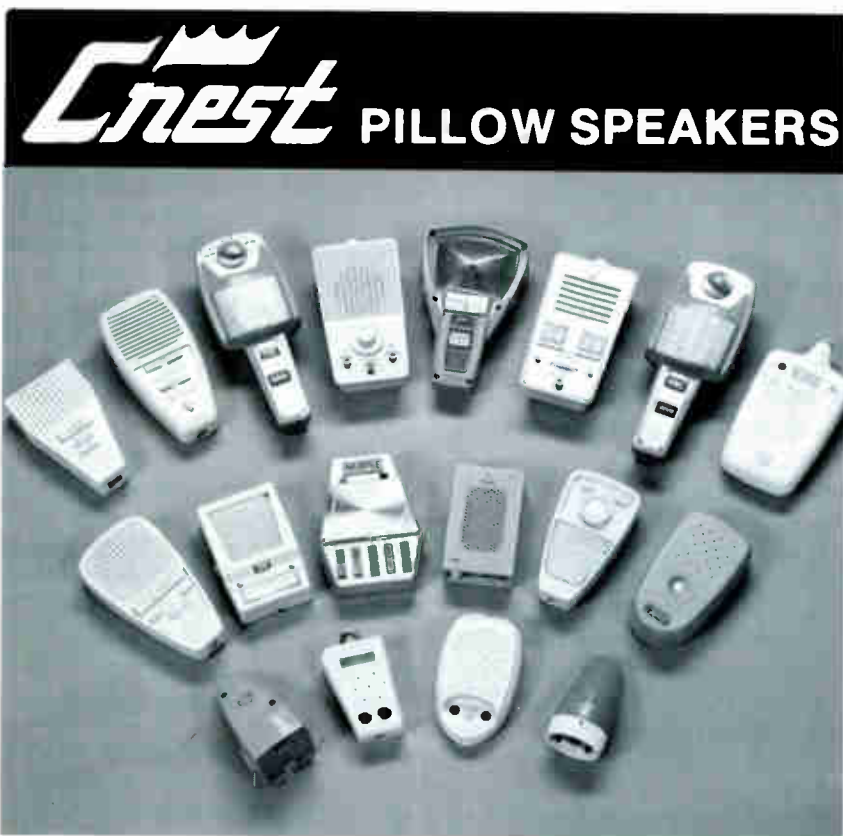
ing, installation and customer service with ITT.

**Sullivan To Head DeltaLab, the Pro Audio Division of ADS**

James D. Sullivan has been promoted to director of DeltaLab, the Pro Audio Division of Analog & Digital Systems, Inc. (ADS). He moves to the position from that of DeltaLab sales manager, replacing Richard E. DeFreitas, who will now devote his efforts full-time to engineering.

"In the time since ADS took over the DeltaLab product line, just over a year now, Jim has proven a tremendous asset," Dr. Godehard A. Guenther, ADS founder and president said. "Without his leadership capability and understanding of the pro audio market, that transition period would have been far more complex for us."

Sullivan joined DeltaLab three years ago as assistant sales manager. Prior to that time he was employed outside the pro audio industry.



CREST manufactures pillow speakers, replacement cables and call cords to mate with the following Nurse Call & Television Systems:

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| Couch            | Hill Rom         | Telettracer-Intn'l |
| Crest            | Motorola         | Wells              |
| Edwards          | Norelco          | Med & Tek          |
| Ektacom          | Philips          | Zenith             |

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# DELTA COM 2600

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## IMPEDANCE METER

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The rep firm of S.K. Macdonald was named **Shure Brothers "Rep of the Year"** for 1986. Shure's sales rep in Philadelphia/Mid-Atlantic region, S.K. Macdonald has been handling Shure products for 53 years. (left to right, respectively) From S.K. Macdonald was Les Fleming, salesman, and Bob Carter, general manager, and from Shure Brothers was S.N. Shure, chairman of the board, and James Kogan, president.

Several rep firms received sales awards at **Audio-Technica's** national sales meeting May 31 at the Essex Inn, Chicago. Winner of the **Order of the Samurai**, for best overall performance, was **Robco Associates**, which covers the New York City and New Jersey area.

Other companies which received product sales awards included: **Northern California Marketing** (northern California and Nevada) for phono cartridge and microphone sales; **Paston-Hunter Company** (upstate New York) for stereophone sales; **Marketing Service of Kansas, Inc.** (Kansas, Iowa, Missouri, and parts of Illinois and Nebraska) for accessories and Sound Guard sales; **David H. Brothers Company** (Virginia, Maryland, and Washington, D.C.) for consumer electronics sales; and **Robco Associates** for design acoustics sales.

**Renkus-Heinz** has announced the addition of several new representatives for its product line. **Lichtenauer & Associates** will cover northern California and Nevada. **AMH Sales** will cover southern California, Arizona, and Las Vegas. **Rowe Marketing** will cover Illinois and Michigan. **Richard S. Pass Associates** will cover UPT 7, 8, and 10. **MBT Sales** will cover West Virginia, western Pennsylvania, and Ohio. And **Ron Tunks Sales** will cover Florida, Alabama, Georgia, Mississippi, Tennessee, and the Carolinas.

**Williams Sound Corp.** has appointed **SRT Marketing** of Tampa, FL, as its representative for Florida.

**Paso Sound Products** has announced the appointment of several sales representatives: **Jim Church Marketing**, Bloomington, IN; **Key Marketing**, Kalamazoo, MI; **Thomas Dowell & Associates**, St. Louis and Kansas City, MO; **Pearson & Pearson**, Lakewood, CO; and **Allwest Electronics**, Camarillo CA.

**Allwest Electronics** has also won a

free trip for two to Norway as part of a national sales contest sponsored by **Ring Group of North America**. Seven U.S. rep firms vied for the trip offered by Ring's Internal Communications Division. **Larry Lupo**, president of Allwest, represents Ring throughout the southwest.

**TekTone Sound & Signal Mfg., Inc.** has announced the appointment of **Pacific West Marketing** of Honolulu, HI, as its sales representative for Hawaii.

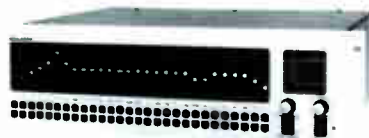
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# CONTRACTING CLOSE-UP

## *Mexican Stadium Debuts*

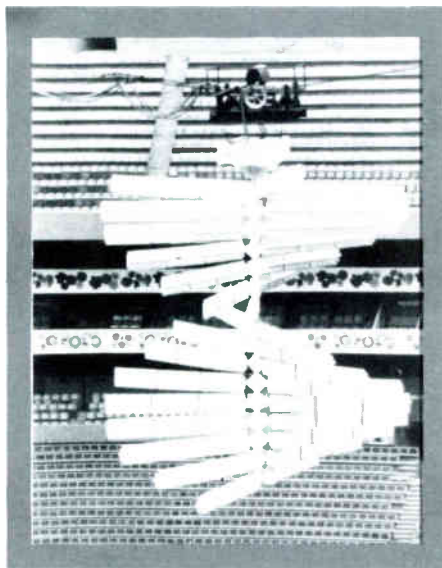
# HELIX-SHAPED SPEAKER ARRAY

Try to imagine 128,000 World Cup Soccer fans screaming at the top of their lungs, and think about how you would provide a sound system that would ensure that each and every fan would understand the announcements. The officials at the Aztec Stadium in Mexico City, Mexico, where the 1986 World Cup Soccer games were held, knew they had to replace their old system in order to provide intelligible announcements to the crowds.

B.E.S. was contacted to solve the stadium's problems. Alex Bertagni, the B.E.S. chief engineer who started the engineering and developed some preliminary concepts, called in Acromedia, a Los Angeles-based contractor, to co-design the system. Acromedia had the responsibility of designing, fabricating, and installing a new cluster for the stadium that would have to be flown in, and hung from the existing winch. The whole project had a turnaround time of just 40 days from contract signing to final acceptance of the completed system.

The resulting system features the largest number of B.E.S. loudspeaker panels ever combined in an array. The array consists of 204, C-60D omnidirectional-type loudspeaker panels, arranged in 16 rows of 12 panels each, with 24 units in the top row. The rows are staggered in a helix manner. The panels were treated for outdoor use and had a protective grille mounted on the rear. Bertagni explained, "The panels are staggered to uncouple the speakers in order to maintain their omnidirectional pattern in the array without introducing lobing effects."

The 3,520-pound aluminum space-frame/array had its weight limit set by the existing winch system. "We had to entirely assemble the frame and cluster in our L.A. shop, break it down, pack it up, and air freight it to Mexico City," said Robert Patrick, Acromedia's project engineer. "Our technicians and local labor were waiting to unpack it and install it in place of the old cluster immediately after its dis-



assembly." This operation, including the installation of a new 600-amp service, which was all coordinated by Acromedia, took place in eight days on the job-site. The array, which is centrally-located just over 400 feet from the farthest seats, provided intelligible sound at a level of 100 dB at every seat in the stadium. Because the system is also used for music reproduction its frequency response was maintained down to 40 Hz +/- 1.5 dB.

The existing electronics were removed to make room for the 37 KW of on-line QSC power amplifiers with some 10 KW of additional spares. Accord-

ing to Bertagni, it was not necessary to use much equalization because of the response of the speaker and the way this response was maintained in the array by the physical de-coupling. Only minimal equalization was used to compensate for the attenuation of high-frequencies through air over great distances, and some low-end was rolled-off as well.

Due to the great distances outdoors, high-frequency absorption was the limiting factor of the system's high-end response. In fact, Patrick said, "The response during the day at the edge of the field about 200 feet from the cluster was flat to about 6 kHz, while at night that increased to just over 8 kHz. But we still had discernable high-frequency energy present, and if the low-pass filter was set down to 8 kHz you could hear the difference in the sibilance."

Commenting on the final checkout and performance of the system, Patrick said: "Gain-before-feedback did not present any unusual problems and not much EQ was needed. Really, the only signal processing we used was an Aphex to reduce the peak-to-average signal ratio, and limiting for overall system protection. The response is absolutely uniform from seat-to-seat in the entire stadium, and the system is actually capable of response down to 20 Hz!"

## ESSC ANNOUNCED

The 1986 schedule for the regional Electronic Sound and Systems Conferences has been announced. With only three shows planned for this Fall, the ESSC organization hopes to minimize the problems which occurred in 1985 that were associated with too many shows. The shows are scheduled as follows: October 2-3 in Columbus, OH; December 4-5 in Secaucus, NJ; and December 8-9 in Carrollton, MD.

The ESSC regional shows, which are sponsored by the National Sound & Communications Association and the Electronics Representatives Association, will be offering educational seminars and product exhibits to electronic system contractors.

## PEIRCE-PHELPS NAMES THREE

The Audio Systems Division of Peirce-Phelps, Inc. in Philadelphia, PA, has announced the addition of three professionals to its group. They are Thomas W. Knauss, sales engineer; James Ritz, senior audio engineer; and Jerry Williamson, sales representative.

Knauss previously was owner and manager of Active Audio Systems, Inc. in Pennsauken, NJ, which engineered, designed and sold sound systems and equipment.

Ritz has 11 years experience in the design and fabrication of sound reinforcement, industrial paging and related systems. He has served as a consultant to private industry and government agencies, specializing in electro-acoustics and simulation technology for aircraft.

Williamson joined Peirce-Phelps following two years of work as a freelance recording engineer and audio consultant. Prior to that he was employed by Alpha International Recording Studio of Philadelphia, as recording engineer and studio manager.

## July 4th's Live Sound

When it came to doing the sound for the live shows held during Liberty Weekend last July 4th, Chip Largman, production coordinator, and Larry Estrin, audio consultant and advisor for Liberty Weekend, contracted Maryland Sound Industries Incorporated to do the job.

The project required a hook-up that provided top concert quality audio to the concert audiences, and also worked with the television broadcast portion. Without forfeiting audio quality, the speakers needed to be hidden from the television cameras and still provide quality sound. Maryland Sound's elaborate camouflaging included hiding monitors in an 18-story waterfall.

The technical requirements for the audio set-ups at Central Park, Liberty State Park, and Giant Stadium meant running 100,000 feet of wire. The project took two months, with three project managers, 20 technicians, and six tractor trailers to plan, implement, and complete.

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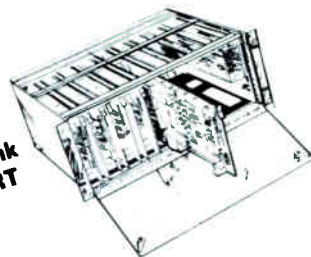
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## IEEE Press Publishes Guide To CATV: Getting The Picture

The Institute of Electrical and Electronics Engineers has published *Getting The Picture: A Guide to CATV and the New Electronic Media*. Written by Stephen B. Weinstein, the book was prepared under the sponsorship of the IEEE Consumer Electronics Society.

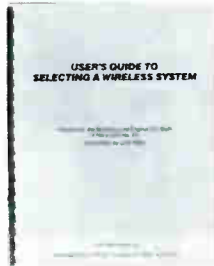
*Getting The Picture* is a guide to the complex technologies and controversial issues surrounding the cable TV industry. It is a comprehensive historical, technical, and policy overview of CATV and its competitors in the communications marketplace.

The subjects covered are divided into two parts. Part 1 covers cable television: growth of the industry, how it works, programming, ancillary services, and the public interest. Part 2 is about the other new electronic media, the shape of the competition, subscription television, multipoint distribution service, private cable (SMATV), direct satellite broadcasting, videocassette recorders, and the telephone network.

*Getting The Picture: A Guide to*

*CATV and the New Electronic Media* (order number PC01891) is \$31.95 (\$28.80 for IEEE members).

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## Wireless Selection Guide Available From Nady

Nady Systems, Inc. has made the guide, *User's Guide To Selecting A Wireless System*, available to sound contractors and end users. Prepared by the marketing and engineering staffs of Nady, the booklet is "an attempt to demystify wireless for the potential purchaser."

Nady's new guide explains the terminology and design configurations unique to wireless systems and sets forth a series of objective and subjective tests for evaluating the array of wireless systems on the market.

Circle 22 on Reader Response Card

## Brochure Tells How To Test Electrical Systems with DMMs

John Fluke Mfg Co., Inc. has announced the availability of a new brochure, *Electrical Troubleshooting with Fluke Multimeters*. This 16-page, color brochure describes various troubleshooting and repair procedures for electrical systems using digital multimeters (DMMs).

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## 1987 Test Gear Catalog Released By Ramsey Electronics

Ramsey Electronics has just released its new 1987 Test Gear Catalog. The catalog is full of test equipment including oscilloscopes, frequency counters, digital multimeters, and the new Com 3 service monitor.

For the satellite television professional there is a section devoted to satellite TV components

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## BOOK REVIEW

# The Electronics Source Book

by Ted Uzzle

Edward C. Jordan, ed., *Reference Data for Engineers: Radio, Electronics, Computer, and Communications*, Seventh Edition (Indianapolis: Howard W. Sams & Co., 1985), 1,363 pp, \$69.95 (hardcover).

*Reference Data for Engineers: Radio, Electronics, Computer, and Communications* is an old book with a new title. Based on the classical reference book, *Reference Data for Radio Engineers*, this new seventh edition promises to be just as useful as its 43-year old predecessor.

Every page the reader turns pulls his attention down into the text, or the clear and well-reproduced drawings.

Weighing in at 4¾ pounds, this behemoth is as comprehensive and detailed as its weight would suggest. There is hardly a page without a line drawing or data table. The type is rather small, and the paper rather thin, but it's a fair trade-off: any bigger and the book would be impossible to lift.

The book is organized into 48 chapters, which are well-designed for use. The book begins with chapters on units and constants, measurements, filter design, attenuators, feedback control systems, and the like. Each of these chapters covers its subject throughout all appropriate applications, so that, for instance, audio filters are described next to radio frequency filters.

Subsequent chapters cover specifics

of applications; there are chapters on satellite communications, antennas, radio noise, and the like. The book concludes with another group of general chapters, on statistics, mathematical formulas and tables, and reliability and testing.

The chapter on electroacoustics is as surprising for what it includes and for what it leaves out. There is a considerable amount of material on pure architectural acoustics: reverberation theory and analysis, and noise transmission through interior partitions. There is also a section on industrial noise exposure. These would seem to be quite distant from electronics, which is the overall thrust of the book.

Yet, there is not one single word in this chapter on electroacoustics, as we ordinarily think of it: loudspeaker and microphone theory and design. Equivalent electrical circuits for these transducers are not shown. This omission from a chapter on electroacoustics is like a chapter on particle physics which forgets to mention atoms.

More basically, the reference level for dB-SPL is shown as 20 mN/m<sup>2</sup>, which is a surprising error for a book so solidly (and so properly) grounded in S.I. units of measure. The reference level for dB-PWL is correctly shown, one picowatt, but dBV appears nowhere in the book. dBm appears in the chapter on telephony, but without definition; it is used only in the definition of d/Bm0 and dBm0p.

Although I do not feel competent to judge chapters on microwave systems, radio navigation, or the like, after reading the parts on basic electronics, the chapter on electroacoustics is a clear and surprising disappointment.

But what a wonder and a marvel the rest of this book is! Every page the reader turns pulls his attention down into the text, or the clear and well-reproduced drawings. The analytical approach is a breath of fresh air (although you may gasp at the speed with which the book moves).

There is a table that shows conver-

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# PRODUCT INDEX

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**THE PUBLISHER**

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# ACOUSTICAL TREATMENTS

## ASC ACOUSTIC SCIENCES CORPORATION, 385

Lawrence St., Eugene, OR 97401

Tel.: 1-800-ASC-TUBE

President: Art Noxon

Sales Manager: Larry Ward

Chief Engineer: Charles Wiens

Products: manufacturer of the TUBE TRAP™

District Offices:

Japan Dist.: UNICO, Tokyo, 03-478-2709, Telex 2426646

Australia Dist.: INTERDYN, Melbourne, 03-584-8066, Telex 32955

Canada Dist.: Pacific Western Audio, Vancouver, BC, 604-669-6666

Mid-Pacific Dist.: Pro Rep., Honolulu, HI, 808-521-6791

Factory Representatives:

Rich Lomax, Los Angeles, CA, 818-763-9587

Sam Lynn, Chicago, IL, 312-724-5506

## ALPHA AUDIO, 2049 W. Broad St., Richmond, VA

23220 Tel.: 804-358-3852

President: C. Nicholas Colleran

Sales Manager: David Walker

Chief Engineer: Joe Sheets

Products: acoustical treatment products, automated editing equipment and recording services.

## AVL SYSTEMS, INC., 5540 S.W. 6th Pl., Ocala, FL

32674 Tel.: 800-228-7842 904-854-1170

Products: complete line of fabric-covered acoustical wall panels, baffles and ceiling treatments with Class A fire ratings. Over 100 colors and textures are available.

## INDUSTRIAL ACOUSTICS COMPANY, 1160 Commerce Ave., Bronx, NY 10462

Tel.: 212-931-8000

President: Martin Hirschorn

Sales Manager: Robert Buelow

Chief Engineer: Seymour Wasserman

Director of Communications: Zachary Jaquette

Products: design and manufacture acoustic structures for sound conditioning or control of noise such as in broadcasting and recording studios.

District Office:

Industrial Acoustics Co., Garden Grove, CA, 714-636-5440

## JENEL SYSTEMS & DESIGN, INC., 10307 Bernardin,

Dallas, TX 75243 Tel.: 214-680-0502

President: Elmer E. Smalling III

Executive Vice President: Jean C. Rinklin

Products: consultants on design of television, satellite, and computer systems, acoustic designers of broad band and fiber lans.

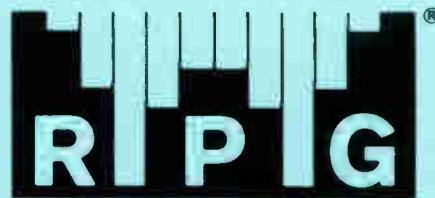
## MELLOTONE, Division of Wendell Fabrics Corp., 108

Church St., Blacksburg, SC 29702

Tel.: 803-839-6341

Sales Manager: Sherrie Traub

Products: fire retardant acoustical fabrics used in amplifiers, churches, auditoriums, public buildings.



## RPG DIFFUSOR SYSTEMS, INC., 12003 Wimbleton

St., Largo, MD 20772 Tel.: 301-249-5647

President: Dr. Peter D'Antonio

Sales Manager: David Sless

Production Manager: Doug Morgan

Products: the RPG, a sound-diffusing surface which provides uniform wide-angle scattering over a broad bandwidth. The RPG is designed to improve the acoustics of any listening or performing space.

District Offices:

RPG Europe, Wembley, Middlesex, England, 44-01-900-0355

Gerr Electro-Acoustics, Toronto, Ontario, 416-868-0528

PSD Ltd., Kowloon, Hong Kong, 3-744-6189

# ALARM, & SECURITY

## AES CORP., 285 Newbury St., P.O. Box 2093, Peabody,

MA 01960 Tel.: 617-535-7310

President: Michael J. Sherman

Sales Manager: Tony Albano

Vice President, Marketing: James F. West

Chief Engineer: Stanley P. Watts

Products: alarm and signal systems including supervised wireless systems, controls, annunciators, emergency response equipment, sirens, delay timers, test timers, power supplies, access control systems, and RF telemetry systems.

## AIPHONE INTERCOM SYSTEMS, 1700 130th Ave.

N.E., Bellevue, WA 98005 Tel.: 206-455-0510

President: Hiko Shinoda

Sales Manager: Jim Morrison

Chief Engineer: Jun Matsumoto

Products: industrial, business, residential, loudspeaking, telephone, video intercom/security systems with paging talk-back, six microprocessor systems available, mixer amplifiers, paging speakers, horns, drivers, ceiling speakers, tuners, fast food intercoms, and special order products.

See full listing under Intercom Systems — Duplex.

## ALARM CONTROLS CORP., 19 Brandywine Dr.,

P.O. Box 280, Deer Park, NY 11729

Tel.: 516-586-4220 800-645-5538

President: Howard Berger

Sales Manager: John Benedetto

Products: alarm controls, apartment alarms, remote station plates, power supplies, accessories, zone expanders, and tuners.

## ALARM SUPPLY COMPANY, INC., 10 Old Bloomfield

Ave., Pinebrook, NJ 07058

Tel.: 201-882-8010 800-631-8054

President: Joel Cohen

Sales Manager: Sheldon Hyman

Chief Engineer: Ken Bergstrom

Products: burglar and fire alarm equipment, CCTV, and automotive security. Catalog available.

District Offices:

Schaumburg, IL

Atlanta, GA

Miami, FL

Valley Forge, PA

Woodside, NY



**ALPHA COMMUNICATIONS**, 89-D Cabot Ct.,  
Hauppauge, NY 11788-3717 Tel.: 516-434-8080

President: Mark S. Goldberg  
Products: intercom and video/intercom systems for apartment, home,  
and industry; custom-made vandal-resistant lobby panels and apart-  
ment stations for new and retrofit, 2-wire apartment intercom, non-  
coax video/intercom.  
See full listing under **Intercom Systems — Apartment & Residential.**

**AMERICAN FIBERTEK, INC.**, 370 W. 35th St., 7th  
Floor, New York, NY 10001 Tel.: 212-868-2150

President: E. Robert Klein  
Sales Manager: E. Robert Klein  
Chief Engineer: Jim McLaughlin  
Technical Sales: Jack Krol  
Products: Fiber optic transmission systems for closed-circuit television  
surveillance and data, general purpose, aerial, burial, and plenum fiber  
cables, termination and splice tool kits, SMA optical connectors, power  
test meter, light source, power supplies.

**AMTEL SECURITY SYSTEMS, INC.**, 8525 N.W. 53rd  
Terrace, Miami, FL 33166  
Tel.: 305-591-8200 800-22-AMTEL

President: Suresh Gajwani  
Sales Manager: Moe H. Weiner  
Chief Engineer: Byron Blank  
Regional Manager (N.E.): Jim Gall  
Products: telephone entry control systems which control access to  
buildings, card access control systems, and parking barrier gates.

**ATLAS SOUND**, 10 Pomeroy Rd., Parsippany, NJ  
07054 Tel.: 201-887-7800

Vice President, Marketing & Sales: Tom Erickson  
Consultant for Marketing: Herbert M. Jaffe  
Director of Sales: Paul Grote  
Chief Engineer: John Saller  
Products: U.L.-listed re-entrant loudspeakers for indoor and outdoor  
installation in conjunction with life-safety, fire alarm signaling, audio  
detection and communications systems.  
See full listing under **Loudspeakers & Accessories.**

**THE AUTH COMPANY**, 505 Acorn St., Deer Park,  
NY 11729 Tel.: 516-667-9000

President: Michael Gioseffi  
Sales Manager: John R. Charczuk  
Chief Engineer: Fred Koffer  
Products: intercom, nurse call, fire alarms, telephone access intruder,  
all needs for the multihousing market.

**BOGEN, A Lear Siegler Company**, 50 Spring St., P.O.  
Box 575, Ramsey, NJ 07446 Tel.: 201-934-8500

President: John H. Ochtera  
Vice President, Marketing: Carl C. Dorwaldt  
Vice President, Engineering: Mark Koller  
Products: commercial sound and communication systems and equip-  
ment including amplifiers, mixers, loudspeakers, microphones, telephone  
paging equipment, tuners, intercoms, audio surveillance and centraliz-  
ed sound systems.  
See full listing under **Engineered Sound Systems.**

**CALRAD ENGINEERED ELECTRONIC PRODUCTS**  
819 No. Highland Ave., Los Angeles, CA 90038  
Tel.: 213-465-2131

President: Joseph Shupper  
Vice President: Robert Shupper  
Sales Manager: Fred Crown  
Chief Engineer: Wes Black  
Products: microphones, headphones, public address amplifiers, power  
supplies, speakers, connecting cables, telephone accessories, poten-  
tiometers, connectors, switches, meters, control knobs.  
See full listing under **Audio Amplifiers.**

**COMMUNICATIONS EQUIPMENT CO., INC.**,  
6443 Western Ave., Glen Arbor, MI 49636  
Tel.: 616-334-3081

President: Hugh I. Morris  
Sales Manager: Thomas A. Garmhausen  
Products: audio surveillance systems, detecting and locating crashes,  
screams, etc. in public buildings, parking garages, penal institutions.  
Large rack-mounted systems for station capacities in 25-station in-  
crements; smaller units in 5-station increments. Intercom and all-call  
features.  
See full listing under **Engineered Sound Systems.**

**CORNELL ELECTRONIC PRODUCTS, INC.**, 4911  
W. Good Hope Rd., P.O. Box 23411, Milwaukee,  
WI 53223 Tel.: 414-351-4660

President: Donald J. Glaubitz  
Vice President, Engineering: Gary Butler  
Sales Manager: Pauline Haack  
Products: visual nurse call, audio visual nurse call, door monitors, apart-  
ment intercom, in/out register, institutional intercom, silent paging.  
See full listing under **Intercom Systems—Hospital & Health Care  
Facilities.**

**CREST ELECTRONICS, INC.**, 4921 Exposition  
Blvd., Los Angeles, CA 90016  
Tel.: 213-731-1105

President: Hope Borows  
Sales Manager: Dennis Castelli  
Chief Engineer: Ken Fukui  
Products: CCTV cameras, video monitors, time lapse recorders,  
modulators, lenses, switchers, housings, mounts, tubes, pan and tilts,  
scanners, dummy cameras, quad split-screen systems.  
See full listing under **CCTV Systems & Products.**

**C Z LABS, INC.**, 55 Railroad Ave., Garnerville, NY  
10923 Tel.: 914-947-1554

President: Harry Zipkin  
Sales Manager: Steven Zipkin  
Sales Associate: Keith Scott  
Products: coaxial cable, multi-conductor cable, satellite cable, connec-  
tors, computer access, telephone access, video access, crimping tools  
cable assemblies, adapters, switches.  
See full listing under **Wire & Cable.**

**J.W. DAVIS & CO.**, 3215 Canton St., Dallas, TX  
75226 Tel.: 214-651-7341  
TX WATS: 800-442-1564  
NAT. WATS: 800-527-5705

President: Charles Griffiths  
Vice President, Sales: Jack W. Tucker  
Products: audio and audio visual systems, door monitoring devices  
CCTV cameras, monitors, pan and tilt scanners, burglar and fire alarm  
equipment.  
See full listing under **Pro Audio Systems.**

**ELECTRO-COMM SYSTEMS INC.**, 7915 N. 81st St.  
Milwaukee, WI 53223 Tel.: 414-354-0202

President and Chief Engineer: Angelo Balistreri  
Sales Manager: Jim Ippolite  
Products: audio and audio-visual nurse-call systems, door-monitoring  
devices, apartment intercoms and personnel registers. Emergency call  
systems for nursing homes and housing for the elderly; custom signal-  
ing and communications systems.

**ELECTRO-VOX INDUSTRIES, INC. (Santel Group)**  
2626 Bates Rd., Montreal, Que. H3S 1B1  
Tel.: 514-731-3771

President: D. Lafreniere  
Sales Manager: G. Senechal  
Engineering: A. Dorion

Products: voice-alarm systems, all-transistorized school, industrial, commercial sound and hospital systems; intercoms, transistorized amplifiers 5 to 230 watts; apartment intercom.



**FIRE  
PRODUCTS**  
DIVISION

**EMERGENCY PRODUCTS CORPORATION**

**EMERGENCY PRODUCTS CORP.**, 10 Bloomfield Ave., Pinebrook, NJ 07058  
Tel.: 201-882-8010 1-800-631-8054

President: Joel Cohen  
Sales Manager: Howard M. Avin  
Chief Engineer: Ken Bergstrom  
Products: full line of quality fire alarm products to service the sound industry from basic systems to sophisticated.  
District Offices:  
Bidwell Sales Assoc. of Arizona, Mesa, AZ  
Bidwell Sales Associates, Gardena, CA  
Chuck Olson Associates, Renton, WA  
Henry W. Phillips Co., Inc., Roswell, GA  
Henry W. Phillips Co., Inc., Matthews, NC  
W. B. Pray Sales, Inc., No. Borough, MA  
Warren Associates, Santa Clara, CA  
William M. Linz Assoc., Inc., Northbrook, IL  
Unirep, Inc., Ft. Lauderdale, FL  
Unirep, Inc., (Branch Office), Valrico, FL  
Graham/Davis, Inc., Dallas, TX  
Graham/Davis, Inc., Houston, TX  
Forti Associates, Kensington, MD  
Kingston Sales Corp., Indianapolis, IN  
RW Sales, St. Paul, MN  
Rancillo Associates, St. Louis, MO  
Weller Sales, Columbus, OH

**FARADAY, INC.**, 805 S. Maumee St., Tecumseh, MI 49286  
Tel.: 517-423-2111

President: Robert F. Bell  
Sales Manager: Charles Stevens  
Vice President Engineering: R. Miller  
Products: intercom & sound distribution systems, nurse call systems, fire alarm, annunciator, clock and hospital life safety systems, full range of signaling products.  
District Offices:  
Standard Electric Time (unit of Faraday), Chicago, IL, 312-286-0618  
Standard Electric Time (unit of Faraday), Paramount, CA, 213-634-6887  
Standard Electric Time (unit of Faraday), Springfield, MA, 413-739-5263  
Standard Electric Time (unit of Faraday), Fairfield, NJ, 201-227-9190  
Standard Electric Time (unit of Faraday), Bensalem, PA, 215-639-2055  
Standard Electric Time (unit of Faraday), Richmond, VA, 804-279-6776  
Standard Electric Time (unit of Faraday), San Francisco, CA, 415-467-8796

**FLORENCE CORPORATION**, 2101 N. Elston Ave., Chicago, IL 60614  
Tel.: 312-384-3310

President: Lloyd A. Schooley  
Vice President & General Manager: John Martino  
Sales Manager: George Jans  
Chief Engineer: Ray Cozzens  
Vice President/Sales: Don Cannella  
Products: designers and manufacturers of nurse calls, emergency calls, mail boxes and apartment communication systems.

**FOURJAY INDUSTRIES, INC.**, 3400 Stop Eight Rd., Dayton, OH 45414  
Tel.: 513-890-6444

President: J. M. Fulkerson II  
Director of Sales: M. W. (Bud) Frawley

Products: ceiling white recessed baffles, time-saving baffle mounting devices, protective covers, wall baffles and music speakers. Horn speakers for paging/talkback, intercom, telephone and security systems.

**INTELLIGENT CONTROLS, INC.**, 22313 70th Ave. W. L-7, Mountlake Terrace, WA 98043  
Tel.: 206-771-8107

President: Robert Percival  
Sales Manager: Ronald Katzin  
Chief Engineer: Brian Mallabon  
Products: BARCODE access control devices to data log people in or out of buildings, departments or any given area, including parking lots. Users can make own secure access cards on site for under \$1.

**LEE DAN COMMUNICATIONS, INC.**, 155 Adams Ave., Hauppauge, NY 11788  
Tel.: 516-231-1414  
800-231-1414 (in NY) 800-LEE-DAN1 (in U.S.)

President: Leon Goldberg  
Sales Manager: Lawrence J. Goldberg  
Chief Engineer: Sanford Hoffman  
Products: audio/visual communications systems providing effective security with our DS-100 door-sentry intrusion annunciators. Tek-Care emergency call systems for health care facilities.

**MACKENZIE LABORATORIES, INC.**, 5507 Peck Rd., Arcadia, CA 91006  
Tel.: 818-579-0440 800-423-4147

President: A. R. Taylor  
Chief Engineer and Vice President: N. Khattar  
Products: solid-state digital audio message repeaters for life safety, voice evacuation and security applications. UL component recognized.  
See full listing under **Magnetic Tape Products**.

**MG ELECTRONICS**, 32 Ranick Rd., Hauppauge, NY 11788  
Tel.: 516-582-3400

President: Louis Maltz  
Vice President: Elliott Maltz  
Sales Manager: Stan Grey  
Products: full line of paging speakers and electronic sirens 5"-12" for P.A. and security applications.  
See full listing under **Loudspeakers & Accessories**.

**MILLBANK ELECTRONICS GROUP LTD.**, Bellbrook Industrial Estate, Uckfield, Sussex, TN22 1QL England  
Tel.: Uckfield 825-4811

Chairman: Tony Walker  
Director and General Manager: Brian Evans  
Sales and Marketing: Don Eaton  
Client Services Director: Bernard Skinner  
Engineering Manager (Sales): Doug Edworthy  
Products: custom engineered sound systems; public address, tele-conference, life-safety. Sound reinforcement systems: amplifiers, pre-amplifiers, background music, FM/AM tuners, alarm and tone signal generators, loudspeakers, microphones.  
See full listing under **Engineered Sound Systems**.

**MOUNTAIN WEST** 4215 N. 16th St., Phoenix, AZ 85016  
Tel.: 602-263-8831

President: Richard Schultz  
Marketing Manager: Jeanne Barry  
Products: burglar and fire security alarm systems, parts and supplies. Professional quality systems for business, industry, homes, government.

**NATIONAL TELESYSTEM LTD. CANADA**, 438 Papin Ave., Ste. Foy, Quebec, CN G1P-379  
Tel.: 418-687-2031

President: Charles Sirois  
General Manager: Howard Bowles  
Chief Engineer: Christian Legare, Ing.  
Chief of Electronics: Marcel Langlois

Products: systems and equipment for institutional intercoms, nurse call, paging, school systems, emergency systems, radio control; metal cabinets, audio-visual equipment systems.

**NORCON ELECTRONICS, INC.**, 1260 Ralph Ave.,  
Brooklyn, NY 11236 Tel.: 718-451-1112

President: Norman Schlaf  
Chief Engineer: Simon Kleyner

Products: Norcon Talk-Thru communicator providing amplified hands-free communication through an environmental partition. Engineered sound reinforcement systems. Public address systems. Closed-circuit and master antenna television systems. Fire alarm systems.

**PHI TECHNOLOGIES, INC.**, 4605 N. Stiles, Oklahoma  
City, OK 73105 Tel.: 405-521-9000

President: Gary A. Zebrowski  
Chief Engineer: Larry Debell

Products: heavy-duty cassette tape transports, random-access message systems, cassette playback units for background music, message repeaters and digital audio message systems.

**POETKER COMMUNICATIONS LTD.**, 461 Manitou  
Dr., Kitchener, Ontario N2C 1L5  
Tel.: 519-893-1010

President: Bernie W. Poetker  
Sales Manager: Grant Ertel  
Chief Engineer: Lance Cooper

Products: school and institutional communications products, Celestale™ institutional security systems, Trakker™ vehicle identification and control systems, nurse-call and health care products.  
See full listing under **Intercom Systems—Institutional**.

**POWERTRONIX**, 10623 Lawson River, Fountain Valley,  
CA 92708 Tel.: 714-963-5411

President: Robert Gehlke  
Sales Manager: Irv Weisman

Products: 200W current drive distribution amplifiers with 24V-46 VDC emergency back-up power capability. 24 VDC mobile amplifier with electronically-switched, prioritized inputs. Preamp with 5 electronically-switched, prioritized inputs.  
See full listing under **Audio Amplifiers**.

**SAN MING ELECTRONIC SOUND EQUIPMENT CO.,  
LTD.**, 12715 Western Ave., Garden Grove, CA  
92641 Tel.: 714-891-2252

President: Hugh C. Hsieh  
Sales Manager: Leon C. Hsieh  
Chief Engineer: S.W. Hsu  
International Sales: Hua C. Hsieh

Products: high-intelligence multi-tap paging horns, heavy-duty driver units for PA and siren applications, extra-heavy-duty driver horns for community warning systems, megaphones.

**SIELER DESIGN PRODUCTS**, 1308 W. 130th St., P.O.  
Box 2128, Gardena, CA 90247  
Tel.: 213-324-9663

President: Patrice Sieler Crane  
Chief Engineer: George Sieler

Products: hand-held, high power portable PA 30 watt amplifier, less than 4 lbs. ready to use, up to a year battery life, all cardioid mic with pushbutton power switch.

**SOUNDOLIER**, 1859 Intertech Dr., Fenton, MO 63026  
Tel.: 314-962-9870

Vice President/Sales & Marketing: Tom Erickson  
Vice President/Consultant for Marketing: Herbert M. Jaffe  
Director of Sales: Paul Grote  
Chief Engineer: John Saller

Products: high quality, commercial sound loudspeakers, enclosures and accessories for music, alarm and public address systems, baffles for ceilings and walls, matching transformers and backbox enclosures.  
See full listing under **Loudspeakers & Accessories**.

**SPECO DIV., Components Specialties, Inc.**, 1172  
Rt. 109, P.O. Box 624, Lindenhurst, NY 11757  
Tel.: 516-957-8700 (in NY)  
1-800-645-5516 (outside NY)

President: Louis W. Keller  
Vice President and General Manager: James Ganci  
Vice President Sales: Mel Hulkower  
Regional Sales: Eric Forman, Bruce Kurtz

Products: PA horns, amplifiers, tuners, loudspeakers, wall baffles speaker assemblies, outdoor speakers, sound columns, ceiling grilles transformers, L-pads, attenuators, accessories, microphones, intercoms alarm sirens, multitestors, oscilloscopes.

**SURVEILLANCE VIDEO SYSTEMS**, 258 "A" St., P.O.  
Box 1349, Ashland, OR 97520  
Tel.: 503-773-9800

President: Bud Wilkey  
Products: several models of simulated (dummy) CCTV security cameras discounted CCTV cameras, monitors, systems, and accessories.

**TEKTONE SOUND & SIGNAL MFG.**, 1331 S. Killian  
Dr., Lake Park, FL 33403 Tel.: 305-844-2383

President: M. Mira  
Sales Manager: Carlos Mira  
Chief Engineer: J. Switzer

Products: intercom systems for home, apartment, commercial/industrial, institutional—telephone, loudspeaking and door answering Nurse call, security/alarm and AM/FM radio intercom systems.  
See full listing under **Intercom Systems—Apartment and Residential**.

**TEL-TRON (Div. Radio Manufacturers Inc.)**, 220  
Fentress Blvd., Daytona Beach, FL 32014  
Tel.: 904-255-1921 800-874-5622

President: N. Rick Dawson  
Sales Manager: Herman Dawson

Products: electronic systems for the hotel industry; room status energy saving systems, message waiting, TV theft alarm, central smoke detector systems.

**TOA ELECTRONICS, INC.**, 480 Carlton Court, S. San  
Francisco, CA 94080 Tel.: 415-588-2538

President: Sam Sakata  
Sales Manager, Commercial Division: Joe Green  
Technical Services Manager: Bob Sweet

Products: engineered sound systems, commercial sound systems amplifiers, dual amplifiers, tuners, equalizers, multi-functional preamplifiers, mixing consoles, speakers, horns, drivers, microphones wireless systems, microcomputerized EXES intercom systems, CCTV security systems.  
See full listing under **Engineered Sound**.

**TOA ELECTRONICS, INC.—SECURITY GROUP**, 480  
Carlton Ct., S. San Francisco, CA 94080  
Tel.: 415-588-2538

President: Sam Sakata  
Sales Manager: Barry Rubin  
Products: video observation systems including video cameras, monitors switchers, remote control equipment, rack mounting equipment, and video camera equipment.

**TSK ELECTRONICS, INC.**, 564 Young St., P.O. Box  
190, Tonawanda, NY 14151 Tel.: 716-693-3916

President: Theodore S. Kedzierski  
Chief Engineer: Kevin T. Kedzierski  
Products: zero-level loudspeaking intercoms used on very long twisted  
or leased telephone lines. Communication system design and fabrica-  
tion. Sound detectors and telephone intercoms.

**UNIVERSITY SOUND, Electro-Voice, Inc.**, 600 Cecil  
St., Buchanan, MI 49107 Tel.: 616-695-6831

President: Robert D. Pabst  
Chief Engineer: Earl Harris  
Vice President, Sales and Marketing: Paul McGuire  
Director of Marketing: Jim Holt  
Products: Complete line of horns, drivers, speakers and transformers.  
See full listing under **Loudspeakers & Accessories**.

**WHELEN ENGINEERING CO., INC.**, Rte. 145,  
Winthrop Rd., Chester, CT 06412-1036  
Tel.: 203-526-9504

President: John F. Olson  
Sales Manager: Howard Berke  
Chief Mechanical Engineer: Wayne Lyons  
Products: audible & visual signalling devices for automotive & industrial  
applications, including strobe & rotating beacons, light bars, vehicle  
sirens & public address systems, and high-power outdoor warning  
systems.  
Regional Sales Managers:  
John Tuthill, Waterford, CT, 203-526-9504  
Joseph Bernert, Willow Grove, PA, 215-657-4513  
Michael Holstein, Columbus, OH, 614-457-4577  
Everett Harris, Jr., Little Rock, AR, 501-225-6288  
Rod Heinze, Canton, IL, 309-647-3327  
Kenneth Kuberacki, Livonia, MI, 313-344-0882  
David Fesler, Iowa City, IA, 319-626-6551  
Richard Gerfen, Temecula, CA, 714-676-4896  
Howard Rolie, San Rafael, CA, 415-485-5306  
Thomas Madden, Stone Mountain, GA, 404-925-0580  
Alan MacLachlan, Seattle, WA, 206-485-3801  
Dick Reimer, Littleton, CO, 303-979-2414  
Phil Rarick, Honolulu, HI, 808-373-4666  
Chip Sawyer, Highlands Ranch, CO, 303-791-2773

## ANTENNA SYSTEMS (CCTV, ETV, MATV)

**THE ANTENNA SPECIALISTS CO.**, 12435 Euclid  
Ave., Cleveland, OH 44106 Tel.: 216-791-7878

President: Robert G. Paul  
Vice President Sales: L. H. Kline  
Chief Engineer: Dale Horn  
Products: radio communications antenna systems and electronic  
emergency personnel alerting devices.

**BLONDER-TONGUE LABORATORIES, INC.**, 1 Jake  
Brown Rd., Old Bridge, NJ 08857  
Tel.: 201-679-4000

President: Ben H. Tongue  
Sales Manager: Glenn H. Tongue  
Chief Engineer: Ben H. Tongue  
Products: complete line of SMATV equipment to meet a wide range  
of individual requirements. CATV equipment, complete line of TV  
modulators. Off premises pay TV line.  
District Offices:  
Glenn Stawicki, Blonder-Tongue Labs, Old Bridge, NJ  
Charles Fitzer, Livermore, CA  
Ed Curreri, Cincinnati, OH

BB-10

**CONSOLIDATED ELECTRONICS**, 20 Celestial Way,  
#205, Juno Beach, FL 33408 Tel.: 305-626-1126

President: Leonard L. Jezorek  
Products: antenna systems, tuners, etc.

**C Z LABS, INC.**, 55 Railroad Ave., Garnerville, NY  
10923 Tel.: 914-947-1554

President: Harry Zipkin  
Sales Manager: Steven Zipkin  
Sales Associate: Keith Scott  
Products: coaxial cable, multi-conductor cable, satellite cable, connec-  
tors, computer access, telephone access, video access, crimping tools,  
cable assemblies, adapters, switches.  
See full listing under **Wire & Cable**.

**M/A-COM CABLE HOME GROUP**, 1375 Lenoir Rhyne  
Blvd., P.O. Box 1729, Hickory, NC 28601  
Tel.: 800-438-3331

Vice President Marketing and Sales: Larry Bowman  
Products: compression molded fiberglass satellite antennas for home  
and commercial applications. Full selection from small DBS to 6,8,10,12  
foot sizes. Individual components, reflectors, mounts, feeds, receivers,  
LNA's, polarizers. Complete operating systems, and coaxial cable.

**NORCON ELECTRONICS, INC.** 1260 Ralph Ave.,  
Brooklyn, NY 11236 Tel.: 718-451-1112

President: Norman Schlaff  
Chief Engineer: Simon Kleyner  
Products: Norcon Talk-Thru communicator providing amplified hands-  
free communication through an environmental partition. Engineered  
sound reinforcement systems. Public address systems. Closed-circuit  
and master antenna television systems. Fire alarm systems.

**RACON, INCORPORATED**, 12628 Interurban Ave.  
South, Seattle, WA 98168 Tel.: 206-241-1110  
800-426-5245

President: Daniel Blattman  
Sales Manager: David Babbitt  
Chief Engineer: Michael Quigley  
Director of Sales and Marketing: Robert Kirkaldie  
Marketing Coordinator: Jack Edgerton  
Products: Micropass<sup>®</sup> microwave transmission systems available for  
10-15 mile transmission of voice/data and video without cables.  
District Offices:  
SAC Communications, Vienna, VA, 703-281-2558  
Col-Ins-Co, Orlando, FL, 305-423-7615  
Engineering Services Co., St. Louis, MO, 314-997-1515  
Davidson and Associates, Kent, WA, 206-824-9337  
Jordan Electronics, Orange, CA

**RMS ELECTRONICS, INC.**, 50 Antin Place, Bronx,  
NY 10462 Tel.: 212-892-6700

Chairman of the Board: Joseph Bradway, Jr.  
Vice Chairman: Arthur A. Fink  
Vice President, CATV Division: Ray Perez  
Vice President, Operations: Dominik Badilla  
Vice President, Finance: Harry Bogatch  
Sales Manager: Seymour Goldberg  
Chief Engineer: Gunther Diefes  
Products: systems equipment for MATV, CATV, CCTV including  
passive and active devices, antennae, hardware, hook-up cables, video  
and telephone accessories.

Sound & Communications

# AUDIO AMPLIFIERS

**AB SYSTEMS, INC.**, 11480 Sunrise Gold Circle,  
Rancho Cordova, CA 95670 Tel.: 916-635-0890

President: Robert Bird  
Sales Manager: Irwin Laskey  
Chief Engineer: Jeff Kuells  
Other Personnel: George Anderson, Dona Maxcy  
Products: power amplifiers, mixer amplifiers, mono and dual bi-amplifiers and tri-amplifiers. Commercial ATD series power amplifiers, mixers, and loudspeakers. Provide full sound reinforcement and distributed system capabilities.

#### District Offices:

Hanoud & Assoc., Rehoboth, MA, 617-252-3735  
Dick Bellew Sales, Dallas, TX, 214-644-7881  
Pro Audio Marketing, Melville, NY, 516-367-8620  
Mes Tech Marketing, Culver City, CA, 213-870-1030  
MBT, Pittsburgh, PA, 412-344-1360  
Steve Lichtenauer, Antioch, CA, 415-757-1200  
Ken Luger, Birmingham, MI, 313-540-6302  
Lead & Assoc., Shawnee Mission, KS, 913-268-8783  
Core Co., White Bear Lake, MN, 612-770-9760  
Murphy & Cota, Atlanta, GA, 404-875-2525  
Worldwide Elec., Pembroke Pines, FL, 305-966-6622

**ALPHONE INTERCOM SYSTEMS**, 1700 130th Ave.  
N.E., Bellevue, WA 98005 Tel.: 206-455-0510

President: Hiko Shinoda  
Sales Manager: Jim Morrison  
Chief Engineer: Jun Matsumoto  
Products: industrial, business, residential, loudspeaking, telephone, video intercom/security systems with paging talk-back; six microprocessor systems available, mixer amplifiers, paging speakers, horns, drivers, ceiling speakers, tuners, fast food intercom systems, and special order products.

See full listing under **Intercom Systems—Duplex**.



**ALTEC LANSING CORPORATION**, Box 26105,  
Oklahoma City, OK 73126 Tel.: 405-324-5311

President: F. Davis Merrey  
Vice President of Marketing: Gary Rilling  
Sales Manager: Gayle Campbell  
Products: industrial and professional electronic and loudspeaker products including mixers, power amplifiers, equalizers, high power speakers and compression drivers, constant directivity horns, crossovers and microphones.

#### District Offices:

1-800-824-7888, 1-800-824-7919 (Alaska and Hawaii)  
Allen McAlister, Ext. M-266 for southern CA, AZ, NM, HI, and southern NV, western TX.  
William Sparling, Ext. M-267 for northern CA, CO, ID, MT, WY, OR, UT, northern NV, AK, WA  
Stephen Faucher, Ext. M-268 for IL, IA, KS, No. MI, MN, MO, NE, ND, SD, WI  
David Read, Ext. M-269 for AR, LA, MS, OK, TX  
Jerry Spriggs, Ext. M-270 for IN, KY, lower MI, western NY, OH, W. PA, WI  
Mike Sturgeon, Ext. M-271 for AL, FL, GA, NC, SC, TN, southern VA  
Gorge Solti, Ext. M-273 for CT, DE, MA, MD, ME, NH, NJ, eastern NY, eastern PA, RI, VT, northern VA, DC

# ASHLY

**ASHLY AUDIO INC.**, 100 Fernwood Ave., Rochester,  
NY 14621 Tel.: 716-544-5191 800-828-6308

President: Bill Thompson  
Sales Manager: Bob French  
Chief Engineer: Jon Gaines  
Products: manufacturers of professional sound products since 1972. Products include MOS-FET power amplifiers, graphic equalizers, noise gates, limiter-compressors, electronic crossovers, parametric equalizers, notch filters, and OEM products.  
See full listing under **Pro Audio Sound Systems & Products**.

**ATI-AUDIO TECHNOLOGIES, INC.**, 328 Maple Ave.,  
Horsham, PA 19044 Tel.: 215-443-0330

Vice President: Edward M. Mullin  
Products: microphone, line/buffer, turntable and small power amplifiers, IHF-pro interface amplifiers, microphone audio processors, audio distribution amplifiers, broadcast mixers.

**AUDISAR**, Box 1561, Bellevue, WA 98009  
Tel.: 206-454-2040

President: Robert E. Munger  
Products: industrial audio and broadcast equipment, audio transformers, loudspeakers, power amplifiers, mixers, sound projector interface device, test equipment, specials and engineered sound systems.

**BENCHMARK MEDIA SYSTEMS**, 3817 Brewerton Rd.,  
N. Syracuse, NY 13212 Tel.: 315-452-0400

President and Chief Engineer: Allen H. Burdick  
Sales Manager: David G. May  
Products: audio processing and distribution electronics; input/output balancing amplifiers.

**BGW SYSTEMS, INC.**, 13130 S. Yukon Ave., Haw-  
thorne, CA 90251-5042 Tel.: 213-973-8090

President: Brian Gary Wachner  
Sales Manager: Shelley Herman  
Chief Engineer: Michael Karagosian  
Products: five complete lines of audio power amplifiers including: professional, commercial, broadcast, Proline II, signal processing, and professional mobile audio power amplifiers. Also includes professional electronic crossovers.

#### District Offices:

Meyer Marketing, Boca Raton, FL, 305-487-0540  
Mel Foster Technical Sales, Edina, MN, 612-941-9800  
New Resource, Norwell, MA, 617-659-1463  
Chuck Rancilio Assocs., St. Louis, MO, 314-631-3326  
Upstate Marketing, Glenville, NY, 518-399-6311  
Monfort Electronics Marketing, Indianapolis, IN, 317-872-8877  
Shalco, Ferndale, MI, 313-547-4771

**BIAMP SYSTEMS, INC.**, 14270 S.W. Science Park Dr.,  
Portland, OR 97209 Tel.: 503-641-7287

President: Don Waggoner  
Sales Manager: Ralph Lockhart  
Chief Engineer: Hans Geerling  
Vice President of Finance: Jerry Payette  
Products: professional sound reinforcement and audio production equipment, powered mixers, console mixers, power amplifiers, crossovers, parametric equalizers, and limiters.

**BOGEN, A Lear Siegler Company**, 50 Spring St., P.O.  
Box 575, Ramsey, NJ 07446 Tel.: 201-934-8500

President: John H. Ochtera  
Vice President, Marketing: Carl C. Dorwaldt  
Vice President, Engineering: Mark Koller  
Products: commercial sound and communication systems and equipment including amplifiers, mixers, loudspeakers, microphones, telephone paging equipment, tuners, intercoms, audio surveillance and centralized sound systems.  
See full listing under **Engineered Sound Systems**.

**BONNEVILLE MEDIA COMMUNICATIONS**, 130 Social  
Hall Ave., Salt Lake City, UT 84111  
Tel.: 801-237-2400

Sales Manager: Michael F. Collett  
Chief Engineer: Brian Gallagher  
Products: audio distribution amplifiers for both rack-mount installations and for portable press-corps use.

**BROADCAST AUDIO CORP.**, 11306 Sureo Dr.,  
Rancho Cordova, CA 95670 Tel.: 916-635-1048

President: David W. Evans  
Products: stereo audio consoles, monitor amplifiers, phono preamps, distribution amplifiers and audio processors.

**CALRAD ENGINEERED ELECTRONIC PRODUCTS**,  
819 N. Highland Ave., Los Angeles, CA 90038  
Tel.: 213-465-2131

President: Joseph Shupper  
Vice President: Robert Shupper  
Sales Manager: Fred Crown  
Chief Engineer: Wes Black  
Products: microphones, headphones, public address amplifiers, power supplies, speakers, connecting cables, telephone accessories, potentiometers, connectors, switches, meters, control knobs.  
Sales Representatives:  
Shamrock Electronic Sales, Dayton, OH  
Forti Associates, Kensington, MD  
B & R Electronic Sales, Plano, TX  
Your Rep (Charles Muse), Bothell, WA  
Bruce Gordon, San Francisco, CA

**CARVER CORP.**, 20121 48th Ave., P.O. Box 1237,  
Lynnwood, WA 98036 206-775-1202

President: Robert Carver  
Chief Engineer: Colleen McNaur  
Director of Marketing: Milton McNalley  
Products: high quality consumer electronics featuring magnetic field amplifiers, sonic holography, asymmetrical charge, coupled FM decoders and the digital time lense.

**CETEC IVIE**, 1366 W. Center St., Orem, UT 84057  
Tel.: 801-224-1800

President: Craig Berry  
Sales Manager: Glen Meyer  
Chief Engineer: Greg Greenwood  
Products: 5000 modular sound system comprised of a mainframe and various plug-in modules including 70-volt, 140-volt, and 4/8-ohm amplifier combinations capable of producing power from 100 to 900 watts into various loads. There is also a dual 50-watt amplifier module.  
See full listing under **Audio Signal Processors**.

**CETEC RAYMER**, 7315 Fulton Ave., N. Hollywood,  
CA 91605 Tel.: 213-875-0423

President: Hugh T. Wilcox  
Chief Engineer: Clifford L. Kogge Jr.  
Sales Manager: Hugh T. Wilcox

BB-12

Products: background/foreground equipment: wall and shelf mount amplifiers, AM/FM tuners and paging receivers, microphone mixers, installation accessories and transformers, M-O-H and telephone interconnect devices, and test equipment.

**CREST AUDIO**, 150 Florence Ave., Hawthorne, NJ  
07506 Tel.: 201-423-1300

President: John Lee  
Sales Manager: Craig Hannabury  
Chief Engineer: J.D. Bennett  
Products: complete line of professional power amplifiers ranging from 40-1800 watts. By fall, AES, a new line of convection-cooled amplifiers designed specifically for fixed installations and studios, will be available.  
District Offices:  
Midwest Regional Sales Manager, Carl Schwartz, 312-864-1147  
Southern CA Representative, Tom Carlile, 818-907-8528  
TX, LS, RepTech, 214-222-2131  
NY, New England, Greg Ouzunoff & Assocs., 914-245-6452



**CROWN INTERNATIONAL**, 1718 W. Mishawaka  
Road, Elkhart, IN 46517 Tel.: 219-294-8000

President: Max Scholfield  
Marketing Manager: Charles W. Gushwa  
Engineering Manager: Verne E. Searer  
Products: complete line of professional, commercial, and studio amplifiers.

**C Z LABS, INC.**, 55 Railroad Ave., Garnerville, NY  
10923 Tel.: 914-947-1554

President: Harry Zipkin  
Sales Manager: Steven Zipkin  
Sales Associate: Keith Scott  
Products: coaxial cable, multi-conductor cable, satellite cable, connectors, computer access, telephone access, video access, crimping tools, cable assemblies, adapters, switches.  
See full listing under **Wire & Cable**.

**J. W. DAVIS & CO.**, 3215 Canton St., Dallas, TX  
75226 Tel.: 214-651-7341  
800-442-1564 Tex. WATS  
800-527-5705 National WATS

President: Charles Griffiths  
Vice President Sales: Jack W. Tucker  
Products: integrated and booster power amplifiers in various sizes to 250 watts including separate mixers and equalizers or combination packages for custom or engineered sound reinforcement.

**DB SYSTEMS**, Main Street, Rindge, NH 03461  
Tel.: 603-899-5121

President: David B. Hadaway  
Sales Manager: John S. Tarner  
Products: low distortion high-fidelity components; preamplifiers, power amplifiers, electronic crossovers; gold-plated connectors; audiophile accessories.

**DUKANE CORPORATION**, 2900 Dukane Dr., St.  
Charles, IL 60174 Tel.: 312-584-2300

General Manager: William B. Clark  
Marketing Manager: Craig E. Lyons  
Sales Manager: Jim Shane  
Chief Engineer: Gordon Mielce

Sound & Communications

Products: nurse call, intercom, voice paging, clock, sound masking, staff registry and voice evacuation systems for health care, institutional and industrial markets.

See full listing under **Paging Systems**.

**EDCOR**, 16782 Hale Ave., Irvine, CA 92714

Tel.: 714-863-1529

President: Larry Weston

Products: modular mixer & power amplifiers, GLA mixer & booster amplifiers, mic/line & voice gated mixers, automatic mixers. Wireless microphone systems. Transformers audio custom and standard, power transformers.

# EMS/MUSIC

THE NEW SOUND IN FOREGROUND MUSIC

**EMS/MUSIC**, 2264 15th Ave. West, Seattle, WA

98119 Tel.: 206-281-8686

Vice President National Music Service Sales: G. Bernard Kron

National Dealer Sales Desk: Mark Rubin, Steve Ducharme, Anne Walker

Products: current-drive amplifiers, tape cartridge players, foreground music libraries, message inserters.

**FANON COURIER CORP.**, 15300 San Fernando

Mission Blvd., Mission Hills, CA 91345

Tel.: 818-898-2237

President: Jay Steinbeck

Sales Manager: Murray Trotiner

Products: intercoms, speakerphones, PA amplifiers, paging horns, rumpets and drivers, megaphones, FM scanning monitors, satellite stereo receivers, c.b. transceivers.

**FM ACOUSTICS LTD.**, Tiefenhofstrasse 17,

Waedenswil, CH (Switzerland) 8820

Tel.: 01-780-6444

President: Manuel Huber

Products: high power amplifiers from 150 to 7,000 Watts RMS; linear-phase electronic crossovers featuring 36 dB/Octave attenuation; Forcelines high energy transfer cables.

District Office:

FM Acoustics USA, Benicia, CA 707-745-4444

**HEDCO**, P.O. Box 1985, Grass Valley, CA 95945

Tel.: 916-273-9524

President: Peter Hughes

Sales Manager: Ross Shelton

Chief Engineer: Steve Miller

Products: audio and video routing and distribution equipment.

See full listing under **Audio Visual Equipment**.

**HEIL LTD.**, 2 Heil Drive, Marissa, IL 62257

Tel.: 618-295-3000

President: Bob Heil

Products: mixing consoles power amplifiers, parametric EQ, crossovers, satellite TV antennas, amateur radio and communication microphones.

**MC**, 1316 E. Lancaster, Ft. Worth, TX 76102

Tel.: 817-336-5114

President: Jerry Freed

Sales Manager: Chuck Murray

Chief Engineer: Jim Cowser

Products: Akai—multitrack recorder, synthesizers. Studiomaster—recording and live mixing consoles. Ross—multitrack recorders, PA systems, guitar amps and effects. Fane—professional loudspeakers and compression drivers.

**INDUSTRIAL RESEARCH PRODUCTS, INC.**, 321

Bond St., Elk Grove Village, IL 60007

Tel.: 312-439-3600

President: Hugh S. Knowles

Marketing Manager: Roger Carroll

Sales Engineer: Jack Read

Products: Voice-matic™ automatic microphone mixers, digital delays TEQ™ transversal equalizers, power amplifiers, Levelmatic™ automatic level controllers.

**INNOVATIVE ELECTRONIC DESIGNS, INC.**, 9701

Taylorville Rd., Louisville, KY 40299

Tel.: 502-267-7436

President: Hardison G. Martin

Sales Manager: Tom Roseberry

Chief Engineer: Ed Young

Design Engineer: Bob Ponto

Products: new "Class D" 200 W, 70.7 volt plug-in amplifiers, 7 inch rack frame holds 8 amplifiers; computer-controlled audio systems; smart automatic mixer; building block audio processing equipment.

**JBL PROFESSIONAL**, 8500 Balboa Blvd., Northridge,

CA 91329 Tel.: 818-893-8411

President: Ron Means

Vice President, Sales: Ken Lopez

Applications Engineer: Drew Daniels

Products: high quality loudspeakers and loudspeaker systems of all kinds; special loudspeakers for musical instruments; automatic microphone mixer; electronic crossover.

See full listing under **Loudspeakers & Accessories**.

**JOHNSON ELECTRONICS, INC.**, P.O. Box 4728,

Winter Park, FL 32793-4728

Tel.: 305-677-4030

Chief Executive Officer: Ralph L. Weber

President: Charles Gabrielson

Vice President, Engineering: Kenneth St. John

Director of Marketing: Mel Kelch

Products: complete line of solid state SCA multiplex tuners, tuner/amplifiers, solid state audio amplifiers and accessories. Datavox™ data transmission equipment.

**McGOHAN ELECTRONICS, INC.**, 1033 Fairway Dr.,

Bensenville, IL 60106 Tel.: 312-595-2342

President and Sales Manager: James M. McGohan

Chief Engineer: Bill Everhart

Products: solid state amplifiers for commercial sound, background, and telephone interconnect. Mic mixers, zone paging preamplifiers, mic and telephone line transformers and other accessories—off the shelf stock.

District Offices:

Austin Associates, Willingboro, NJ, 609-871-9290

Irv Brown Co., Brooklyn, NY, 212-493-1379

Ted Firaneck Sales Co., Pontiac, MI, 313-373-9595

Givan-Flanagan Assoc., Inc., W. Boylston, MA, 617-835-3161

Maish Sales Co., Mulberry, IN, 317-296-2322

J. W. Lehner Co., Stow, OH, 216-686-1965

Miller Associates, Richardson, TX, 214-437-5733

Chuck Olson Assoc., Renton, WA, 206-226-2112

Henry W. Phillips Co., Inc., Roswell, GA, 404-992-3070

Rancilio Assoc., Inc., St. Louis, MO, 314-631-3326

Meyer Marketing, Deerfield Beach, FL, 305-481-9250

SAGA, Oswego, NY, 315-343-5739

Stan Sliz & Assoc., Louisville, CO, 303-466-1608

Sunrise Sales Co., Romeoville, IL, 815-886-6034

Brian Trankle & Assoc., Hillsborough, CA, 415-344-1133

Wes-Tech Marketing, Culver City, CA, 213-870-1030

**McMARTIN INTERNATIONAL, INC.**, P.O. Box 4500,  
Gunnison, CO 81230 Tel.: 303-641-5500

President: Ray B. McMARTIN  
Vice President, Sales: Jay B. McMARTIN  
Financial Administrator: Robert McMARTIN  
Products: engineered and commercial sound amplifiers/  
mixers/accessories, background and foreground music amplifiers and  
sound systems, FM/SCA receivers, satellite modulators/demodulators.

**MIDWEST ELECTRONIC INDUSTRIES, INC.**, 4945  
W. Belmont, Chicago, IL 60641  
Tel.: 312-685-3500

Vice President/General Manager: H. D. Vicinus  
Sales Manager: C. L. Madonia, J. Rusick  
Products: manufacturers of the Mobilpage PA system for the transpor-  
tation industry, including solid state amplifiers in models up to 100 watts  
and matched accessories including horns, microphones, radio and tape  
reproducing equipment.

**MILLBANK ELECTRONICS GROUP LTD.**, Bellbrook  
Industrial Estate, Uckfield, Sussex,  
TN22 1QL England Tel.: Uckfield 825-4811

Chairman: Tony Walker  
Director and General Manager: Brian Evans  
Client Services Director: Bernard Skinner  
Engineering Manager (Sales): Doug Edworthy  
Sales and Marketing: Don Eaton  
Products: custom engineered sound systems; public address, tele-  
conference, life-safety. Sound reinforcement systems; amplifiers,  
preamplifiers, background music. FM/AM tuners, alarm and tone signal  
generators, loudspeakers, microphones.  
See full listing under **Engineered Sound Systems**.

**MULTI-VOX LTD.**, 9967 St. Michel Blvd., Montreal  
H1H 5G7, Quebec, Canada Tel.: 514-321-3131

President: Fernand Parent  
Sales Manager: Robert Girard  
Chief Engineer: Dominique Malenfant  
Operations Manager: Georges Morissette  
Products: audio amplifiers, electronic carillons and chimes, simplex and  
duplex intercom systems, solid state and microprocessor intercom  
systems for apartments, hospital and health care facilities, schools,  
institutions and industries, paging systems.

**NORCON ELECTRONICS, INC.**, 1260 Ralph Ave.,  
Brooklyn, NY 11236 Tel.: 718-451-1112

President: Norman Schlaff  
Chief Engineer: Simon Kleyner  
Products: Norcon Talk-Thru communicator providing amplified hands-  
free communication through an environmental partition. Engineered  
sound reinforcement systems. Public address systems. Closed-circuit  
and master antenna television systems. Fire alarm systems.

**NUMARK ELECTRONICS/PPD**, 503 Raritan Center,  
Edison, NJ 08837 Tel.: 201-225-3222

President: Harry Kotovsky  
Sales Manager: Peter Horsman  
Products: power amplifiers, mixers, equalizers, noise reduction, expan-  
sion system, video sound processors.  
See full listing under **Pro Audio Sound Systems**.

**OPAMP LABS, INC.**, 1033 N. Sycamore Ave., Los  
Angeles, CA 90038 Tel.: 213-934-3566

Sales Manager: B. Losmandy  
Products: audio consoles (kits and wired); amplifiers, DC, mic preamp;  
E.Q., magnetic tape, oscillators, power supplies, transformers, reverbs,  
graphic equalizers, electronic matrices. Video distribution amplifiers.  
Audio-video switches rack-fitted.

**PANASONIC INDUSTRIAL COMPANY, RAMSA**, 6550  
Katella Ave., Cypress, CA 90630  
Tel.: 714-895-7277

President: Scott Minakami  
Sales Manager: Steve Woolley  
Other Personnel: Gene Juall, Joe Crocco, Chris Foreman  
Products: pro audio and commercial sound products including mix-  
ers, mixer-amplifiers, power amplifiers, speakers, microphones, and  
a portable public address system with wireless microphones(s).  
See full listing under **Pro Audio Sound Systems & Products**.

**PANASONIC INDUSTRIAL CO., Audio-Video  
System Products Group**, One Panasonic Way,  
Secaucus, NJ 07094 Tel.: 201-348-7000

Vice President: Steve Yuhas  
Sales Manager: Steve Woolley  
Chief Engineer: Tom Nagai  
Marketing Manager: John McDonnell  
Products: complete line of four-input and five-input mixer power  
amplifiers. A series of five-input power amplifiers with AM-FM tuners,  
relay boxes, video projection systems, and a complete line of accessories.  
See full listing under **CCTV/Video Systems & Products**.

**PASO SOUND PRODUCTS, INC.**, 14 First St., Pel-  
ham, NY 10803-1401 Tel.: 914-738-4800

Vice President, Engineering: Paul Mastrangelo  
Operations Manager: Anthony Sgueglia  
Sales Manager: David Moore  
Product Manager (Engineering): Ken O'Brien  
Credit Manager: Marilyn Beckerson  
Customer/Representative Support: Tommi Paladino  
Sales Administration (Order Expedite): Stacy Appel  
Products: indoor, outdoor, portable, mobile amplifiers, preamplifiers,  
mixers, booster amplifiers, AC/DC integrated amplifiers and boosters,  
intercom systems, multi-residential systems, microphones, wireless  
microphones, industrial grade auto reverse cassette machines, tuners,  
sound columns, speakers, baffles, driver units, trumpets, horns, full  
range loudspeaker systems, stage monitors, stands, accessories, equip-  
ment racks.  
See full listing under **Engineered Sound Systems**.

**POWERTRONIX**, 10623 Lawson River, Fountain  
Valley, CA 92708 Tel.: 714-963-5411

President: Robert Gehlke  
Sales Manager: Irv Weisman  
Products: 200W current-drive distribution amplifiers with 24V-48 VDC  
emergency back-up power capability. 24 VDC mobile amplifier with  
3 electronically-switched, prioritized inputs. Preamp with 5  
electronically-switched, prioritized inputs.  
District Offices:  
Design Factors, Hacienda Heights, CA, 213-697-7576  
Raleigh Perry & Associates, Buford, GA, 404-945-3142  
R.G. Associates, Stow, MA, 617-897-7146

**PRECISION ELECTRONICS, INC.**, 9101 King St.,  
Franklin Park, IL 60131 Tel.: 312-678-5350

President: W.S. Grommes  
Sales Manager: W. Stow  
Chief Engineer: A.A. Hart  
Products: PA amplifiers, mixer preamplifiers, power amplifiers,  
AM/FM tuners, tuner amplifiers with paging, graphic equalizer,  
automatic volume limiter, telephone music-on-hold amplifier, and sound  
accessories.

**PROTECH AUDIO CORP.**, Flowerfield, Bldg. #1, St.  
James, NY 11780 Tel.: 516-584-5855

President: William Murphy  
Chief Engineer: Joseph Giambone



Products: amplifiers—power, medium level, distribution, compressor/limiters, preamplifiers modular, automatic level, controls, remote level controls, switching modules, line amplifiers, mixing/summing modules, audio transformers, hardware.

**QSC AUDIO PRODUCTS, INC.**, 1926 Placentia Ave.,  
Costa Mesa, CA 92627 Tel.: 714-645-2540

President: Barry Andrews  
Sales Manager: Greg Hockman  
Sales Administrator: Karen Notin  
Chief Engineer: P. H. Quilter  
Products: professional power amplifiers and electronic crossovers.

**ROUND & BIDNICK ASSOCS.**, 2631 Rocky Trail Rd.,  
Diamond Bar, CA 91765 Tel.: 714-861-3928

President and Sales Manager: Charles W. Round  
Chief Engineer: Ron S. Bidnick  
Products: mixer/power amplifiers with AM/FM radio, Selectizone™ paging, chime-siren signaling, AC/24v DC operations; power amplifiers; mixers; tuners; cassette decks, battery chargers.  
District Offices:  
Murphy & Cota, Inc., Atlanta, GA  
Burcaw Company, Grand Rapids, MI  
Lichtenauer & Associates, Pittsburg, CA  
Forti Associates, Kensington, MD  
Avcom, Olmstead, OH

**RTS SYSTEMS, INC.**, 1100 W. Chestnut St., Burbank,  
CA 91506 Tel.: 818-840-7119

President: Bob Ringer  
Sales Manager: Shelley Harrison  
Chief Engineer: Stan Hubler  
Vice President, Marketing: Douglas Leighton  
Products: professional intercom systems, conference line and dedicated line, IFB systems. Pro audio amplifier, phonopreamp, 10-watt monitor amp and buffer amp.

**SESCOM, INC.**, 2100 Ward Dr., Henderson, NV  
89015 Tel.: 702-565-3400

President: Franklin J. Miller  
Products: amplifiers, complete line of audio interfacing components. Audio transformers, audio modules. Signal processing equipment.

**SOUND CODE SYSTEMS, INC.**, 13932 Seaboard  
Circle, Garden Grove, CA 92643  
Tel.: 714-554-0903

President: Marvin Halverson  
Sales Manager: Tim Edwards  
Chief Engineer: Kevin Halverson  
Products: Model 21250A 150-watt amplifier, Model 2350A 700-watt amplifier, Model 2450A 900-watt amplifier, Model 2600 1,200-watt amplifier.

District Offices:  
AMH Sales Company, Palos Verdes, CA, 213-373-2034  
Audio Associates, Glenwood, MD, 301-854-6122  
Fleetwood Marketing, Madison, IN, 812-265-3309  
Future Sales, Fairfax, CA, 415-459-6880  
Hot House, Highland, NY, 914-691-6077  
Northwest Marketing, Vancouver, WA, 206-253-9749  
Martin Music Sales, Austin, TX, 512-266-1113  
Hawkeye Music Sales, St. Paul, MN, 612-227-2673  
Pro New England Marketing, Avon, CT, 203-673-1558  
Ron Tunks Sales, Ft. Lauderdale, FL, 305-741-5121

**SOUND PRODUCTS/3M**, 3M Center 225-45-10, St.  
Paul, MN 55144-1000 Tel.: 612-733-0447

Marketing Manager: Don Rada  
Sales Manager: Jack Dingley  
Products: music libraries for all purposes. Reliable players. Industrial quality intercoms and vehicle detectors. Top-line message repeater. Speaker assemblies for distributed systems. Microphones, amplifiers and other sound system components.

**SPECO, DIV., COMPONENTS SPECIALTIES INC.**  
1172 Rt. 109, P.O. Box 624, Lindenhurst, NY  
11757 Tel.: 516-957-8700 (New York)  
1-800-645-5516 (Outside NY)

President: Louis W. Keller  
Vice President, Sales: Mel Hulkower  
Vice President & General Manager: James Ganci  
Regional Sales Managers: Eric Forman, Bruce Kurtz  
Products: P.A. horns, amplifiers, tuners, loudspeakers, wall baffle speaker assemblies, outdoor speakers, sound columns, ceiling grille transformers, L-pads, attenuators, accessories, microphones, intercom alarm sirens, multitesters, oscilloscopes.

**TAPE-ATHON CORPORATION**, 13633 Crenshaw  
Blvd., Hawthorne, CA 92500  
Tel.: 213-676-6752

President: Lee Tate  
Sales Manager: Robert Mayfield  
Chief Engineer: Bernard Sayers  
Products: reel-to-reel, dual cassette on-premise systems, rack-mounted or portable, complete automated central studio systems, chimes and carillon systems, message insertion units, full audio-master amplifier line, customized background/foreground libraries.  
District Offices:  
Chuck Olson Assocs., Renton, WA, 206-271-5416  
Warren Assocs., Santa Clara, CA, 408-988-7762  
Avwest, Fountain Hills, AZ, 602-946-1811  
Spivey-Leboeuf Assocs., Richardson, TX, 214-231-3190  
Central Marketing Group, Kansas City, MO, 816-741-7460  
John E.M. Anderson, Minneapolis, MN, 612-823-6459  
Ken Levy and Assocs., Chicago, IL, 312-763-5000  
Avcom, N. Olmsted, OH, 216-777-2060  
Elmarcon, Indianapolis, IN, 317-846-0221  
Pinz Sales Corp., Yonkers, NY, 914-423-4747  
Associated Sales Reps, Baltimore, MD, 301-574-0550  
Murphy & Cota, Atlanta, GA, 404-875-2525  
Bencsik Assocs., Ocala, FL, 904-732-9775  
C&B Electronics, Arvada, CO, 303-422-0561  
Design Factors, La Habra Heights, CA, 213-697-7576

**TOA ELECTRONICS, INC.**, 480 Carlton Ct., S. San  
Francisco, CA 94080 Tel.: 415-588-2538

President: Sam Sakata  
Sales Manager, Commercial Div: Joe Green  
Technical Service Manager: Bob Sweet  
Products: engineered sound systems, commercial sound systems amplifiers, dual amplifiers, tuners, equalizers, multi-functional preamplifiers, mixing consoles, speakers, horns, drivers, microphones wireless systems, microcomputerized EXES intercom systems, CCTV security systems.  
See full listing under **Engineered Sound Systems**.

**UREI**, 8500 Balboa Blvd., Northridge, CA 91320  
Tel.: 818-893-8411

President: Ron Means  
Vice President: Ken Lopez  
Applications Engineer: Drew Daniels  
Products: power amplifiers, limiters, compressors, equalizers, filters Time Aligned™ speakers, direct boxes, electronic crossover, digital metronome, transcription preamplifier, disco mixers, broadcast consoles.

**XTEL CORPORATION**, 4301 Will Rogers Pkwy., Suite  
900, Oklahoma City, OK 73108  
Tel.: 405-946-1500

President: J. William Patterson  
Vice President: Glen Patterson  
Products: "Voicepac 10-75 stations:" handsfree response behind PBX/Centrex or key systems. "All-Call," splash and privacy tones power paging. Compact speaker/microphones mount inside telephones

# AUDIO SIGNAL PROCESSORS

**AB SYSTEMS, INC.**, 11480 Sunrise Gold Circle,  
Rancho Cordova, CA 95670 Tel.: 916-635-0890

President: Robert Bird  
Sales Manager: Irwin Laskey  
Chief Engineer: Jeff Kuells  
Other Personnel: George Anderson, Dona Maxcy  
Products: power amplifiers, mixer amplifiers, mono and dual bi-amplifiers and tri-amplifiers. Commercial ATD series power amplifiers, mixers, and loudspeakers. Provide full sound reinforcement and distributed system capabilities.  
See full listing under **Audio Amplifiers**.

**ADA SIGNAL PROCESSORS, INC.**, 7303 D Edgewater  
Dr., Oakland, CA 94621 Tel.: 415-632-1323

President: David Tarnowski  
Sales Manager: Lorry Marcus  
Chief Engineer: Bill Houston  
Products: Pitchtraq (programmable pitch transposer); Digitizer 4 (programmable digital delay), S1000 (one-second digital delay).  
District Offices:  
Lorry Marcus, Oakland, CA, 800-241-8888  
David Gonden, Oakland, CA, 800-241-8888

**ADVANCED MUSIC SYSTEMS**, Billington Road,  
Burnley, Lancs, England BB11 5ES  
Tel.: 0282-57011

President: Mark Crabtree  
Sales Manager: Stuart Nevison  
Chief Engineer: Ray Worrall  
Products: design and manufacture professional audio equipment including digital delay lines, reverberators and audio delay compensators.  
District Office:  
Harris Sound, Inc., Hollywood, CA

**AKG ACOUSTICS, INC.**, 77 Selleck St., Stamford,  
CT 06902 Tel.: 203-348-2121

Vice President/General Manager: S. R. Ravich  
Sales Manager: D. Talbot  
Tech Manager: D. Pilkington  
Products: studio condenser microphones; prepolarized condenser microphones; professional dynamic microphones; cardioid dynamic microphones; special purpose microphones; stereo headphones; boom sets; accessories, reverb units, phonocartridges, digital delays, digital reverbs.  
See full listing under **Microphones**.

**ALTEC LANSING CORPORATION**, Box 26105,  
Oklahoma City, OK 73126-0105  
Tel.: 405-324-5311

President: F. Davis Merrey  
Vice President of Marketing: Gary Rilling  
Sales Manager: Gayle Campbell  
Products: industrial and professional electronic and loudspeaker products including mixers, power amplifiers, equalizers, high power speakers and compression drivers, constant directivity horns, crossovers and microphones.  
See full listing under **Audio Amplifiers**.

**APHEX SYSTEMS LTD.**, 13340 Saticoy St., N.  
Hollywood, CA 91605 Tel.: 818-765-2212

President: Marvin Caesar  
Sales Manager: Paula Lintz  
Chief Engineer: Donn Werrbach  
Product Manager: Jon Sanserino

Products: combination compellor/aural exciter, automatic dynamic control with total transparency and increased intelligibility and presence; easy interface with active I/O circuits that adjust automatically to balanced or unbalanced use.

**ART — Applied Research & Technology Inc.**,  
215 Tremont St., Rochester, NY 14608  
Tel.: 716-436-2720

President: Philip A. Betette  
Sales Manager: Peter Beverage  
Chief Engineer: Richard Neatrou  
Customer Relations: Jim Stachowski  
Products: digital signal processors including software-updateable DR1 and DR2a digital reverberation systems; PD3 1-in-3-out fixed installation delay; graphic equalizers; pitch transposer (time compression/expansion); 1500 delay line.  
Sales Representatives:  
PAB Marketing, Mount Laurel, NJ, 609-561-5309  
Audio Associates, Glenwood, MD, 301-854-6122  
Ron Tunks Sales, Ft. Lauderdale, FL, 305-741-5121  
JAMM Distributing, Chicago, IL, 312-747-6363  
New West Audio, Hollywood, CA, 213-876-9164

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# ASHLY

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**ASHLY AUDIO INC.**, 100 Fernwood Ave., Rochester,  
NY 14621 Tel.: 716-544-5191 800-828-6308

President: Bill Thompson  
Sales Manager: Bob French  
Chief Engineer: Jon Gaines  
Products: professional sound products since 1972. Products include MOS-FET power amplifiers, graphic equalizers, noise gates, limiter-compressors, electronic crossovers, parametric equalizers, notch filters, and OEM products.  
See full listing under **Pro Audio Sound Systems & Products**.

**AUDIO + DESIGN/CALREC, INC.**, P.O. Box 786,  
Bremerton, WA 98310 Tel.: 206-275-5009, 5010

President: Mike Beville  
Sales and Marketing Manager: Nigel Branwell  
Chief Engineer: Tom Gandy  
General Manager: Kathleen Mallory  
Products: audio signal processing, microphones, mixing consoles, compressors, limiters, expanders, gates, equalizers, distribution amps, de-essers, Ambisonic Surround Sound equipment.  
District Offices:  
Dick Swettenham, Audio + Design/Calrec, W. Los Angeles, CA

**AUDIO/DIGITAL, INC.**, 1000 S. Bertelsen Rd., Ste. 4,  
Eugene, OR 97404 Tel.: 503-687-8412  
800-423-1082

President: Gary Hartesty  
Sales Manager: Virginia Nott  
Chief Engineer: Gary Hartesty  
Products: digital signal processing equipment for permanent installation, touring, recording, studio and radio broadcasting applications, including the ADD series of 2 and 3 output microsecond digital delay.  
District Offices:  
Triad Marketing Assoc., Paul Ackel, Wayne, NJ, 201-696-8625  
Westech Marketing, Wes Alderson, Dale Meyers, Greg Gzubay, Culver City, CA, 213-870-9286  
Future Sales, John Caporale, Redmond, WA, 206-868-5577  
Pro Marketing, Pete Finney, Indianapolis, IN, 317-846-9591  
Future Sales, Wayne Fuday, Fairfax, CA, 415-459-6880  
Shalco, Inc., Bill McCall, Don Jones, Ferndale, MI, 313-547-4771

Meyer Marketing, Larry Meyer, Randy Millis, Deerfield Beach, FL, 305-481-9250  
Richard S. Pass Assocs., Inc., Dick Pass, Roy Pass, Langhorn, PA, 215-757-6100  
Peregrine Southwest Reps, Ben Speegle, Steve Simmons, Houston, TX, 713-772-6765  
Wilson Audio Sales, Wally Wilson, Chris Jones, Nashville, TN, 615-646-4477

**AUDIO-TECHNICA U.S., INC.**, 1221 Commerce Dr.,  
Stow, OH 44224 Tel.: 216-686-2600

President: Jon R. Kelly  
Sales Manager: Mark Taylor  
Vice President Marketing: Ken Reichel  
Chief Engineer: Steve Hebrock  
Products: microphones and microphone accessories, recorder/mixers, cables, direct boxes, headphones, ENG mixers, mic stands.  
See full listing under **Microphones**.

**AUDIOVISUAL SYSTEMS**, 725 Lorraine Blvd., Los  
Angeles, CA 90005 Tel.: 213-934-3006

President and Chief Engineer: Orrin Charm  
Products: PB289G patch bay system. Ground plane construction, switchable normals, PCB construction, switches audio and video.  
"Pyramount" ceiling suspension system designed for hanging loudspeakers, PZM™ mics, etc.

**BEL ELECTRONICS**, 745 109th St., Arlington, TX  
76011 Tel.: 817-640-6447

President: John Birkhead  
Executive Vice President: Jerry Spohn  
Sales Manager: Paul Westbrook  
Chief Engineer: Tom Burrows  
Products: digital delay processors, microprocessor-based BDE series analog flangers, noise reduction units.

**BENCHMARK MEDIA SYSTEMS**, 3817 Brewerton Rd.,  
N. Syracuse, NY 13212 Tel.: 315-452-0400

President and Chief Engineer: Allen H. Burdick  
Sales Manager: David G. May  
Products: audio processing and distribution electronics; input/output balancing amplifiers.

**BIAMP SYSTEMS, INC.**, 14270 S.W. Science Park Dr.,  
Portland, OR 97209 Tel.: 503-641-7287

President: Don Waggoner  
Sales Manager: Ralph Lockhart  
Chief Engineer: Hans Geerling  
Vice President & Finance: Jerry Payette  
Products: professional sound reinforcement and audio production equipment, powered mixers, console mixers, power amplifiers, crossovers, parametric equalizers, and limiters.

**BROADCAST AUDIO CORP.**, 11306 Sureo Dr.,  
Rancho Cordova, CA 95670 Tel.: 916-635-1048

President: David W. Evans  
Products: stereo audio consoles, monitor amplifiers, phono preamps, distribution amplifiers and audio processors.

**BROOKE SIREN SYSTEMS**, 262A Eastern Parkway,  
Farmingdale, NY 11735 Tel.: 516-249-3660

President: Jack Kelly  
Sales Manager: Keith Worsley  
Chief Engineer: Jim Jacobelli  
Products: audio signal processors.

**CETEC IVIE**, 1366 W. Center St., Orem, UT 84057  
Tel.: 801-224-1800

President: Craig Berry  
Sales Manager: Glen Meyer  
Chief Engineer: Greg Greenwood  
Products: modular signal processing systems. A common main frame accepts mixers, crossovers, equalizers, digital delays, compressors, noise-making generators, and power amplifiers. A programmable audio buss system provides all interconnects.

**CIRCUIT RESEARCH LABS, INC.**, 2522 W. Geneva  
Dr., Tempe, AZ 85282 Tel.: 1-800-535-7648

President: Ron Jones  
Sales Manager: Ray Uptide  
Chief Engineer: Stan Salek  
Sales: Dee McVicker  
Products: the Dynafax Models DX-1 and DX-2 are single-ended (no encode-decode) noise reduction units.

**DAX AUDIO GROUP**, 1231 S.E. Gideon St., Portland,  
OR 97202 Tel.: 503-232-4445

President: R.C. Stevenson  
Chief Engineer: Robert Herb  
Sales Manager: H.C. (Bud) Garrison  
Products: mixing consoles, powered mixers, graphic equalizers, real time analyzers, reverberation units, electronic crossovers, audio amplifiers.  
District Offices:  
David H. Brothers Company, Baltimore, MD  
S.F. Marketing, Montreal, Quebec  
Professional Sound and Lighting, Lakewood, CO  
Wm. J. Ray and Associates, Atlanta, GA  
Lichtenauer and Assoc., Antioch, CA

**dbx INCORPORATED**, 71 Chapel St., Newton, MA  
02195 Tel.: 617-964-3210

President: David Kennedy  
Pro Products Sales Director: Scott Berdell  
North American Sales Manager: Greg Green  
Products: compressor/limiters; de-essers; parametric and computerized automatic memory equalizers; soft clippers; noise gates; pro and consumer tape noise reduction; the 700 digital audio processor; subharmonic synthesizers; dynamic-range expanders; mixer/dist amps; powered mainframes; A/V switchers; 321 satellite noise reduction; MTS (stereo TV) noise reduction; Soundfield Imaging speaker systems — all for recording, sound contracting (reinforcement), and broadcasting applications.

**DELTALAB/ADS**, 1 Progress Way, Wilmington, MA  
01887 Tel.: 617-658-5100 617-729-1140

President: James D. Sullivan  
Sales Manager: James D. Sullivan  
Products Specialist: James M. Ruse  
Products: digital time delays for pro audio and industrial use; current models include the ADM 315 single-tap digital delay and the ADM 465 triple-tap digital delay.  
District Offices:  
MI, Northern IL, WI, IN, KY; JAMM Distributing, Inc., John Amstadter, 312-747-6363  
NY, Northern NJ: Metropolis Mktg., Inc., Tom Benson, 201-225-0085  
Southern NJ, PA, DE, MD, VA, OH, Western VA: MBT, Mark Tarshis, 412-344-1360  
SC, PN, GA, AL, MS, NC: William J. Ray Assocs., William Ray, 404-351-6367  
Southern CA, AZ, NV: Western Audio Sales, Mike Klickstein, 818-246-3806

**DOD ELECTRONICS CORP.**, 5639 South Riley La.,  
Salt Lake City, UT 84107 Tel.: 801-268-8400

President: David D. Francesco  
Sales Manager: John Johnson  
Chief Engineer: David D. Francesco  
International Sales Manager: Wayne Morris

Products: audio-signal processing equipment, including DOD professional products group of rack mount equipment, DIGITEX® digital processors, and AUDIOLOGIC® signal processor.

Representatives:

New England: Hanoud & Assocs., 671-252-3735

New York: Gary Castelluccio, 201-278-2500

**DOLBY LABORATORIES, INC.**, 100 Potero Ave., San Francisco, CA 94109 Tel.: 415-558-0200

President: Bill Jasper

Vice President, Advanced Marketing: Ioan Allen

Vice President, Sales & Marketing: Kevin Dauphinee

Vice President, Motion Picture Division: Bob Schein

Sales Manager: Stacey Rehm

Products: signal processing and noise reduction systems for the recording, broadcast, video, and film industries.

District Offices:

Audio Industries, Corp., Hollywood, CA, 213-851-4111

Audiotechniques, Inc., New York, NY, 212-586-5989

AVC Systems, Inc., Minneapolis, MN, 612-729-8305

Everything Audio, Encino, CA, 818-995-4175

Harris Audio Systems, Inc., N. Miami, FL, 305-944-4448

Lake Systems, Newton, MA, 617-244-6881

Martin Audio/Video Corp., New York, NY, 212-541-5900

Milam Audio Corp., Pekin, IL, 309-346-3161

Performance Audio, Salt Lake City, UT, 801-466-3196

RMS Sound, Seattle, WA, 206-362-0491

Sound Genesis, Inc., San Francisco, CA, 415-285-8900

Southwest Pro Audio, Inc., Austin, TX, 512-443-4567

Studio Supply Corp., Nashville, TN, 615-366-1890

Tekom, Philadelphia, PA, 215-627-6700

Westlake Audio Corp., Los Angeles, CA, 213-851-9800

**DORROUGH ELECTRONICS**, 5221 Collier Pl., Woodland Hills, CA 91364 Tel.: 818-999-1132

President: Mike Dorrough

Sales Manager: Jon Churchill

Chief Engineer: Tom Carnegie

Products: Dorrough Loudness Meter simultaneously displays in LED form the peak and average of audio on the same scale; Audio Processor Model 610, a tri-band audio processor for signal processing; Stereo Generator Model 80-B, a stereo signal generator for FM frequencies; broadcast console.

District Offices:

Allied Broadcast Equipment, Richmond, IN, 317-962-8596

Sound Distributors, San Antonio, TX

Broadcast Systems, Austin, TX, 512-836-6011

Coast Recording, Hollywood, CA, 213-462-6058

Midwest Communications Corp., Nashville, TN

**EDCOR**, 16782 Hale Ave., Irvine, CA 92714 Tel.: 714-863-1529

President: Larry Weston

Products: automatic mixers, mic/line level mixers, voice gated microphone mixers. Four and eight channel phantom power supplies for electret or condenser microphones with step attenuator on each channel.

**ELTREX INTERNATIONAL**, 2 Columbia Dr., Amherst, NH 03031 Tel.: 603-886-3500 Telex: 953016

President: Thomas H. Sullivan

Products: complete line of radio paging encoders, terminals, test equipment for two-tone and five-tone sequential solid state voice recorders and digital delay units for the broadcast industry.

**EVENTIDE, INC.**, One Alsan Way, Little Ferry, NJ 07643 Tel.: 201-641-1200

President: Richard Factor

Sales Manager: Gil Griffith

Products: digital audio delays with delay up to 10 seconds in models for sound reinforcement, broadcast, and recording; SP 2016/audio effects processor/reverb; pitch change/effects units; compression/expansion systems; real-time third octave spectrum analyzers with RT-60 and spectral surface analysis capabilities.

**FURMAN SOUND, INC.**, 30 Rich St., Greenbrae, CA 94904 Tel.: 415-927-1225

President and Chief Engineer: Jim Furman

Sales Manager: Diane Poole

Chief Engineer: Jim Murphy

Products: rack-mounted audio signal processing: equalizers, crossovers, reverberation systems, limiter/compressors, noise gates, patch bays, power conditioners, microphone mixers.

**INDUSTRIAL RESEARCH PRODUCTS, INC.**, 321 Bond St., Elk Grove Village, IL 60007 Tel.: 312-439-3600

President: Hugh S. Knowles

Marketing Sr. Managers: Roger M. Carroll, Jack L. Read

Products: Voice-matic™ automatic microphone mixers, TEQ™ digital delays, transversal equalizers, power amplifiers, Levelmatic™ automatic level controllers.

**INNOVATIVE ELECTRONIC DESIGNS, INC.**, 9701 Taylorsville Rd., Louisville, KY 40299 Tel.: 502-267-7436

President: Hardison G. Martin

Sales Manager: Tom Roseberry

Chief Engineer: Ed Young

Design Engineer: Bob Ponto

Products: new "Class D" 200 W, 70.7 volt plug-in amplifiers, 7 inch rack frame holds 8 amplifiers; computer-controlled audio systems; smart automatic mixer; building block audio processing equipment.

**KLARK-TEKNIK ELECTRONICS**, 30B Banfi Plaza N, Farmingdale, NY 11735 Tel.: 516-249-3660

President: John P. Kelly, Jr.

Sales Manager: Keith Worsley

Chief Engineer: Jim Jacobelli

Products: digital reverberation systems, digital delay lines, 1/3 octave and 2/3 octave graphic equalizers, 1/3 octave R.T.A. with R.T.60 measurement capabilities, Brooke Siren Systems crossovers, compressor/limiters, DDA mixing consoles for recording, sound reinforcement, and ENG/film.

District Offices:

Klark-Teknik West, 415-482-1800

Derek Allen, Toluca Lake, CA

Professional Audio Marketing, Melville, NY

Audio Resources, Westmount, IL

**KORG U.S.A.**, 89 Frost St., Westbury, NY 11590 Tel.: 516-333-9100 800-645-3188

President: Don Miller

Sales Manager: Art Miller

Products: audio signal processors

District Offices:

Korg U.S.A. West Coast, Canoga Park, CA, 818-888-2022

**LEXICON, INC.**, 60 Turner St., Waltham, MA 02154 Tel.: 617-891-6790

President: Ronald Noonan

Director of Sales: Joel Silverman

Advanced Products Sales Manager: Brian Zolner

Broadcast Sales Manager: Lawrence Rich

Products: digital audio delay and reverberation systems. Several basic models allow cost effective use in sound reinforcement, studio and live entertainment applications; broadcast quality audio time compressor/expanders, digital audio/video delay compensators.

District Office:

Gexco International Inc., Jersey City, NJ

**LINEAR & DIGITAL SYSTEMS INC.**, 46 Marco Lane,  
Centerville, OH 45459 Tel.: 513-439-1758

President: Dale Beard  
Product: noise suppression and power protection system for most sound  
reinforcement equipment.

**McMARTIN INTERNATIONAL, INC.**, P.O. Box 4500,  
Gunnison, CO 81230 Tel.: 303-641-5500

President: Ray B. McMartin  
Financial Administrator: Robert W. McMartin  
Products: engineered and commercial sound amplifiers; mixers; ac-  
cessories; background and foreground music amplifiers and sound  
systems; FM/SCA receivers; satellite modulators; demodulators.

**MICROAUDIO**, 4438 S.W. Hewett, Portland, OR 97221  
Tel.: 503-292-8896

President: Gene Rimkeit  
Chief Engineer: Richard Schomberg/Gene Rimkeit  
Sales Manager: H.C. (Bud) Garrison  
Products: computer-controlled graphic equalizer/real time analyzer.  
Equalizer PODS (slave equalizers adjustable by using the DAX  
computer-controlled "master" unit).

District Offices:  
David H. Brothers Company, Baltimore, MD  
S.F. Marketing, Montreal, Quebec  
Professional Sound and Lighting, Lakewood, CO  
Wm. J. Ray & Associates, Atlanta, GA  
Lichtenauer & Associates, Antioch, CA

**NORCON ELECTRONICS, INC.**, 1260 Ralph Ave.,  
Brooklyn, NY 11236 Tel.: 718-451-1112

President: Norman Schlaff  
Chief Engineer: Simon Kleynner  
Products: Norcon Talk-Thru communicator providing amplified hands-  
free communication through an environmental partition. Engineered  
sound reinforcement systems. Public address systems. Closed-circuit  
and master antenna television systems. Fire alarm systems.

**NUMARK ELECTRONICS/PPD**, 503 Raritan Center,  
Edison, NJ 08837 Tel.: 201-225-3222

President: Harry Kotovsky  
Sales Manager: Peter Horsman  
Products: power amplifiers, mixers, equalizers, noise reduction, expan-  
sion system, video sound processors.  
See full listing under **Pro Audio Sound Systems**.

**OPAMP LABS, INC.**, 1033 N. Sycamore Ave., Los  
Angeles, CA 90038 Tel.: 213-934-3566

Sales Manager: B. Losmandy  
Products: audio consoles (kits and wired); amplifiers, D.C., mic preamp;  
E.Q., magnetic tape, oscillators, power supplies, transformers, reverbs,  
graphic equalizers, electronic matrices. Video distribution amplifiers.  
Audio-video switches rack-fitted.

**ORBAN ASSOCIATES, INC.**, 645 Bryant St., San  
Francisco, CA 94107 Tel.: 415-957-1067

President: John Delantoni  
Sales Manager: Sid Goldstein  
Chief Engineer: Robert Orban  
Products: signal processing for sound reinforcement, parametric and  
graphic/parametric equalizers, spring reverb, de-essers, limiter/com-  
pressors, and universal security cover for 19" rack mount units.

**OXMOOR CORPORATION**, 237 Oxmoor Circle,  
Birmingham, AL 35209 Tel.: 205-942-6779

President: Lynn McCroskey  
Sales Manager: Richard Mitchell  
Products: DCA-2 digital control attenuator, RC-16 remote control, 4x4  
buffer amplifier, DQ-29 programmable equalizer.

District Offices:  
Allwest Electronics, Camarillo, CA, 805-388-1789  
Pinz Sales, Yonkers, NY, 914-423-4747  
Loppnow & Associates, Redmont, WA, 206-883-3205  
Yore Company, White Bear Lake, MN, 612-770-9760  
Technical Systems Reps, Chamblee, GA, 800-241-5091

**PROTECH AUDIO CORP.**, Flowerfield Bldg. #1,  
St. James, NY 11780 Tel.: 516-584-5855

President: William Murphy  
Chief Engineer: Joseph Giambone  
Products: amplifiers—power, medium level, distribution, compressor/  
limiters, preamplifiers modular automatic level controls, remote level  
controls, switching modules, line amplifiers, mixing/summing modules  
audio transformers, hardware.

**RANE CORP.**, 6510 216th SW, Mountainlake Terr., WA  
98043 Tel.: 206-774-7309

President: Steve Brakken  
Sales Manager: Larry Winter  
Chief Engineer: Dennis Bohn  
Products: constant Q equalizers, realtime analyzers, 6-channel amplifier  
(900W), distribution amps, 70 volt systems, headphone amplifiers  
crossovers.

**RAVEN ELECTRONICS CORPORATION**, 400  
Wolvering Way, Sparks, NV 89431  
Tel.: 702-359-3700

President: Carl A. Dawson  
Sales Manager: Davis S. Young  
Chief Engineer: Wook Shim  
Purchasing Agent: Jay W. Cigno  
Products: designs, engineers, and manufactures Engineering Service  
Channel equipment, INTELSAT/DomSat earth station products, STL  
VF, and TTY switching equipment for use in LOS microwave, satellite  
wireline, and fiber optic transmission networks.

**RTS SYSTEMS, INC.**, 1100 W. Chestnut St., Bur-  
bank, CA 91506 Tel.: 818-840-7119

President: Bob Ringer  
Vice President, Marketing: Douglas Leighton  
Sales Manager: Shelley Harrison  
Chief Engineer: Stan Hubler  
Products: professional intercom systems, conference-line and dedicated  
line, IFB systems. Pro audio amplifier-phonopreamp, 10-watt monitor  
amp and buffer amp.

**SAN DIEGO SOUND & COMMUNICATIONS CO.**  
4950 Waring Rd., #2A, San Diego, CA 92120  
Tel.: 619-265-2551

President: Lowell D. Johnson  
Sales Manager: Lee Carter  
Chief Engineer: Ken Britsch  
Products: noise operated volume controls.

**SEQUENTIAL**, 3051 N. First St., San Jose, CA 95134  
Tel.: 408-946-5240

Sales Marketing Manager: Steve Salyer  
Sales Coordinator: Ann Johnson  
Western Rep: Ed Wibarri  
Product Manager: David Sesnek  
Products: DDLs, flangers, reverbs, phasers, stereo mixers, distortion  
devices, parametric equalizers, Prophet VS, MT, 2000, 2002.

**SOUNDTRACS USA**, 745 109th St., Arlington, TX  
76011 Tel.: 817-640-6447

President: John Birkhead  
Executive Vice President: Jerry Spohn  
Sales Manager: Paul Westbrook  
Chief Engineer: Tom Burrows

Products: Soundtracs mixing consoles, seven series. The FM and FMX Series of 19-inch rack-mount mixers featuring sweepable EQ, mono, stereo or monitor input modules. Bel digital delay/samplers.

**SYMETRIX, INC.**, 4211 24th Ave. West, Seattle, WA 98199 Tel.: 206-282-2555

President: Dane Butcher  
Sales Manager: Roy C. Blankenship  
Office Manager: Lisa McDonald  
Products: CL-150 comp/limiter, 501 comp/limiter, 525 dual-gated comp/limiter, 522 comp/limiter/expander/gate/ducker, 544 quad expander/gate, 511 noise reduction system, A-220 stereo amplifier, SE-400 parametric equalizer.

**TASCAM, Teac Professional Division**, 7733 Telegraph Road, Montebello, CA 90640 Tel.: 213-726-0303

President: Noria Tamura  
National Sales Manager: William Mohrhoff  
Director of Product Planning: Dave Oren  
Product/Service Manager: Jon Bliese  
Advertising Manager: Anders Madsen  
Products: manufacturer of a full line of rack mountable signal processing equipment from meter bridges to parametric equalizers, including headphone amplifiers, mic/line mixers and a dual reverb amplifier. See full listing under **Pro Audio Systems**.

**TOA ELECTRONICS, INC.**, 480 Carlton Ct., S. San Francisco, CA 94080 Tel.: 415-588-2538

President: Sam Sakata  
Sales Manager, Commercial Division: Joe Green  
Technical Services Manager: Bob Sweet  
Products: engineered sound systems, commercial sound systems, amplifiers, dual amplifiers, tuners, equalizers, multi-functional preamplifiers, mixing consoles, speakers, horns, drivers, microphones, wireless systems, microcomputerized EXES intercom systems, CCTV, security systems.  
See full listing under **Engineered Sound Systems**.

**VALLEY PEOPLE, INC.**, P.O. Box 40306, 2817 Erica Pl., Nashville, TN 37204 Tel.: 615-383-4737

President: Norman Baker  
Sales Manager: Tom Irby  
Chief Engineer: Michael Morgan  
Products: limiters, compressors, expanders, noise gates, de-essers, equalizers, microphone processors, line amplifiers/attenuators, voltage controlled amplifiers, gain cells, transistor arrays.  
District Offices:  
Allied Broadcast Equipment, Richmond, IN, 317-962-8596  
Martin Audio, New York, NY, 212-541-5900  
Sam Ash Music, New York, NY, 212-245-4778  
J-Mar Electronics, Ltd., Toronto, Ontario, Canada  
Westlake Audio, Los Angeles, CA, 213-851-9800



**WHITE INSTRUMENTS**, P.O. Box 698, Austin, TX 78767 Tel.: 512-892-0752  
Telex 776409 White INST AUS

President: Carl Van Ryswyk  
Sales Manager: Emory E. Straus  
Chief Engineer: Carl Van Ryswyk  
Products: real-time analyzers; active and passive equalizers (broad band and narrow band); filters; low level crossover networks; masking noise generators and equalizers.  
District Offices:  
Audio Marketing Assocs., Brecksville, OH, 216-526-2426  
LSM, Phelps, NY, 315-548-4891  
Bencsik Assocs., Ocala, FL, 904-732-9775

Richard S. Pass Assocs., Langhorne, PA, 215-757-6100  
Metrorep Sales, Freehold, NJ, 201-462-1221  
Gemini Electronics Marketing, Edmonds, WA, 206-776-3121  
Pro Marketing Systems, Indianapolis, IN, 317-846-9591  
Rancilio Assocs., St. Louis, MO, 314-631-3326  
Rep Tech, Terrell, TX, 214-222-2131  
Shalco, Ferndale, MI, 313-547-4771  
Warren Assocs., Santa Clara, CA, 408-988-7762  
Wilson Audio Sales, Nashville, TN, 615-646-4477  
Ziskind Assocs., Rolling Meadows, IL, 312-577-1624  
Design Factors, Hacienda Heights, CA, 213-697-7576  
Avwest, Fountain Hills, AZ, 602-946-1881  
New Resources, Norwell, MA, 617-659-1463

**BOB WHITE ASSOCIATES**, P.O. Box 39104, Solon, OH 44139 Tel.: 216-248-1317

President: Bob White  
Sales Manager: Tod White  
Chief Engineer: George White  
Products: professional sound products, disco systems, projection TV, professional lighting equipment.  
See full listing under **Pro Audio Sound Systems**.

**WINSTED CORP.**, 9801 James Circle, Minneapolis, MN 55431 Tel.: 612-888-1957 800-447-2257

President: C.E. Johnson  
Sales Manager: Brenda Sabin  
Vice President: G.R. Hoska  
Products: modular editing, duplicating, production, and executive consoles; space-saving video tape and film storage systems; electronic equipment racks.

## AUDIO-VISUAL EQUIPMENT & SYSTEMS

**AMERICAN FIBERTEK, INC.**, 370 W. 35th St., 7th Floor, New York, NY 10001 Tel.: 212-868-2150

President: E. Robert Klein  
Sales Manager: E. Robert Klein  
Chief Engineer: Jim McLaughlin  
Technical Sales: Jack Krol  
Products: Fiber optic transmission systems for closed-circuit television surveillance and data, general purpose, aerial, burial, and plenum fiber cables, termination and splice tool kits, SMA optical connectors, power test meter, light source, power supplies.

**AMTEL SECURITY SYSTEMS, INC.**, 8525 N.W. 53rd Terrace, Miami, FL 33166 Tel.: 305-591-8200  
800-22-AMTEL

President: Suresh Gajwani  
Sales Manager: Moe H. Weiner  
Chief Engineer: Byron Blank  
Regional Manager (N.E.): Jim Gall  
Products: telephone entry control systems which control access to buildings, card access control systems, and parking barrier gates.

**ANSETT TECHNOLOGIES, INC.**, 7595 E. Gray Rd., Scottsdale, AZ 85260 Tel.: 602-483-2956

President: John Payne  
Marketing Manager: Ron Suttle  
Products: digital infra-red wireless audio-visual video control systems with built-in 35 W audio amplifier. Systems may be stand alone, custom built-in consoles or in Lectrum portable aluminum lecterns.

**APOGEE ELECTRONICS CORP.**, 1517 20th St., Santa Monica, CA 90404 Tel.: 213-828-1930

President and Chief Engineer: Bruce Jackson  
Sales Manager: Betty Bennett  
Products: Audioscope complete line of 1/3-octave spectrum analyzers and 32-channel color video meter. aaLP44, aaLP48 and aaLP50 are a family of anti-aliasing low-pass filters, band limiting for digital audio.

**APOGEE SOUND INC.**, 1150 Industrial Ave., Suite C,  
Petaluma, CA 94952  
Tel.: 707-778-8887 (National)  
800-528-3939 (CA)

President: Ken DeLoria  
Vice President Sales: Joe Manning  
Vice President Marketing: Brian Glenn  
Chief Engineer: Ken DeLoria

Products: arrayable bi-amp portable loudspeaker, multipurpose 2-way single-amp portable loudspeakers, tri-amp portable loudspeaker. Speakers designed for stage monitoring, theater, and audio visual use. Include signal processors, equalization.  
See full listing under **Pro Audio Sound Systems & Products**.

**ARGOS PRODUCTS CO.**, 600 S. Sycamore St., Genoa,  
IL 60135 Tel.: 815-784-5118

President: D. C. MacLaughlin  
Sales Manager: Ron Evers  
Chief Engineer: Loren Shroder

Products: indoor, outdoor sound columns, packaged sound systems, portable PA systems, lecterns, baffle/speaker combinations, baffles, speaker systems and enclosures.  
See full listing under **Loudspeakers & Accessories**.

**AUDICO, INC.**, 219 Crossen Ave., Elk Grove, IL  
60007 Tel.: 312-640-1030

President: Bill Hinkle  
Sales Manager: Bill Hinkle  
Chief Engineer: Norm Deletzke

Products: audio, and umatic, VHS, beta, and 8mm video cassette tape loaders, rewinders, counters, pressure sensitive labels, 8-track, broadcast cart and Nagra reel winders; professional impulser with 50, 150, and 1,000 Hz pulses.

**AUDIO ACCESSORIES, INC.**, Mill St., Marlow,  
NH 03456 Tel.: 603-446-3335

President: M. B. Hall  
Sales Manager: David Hall  
Plant Manager: T. J. Symonds

Products: jack panel assemblies and accessories; patch cords; panels, bakelite; phone plugs and phone jacks; wired jack panels. All miniature and full-size.

**AUDIOLAB ELECTRONICS, INC.**, 5831 Rosebud Lane,  
Bldg. P, Sacramento, CA 95841 Tel.: 916-485-0500

President and Chief Engineer: Robert E. Stofan  
Sales Manager: Ronald A. Stofan

Products: Audiolab Tape Degaussers (bulk tape erasers) for all types of magnetic media.

District Offices:

Audiolab Electronics, Inc., Sacramento, CA, 916-344-4744  
RF Systems, Sacramento, CA, 916-331-1070

**AUDIO SERVICES CORPORATION**, 4210 Lankershim  
Blvd., Hollywood, CA 91602 Tel.: 818-980-9891

President: Richard Topnam, Sr.  
General Manager: Richard Topnam, Jr.  
Sales Manager: David Panfili  
Chief Engineer: Michael Riner

Rental Manager: Tove Blue  
Service Manager: Ron Meyer

Products: professional portable sound equipment, sales, rental, lease, service, consulting, design and manufacture.

**AVTEC INDUSTRIES, INC.**, 5 Audrey Pl., Fairfield,  
NJ 07006 Tel.: 201-882-9460

President: James P. Tore  
Vice President: Sy Miller  
Sales Manager: Scott Curran  
Chief Engineer: Michael DeBlasio

Products: engineer, design, fabricate and install audio/visual communication systems, specializing in boardroom interconferencing systems; specialized equipment sales (video projection, industrial video equipment, communications); manufacture Vantage Point™ multi-media lectern and Conferscan™ boardroom conference table designed to record meetings (audio and video).

**BES, Bertagni Electroacoustical Systems**, 1275  
Moore St., Cerritos, CA 90701  
Tel.: 213-926-0201 800-592-4644

President: K.L. Ching  
Sales Manager: Dennis Schulgen  
Chief Engineer: Alex Bertagni

Products: high-performance, hemispherically radiating ceiling speaker with 180-degree dispersion pattern. Closely resemble flat ceiling tiles. Interior Design Series has acoustical tile pattern embossed for total camouflage. Omnidirectional Thinline Series for theaters and churches. Omnidirectional outdoor sound reinforcement speakers with 360-degree dispersion.

See full listing under **Loudspeakers & Accessories**.

**BOSE CORPORATION**, The Mountain, Framingham  
MA 01701 Tel.: 617-879-7330

President: Sherwin Greenblatt  
Sales Manager: John Stiernberg  
Chief Engineer: John Carter

Other Personnel: Dave Bell, Barry Luz, Mark Mayfield, Ken Jacobson  
Products: professional loudspeaker systems for portable and installed applications including sound reinforcement, commercial sound and foreground music. Modeler™ computer software for designing commercial sound systems.

**CALZONE CASE CO.**, 225 Black Rock Ave.,  
Bridgeport, CT 06605 Tel.: 203-367-5766

President: Joseph E. Calzone III  
Vice President: Vincent J. Calzone  
Chief Engineer: Thomas M. Mackno

Sales and Marketing Administrator: Barbara J. Honeycomb  
Products: full line of road and flight cases for the musical, audio, and video markets; ESCORT-ATA styled, ¼" plywood, heavy-duty construction; PROLINE, constructed of ¼" plywood; CONVOY lightweight, protective; ULTIMA, extremely lightweight case providing protection for keyboards, mixers, recorders, and drum machines during local transport.

**CANARE CABLE, INC.**, 832 N. Victory Blvd., Burbank  
CA 91502 Tel.: 818-840-0993

President: K. Kawamoto  
General Manager: Barry Brenner

Products: high definition, audio and video cable. Featuring Star Quad mic cable in 10 colors. Eight to 32 channel snakes, pigtailed, junction boxes and cable reel systems.

Sell full listing under **Wire & Cable**.

**COMMUNICATIONS CO., INC.**, 3490 Noell St., San  
Diego, CA 92110 Tel.: 619-297-3261

President and Sales Manager: Peter T. Jordan  
Chief Engineer: David Johnson

Order Department: Laura McCullough

Products: programmable two-way intercom amplifier w/vox., media distribution amplifier, projector patch, room combining systems, recorder, patch, RT-60 reverberation measuring device, burst octave noise generator, 1/3 octave real time analyzer, 27 B.I.T. oscilloscope adaptor, audio inductive loop receivers.

See full listing under **Intercom Systems Institutional**.

**D.O. INDUSTRIES, INC.**, 317 East Chestnut St., E.  
Rochester, NY 14445 Tel.: 716-385-4920

President: David Goldstein  
Vice President: Julian Goldstein  
Chief Engineer: Gene Turula

Products: Navitar slide projector lenses, Navitar xenon slide projectors, Navitron CCTV lenses, Cine-Navitar theatre projection lenses, Navitar infrared remote control for slide projector, laser pointer, and other AV products.

**DUKANE CORPORATION**, 2900 Dukane Dr., St. Charles, IL 60174 Tel.: 312-584-2300

General Manager: William B. Clark  
Marketing Manager: Craig E. Lyons  
Chief Engineer: Gordon Mielke  
Sales Manager: Jim Shane  
Products: nurse call, intercom, voice paging, clock, sound masking, staff registry and voice evacuation systems for health care, institutional and industrial markets.  
See full listing under **Paging Systems**.

**FSR, INC.**, 220 Little Falls Road, Cedar Grove, NJ 07009 Tel.: 201-239-0988

President: William G. Fitzsimmons  
Sales Manager: Janice Sandri  
Chief Engineer: Joseph Fischer  
Products: hotel ballroom combining systems; control systems for boardrooms, auditoriums, churches, homes; teleconferencing systems; IR controls; computer interfaces; custom engineering; custom panels; remote control modules for audio video, and projector controls.  
District Offices:  
Richard Pass Assocs., Langhorne, PA, 215-757-6100  
Peregrine Southwest, Houston, TX, 713-772-6765  
Piper Assocs., Needham, MA 617-499-1144  
Design Factors, La Habra Heights, CA, 213-697-7576  
Brian Trankle Assocs., Hillsborough, CA, 415-344-1133  
Pacnor Marketing, Lynnwood, WA, 206-771-6016  
Ziskind Assocs., Rolling Meadows, IL, 312-577-1624  
Monfort Electronics Marketing, Indianapolis, IN, 317-872-8877  
Unirep, Ft. Lauderdale, FL, 305-587-7481  
Tortech Marketing, Toronto, Ontario, 416-536-1441  
Henry Phillips Co., Roswell, GA, 404-992-3070  
Avwest, Fountain Hills, AZ, 602-946-1811

**HEDCO**, P.O. Box 1985, Grass Valley, CA 95945 Tel.: 916-273-9524

President: Peter Hughes  
Sales Manager: Ross Shelton  
Chief Engineer: Steve Miller  
Products: audio and video routing and distribution equipment.  
District Office:  
Gary Carter, Los Angeles, CA, 714-997-8386

**JENEL SYSTEMS & DESIGN, INC.**, 10307 Bernardin, Dallas, TX 75243 Tel.: 214-680-0502

President: Elmer E. Smalling III  
Executive Vice President: Jean C. Rinklin  
Products: consultants on design of television, satellite, and computer systems, acoustic designers of broad band and fiber lans.

**MACKENZIE LABORATORIES, INC.**, 5507 Peck Rd., Arcadia, CA 91006 Tel.: 818-579-0440 800-423-4147

President: A. R. Taylor  
Vice President and Chief Engineer: N. Khattar  
Products: Z-Mac audio visual control systems for boardrooms and communications centers. Customized control panels. Control modules for volume, 16mm, slide, video, screens, dropes, houselight dimmers.  
See full listing under **Magnetic Tape Systems & Supplies**.

**MULTI-VOX LTD.**, 9967 St. Michel Blvd., Montreal, H1H 5G7, Quebec, Canada Tel.: 514-321-3131

President: Fernand Parent  
Sales Manager: Robert Girard  
Chief Engineer: Dominique Malenfant  
Operations Manager: Georges Morissette

Products: audio amplifiers, electronic carillons and chimes, simplex and duplex intercom systems, solid state and microprocessor intercom systems for apartments, hospital and health care facilities, schools, institutions and industries, paging systems.

**NORCON ELECTRONICS, INC.**, 1260 Ralph Ave. Brooklyn, NY 11236 Tel.: 718-451-1112

President: Norman Schlaff  
Chief Engineer: Simon Kleyner  
Products: Norcon Talk-Thru communicator providing amplified hand-free communication through an environmental partition. Engineered sound reinforcement systems. Public address systems. Closed-circuit and master antenna television systems. Fire alarm systems.

**PANASONIC INDUSTRIAL COMPANY, RAMSA**, 655 Katella Ave., Cypress, CA 90630 Tel.: 714-895-7277

President: Scott Minakami  
Sales Manager: Steve Woolley  
Other Personnel: Gene Juall, Joe Crocco, Chris Foreman  
Products: pro audio and commercial sound products including mixers, mixer-amplifiers, power amplifiers, speakers, microphones, and a portable public address system with wireless microphones(s).  
See full listing under **Pro Audio Sound Systems & Products**.

**PENTAGON INDUSTRIES, INC.**, 5115 N. Sheridan Rd., Chicago, IL 60640 Tel.: 312-271-8300 800-621-3867

President: Lateef Khan  
Sales Manager: Gopal Muntha  
Chief Engineer: Batric Furundzic  
Products: auto reverse cassette changer; four servo drive, sequential operated, auto reverse cassette decks; provides over 8 hours of continuous background music; response to over 12,000 Hz.  
District Offices:  
Raleigh Perry & Assoc., Buford, GA, 404-945-3142  
Encore Marketing, Kenilworth, IL, 312-256-6223  
Evans Marketing, San Francisco, CA, 415-474-3377  
Richard Pass & Assocs., Langhorne, PA

**ROCTRONICS LIGHTING AND SPECIAL EFFECTS INC.**, 100-BB Roctronics Park, Pembroke, MA 02359 Tel.: 617-826-8888

President: Dr. Richard Iacobucci  
Sales manager; Dr. Richard Iacobucci  
Chief Engineer: Dr. Richard Iacobucci  
Products: dimming systems, spotlites, foggers, beacons, mirrorball strobes, lasergraphics, drapes, music-into-color and motion, underl dancefloors, large screen TV, colored animated displays. Send for catalog, video, and dealership.

**SOUND MASTERS**, Rte. #3, Morrilton, AL 72110 Tel.: 501-727-5401

President and Sales Manager: John McVey  
Products: portable public address equipment and floor-model lectern  
District Offices:  
Don Kunz and Assoc., Inc., Churchville, PA, 215-357-5020  
Al Stumpfl, Northland Media, Chanhassen, MN, 612-934-6317  
Bill Perry, Raleigh, Perry and Assoc., Buford, GA, 404-945-3142  
Don Zeiller, ZEECO Sales & Marketing, Inc., Hurst, TX, 817-282-9888  
Robert Friberg and Assoc., Moraga, CA, 415-376-6269

**SOUNDSPHERE, SONIC SYSTEMS INC.**, 737 Canal St., Bldg. 23B, Stamford, CT 06902 Tel.: 203-356-1136

President: Peter Hamilton  
Sales Manager: John Karamon  
Products: various models of Soundsphere omnidirectional loudspeakers are used in live entertainment, churches, gymnasiums, airports, shopping malls and other locations that require sound reinforcement.



**SPECO, DIV., COMPONENTS SPECIALTIES INC.,**  
1172 Rt. 109, P.O. Box 624, Lindenhurst, NY  
11757 Tel.: 516-957-8700 (New York)  
1-800-645-5516 (Outside NY)

President: Louis W. Keller  
Vice President, Sales: Mel Hulkower  
Vice President & General Manager: James Ganci  
Regional Sales Managers: Eric Forman, Bruce Kurtz  
Products: P.A. horns, amplifiers, tuners, loudspeakers, wall baffles, speaker assemblies, outdoor speakers, sound columns, ceiling grilles, transformers, L-pads, attenuators, accessories, microphones, intercoms, alarm sirens, multitestors, oscilloscopes.

**TELEX COMMUNICATIONS, INC.,** 9600 Aldrich Ave.  
S., Minneapolis, MN 55420 Tel.: 612-887-5550

President: John Howe  
Sales Managers: Jerry Hines, John Serio  
Products: 16mm film projectors, 35mm slide projectors, 35mm filmstrip projectors, cassette tape copiers, reel-to-reel tape copiers, headsets, language labs.  
District Offices:  
Loomis & Assoc., Alameda, CA, 415-865-2200  
Michael Unzicker, Plano, TX, 214-985-8766  
Ted Nemzek, Schaumburg, IL, 312-885-8477  
Danny Grant, Marietta, GA, 404-565-0086  
Marshall Miller, Lebanon, OH, 513-932-5927  
Linda Munt, Absecon, NJ 609-652-6405  
John Davidson, Warrenton, VA, 703-347-9589

**FOA ELECTRONICS, INC.,** 480 Carlton Court, S.  
San Francisco, CA 94080 Tel.: 415-588-2538

President: Sam Sakata  
Sales Manager: Joe Green  
Technical Services Manager: Bob Sweet  
Products: engineered sound systems, commercial sound systems, amplifiers, dual amplifiers, tuners, equalizers, multi-functional preamplifiers, mixing consoles, speakers, horns, drivers, microphones, wireless systems, microcomputerized EXES intercom systems, CCTV, security systems.

**TOUCH TECHNOLOGIES, INC.,** 363 Adelaide St. E.,  
Toronto, Ontario M4K 3A4 Tel.: 416-865-1877

President: W. Robert Snelgrove  
Director, Marketing: Alan Hardman  
Chief Engineer: Phil Giddings  
Products: AVE SYNC modular control system for programmable synchronization of sound, lighting and motorized equipment. Each module controls 8 independent sequences of variable duration, 24 lighting channels (0-14V) and 24 relay enclosures.

**TSI, 393 Jericho Turnpike, Mineola, NY 11501**  
Tel.: 516-294-5390

Director of Marketing: Glenn C. Kern  
Products: custom AV system design, assembly, installation and service for conference, board and training rooms. Teleconferencing systems. Video projection. Remote control of VCR, film, slides, microphones, room lighting, draperies, environment. Computer interfacing.

**TRANSAN, 16735 E. Johnson Dr., City of Industry, CA**  
91745 Tel.: 818-961-7211

President: Mark Vanlandingham  
Sales Manager: Steve Holland  
Chief Engineer: Ron Dain  
Products: handcrafted lecterns equipped with a light, digital clock and self-contained PA system, plus Lectrajust® electric height control.

**VERREX CORPORATION, 1130 Route 22 West,**  
Mountainside, NJ 07092 Tel.: 201-232-7000

Sales Manager: Richard Krochmal  
Chief Engineer: David G. Butz  
Products: supplier of engineered audio-visual systems world wide, since 1946. Systems supplied to contractors and end users such as boardrooms, telecommunications, theater and audio-visual systems.

## BACKGROUND/ FOREGROUND MUSIC SYSTEMS

**ARGOS PRODUCTS CO.,** 600 S. Sycamore St., Genoa,  
IL 60135 Tel.: 815-784-5118

President: D. C. MacLaughlin  
Sales Manager: Ron Evers  
Chief Engineer: Loren Shroder  
Products: indoor, outdoor sound columns, packaged sound systems, portable PA systems, lecterns, baffle/speaker combinations, baffles, speaker systems and enclosures.  
See full listing under **Loudspeakers & Accessories.**

**AUDIOCOM, INC.,** 14645 N.W. 77th Ave., Suite 203,  
Miami Lakes, FL 33014  
Tel.: 305-825-HOLD (4653)

President: Ron Deblinger  
Marketing Manager: Stuart L. Ginsberg  
Chief Engineer: Kevin Morahan  
Director of Operations: Art Hecht  
Products: Promotions on Hold — professionally produced, company-specific audio programming that provides a soft sell mix of messages and music to keep callers informed and entertained while they wait "on hold."

**AUDIO ENVIRONMENTS INC.,** 900 E. Pine St.,  
Seattle, WA 98122 Tel.: 206-329-1400  
Product inquiries only: 800-831-8001

President: Michael J. Malone  
Vice President, Director/Dealer Sales: Jack Craig  
Chief Engineer: Tom Carpenter  
Products: programs of contemporary music; tape playback units (amplified and non-amplified). Package service/system (including monthly tape-exchanges).

**BEYER DYNAMIC, INC.,** 5-05 Burns Ave., Hicksville,  
NY 11801 Tel.: 516-935-8000

General Manager: Paul Murphy  
Director of Sales and Marketing: Bob Lowie  
Products: dynamic moving coil and ribbon microphones, studio condenser microphones, professional headphones and headsets, microphone stands, booms and accessories. Full line of sound contracting products.

**BGM INTERNATIONAL, P.O. Box 8057, Pensacola,**  
FL 32505 Tel.: 904-434-1953

Owner: Frederic T. C. Brewer  
Products: background music programs for SCA, central studio telephone, CATV, on premise; general, up-tempo, beautiful music; associated studio equipment also available.

**BOGEN, A Lear Siegler Company, 50 Spring St., P.O.**  
Box 575, Ramsey, NJ 07446 Tel.: 201-934-8500

President: John H. Ochtera  
Vice President, Marketing: Carl C. Dorwaldt  
Vice President, Engineering: Mark Koller  
Products: commercial sound and communication systems and equipment including amplifiers, mixers, loudspeakers, microphones, telephone paging equipment, tuners, intercoms, audio surveillance and centralized sound systems.  
See full listing under **Engineered Sound Systems.**

**BOSE CORPORATION, The Mountain, Framingham,**  
MA 01701 Tel.: 617-879-7330

President: Sherwin Greenblatt  
Sales Manager: John Stiernberg  
Chief Engineer: John Carter  
Other Personnel: Dave Bell, Barry Luz, Mark Mayfield, Ken Jacob  
Products: professional loudspeaker systems for portable and installed applications including sound reinforcement, commercial sound and foreground music. Modeler™ computer software for designing commercial sound systems.

**BOZAK, INC.**, 326 South St., New Britain, CT  
06051-3721 Tel.: 203-225-0555

President: Donald D. Bowers  
Director of Marketing: William J. Kielyka  
Chief Engineer: Sheldon Glick  
Products: foreground speaker systems and professional mixers.  
See full listing under **Disco Systems & Supplies**.

**CASCO BACKGROUND SOUND, INC.**, P.O. Box  
115, 50 Terminal St., Charlestown, MA 02129  
Tel.: 617-242-2983

President: Samuel J. Blengs  
Products: direct drive tape player, 1 7/8 ips, 32 hours continuous music, loop cartridge with sealed heads; cartridges exchanged every 90 days; custom, jingles, seasonal music available. Sales, rentals, leases.

**CETEC RAYMER**, 7315 Fulton Ave., N. Hollywood,  
CA 91605  
Tel.: 213-875-0423 Telex: 510 6003062

President: Hugh T. Wilcox  
Sales Manager: Hugh T. Wilcox  
Chief Engineer: Clifford L. Kogge, Jr.  
Products: background/foreground equipment: wall and shelf mount amplifiers, AM/M tuners and paging receivers, microphone mixers, installation accessories and transformers, M-O-H and telephone interconnect devices and test equipment.

**J. W. DAVIS & CO.**, 3215 Canton St., P.O. Box 26177,  
Dallas, TX 75226 Tel.: 214-651-7341  
1-800-442-1564 WATS Texas  
1-800-527-5705 (outside Texas)

President: Charles Griffiths  
Vice President Sales: Jack W. Tucker  
Products: ceiling speakers, wall baffles, transformers, controls and power amplifiers including AM-FM tuners, microphones, etc. for all background and foreground music applications.  
See full listing under **Pro Audio Sound Systems & Products**.

**DUKANE CORPORATION**, 290 Dukane Dr., St.  
Charles, IL 60174 Tel.: 312-584-2300

General Manager: William B. Clark  
Marketing Manager: Craig E. Lyons  
Sales Manager: Jim Shane  
Chief Engineer: Gordon Mielce  
Products: nurse call, intercom, voice paging, clock, sound masking, staff registry and voice evacuation systems for health care, institutional and industrial markets.  
See full listing under **Paging Systems**.

**DYNAMIC SOUND INDUSTRIES**, P.O. Box 1395,  
LaBelle, FL 33935 Tel.: 813-675-0100

Chief Engineer: U. L. Lahti  
Products: products manufactured under patented pressure velocity formula for symmetrical dispersion. Speaker systems for ceiling, plenum, partition and floor custom designs for music paging and sound masking.  
Sales Representative:  
Don Heavenor, 7936 Comino Circle, Miami, FL 33143

**EMS/MUSIC**  
THE NEW SOUND IN FOREGROUND MUSIC

**EMS/MUSIC**, 2264 15th Ave. W., Seattle, WA 98119  
Tel.: 206-281-8686

Vice President National Music Service Sales: G. Bernard Kron  
National Dealer Sales Desk: Mark Rubin, Steve Ducharme, Anne Walker  
Products: complete foreground/background music services, tape cartridge players, message insertion systems, current-drive amplifiers for transformerless distributed speaker systems.

BB-24

**HARRIS CORP., DRACON DIV.**, 809 Calle Plano,  
Camarillo, CA 93010 Tel.: 805-987-9511

Vice President, General Manager: John R. Mason  
Director, Domestic Sales: Tom Erdmann  
Vice President, Sales & Marketing: Jack McGuigan  
Chief Engineer: Joe Mader  
Products: FM Music Source which provides music for various applications, such as music-on-hold for telephone systems or background music for a paging system.  
See full listing under **Paging Systems**.

**IGM COMMUNICATIONS, INC.**, 282 West Kellogg  
Road, Bellingham, WA 98226  
Tel.: 206-733-4567

President: Jim Wells  
Sales Manager: Nick Solberg—Custom Systems  
Sales Manager: Tom Ransom—Standard Systems  
Chief Engineer: Jim Wolniakowski  
Products: Go Cart random access cartridge playback unit. Instacart— instant access cartridge playback unit. IGM-SC—a system controller.

**MAGNE-TRONICS, INC.**, 93 Broad St., Matawan,  
NJ 07747 Tel.: 201-566-9600

President: John H. Bolenz  
Products: subscription service featuring many formats of taped music programs for background music services via FM, SCA, phone lines, on premise and cable.

**McGOHAN ELECTRONICS, INC.**, 1033 Fairway Dr.,  
Bensenville, IL 60106 Tel.: 312-595-2342

President and Sales Manager: James M. McGohan  
Chief Engineer: Bill Everhart  
Products: solid state amplifiers for commercial sound, background, and telephone interconnect. Mic mixers, zone paging preamplifiers, mic and telephone line transformers and other accessories—off the shelf stock.  
See full listing under **Audio Amplifiers**.

**McMARTIN INTERNATIONAL, INC.**, P.O. Box 4500,  
Gunnison, CO 81230 Tel.: 303-641-5500

President: Ray B. McMartin  
Vice President, Sales: Jay B. McMartin  
Financial Administrator: Robert McMartin  
Products: engineered and commercial sound amplifiers/mixers/accessories, background and foreground music amplifiers and sound systems, FM/SCA receivers, satellite modulators/demodulators.

**MG ELECTRONICS**, 32 Ranick Rd., Hauppauge, NY  
11788 Tel.: 516-582-3400

President: Louis Maltz  
Vice President: Elliott Maltz  
Sales Manager: Stan Grey  
Products: 8" PA speakers with and without transformers, dual cone speakers, coaxial speakers, etc. Full line of mini speaker systems with hang-on mounting brackets.  
See full listing under **Loudspeakers**.

**MILLBANK ELECTRONICS GROUP LTD.**, Bell-  
brook Industrial Estate, Uckfield, Sussex, TN22  
1QL England Tel.: Uckfield 825-4811

Chairman: Tony Walker  
Director and General Manager: Brian Evans  
Client Services, Sales & Marketing: Don Eaton  
Director: Bernard Skinner  
Engineering Manager (Sales): Doug Edworthy  
Products: custom engineered sound systems; public address, teleconference, life-safety. Sound reinforcement systems: amplifiers, preamplifiers, background music, FM/AM tuners, alarm and tone signal generators, loudspeakers, microphones.  
See full listing under **Engineered Sound Systems**.

Sound & Communications

**MULTI-VOX LTD.**, 9967 St. Michel Blvd., Montreal  
H1H 5G7, Quebec, Canada Tel.: 514-321-3131

President: Fernand Parent  
Sales Manager: Robert Girard  
Chief Engineer: Dominique Malenfant  
Operations Manager: Georges Morissette  
Products: audio amplifiers, electronic carillons and chimes, simplex and duplex intercom systems, solid state and microprocessor intercom systems for apartments, hospital and health care facilities, schools, institutions and industries, paging systems.

**MUSIC PROGRAMMING INC.**, 265 Concord St.,  
Framingham, MA 01701 Tel.: 617-875-3530

President: Ray Regis  
Vice President: Dutch Blue  
Chief Engineer: Jon Rhind  
Products: programs for background, midground and foreground music. Unlimited hours with no repeats. For central studio distribution, cable and satellite.

**MUSIC THEATRE NETWORK INC.**, 50 Terminal St.,  
Charlestown, MA 02129 Tel.: 617-242-4202

Vice President: Georges Tcherkassky  
Products: sealed continuous loop cartridge operating at 3 3/4 ips holding up to 24 hours with twenty-eight different categories of music, including all types of ethnic music.

**NORCON ELECTRONICS, INC.**, 1260 Ralph Ave.,  
Brooklyn, NY 11236 Tel.: 718-451-1112

President: Norman Schlaff  
Chief Engineer: Simon Kleyner  
Products: Norcon Talk-Thru communicator providing amplified hands-free communication through an environmental partition. Engineered sound reinforcement systems. Public address systems. Closed-circuit and master antenna television systems. Fire alarm systems.

**DWI INC.**, 1160 Mahalo Pl., Compton, CA 90220  
Tel.: 213-638-4732

President and Sales Manager: Ned Morioka  
Chief Engineer: Hiro Okayama  
Products: hi fidelity mini speakers w/built in 70 volt and 25 volt line transformer and weatherized/standard systems for foreground and background applications.

**PENTAGON INDUSTRIES, INC.**, 5115 N. Sheridan  
Road, Chicago, IL 60640 Tel.: 1-800-621-3867

President: Lateef M. Khan  
Sales Manager: Gopal Muntha  
Products: auto-reverse cassette changer. Four servo drive, sequentially operated, auto reverse cassette decks. Provides over 8 hours of continuous background music. Response to over 12,000 Hz.  
See full listing under **Audio-Visual Equipment & Systems**.

**PHI TECHNOLOGIES, INC.**, 4605 N. Stiles, Oklahoma  
City, OK 73105 Tel.: 405-521-9000

President: Gary A. Zebrowski  
Chief Engineer: Larry Debell  
Products: heavy-duty cassette tape transports, random-access message systems, cassette playback units for background music, message repeaters, and digital audio message systems.

**PRECISION ELECTRONICS, INC.**, 9101 King St.,  
Franklin Park, IL 60131 Tel.: 312-678-5350

President: W. S. Grommes  
Sales Manager: W. Stow  
Chief Engineer: A. A. Hart  
Products: integrated audio amplifiers, amps for mono or stereo power, line, music-on-hold. Mixer preamplifiers, 2 ch. limiters or compressors, graphic equalizers, FM-AM tuners, background music receivers and

systems, public address systems, custom engineered sound reinforcement systems, sound columns, trumpets, driver units, baffles, microphones and microphone stands.  
See listing under **Audio Amplifiers**.

**RMI**, P.O. Box 3839, Huntington Beach, CA  
92605 Tel.: 714-964-0262

Owner: Edward S. Cleland  
Products: tape cartridge playback equipment. Beautiful general background music programs including largest variety of specialty tapes. Subscriber given unlimited tape exchange privileges.

**ROWE INTERNATIONAL, INC., Customusic Div.**,  
75 Troy Hills Road, Whippany, NJ 07981  
Tel.: 201-887-0400

Sales Manager: Beverly LaForte  
Products: Customusic Programasters in 3 modes with accessories. Customusic® programs: two 60-hour libraries with refresher program every 120 days. Atmosphere - commercial and one 24-hour library with refresher program every 30 days, foreground.

**SAN MING ELECTRONIC SOUND EQUIPMENT CO.,  
LTD.**, 12715 Western Ave., Garden Grove, CA  
92641 Tel.: 714-891-2252

President: Hugh C. Hsieh  
Sales Manager: Leon C. Hsieh  
Chief Engineer: S.W. Hsu  
International Sales: Hua C. Hsieh  
Products: high-intelligence multi-tap paging horns, heavy-duty driver units for PA and siren applications, extra-heavy-duty driver horns for community warning systems, megaphones.

**SEEBURG MUSIC SATELLITE NETWORK**, 5706 New  
Chapel Rd., Raleigh, NC 27607  
Tel.: 919-851-5823 800-334-1561

General Manager: William E. Fox  
National Sales: Bonnie Sullivan  
Distributor Relations Manager: Sherrill Williams, Sr.  
Products: background and foreground music for all industrial and commercial applications delivered by satellite direct.

**SOUNDOLIER**, 1859 Intertech Dr., Fenton, MO  
63026 Tel.: 314-962-9870

Vice President/Consultant for Marketing: Herbert M. Jaffe  
Director of Sales: Paul Grote  
National Sales Manager: Tony Dalba  
Chief Engineer: John Saller  
Products: high quality, commercial sound loudspeakers, enclosures and accessories for music, alarm and public address systems, baffles for ceilings and walls, matching transformers and backbox enclosures.  
See full listing under **Loudspeakers & Accessories**.

**SOUND PRODUCTS/3M**, 3M Center 225-45-10,  
St. Paul, MN 55144-1000 Tel.: 612-733-0447

Marketing Manager: Don Rada  
Sales Manager: Jack Dingley  
Products: music libraries for all purposes. Reliable players. Industrial quality intercoms and vehicle detectors. Top-line message repeater. Speaker assemblies for distributed systems. Microphones, amplifiers and other sound system components.

**SOUNDSPHERE, SONIC SYSTEMS INC.**, 737 Canal  
St., Bldg. 23B, Stamford, CT 06902  
Tel.: 203-356-1136

President: Peter Hamilton  
Sales Manager: John Karamon  
Products: various models of Soundsphere omnidirectional loudspeakers are used in live entertainment, churches, gymnasiums, airports, shopping malls and other locations that require sound reinforcement.

**SPECO DIV., Components Specialties, Inc.**, 1172 Rt.  
109, P.O. Box 624, Lindenhurst, NY 11757  
Tel.: 516-957-8700 (in NY)  
1-800-645-5516 (outside NY)

President: Louis W. Keller  
Vice President and General Manager: James J. Ganci  
Vice President, Sales: Mel Hulkower  
Regional Sales Managers: Eric Forman, Bruce Kurtz  
Products: P.A. horns, amplifiers, tuners, loudspeakers, wall baffles, speaker assemblies, outdoor speakers, sound columns, ceiling grilles, transformers, L-pads, attenuators, accessories, microphones, intercoms, alarm sirens, multitestors, oscilloscopes.

**TAPE-ATHON CORP.**, 13633 Crenshaw Blvd., Hawthorne, CA 90250 Tel.: 213-676-6752

President: Lee Tate  
Director of Sales: Robert Mayfield  
General Manager: Bob Haller  
Chief Engineer: Bernard Sayers  
Products: reel-to-reel, dual cassette on-premise systems, rack-mounted or portable, complete automated central studio systems, chimes and carillon systems, message insertion units, full audio-master amplifier line, customized background/foreground libraries.  
District Offices:  
Chuck Olson Assocs., Renton, WA, 206-271-5416  
Warren Assocs., Santa Clara, CA, 408-988-7762  
Pinz Sales Corp., Yonkers, NY, 914-423-4747  
Elmarcon, Inc., Indianapolis, IN, 317-846-0221  
John E.M. Anderson Co., Minneapolis, MN, 612-823-6459  
Murphy & Cota, Atlanta, GA, 404-875-2525  
C&B Electronics, Arvada, CO, 303-422-0561  
Spivey-Leboeuf Assoc., Richardson, TX, 214-231-3190  
Central Marketing Group, Kansas City, MO, 816-741-7460  
AV West Inc., Fountain Hills, AZ, 602-946-1811  
Associated Sales Reps, Fallston, MD, 301-574-0550  
Bencsik Assocs., Ocala, FL, 904-732-9775  
Avcom Inc., N. Olmsted, OH, 216-777-2060  
Ken Levy & Assoc., Chicago, IL, 312-763-5000  
Design Factors, La Habra Heights, CA, 213-697-7576

**TOA ELECTRONICS, INC.**, 480 Carlton Court, S. San Francisco, CA 94080 Tel.: 415-588-2538

President: Sam Sakata  
Sales Manager: Joe Green  
Technical Services Manager: Bob Sweet  
Products: engineered sound systems, commercial sound systems, amplifiers, dual amplifiers, tuners, equalizers, multi-functional preamplifiers, mixing consoles, speakers, horns, drivers, microphones, wireless systems, microcomputerized EXES intercom systems, CCTV, security systems.  
See full listing under **Engineered Sound Systems**.

**VIF INTERNATIONAL**, P.O. Box 1555, Mountain View, CA 94042 Tel.: 408-739-9740

President: N. L. Mackechnie  
Products: background music tape reproducers (manufacture and service); accessories and spare parts for pro audio tape recorders. Background music leasing services.

**YESCO FOREGROUND MUSIC**, 915 Yale Ave. N., Seattle, WA 98109 Tel.: 206-682-3737  
800-426-9248

President: Mark Torrance  
Vice President Sales: Paul Sullivan  
National Dealer Director: Julie McCullough  
Products: full service audio and video company. Foreground and background music programs nationally distributed, playback units (amplified and non amplified) on premise and central studio formats.  
District Offices:  
Yesco Systems, 123 West Harrison, Seattle, WA

## BELLS, BUZZERS, GONGS

**ATLAS SOUND**, 10 Pomeroy Rd., Parsippany, NJ 07054 Tel.: 201-887-7800

Vice President, Sales & Marketing: Tom Erickson  
Vice President, Consultant for Marketing: Herbert M. Jaffe  
Director of Sales: Paul Grote  
Chief Engineer: John Saller  
Products: signaling components both audio and visual for indoor and outdoor installation including life-safety, fire alarm signaling, telephone communications and audio detection.  
See full listing under **Loudspeakers**.

**CAMBRIDGE ELECTRONICS LABORATORIES**, 20 Chester St., Sommerville, MA 02144  
Tel.: 617-629-2805

President: Dr. Jeffrey Race  
Sales Manager: Charlotte Bissell  
Products: specialized telecom accessories including digital music-on-hold source for PABX/key systems, mini telephone ringing generators, and two-way talk-back intercom unit.

**FARADAY, INC.**, 805 S. Maumee St., Tecumseh, MI 49286 Tel.: 517-423-2111

President: Robert F. Bell  
Sales Manager: Charles Stevens  
Vice President, Engineering: R. Miller  
Products: intercom and sound distribution systems, nurse call systems, fire alarm, annunciator, clock and hospital life safety systems, full range of signaling products.  
See full listing under **Alarm & Security**.

**MALLORY CAPACITOR CO.**, 3029 E. Washington St., P.O. Box 372, Indianapolis, IN 46206  
Tel.: 317-636-5353

President: S. Murray  
Vice President Sales and Marketing: R. Patrick  
Products: Sonalert® electronic audible signals, fast pulse; slow pulse; continuous pulse—with no arcing, no moving parts and no mechanical wear.

**McGOHAN ELECTRONICS, INC.**, 1033 Fairway Dr., Bensenville, IL 60106 Tel.: 312-595-2342

President and Sales Manager: James M. McGohan  
Chief Engineer: Bill Everhart  
Products: solid state amplifiers for commercial sound, background, and telephone interconnect. Mic mixers, zone paging preamplifier, mic and telephone line transformers and other accessories—off the shelf stock.  
See full listing under **Audio Amplifiers**.

**McMARTIN INTERNATIONAL, INC.**, P.O. Box 4500, Gunnison, CO 81230 Tel.: 303-641-5500

President: Ray B. McMartin  
Financial Administrator: Robert W. McMartin  
Products: engineered and commercial sound amplifiers; mixers; accessories; background and foreground music amplifiers and sound systems; FM/SCA receivers; satellite modulators; demodulators.

**VALCOM, INC.**, 1111 Industry Ave., Roanoke, VA 24013 Tel.: 703-982-3900

President: J.W. Mason  
Sales Manager: Donald Buck  
Chief Engineer: D. Lynch  
Products: telephone integrated paging and intercom systems, talkback, bell-buzzer, code call, PBX adapters, key telephone system ancillaries, loud ringers, power supplies, amplified and talkback speakers.  
See full listing under **Paging Systems**.

**WHEELLOCK, INC.**, 273 Branchport Ave., Long Branch,  
NJ 07740 Tel.: 201-222-6880

President: Peter W. Tarlton  
Sales Manager: William Goldstein  
Vice President, Engineering: Steve Andrews  
Marketing Manager: J. Chris Olivieri  
Products: audible/visual signaling devices for life safety and alarm systems and for telephone systems. Bells, horns, speakers, strobes, chimes and combinations, paging systems.  
Sales Representatives:  
Jerry Ross (Eastern Regional Manager), 617-478-7161  
Frank Malloy (Central Regional Manager), 404-394-8113  
Tom Ryan (Western Regional Manager), 206-631-7773  
Peter Koehler (SW District Manager), 214-350-1232  
Joseph McCaffrey (Midwest District Manager), 312-790-2898

## CABINETS, CONSOLES CASES & RACKS

**ARMOR CASE CO.**, 420 N. Dexter, Ionia, MI  
48846 Tel.: 616-527-2120

President: Steven Catlin  
Sales Manager: Dave Hall  
Products: designs and manufactures shipping containers, carrying, handling and flight cases. Available in standard or custom designs for lighting, computer, audio/visual, musical, testing, and military equipment.

**AMCO ENGINEERING CO.**, 3801 Rose St., Schiller  
Park, IL 60648 Tel.: 312-671-6670

President: Edwin V. Anderson  
Sales Manager: Floyd A. Johnson  
Chief Engineer: Mike Amoroso  
Products: modular instrument enclosures, consoles and cabinets, EMI cabinets, computer desks, desk top cabinets, EMI cabinets to assist in complying with FCC regulations, complete line of blowers/fans and accessories.  
District Offices:  
Instrument Dynamics, Wakefield, MA, 617-245-5100  
L.G. White & Co., Silver Spring, MD, 301-434-1555  
The Knight Co., Los Angeles, CA, 213-670-2833  
Rush & West, Ballwin, MO, 314-394-7271  
Kemp Engineering, Addison, TX, 214-931-7100

**ANVIL CASES, INC.**, 4128 Tempo City Blvd.,  
Rosemead, CA 91770 Tel.: 818-575-8614  
in CA, 800-242-4466  
outside of CA, 800-423-4279

President: M. Wayne Thompson  
Chief Engineer: Marge Murphy  
Vice President of Public Relations/Marketing: Ralph Hoopes  
Products: heavy-duty, custom reusable shipping and carrying cases designed for musical instrument and sound reinforcement applications.

**CALZONE CASE CO.**, 225 Black Rock Ave.,  
Bridgeport, CT 06605 Tel.: 203-367-5766

President: Joseph E. Calzone III  
Vice President: Vincent J. Calzone  
Chief Engineer: Thomas M. Mackno  
Sales and Marketing Administrator: Barbara J. Honeycomb  
Products: full line of road and flight cases for the musical, audio, and video markets; ESCORT-ATA styled, 1/4" plywood, heavy-duty construction; PROLINE, constructed of 1/4" plywood, CONVOY, lightweight, protective; ULTIMA, lightweight case providing protection for keyboards, mixers, recorders, and drum machines during local transport.  
Other Office:  
Calzone Case Company, Lewisville, TX, 214-221-2711  
Sales Representatives:  
McFadden Sales & Marketing, Columbus, OH, 614-761-3177  
Yore Co., White Bear Lake, MN, 612-770-9760  
New Horizons Marketing Group, East Keansburg, NJ, 201-787-2104  
B.C. Electronic Sales, Mission, KS, 913-262-1720

**CANARE CABLE, INC.**, 832 N. Victory Blvd., Burbank,  
CA 91502 Tel.: 818-840-0993

President: K. Kawamoto  
General Manager: Barry Brenner  
Products: high definition, audio and video cable. Featuring Star Quad mic cable in 10 colors. Eight to 32 channel snakes, pigtailed, junction boxes and cable reel systems.  
See full listing under **Wire & Cable**.

**DELCOM CORP.**, 6019 S. 66th E. Ave., Tulsa, OK  
74145 Tel.: 918-494-9500 800-331-5461

President: Sam Pate  
Sales Manager: Jerry Koerner  
Chief Engineer: Martin Brown  
Other Personnel: Buddy Schwartz  
Products: turnkey video systems, design and engineering services, custom and standard consoles and control room furnishings. Computerized cable and tracing for system documentation.  
See full listing under **CCTV/Video Systems**.

**DUKANE CORPORATION**, 2900 Dukane Dr., St.  
Charles, IL 60174 Tel.: 312-584-2300

General Manager: William B. Clark  
Marketing Manager: Craig E. Lyons  
Sales Manager: Jim Shane  
Chief Engineer: Gordon Mielke  
Products: nurse call, intercom, voice paging, clock, sound masking, staff registry and voice evacuation systems for health care, institutional and industrial markets.  
See full listing under **Paging Systems**.

**EQUIPTO ELECTRONICS CORP.**, 351 Woodlawn  
Ave., Aurora, IL 60507 Tel.: 312-897-4691

President: Robert Golz  
Sales Manager: Kent Jarnig  
Chief Engineer: Ken Gazark  
Products: standard, modified, & custom electronic enclosures and work stations. RFI/EMI suppression cabinets and technical support.

**FOUR DESIGNS CO.**, 6531 Gross Ave., Canoga Park,  
CA 91307 Tel.: 818-716-8540

President: Dave Riddle  
Sales Manager: Rebecca Ray  
Products: studio rackmount "furniture" units, portable plastic rack units, cable testers, mic splitters, audio cable adapters.

**HAMMOND MANUFACTURING CO., INC.**, 1690  
Walden Ave., Buffalo, NY 14225  
Tel.: 716-894-5710

Sales Manager: Raymond C. Shatzel  
Products: complete line of enclosure products for the commercial sound contractor. Racks, cases, cabinets, baffles, a wide range of mounting accessories and complete line of audio transformers.

**HOUSE OF METAL ENCLOSURES, INC.**, 500 W.  
Ninth St., Hermann, MO 65041  
Tel.: 314-486-3111

President: A. P. Brigham  
Marketing Manager: Carolyn LaBoube  
Products: standard, modified, custom-designed electronic enclosures. Racks, wall-mounted and desk-top cabinets, turrets, consoles, panels and accessories for 19" equipment.  
District Offices:  
Associated Sales Reps, Audobon, PA  
David H. Brothers Co., Baltimore, MD  
Givan-Flanagan Assocs., W. Boylston, MA  
Chuck Olson Assocs., Renton, WA  
Peregrine S.W. Reps, Inc., Houston, TX  
Henry Phillips Co., Roswell, GA  
Weller Electronics, Columbus, OH  
Ted Firaneck Sales, Pontiac, MI  
Hutto, Hawkins, Maitland, FL  
Marcus Johnson, St. Charles, MO

Kingston Sales, Indianapolis, IN  
Paul Pusecker Sales, Upper Montclair, NJ  
Silver Peak Marketing, Wheat Ridge, CO  
S.L.K./Tech Rep, Hayward, CA  
White Radio Ltd., Ontario, Canada  
Ken Levy & Assoc., Chicago, IL

**MULTI-VOX LTD.**, 9967 St. Michel Blvd., Montreal,  
H1H 5G7, Quebec, Canada Tel.: 514-321-3131

President: Fernand Parent  
Sales Manager: Robert Girard  
Chief Engineer: Dominique Malenfant  
Operations Manager: Georges Morissette  
Products: audio amplifiers, electronic carillons and chimes, simplex and duplex intercom systems, solid state and microprocessor intercom systems for apartments, hospital and health care facilities, schools, institutions and industries, paging systems.

**NATIONAL TELESYSTEM LTD. CANADA**, 438 Papin  
Ave., Ste. foy, Quebec, CN G1P-379  
Tel.: 418-687-2031

President: Charles Sirois  
General Manager: Howard Bowles  
Chief Engineer: Christian Legare, Ing.  
Chief of Electronics: Marcel Langlois  
Products: systems and equipment for institutional intercoms, nurse call, paging, school systems, emergency systems, radio control; metal cabinets, audio-visual equipment systems.

**PREMIER METAL PRODUCTS CO.**, 381 Canal Pl.,  
Bronx, NY 10451 Tel.: 212-993-9200

President: Stanley Kwasnicki  
Sales Manager: Anthony Bozza  
Chief Engineer: Frank Soranno  
Products: cabinets, racks, cases, chassis, fans, slides and blowers for electronic equipment.

**ROADRUNNER CASES**, 1745 W. 134 St., Gardena, CA  
90249 Tel.: 213-770-4444

President: Howard Chatt  
Sales Manager: Wayne Nall  
Chief Engineer: Mark Delman  
Products: shipping, carrying, and storage cases and cabinets for all types of equipment.  
District Offices:  
Pro Teen Marketing, Newport Beach, CA, 714-675-4844  
Pink Lady, Patchogue, NY, 516-654-9009  
Allegro Inc., Pine, CO, 303-383-7600  
Carl Krause, Trenton, NJ, 609-396-7971

**SIMS VIBRATION DYNAMICS**, 17724 15th Ave. N.E.,  
Seattle, WA 98155 Tel.: 206-362-0700

President: Steve Sims  
Sales Manager: Nat A. Williams, Jr.  
Chief Engineer: Steve Sims  
Products: vibration isolation bases for turntables and compact disc players.

**SOUNDOLIER**, 1859 Intertech Dr., Fenton, MO  
63026 Tel.: 314-962-9870

Vice President/Consultant of Marketing: Herbert M. Jaffe  
Director of Sales: Paul Grote  
Vice President, Sales & Marketing: Tom Erickson  
Chief Engineer: John Saller  
Products: high quality, commercial sound loudspeakers, enclosures and accessories for music, alarm and public address systems, baffles for ceilings and walls, matching transformers and backbox enclosures.  
See full listing under **Loudspeakers & Accessories**.

**STAR CASE**, 648 Superior, Munster, IN 46321  
Tel.: 219-922-4440

President: Dennis Toma  
Chief engineer: Roger Hallberg  
Vice President, Marketing: Bernard Fryman  
Products: flight cases for all industries.

**WHELEN ENGINEERING, CO., INC.**, Route 145,  
Winthrop Road, Chester, CT 06412-1036  
Tel.: 203-526-9504

President: John F. Olson  
Sales Manager: Howard M. Berke  
Chief Mechanical Engineer: Wayne Lyons  
Products: audible & visual signalling devices for automotive & industrial applications, including strobe & rotating beacons, light bars, vehicle sirens & public address systems, and high-power outdoor warning systems.  
See full listing under **Alarm & Security**.

## CHURCH CARILLONS & CHIMES

**MAAS-ROWE CARILLONS**, 2255 Meyers Ave.,  
Escondido, CA 92025 Tel.: 619-743-1311

President: Paul H. Rowe  
Product: complete line of church bells and carillons from pre-recorded to digitally operated systems, handbells.

**SCHULMERICH CARILLONS**, Carillon Hill, Sellers-  
ville, PA 18960 Tel.: 215-257-2771

President: Ronald O. Beach  
Vice-President/Sales & Marketing: Creed Freeman  
Sales Managers: Frank Keating and Jack O'Brien  
Chief Engineer: Charles Vaccaro  
Products: bells and carillons.

**TAPE-ATHON CORP.**, 13633 Crenshaw Blvd., Haw-  
thorne, CA 90250 Tel.: 213-676-6752

President: Lee Tate  
General Manager: Bob Haller  
Sales Manager: Bob Mayfield  
Products: complete line reel-to-reel play back from on-premise through completely automated central studio systems, portable and rack mount, chimes line; all speed - customized music library — sale or lease.  
See full listing under **Background/Foreground Music Systems**.

## CCTV SYSTEMS & PRODUCTS

**ALPHA COMMUNICATIONS**, 89-D Cabot Ct.,  
Hauppauge, NY 11788-3717 Tel.: 516-434-8080

President: Mark S. Goldberg  
Products: intercom and video/intercom systems for apartment, home, and industry, custom-made vandal-resistant lobby panels and apartment stations for new and retrofit, 2-wire apartment intercom, non-coax video/intercom.  
See full listing under **Intercom Systems—Apartment & Residential**.

**AMERICAN FIBERTEK, INC.**, 370 W. 35th St., 7th  
Floor, New York, NY 10001 Tel.: 212-868-2150

President: E. Robert Klein  
Sales Manager: E. Robert Klein  
Chief Engineer: Jim McLaughlin  
Technical Sales: Jack Krol  
Products: fiber optic transmission systems for closed-circuit television surveillance and data, general purpose, aerial, burial, and plenum fiber cables, termination and splice tool kits, SMA optical connectors, power test meter, light source, power supplies.

**ANIXTER BROTHERS, INC./ANIXTER COMMUNICATIONS**, 4711 Gulf Rd., Skokie, IL 60076 Tel.: 312-677-2600

President (Anixter Bros.): John Pigott  
President (Anixter Communications): John Egan  
Vice President (Broad Band Sales & Marketing): Gordon Halverson  
Products: total inventory for MATV, SMATV, MDS, STV industries.  
District Offices:  
Wharton, NJ, 201-328-0980  
Atlanta, GA, 404-449-6533  
Chicago, IL, 312-869-8000  
Anaheim, CA, 714-778-4414  
Blue Ash, OH, 513-733-9100  
Seattle, WA, 206-251-6760  
Denver, CO, 303-373-9200  
Dallas, TX, 214-484-2933  
Tampa, FL, 813-626-7115

**AVTEC INDUSTRIES, INC.**, 5 Audrey Pl., Fairfield, NJ 07006 Tel.: 201-882-9460

President: James P. Tore  
Vice President: Sy Miller  
Sales Manager: Scott Curran  
Chief Engineer: Michael DeBlasio  
Products: engineer, design, fabricate and install audio/visual communication systems, specializing in boardroom interconferencing systems; specialized equipment sales (video projection, industrial video equipment, communications); manufacture Vantage Point™ multi-media lectern and ConferScan™ boardroom conference table designed to record meetings (audio and video).

**C Z LABS, INC.**, 55 Railroad Ave., Garnerville, NY 10923 Tel.: 914-947-1554

President: Harry Zipkin  
Sales Manager: Steven Zipkin  
Sales Associate: Keith Scott  
Products: coaxial cable, multi-conductor cable, satellite cable, connectors, computer access, telephone access, video access, crimping tools, cable assemblies, adapters, switches.  
See full listing under **Wire & Cable**.

**CREST ELECTRONICS INC.**, 4921 Exposition Blvd., Los Angeles, CA 90016 Tel.: 213-731-1105

President: Hope Borows  
Sales Manager: Dennis Castelli  
Chief Engineer: Ken Fukui  
Products: CCTV cameras, video monitors, time lapse recorders, modulators, lenses, switchers, housings, mounts, tubes, pan and tilts, scanners, dummy cameras, quad split screen systems.  
District Offices:  
Henry Philips Co., Roswell, GA  
Irv Brown, Brooklyn, NY  
Mike Bermann, Skokie, IL  
Pacnor Marketing, Lynnewood, WA  
Forti Associates, Kensington, MD

**J. W. DAVIS & CO.**, 3215 Canton St., Dallas, TX 75226  
Tel.: 214-651-7341 Texas WATS: 800-442-1564  
National WATS: 800-527-5705

President: Charles Griffiths  
Vice President Sales: Jack W. Tucker  
Products: closed-circuit television cameras with a wide assortment of lenses and accessories including mounts, enclosures, switches, controls and monitors. Available with intercom capabilities if required.  
See full listing under **Pro Audio Systems**.

**DELCOM CORP.**, 6019 S. 66th E. Ave., Tulsa, OK 74145 Tel.: 918-494-9500 800-331-5461

President: Sam Pate  
Sales Manager: Jerry Koerner  
Chief Engineer: Martin Brown  
Other Personnel: Buddy Schwartz

Products: turnkey video systems, design and engineering services, custom and standard consoles and control room furnishings. Computerized cable and tracing for system documentation.

District Office:  
Delcom Corp., St. Louis, MO, 314-432-1164

**DYNAIR ELECTRONICS, INC.**, 5275 Market St., San Diego, CA 92114 Tel.: 619-263-7711

President: E. G. "Garry" Gramman  
Sales Manager: Robert A. Jacobs  
Vice President Marketing: D. Castellini  
Vice President Finance: H. Greunstern  
Products: audio and video switching and distribution systems designed for aerospace, broadcast, CATV, communications, CCTV and other related markets.

**ELBEX AMERICA**, 20630 S. Leapwood Ave., Unit F, Carson, CA 90746  
Tel.: 800-FOR-CCTV (California)  
800-421-5206 (National)

President: David Elberbaum  
Treasurer: Ken Rock  
Sales Coordinator: Margaret Wall  
Chief Engineer: Cameron W. Cotrill  
Technician: Mohammad Bigdeli  
Products: completely integrated CCTV system utilizing single-cable installation, Video Interphone™ apartment/residential access control system, CCTV cameras, monitors, switchers, accessories, automotive camera system.  
District Offices:  
Iran Campos, Miami, FL  
Rueben Fursaig, Mt. Vernon, NY  
Phil Eaton, Clearwater, FL  
Brian Webber, Phoenix, AZ  
Executive Systems, Nashville, TN

**GBC CLOSED CIRCUIT TELEVISION CORP.**, 315 Hudson St., New York, NY 10013  
Tel.: 212-989-4433

President: Stephen Lefkowitz  
Sales Manager: Gary Perlin  
Chief Engineer: Edward Ickowski, V.P.  
Products: closed-circuit TV cameras and monitors, and related accessories for industrial, home, and government use.  
District Offices:  
GBC CCTV California Corp., Carson, CA  
GBC CCTV Washington Corp., N.E. Washington, DC

**HITACHI DENSHI AMERICA LTD.**, 18005 S. Adria Maru Lane, Carson, CA 90746  
Tel.: 213-538-4880 800-824-9751

President: J. Tosaka  
Sales Manager: Fred Posner  
Products: sales and distribution of closed circuit TV cameras, monitors, specializing in black-and-white and color solid state (chip) cameras.  
District Office:  
Woodbury, NY, 516-921-7200, 800-645-7510

**IMPART, INC.**, 2225 4th Ave., Seattle, WA 98121 Tel.: 206-728-0184

President: Steven Corey  
Sales Manager: Laird Laabs  
Other Personnel: Peter Sherwin  
Products: complete video training equipment with locking wall mount or locking cart, CCTV systems and chip cameras, fully packaged with housing units and mounting equipment.

**ISS ENGINEERING, INC., 104 Constitution #4, Menlo Park, CA 94025 Tel.: 415-853-0833**

President: Norman Gillaspie  
Sales Manager: John Coiro  
Marketing Director: Lydia Gillaspie  
Products: CATV, MATV, SMATV television modulators that are frequency agile. Any UHF, VHF channel user selectable with front panel switch.  
District Offices:  
ISS EAST, 800-351-4477

**JAVELIN ELECTRONICS, 19831 Magellan Dr., Torrance, CA 90502 Tel.: 213-327-7440**

President: Donald T. Heckel  
Vice President, Engineering: Raymond Payne  
National Sales Manager: Bill Walters  
Sales Manager: Russell Mayworm  
Industrial Sales: John Shulte  
Chief Engineer: Julian Hansen  
Products: complete CCTV security systems including cameras, monitors, video tape recorders, lenses, cable, pan/tilts, video signal equipment and other accessories. Also, night viewing equipment.  
District Offices:  
Bencsik & Assocs., Ocala, FL  
Bi-State Marketers, Inc., Ridgefield, NJ  
Mets Lerwill, Elk Grove, CA  
RG Assocs., Stowe, MA, 617-897-1741  
Blue Marble, Costa Mesa, CA, 714-966-1883

**LEE DAN COMMUNICATIONS, INC., 155 Adams Ave., Hauppauge, NY 11788 Tel.: 516-231-1414 800-231-1414 (in NY) 800-LEE-DANI (in U.S.)**

President: Leon Goldberg  
Sales Manager: Lawrence Goldberg  
Chief Engineer: Sanford Hoffman  
Products: Tek-View combination audio/visual intercom and door control systems for private homes, commercial applications and multi-unit housing.

**LIGHTWAVE COMMUNICATIONS, INC., 650 Danbury Road, Ridgefield, CT 06877 Tel.: 203-438-3591**

President: Ronald Marsilio  
Sales Manager: Diana McCauley  
Chief Engineer: Michael Canestri  
Vice President Marketing: Ingemar Sjunnemark  
Products: fiber optic data, voice and video modems and multiplexers.

**MULTI-VOX LTD., 9967 St. Michel Blvd., Montreal H1H 5G7, Quebec, Canada Tel.: 514-321-3131**

President: Fernand Parent  
Sales Manager: Robert Girard  
Chief Engineer: Dominique Malenfant  
Operations Manager: Georges Morissette  
Products: audio amplifiers, electronic carillons and chimes, simplex and duplex intercom systems, solid state and microprocessor intercom systems for apartments, hospital and health care facilities, schools, institutions and industries, paging systems.

**NORCON ELECTRONICS, INC., 1260 Ralph Ave., Brooklyn, NY 11236 Tel.: 718-451-1112**

President: Norman Schlaff  
Chief Engineer: Simon Kleyner  
Products: Norcon Talk-Thru communicator providing amplified hands-free communication through an environmental partition. Engineered sound reinforcement systems. Public address systems. Closed-circuit and master antenna television systems. Fire alarm systems.

**OPAMP LABS, INC., 1033 N. Sycamore Ave., Los Angeles, CA 90038 Tel.: 213-934-3566**

Sales Manager: B. Losmandy

Products: audio consoles (kits and wired); amplifiers, D.C., mic preamp; E.Q., magnetic tape, oscillators, power supplies, transformers, reverbs, graphic equalizers, electronic matrices. Video distribution amplifiers. Audio-video switches rack-fitted.

**PANASONIC INDUSTRIAL CO., Audio-Video System Products Group, One Panasonic Way, Secaucus, NJ 07094 Tel.: 201-348-7000**

President and Chief Operating Officer: Kiyoshi Seki  
Vice President: Steve Yuhas  
Sales Manager: Steve Woolley  
Chief Engineer: Tom Nagai  
Marketing Manager: John McDonnell  
Products: complete line of Vidicon and Newvicon CCTV cameras, single cable compact CCTV camera systems, high resolution and low-light cameras, solid state cameras, monitors, recorders, time date generators, lenses, switches, and accessories.  
District Offices:  
Southeast, Norcross, GA, 404-925-6835  
Southwest, Irving, TX, 214-580-0518  
Northwest, Bothell, WA, 206-485-4446  
Northeast, Secaucus, NJ, 201-348-7620  
Midwest, Arlington Heights, IL, 312-981-4826  
Western, Cypress, CA, 714-985-7200

**PEERLESS SALES COMPANY, 1950 Hawthorne Ave., Melrose Pk., IL 60160 Tel.: 312-865-8870**

President: Walter Griffing  
Sales Manager: Art Mraz  
Chief Engineer: Bill Mraz  
Vice President: Walt Snodell  
Products: TV, AV, VCR, CCTV accessory products including security hardware, stands, mounts, carts and brackets for the desk, wall, and ceiling.  
District Offices:  
SYMCO, Inc., New York, NY, 212-647-6262  
James W. Bell, Atlanta, GA, 404-237-6819  
GO Video Sales, Inc., Chicago, IL, 312-295-6726  
F.M. Valenti, Inc. & Assoc., Boston, MA, 617-592-5300  
Technical Products Sales, Los Angeles, CA, 213-875-1235

**SURVEILLANCE VIDEO SYSTEMS, 258 'A' Street, P.O. Box 1349, Ashland, OR 97520 Tel.: 503-773-9800**

President: Bud Wilkey  
Products: several models of simulated (dummy) CCTV security cameras. Also discounted CCTV cameras, monitors, systems and accessories.

**TELEVOX SYSTEMS (div. National Telesystem Ltd.), 438 Papin Ave., Ste-Foy, Quebec G1P 3T9 Canada Tel.: 418-659-3565**

President: Charles Sirois  
Sales Manager: Leopold Lambert  
Chief Engineer: Marcel Langlois  
Products: systems and equipment for audio-visual, CCTV/video, intercom (institutional), nurse/patient intercom, paging, school communication. Headphones and headsets, wire and cable, loudspeakers and accessories, microphones.

**TOA ELECTRONICS, INC., Security Group, 480 Carlton Ct., S. San Francisco, CA 94080 Tel.: 415-588-2538**

President: Sam Sakata  
Sales Manager: Barry Rubin  
Products: video observation systems including video cameras, monitors, switchers, remote control equipment, rack mounting equipment, and video camera equipment.  
See full listing under **Engineered Sound Systems & Products.**

**USATCO (Universal Satellite Corp.), 300 E. 59th St., New York, NY 10022 Tel.: 718-786-1510**

President: Henry Schwartz  
Sales Manager: Steve Emspak  
Products: videomate large screen video and data projectors, computer interfaces.



**VERREX CORPORATION**, 1130 Rt. 22W, Mountain-side, NJ 07092 Tel.: 201-232-7000

President: Thomas G. Berry  
Sales Manager: Richard Krochmal  
Chief Engineer: David G. Butz

Products: supplier of engineered CCTV/video systems worldwide since 1946. Systems supplied to contractors and end users such as casinos, manufacturing and chemical plants, schools, hospitals, etc.

**VICON INDUSTRIES, INC.**, 525 Broad Hollow Rd., Melville, NY 11747 Tel.: 516-293-2200

President: Donald N. Horn  
Executive Vice President: Arthur V. Wallace  
Vice President, Operations: Rich Perna

Vice President, Sales: Dar Hyatt

Vice President, Engineering: Rein Randmae

Products: CCTV systems and accessories for security and surveillance for application in bank security, casinos, education, traffic control, hospitals, retail and industrial plants.

District Offices:

Bob Milecki, Melville, NY, 516-293-2200

Dennis Beeskow, River Forest, IL, 312-848-5100

Ron Klein, Brea, CA, 714-990-3858

Tom Nash, Norcross, GA, 404-449-0499

David Gibbs, San Jose, CA, 408-297-0377

## DISCO SYSTEMS & SUPPLIES

**AB SYSTEMS INC.**, 11480 Sunrise Gold Circle, Rancho Cordova, CA 95670 Tel.: 916-635-0890

President: Robert Bird  
Sales Manager: Irwin Laskey  
Chief Engineer: Jeff Kuells

Other Personnel: George Anderson, Dona Maxcy

Products: power amplifiers, mixer amplifiers, mono and dual bi-amplifiers and tri-amplifiers. Commercial ATD series power amplifiers, mixers, and loudspeakers. Provide full sound reinforcement and distributed system capabilities.

See full listing under **Audio Amplifiers**.

**ART, Applied Research & Technology, Inc.**,  
215 Tremont St., Rochester, NY 14608  
Tel.: 716-436-2720

President: Philip A. Betette  
Sales Manager: Peter A. Beverage  
Chief Engineer: Richard Neatrou

Customer Relations: Jim Stachowski

Products: digital signal processors including software-updateable DR1 and DR2a digital reverberation systems; PD3 1-in-3-out fixed installation delay; graphic equalizers; pitch transposer (time compression/expansion); 1500 delay line.

See full listing under **Audio Signal Processors**.

# ASHLY

**ASHLY AUDIO INC.**, 100 Fernwood Ave., Rochester, NY 14621 Tel.: 716-544-5191 800-828-6308

President: Bill Thomas  
Sales Manager: Bob French  
Chief Engineer: Jon Gaines

Products: manufacturers of professional sound products since 1972.

Products include MOS-FET power amplifiers, graphic equalizers, noise gates, limiter-compressors, electronic crossovers, parametric equalizers notch filters, and OEM products.

See full listing under **Pro Audio Sound Systems & Products**.

**BIAMP SYSTEMS, INC.**, 14270 S.W. Science Park Dr., Portland, OR 97209 Tel.: 503-641-7287

President: Don Waggoner  
Sales Manager: Ralph Lockhart  
Chief Engineer: Hans Geerling  
Vice President & Finance: Jerry Payette

Products: professional sound reinforcement and audio production equipment, powered mixers, console mixers, power amplifiers, crossovers parametric equalizers, and limiters.

**BOSE CORPORATION**, The Mountain, Framingham, MA 01701 Tel.: 617-879-7330

President: Sherwin Greenblatt  
Sales Manager: John Stiernberg  
Chief Engineer: John Carter

Other Personnel: Dave Bell, Barry Luz, Mark Mayfield, Ken Jacobson  
Products: professional loudspeaker systems for portable and installed applications including sound reinforcement, commercial sound and foreground music. Modeler™ computer software for designing commercial sound systems.



**BOZAK, INC.**, 326 South St., New Britain, CT 06051-3721 Tel.: 203-225-0555

President: Donald D. Bowers  
Director of Marketing: William J. Kieltyka  
Chief Engineer: Sheldon Glick

Products: foreground speaker systems and professional mixers.

District Office:

Electronic Wholesale Dist., Huntington Beach, CA, 714-841-9540

**CALZONE CASE CO.**, 225 Black Rock Ave. Bridgeport, CT 06605 Tel.: 203-367-5766

President: Joseph E. Calzone III  
Vice President: Vincent J. Calzone  
Chief Engineer: Thomas M. Mackno

Sales and Marketing Administrator: Barbara J. Honeycomb  
Products: full line of road and flight cases for the musical, audio, and video markets; ESCORT-ATA styled, 1/4" plywood, heavy-duty construction; PROLINE, constructed of 1/4" plywood; CONVOY lightweight, protective; ULTIMA, lightweight case providing protection for keyboards, mixers, recorders, and drum machines during local transport.

See full listing under **Cabinets, Consoles, Cases, & Racks**.

**EASTERN ACOUSTICS WORKS**, 59 Fountain St. Framingham, MA 01701 Tel.: 617-670-1478

President: Ken Berger  
Sales Manager: Frank Loyko  
Chief Engineer: Kenton Forsythe  
Other Personnel: Sandy MacDonald

Products: professional loudspeaker products including full-range systems, bass and mid-bass horns, drivers, and studio monitor systems

See full listing under **Loudspeakers & Accessories**.

**EDEN ELECTRONICS INC.**, Box 338, First St.,  
Montrose, MN 55363 Tel.: 612-675-3650

President: David D. Nordschow  
Products: high quality commercial sound systems, mobile PA systems,  
stage monitors, constant directivity horns, crossovers, cabinets,  
fiberglass horns for O.E.M. application, horn-loaded bass systems.  
See full listing under **Engineered Sound Systems**.

**FM ACOUSTICS LTD.**, Tiefenhofstrasse 17,  
Waedenswil, CH (Switzerland) 8820  
Tel.: 01-780-6444

President: Manuel Huber  
Products: high power amplifiers from 150 to 7,000 Watts RMS; linear-  
phase electronic crossovers featuring 36 dB/octave attenuation;  
Forcelines high energy transfer cables.

**IMC**, 1316 E. Lancaster, Ft. Worth, TX 76102  
Tel.: 817-336-5114

President: Jerry Freed  
Sales Manager: Chuck Murray  
Chief Engineer: Jim Cowser  
Products: Akai—multitrack recorder synthesizers. Studiomaster—  
recording and live mixing consoles. Ross—multitrack recorders, PA  
systems, guitar amps and effects. Fane—professional loudspeakers and  
compression drivers.

**INTERSONICS, INC.**, 3453 Commercial Ave.,  
Northbrook, IL 60062 Tel.: 312-272-1772

President: Roy Whymark  
Sales Manager: Thomas Melzer  
Chief Engineer: Thomas Danley  
Other Personnel: Dr. Charles Rey  
Products: servo-drive loudspeakers, subwoofers run by a servo motor  
and driveshaft principle — no voice coils!  
See full listing under **Loudspeakers & Accessories**.

**JBL PROFESSIONAL**, 8500 Balboa Blvd., Northridge,  
CA 91329 Tel.: 818-893-8411

President: Ron Means  
Vice President, Sales: Ken Lopez  
Applications Engineer: Drew Daniels  
Products: high quality loudspeakers and loudspeaker systems of all  
kinds; automatic microphone mixer; electronic crossover; special  
loudspeakers for musical instruments.  
See full listing under **Loudspeakers and Accessories**.

**MODULAR SOUND SYSTEMS, INC.**, P.O. Box 488,  
Barrington, IL 60010 Tel.: 312-382-4550

President & Sales Manager: Jim Wischmeyer  
Chief Engineer: Henry Heine  
Products: BAG END loudspeaker systems, custom cabinetry, rack  
mount enclosures, and sound system design.  
See full listing under **Pro Audio Sound Systems**.

**NUMARK ELECTRONICS/PPD**, 503 Raritan Center,  
Edison, NJ 08837 Tel.: 201-225-3222

President: Harry Kotovsky  
Sales Manager: Peter Horsman  
Products: power amplifiers, mixers, equalizers, noise reduction, expansion  
systems, video sound processors.  
See full listing under **Pro Audio Sound Systems**.

**PANASONIC INDUSTRIAL CO., Audio-Video System  
Products Group**, One Panasonic Way, Secaucus,  
NJ 07094 Tel.: 201-348-7000

President & Chief Operating Officer: Kiyoshi Seki  
Vice President: Steve Yuhas  
Sales Manager: Steve Woolley  
Chief Engineer: Tom Nagai  
Marketing Manager: John McDonnell

Products: Ramsa® professional power amplifiers, mixing consoles, portable  
and stationary audio recording mixers and post production and  
recording consoles, compact speakers, integrated amplifiers, including  
mixer power amplifiers with AM/FM tuner, and accessories.  
See full listing under **CCTV/Video Systems & Products**.

**PASO SOUND PRODUCTS, INC.**, 14 First St., Pelham,  
NY 10803-1401 Tel.: 914-738-4800

Executive Vice President: Paul Mastrangelo  
Operations Manager: Anthony Sgueglia  
Sales Manager: David Moore  
Product manager (Engineering): Ken O'Brien  
Credit Manager: Marilyn Beckerson  
Customer/Representative Support: Tommi Paladino  
Sales Administration (Order Expedite): Stacy Appel  
Products: indoor, outdoor, portable, mobile amplifiers, preamplifiers,  
mixers, booster amplifiers, AC/DC integrated amplifiers and boosters,  
intercom systems, multi-residential systems, microphones, wireless  
microphones, industrial grade auto reverse cassette machines, tuners,  
sound columns, speakers, baffles, driver units, trumpets, horns, full  
range loudspeaker systems, stage monitors, stands, accessories, equip-  
ment racks.  
See full listing under **Engineered Sound Systems**.

**SPECO, DIV., COMPONENTS SPECIALTIES INC.**,  
1172 Rt. 109, P.O. Box 624, Lindenhurst, NY  
11757 Tel.: 516-957-8700 (New York)  
1-800-645-5516 (Outside NY)

President: Louis W. Keller  
Vice President, Sales: Mel Hulkower  
Vice President & General Manager: James Ganci  
Regional Sales Managers: Eric Forman, Bruce Kurtz  
Products: P.A. horns, amplifiers, tuners, loudspeakers, wall baffles,  
speaker assemblies, outdoor speakers, sound columns, ceiling grilles,  
transformers, L-pads, attenuators, accessories, microphones, intercoms,  
alarm sirens, multitestors, oscilloscopes.

**STANTON MAGNETICS INC.**, 200 Terminal Dr.,  
Plainview, NY 11803 Tel.: 718-445-0063

President: Walter O. Stanton  
Sales Manager: Pete Bidwell  
Chief Engineer: John Kuykendall  
Manager, Advertising & Promotion: Jean Kapen  
Product: magnetic cartridges and styli for broadcast and recording  
industries.

**TOA ELECTRONICS, INC.**, 480 Carlton Court,  
S. San Francisco, CA 94080 Tel.: 415-588-2538

President: Sam Sakata  
Sales Manager: Joe Green  
Technical Services Manager: Bob Sweet  
Products: engineered sound systems, commercial sound systems,  
amplifiers, dual amplifiers, tuners, equalizers, multi-functional  
preamplifiers, mixing consoles, speakers, horns, drivers, microphones,  
wireless systems, microcomputerized EXES intercom systems, CCTV,  
security systems.  
See full listing under **Engineered Sound Systems**.

**VERREX CORPORATION**, 1130 Route 22 West,  
Mountainside, NJ 07092 Tel.: 201-232-7000

President: Thomas G. Berry  
Sales Manager: Richard Krochmal  
Chief Engineer: David G. Butz  
Products: suppliers of engineered disco sound systems worldwide since  
1946. Systems supplied to electrical contractors and end users for  
discotheques, hotels, clubs, etc.

**BOB WHITE ASSOCIATES**, P.O. Box 39104, Solon,  
OH 44139 Tel.: 216-248-1317

President: Bob White  
Sales Manager: Tod White  
Chief Engineer: George White

Products: professional sound products, disco systems, projection TV, pro lighting equipment.  
See full listing under **Pro Audio Sound Systems & Products**

## ENCODERS & DECODERS

(communication signaling devices)

**C Z LABS, INC.**, 55 Railroad Ave., Garnerville, NY 10923 Tel.: 914-947-1554

President: Harry Zipkin  
Sales Manager: Steven Zipkin  
Sales Associate: Keith Scott  
Products: coaxial cable, multi-conductor cable, satellite cable, connectors, computer access, telephone access, video access, crimping tools, cable assemblies, adapters, switches.  
See full listing under **Wire & Cable**.

**McMARTIN INTERNATIONAL, INC.**, P.O. Box 4500, Gunnison, CO 81230 Tel.: 313-641-5500

President: Ray B. McMartin  
Vice President, Director of Sales: Jay B. McMartin  
Products: engineered and commercial sound amplifiers/mixers/accessories, background music amplifiers and sound systems, SCA multiplex receivers. FM/SCA receivers, satellite modulators/ demodulators.  
See full listing under **Audio Amplifiers**.

**MONROE ELECTRONICS, INC.**, 100 Housel Ave., Lyndonville, NY 140 Tel.: 716-765-2254

Marketing Manager: Eugene B. Fuller  
Chief Engineer: Charles G. Perry  
Products: DTMF remote control and status monitoring systems, DTMF encoders and decoders, FCC registered telephone couplers, audio amplifiers, hybrid couplers, timers, video switchers, audio switchers.

**MONTGOMERY MANUFACTURING CO., INC.**, 202 S. Main St., Owensville, IN 47665  
Tel.: 812-724-2505

President and General Manager: W. B. Davis  
Products: clock and program systems, automatic operation 1 to 5 separate schedules on 1 to 5 groups of signals; 12- or 24-hour models.  
Applications: schools, hospitals, institutions, business and commerce.

**RAVEN ELECTRONICS CORPORATION**, 400 Wolvering Way, Sparks, NV 89431  
Tel.: 702-359-3700

President: Carl A. Dawson  
Sales Manager: Davis S. Young  
Chief Engineer: Wook Shim  
Purchasing Agent: Jay W. Cigno  
Products: designs, engineers, and manufactures Engineering Service Channel equipment, INTELSAT/DomSat earth station products, STL, VF, and TTY switching equipment for use in LOS microwave, satellite, wireline, and fiber optic transmission networks.  
See full listing under **Teleconferencing Systems**.

**SIMS VIBRATION DYNAMICS**, 17724 15th Ave., N.E., Seattle, WA 98155 Tel.: 206-362-0700

President: Steve Sims  
Sales Manager: Nat A. Williams, Jr.  
Chief Engineer: Steve Sims  
Products: vibration isolation bases for turntables and compact disc players.  
Sales Representatives:  
World Wide Electronics, Pembroke Pines, FL, 305-966-6622  
Darmsteder Assocs., Baldwinsville, NY, 315-638-1261

**WHELEN ENGINEERING CO., INC.**, Route 145, Winthrop Road, Chester, CT 06412-1036  
Tel.: 203-526-9504

President: John F. Olson  
Sales Manager: Howard M. Berke  
Chief Mechanical Engineer: Wayne Lyons  
Products: audible & visual signalling devices for automotive & industrial applications, including strobe & rotating beacons, light bars, vehicle sirens & public address systems, and high-power outdoor warning systems.  
See full listing under **Alarm & Security**.

## ENGINEERED SOUND SYSTEMS

**A B SYSTEMS, INC.**, 11480 Sunrise Gold Circle, Rancho Cordova, CA 95670 Tel.: 916-635-0890

President: Robert Bird  
Sales Manager: Irwin Laskey  
Chief Engineer: Jeff Kuells  
Other Personnel: George Anderson, Dona Maxcy  
Products: power amplifiers, mixer amplifiers, mono and dual bi-amplifiers and tri-amplifiers. Commercial ATD series power amplifiers, mixers, and loudspeakers. Provide full sound reinforcement and distributed system capabilities.  
See full listing under **Audio Amplifiers**.

**AIPHONE INTERCOM SYSTEMS**, 1700 130th Ave. N.E., Bellevue, WA 98005 Tel.: 206-455-0510

President: Hiko Shinoda  
Sales Manager: Jim Morrison  
Chief Engineer: Jun Matsumoto  
Products: industrial, business, residential, loudspeaking, telephone, video intercom/security systems with paging talk-back; six microprocessor systems available; mixer amplifiers, paging speakers, horns, drivers, ceiling speakers, tuners, fast food intercom systems, and special order products.

**ALTEC LANSING CORPORATION, Gulton Co.**, Box 26105, Oklahoma City, OK 73126-0105  
Tel.: 405-324-5311

President: F. Davis Merrey  
Vice President of Marketing: Gary Rilling  
Sales Manager: Gayle Campbell  
Products: industrial and professional electronic and loudspeaker products including mixers, power amplifiers, equalizers, high power speakers and compression drivers, constant directivity horns, crossovers and microphones.  
See full listing under **Audio Amplifiers**.

**APOGEE SOUND INC.**, 1150 Industrial Ave., Suite C, Petaluma, CA 94952  
Tel.: 707-778-8887 (National)  
800-528-3939 (CA)

President: Ken DeLoria  
Vice President Sales: Joe Manning  
Vice President Marketing: Brian Glenn  
Chief Engineer: Ken DeLoria  
Products: arrayable bi-amp portable loudspeaker, multipurpose 2-way single-amp portable loudspeakers, tri-amp portable loudspeaker. Speakers designed for stage monitoring, theater, and audio visual use. Include signal processors, equalization.  
See full listing under **Pro Audio Sound Systems & Products**.

**ART—Applied Research & Technology Inc.,**  
215 Tremont St., Rochester, NY 14608  
Tel.: 716-436-2720

President: Philip A. Betette  
Sales Manager: Peter Beverage  
Chief Engineer: Richard Neatroun  
Customer Relations: Jim Stachowski  
Products: digital signal processors including software-updateable DR1 and DR2a digital reverberation system; PD3 1-in-3-out fixed installation delay; graphic equalizers; pitch transposer (time compression/expansion); 1500 delay line.  
See full listing under **Audio Signal Processors**.

**AUDITEL SYSTEMS LIMITED, 78 Asheridge Road,**  
Chesham, Bucks., England HP5 2PY  
Tel.: (0494) 778043

President: David Langtry  
Chief Engineer: Mike White  
Products: central and delegate controlled conference systems, computer-controlled conference consoles, simultaneous interpretation systems, multi-channel FM induction loop transmitters and receivers, electronic voting systems.  
District Office:  
Edcom, Lewiston, NY

**AVTEC INDUSTRIES, INC., 5 Audrey Pl., Fairfield,**  
NJ 07006 Tel.: 201-882-9460

President: James P. Tore  
Vice President: Sy Miller  
Sales Manager: Scott Curran  
Chief Engineer: Michael DeBlasio  
Products: engineer, design, fabricate and install audio/visual communication systems, specializing in boardroom interconferencing systems; specialized equipment sales (video projection, industrial video equipment, communications); manufacture Vantage Point™ multi-media lectern and Conferscan™ boardroom conference table designed to record meetings (audio and video).

**BIAMP SYSTEMS, INC., 14270 S.W. Science Park Dr.,**  
Portland, OR 97209 Tel.: 503-641-7287

President: Don Waggoner  
Sales Manager: Ralph Lockhart  
Chief Engineer: Hans Geerling  
Vice President of Finance: Jerry Payette  
Products: professional sound reinforcement and audio production equipment, powered mixers, console mixers, power amplifiers, crossovers, parametric equalizers, and limiters.

**BOGEN, A Lear Siegler Company, 50 Spring St., P.O.**  
Box 575, Ramsey, NJ 07446 Tel.: 201-934-8500

President: John H. Ochtera  
Vice President, Marketing: Carl C. Dorwaldt  
Vice President, Engineering: Mark Koller  
Products: commercial sound and communication systems and equipment including amplifiers, mixers, loudspeakers, microphones, telephone paging equipment, tuners, intercoms, audio surveillance and centralized sound systems.  
District Offices:  
Bi-State Marketers, Inc., Ridgfield, NJ, 201-943-5888  
Kingston Sales Corp., Indianapolis, IN, 317-876-2545  
R. W. Kunz & Assocs., Inc., Prairie Village, KS, 913-648-3535  
R. W. Kunz & Assocs., Inc., St. Louis, MO, 314-966-4977  
Wm. M. Linz Assocs., Deerfield, IL, 312-945-9600  
L. D. Lowery Inc., Broomall, PA, 215-356-5300  
Mountain Representatives, Inc., Denver, CO, 303-623-0972  
Pacnor Marketing, Inc., Sandy, OR, 503-668-8848  
Pacnor Marketing, Inc., Lynnwood, WA, 206-771-6016  
Paston Hunter Co., Syracuse, NY, 13206, 315-437-2992  
R. G. Assocs., Stow, MA, 617-897-1741  
R. W. Sales Inc., St. Paul, MN, 612-646-2710  
Riley & Petchell Sales, Inc., Detroit, MI, 313-937-3000  
Rohr-Wanger-Roberts Inc., Alabaster, AL, 205-879-7361

Rohr-Wanger-Roberts Inc., Norcross, GA, 404-263-9349  
Rohr-Wanger-Roberts Inc., Rock Hill, SC, 803-324-5111  
J. Y. Schoonmaker Co., Dallas, TX, 214-349-1650  
Shamrock Electronics Sales, Dayton, OH, 513-258-1227  
SLK/Tech Rep Assocs., Inc., Hayward, CA, 415-785-4531  
SRT Marketing, Tampa, FL, 813-884-4805  
Wes-Tech Marketing, Culver City, CA, 213-870-9286  
White Radio, Ltd., Burlington, Ont., Canada, 416-632-6894  
Foreign Representative: Singer Products, Co., Inc., Westbury, NY, 516-683-3000

**BOSE CORPORATION, The Mountain, Framingham,**  
MA 01701 Tel.: 617-879-7330

President: Sherwin Greenblatt  
Sales Manager: John Stiernberg  
Chief Engineer: John Carter  
Other Personnel: Dave Bell, Barry Luz, Mark Mayfield, Ken Jacob  
Products: professional loudspeaker systems for portable and installed applications including sound reinforcement, commercial sound and foreground music. Modeler™ computer software for designing commercial sound systems.

**CAPITOL BACKGROUND MUSIC, INC., d/b/a See-**  
**burg Sound Systems, 5706 New Chapel Hill**  
Road, Raleigh, NC 27607 Tel.: 919-851-5823

General Manager: William E. Fox  
Sales Manager: Charles Anderson  
Products: engineer, custom design, install and service: foreground/background music for all industrial and commercial applications.

**CETEC GAUSS, 9130 Glenoaks Blvd., Sun Valley,**  
CA 91352 Tel.: 213-875-1900

President: W. Mort Fujii  
Sales Managers: J. Fleischmann, John Williams  
Chief Engineer: J. Williams  
Products: musical component loudspeakers, precision components for sound reinforcement, custom systems, high-speed tape duplicating equipment.

**CETEC IVIE, 1366 W. Center St., Orem, UT 84057**  
Tel.: 801-224-1800

President: Craig Berry  
Sales Manager: Glen Meyer  
Chief Engineer: Greg Greenwood  
Products: 5000 modular sound system comprised of a mainframe and various plug-in modules including outo mixers, crossovers, equalizers, delays, notch filter, 70-V and 8-ohm amplifiers. Room combiners.  
See full listing under **Audio Signal Processors**.

**COMMUNICATIONS EQUIPMENT CO., INC., 6443**  
Western Ave., Glen Arbor, MI 49636  
Tel.: 616-334-3081

President: Hugh I. Morris  
Sales Manager: T. A. Garmhausen  
Products: centralized sound systems for institutional applications including selective program distribution and intercommunication, manual or dial access, emergency call, light or digital annunciation, and audio surveillance.  
District Offices:  
Carey & Assocs., Inc., Richmond, TX  
Carey & Assocs., Inc., Houston, TX  
Bidwell Sales Associates, Gardena, CA  
Bill Newman & Company, Denver, CO  
Whitaker Security, Inc., Springfield, VA

**COMMUNITY LIGHT & SOUND, INC., 333 E. 5th St.,**  
Chester, PA 19013 Tel.: 215-876-3400

President and Chief Engineer: Bruce Howze  
Sales Manager: John D. Strand  
Vice President, Engineering: John T. Wiggins

Products: high efficiency loudspeakers, loudspeaker systems and enclosures, public address and sound reinforcement products, voice warning systems and OEM designs.

See full listing under **Pro Audio Sound Systems & Products.**

**J. W. DAVIS & CO.,** 3215 Canton St., Dallas, TX 75226  
Tel.: 214-651-7341 Texas WATS: 800-442-1564  
National WATS: 800-527-5705

President: Charles Griffiths

Vice President Sales: Jack W. Tucker

Products: speakers, baffles, transformers, sound columns, mixers, amplifiers, intercom systems, school systems, microphones, CCTV, paging systems, background and foreground music systems, pro sound systems, nurse call systems.

**DELTA MAGNETICS,** 16782 Hale Ave., Irvine, CA 92714 Tel.: 714-863-1537

General Manager: Vince Piraino

Products: standard and custom audio and power transformers for the contractor or OEM. Cross to major hard to get transformers. Short run and design a specialty.

**EASTERN ACOUSTICS WORKS,** 59 Fountain St., Framingham, MA 01701 Tel.: 617-670-1478

President: Ken Berger

Sales Manager: Frank Loyko

Chief Engineer: Kenton Forsythe

Other Personnel: Sandy MacDonald

Products: professional loudspeaker products including full-range systems, bass and mid-bass horns, drivers, and studio monitor systems.

**EDCOM, INC., Division of BCE/Edcom Inc.,** 755 Center St., Lewiston, NY 14092-0506  
Tel.: 716-754-7130

President: Peter Jova

Vice President, Marketing: Jim Wood

Project Engineer: Alan Butterfield

Products: microprocessor-controlled school & administrative communication systems; correctional & retirement complex systems; conference & simultaneous interpretation systems; life safety systems for commerce & industry.

**EDCOR,** 16782 Hale Ave., Irvine, CA 92714  
Tel.: 714-863-1529, 800-854-0259

President: Larry Weston

Products: a complete line of contractor equipment including amplifiers, mixers, automatic mixers, wireless microphone systems, audio and power transformers.

**EDEN ELECTRONICS, INC.,** P.O. Box 338, First St., Montrose, MN 55363 Tel.: 612-675-3650

President: David D. Nordschow

Products: high quality commercial sound systems, mobile PA systems, stage monitors, constant directivity horns, crossovers, cabinets, fiberglass horns for O.E.M. application, horn-loaded bass systems.

Sales Representatives:

Hawkeye, Shoreview, MN, 612-484-3103

Gil Soucy, Manchester, NH, 603-623-6241

Music Industry Products, Royal Oak, MI, 313-543-6775

Larry Sturgill, Columbia, MD, 301-995-1578

Denny Handa, Vancouver, WA, 206-253-9749

Greg Ouzunoff, Yorktown Hgts., NY, 914-245-6452

**ELECTRO-VOICE, INC.,** 600 Cecil St., Buchanan, MI 49107 Tel.: 616-695-6831

President: Robert B. Pabst

Vice President, Sales and Marketing: Paul McGuire

Chief Engineer: Earl Harris

Director of Marketing: Jim Holt

Products: broadcast, recording, communications and PA microphones; public address and component high-fidelity loudspeakers and systems, high-performance compression drivers, horns, low-frequency systems, mixers, mixing consoles, signal processors and crossover networks.

District Offices:

George M. Conneen Co., Inc., Springfield, PA

Metropolis Audio Marketing, Inc., Edison, NJ

R.J. Marketing Ltd., Rockville, MD

The Smith Company, Hartford, CT

Meyer Marketing, Deerfield Beach, FL

Wilson Audio Sales, Nashville, TN

Loppnow and Associates, Inc., Redmond, WA

Radon and Associates, Mill Valley, CA

Audio Resources, Westmont, IL

B.C. Electronic Sales, Inc., Mission, KS

Dick Bellew Sales, Inc., Dallas, TX

C.L. Pugh & Assoc., Inc., Columbus, OH

Riley & Petchell Sales, Inc., Detroit, MI

Silver Peak Marketing Ltd., Wheat Ridge, CO

Western Audio Sales, Glendale, CA

**ELTRÉX INTERNATIONAL,** 2 Columbia Dr., Amherst, NH 03031 Tel.: 603-886-3500 Telex: 953016

President: Thomas H. Sullivan

Products: complete line of radio paging encoders, terminals, test equipment for 2-tone and 5-tone sequential, solid state voice recorders and digital delay units for the broadcast industry.

**ENVIRONMENTAL SOUND,** 31220 La Baya Dr., Bldg. 110, Westlake Village, CA 91362  
Tel.: 818-706-0228

President: Pascal Delbuck

Sales Manager: Jean Pierre

Chief Engineer: Pascal Delbuck

Products: drop ceiling monitors that fit directly into standard T-bar or grid ceiling. Pro Drop 1 8-inch 2 way, ES-802 8-inch full range, ES-502 2-way, ES-602 6-inch 2-way. All ES Series speakers have multiple mounting. Video monitor series. Limited edition Pascal 1 and Pascal 2 "mind soars" multiple driver arrangement, mounting between 16 inches on center studs, optional speaker mounting hardware.

**FSR, INC.,** 220 Little Falls Road, Cedar Grove, NJ 07009 Tel.: 201-239-0988

President: William G. Fitzsimmons

Sales Manager: Janice Sandri

Chief Engineer: Joseph Fischer

Products: hotel ballroom combining systems; control systems for board rooms, auditoriums, churches, homes; teleconferencing systems; IR controls; computer interfaces; custom engineering; custom panels; remote control modules for audio, video, and projector controls.

See full listing under **Audio-Visual Equipment & Systems.**

**INDUSTRIAL RESEARCH PRODUCTS, INC.,** 321 Bond St., Elk Grove Village, IL 60007  
Tel.: 312-439-3600

President: Hugh S. Knowles

Marketing Manager: Roger Carroll

Sales Engineer: Jack Read

Products: Voice-matic™ automatic microphone mixers, TEQ™ digital delays, transversal equalizers, power amplifiers, Levelmatic™ automatic level controllers.

**INNOVATIVE ELECTRONIC DESIGNS, INC.,** 9701 Taylorsville Rd., Louisville, KY 40299  
Tel.: 502-267-7436

President: Hardison G. Martin

Sales Manager: Tom Roseberry

Chief Engineer: Ed Young

Design Engineer: Bob Ponto

Products: new "Class D" 200 W, 70.7 volt plug-in amplifiers, 7 inch rack frame holds 8 amplifiers; computer-controlled audio systems; smart automatic mixer; building block audio processing equipment.

**JBL PROFESSIONAL**, 8500 Balboa Blvd., Northridge,  
CA 91329 Tel.: 818-893-8411

President: Ron Means  
Vice President, Sales: Ken Lopez  
Applications Engineer: Drew Daniels  
Products: high quality loudspeakers and loudspeaker systems of all kinds; automatic microphone mixer; electronic crossover; special loudspeakers for musical instruments.  
See full listing under **Loudspeakers & Accessories**.

**JENEL SYSTEMS & DESIGN, INC.**, 10307 Bernardin,  
Dallas, TX 75243 Tel.: 214-680-0502

President: Elmer E. Smalling III  
Executive Vice President: Jean C. Rinklin  
Products: consultants on design of television, satellite, and computer systems, acoustic designers of broad band and fiber lans.

**McMARTIN INTERNATIONAL, INC.**, P.O. Box 4500,  
Gunnison, CO 81230 Tel.: 303-641-5500

President: Ray B. McMartin  
Financial Administrator: Robert W. McMartin  
Products: engineered and commercial sound amplifiers; mixers; accessories; background and foreground music amplifiers and sound systems; FM/SCA receivers; satellite modulators; demodulators.

**MILLBANK ELECTRONICS GROUP LTD.**, Bell-  
brook Industrial Estate, Uckfield, Sussex, TN 22  
1QL England Tel.: Uckfield 825-4811

Chairman: Tony Walker  
Director and General Manager: Brian Evans  
Client Services Director: Bernard Skinner  
Sales and Marketing: Don Eaton  
Engineering Manager: Doug Edworthy  
Products: custom engineered sound systems; public address, teleconference, life-safety. Sound reinforcement systems; amplifiers, preamplifiers, background music, FM/AM tuners, alarm and tone signal generators, loudspeakers, microphones.  
District Office:  
Len Finkler & Co., Downsview, Ont., Canada  
Edcom, Lewiston, NY

**MODULAR SOUND SYSTEMS, INC.**, P.O. Box 488,  
Barrington, IL 60010 Tel.: 312-382-4550

President: Jim Wischmeyer  
Chief Engineer: Henry Heine  
Products: BAG END loudspeaker systems, custom cabinetry, and rack mount enclosures.  
See full listing under **Pro Audio Sound Systems**.

**MULTI-VOX LTD.**, 9967 St. Michel Blvd., Montreal  
H1H 5G7, Quebec, Canada Tel.: 514-321-3131

President: Fernand Parent  
Sales Manager: Robert Girard  
Chief Engineer: Dominique Malenfant  
Operations Manager: Georges Morissette  
Products: audio amplifiers, electronic carillons and chimes, simplex and duplex intercom systems, solid state and microprocessor intercom systems for apartments, hospital and health care facilities, schools, institutions and industries, paging systems.

**NORCON ELECTRONICS, INC.**, 1260 Ralph Ave.,  
Brooklyn, NY 11236 Tel.: 718-451-1112

President: Norman Schlaff  
Chief Engineer: Simon Kleyner  
Products: Norcon Talk-Thru communicator providing amplified hands-free communication through an environmental partition. Engineered sound reinforcement systems. Public address systems. Closed-circuit and master antenna television systems. Fire alarm systems.

**OPAMP LABS, INC.**, 1033 N. Sycamore Ave., Los  
Angeles, CA 90038 Tel.: 213-934-3566

Sales Manager: B. Losmandy  
Products: audio consoles (kits and wired); amplifiers, D.C. mic preamp; E.Q., magnetic tape, oscillators, power supplies, transformers, reverbs, graphic equalizers, electronic matrices. Video distribution amplifiers. Audio-video switches rack-fitted.

**pasos**  
**SOUND PRODUCTS**

**PASO SOUND PRODUCTS, INC.**, 14 First St., Pel-  
ham, NY 10803 Tel.: 914-738-4800

Executive Vice President: Paul Mastrangelo  
Operations Manager: Anthony Sgueglia  
Sales Manager: David Moore  
Product Manager (Engineering): Ken O'Brien  
Credit Manager: Marilyn Beckerson  
Customer/Representative Support: Tommi Paladino  
Sales Administration (Order Expedite): Stacy Appel  
Products: (indoor, outdoor, portable, mobile) amplifiers, preamplifiers, mixers, booster amplifiers, AC/DC integrated amplifiers and boosters, intercom systems, multi-residential systems, microphones, wireless microphones, industrial grade auto reverse cassette machines, tuners, sound columns, speakers, baffles, driver units, trumpets, horns, full range loudspeaker systems, stage monitors, stands accessories, equipment racks.  
Regional Representatives:  
All West Electronics, Larry Lupo, Camarillo, CA, 805-388-1789  
Anderson Sales, Robert Anderson, Sr., Braintree, MA, 617-848-9194  
Brainard-Wilson Marketing, Paul Nielson, Arlington Heights, IL, 312-437-2700  
Brainard-Wilson Marketing, Waukeshe, WI, 414-797-7940  
Jim Church Marketing, James Church, Bloomington, IN  
De Witt Austin Company, De Witt Austin, Charlotte, NC, 704-334-0174  
De Witt Austin Company, Ray Austin, Marietta, GA, 404-926-4943  
Dimension Point IX Marketing Group, Phil Canavespe, Houston, TX, 713-879-4010  
Dimension Point IX Marketing Group, Terry Green, Dallas, TX, 214-348-9657  
Thomas L. Dowell Associates, Inc., Don Geders, St. Louis, MO, 314-849-4234  
Thomas L. Dowell Associates, Inc., Gary Jaeger, Overland Park, KS, 913-648-7373  
Electronic Sales, A.F. Howard, Memphis, TN, 901-682-2281  
Key Marketing, John Riley, Kalamazoo, MI, 616-375-1137  
Key Marketing, Glen Cordial, Plymouth, MI, 313-459-6040

**PERMA POWER ELECTRONICS, INC.**, 5601 W.  
Howard Ave., Chicago, IL 60648  
Tel.: 312-647-9414

President: Norman Ackerman  
Sales Manager: Michael Shatz  
Marketing Manager: Jay Goldstein  
Products: portable public address sound systems; solid state, portable rostrums; sound column lecterns; mobile sound; hailers.  
District Offices:  
Teqni-Rep, Sun Valley, CA, 818-768-4223  
Dick Bellew Sales, Inc., Dallas, TX, 214-644-7881  
Fahy Marketing, Marlton, NJ, 609-654-1022  
Stan Sliz Assocs., Bloomfield, CO, 312-647-9414  
Carmine Vignola & Assocs., Jefferson City, MO, 314-636-3121  
Adams & Assocs., Greensboro, NC, 919-272-6838  
Berthold Sales Co., Dallas, TX, 214-328-0067  
J. Malcolm Flora & Assocs., Plymouth, MI, 313-453-4296  
Green-Wissler Co., Indianapolis, IN, 317-872-9981  
Northmar, Inc., Seattle, WA, 206-524-5170  
LSM & Assocs., Phelps, NY, 315-548-4891  
Landau & Mack, Inc., Plainview, NY, 516-293-3310

The Smith Co., Hartford, CT, 203-523-0512  
Technical Sales Inc., San Francisco, CA, 415-467-1434  
Morhan Export, Plainview, NY, 516-293-5582  
R W Sales, St. Paul, MN, 612-646-2710  
Markal Sales Corp., Chicago, IL, 312-792-2900  
J. W. Lehner, Stow, OH, 216-686-1965

**PHONIC EAR INC., 250 Camino Alto, Mill Valley, CA  
94941 Tel.: 415-383-4000**

President: James C. Mulford  
Vice President: Richard Pimentel  
Product: wireless FM system to serve the needs of hearing impaired.  
Compatible with in-place equipment requiring minimum installation.

**POETKER COMMUNICATIONS LTD., 461 Manitou  
Dr., Kitchener, Ontario N2C 1L5  
Tel.: 519-893-1010**

President: Bernie W. Poetker  
Sales Manager: Grant Ertel  
Chief Engineer: Lance Cooper  
Products: school and institutional communications products,  
Teletale™ institutional security systems, Trakker™ vehicle identificaion  
and control systems, nurse-call and health care products.  
See full listing under **Intercom Systems—Institutional**

**PRECISION ELECTRONICS, INC., 9101 King St.,  
Franklin Park, IL 60131 Tel.: 312-678-5350**

President: W. S. Grommes  
Sales Engineer: W. Stow  
Chief Engineer: A. A. Hart  
Products: integrated audio amplifiers. Amps for mono or stereo power,  
ine, music-on-hold. Mixer preamplifiers, 2 CH. limiters or compressors,  
graphic equalizers, FM-AM tuners, background music receivers and  
systems, public address systems, custom engineered sound reinforce-  
ment systems, sound columns, trumpets, driver units, baffles,  
microphones and microphone stands.  
See full listing under **Audio Amplifiers**.

**PROTECH AUDIO CORP., Flowerfield, Bldg. #1,  
St. James, NY 11780 Tel.: 516-584-5855**

President: William Murphy  
Chief Engineer: Joseph Giambone  
Products: amplifiers—power, medium level, distribution, com-  
pressor/limiters, preamplifiers modular, automatic level, controls,  
emote level controls, switching modules, line amplifiers, mixing/sum-  
ming modules, audio transformers, hardware.

**PULSAR LABORATORIES, 3200 Gilchrist Rd.,  
Mogadore, OH 44221 Tel.: 216-784-8022**

President: G. Carr  
Sales Manager: G. Carr  
Chief Engineer: J. Boessneck  
Studio Consultant: Bruce Hensal  
Products: professional touring consoles, frames, front, and monitor,  
recording consoles.

**RAULAND-BORG CORP., 3535 W. Addison St.,  
Chicago, IL 60618 Tel.: 312-267-1300,**

President: William Krucks  
Vice-President, Sales and Marketing: Kenneth T. James  
Sales Manager: Rick Blunt  
Chief Engineer: Lawrence Gleason  
Products: amplifiers, preamplifiers; mixers; equalizers; intercoms,  
telephone systems, school communications systems, health care systems;  
professional sound systems; paging systems; AM-FM tuners;  
loudspeaker systems.

**District Offices:**

Harry B. Hahn, Chicago, IL, 312-267-1300  
William C. Zophy, Ft. Myers, FL, 813-433-4766  
Harold Devaney, Dickinson, TX, 713-337-1040  
Hank Plaisier, Midway City, CA, 714-898-2499  
Vince Ward, Redmond, WA, 206-883-3539  
John Hoover, Cherry Hill, NJ, 609-667-1297  
William S. Lewis, Louisville, KY, 502-491-4273  
Patrick Flannery, Orland Park, IL, 312-349-3802  
Michael Meglio, Chicago, IL, 312-267-1300  
Rauland-Borg Canada, Mississauga, Ontario, 416-821-2225  
Jim Welch, Scarborough, Ontario, 416-438-4756

**ROUND & BIDNICK ASSOCS., 2601 Rocky Trail Road,  
Diamond Bar, CA 91765  
Tel.: 714-861-3928**

President and Sales Manager: Charles W. Round  
Chief Engineer: Ron S. Bidnick  
Products: mixer/power amplifiers with FM/AM radio; Selectizone pag-  
ing, chime-siren signaling, power amplifiers; mixers and other signal-  
ing equipment.  
See full listing under **Audio Amplifiers**.

**SAN MING ELECTRONIC SOUND EQUIPMENT CO.,  
LTD., 12715 Western Ave., Garden Grove, CA  
92641 Tel.: 714-891-2252**

President: Hugh C. Hsieh  
Sales Manager: Leon C. Hsieh  
Chief Engineer: S.W. Hsu  
International Sales: Hua C. Hsieh  
Products: high-intelligence multi-tap paging horns, heavy-duty driver  
units for PA and siren applications, extra-heavy-duty driver horns for  
community warning systems, megaphones.

**SWITCHCRAFT INC., 5555 N. Elston Ave., Chicago,  
IL 60630 Tel.: 312-792-2700**

President: William C. Jones  
Sales Manager: Keith Bandolik  
Chief Engineer: Bruce Heeb  
Products: audio and general purpose connectors and receptacles, phone  
and phono jacks and plugs, molded cable assemblies, jack panels and  
jack fields, switches and audio accessories.

**TOA ELECTRONICS, INC., 480 Carlton Court, S. San  
Francisco, CA 94080 Tel.: 415-588-2538**

President: Sam Sakata  
Sales Manager, Commercial Division: Joe Green  
Technical Services Manager: Bob Sweet  
Products: engineered sound systems, commercial sound systems,  
amplifiers, dual amplifiers, tuners, equalizers, multi-functional  
preamplifiers, mixing consoles, speakers, horns, drivers, microphones,  
wireless systems, microcomputerized EXES intercom systems, CCTV,  
security systems.  
Sales Representatives:  
Associated Sales Reps, Baltimore, MD  
Avwest, Fountain Hills, AZ  
Bencsik Assocs., Ocala, FL  
CB Electronic Marketing, Arvada, CO  
Control Assembly, Pittsburgh, PA  
J.C. Electronics, Honolulu, HI  
John Humble Assocs., Anaheim, CA  
Kodo Assocs., Minneapolis, MN  
L-C-A Sales Co., Tuckahoe, NY  
LSM Assocs., Phelps, NY  
Marcus Johnson Assocs., St. Charles, MO  
Monfort Elec. Marketing, Indianapolis, In  
Peregrine S.W. Reps, Houston, TX  
Piper Assocs., Needham, MA  
Secom System, Chamblee, GA  
Shalco, Ferndale, MI  
Vector, Seattle, WA  
Ziskind Assocs., Rolling Meadows, IL

**TSI, 393 Jericho Turnpike, Mineola, NY 11501**  
Tel.: 516-294-5390

Director of Marketing: Glenn C. Kern  
Products: custom AV system design, assembly installation and service for conference, board and training rooms. Teleconferencing systems. Video projection. Remote control of VCR, film, slides, microphones, room lighting, draperies, environment. Computer interfacing.

**T-S-K ELECTRONICS, INC., 564 Young St., P.O. Box 190, Tonawanda, NY 14151** Tel.: 716-693-3916

President: Theodore S. Kedzierski  
Chief Engineer: Kevin T. Kedzierski  
Products: zero-level loudspeaking intercoms used on very long twisted or leased telephone lines. Communication system design and fabrication. Sound detectors and telephone intercoms.

**UNIVERSITY SOUND, Electro-Voice, Inc., 600 Cecil St., Buchanan, MI 49107** Tel.: 616-695-6831

President: Robert D. Pabst  
Chief Engineer: Earl Harris  
Vice President, Sales and Marketing: Paul McGuire  
Director of Marketing: Jim Holt  
Products: complete commercial sound line, including horns, public address and explosion-proof drivers, paging/talk-back speakers, weatherproof high-fidelity systems, submergence-proof and underwater speakers, and transformers.  
See full listing under **Loudspeakers & Accessories.**

**VERREX CORPORATION, 1130 Route 22 West, Mountaintown, NJ 07092** Tel.: 201-232-7000

President: Thomas G. Berry  
Sales Manager: Richard Krochmal  
Chief Engineer: David G. Butz  
Products: supplier of engineered pro-audio sound systems worldwide since 1946. Sales, engineering, fabrication, installation and service departments.

**WHELEN ENGINEERING CO., INC., Route 145, Winthrop Road, Chester, CT 06412-1036**  
Tel.: 203-526-9504

President: John F. Olson  
Sales Manager: Howard M. Berke  
Chief Mechanical Engineer: Wayne Lyons  
Products: audible and visual signalling devices for automotive and industrial applications, including strobe and rotating beacons, light bars, vehicle sirens and public address systems, and high-power outdoor warning systems.  
See full listing under **Alarm & Security.**

**BOB WHITE ASSOCIATES, P.O. Box 39104, Solon, OH 44139** Tel.: 216-248-1317

President: Bob White  
Sales Manager: Tod White  
Chief Engineer: George White  
Products: professional sound products, disco systems, projection TV, professional lighting equipment.  
See full listing under **Pro Audio Sound Systems & Products.**

**YALE AUDIO OF FLORIDA CORP., P.O. Box 2661, Tampa, FL 33601** Tel.: 813-876-6789

President: Y. Brevda  
Sales Manager: David Kentwood  
Products: position markers for knobs, switches, push buttons, etc. on amplifiers and control panels, self-adhesive vinyl, miniature designs of various controls in different switching positions.

## HARDWARE & TOOLS

**AMP NETCON, A Division of AMP Products Corporation, P.O. Box 1776, Southeastern, PA 19482** Tel.: 215-647-1000

Chief Executive Officer: Walter Raab  
Marketing Manager: Bill Russo  
Products: products for the specialized needs of the premises-wiring, networking, and construction industries.  
See full listing under **Wire & Cable.**

**AVA ELECTRONICS & MACHINE CORP., 4000 Bridge St., Drexel Hill, PA 19026**  
Tel.: 215-284-2500

President: Dr. Mario Rafalin  
Sales Manager: Bill Cooper  
Chief Engineer: Howard Lomax  
Products: RF and computer connectors, BNC, Twinax, F, UHF connectors, cable assemblies, computer switches, computer panel and wall plates, adapters.

**BRIM ELECTRONICS, INC., 120 Home Pl., Lodi, NJ 07644** Tel.: 201-796-2886

President: B. Danziger  
Sales Manager: B. Brown  
Products: wire, cable (including shielded braiding, retractile cords); tubing, sleeving; ceramic insulators; adhesive-backed fastening devices; nylon, brass hardware; solderless terminals; plugs, jacks, switches.  
See full listing under **Wire & Cable.**

**CABLETRONIX, Div. Storm King Industries, Inc., 366 Washington St., P.O. Box 3003, Newburgh, NY 12550** Tel.: 914-565-7570,  
800-431-W.I.R.E. (outside NY)  
800-942-W.I.R.E. (inside NY)

President: Stephen L. Roth  
Vice President: Leonard Ellentuch  
Products: "Amp," connectors; staplers, staples; "B" connectors; bridging clips; Drive-rings; tie wraps; drive pins; electrical, masking and packing tape; molly & toggle bolts; pan head screws and plastic anchors, pole-line hardware, modular blocks (flush and base mount) modular cords and RG 31X jacks, adhesive cable duct.

**DIALIGHT CORPORATION/NEUTRIK PRODUCTS, 1913 Atlantic Ave., Manasquan, NJ 08736**  
Tel.: 201-223-9400

President: Harry Miller  
Product Manager: Jim Cowan  
Chief Engineer: Fred Kaufman  
Products: 3, 4, 5, 6-pin XLR connectors, panel and P.C., test probes and oscilloscope probes.  
See full listing under **Test Equipment.**

**D.J. ASSOCIATES, INC., 8411 S. Zepo, Unit 5, Ft. Smith, AR 72903** Tel.: 501-452-3987

President: D.G. Beck  
Sales Manager: Mike Beck  
Products: connectors, terminals, cable clamps, wire ties, lacing tape, heat shrink tubing.

**FAMOUS TELEPHONE SUPPLY CO., P.O. Box 2172, Akron, OH 44309** Tel.: 216-762-8811,  
800-321-9122

President: J. Blaushild  
General Manager: Robert A. Fuzy  
Marketing: John P. Cavataio  
Products: wire and cable; general hardware; apparatus; paging equipment; power equipment; protection devices; tools; splicing equipment;



losures; compounds; couplers and peripheral devices; plenum cable.  
Key systems and PABX's.

District Offices:

Cathie Blankenship, Roanoke, VA, 800-321-9122

Wayne Lloyd, Indianapolis, IN, 800-321-9122

Tom Markert, Columbus, OH, 800-321-9122

**HARRIS CORP., DRACON DIV.,** 809 Calle Plano,  
Camarillo, CA 93010 Tel.: 805-987-9511

Vice President/General Manager: John R. Mason

Director, Domestic Sales: Tom Erdmann

Chief Engineer: Joe Mader

Vice President, Sales & Marketing: Jack McGuigan

Products: Page Pac, telephone integrated loudspeaker voice paging  
systems; linemen's test sets; craft tools; relay racks.

See full listing under **Paging Systems**.

**ITT POMONA ELECTRONICS/Div. ITT Corp.,** 1500 E.  
Ninth St., P.O. Box 2767, Pomona, CA 91766  
Tel.: 714-623-3463

President: Carl W. Mussarra

Chief Engineer: Raymond Mix

Operations Manager: Len Kendrick

Products: connectors — XLR, XLB, XLA series — for audio, elec-  
tronics and other low level circuit applications, patch cords, gold plated  
banana plugs and accessories.

District Offices:

William M. Linz, Assoc., Inc., Deerfield, IL

Al Appell Associates, Inc., Sharon, MA

Carelli/EMA, Inc., Burlingame, CA

DeAngelo, Rothman & Company, Culver City, CA

David S. Linz, Inc., Philadelphia, PA

**JENSEN TOOLS, INC.,** 7815 S. 46th St., Phoenix,  
AZ 85044 Tel.: 602-968-6231

General Manager: Uma Nandan Aggarwal

Sales Manager: Bill Hewitt

Products: hand tools and scientific supplies for electronic installation;  
assembly, repair, tool kits, instruments, soldering tools, cases, relay  
tools, lamps, fiber optic tools and tool kits.

**MUSIC SUPPLY CO., INC.,** 809 N. Madison, Dallas,  
TX 75208 Tel.: 1-800-527-1522

President: W. E. Brown

Products: Push-Pull rods. Set of twenty, lightweight, aluminum alloy,  
1/2 oz. per rod. Joins together for 45 ft. span. Pushes or pulls wire  
or cable through impossible places. 30 days free trial.

**MUSIC SUPPLY CO., INC.,** 809 N. Madison, Dallas,  
TX 75208 Tel.: 1-800-527-1522  
Texas Collect: 214-946-8450

President: W. E. Brown

Products: EASY-KARY™ wire reel holders. Holds spools of wire and  
table for easy reeling off on job site. All components stow in hollow  
frame. Takes up no room in truck. 30 days free trial.

**OMNIMOUNT SYSTEMS,** 10850 Van Owen St.,  
N. Hollywood, CA 91605 Tel.: 818-766-9000

President and Chief Engineer: Alexander Cyrell

Sales Manager: Jim Schaller

Vice President Marketing: Susan Michelson

Products: industrial quality mounts. Unique ebonite ball joint design  
adjustability, security features, invisible wiring capability, assorted  
models to support weight loads from ounces to hundreds of pounds.

**PALADIN CORP.,** 3543 Old Conejo Road, Suite #102,  
Newbury Park, CA 91320 Tel.: 805-499-0318

President: Peter Glasel

Sales Manager: Ronald J. Vogel

Products: crimper, strippers, heat guns, desoldering tools, ergonomically  
designed screw drivers.

District Offices:

Dunn & Bryan, Inc., Jersey City, NJ, 201-963-4478

Classen-Doolittle Assoc., York, PA, 717-741-1689

Bradley Representatives, Elkgrove Village, IL, 312-228-8450

Shattuck-Hagen Mktg., Sunnyvale, CA, 408-745-0448

Ray-Mar & Associates, Dallas, TX, 214-337-7308

**PANDUIT CORP.,** 17301 Ridgeland Ave., Tinley Park,  
IL 60477 Tel.: 312-532-1800  
800-323-4439

Sales Manager: Paul Trunk

Products: products tie, identify, terminate, and contain wiring sold  
through distributors nationwide.

**PROJECTOR RECORDER BELT CORP.,** P.O. Box  
176, Whitewater, WI 53115 Tel.: 414-473-2151

President: John F. Dwinell

Sales Manager: Wm. G. Dwinell

Products: belts for audio-visual equipment, VCRs, tape recorders,  
printers, semiconductors.

District Offices:

Jack Mesnick Sales, Liverpool, NY, 315-622-3211

Crown Associates, Charlottesville, VA, 804-293-6373

Associate Marketing Grp, Dallas, TX, 214-241-7190

Mike Roth Sales, Santa Ana, CA, 714-647-0606

TG & Associates, Bradenton, FL, 813-753-4158

**RESCO, INC.,** P.O. Box 2244, Newburgh, NY 12550  
Tel.: 914-565-7583

President: Stephen L. Roth

Vice President: Leonard Ellentuch

Products: "B" connectors, "B" bridging clips, plastic anchors, hollow  
wall anchors, toggle bolts, RJ31X, modular wire bulk. Modular ac-  
cessories for large-volume manufacturers; computer cable assemblies.  
Import and export agents of components, devices and special  
requirements.

**SELCO PRODUCTS CO.,** 7580 Stage Rd., Buena Park,  
CA 90621 Tel.: 714-521-8673

President: Bill Wilkinson

Sales Manager: Celeste Martinez

Other Personnel: Diane Duquette

Products: Selco Collet knobs in matte finishes (10-38mm diameters).  
Audio level indicators type AL19, AL29 and AL39 with mask or bezel.  
Other meters are full spec. JU and PPM meters.

See full listing under **Pro Audio Sound Systems**.

**UNIPRISE CORP.,** 15 Hickory Dr., Roslyn, NY  
11576 Tel.: 516-621-6987

Sales Manager: Stanley Hirsch

Products: microphone goosenecks, flexible headset tubing.

## HEADPHONES/HEADSETS

**ACS COMMUNICATIONS,** 250 Technology Circle,  
Scotts Valley, CA 95066 Tel.: 408-438-3883

President: Al Butcher

Executive Vice President: Kevin Larkin

Products: telephone headsets.

**AKG ACOUSTICS, INC.,** 77 Selleck St., Stamford,  
CT 06902 Tel.: 203-348-2121

Vice President: S. R. Ravich

Sales Manager: D. Talbor

Tech Manager: D. Pilkington  
Products: studio condenser microphones; prepolarized condenser microphones; professional dynamic microphones; cardioid dynamic microphones; special purpose microphones; stereo headphones; boom sets; accessories; reverb units, phono cartridges, digital delays, digital reverbs.  
See full listing under **Microphones**.

**AUDIOCOM, INC.**, 14645 N.W. 77th Ave., Suite 203,  
Miami Lakes, FL 33014  
Tel.: 305-825-HOLD (4653)

President: Ron Deblinger  
Marketing Manager: Stuart L. Ginsberg  
Chief Engineer: Kevin Morahan  
Director of Operations: Art Hecht  
Products: Promotions on Hold — professionally produced, company-specific audio programming that provides a soft sell mix of messages and music to keep callers informed and entertained while they wait "on hold."  
Sell full listing under **Telephone System Peripherals**.

**AUDIOSEARS CORP.**, 2 South St., Stamford, NY  
12167 Tel.: 607-652-7305

President and Sales Manager: G. V. Mahler  
Sales Manager: David Hartwell  
Chief Engineer: Fred Roscoe  
Products: telephone handsets; telephone operators' headsets; headsets; carbon microphones; magnetic earphones; headbands; booms; special cordsets; push-to-talk switches; paystation armored-cable handsets.  
District Office:  
H. Bruning, Long Beach, CA, 213-433-5961

**AUDIO SERVICES CORPORATION**, 4210 Lankershim  
Blvd., N. Hollywood, CA 91602  
Tel.: 818-980-9891

President: Richard Topnam, Sr.  
General Manager: Richard Topnam, Jr.  
Sales Manager: David Panfili  
Chief Engineer: Michael Riner  
Rental Manager: Tove Blue  
Service Manager: Ron Meyer  
Products: professional portable sound equipment, sales, rental, lease, service, consulting, design and manufacture.

**AUDIO TECHNICA U.S. INC.**, 1221 Commerce Dr.,  
Stow, OH 44224 Tel.: 216-686-2600

President: Jon R. Kelly  
Sales Manager: Mark Taylor  
Vice President Marketing: Ken Reichel  
Chief Engineer: Steve Hebrock  
Products: microphones and microphone accessories, recorder/mixers, cables, direct boxes, headphones, ENG mixers, mic stands.

**BEYER DYNAMIC, INC.**, 5-05 Burns Ave., Hicks-  
ville, NY 11801 Tel.: 516-935-8000

General Manager: Paul Murphy  
Director of Sales & Marketing: Bob Lowie  
Products: dynamic moving coil and ribbon microphones, studio condenser microphones, professional headphones and headsets, microphone stands, booms and accessories. Full line of sound contracting products.

**CALRAD ENGINEERED ELECTRONIC PRODUCTS**,  
819 No. Highland Ave., Los Angeles, CA 90038  
Tel.: 213-465-2131

President: Joseph Shupper,  
Vice President: Robert Shupper  
Sales Manager: Fred Crown  
Chief Engineer: Wes Black  
Products: microphones, headphones, public address amplifiers, power supplies, speakers, connecting cables, telephone accessories, potentiometers, connectors, switches, meters, control knobs.  
See full listing under **Audio Amplifiers**.

**DAVID CLARK CO., INC.**, 360 Franklin St., Worces-  
ter, MA 01604 Tel.: 617-756-6216

President: John E. Flag  
Sales Manager: George R. Conlon  
Products: portable and fixed communication systems featuring noise attenuating (reducing) headsets for use in high-noise areas. VOX systems for portable radios with throat microphones.

**CLEAR-COM INTERCOM SYSTEMS**, 1111 17th St.,  
San Francisco, CA 94107 Tel.: 415-861-6666  
TWIX 910-371-1087

President: Robert Cohen  
Sales Manager: Michael Goddard  
Manager, Export Marketing: Peter Giddings  
Products: high noise level intercom systems for theaters, arenas, broadcast, industrial. Interconnects with microphone cable. Interfaces with RTS type two wire systems, telephone lines, cameras, etc.  
See full listing under **Intercom Systems—Duplex**.

**HEIL LTD.**, #2 Heil Dr., Marissa, IL 62257  
Tel.: 618-295-3000

President: Bob Heil  
Products: mixing consoles power amplifiers, parametric EQ, crossovers, satellite TV antennas, amateur radio and communication microphones.

**METRAGEN**, 3701 Chesswood Dr., #208, Downsview,  
Ont. M3J 2P6, Canada Tel.: 416-635-9212

President: E. Wigdor  
Products: self-amplified interphones with built-in buzzers, self-amplified communications headsets with buzzers.  
District Office:  
Cambridge Communications, Niles, IL

**NUMARK ELECTRONICS/PPD**, 503 Raritan Center,  
Edison, NJ 08837 Tel.: 201-225-3222

President: Harry Kotovsky  
Sales Manager: Peter Horsman  
Products: power amplifiers, mixers, equalizers, noise reduction, expansion system, video sound processors.  
See full listing under **Pro Audio Sound Systems**.

**P/H ELECTRONICS, INC.**, 117 E. Helena St., Dayton,  
OH 45404 Tel.: 513-461-5898

President: N. R. Anderson  
Sales Manager: Donna Martin  
Chief Engineer: V.M. Pantelic  
Products: multi-channel wireless simultaneous interpretation systems. Single channel wireless listening systems. Desk top, belt pack, or self-contained headphone/receiver. General purpose headphones and headsets.

**PLANTRONICS, INC.**, 1762 Technology Dr., Suite 225,  
San Jose, CA 95110 Tel.: 408-426-5858

President: Neil Hynes  
Senior Vice President: Tom Blinn  
Vice President of Sales & Marketing: Al Pepper  
Vice President of Engineering & Development: Bob Bernardi  
Vice President of Manufacturing & Operations: Carlos Garner  
Vice President of Strategic Planning: John Tymoczko  
Vice President of Human Resources: Robert Lee  
Vice President Controller: Thomas Stewart  
Products: supplier of interface products and services to users and providers of communications services.

**RTS SYSTEMS, INC.**, 1100 W. Chestnut St., Burbank,  
CA 91506 Tel.: 818-840-7119

President: Bob Ringer  
Vice President, Marketing: Douglas Leighton  
Sales Manager: Shelley Harrison

Chief Engineer: Stan Hubler

Products: professional intercom systems, conference-line and dedicated-line, IFB systems. Pro audio amplifier, phono preamp, 10-watt monitor amp and buffer amp.

**SENNHEISER ELEC. CORP. (N.Y.), 48 W. 38th St.,  
New York, NY 10018 Tel.: 212-944-9440**

President: Andrew Brakhan

Sales Manager: Tony Tudisco

Chief Engineer: Horst Ankermann

Products: full line of professional microphones including dynamics, electrets and condenser series as well as UHF and VHF wireless units. Sealed and open-air headphones available.

**SETCOM CORP., 1400 Stierlin Rd., Mountain View,  
CA 94043 Tel.: 415-965-8020**

President: Kent Schwartzman

Sales Manager: Steve Kilczewski

Products: headsets and headphones for all applications including TV cameras with Western Electric circuitry. Single or dual speaker units.

**SOUND POWERED COMMUNICATIONS CORP.,  
335 Robbins Ave., P.O. Box 5569, Trenton, NJ  
08638 Tel.: 609-883-1180**

Sales Manager: Harry Mosle

Products: sound-powered communications equipment including intercom stations, field telephones, handsets, noise-attenuating headsets, hook-up cable, reel systems and accessories.

**TECHNICAL PROJECTS, INC., 449 Princeton Ave.,  
P.O. Box 1449, Barrington, IL 60010  
Tel.: 312-381-5350 800-562-5872**

Executive Vice President: Glenn Mullis

Other Personnel: Bill Griffis, Sibbelina Mullis

Products: complete duplex communications systems, including headsets, headset stations, master stations, power supplies, talkback/paging loudspeaker stations, adaptors and accessories. Also MJS401D Audio Test and Measurement system with IEEE interface capability.

District Offices:

Professional Audio Marketing, New York, NY, 516-367-8620

Design Factors, La Habla, CA, 213-697-7576

William M. Linz Associates, Deerfield, IL, 312-227-7222

Ferry Hudson, Irving, TX, 214-256-7665

Vector, Seattle, WA, 206-322-4343

**TELEPHONE COMPONENTS, INC., 3180 Express-  
way Dr., S., Central Islip, NY 11722  
Tel.: 516-582-4745**

President: P. Crescentini

Sales Manager: James Costa

Products: telephone handsets, hangers, hook switches, cradles; operator headsets; plugs and jacks; for standard and special applications, such as mobile, interconnect, etc. Retractable and straight telephone cords.

**TELEX COMMUNICATIONS, INC., 9600 Aldrich  
Ave. S., Minneapolis, MN 55420  
Tel.: 612-887-5550 612-884-4051**

President: John Howe

Sales Manager: Claude Kleiman

Director of Marketing: Donald Merein

Products: single and dual muff monitor headphones, single and dual muff boom mic headsets for broadcast, communication, specialty and intercom use.

See full listing under **Microphones**.

**UNEX, A Dynatech Company, 4 Kidder Road,  
Chelmsford, MA 01824 Tel.: 617-256-8222**

President: John D. Ela

Sales Manager: Robert L. Birch

Chief Engineer: Robert Lucey

Marketing Director: Robert Harmon

Products: Ventel line of communication headsets; ranges from lightweight to noise-attenuating; with rugged modular design, noise cancelling microphones, amplifier with volume control, and optional push-to-talk.

Sell full listing under **Hearing Assistance Systems**.

## HEARING ASSISTANCE DEVICES

**COMTEK, INC., 357 W. 2700 St., Salt Lake City, UT  
84115 Tel.: 801-466-3463**

Products: wireless microphone systems operating in high-band frequencies up to 216 MHz, and RF assistive listening systems for the hearing-impaired in auditoriums, churches and theaters.

**LPB INC., 28 Bacton Hill Rd., Frazer, PA  
19355 Tel.: 215-644-1123**

President: Richard H. Crompton

Sales Manager: Charles J. Sheridan

Chief Engineer: Charles R. Bramhall

Products: broadcast audio consoles, low power AM radio systems including systems for the hearing impaired and language translation. Sell full listing under **Mixers & Mixing Consoles**.

**TELEX COMMUNICATIONS, INC., 9600 Aldrich Ave.,  
S., Minneapolis, MN 55420 Tel.: 612-887-5550**

President: John Howe

Sales Manager: Gary Fisher

Director of Marketing: Donald Merein

Products: wireless base station transmitter and pocket-sized receiver system for churches, theaters, outdoor events.

See full listing under **Microphones**.

**UNEX, A Dynatech Company, 4 Kidder Road,  
Chelmsford, MA 01824 Tel.: 617-256-8222**

President: John D. Ela

Sales Manager: Robert L. Birch

Chief Engineer: Robert Lucey

Marketing Director: Robert Harmon

Products: infrared professional sound system for churches, schools, nursing homes, and auditoriums; connects easily to existing audio systems for interference-free aid to the hearing-impaired who wear lightweight wireless receivers.

Sales Representatives:

John Ballisteri, Hayward, CA, 415-889-6419

Group IV Products, Pacifica, CA, 415-755-4331

**WILLIAMS SOUND CORP., 5929 Baker Road, Min-  
netonka, MN 55345 Tel.: 800-328-6190**

President: Gerald I. Williams

Sales Manager: Jeff Peters

Chief Engineer: Jay Kershaw

Products: FM wireless hard-of-hearing systems; frequency-programmable diversity wireless microphone system; wireless tour guide & cueing systems.

Sell full listing under **Microphones**.

## IN & OUT REGISTERS

**CORNELL ELECTRONIC PRODUCTS, INC., 4911 W.  
Good Hope Rd., Milwaukee, WI 53223  
Tel.: 414-351-4600**

President: Donald Glaubit

Vice President and Chief Engineer: Gary Butler

Sales Manager: Pauline Haack

Products: visual nurse call, audio visual nurse call, door monitors, apartment intercom, in/out register, institutional intercom, silent paging. See full listing under **Intercom Systems-Hospital & Health Care Facilities**.

**DUKANE CORPORATION**, 2900 Dukane Dr., St. Charles, IL 60174 Tel.: 312-584-2300

President: William B. Clark

Sales Manager: Jim Shane

Chief Engineer: Gordon Mielke

Marketing Manager: Craig Lyons

Products: nurse call, intercom, voice paging, clock, sound masking, staff registry and voice evacuation systems for healthcare, institutional and industrial markets.

See full listing under **Paging Systems**.

**EKTACOM-FISHER BERKELEY CORP.**, 5800 Christie Ave., Emeryville, CA 94608  
Tel.: 415-655-9696

President: Robert S. Fisher

Vice President, Engineering: Robert T. Shipley

Products: duplex and simplex intercom systems, annunciator and voice call-in; audio-visual, microprocessor, and visual-only nurse-call systems; manual and automatic personnel registers, apartment signaling systems. See full listing under **Intercom Systems—Simplex**.

**JERON ELECTRONIC SYSTEMS, INC.**, 3554 N. Clark St., Chicago, IL 60657  
Tel.: 312-528-4020, 800-621-1903

President: Jerome Chesnut

Sales Manager: John Charczuk

Products: in-out registers. Clinic call systems. Audio-visual nurse call. Communications and signaling systems for hospitals, nursing homes, prisons, schools, institutions, elderly housing, apartment buildings, offices.

See full listing under **Intercom—Apartment & Residential**

**MULTI-VOX LTD.**, 9967 St. Michel Blvd., Montreal H1H 5G7, Quebec, Canada Tel.: 514-321-3131

President: Fernand Parent

Sales Manager: Robert Girard

Chief Engineer: Dominique Malenfant

Operations Manager: Georges Morissette

Products: audio amplifiers, electronic carillons and chimes, simplex and duplex intercom systems, solid state and microprocessor intercom systems for apartments, hospital and health care facilities, schools, institutions and industries, paging systems.

**RADIONICS, INCORPORATED**, 920 Holt Rd., Webster, NY 14580 Tel.: 716-872-2100

President: A. J. Ozminkowski

Manager, Telecommunications Marketing: Scott Ladin

Chief Engineer: Fred Cupp

Sales Engineer: Roger Moore

Products: TelTrak 2 electronic register and message system. Easy In/Out/Availability information plus individual and group messaging capabilities. Personal check-in at registry stations or from any tone telephone.

# EDSTAN

**TIME & SOUND CO., INC.**, 14120 Live Oak Ave., Baldwin Park, CA 91706  
Tel.: 818-960-7781 800-423-4765

President: David Verner

Sales Manager: N. Ray Keddington

BB-42

Products: IBM PC-based staff register systems with video displays, smart entrance stations, visual paging option, message printer option now offers flush wall mounting printers for doctors' messages and patient location.

## INTERCOM SYSTEMS— DUPLEX

# AIPHONE<sup>®</sup>

**AIPHONE INTERCOM SYSTEMS**, 1700 13th Ave., N.E., Bellevue, WA 98005 Tel.: 206-455-0510

President: Hiko Shinoda

Sales Manager: Jim Matsumoto

Chief Engineer: Jim Matsumoto

Products: home intercom systems, commercial/industrial telephone and loudspeaking intercom, apartment house intercom, hospital systems, paging systems with talkback, tuners, fast food intercom systems, and special order products.

Regional Offices:

East Coast: Carol Mayer, Chantilly, VA, 703-631-6866

Mid-West: Al Burns, Jr., Chicago, IL, 312-221-6191

**ALPHA COMMUNICATIONS**, 89-D Cabot Ct., Hauppauge, NY 11788-3717 Tel.: 516-434-8080

President: Mark S. Goldberg

Products: intercom and video/intercom systems for apartment, home, and industry, custom-made vandal-resistant lobby panels and apartment stations for new and retrofit, 2-wire apartment intercom, non-coax video/intercom.

See full listing under **Intercom Systems—Apartment & Residential**.

**ALTERNATIVE TELECOMMUNICATIONS CORPORATION**, 80 Eighth Ave., New York, NY 10011 Tel.: 212-691-0800

President: Alan R. Fitzpatrick

Executive Vice President: Sonny Greco

Products: hands-free intercom systems manufactured by L.M. Ericsson.

District Office:

ATC, Santa Monica, CA

**AMPLYVOX / USA SECURITY INTERCOM, INC.**, 1833 N. 105th, Seattle, WA 98133  
Tel.: 206-523-6170

President: Gerard H. Mooyman

Sales Manager: Claudia Mazzola

Chief Engineer: Jeff Groth

Other Personnel: John Burnard

Products: apartment house intercoms video — duplex with buzzer or chime, P.A. and background music systems, speakers, microphones, intercom kits complete.

See full listing under **Intercom Systems—Duplex**.

**ATC SUPPLY CORP.**, 106 Hobart St., Hackensack, NJ 07601 Tel.: 201-488-0776

President: Alan R. Fitzpatrick

Sales Manager: Steven M. Ryan

Products: wholesale supplier of hands-free intercom systems manufactured by L.M. Ericsson.

**CLEAR-COM INTERCOM SYSTEMS**, 1111 17th St., San Francisco, CA 94107 Tel.: 415-861-6666,  
TWIX 910-371-1087

President: Robert Cohen

Sales Manager: Michael Goddard

Manager, Export Marketing: Peter Giddings

Products: high noise level intercom systems for theaters, arenas, broadcast, industrial. Interconnects with microphone cable. Interfaces with RTS type two wire systems, telephone lines, cameras, etc.

District Office:

Export Division, Walnut Creek, CA

Sound & Communications

**COLUMBIA SCIENTIFIC INDUSTRIES CORP., P.O.**  
Box 203190, Austin, TX 78720  
Tel.: 512-258-5191

President: E. Haddad  
Sales Manager: Jim Cotton  
Chief Engineer: John Rhodes  
Products: multi-channel VOX intercom systems for bank drive-ins, self service gas stations, security stations, cashiers, etc.

**COMMUNICATIONS CO., INC.**, 3490 Noell St., San Diego, CA 92110 Tel.: 619-297-3261

President and Sales Manager: Peter T. Jordan  
Chief Engineer: David Johnson  
Order Department: Laura McCullough  
Products: programmable two-way intercom amplifier w/vox., media distribution amplifier, projector patch, room combining systems, record patch, RT-60 reverberation measuring device, burst octave noise generator, 1/3 octave real time analyzer, 27 B.I.T. oscilloscope display adaptor.  
See full listing under **Intercom Systems—Institutional**

**J. W. DAVIS & CO.**, 3215 Canton St., Dallas, TX 75226 Tel.: 214-651-7341  
Texas WATS: 800-442-1564  
National WATS: 800-527-5705

President: Charles Griffiths  
Vice President Sales: Jack W. Tucker  
Products: duplex intercom systems including telephone type, microprocessor controlled or hands free. Paging talkback type systems also available for office, warehouse applications including telephone interconnect.  
See full listing under **Pro Audio Sound Systems & Products**.

**DUKANE CORPORATION**, 2900 Dukane Dr., St. Charles, IL 60174 Tel.: 312-584-2300

General Manager: William B. Clark  
Marketing Manager: Craig E. Lyons  
Sales Manager: Jim Shane  
Chief Engineer: Gordon Mielke  
Products: nurse call, intercom, voice paging, clock, sound masking, staff registry and voice evacuation system for health care, institutional and industrial markets.  
See full listing under **Paging Systems**.

**EKTACOM-FISHER BERKELEY CORP.**, 5800 Christie Ave., Emeryville, CA 94608  
Tel.: 415-655-9696

President: Robert S. Fisher  
Vice President, Engineering: Robert Shipley  
Products: duplex and simplex intercom systems, annunciator and voice call-in; audio-visual, microprocessor, and visual-only nurse-call systems; manual and automatic personnel registers, apartment signaling systems.  
See full listing under **Intercom Systems—Simplex**.

**ENCOM PRODUCTS CO., INC.**, P.O. Box 300, 502 Lower Hopewell Road, Oxford, PA 19363-0300  
Tel.: 215-932-9600

Sales Manager: Bob Mallalieu  
Products: commercial/industrial interphone equipment to fit applications ranging from retail stores to offshore drilling rigs.

**FARADAY, INC.**, 805 S. Maumee St., Tecumseh, MI 49286 Tel.: 517-423-2111

President: Robert F. Bell  
Sales Manager: Charles Stevens  
Vice President, Engineering: R. Miller  
Products: intercom and sound distribution systems, nurse call systems, fire alarm, annunciator, clock and hospital life safety systems, full range of signaling products.  
See full listing under **Alarm & Security**.

**ITT DATA EQUIPMENT & SYSTEMS DIV.**, 20 Mayfield Ave., Edison, NJ 08837 Tel.: 201-225-6121  
800-524-1646

Vice President: Donald Duthaler  
Chief Engineer: Jeffrey Stellman  
Products: microprocessor-based duplex intercom—8-4,000 lines, variety of stations — desk, wall, flush, with or without handset.

**METRAGEN**, 3701 Chesswood Dr., #208, Downsview, Ont. M3J 2 P6, Canada Tel.: 416-635-9212

President: E. Wigdor  
Products: self-amplified interphones with built-in buzzers, self-amplified communications headsets with buzzers.  
See full listing under **Headphones & Headsets**.

**MULTI-VOX LTD.**, 9967 St. Michel Blvd., Montreal H1H 5G7, Quebec, Canada Tel.: 514-321-3131

President: Fernand Parent  
Sales Manager: Robert Girard  
Chief Engineer: Dominique Malenfant  
Operations Manager: Georges Morissette  
Products: audio amplifiers, electronic carillons and chimes, simplex and duplex intercom systems, solid state and microprocessor intercom systems for apartments, hospital and health care facilities, schools, institutions and industries, paging systems.

**NADY SYSTEMS, INC.**, 1145 65th St., Oakland, CA 94608 Tel.: 415-652-2411

President: John Nady  
Sales Manager: Peter Kalmen  
Chief Engineer: John Nady  
Products: wireless microphones, infrared listening systems, wireless intercoms, and portable sound systems.

**PASO SOUND PRODUCTS, INC.**, 14 First St., Pelham, NY 10803 Tel.: 914-738-4800

Executive Vice President: Paul Mastrangelo  
Operations Manager: Anthony Sgueglia  
Sales Manager: David Moore  
Product Manager (Engineering): Ken O'Brien  
Credit Manager: Marilyn Beckerson  
Customer/Representative Support: Tommi Paladino  
Sales Administration (Order Expedite): Stacy Appel  
Products: indoor, outdoor, portable, mobile amplifiers, preamplifiers, mixers, booster amplifiers, AC/DC integrated amplifiers and boosters, intercom systems, multi-residential systems, microphones, wireless microphones, industrial grade auto reverse cassette machines, tuners, sound columns, speakers, baffles, driver units, trumpets, horns, full range loudspeaker systems, stage monitors, stands, accessories, equipment racks.  
See full listing under **Engineered Sound Systems**.

**RAULAND-BORG CORP.**, 3535 W. Addison St., Chicago, IL 60618 Tel.: 312-267-1300  
TX: 910 221 1290

President: William Krucks  
Vice President, Sales and Marketing: Kenneth T. James  
Sales Manager: Rick Blunt  
Product Manager: David Weeden  
Products: N.V. Philips duplex intercom systems. Capacity of intercoms ranges from 2 to 10,000 stations. Features include voice message and personal voice mail. Applications include business, hospitals, heavy industrial, health care, government, and others.  
See full listing under **Engineered Sound Systems**.

**RAVEN ELECTRONICS CORPORATION**, 400 Wolverine Way, Sparks, NV 89431 Tel.: 702-359-3700

President: Carl A. Dawson  
Sales Manager: Davis S. Young  
Chief Engineer: Wook Shim

Purchasing Agent: Jay W. Cigno  
Products: designs, engineers, and manufactures Engineering Service Channel equipment, INTELSAT/DomSat earth station products, STL, VF, and TTY switching equipment for use in LOS microwave, satellite, wireline, and fiber optic transmission networks.  
See full listing under **Teleconferencing Systems**.

**RING GROUP OF NORTH AMERICA**, 230 Community Dr., Great Neck, NY 11021 Tel.: 516-487-0250  
800-645-9690

Vice President: Peter McLean  
Sales Manager: Stan Davis  
Chief Engineer: Jim Small  
Products: Ring-Master "Tridex" intercom series— fully electronic, handsfree, microprocessor controlled duplex systems. Field programmable; paging, telephone, radio, alarm interfaces. 5000 station capacity with variety of stations.  
District Offices:  
Mexico: Grupo Sit, Mexico, D.F.  
Sales Representatives:  
Poetker Communications Ltd., Kitchener, Ontario, 519-893-1010  
Sheridah Klumpp, Jacksonville, FL  
Jerry Leach, Incline Village, NV  
Larry Lupo, Camarillo, CA  
Gus Gustafson, Red Wing, MN  
Joe Wilson, Kansas City, MO  
Bill Petty, Chagrin Falls, OH  
Jim Chang, Honolulu, HI

**RTS SYSTEMS, INC.**, 1100 W. Chestnut St., Burbank, CA 91506 Tel.: 818-840-7119

President: Bob Ringer  
Vice President, Marketing: Douglas Leighton  
Sales Manager: Shelley Harrison  
Chief Engineer: Stan Hubler  
Products: professional intercom systems, conference-line and dedicated-line, IFB systems. Pro audio amplifier-phono-preamp, 10-watt monitor amp and buffer amp.

**SPECO DIV., Components Specialties Inc.**, 1172 Rt. 109, P.O. Box 624, Lindenhurst, NY 11757  
Tel.: 516-957-8700 (in NY)  
1-800-645-5516 (outside NY)

President: Louis W. Keller  
Vice President & General Manager: James Ganci  
Regional Sales Managers: Eric Forman, Bruce Kurtz  
Vice President, Sales: Mel Hulkower  
Products: PA horns, amplifiers, tuners, loudspeakers, wall baffles, speaker assemblies, outdoor speakers, sound columns, ceiling grilles, transformers, L-pads, attenuators, accessories, microphones, intercoms, alarm sirens, multitesters, oscilloscopes.

**STENTOFON COMMUNICATIONS, INC.**, 6012 Paretta Dr., Kansas City, MO 64120  
Tel.: 816-231-7200

President and Sales Manager: Ken Jensen  
Chief Engineer: James A. Pierce  
Business Manager: Doug Caldwell  
Products: simplex and duplex intercom RF paging systems, wireless alarms, security systems, voice message systems.  
Sales Representatives:  
Mike Wilcock, San Dimas, CA, 714-599-9323  
Fred Hall, Kansas City, MO, 816-231-7200  
Alex Winfrey, Oaktown, VA, 703-448-6866  
Cliff Rea, Fairfax, VA, 703-378-0367

**TALK-A-PHONE CO.**, 5013 N. Kedzie Ave., Chicago, IL 60625 Tel.: 312-539-1100

President: Z. Liberman  
Sales Manager: Daniel Kagan  
Products: intercom systems — manual and hands free equipment — for industrial, institutional, commercial, home, self-service gas station and apartment house use and bank drive-up use.

**TELEX COMMUNICATIONS, INC.**, 9600 Aldrich Ave. S., Minneapolis, MN 55420 Tel.: 612-887-5550

President: John Howe  
Sales Manager: Claude Kleiman  
Director of Marketing: Donald Merein  
Products: closed-circuit intercom systems for headset or speaker station listening with 2, 3 and 4 channel masterstations.  
See full listing under **Microphones**.

**TOA ELECTRONICS, INC.**, 480 Carlton Ct., S. San Francisco, CA 94080 Tel.: 415-588-2538

President: Sam Sakata  
Sales Manager, Commercial Div.: Joe Green  
Technical Support Manager: Bob Sweet  
Products: engineered sound systems, commercial sound systems, amplifiers, dual amplifiers, tuners, equalizers, multi-functional preamplifiers, mixing consoles, speakers, horns, drivers, microphones, wireless systems, microcomputerized EXES intercom systems, CCTV, security systems.  
See full listing under **Engineered Sound Systems**.

**XTEL CORPORATION**, 4301 Will Rogers Pkwy., Suite 900, Oklahoma City, OK 73108  
Tel.: 405-946-1500

President: J. William Patterson  
Vice President: Glen Patterson  
Products: "Voicepac 10-75 stations:" hands free response behind PBX/Centrex or key systems. "All-Call," splash and privacy tones, power paging. Compact speaker/microphones mount inside telephones.

## INTERCOM SYSTEMS— SIMPLEX

# AIPHONE®

**AIPHONE INTERCOM SYSTEMS**, 1700 13th Ave. N.E., Bellevue, WA 98005 Tel.: 206-455-0510

President: Hiko Shinoda  
Sales Manager: Jim Morrison  
Chief Engineer: Jun Matsumoto  
Products: industrial, business, residential, loudspeaking, telephone, video intercom/security systems with paging talk-back; six microprocessor systems available; mixer amplifiers, paging speakers, horns, drivers, ceiling speakers, tuners, fast food intercom systems, and special order products.  
See full listing under **Intercom Systems—Duplex**.

# ALPHA COMMUNICATIONS

**ALPHA COMMUNICATIONS**, 89-D Cabot Ct., Hauppauge, NY 11788-3717 Tel.: 516-434-8080

President: Mark S. Goldberg  
Products: intercom and video/intercom systems for apartment, home, and industry, custom-made vandal-resistant lobby panels and apartment stations for new and retrofit, 2-wire apartment intercom, non-coax video/intercom.  
See full listing under **Intercom Systems—Apartment & Residential**.

**ATKINSON DYNAMICS**, 10 W. Orange Ave., S. San Francisco, CA 94080 Tel.: 415-583-9845

Operations Manager: E. M. Watson

Sales Manager: Asa Bullock

Products: heavy-duty intercom units engineered specifically for high-noise areas. Clear communications under most difficult conditions guaranteed. Weatherproof, sealed, transistorized.

**BOGEN, A Lear Siegler Company**, 50 Spring St., P.O. Box 575, Ramsey, NJ 07446 Tel.: 201-934-8500

President: John H. Ochtera

Vice President, Marketing: Carl C. Dorwaldt

Vice President, Engineering: Mark Koller

Products: commercial sound and communication systems and equipment including amplifiers, mixers, loudspeakers, microphones, telephone paging equipment, tuners, intercoms, audio surveillance and centralized sound systems.

See full listing under **Engineered Sound Systems**.

**DAVID CLARK CO., INC.**, 360 Franklin St., Worcester, MA 01604 Tel.: 617-756-6216

President: John E. Flagg

Sales Manager: George R. Conlon

Products: portable and fixed communication systems featuring noise attenuating (reducing) headsets for use in high-noise areas. VOX systems for portable radios with throat microphones.

**COMMUNICATIONS CO., INC.**, 3490 Noell St., San Diego, CA 92110 Tel.: 619-297-3261

President and Sales Manager: Peter T. Jordan

Chief Engineer: David Johnson

Order Department: Laura McCullough

Products: specialized audio test equipment, 1/3 octave real time analyzer. 27 B.I.T. oscilloscope display adaptor, RT-60 reverberation measuring device. Programmable two-way intercom amplifier w/vox. See full listing under **Intercom Systems — Institutional & School**.

**COMMUNICATIONS EQUIPMENT CO., INC.**, 6443 Western Ave., Glen Arbor, MI 49636 Tel.: 616-334-3081

President: Hugh I. Morris

Sales Manager: Thomas A. Garmhausen

Products: commercial/industrial telephone and loudspeaking intercom systems, self-contained intercom masters for service windows, fast-food restaurants, self-serve gas stations.

See full listing under **Engineered Sound Systems**.

**DUKANE CORPORATION**, 2900 Dukane Dr., St. Charles, IL 60174 Tel.: 312-584-2300

General Manager: William B. Clark

Marketing Manager: Craig E. Lyons

Sales Manager: Jim Shane

Chief Engineer: Gordon Mielke

Products: nurse call, intercom, voice paging, clock, sound masking, staff registry and voice evacuation systems for health care, institutional and industrial markets.

See full listing under **Paging Systems**.



**EKTACOM-FISHER BERKELEY CORP.**, 5800 Christie Ave., Emeryville, CA 94608 Tel.: 415-655-9696

President: Robert S. Fisher

Vice President, Engineering: Robert Shipley

Products: duplex and simplex intercom systems, annunciator and voice

call-in; audio-visual, microprocessor, and visual-only nurse-call systems; manual and automatic registers, apartment signaling systems.

District Offices:

Midwestern Region Office: Westfield Center, OH

Eastern Region Office: Fayetteville, PA

Metrocom System Sales, Brooklyn, NY

ECSHO, Los Angeles, CA

The Corrigan Agency, Mandeville, LA

Avwest, Inc., Fountain Hills, AZ

**FANON COURIER CORP.**, 15300 San Fernando Mission Blvd., Mission Hills, CA 91345 Tel.: 818-898-2237

President: Jay Steinbeck

Sales Manager: Murray Trotiner

Products: intercoms, speakerphones, PA amplifiers, paging horns, trumpets and drivers, megaphones, FM scanning monitors, satellite stereo receivers, c.b. transceivers.

**FARADAY, INC.**, 805 S. Maumee St., Tecumseh, MI 49286 Tel.: 517-423-2111

President: Robert F. Bell

Sales Manager: Charles Stevens

Vice President, Engineering: R. Miller

Products: intercom and sound distribution systems, nurse call systems, fire alarm, annunciator, clock and hospital life safety systems, full range of signaling products.

See full listing under **Alarm, Security & Life-Safety Systems**.

**ITT DATA EQUIPMENT & SYSTEMS DIV.** 20 Mayfield Ave., Edison, NJ 08837 Tel.: 201-225-6121 800-524-1646

Vice President: Donald Duthaler

Chief Engineer: Jeffrey Stellman

Products: microprocessor-based duplex intercom systems 8-4,000 lines, variety of stations — desk, wall, flush with or without handsets.

**JERON ELECTRONIC SYSTEMS, INC.**, 3554 N. Clark St., Chicago, IL 60657 Tel.: 312-528-4020 800-621-1903

President: Jerome Chesnut

Sales Manager: John Charczuk

Products: intercom systems for apartment buildings, townhouses, offices. Combination emergency call/intercom systems for elderly housing. Hospital, nursing home, institutional prison, school, dormitory communications and signaling systems.

See full listing under **Intercom—Apartment & Residential**.



**LEE DAN COMMUNICATIONS, INC.**, 155 Adams Ave. Hauppauge, NY 11788 Tel.: 516-231-1414 800-231-1414 (in NY) 800-LEE-DAN1 (in U.S.)

President: Leon Goldberg

Sales Manager: Lawrence Goldberg

Chief Engineer: Sanford Hoffman

Products: communication and security systems for apartment house home and industry. Intercom, music and paging systems, mailboxes directories, annunciators, signaling devices, communications cable nurse-call systems, Tek-View audio/visual intercom systems.

**MULTI-VOX LTD.**, 9967 St. Michel Blvd., Montreal  
H1H 5G7, Quebec, Canada Tel.: 514-321-3131

President: Fernand Parent  
Sales Manager: Robert Girard  
Chief Engineer: Dominique Malenfant  
Operations Manager: Georges Morissette  
Products: audio amplifiers, electronic carillons and chimes, simplex and duplex intercom systems, solid state and microprocessor intercom systems for apartments, hospital and health care facilities, schools, institutions and industries, paging systems.

**NADY SYSTEMS, INC.**, 1145 65th St., Oakland, CA  
94608 Tel.: 415-652-2411

President: John Nady  
Sales Manager: Peter Kalmen  
Chief Engineer: John Nady  
Products: wireless microphones, infrared listening systems, wireless intercoms, and portable sound systems.

**PASO SOUND PRODUCTS, INC.**, 14 First St., Pelham, NY 10803 Tel.: 914-738-4800

Executive Vice President: Paul Mastrangelo  
Operations Manager: Anthony Sgueglia  
Sales Manager: David Moore  
Product Manager (Engineering): Ken O'Brien  
Credit Manager: Marilyn Beckerson  
Customer/Representative Support: Tommi Paladino  
Sales Administration (Order Expedite): Stacy Appel  
Products: indoor, outdoor, portable, mobile amplifiers, preamplifiers, mixers, booster amplifiers, AC/DC integrated amplifiers and boosters, intercom systems, multi-residential systems, microphones, wireless microphones, industrial grade auto reverse cassette machines, tuners, sound columns, speakers, baffles, driver units, trumpets, horns, full range loudspeaker systems, stage monitors, stands, accessories, equipment racks.  
See full listing under **Engineered Sound Systems**.

**RTS SYSTEMS, INC.**, 1100 W. Chestnut St., Burbank, CA 91506 Tel.: 213-843-7022

Vice President: Bob Ringer  
Vice President, Marketing: Douglas Leighton  
Sales Manager: Shelley Harrison  
Chief Engineer: Stan Hubler  
Products: professional intercom systems, conference-line and dedicated-line, IFB systems. Pro-audio amplifier-phono-preamp, 10-watt monitor amp and buffer amp.

**SIEDLE INTERCOM/USA**, 1 Wynnewood Rd., Wynnewood, PA 19096 Tel.: 800-874-3353

Sales Director: Earl Zausmer  
Sales Manager: Steve Camp  
Products: 2-wire apartment house intercoms for duplex communications between front door and apartment, chime announcement and door release operation from handset.

**SOUND PRODUCTS/3M**, 3M Center 225-45-10, St. Paul, MN 55144-1000 Tel.: 612-733-0447

Marketing Manager: Don Rada  
Sales Manager: Jack Dingley  
Products: music libraries for all purposes. Reliable players. Industrial quality intercoms, and vehicle detectors. Top-line message repeater. Speaker assemblies for distributed systems. Microphones, amplifiers and other sound system components.  
See full listing under **Pro Audio Sound Systems**.

**SPECO DIV., Components Specialties, Inc.**, 1172 Rt. 109, P.O. Box 624, Lindenhurst, NY 11757  
Tel.: 516-957-8700 (New York)  
1-800-645-5516 (outside NY)

President: Louis W. Keller

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Vice President and General Manager: James Ganci

Vice President Sales: Mel Hulkower

Regional Sales Managers: Eric Forman, Bruce Kurtz

Products: PA horns, amplifiers, tuners, loudspeakers, wall baffles, speaker assemblies, outdoor speakers, sound columns, ceiling grilles, transformers, L-pads, attenuators, accessories, microphones, intercoms, alarm sirens, multitestors, oscilloscopes.

**TALK-A-PHONE CO.**, 5013 N. Kedzie Ave., Chicago, IL 60625 Tel.: 312-539-1100

President: Zvie Liberman

Sales Manager: Dan F. Kagan

Products: intercom systems—manual and hands-free equipment—for industrial, institutional, commercial, home, apartment house, self-service gas station, and fast food drive-thru use and bank drive-up use.

**TEKTONE SOUND & SIGNAL MFG.**, 1331 S. Killian Dr., Lake Park, FL 33403 Tel.: 305-844-2383

President: M. Mira

Sales Manager: Carlos Mira

Chief Engineer: J. Switzer

Products: intercom systems for home, apartment, commercial/industrial, institutional—telephone, loudspeaking and door answering. Nurse call, security/alarm and AM/FM radio intercom systems.  
See full listing under **Intercom Systems—Apartment & Residential**.

**T-S-K ELECTRONICS, INC.**, 564 Young St., P.O. Box 190, Tonawanda, NY 14151 Tel.: 716-693-3916

President: Theodore S. Kedzierski

Chief Engineer: Kevin T. Kedzierski

Products: zero-level loudspeaking intercoms used on very long twisted or leased telephone lines. Communication system design and fabrication. Sound detectors and telephone intercoms.

**WESTPARK COMMUNICATIONS INC.**, 2408 Superior Dr., Arlington, TX 76013 Tel.: 817-469-1144

President: Gene Ware

Sales Manager: Jim Burke

Chief Engineer: Larry Norris

Products: drive-thru communication systems for the fast-food restaurant, CCTV and accessories, music, paging.

## INTERCOM SYSTEMS — APARTMENT & RESIDENTIAL

**AIPHONE INTERCOM SYSTEMS**, 1700 130th Ave. N.E., Bellevue, WA 98005 Tel.: 206-455-0510

President: Hiko Shinoda

Sales Manager: Jim Morrison

Chief Engineer: Jun Matsumoto

Products: industrial, business, residential, loudspeaking, telephone, video intercom/security systems with paging talk-back; six microprocessor systems available, mixer amplifiers, paging speakers, horns, drivers, ceiling speakers, tuners, fast food intercoms, and special order products.

See full listing under **Intercom Systems—Duplex**.

# ALPHA COMMUNICATIONS

**ALPHA COMMUNICATIONS**, 89-D Cabot Ct., Hauppauge, NY 11788-3717 Tel.: 516-434-8080

President: Mark S. Goldberg

Products: intercom and video/intercom systems for apartment, home,

*Sound & Communications*



nd industry, custom-made vandal-resistant lobby panels and apartment stations for new and retrofit, 2-wire apartment intercom, non-coax video/intercom.

District Office:

Canterbury Sales, East Brunswick, NJ, 201-257-3951

**ALTRONIC CO. LTD.**, 191 Oneida Dr., Pointe Claire, Quebec H3W 1M5 Tel.: 514-694-0168

President and Chief Engineer: A. D. Grunberg

Sales Manager: T. Pohoryles

Products: apartment house telephones with door-answering facilities.

Directory panels. Speaker systems. Video intercom systems with

privacy — specially designed for apartment houses.

**AMPLYVOX/USA SECURITY INTERCOM, INC.**, 1833 N. 105th, Seattle, WA 98133 Tel.: 206-523-6170

President: Gerard H. Mooyman

Sales Manager: Claudia Mazzola

Chief Engineer: Jeff Groth

Other Personnel: John Burnard

Products: apartment house intercoms video — duplex with buzzer or chime, P.A. and background music systems, speakers, microphones, intercom kits complete.

See full listing under Intercom Systems—Duplex.

**AMTEL SECURITY SYSTEM, INC.**, 8525 N.W. 53rd Terrace, Miami, FL 33166 Tel.: 305-591-8200 800-22-AMTEL

President: Suresh Gajwani

Sales Manager: Moe H. Weiner

Chief Engineer: Byron Blank

Regional Manager (N.E.): Jim Gall

Products: telephone entry control systems which control access to buildings, card access control systems, and parking barrier gates.

**CAMBRIDGE ELECTRONICS LABORATORIES**, 20 Chester St., Somerville, MA 02144 Tel.: 617-629-2805

President: Dr. Jeffrey Race

Sales Manager: Charlotte Bissell

Products: specialized telecom accessories including digital music-on-hold source for PABX/key systems, mini telephone ringing generators, and two-way talk-back intercom unit.

**CORNELL ELECTRONIC PRODUCTS, INC.**, 4911 W. Good Hope Rd., Milwaukee, WI 53233 Tel.: 414-351-4600

President: Donald Glaubitz

Vice President and Chief Engineer: Gary Butler

Sales Manager: Pauline Haack

Products: visual nurse call, audio visual nurse call, door monitors, apartment intercom, in/out register, institutional intercom, silent paging.

See full listing under Intercom Systems—Hospital & Health Care Facilities.

**EKTACOM-FISHER BERKELEY CORP.**, 5800 Christie Ave., Emeryville, CA 94608 Tel.: 415-655-9696

President: Robert S. Fisher

Vice President, Engineering: Robert Shipley

Products: duplex and simplex intercom systems, annunciator and voice call-in; audio-visual and visual-only nurse-call systems; manual and automatic personnel registers, apartment signaling systems.

See full listing under Intercom Systems—Simplex.

**ELECTRO-COMM SYSTEMS INC.**, 7915 N. 81st St. Milwaukee, WI 53223 Tel.: 414-354-0202

President and Chief Engineer: Angelo Balistreri

Sales Manager: Jim Ippolite

Products: audio and audio-visual nurse-call systems, door-monitoring

devices, apartment intercoms and personnel registers. Emergency call systems for nursing homes and housing for the elderly, custom signaling and communications systems.

**FARADAY, INC.**, 805 S. Maumee St., Tecumseh, MI 49286 Tel.: 517-423-2111

President: Robert F. Bell

Sales Manager: Charles Stevens

Vice President, Engineering: R. Miller

Products: intercom & sound distribution systems, nurse call systems, fire alarm, annunciator, clock and hospital life safety systems, full range of signaling products.

See full listing under Alarms & Security.

**FLORENCE CORP.**, 2101 N. Elston Ave., Chicago, IL 60614 Tel.: 312-384-3310

President: L. A. Schooley

Vice President, Sales: D.A. Cannella

Sales Manager: George Jans

Chief Engineer: Ray Cozzens

Vice President, General Manager: John Martino

Products: designers and manufacturers of nurse calls, emergency calls, mail boxes and apartment communication systems.



# JERON

electronic systems, inc.

**JERON ELECTRONIC SYSTEMS, INC.**, 3554 N. Clark St., Chicago, IL 60657 Tel.: 312-528-4020, 800-621-1903

President: Jerome Chesnul

Sales Manager: John Charczuk

Products: intercom-security systems for apartment buildings, townhouses, offices. Combination emergency call/intercom systems for elderly housing. Hospital, nursing home, institutional, prisons, schools, dormitory communications and signaling systems.

District Offices:

Central Marketing Group, Kansas City, MO, 816-741-7460

J. W. Lehner Co., Stow, OH, 216-686-1965

New West Agency, San Diego, CA, 619-299-3269

Myer & Ross, Burlingame, CA, 415-348-6800

R. G. Associates, Stow, MA, 617-897-7146

Mike Schlarman, Wanaque, NJ, 201-839-2243

John S. Wilkin & Assoc., Inc., Hillboro, OH, 513-393-1137

ASR Enterprises, Baltimore, MD, 301-574-0552

Burcaw Co. & Assocs., Warren, MI, 313-573-4605

Jim Church Marketing, Bloomington, IN, 812-334-0383

Gemini Electronics Marketing, Edmonds, WA, 206-776-3121

Gustafson Sales, Red Wing, MN, 612-388-4277

Pacific West Marketing, Honolulu, HI, 808-923-5563

Henry Phillips Co., Roswell, GA, 404-992-3070

SRT Marketing, Tampa, FL, 813-884-4805



**LEE DAN COMMUNICATIONS, INC.**, 155 Adams Ave., Hauppauge, NY 11788 Tel.: 516-231-1414 800-231-1414 (in NY) 800-LEE-DAN1 (in U.S.)

President: Leon Goldberg

Sales Manager: Lawrence Goldberg

Chief Engineer: Sanford Hoffman

Products: apartment house intercom from two units up. Custom made lobby panels and apartment stations for retrofit applications. Tek-View combination audio/visual intercom. Government approved mailboxes.

**MARLEE ELECTRONICS CORP.**, 900 W. Olive St.,  
Englewood, CA 90301 Tel.: 213-568-8982  
1-800-368-7243

President: B. Scott Holloway

Sales Manager: P. Mike Bevan

Production Manager: Nadine Uhart

Chief Engineer: Barbara Mauch

Products: Entraguard — tenant-controlled security entry system for apartment and office buildings that operates over telephone lines; single, multi-entry, handset and hands-free. Keyboard systems for restricted areas.

Regional Sales Offices:

East: Philadelphia, PA, Mike Bevan, 800-368-7243

Southeast: Tequesta, FL, Jim Driver, 305-744-4740

District Offices:

Associated Systems, Manchester, NH, Churchill Miller, 603-472-2297

Electronic Innovations, Inc., Richmond, CA, 415-233-2795

Exclusive Distributor:

Electronic Security Services, Camp Springs, MD, Sam Alexander,  
301-449-3850

**MULTI-VOX LTD.**, 9967 St. Michel Blvd., Montreal  
H1H 5G7, Quebec, Canada Tel.: 514-321-3131

President: Fernand Parent

Sales Manager: Robert Girard

Chief Engineer: Dominique Malenfant

Operations Manager: Georges Morissette

Products: audio amplifiers, electronic carillons and chimes, simplex and duplex intercom systems, solid state and microprocessor intercom systems for apartments, hospital and health care facilities, schools, institutions and industries, paging systems.

**PASO SOUND PRODUCTS, INC.**, 14 First St.,  
Pelham, NY 10803 Tel.: 914-738-4800

Executive Vice President: Paul Mastrangelo

Sales Manager: David Moore

Operations Manager: Anthony Sgueglia

Product Manager (Engineering): Ken O'Brien

Credit Manager: Marilyn Beckerson

Customer/Representative Support: Tommi Paladino

Sales Administration (Order Expedite): Stacy Appel

Products: indoor, outdoor, portable, mobile amplifiers, preamplifiers, mixers, booster amplifiers, AC/DC integrated amplifiers and boosters, intercom systems, multi-residential systems, microphones, wireless microphones, industrial grade auto reverse cassette machines, tuners, sound columns, speakers, baffles, driver units, trumpets, horns, full range loudspeaker systems, stage monitors, stands, accessories, equipment racks.

See full listing under **Engineered Sound Systems**.

**RING GROUP OF NORTH AMERICA**, 230 Community  
Dr., Great Neck, NY 11021  
Tel.: 516-487-0250 800-645-9690

Vice President: Peter McLean

Sales Manager: Stan Davis

Chief Engineer: Jim Small

Products: Ring 3000 school systems, duplex intercom (2 to 5000 station, 2 alarm channels, 8 programmer channels, telephone interface, field programmable); speakers and baffles.

See full listing under **Intercom Systems—Duplex**.

**SECURITY INTERCOM INC.**, 1833 No. 15th, Seattle,  
WA 98133 Tel.: 206-523-6170

President: Gerard Mooyman

Products: voice and video systems for security applications in low and hi-rise apartment houses.

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**SELECT ENGINEERED SYSTEMS**, 7991 W. 26th Ave.,  
Hialeah, FL 33016 Tel.: 305-823-5410  
800-342-5737

President: John Sheppard

Sales Manager: John Holloway

Chief Engineer: Rick Muller

Marketing Manager: Peter Vilardi

Products: handset and hands-free telephone-based visitor entry systems for office or multi-residential use, digital keypads for access control.

**SENTEX SYSTEMS, INC.**, 109 East Harvard St., Glen-  
dale, CA 91205 Tel.: 818-244-6800

President: William R. Davis

Products: telephone, card, and keypad entry systems.

District Offices:

Bi-State Marketers, Ridgefield, NJ, 201-943-5888

Boggs & Associates, Ft. Washington, MD, 301-292-2047

Coaxial Systems, Tequesta, FL, 305-746-6626

Denning Electronics, Hinsdale, IL, 312-920-1488

ECR, Inc., Charlotte, NC, 704-372-5763

**SIEDLE INTERCOM/USA**, 1 Wynnewood Rd., Wynne-  
wood, PA 19096 Tel.: 1-800-874-3353

Sales Director: Earl Zausmer

Sales Manager: Steve Camp

Products: 2-wire apartment house intercoms for duplex communica-  
tions between front door and apartment, chime announcement and door  
release operation from handset.

**TALK-A-PHONE CO.**, 5013 N. Kedzie Ave., Chicago,  
IL 60625 Tel.: 312-539-1100

President: Z. Liberman

Sales Manager: Daniel Kagan

Products: instant and direct 2-way conversation between any apartment  
and vestibule-in buildings of any size. Features: 1 or 2 talking circuits;  
automatic privacy; individual volume selection for each apartment; built-  
in buzzer.



**TEKTONE SOUND & SIGNAL MFG.**, 1331 S. Killian  
Dr., Lake Park, FL 33403 Tel.: 305-844-2383

President: M. Mira

Sales Manager: Carlos Mira

Chief Engineer: J. Switzer

Products: intercom systems for home, apartment, commercial/in-  
dustrial, institutional—telephone, loudspeaking and door answering.  
Nurse call, security/alarm and AM/FM radio intercom systems.

District Offices:

Alvan Chaney, Hialeah, FL

Dardon & Assoc., Olmsted Township, OH

Howard Golenpaul & Assoc., Arlington, VA

William B. Allen Supply Co., Inc., New Orleans, LA

Lee Dan Communications, Hauppauge, NY

Klump Sales Co., Jacksonville, FL

Lichtenauer & Assoc., Antioch, CA

Majestic Sales, Chicago, IL

Mountain Representatives, Denver, CO

Chuck Olson Assoc., Renton, WA

Universal Agents & Assoc., Burnsville, MN

Alarmtronics, Edin, MN

Western Marketing, Culver City, CA

Pacific West Marketing, Honolulu, HI

*Sound & Communications*

**TELEPHONE SALES & SERVICE CO.,** 25 DeForest St., Amityville, NY 11701  
Tel.: 516-842-4800

President: Harry F. Bradley  
Products: electronic PAX; Select-O-Phone II to 64 stations with 100% trunkage. Comtrac EPAX 64 to 4000 stations. Electronic code-call with telephone access. Message repeater.

## INTERCOM SYSTEMS — INDUSTRIAL

**ALPHA COMMUNICATIONS,** 89-D Cabot Ct., Hauppauge, NY 11788-3717 Tel.: 516-434-8080

President: Mark S. Goldberg  
Products: intercom and video/intercom systems for apartment, home, and industry, custom-made vandal-resistant lobby panels and apartment stations for new and retrofit, 2-wire apartment intercom, non-coax video/intercom.  
See full listing under **Intercom Systems — Apartment & Residential.**

**AMTEL SECURITY SYSTEMS, INC.,** 8525 N.W. 53rd Terrace, Miami, FL 33166 Tel.: 305-591-8200  
800-22-AMTEL

President: Suresh Gajwani  
Sales Manager: Moe H. Weiner  
Chief Engineer: Byron Blank  
Regional Manager (N.E.): Jim Gall  
Products: telephone entry control systems which control access to buildings, card access control systems, and parking barrier gates.

**ATKINSON DYNAMICS,** 10 W. Orange Ave., S. San Francisco, CA 94080 Tel.: 415-583-9845

Operations Manager: E.M. Watson  
Sales Manager: Asa Bullock  
Products: heavy-duty intercom units engineered specifically for high-noise areas; clear communications under most difficult conditions guaranteed; weatherproof, sealed, transistorized.

**BOGEN, A Lear Siegler Company,** 50 Spring St., P.O. Box 575, Ramsey, NJ 07446 Tel.: 201-934-8500

President: John H. Ochtera  
Vice President, Marketing: Carl C. Dorwaldt  
Vice President, Engineering: Mark Koller  
Products: commercial sound and communication systems and equipment including amplifiers, mixers, loudspeakers, microphones, telephone paging equipment, tuners, intercoms, audio surveillance and centralized sound systems.  
See full listing under **Engineered Sound Systems.**

**DUKANE CORPORATION,** 2900 Dukane Dr., St. Charles, IL 60174 Tel.: 312-584-2300

President: William B. Clark  
Sales Manager: Jim Shane  
Chief Engineer: Gordon Mielke  
Marketing Manager: Craig Lyons  
Products: nurse call, intercom, voice paging, clock, sound masking, staff registry and voice evacuation systems for health care, institutional and industrial markets.  
See full listing under **Paging Systems.**

**EDCOM, A Division of BCE/Edcom Inc.,** 755 Center St., Lewiston, NY 14092 Tel.: 716-754-7130

President: Peter Jova  
Vice President of Marketing: James K. Wood  
Chief Engineer: Alan Butterfield  
Office Manager: Janet Gorman

Products: microprocessor-controlled school & administrative communication systems; correctional & retirement complex systems; conference & simultaneous interpretation systems; life safety systems for commerce & industry.

**NORCON ELECTRONICS, INC.,** 1260 Ralph Ave., Brooklyn, NY 11236 Tel.: 718-451-1112

President: Norman Schlaff  
Chief Engineer: Simon Kleynner  
Products: Norcon Talk-Thru communicator providing amplified hands-free communication through an environmental partition. Engineered sound reinforcement systems. Public address systems. Closed-circuit and master antenna television systems. Fire alarm systems.

**POWERTRONIX,** 10623 Lawson River, Fountain Valley, CA 92708 Tel.: 714-963-5411

President: Robert Gehlke  
Sales Manager: Irv Weisman  
Products: 200W current-drive distribution amplifiers with 24V-48 VDC emergency back-up power capability. 24 VDC mobile amplifier with 3 electronically-switched, prioritized inputs. Preamp with 5 electronically-switched, prioritized inputs.  
See full listing under **Audio Amplifiers.**

**RAVEN ELECTRONICS CORPORATION,** 400 Wolvering Way, Sparks, NV 89431  
Tel.: 702-359-3700

President: Carl A. Dawson  
Sales Manager: Davis S. Young  
Chief Engineer: Wook Shim  
Purchasing Agent: Jay W. Cigno  
Products: designs, engineers, and manufactures Engineering Service Channel equipment, INTELSAT/DomSat earth station products, STL, VF, and TTY switching equipment for use in LOS microwave, satellite, wireline, and fiber optic transmission networks.  
See full listing under **Teleconferencing Systems.**

**RING GROUP OF NORTH AMERICA,** 230 Community Dr., Great Neck, NY 11021  
Tel.: 516-487-0250 800-645-9690

Vice President: Peter McLean  
Sales Manager: Stan Davis  
Chief Engineer: Jim Small  
Products: Ring 3000 school systems, duplex intercom (2 to 5000 station, 2 alarm channels, 8 programmer channels, telephone interface, field programmable); speakers and baffles.  
See full listing under **Intercom Systems—Duplex.**

**SIEDLE INTERCOM/USA,** One Wynnewood Rd., Wynnewood, PA 19096 Tel.: 1-800-874-3353

President: Earl Zausmer  
Sales Manager: Steve Camp  
Products: 2-wire apartment house intercoms for duplex communications between front door and apartment door, chime announcement and door release from handset.

**SPECO, DIV., COMPONENTS SPECIALTIES INC.,** 1172 Rt. 109, P.O. Box 624, Lindenhurst, NY 11757 Tel.: 516-957-8700 (New York)  
1-800-645-5516 (Outside NY)

President: Louis W. Keller  
Vice President, Sales: Mel Hulkower  
Vice President & General Manager: James Ganci  
Regional Sales Managers: Eric Forman, Bruce Kurtz  
Products: P.A. horns, amplifiers, tuners, loudspeakers, wall baffles, speaker assemblies, outdoor speakers, sound columns, ceiling grilles, transformers, L-pads, attenuators, accessories, microphones, intercoms, alarm sirens, multitestors, oscilloscopes.

**SWINTEK ENT., INC.**, 587 Division St., Campbell, CA  
95008 Tel.: 408-378-8091

President: William Swintek  
Sales Manager: Darisa Hill  
Chief Engineer: Les Underwood  
Ad Assistant: Marilyn Roberts  
Products: switching diversity radio microphones, wireless headsets to  
RTS and Clearcom intercoms, min video camera wireless receivers, anten-  
na systems.  
District Offices:  
W3 Marketing, Stone Mt., GA, 404-292-5364  
Video Components, Spring Valley, NY, 914-356-3700  
Pass Associates, Langhorne, PA, 215-757-6100  
Loppnow Associates, Redmond, WA, 206-883-3205  
Lintern Associates, Naperville, IL, 312-983-0935  
Cinequip, Toronto, Ontario, CN, 416-920-5424  
Pro Sound, Johannesburg, Africa, 001-37-655619  
Commercial Electronics, Vancouver, BC, 604-669-5525

**TALK-A-PHONE CO.**, 5013 N. Kedzie Ave., Chicago,  
IL 60625 Tel.: 312-539-1100

President: Z. Liberman  
Sales Manager: Dan F. Kagan  
Products: full line of intercom systems for industrial applications of  
any size-from 2 station K-LC-2 to 30 watt Chief Redi-Power systems.  
Communication between office, factory & warehouse. Monitor security  
areas.

**TELEX COMMUNICATIONS, INC.**, 9600 Aldrich Ave.  
S., Minneapolis, MN 55420 Tel.: 612-887-5550

President: John Howe  
Sales Manager: Claude Kleiman  
Director of Marketing: Donald Mereen  
Products: closed-circuit intercom systems for headset or speaker sta-  
tion listening with 2, 3 and 4 channel masterstations.  
See full listing under **Microphones**.

**T-S-K ELECTRONICS, INC.**, 564 Young St., P.O. Box  
190, Tonawanda, NY 14151 Tel.: 716-693-3916

President: Theodore S. Kedzierski  
Chief Engineer: Kevin T. Kedzierski  
Products: zero-level loudspeaking intercoms used on very long twisted  
or leased telephone lines. Communication system design and fabrica-  
tion. Sound detectors and telephone intercoms.

**WHELEN ENGINEERING CO., INC.**, Route 145, Win-  
throp Road, Chester, CT 06412-1036  
Tel.: 203-526-9504

President: John F. Olson  
Sales Manager: Howard M. Berke  
Chief Mechanical Engineer: Wayne Lyons  
Products: audibles & visual signalling devices for automotive & industrial  
applications, including strobe & rotating beacons, light bars, vehicle  
sirens & public address systems, and high-power outdoor warning  
systems.  
See full listing under **Alarm & Security**.

## INTERCOM SYSTEMS— INSTITUTIONAL & SCHOOL

**AIPHONE INTERCOM SYSTEMS**, 1700 130th Ave.  
N.E., Bellevue, WA 98005 Tel.: 206-455-0510

President: Hiko Shinoda  
Sales Manager: J.M. Morrison  
Chief Engineer: Jun Matsumoto  
Products: industrial, business, residential, loudspeaking, telephone,  
video intercom/security systems with paging talk-back; six  
microprocessor systems available; mixer amplifiers, paging speakers,

horns, drivers, ceiling speakers, tuners, fast food intercom systems, and  
special order products.  
See full listing under **Intercom Systems—Duplex**.

# ALPHA COMMUNICATIONS

**ALPHA COMMUNICATIONS**, 89-D Cabot Ct., Haup-  
page, NY 11788-3717 Tel.: 516-434-8080

President: Mark S. Goldberg  
Products: intercom and video/intercom systems for apartment, home,  
and industry, custom-made vandal-resistant lobby panels and apart-  
ment stations for new and retrofit, 2-wire apartment intercom, non-  
coax video/intercom.  
See full listing under **Intercom Systems—Apartment & Residential**.

**ATKINSON DYNAMICS**, 10 W. Orange Ave., S. San  
Francisco, CA 94080 Tel.: 415-583-9845

Operations Manager: E. M. Watson  
Sales Manager: Asa Bullock  
Products: heavy-duty intercom units engineered specifically for high-  
noise areas. Clear communications under most difficult conditions  
guaranteed. Weatherproof, sealed, transistorized.

**BOGEN, A Lear Siegler Company**, 50 Spring St., P.O.  
Box 575, Ramsey, NJ 07446 Tel.: 201-934-8500

President: John H. Ochtera  
Vice President, Marketing: Carl C. Dorwaldt  
Vice President, Engineering: Mark Koller  
Products: commercial sound and communication systems and equip-  
ment including amplifiers, mixers, loudspeakers, microphones, telephone  
paging equipment, tuners, intercoms, audio surveillance and centraliz-  
ed sound systems.  
See full listing under **Engineered Sound Systems**.

**CLEAR-COM INTERCOM SYSTEMS**, 1111 17th St.,  
San Francisco, CA 94107 Tel.: 415-861-6666  
TWIX 910-371-1087

President: Robert Cohen  
Sales Manager: Michael Goddard  
Manager, Export Marketing: Peter Giddings  
Products: high noise level intercom systems for theaters, arenas, broad-  
cast, industrial. Interconnects with microphone cable. Interfaces with  
RTS type two wire systems, telephone lines, cameras, etc.  
See full listing under **Intercom Systems—Duplex**.

**COMMUNICATIONS CO., INC.**, 3490 Noell St., San  
Diego, CA 92110 Tel.: 619-297-3261

President and Sales Manager: Peter T. Jordan  
Chief Engineer: David Johnson  
Order Department: Laura McCollough  
Products: programmable two-way intercom amplifier w/vox, media  
distribution amplifier, projector patch, room combining systems, record  
patch, RT-60 reverberation measuring device, burst octave noise  
generator, 1/3 octave real time analyzer, 27 B.I.T. oscilloscope display  
adaptor.  
District Offices:  
Austin Assocs., Willingboro, NJ  
Secom Systems, Chamblee, GA  
Bencsik Assocs., Ocala, FL  
Audio Marketing Assoc., Brecksville, OH  
Pro Marketing, Indianapolis, IN  
Burcaw Co., Warren, MI  
Ziskind Assocs., Rolling Meadows, IL  
Jack Mesnick Sales, Liverpool, NY

Irv Brown Company, Inc., Brooklyn, NY  
Forristal-Young Sales Corp., Kansas City, MO  
Peregrine S.W. Reprs., Houston, TX  
Mountain Reprs. Inc., Denver, CO  
Western Audio Sales, Glendale, CA  
Bryan Trankle, Hillsborough, CA  
Fleetheart & Sullivan, Portland, OR

**COMMUNICATIONS EQUIPMENT CO., INC.**, 6443  
Western Ave., Glen Arbor, MI 49636  
Tel.: 616-334-3081

President: Hugh I. Morris  
Sales Manager: Thomas A. Garmhausen  
Products: selective signal, common talk telephone systems; including multiple talk channels, paging access, internal speakers for hands-free answering; other special features.  
See full listing under **Engineered Sound Systems**.

**CORNELL ELECTRONIC PRODUCTS, INC.**, 4911 W.  
Good Hope Road, Milwaukee, WI 53223  
Tel.: 414-351-4660

President: Donald J. Glaubitz  
Vice President and Chief Engineer: Gary Butler  
Sales Manager: Pauline Haack  
Products: visual nurse call, audio visual nurse call, door monitors, apartment intercom, in/out register, institutional intercom, silent paging.  
See full listing under **Intercom Systems—Hospital & Health Care**.

**CP COMMUNICATIONS**, 1 Odell Plaza, Yonkers,  
NY 10701 Tel.: 914-378-1700  
800-762-4254 (outside NY)  
212-496-9111 (New York City)

President: Tim Fisher  
Sales Manager: David Goldsmith  
Products: walkie-talkies, intercoms, wireless headset systems and cellular telephones by the day, week, or month.

**J. W. DAVIS & CO.**, 3215 Canton St., Dallas, TX  
75226 Tel.: 214-651-7341  
Texas WATS: 800-442-1564  
National WATS: 800-527-5705

President: Charles Griffiths  
Vice President Sales: Jack W. Tucker  
Products: console, console or desk top mounting with telephone handsets for privacy if desired. Room call in available and privacy features to prevent monitoring without notification. Any number of rooms may be accommodated.  
See full listing under **Pro Audio Sound Systems**.

**DELTA COMMUNICATIONS CO.**, 7852 78th Ave.,  
S.W., Tacoma, WA 98498 Tel.: 206-582-2201

President: Sid C. Flothe  
Sales Manager: Sid C. Flothe  
Products: school and institutional intercommunication systems. Features include: room handsets, two channels of telecommunications, voice intercom, programming from radio/cassette, compact size, time tone signals, etc.

**DUKANE CORPORATION**, 2900 Dukane Dr., St.  
Charles, IL 60174 Tel.: 312-584-2300

President: William B. Clark  
Sales Manager: Jim Shane  
Chief Engineer: Gordon Mielke  
Marketing Manager: Craig Lyons  
Products: nurse call, intercom, voice paging, clock, sound masking, staff registry and voice evacuation systems for health care, institutional and industrial markets.  
See full listing under **Paging Systems**.

# EDCOM

**EDCOM, A Division of BCE/Edcom Inc.**, 755 Center  
St., Lewiston, NY 14092 Tel.: 716-754-7130

President: Peter Jova  
Vice President of Marketing: James K. Wood  
Chief Engineer: Alan Butterfield  
Office Manager: Janet Gorman  
Products: microprocessor-controlled school & administrative communication systems; correctional & retirement complex systems; conference & simultaneous interpretation systems; life safety systems for commerce & industry.

**EKTACOM-FISHER BERKELEY CORP.**, 5800 Chris-  
tie Ave., Emeryville, CA 94608  
Tel.: 415-655-9696

President: Robert S. Fisher  
Vice President, Engineering: Robert T. Shipley  
Products: duplex intercom systems, annunciator and voice call-in; audio visual and visual-only nurse-call systems; manual and automatic registers, apartment signaling systems.  
See full listing under **Intercom Systems—Simplex**.

**FARADAY, INC.**, 805 S. Maumee St., Tecumseh, MI  
49286 Tel.: 517-423-2111

President: Robert F. Bell  
Sales Manager: Charles Stevens  
Vice President Engineering: R. Miller  
Products: intercom and sound distribution systems, nurse call systems fire alarm, annunciator, clock and hospital life safety systems, full range of signaling products.  
See full listing under **Alarm, Security & Life-Safety Systems**.

**FLORENCE CORP.**, 2101 N. Elston Ave., Chicago, IL  
60614 Tel.: 312-384-3310

President: L. A. Schooley  
Vice President, Sales: D. A. Cannella  
Sales Manager: George Jans  
Chief Engineer: Ray Cozzens  
Vice President, General Manager: John Martino  
Products: designers and manufacturers of nurse call, emergency calls mail boxes and apartment communication systems.

**JERON ELECTRONIC SYSTEMS, INC.**, 3554 N  
Clark St., Chicago, IL 60657  
Tel.: 312-528-4020, 800-621-1903

President: Jerome Chesnul  
Sales Manager: John Charczuk  
Products: communication and signaling systems for hospitals psychiatric wards, nursing homes, elderly housing and care facilities jails, dormitories, military, schools, prisons, institutions. **Does** surveillance systems. Room status systems.  
See full listing under **Intercom—Apartment & Residential**.



**LEE DAN COMMUNICATIONS, INC.**, 155 Adams Ave., Hauppauge, NY 11788  
Tel.: 516-231-1414  
800-231-1414 (in NY) 800-LEE-DAN1 (in U.S.)

President: Leon Goldberg  
Sales Manager: Lawrence Goldberg  
Chief Engineer: Sanford Hoffman  
Products: Tek-Care emergency call systems for multi-dwelling senior citizen housing. U.L. nurse-call systems. Intercom systems for dormitories.

**LT ELECTRONICS LTD.**, 2535 Gerrard St. East, Scarborough, Canada M1N 1W9 Tel.: 416-691-9406

President: Jim Breedon  
Sales Manager: Jim Breedon  
Chief Engineer: J. Hesse  
Products: school intercoms, cone speakers, sound columns, packaged amplifiers, telephone amplifiers, speaker baffles, bass reflex speaker systems.  
See full listing under **Paging Systems**.

**MILLBANK ELECTRONICS GROUP LTD.**, Bellbrook Industrial Estate, Uckfield, Sussex, TN22 1QL England Tel.: Uckfield 825-4811

Chairman: Tony Walker  
Director and General Manager: Brian Evans  
Client Services Director: Bernard Skinner  
Engineering Manager (Sales): Doug Edworthy  
Sales & Marketing: Don Eaton  
Products: custom engineered sound systems; public address, teleconference, life-safety. Sound reinforcement systems; amplifiers, pre-amplifiers, background music, FM/AM tuners, alarm and tone-signal generators, loudspeakers, microphones.  
See full listing under **Engineered Sound Systems**.

**MULTI-VOX LTD.**, 9967 St. Michel Blvd., Montreal H1H 5G7, Quebec, Canada  
Tel.: 514-321-3131

President: Fernand Parent  
Sales Manager: Robert Girard  
Chief Engineer: Dominique Malenfant  
Operations Manager: Georges Morissette  
Products: audio amplifiers, electronic carillons and chimes, simplex and duplex intercom systems, solid state and microprocessor intercom systems for apartments, hospital and health care facilities, schools, institutions and industries, paging systems.

**NATIONAL TELESYSTEM LTD. CANADA**, 438 Papin Ave., Ste. Foy, Quebec, CN G1P-379  
Tel.: 418-687-2031

President: Charles Sirois  
General Manager: Howard Bowles  
Chief Engineer: Christian Legare, Ing.  
Chief of Electronics: Marcel Langlois  
Products: systems and equipment for institutional intercom, nurse call, paging, school systems, emergency systems, radio control; metal cabinets, audio-visual equipment systems.

**NORCON ELECTRONICS, INC.**, 1260 Ralph Ave., Brooklyn, NY 11236 Tel: 718-451-1112

President: Norman Schlaff  
Chief Engineer: Simon Kleyner  
Products: Norcon Talk-Thru communicator providing amplified hands-free communication through an environmental partition. Engineered sound reinforcement systems. Public address systems. Closed-circuit and master antenna television systems. Fire alarm systems.

**PASO SOUND PRODUCTS, INC.**, 14 First St., Pelham, NY 10803-1401 Tel.: 914-738-4800

Executive Vice President: Paul Mastrangelo  
Operations Manager: Anthony Sgueglia  
Sales Manager: David Moore  
Product Manager (Engineering): Ken O'Brien  
Credit Manager: Marilyn Beckerson  
Customer/Representative Support: Tommi Paladino  
Sales Administration (Order Expedite): Stacy Appel  
Products: indoor, outdoor, portable, mobile amplifiers, preamplifiers, mixers, booster amplifiers, AC/DC integrated amplifiers and boosters, intercom systems, multi-residential systems, microphones, wireless microphones, industrial grade auto reverse cassette machines, tuners, sound columns, speakers, baffles, driver units, trumpets, horns, full range loudspeaker systems, stage monitors, stands, accessories, equipment racks.  
See full listing under **Engineered Sound Systems**.

**POETKER COMMUNICATIONS LTD.**, 461 Manitou Dr., Kitchener, Ontario N2C 1L5  
Tel.: 519 893-1010

President: Bernie W. Poetker  
Sales Manager: Grant Ertel  
Chief Engineer: Lance Cooper  
Products: school and institutional communications products, Teletale™ institutional security systems, Trakker™ vehicle identification and control systems, nurse-call and health care products.  
Sales Representatives:  
John Corrigan, Mandeville, LA, 504-626-5231  
Gustafson Sales, Red Wing, MN, 612-388-7101  
Honeypohl Enterprises, Sacramento, CA, 916-483-1810  
Bob Mangini, Anaheim, CA, 714-630-6177, 818-333-5068

**POWERTRONIX**, 10623 Lawson River, Fountain Valley, CA 92708 Tel.: 714-963-5411

President: Robert Gehlke  
Sales Manager: Irv Weisman  
Products: 200W current drive distribution amplifiers with 24V-48 VDC emergency back-up power capability. 24 VDC mobile amplifier with 3 electronically-switched, prioritized inputs. Preamp with 5 electronically-switched, prioritized inputs.  
See full listing under **Audio Amplifiers**.

**RAULAND-BORG CORP.**, 3535 W. Addison St., Chicago, IL 60618 Tel.: 312-267-1300  
TWX: 910 221 1290

President: William Krucks  
Vice President, Sales and Marketing: Kenneth T. James  
Sales Manager: Rick Blunt  
Chief Engineer: Lawrence Gleason  
Products: intercoms, telephone systems, administrative intercom, dormitory and retirement home intercom; health care systems; school systems, Philips M100 direct speech intercom system.  
See full listing under **Engineered Sound Systems**.

**RING GROUP OF NORTH AMERICA**, 230 Community Dr., Great Neck, NY 11021  
Tel.: 516-487-0250 800-645-9690

Vice President: Peter McLean  
Sales Manager: Stan Davis  
Chief Engineer: Jim Small  
Products: Ring 3000 school systems, duplex intercom—2 to 5,000 stations, 2 alarm channels, 8 program channels, speakers & baffles.  
See full listing under **Intercom Systems—Duplex**.

**ROFU INTERNATIONAL CORP.**, 5531G Hempstead Way, Springfield, VA 22151 Tel.: 800-762-7638  
National Sales Manager: Frank Begovich  
Products: BPT video-intercom, BPT intercom, BPT CCTV systems, electronic locking devices.

**RTS SYSTEMS, INC.**, 1100 West Chestnut St., Burbank, CA 91506 Tel.: 818-840-7119  
President: Bob Ringer  
Vice President, Marketing: Douglas Leighton  
Sales Manager: Shelley Harrison  
Chief Engineer: Stan Hubler  
Products: professional intercom systems, conference-line and dedicated-line, IFB systems. Pro audio amplifier, phono preamp, 10-watt monitor amp and buffer amp.

**SIEDLE INTERCOM/USA**, 1 Wynnewood Rd., Wynnewood, PA 19096 Tel.: 800-874-3353  
Sales Director: Earl Zausmer  
Sales Manager: Steve Camp  
Products: 2-wire apartment house intercoms for duplex communications from front door and apartment, chime announcement and door release operation from handset.

**SOUNDOLIER**, 1859 Intertech Dr., Fenton, MO 63026 Tel.: 314-962-9870  
Vice President, Consultant for Marketing: Herbert M. Jaffe  
Director of Sales: Paul Grote  
Vice President, Sales & Marketing: Tom Erickson  
Chief Engineer: John Saller  
Products: high quality, commercial sound loudspeakers, enclosures and accessories for music, alarm and public address systems, baffles for ceilings and walls, matching transformers and backbox enclosures.  
See full listing under **Loudspeakers & Accessories**.

**SOUND POWERED COMMUNICATIONS CORP.**, 335 Robbins Ave., P.O. Box 5569, Trenton, NJ 08638 Tel.: 609-883-1180  
Sales Manager: Harry Mosle  
Products: sound-powered communications equipment including intercom stations, field telephones, handsets, noise-attenuating headsets, look-up cable, reel systems and accessories.

**SPECO DIV., Components Specialties, Inc.**, 1172 Rt. 109, P.O. Box 624, Lindenhurst, NY 11757 Tel.: 516-957-8700 (New York) 1-800-645-5516 (Outside NY)  
President: Louis W. Keller  
Vice President & General Manager: James J. Ganci  
Vice President, Sales: Mel Hulkower  
Regional Sales Managers: Eric Forman, Bruce Kurtz  
Products: PA horns, amplifiers, tuners, loudspeakers, wall baffles, speaker assemblies, outdoor speakers, sound columns, ceiling grilles, transformers, L-pads, attenuators, accessories, microphones, intercoms, alarm sirens, multitestors, oscilloscopes.

**TALK-A-PHONE CO.**, 5013 N. Kedzie Ave., Chicago, IL 60625 Tel.: 312-539-1100  
President: Z. Liberman  
Sales Manager: Daniel Kagan  
Products: full line of intercom systems for schools and institutions of any size. Communication between offices; monitor security areas, converse with classrooms. Masters, staffs, horns, other equipment may be added as needed.

**TEKTONE SOUND & SIGNAL MFG.**, 1331 S. Killian Dr., Lake Park, FL 33403 Tel.: 305-844-2383  
President: M. Mira  
Sales Manager: Carlos Mira  
Chief Engineer: J. Switzer

Products: intercom systems for home, apartment, commercial/industrial, institutional—telephone, loudspeaking and door answering. Nurse call, security/alarm and AM/FM radio intercom systems.  
See full listing under **Intercom Systems—Apartment & Residential**.

**TELEPHONE SALES & SERVICE CO.**, 25 DeForest St., Amityville, NY 11701 Tel.: 516-842-4800  
President: Harry F. Bradley  
Products: electronic PAX; Select-O-Phone II to 64 stations with 100% trunkage. Contrac EPAX 64 to 4000 stations. Electronic code-call with telephone access. Message repeater.

**TN COMMUNICATIONS CORPORATION**, 42-15 Crescent St., Long Island City, NY 11101 Tel.: 718-729-9400  
President: Paul C. Roche  
Sales Manager: Reginald Humphrey  
Chief Engineer: Walter Strauss  
Products: intercom and interconnect telephone systems, both key and PABX.

**TOA ELECTRONICS, INC.**, 380 Carlton Ct., S. San Francisco, CA 94080 Tel.: 415-588-2538  
President: Sam Sakata  
Sales Manager, Sound and Communication Products: Joe Green  
Products: micro-computerized intercom systems EXES-5000, EXES-1000, EX-16. Full electronic exchange, all types stations — hands-free, handset, auto-dialer, talk-back unit.  
See full listing under **Engineered Sound Systems**.

**TOUCH-PLATE INTERNATIONAL INC.**, 16530 Garfield Ave., Paramount, CA 90723 Tel.: 213-636-8171  
President: R. G. Martinson  
Sales Manager: William Paulin  
Chief Engineer: William Wright  
Products: all-master intercom systems, low-voltage light switching, signal, and room-status systems. Flush plate line of wall plates, speaker baffles and accessories.

**VALCOM, INC.**, 1111 Industry Ave., Roanoke, VA 24013 Tel.: 703-982-3900  
President: J. W. Mason  
Sales Manager: Donald Buck  
Chief Engineer: D. Lynch  
Products: telephone integrated paging and intercom systems, talkback, bell-buzzer, code call, PBX adapters, key telephone system ancillaries, loud-ringers, power supplies, amplified and talkback speakers.  
See full listing under **Paging Systems**.

**XTEL CORPORATION**, 4301 Will Rogers Pkwy., Suite 900, Oklahoma City, OK 73108 Tel.: 405-946-1500  
President: J. William Patterson  
Vice President: Glen Patterson  
Products: "Voicepac 10-75 stations;" hands-free response behind PBX/Centrex or key systems. "All-Call," splash and privacy tones, power paging. Compact speaker/microphones mount inside telephones

## **INTERCOM SYSTEMS HOSPITAL & HEALTH CARE**

**AIPHONE INTERCOM SYSTEMS**, 1700 130th Ave., N.E., Bellevue, WA 98005 Tel.: 206-455-0510  
President: Hiko Shinoda  
Sales Manager: Jim Morrison  
Chief Engineer: Jun Matsumoto

Products: industrial, business, residential, loudspeaking, telephone, video intercom/security systems with paging talk-back; six microprocessor systems available, mixer amplifiers, paging speakers, horns, drivers, ceiling speakers, tuners, fast food intercom systems, and special order products.

See full listing under **Intercom Systems—Duplex**.

**ALPHA COMMUNICATIONS**, 89-D Cabot Ct.,  
Hauppauge, NY 11788-3717 Tel.: 516-434-8080

President: Mark S. Goldberg

Products: intercom and video/intercom systems for apartment, home, and industry, custom-made vandal-resistant lobby panels and apartment stations for new and retrofit, 2-wire apartment intercom, non-coax video/intercom.

**AMERICAN ZETTLER CORP.**, 16881 Hale Ave.,  
Irvine, CA 92714 Tel.: 714-660-1670

Sales Manager: Michael E. Nathanson

Products: nurse-call systems from simple direct select through sophisticated computer patient information systems; time and attendance systems to automate payroll processing.

**AMTEL SECURITY SYSTEMS, INC.**, 8525 N.W. 53rd  
Terrace, Miami, FL 33166 Tel.: 305-591-8200  
800-22-AMTEL

President: Suresh Gajwani

Sales Manager: Moe H. Weiner

Chief Engineer: Byron Blank

Regional Manager (N.E.): Jim Gall

Products: telephone entry control systems which control access to buildings, card access control systems, and parking barrier gates.

**COMMUNICATIONS EQUIPMENT CO., INC.**, 6443  
Western Ave., Glen Arbor, MI 49636  
Tel.: 616-334-3081

President: Hugh I. Morris

Sales Manager: T. A. Garmhausen

Products: five different nurse-call systems including audio-visual, visual only and doctors' in-out registers. Included are emergency call systems for nursing homes and elderly housing, both new construction and rehabilitation.

See full listing under **Engineered Sound Systems**.

# CORNELL

ELECTRONIC PRODUCTS, INC.

**CORNELL ELECTRONIC PRODUCTS, INC.**, 4911  
W. Good Hope Rd., Milwaukee, WI 53223  
Tel.: 414-351-4660

President: Donald Glaubitz

Vice President and Chief Engineer: Gary Butler

Sales Manager: Pauline Haack

Products: visual nurse call, audio visual nurse call, door monitors, apartment intercom, in/out register, institutional intercom, silent paging.  
District Offices:

Pinz Sales Corp., Yonkers, NY

Avcom, Inc., N. Olmsted, OH

LSM Assocs., Phelps, NY

Richard S. Pass Assocs., Langhorne, PA

Cavendish Assocs., Inc., Atlanta, GA

Kingston Sales Corp., Indianapolis, IN

Rancilio Assocs., St. Louis, MO

Russ Bidwell Sales, Gardena, CA

CB Electronic Marketing, Arvada, CO

Cartwright & Bean, Inc., Orlando, FL

BB-54

Avwest Inc., Fountain Hills, AZ

Ken Levy & Associates, Ltd., Chicago, IL

McLaughlin-Long Marketing Inc., Woodinville, WA

Southeast Region: William A. Ellinger, Palm Coast, FL

Dick Belew Sales, Inc., Dallas, TX

W.A. Hendrickson Co., Inc., N. Scituate, MA

Kodo Assoc., Inc., Minneapolis, MN

**CREST ELECTRONICS**, Simon at Third, Dassel,  
MN 55325 Tel.: 612-275-3382, 800-328-8908

President: Howard K. Page

Sales Manager: H. Kelsey Page

Products: pillow speakers, nurse-call cords, bed controls, annunciators, security control systems, doctors' registers, patient lighting, audio and visual nurse-call systems, clinic systems.

**J. W. DAVIS & CO.**, 3215 Canton St., P.O. Box 26177,  
Dallas, TX 75226 Tel.: 214-651-7341

1-800-442-1564 (Texas)

1-800-527-5705 (outside Texas)

President: Charles Griffiths

Vice President Sales: Jack W. Tucker

Products: nurse call systems available for hospitals, nursing homes and doctors' offices. Systems may include ceiling or wall speakers, corridor lights, push button pendants, emergency call and voice intercom.

See full listing under **Pro Audio Sound Systems**.

**DIVERSATRONICS**, 620 Park Way, Broomall, PA  
19008 Tel.: 215-356-3995

President: Wilfred Klein

Sales Manager: Wilfred Klein

Chief Engineer: Wilfred Klein

Products: doctor-locating and patient-flow monitors in many configurations utilizing colored lights and various flashing rates to send information from exam rooms to reception areas.

**DUKANE CORPORATION**, 2900 Dukane Dr., St.  
Charles, IL 60174 Tel.: 312-584-2300

General Manager: William B. Clark

Marketing Manager: Craig E. Lyons

Chief Engineer: Gordon Mielke

Sales Manager: Jim Shane

Products: nurse call, intercom, voice paging, clock, sound masking, staff registry and voice evacuation systems for health care, institutional and industrial markets.

See full listing under **Paging Systems**.

**EDCOM, INC.**, Division of BCE/Edcom Inc.,  
755 Center St., Lewiston, NY 14092-0506  
Tel.: 716-754-7130

President: Peter Jova

Vice President, Marketing: James K. Wood

Engineering: Alan Butterfield

Products: microprocessor-controlled school & administrative communication systems; correctional & retirement complex systems; conference & simultaneous interpretation systems; life safety systems for commerce & industry.

See full listing under **Engineered Sound Systems**.

**EKTACOM-FISHER BERKELEY CORP.**, 5800 Chris-  
tie Ave., Emeryville, CA 94608  
Tel.: 415-655-9696

President: Robert S. Fisher

Vice President, Engineering: Robert Shipley

Products: duplex and simplex intercom systems, annunciator and voice call-in; audio-visual micro-processor and visual-only nurse-call systems; manual and automatic personnel registers, apartment signaling systems.

See full listing under **Intercom Systems—Simplex**.



**ELECTRO-COMM SYSTEMS, INC.**, 7915 N. 81st St.,  
Milwaukee, WI 53223 Tel.: 414-354-0202

President and Chief Engineer: Angelo Balistreri  
Sales Manager: Jim Ippolite  
Products: audio and audio-visual nurse-call systems, door-monitoring devices, apartment intercoms and personnel registers. Emergency call systems for nursing homes and housing for the elderly; custom signaling and communication systems.

**ELENEX INC.**, 7392 Trade St., San Diego, CA  
92121 Tel.: 619-566-7515

President: Sten Persson  
Vice President: Dennis Berglund  
Manufacturing Engineer: Dave Larseneau  
Products: solid state intercom for drive-thru in high-noise applications; vehicle sensing equipment with repeat chime; amplifiers, horns; speech processing equipment; drive-thru visual ordering systems.

**ENGINEERED ELECTRONICS, INC.**, 4301 Industrial  
Access Rd., Douglasville, GA 30134  
Tel.: 404-949-3290

President: Roy J. Caviness  
Executive Vice President: Anthony W. Bunch  
Products: visual and audio-visual nurse-call systems with all associated accessories.

**PARADAY, INC.**, 805 S. Maumee St., Tecumseh, MI  
49286 Tel.: 517-423-2111

President: Robert F. Bell  
Sales Manager: Charles Stevens  
Vice President, Engineering: R. Miller  
Products: intercom and sound distribution systems, nurse call systems, fire alarm, annunciator, clock and hospital life safety systems, full range of signaling products.  
See full listing under **Alarm & Security**.

**FLORENCE CORP.**, 2101 N. Elston Ave., Chicago,  
IL 60614 Tel.: 312-384-3310

President: Lloyd A. Schooley  
Vice President and General Manager: John Martino  
Vice President, Sales: Don Cannella  
Sales Manager: George Jans  
Chief Engineer: Ray Cozzens  
Products: nurse calls, emergency calls, mail boxes and apartment communication systems.

**TT DATA EQUIPMENT & SYSTEMS DIVISION, 20**  
Mayfield Ave., Edison, NJ 08837  
Tel.: 201-225-6121 800-524-1646

Vice President: Donald Duthalen  
Chief Engineer: Jeffrey Stellman  
Products: microprocessor-based duplex intercom systems 8-4,000 lines, variety of stations—desk, wall, flush with or without handsets.



**JERON**  
electronic systems, inc.

**JERON ELECTRONIC SYSTEMS, INC.**, 3554 N. Clark  
St., Chicago, IL 60657 Tel.: 312-528-4020  
800-621-1903

President: Jerome Chesnut  
Sales Manager: John Charczuk  
Products: audio-visual nurse call. Communication and signaling systems

for hospitals, nursing homes, elderly care facilities, institutions. Visual call systems. Clinic call systems. In-out registers.  
See full listing under **Intercoms—Apartment & Residential**.

**KOMTEK COMMUNICATIONS**, 11 White Lakes Rd.,  
Stanley, NM 87056 Tel.: 800-545-7000

President: Bill Patterson  
Chief Engineer: Don Elibee  
Products: custom and standard design light signaling systems, including light intercom nurse call, doctor message, room status and patient sequencing functions.

**LEE DAN COMMUNICATIONS, INC.**, 155 Adams  
Ave., Hauppauge, NY 11788 Tel.: 516-231-1414  
800-231-1414 (in NY) 800-LEE-DAN1 (in US)

President: Leon Goldberg  
Sales Manager: Lawrence J. Goldberg  
Chief Engineer: Sanford Hoffman  
Products: U.L. 1069 listed nurse call systems. Tek-Care emergency call system for multi-dwelling senior citizen housing. Intercom systems for doctors' offices and examining rooms.

**MULTI-VOX LTD.**, 9967 St. Michel Blvd., Montreal  
H1H 5G7, Quebec, Canada Tel.: 514-321-3131

President: Fernand Parent  
Sales Manager: Robert Girard  
Chief Engineer: Dominique Malenfant  
Operations Manager: Georges Morissette  
Products: audio amplifiers, electronic carillons and chimes, simplex and duplex intercom systems, solid state and microprocessor intercom systems for apartments, hospital and health care facilities, schools, institutions and industries, paging systems.

**POWERTRONIX**, 10623 Lawson River, Fountain Valley,  
CA 92708 Tel.: 714-963-5411

President: Robert Gehlke  
Sales Manager: Irv Weisman  
Products: 200W current drive distribution amplifiers with 24V-48 VDC emergency back-up power capability. 24 VDC mobile amplifier with 3 electronically-switched, prioritized inputs. Preamp with 5 electronically switched, prioritized inputs.  
See full listing under **Audio Amplifiers**.

**RAULAND-BORG CORP.**, 3535 W. Addison St.  
Chicago, IL 60618 Tel.: 312-267-1300  
TWX: 910 221 1290

President: William Krucks  
Vice President, Sales and Marketing: Kenneth T. James  
Sales Manager: Rick Blunt  
Chief Engineer: Lawrence Gleason  
Products: nurse-call systems ("TeleNurse" and "Responder").  
See full listing under **Engineered Sound Systems**.

**RING GROUP OF NORTH AMERICA**, 230  
Community Dr., Great Neck, NY 11021  
Tel.: 516-487-0250 800-645-9690

Vice President: Peter McLean  
Sales Manager: Stan Davis  
Chief Engineer: Jim Small  
Products: Ring 3000 school systems, duplex intercom (2 to 5000 station, 2 alarm channels, 8 programmer channels, telephone interface field programmable); speakers and baffles.  
See full listing under **Intercom Systems—Duplex**.

**SIEDLE INTERCOM/USA**, One Wynnewood Rd.,  
Wynnewood, PA 19096 Tel.: 1-800-874-3353

President: Earl Zausmer  
Sales Manager: Steve Camp

Products: 2-wire apartment house intercoms for duplex communications between front door and apartment door, chime announcement and door release from handset.

**SOUNDOLIER, 1859 Intertech Dr., Fenton, MO  
63026 Tel.: 314-962-9870**

Vice President/Consultant for Marketing: Herbert M. Jaffe  
Director of Sales: Paul Grote  
Chief Engineer: John Saller  
Vice President, Sales & Marketing: Tom Erickson  
Products: high quality, commercial sound loudspeakers, enclosures and accessories for music, alarm and public address systems, baffles for ceilings and walls, matching transformers and backbox enclosures. See full listing under **Loudspeakers & Accessories**.

**SPECO, DIV., COMPONENTS SPECIALTIES INC.,  
1172 Rt. 109, P.O. Box 624, Lindenhurst, NY  
11757 Tel.: 516-957-8700 (New York)  
1-800-645-5516 (Outside NY)**

President: Louis W. Keller  
Vice President, Sales: Mel Hulkower  
Vice President & General Manager: James Ganci  
Regional Sales Managers: Eric Forman, Bruce Kurtz  
Products: P.A. horns, amplifiers, tuners, loudspeakers, wall baffles, speaker assemblies, outdoor speakers, sound columns, ceiling grilles, transformers, L-pads, attenuators, accessories, microphones, intercoms, alarm sirens, multitestors, oscilloscopes.

**TALK-A-PHONE CO., 5013 N. Kedzie Ave., Chicago,  
IL 60625 Tel.: 312-539-1100**

President: Z. Liberman  
Sales Manager: Dan F. Kagan  
Products: complete line of intercom for hospital/laboratory applications. Private and non-private units. From 40 station capacity chief to totally hands-free automation system for CAT scanner and other diagnostic labs.

**TEKTONE SOUND & SIGNAL MFG. INC., 1331 S.  
Killian Dr., Lake Park, FL 33403  
Tel.: 305-844-2383**

President: M. Mira  
Sales Manager: Carlos Mira  
Chief Engineer: J. Switzer  
Products: intercom systems for home, apartment, commercial/industrial, institutional—telephone, loudspeaking and door answering. Nurse call, security/alarm and AM/FM radio intercom systems. See full listing under **Intercom Systems: Apartment & Residential**.

## INTERCOM SYSTEMS — PRODUCTION & THEATRICAL

**RTS SYSTEMS, INC., 1100 W. Chestnut St., Burbank,  
CA 91506 Tel.: 818-840-7119**

President: Bob Ringer  
Sales Manager: Shelley Harrison  
Chief Engineer: Stan Hubler  
Vice President, Marketing: Douglas Leighton  
Products: Professional intercom systems, conference line and dedicated line, IFB systems. Pro audio amplifier, phonopreamp, 10-watt monitor amp and buffer amp.

**SPECO, DIV., COMPONENTS SPECIALTIES INC.,  
1172 Rt. 109, P.O. Box 624, Lindenhurst, NY  
11757 Tel.: 516-957-8700 (New York)  
1-800-645-5516 (Outside NY)**

President: Louis W. Keller  
Vice President, Sales: Mel Hulkower

BB-56

Vice President & General Manager: James Ganci  
Regional Sales Managers: Eric Forman, Bruce Kurtz  
Products: P.A. horns, amplifiers, tuners, loudspeakers, wall baffles, speaker assemblies, outdoor speakers, sound columns, ceiling grilles, transformers, L-pads, attenuators, accessories, microphones, intercoms, alarm sirens, multitestors, oscilloscopes.

**TALK-A-PHONE CO., 5013 N. Kedzie Ave., Chicago,  
IL 60625 Tel.: 312-539-1100**

President: Z. Liberman  
Sales Manager: Dan F. Kagan  
Products: full line of intercom systems for production/theatrical applications of any size—from 2 station K-LC-2 to 30 Watt Chief Redi-Power systems. Also totally hands-free Automation systems for theater ticket booth applications.

**TECHNICAL PROJECTS, INC., 449 Princeton Ave.,  
P.O. Box 1449, Barrington, IL 60010  
312-381-5350 800-562-5872**

Executive Vice President: Glenn Mullis  
Other Personnel: Bill Griffis, Sibbelina Mullis  
Products: complete duplex communications systems, including headsets, headset stations, master stations, power supplies, talkback/paging loudspeaker stations, adaptors and accessories. Also MJS401D Audio Test and Measurement system with IEEE interface capability.  
District Offices:  
Professional Audio Marketing, New York, NY, 516-367-8620  
Design Factors, La Habla, CA, 213-697-7576  
William M. Linz Associates, Deerfield, IL, 312-227-7222  
Jerry Hudson, Irving, TX, 214-256-7665  
Vector, Seattle, WA, 206-322-4343

**TELEX COMMUNICATIONS, INC., 9600 Aldrich Ave.  
S., Minneapolis, MN 55420 Tel.: 612-887-5550**

President: John Howe  
Sales Manager: Claude Kleiman  
Director of Marketing: Claude Kleinman  
Products: closed-circuit intercom systems for headset or speaker station listening with 2, 3 and 4 channel masterstations. See full listing under **Microphones**.

## LIFE SAFETY & VOICE EVACUATION SYSTEMS

**DUKANE CORPORATION, 2900 Dukane Dr., St.  
Charles, IL 60174 Tel.: 312-584-2300**

President: William B. Clark  
Sales Manager: Jim Shane  
Chief Engineer: Gordon Mielke  
Marketing Manager: Craig Lyons  
Products: nurse call, intercom, voice paging, clock, sound masking, staff registry and voice evacuation systems for health care, institutional and industrial markets. See full listing under **Paging Systems**.

**EDCOM, A Division of BCE/Edcom Inc., 755 Center  
St., Lewiston, NY 14092 Tel.: 716-754-7130**

President: Peter Jova  
Vice President of Marketing: James K. Wood  
Chief Engineer: Alan Butterfield  
Office Manager: Janet Gorman  
Products: microprocessor-controlled school & administrative communication systems; correctional & retirement complex systems; conference & simultaneous interpretation systems; life safety systems for commerce & industry.

Sound & Communications

**TT DATA EQUIPMENT & SYSTEMS DIVISION, 20**  
Mayfield Ave., Edison, NJ 08837  
Tel.: 201-225-6121 800-524-1646

Vice President: Donald Duthalen  
Chief Engineer: Jeffrey Stellman  
Products: microprocessor based duplex intercom systems 8-4,000 lines,  
variety of stations — desk, wall, flush with or without handsets.

**GERON ELECTRONIC SYSTEMS, INC., 3554 N. Clark**  
St., Chicago, IL 60657  
Tel.: 312-528-4020 800-621-1903

President: Jerome Chesnut  
Sales Manager: John Charczuk  
Products: intercom security-systems for apartment buildings,  
townhouses; combination emergency call/intercom systems for elderly  
housing; hospital, nursing home, institutional, prison, school, and  
territory communications and signaling systems.  
See full listing under **Intercom Systems—Apartment & Residential.**

**MUTLI-VOX LTD., 9967 St. Michel Blvd., Montreal**  
H1H 5G7, Quebec, Canada Tel.: 514-321-3131

President: Fernand Parent  
Sales Manager: Robert Girard  
Chief Engineer: Dominique Malenfant  
Operations Manager: Georges Morissette  
Products: audio amplifiers, electronic carillons and chimes, simplex and  
duplex intercom systems, solid state and microprocessor intercom  
systems for apartments, hospital and health care facilities, schools, in-  
stitutions and industries, paging systems.

**POWERTRONIX, 10623 Lawson River, Fountain Valley,**  
CA 92708 Tel.: 714-963-5411

President: Robert Gehlke  
Sales Manager: Irv Weisman  
Products: 200W current drive distribution amplifiers with 24V-48 VDC  
emergency back-up power capability. 24 VDC mobile amplifier with  
electronically-switched, prioritized inputs. Preamp with 5  
electronically-switched, prioritized inputs.  
See full listing under **Audio Amplifiers.**

**SAN MING ELECTRONIC SOUND EQUIPMENT CO.,**  
LTD., 12715 Western Ave., Garden Grove, CA  
92641 Tel.: 714-891-2252

President; Hugh C. Hsieh  
Sales Manager: Leon C. Hsieh  
Chief Engineer: S.W. Hsu  
International Sales: Hua C. Hsieh  
Products: high-intelligence multi-tap paging horns, heavy-duty driver  
units for PA and siren applications, extra-heavy-duty driver horns for  
community warning systems, megaphones.

**SPECO, DIV., COMPONENTS SPECIALTIES INC.,**  
1172 Rt. 109, P.O. Box 624, Lindenhurst, NY  
11757 Tel.: 516-957-8700 (New York)  
1-800-645-5516 (Outside NY)

President: Louis W. Keller  
Vice President, Sales: Mel Hulkower  
Vice President & General Manager: James Ganci  
Regional Sales Managers: Eric Forman, Bruce Kurtz  
Products: P.A. horns, amplifiers, tuners, loudspeakers, wall baffles,  
speaker assemblies, outdoor speakers, sound columns, ceiling grilles,  
transformers, L-pads, attenuators, accessories, microphones, intercoms,  
alarm sirens, multitestors, oscilloscopes.

**VERREX CORPORATION, 1130 Route 22 West, Moun-**  
tainside, NJ 07092 Tel.: 201-232-7000

President: Thomas G. Berry  
Sales Manager: Richard Krochmal  
Chief Engineer: David G. Butz

Products: supplier of engineered life safety and voice evacuation systems  
worldwide since 1946. Systems supplied to electrical contractors and  
end users for offices, hospitals, schools, plants, etc.

**WHELEN ENGINEERING CO., INC., Route 145, Win-**  
throp Road, Chester, CT 06412-1035  
Tel.: 203-526-9504

President: John F. Olson  
Sales Manager: Howard M. Berke  
Chief Mechanical Engineer: Wayne Lyons  
Products: audible & visual signalling devices for automotive & industrial  
applications, including strobe & rotating beacons, light bars, vehicle  
sirens & public address systems, and high-power outdoor warning  
systems.  
See full listing under **Alarm & Security.**

## LOUDSPEAKERS & ACCESSORIES

**A B SYSTEMS, INC., 11480 Sunrise Gold Circle,**  
Rancho Cordova, CA 95670 Tel.: 916-635-0890

President: Robert Bird  
Sales Manager: Irwin Laskey  
Chief Engineer: Jeff Kuells  
Other Personnel: George Anderson, Dona Maxcy  
Products: power amplifiers, mixer amplifiers, mono and dual bi  
amplifiers and tri-amplifiers. Commercial ATD series power amplifiers  
mixers, and loudspeakers. Provide full sound reinforcement and  
distributed system capabilities.  
See full listing under **Audio Amplifiers.**

**ACCUSONIC SYSTEMS CORP., (Subsidiary of De-**  
sign Atronics Inc.), 2101 Jericho Turnpike, New  
Hyde Park, NY 11040 Tel.: 516-328-3300

President: Sol Schwartz  
Sales Manager: Dennis Goodman  
Products: military and severe environment microphones, speakers, and  
headsets.

**ACOUSTAT, Division of David Hafler Co., 3101 S.W.**  
1st Terrace, Ft. Lauderdale, FL 33315  
Tel.: 305-462-6700

President: Edward Gately  
Sales Manager: Frank Sterns  
Chief Engineer: James Strickland  
Plant Manager/Engineer: Andrew Szabo  
Products: electrostatic loudspeakers, amplifiers, and preamplifiers.

**AIPHONE INTERCOM SYSTEMS, 1700 13th Ave.,**  
N.E., Bellevue, WA 98005 Tel.: 206-455-0510

President: Hiko Shimoda  
Sales Manager: Jim Morrison  
Chief Engineer: Jun Matsumoto  
Products: industrial, business, residential, loudspeaking, telephone  
video intercom/security systems with paging talk-back; six  
microprocessor systems available; mixer amplifiers, paging speakers  
horns, drivers, ceiling speakers.

**ALTEC LANSING CORPORATION, Box 26105,**  
Oklahoma City, OK 73126-0105  
Tel.: 405-324-5311

President: F. Davis Merrey  
Vice President of Marketing: Gary Rilling  
Sales Manager: Gayle Campbell  
Products: industrial and professional electronic and loudspeaker pro

ducts including mixers, power amplifiers, equalizers, high power speakers and compression drivers, constant directivity horns, crossovers and microphones.

See full listing under **Audio Amplifiers**.

**AMERICAN ACOUSTICS**, One Mitek Plaza, Winslow,  
IL 61089 Tel.: 815-367-3811

President: Loyd Ivey

Sales Manager: Rob Landsberg

Chief Engineer: Nick Leindecker

Products: D-Series digital loudspeakers: state-of-the-art technology; ideal for commercial and industrial applications where aesthetics and true hi-fidelity are key considerations.

Regional Sales Representatives:

Jane Straus, Schaumburg, IL, 312-303-1310

Dennis Raymer, Walton, IN, 219-626-3115

Thom Fehrman, Winslow, IL, 815-367-3811

Pete Kallaof, Creve Coeur, MO, 314-878-3365

**APOGEE SOUND INC.**, 1150 Industrial Ave., Suite C,  
Petaluma, CA 94952  
Tel.: 707-778-8887 (National) 800-528-3939 (CA)

President: Ken DeLoria

Vice President Sales: Joe Manning

Vice President Marketing: Brian Glenn

Chief Engineer: Ken DeLoria

Products: arrayable bi-amp portable loudspeaker, multipurpose 2-way single-amp portable loudspeakers, tri-amp portable loudspeaker. Speakers designed for stage monitoring, theater, and audio visual use. Including signal processors, equalization.

See full listing under **Pro Audio Sound Systems & Products**.



**ARGOS PRODUCTS CO., INC.**, 600 S. Sycamore  
St., Genoa, IL 60135 Tel.: 815-784-5118

President: D. C. MacLaughlin

Vice President, Marketing Manager: Ron Evers

Products: indoor/outdoor sound columns, packaged sound systems, PA portable sound lecterns, baffle/speaker combinations, baffles, speaker systems and enclosures.

District Offices:

Ted Firaneck Sales, Pontiac, MI

Nevco Inc., Kansas City, MO

W. A. Hendrickson Co., N. Scituate, MA

Maish Sales, Mulberry, IN

TMC Sales, Fort Lee, NY

Shamrock Sales, Dayton, OH

Pacnor Marketing, Lynwood, WA

Murphy & Cota, Atlanta, GA

Mel Foster-Technical Sales, Edina, MN

Peregrine Southwest Reps., Houston, TX

Stinson Associates, Wynnewood, PA

Lewis & Dunnigen, Albany, NY

G. McL. Cole Co., Parkridge, IL

Wes Tech Marketing, Culver City, CA

Bencsik Assoc., Ocala, FL

**ATLAS SOUND (Div. American Trading & Production Corp.)**, 10 Pomeroy Road, Parsippany,  
NJ 07054 Tel.: 201-887-7800

Vice President Sales and Marketing: Tom Erickson

Vice President, Consultant for Marketing: Herbert M. Jaffe

Director of Sales: Paul Grote

Chief Engineer: John Saller

Products: reflex, radial, sectoral column, explosion-proof, marine, mobile loudspeakers and components for communications, alarm, intercom and sound systems. Desk, table, boom floor stands. Microphone stand accessories.

Field Representatives:

Atlas Sound, Ennis, TX, 214-875-8413

J.R. Morgan Agency, Phoenix, AZ

Ellard E. Strassner Co., Los Angeles, CA

Warren Assoc., Santa Clara, CA

Atlas Electronics, Ltd., Toronto, Ontario

**AUDISAR**, Box 1561, Bellevue, WA 98009  
Tel.: 206-454-2040

President: Robert E. Munger

Products: industrial audio and broadcast equipment, audio transformers, loudspeakers, power amplifiers, mixers, sound projector interface device, test equipment, specials and engineered sound systems.

**AUERNEIMER LABS AND CO.**, 4561 E. Florence  
Ave., Fresno, CA 93725 Tel.: 209-442-1048

President: Curly Auernheimer

Products: loudspeaker systems for studio, recording, mix-down, meeting rooms, auditoriums; one, two, three-way and sound columns.

**AURATONE CORPORATION**, P.O. Box 698, Cor-  
onado, CA 92110 Tel.: 619-297-2820

President: Jack Wilson

Sales Manager: Elaine Wilson

Chief Engineer: Jack Wilson

Products: monitor loudspeaker systems for recording studios, radio broadcasting, TV stations, post production houses, AV, sound reinforcement and sound distribution.

District Office:

Metrorep Sales, Inc., Freehold, NJ 07728

**BES/Bertagni Electroacoustical Systems, Inc.** 12753  
Moore St., Cerritas, CA 90701  
Tel.: 213-926-0201

President: K. L. Ching

Sales Manager: Dennis Schulgen

Chief Engineer: Alex Bertagni

Products: high performance, hemispherically radiating ceiling speakers with 180° dispersion pattern — closely resembles flat ceiling tiles. Omnidirectional outdoor sound reinforcement speakers with 360° dispersion. Omnidirectional Thinline series for churches and theaters.

Main Offices:

Dan Speegle, Peregrine Southwest Reps., Houston, TX, 713-772-6765

Carl Schwartz, Powerline, Evanston, IL, 312-864-1147

Joel Schwartz, L.C.A. Sales, Tuckahoe, NY, 212-585-1645

Bob Gale, World-Wide Electronics, Pembroke Pines, FL, 305-966-662

Henry Phillips, Jim Light, Mark Winchester, Dave Pergantis;

Henry Phillips Co., Roswell, GA, 404-992-3070

Roger Ponto, Roger Ponto Assoc., Inc., Bellevue, WA, 206-821-2996

Geoffry W. Keleher, Design Factors, La Habra Heights, CA,  
213-697-7576

James Chang, JC Electronics, Honolulu, HI, 808-943-8514

Robert R. Sherwood, L.C.A. Sales, Springdale, CT

Chet Flynn, The Smith Company, Norwell, MA, 617-659-1463

Marcus Johnson & Assocs., St. Charles, MO, 314-723-8310

Mel Foster Technical Sales, Edina, MN, 612-941-9800

SMS, Evergreen, CO, 303-674-3390

Holland Products, Canandigua, NY, 716-396-2804

SLK-Teck Rep Assocs., Hayward, CA, 415-785-4531

**BOGEN, A Lear Siegler Company**, 50 Spring St., P.O.  
Box 575, Ramsey NJ 07446 Tel.: 201-934-8500

President: John H. Ochtera

Vice President, Marketing: Carl C. Dorwaldt

Vice President, Engineering: Mark Koller

Products: commercial sound and communication systems and equipment including amplifiers, mixers, loudspeakers, microphones, telephone

aging equipment, tuners, intercoms, audio surveillance and centralized sound systems.

See full listing under **Engineered Sound Systems**.

# **BOSE**

**BOSE CORPORATION**, The Mountain, Framingham,  
MA 01701 Tel.: 617-879-7330

President: Sherwin Greenblatt

Chief Engineer: John Carter

Sales Manager: John Stiernberg

Other Personnel: Dave Bell, Barry Luz, Mark Mayfield, Ken Jacob

Products: professional loudspeaker systems for portable and installed applications including sound reinforcement, commercial sound and foreground music. Modeler™ computer software for designing commercial sound systems.

Sales Representatives:

Tim Dorwart, Whitehall, PA, 215-266-0971

Bruce Myers, Longmont, CO, 303-776-6885

**BOZAK, INC.**, 326 South St., New Britain, CT  
06051-3721 Tel.: 203-225-0555

President: Donald D. Bowers

Director of Marketing: William J. Kieiltyka

Chief Engineer: Sheldon Glick

Products: foreground speaker systems and professional mixers.

See full listing under **Disco Systems & Supplies**.

**CELESTION INDUSTRIES, INC.**, Kuniholm Dr., Holiston,  
MA 01746 Tel.: 617-429-6706  
800-235-7757

Chief Executive Officer: William G. McGrane

Marketing Manager: Mary Warbasse

Products: professional sound reinforcement loudspeakers. Bullet and rectangular horn tweeters, compression drivers, horns and high-power low frequency cambric edge speakers, 8, 10, 12, 15 and 18.

**DETEC GAUSS**, 9130 Glenoaks Blvd., Sun Valley,  
CA 91352 Tel.: 213-875-1900

President: W. Mort Fujii

Sales Managers: J. Fleischmann, Jon Williams

Chief Engineer: J. Williams

Products: musical component loudspeakers, precision components for sound reinforcement, custom systems, high-speed tape duplicating equipment.

**COMMUNITY LIGHT & SOUND**, 333 E. 5th St.,  
Chester, PA 19013 Tel.: 215-876-3400

President and Chief Engineer: Bruce Howze

Sales Manager: John D. Strand

Vice President, Engineering: John T. Wiggins

Products: high efficiency loudspeakers, loudspeaker systems and enclosures, public address and sound reinforcement products, voice warning systems and OEM designs.

See full listing under **Pro Audio Sound Systems**.

**J. W. DAVIS & CO.**, 3215 Canton St., Dallas, TX 75226  
Tel.: 214-651-7341 Texas Wats: 800-442-1564  
National Wats: 800-527-5705

President: Charles Griffiths

Vice President Sales: Jack W. Tucker

Products: all types of loudspeakers, baffles, transformers, including wall and ceiling mount. Special patio and underwater speakers also available. Types include horns, columns and vented enclosures for commercial or professional applications.

See full listing under **Pro Audio Sound Systems**.

**DCL COMPANY**, 6340 S.W. 145th St., Miami, FL  
33158 Tel.: 305-232-2199

President and Chief Engineer: Daniel Longest

Products: computer-aided design programs for speaker systems; low frequency driver/enclosure alignment (tuning) with frequency response curves; custom design and computer modeling.

District Office:

Caribbean Electronic Sales Associates, Miami Lakes, FL, 305-821-3417

**DUKANE CORPORATION**, 2900 Dukane Dr., St.  
Charles, IL 60174 Tel.: 312-584-2300

President: William B. Clark

Sales Manager: Jim Shane

Chief Engineer: Gordon Mielke

Marketing Manager: Craig Lyons

Products: nurse call, intercom, voice paging, clock, sound masking staff registry and voice evacuation systems for health care, institutional and industrial markets.

See full listing under **Paging Systems**.

**EASTERN ACOUSTICS WORKS**, 59 Fountain St.,  
Framingham, MA 01701 Tel.: 617-670-1478

President: Ken Berger

Sales Manager: Frank Loyko

Chief Engineer: Kenton Forsythe

Other Personnel: Sandy MacDonald

Products: professional loudspeaker products including full-range systems, bass and mid-bass horns, drivers, and studio monitor systems

Sales Representatives:

Marcon, Dallas, TX, 214-521-4313

Fleetwood Marketing, Madison, IN, 812-265-6054

GMI, Avon, MA, 617-588-8043

W.J. Ray Assocs., Atlanta, GA, 404-351-6367

Wire World Electronics, Miramar, FL, 305-966-6622

**ELECTRONIC SYSTEMS GROUP, INC.**, 4405 Vineland  
Rd., St. C-8, Orlando, FL 32811  
Tel.: 305-423-2363

President: Martin Collins

Sales Manager: Ron Neilson

Chief Engineer: Martin Collins

Products: Soundscape weatherproof loudspeakers for garden and outdoor applications.

**ELECTRO-VOICE, INC.**, 600 Cecil St., Buchanan  
MI 49107 Tel.: 616-695-6831

President: Robert D. Pabst

Vice President, Sales and Marketing: Paul McGuire

Chief Engineer: Earl Harris

Director of Marketing: Jim Holt

Products: public address and component high-fidelity loudspeakers and systems, high-performance compression drivers, horns, low-frequency systems, mixers, mixing consoles, signal processors and crossover networks.

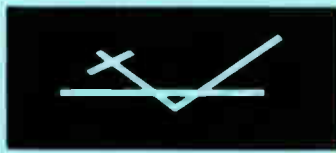
See full listing under **Engineered Sound Systems**.

**EMILAR**, 1365 N. McCan St., Anaheim, CA  
92806 Tel.: 714-632-8500

Other Personnel: Algis Renkus

Chief Engineer: Jonas Renkus

Products: mid & hi frequency compression drivers, horns, bass loudspeakers, passive networks for professional applications.



## ENVIRONMENTAL SOUND®

**ENVIRONMENTAL SOUND**, 31220 La Baya Dr., Bld. 110, Westlake Village, CA 91362  
Tel.: 818-706-0228

President: Pascal Delbuck  
Sales Manager: Jean Pierre  
Chief Engineer: Pascal Delbuck

Products: drop ceiling monitors that fit directly into standard T-bar or grid ceiling. Pro Drop I 8-inch 2-way, ES-801 8 inch full range, ES-502 2-way, ES-602 6-inch 2-way. All ES Series speakers have multiple mounting. Video monitor series. Limited edition Pascal I and Pascal 2 "mind soars" multiple driver arrangement, mounting between 16 inches on center studs, optional speaker mounting hardware.

**FANE**, 1316 East Lancaster St., Fort Worth, TX 76102  
Tel.: 817-336-5114

President: Jerry Freed  
Sales Manager: Chuck Murray  
Chief Engineer: Jim Cowser

Products: Ross PA systems, EQ's, speaker enclosures, power amplifiers and Studiomaster professional mixers and power amplifiers.

**FOSTEX CORP. OF AMERICA**, 15431 Blackburn, Norwalk, CA 90650 Tel.: 213-921-1112

Sales Manager: Mark Cohen

Products: raw frame speakers, monitor speakers, headphones, microphones, power amps, multitrack recorders, synchronizers, mixers, signal processing equipment.

**FOURJAY INDUSTRIES, INC.**, 3400 Stop Eight Rd., Dayton, OH 45414 Tel.: 513-890-6444

President and General Manager: J. M. Fulkerson II  
Director of Sales: M. W. (Bud) Frawley

Products: ceiling white recessed baffles, time-saving baffle mounting devices, protective covers, wall baffles and music speakers. Horn speakers for paging/talkback, intercom, telephone and security systems.

**FRAZIER**, Route 3, Box 319, Morrilton, AK 72110 Tel.: 800-643-8747

President: Earl Love  
Sales Manager: Hank Shaw  
Chief Engineer: Jay Mitchell

Products: commercial and pro loudspeakers and audio signal processors. Portable and floor model lecterns.

**GEMCO ELECTRONICS, INC.**, P.O. Box 993, 550 Airport Rd., Gallatin, TN 37066  
Tel.: 615-452-5960

President: Jerry A. Graves  
Chief Engineer: Todd Adams  
Office Manager: Mrs. Tiny Brown

Products: wall baffles, speakers, ceiling grilles, sound columns, transformers for background music and paging industries.

**GOLLEHON INDUSTRIES, INC.**, 3105 Madison Ave. SE, Grand Rapids, MI 49508 Tel.: 616-247-8231

President and Chief Engineer: John T. Gollehon  
Sales Manager: Don A. Drown  
Customer Service Manager: Elena Dillre

BB-60

Products Warranty Manager: Gloria Messer

Products: sound reinforcement speakers for nightclubs, showrooms, churches, and auditoriums. High power handling, constant directivity dispersion, and full-range response. Penetrator Series of horn-loaded cone drivers, high-frequency drivers and horns as components, and cabinets.

Sales Representatives:

Peter Wood, Belton, TX, 817-939-2076  
Warren Assoc., Santa Clara, CA, 408-988-7762  
Control Assembly, Pittsburgh, PA, 412-561-0293

**HARRIS CORP., DRACON DIV.**, 809 Calle Plano, Camarillo, CA 93010 Tel.: 805-987-9511

Vice President/General Manager: John R. Mason  
Director, Domestic Sales: Tom Erdmann  
Vice President, Sales & Marketing: Jack McGuigan  
Chief Engineer: Joe Mader

Products: telephone integrated paging systems for PBX, PABX and key systems.

See full listing under **Paging Systems**.

**IMC**, 1316 E. Lancaster, Ft. Worth, TX 76102  
Tel.: 817-336-5114

President: Jerry Freed  
Sales Manager: Chuck Murray  
Chief Engineer: Jim Cowser

Products: Akai—multitrack recorder, synthesizers. Studiomaster—recording and live mixing consoles. Ross—multitrack recorders, PA systems, guitar amps and effects. Fane—professional loudspeakers and compression drivers.

**INTERSONICS, INC.**, 3453 Commercial Ave., Northbrook, IL 60062 Tel.: 312-272-1772

President: Roy Whymark

Sales Manager: Thomas Melzer  
Chief Engineer: Thomas Danley  
Other Personnel: Dr. Charles Rey

Products: servo-drive loudspeakers, subwoofers run by a servo motor and driveshaft principle — no voice coils!

Sales Representatives:

Metrorep Sales, Freehold, NJ, 800-526-2331  
Audio Marketing, Westmont, IL, 312-655-1180  
Meyer Marketing, Deerfield Beach, FL, 305-487-0540  
Reptech, Terrel, TX, 214-222-2131  
GMI, Avon, MA, 617-588-8043  
Audio Marketing, Brecksville, OH, 216-526-2426  
Darmstedter Assocs., Baldwinsville, NY, 315-638-1261  
Profession Sound & Light, Lakewood, CO, 303-986-5999  
Roger Ponto & Assocs., Kirkland, WA, 206-821-2996  
Secom, Chamblee, GA, 404-455-0672  
The PA Shop, Edmonton, Alberta, 403-424-3501

**JBL PROFESSIONAL**, 8500 Balboa Blvd., Northridge, CA 91329 Tel.: 818-893-8411

President: Ron Means

Vice President, Sales: Ken Lopez  
Applications Engineer: Drew Daniels

Products: high quality loudspeakers and loudspeaker systems of all kinds; automatic microphone mixer; electronic crossover; special loudspeakers for musical instruments.

District Offices:

Neil Conley, Bedford, TX  
Bill Hamilton, Folsom, PA  
Steve Armstrong, Northridge, CA  
Tom Walter, Barrington, IL

**E.M. LONG ASSOCIATES**, P.O. Box 2727, Oakland, CA 94602 Tel.: 415-531-8725

President: Edward M. Long  
Sales Manager: Debbie Long

Products: calibration standard instrument monitor loudspeakers, ELF™ bass extender systems, QA-200 electro-acoustic analyzer.

Sound & Communications

**District Offices:**

Baus Engineering, Honolulu, HI, 808-949-1969  
Everything Audio, Encino, CA, 818-995-4175  
Leo's Audio, Oakland, CA, 415-652-1553  
Sound Genesis, San Francisco, CA, 415-285-8900  
Martin Audio, New York, NY, 212-541-5900

**LOWELL MANUFACTURING CO.,** 3030 Laclede Sta.  
Road, St. Louis, MO 63143  
Tel.: 314-781-9058

Chairman: Ben W. Lowell  
President: Dorothy H. Lowell  
Sales Manager: John Lowell  
Products: speakers, baffles, enclosures, mounting accessories, attenuators, pre-packaged speaker assemblies, switchpak and relay modules, sound masking equipment, microphone connector plates.

**LT ELECTRONICS LTD.,** 2535 Gerrard St. East, Scarborough, Canada M1N 1W9 Tel.: 416-691-9406

President: Jim Breedon  
Sales Manager: Jim Breedon  
Chief Engineer: J. Hesse  
Products: school intercoms, cone speakers, sound columns, packaged amplifiers, telephone amplifiers, speaker baffles, bass reflex speaker systems.  
See full listing under **Paging Systems.**

**McGOHAN ELECTRONICS, INC.,** 1033 Fairway Dr., Bensenville, IL 60106 Tel.: 312-595-2342

President and Sales Manager: James M. McGohan  
Chief Engineer: Bill Everhart  
Products: solid-state amplifiers for commercial sound, background music, and telephone interconnect. Mic mixers, zone paging preamplifier, mic and telephone line transformers and other accessories — off the shelf stock.  
See full listing under **Audio Amplifiers.**

**MG ELECTRONICS,** 32 Ranick Rd., Hauppauge, NY 11788 Tel.: 516-582-3400

President: Louis Maltz  
Vice President: Elliott Maltz  
Sales Manager: Stan Grey  
Products: full line of commercial sound speakers 4½" to 8", foreground and background mini speaker systems, attenuators and L-pads, ceiling grilles, paging horns with and without transformers.  
District Offices:  
Miller Assocs., Greenwich, CT  
DeWitt Austin Co., Marietta, GA  
Raymer Associates, Dallas, TX.

**MISCO/MINNEAPOLIS SPEAKER COMPANY,** 3806 Grand Ave., Minneapolis, MN 55409  
Tel.: 612-825-1010

President: Cliff Digre  
Sales Manager: Don Ringham  
Chief Engineer: Cliff Digre  
General Manager: Dan Digre  
Products: complete line of loudspeakers, ceiling baffles, transformers for commercial sound applications, waterproof, special impedance, coaxial, voice communications and custom design.  
District Offices:  
World Wide Electronics, Pembroke Pines, FL, 305-996-6622  
Lichtenauer & Associates, Antioch, CA, 415-757-1200  
Dick Bellew Sales, Dallas, TX, 214-644-7881  
W.A. Hendrickson Co., No. Scituate, MA, 617-545-0652  
Pacnor Marketing, Lynwood, WA, 206-771-6016

**MOTOROLA, INC.,** 4800 Alameda Blvd. N.E., Albuquerque, MN 87113 Tel.: 505-822-8801

Sales Manager: T.G. Gilder  
Chief Engineer: J. Bost  
Products: piezo ceramic speakers, produce tweeters, mid-range drivers, voice range devices.

**MTX LOUDSPEAKERS,** One Mitek Plaza, Winslow, IL 61089 Tel.: 815-367-3811

President: Lloyd L. Ivey  
Sales Manager: Rob Landsberg  
Chief Engineer: Nick Leiendecker  
Products: professional replay sound reinforcement loudspeaker systems; PA systems, speakers for commercial installations: foreground and background music systems, horns, drivers, complete line of home, automotive speakers.  
Regional Sales Managers:  
In MN, ND, SD, WI, NW IL, and NE IA, Thom Fehrman, Winslow, IL, 815-367-3811  
In KS, S. IL, IA, MO, and NB, Pete Kallaous, Creve Coeur, MO, 314-878-3365  
In IL midstate and Chicago, James Strauss, Schaumburg, IL, 312-303-1310  
In KY and IN, Dennis Ramer, Walton, IN, 219-626-3115

**MUSIC SUPPLY CO., INC.,** 809 N. Madison, Dallas, TX 75208 1-800-527-1522  
Tel.: Texas call collect 214-946-8450

President: W. E. Brown  
Products: speaker support trusses (T-bar bridge) to support 8" speakers. Prevent ceiling sag. For 2x4 and 2x2 and 4x4 lay-in type ceiling. Lightweight — 12 oz. — save freight.

**MUSIC SUPPLY CO., INC.,** 809 N. Madison, Dallas, TX 75208 Tel.: 1-800-527-1522  
Texas Collect 214-946-8450

President: W. E. Brown  
Products: speaker enclosure (Black Box-Top Hat) one piece, drawn construction. All Steel. U.L. listed.

**NORCON ELECTRONICS, INC.** 1260 Ralph Ave., Brooklyn, NY 11236 Tel.: 718-451-1112

President: Norman Schlaff  
Chief Engineer: Simon Kleynier  
Products: Norcon Talk-Thru communicator providing amplified hands-free communication through an environmental partition. Engineered sound reinforcement systems. Public address systems. Closed-circuit and master antenna television systems. Fire alarm systems.

**OAKTRON INDUSTRIES, INC.,** 1000 30th St., Monroe, WI 53566 Tel.: 800-356-3609

President: M. Copley  
Sales Manager: Jerry Disch  
Engineering: Pat Ochs  
Engineering Production: Robert Raymer  
Products: general, automotive, home entertainment, government, musical instrument and commercial sound. OEM research and development. Sound masking, transformers, ceiling grilles, metal stamping, auto speaker kits and accessories.  
District Offices:  
Neveco, Inc., Kansas City, MO  
C.B. Electronic Marketing, Arvada, CO  
Millar Electronics Inc., Atlanta, GA  
Kendall Assocs., Great Falls, VA  
Lessing Assocs., Newhall, CA  
Leo Barker Co., N. Little Rock, AR  
Jack Brown Elect. Sales, Whitestone, NY  
Campion Sales Co., Inc., Rowlett, TX  
Roy Colen Sales, Inc., Mill Valley, CA  
Electronic Specialists, Elmhurst, IL  
Steve Fisher Assoc., Glendale, AZ

Warren Kaufman Associates, Rochester, NY  
Kodo Associates, Inc., Minneapolis, MN  
The MacInnis Co., Norwood, MA  
Maish Sales, Mulberry, IN  
SRT Marketing, Tampa, FL  
Dick Schnepf Associates, Granada Hills, CA  
Shamrock Electronics, Inc., Dayton, OH  
RG Associates, Millis, MA  
Vector Corp., Seattle, WA

**OWI INC.**, 1160 Mahalo Place, Compton, CA  
90220 Tel.: 213-638-4732

President and Sales Manager: Ned Morioka  
Chief Engineer: Hiro Okayama  
Products: hi fidelity mini speakers with built-in 70 volt and 25 volt line transformer and weatherized/standard systems for foreground and background applications.

**PA CONCEPTS**, 450 W. Taft Drive, South Holland, IL  
60473 Tel.: 312-339-8014

President: Robert Vukelich  
Sales Manager: Mike Acklin  
Chief Engineer: Robert Vukelich  
Service Manager: Ross Hart  
Products: Wonderbox, a compact, high-level sound reinforcement system. For touring sound or permanent installations.

**PANASONIC INDUSTRIAL COMPANY, RAMSA**, 6550  
Katella Ave., Cypress, CA 90630  
Tel.: 714-895-7277

President: Scott Minakami  
Sales Manager: Steve Woolley  
Other Personnel: Gene Juall, Joe Crocco, Chris Foreman  
Products: pro audio and commercial sound products including mixers, mixer-amplifiers, power amplifiers, speakers, microphones, and a portable public address system with wireless microphones(s).  
See full listing under **Pro Audio Sound Systems & Products**.

**PARAMOUNT SOUND SYSTEMS**, 5555 Melrose Ave.,  
Los Angeles, CA 90038 Tel.: 213-468-4601

President: Earl Lestz  
Sales Manager: Jerry Barnett  
Product: GS-3 Omnispeaker, a direct burial outdoor speaker in shrub green color. It houses an 8" driver, optional 70-volt transformer.

**PASO SOUND PRODUCTS, INC.**, 14 First St., Pel-  
ham, NY 10803-1401 Tel.: 914-738-4800

Executive Vice President: Paul Mastrangelo  
Operations Manager: Anthony Sgueglia  
Sales Manager: David Moore  
Product Manager (Engineering): Ken O'Brien  
Credit Manager: Marilyn Beckerson  
Customer/Representative Support: Tommi Paladino  
Sales Administration (Order Expedite): Stacy Appel  
Products: indoor, outdoor, portable, mobile amplifiers, preamplifiers, mixers, booster amplifiers, AC/DC integrated amplifiers and boosters, intercom systems, multi-residential systems, microphones, wireless microphones, industrial grade auto reverse cassette machines, tuners, sound columns, speakers, baffles, driver units, trumpets, horns, full range loudspeaker systems, stage monitors, stands, accessories, equipment racks.  
See full listing under **Engineered Sound Systems**.

**PHILIPS MICROPHONES**, 77 Selleck St., Stamford,  
CT 06902 Tel.: 203-348-2121

Vice President/General Manager: S. R. Ravich  
Sales Manager: D. Talbot  
Technical Manager: D. Pilkington  
Products: full line of backplate electret condenser microphones for professional or special purpose use. This line includes: hand-held mics

w/equalization, gooseneck mics, noise-cancelling mics. Standard series include hypercardioid, ball-head mics, gooseneck, hypercardioid and gooseneck noise-cancelling w/table stand.

**POETKER COMMUNICATIONS LTD.**, 461 Manitou  
Dr., Kitchener, Ontario N2C 1L5  
Tel.: 519-893-1010

President: Bernie W. Poetker  
Sales Manager: Grant Ertel  
Chief Engineer: Lance Cooper  
Products: school and institutional communications products, Teletale™ institutional security systems, Trakker™ vehicle identification and control systems, nurse-call and health care products.  
See full listing under **Intercom Systems—Institutional**

**PORTLAND INSTRUMENT**, 1101A Air Way, Glendale,  
CA 91201 Tel.: 818-500-0137

President: Ron Fuller  
Sales Manager: Hendri Smit  
Other Personnel: Scott Tefkin  
Products: all-weather outdoor speaker.  
District Offices:  
Derek Allen Associates, Burbank, CA, 818-840-8327  
Peregrine Southwest, Houston, TX, 713-772-6765  
Yoreco, MN, 612-770-9760  
Robert Milsk, IN, 317-842-3400  
Professional Audio Assoc., Boston, MA, 617-229-6050  
C.L. Pugh, Cleveland, OH, 216-238-1777

**PRECISION ELECTRONICS, INC.**, 9101 King St.,  
Franklin Park, IL 60131 Tel.: 312-678-5350

President: W. S. Grommes  
Sales Manager: W. Stow  
Chief Engineer: A. A. Hart  
Products: integrated audio amplifiers. Amps for mono or stereo power, line, music-on-hold. Mixer preamplifiers, 2 ch. limiters or compressors, graphic equalizers, FM-AM tuners, background music receivers and systems, public address systems, custom engineered sound reinforcement systems, sound columns, trumpets, driver units, baffles, microphones and microphone stands.  
See full listing under **Audio Amplifiers**.

**PROJECTED SOUND INC.**, P.O. Box 112, 469 Avon  
Ave., Plainfield, IN 46168 Tel.: 317-839-4111

President: Margaret L. Hilligoss  
Sales Manager: Tom Hilligoss  
Chief Engineer: J. Mark Hilligoss  
Products: general purpose loudspeakers for intercom, PA, background music, etc.

**PYLE INDUSTRIES, INC.**, 501 Center St., Huntington,  
IN 46750 Tel.: 219-356-1200

President: Frank Pyle, Jr.  
Sales Manager: Mark E. Pyle  
Chief Engineer: Harold Rich  
Products: loudspeakers and accessories, including pro sound reinforcement/musical instrument, high fidelity, public address/commercial sound, and car stereo speakers and electronics.  
District Offices:  
Don Forth Assocs., W. Covina, CA, 818-919-2322  
Marcus Johnson Assocs., St. Charles, MO, 314-723-8310  
Mark Petty Assocs., Carol Stream, IL, 312-884-9096  
Steve Fisher Electronic Sales, Teaneck, NJ, 201-837-1200  
Morhan Exporting Corp., Plainview, NY, 512-293-5582

**THE Q LINE CORP.**, P.O. Box 20037, 2808 Lakeside  
Dr., Oklahoma City, OK 73120  
Tel.: 405-751-3294

President: John W. Quade  
Products: Q Liner speaker shield. Low cost speaker enclosure, mat-



hes speaker flange, protects against foreign matter, weather. Available in semi-rigid plastic/flame retardant plastic for background music and PA systems, auto radio/tape systems.

**QUAM-NICHOLS CO.**, 234 E. Marquette Rd., Chicago, IL 60637 Tel.: 312-488-5800

President: W. G. Little

Distributor Sales Manager: G. L. Johns

Chief Engineer: Oswald Rohrbacher

Products: loudspeakers, ceiling baffles, line matching transformers and rack box enclosures for background music, public address system and other commercial sound applications, attenuators.

District Offices:

Chuck Olson Assocs., Renton, WA

Given-Flanagan Assocs., W. Boylston, MA

R. E. Breuer Co., Pt. Washington, NY

Cartwright & Bean of Georgia, Atlanta, GA

The Lewis & Dunnigan Co., Inc., Syracuse, NY

Mandabach-Lehner Co., Columbus, OH

McBride Loudspeaker Source Inc., Waterloo, Ont.

Foster Technical Sales Co., Edina, MN

Robert Milsk Co., Southfield, MI

Mouthrop Sales, Inc., Pleasanton, CA

Bidwell Sales Assocs., Gardena, CA

J. Y. Schoonmaker Co., Inc., Dallas, TX

Gen Levy & Associates, Chicago, IL

Lowery Associates, Broomall, PA

R. W. King & Assoc., Prairie Village, KS

**RED ACOUSTICS (USA) LTD.**, 1231 Roth Dr., Lansing, MI 48910 Tel.: 517-694-3618

President: Ken Reed

Sales Manager (Europe): Mark Reed

Products: both active self-powered and passive loudspeakers with a number of models to cover a wide range of professional market needs. Initial Contacts Outside of USA:

Europe: Red Professional Sound Ltd., Unit 2, Colville Rd., London W38 BL, England

Canada: Servo Electronics, 138 Portage Ave. E., Winnipeg MB Canada R3C

Australasia: Wired for Sound PTY, 285 Burwood Rd., Hawthorne 3122, Melbourne, Australia

Asia: Sam Mogan Electroacoustics Ltd., 257 Selegie Rd., 02-297 Selegie Complex, Singapore 0718

**RING GROUP OF NORTH AMERICA**, 230 Community Dr., Great Neck, NY 11021 Tel.: 516-487-0250 800-645-9690

Vice President: Peter McLean

Sales Manager: Stan Davis

Chief Engineer: Jim Small

Products: Ring 3000 school systems, duplex intercom (2 to 5,000 station, 2 alarm channels, 8 programmer channels, telephone interface, field programmable); speakers and baffles.

See full listing under **Intercom Systems—Duplex**.

**SAN MING ELECTRONIC SOUND EQUIPMENT CO., LTD.**, 12715 Western Ave., Garden Grove, CA 92641 Tel.: 714-891-2252

President: Hugh C. Hsieh

Sales Manager: Leon C. Hsieh

Chief Engineer: S. W. Hsu

International Sales: Hua C. Hsieh

Products: high-intelligence multi-tap paging horns, heavy-duty driver units for PA and siren applications, extra-heavy-duty driver horns for community warning systems, megaphones.

**SOUNDOLIER**, 1859 Intertech Dr., Fenton, MO 63026 Tel.: 314-962-9870

Vice President/Consultant for Marketing: Herbert M. Jaffe

Director of Sales: Paul Grote

Vice President, Marketing & Sales: Tom Erickson

Chief Engineer: John Saller

Products: commercial sound loudspeakers, enclosures and accessories for music, alarm and public address systems, baffles for ceilings and walls, matching transformers and backbox enclosures.

District Offices:

Secom Systems, Atlanta, GA

Bencsik Associates, Ocala, FL

Monfort Electronic Marketing, Indianapolis, IN

Ziskind Associates, Rolling Meadows, IL

Soundolier, Laurinburg, NC

V.R. Morgan Agency, Phoenix, AZ

Ellard E. Strassner Co., Los Angeles, CA

Warren Assocs., Santa Clara, CA

Atlas Electronics Ltd., Toronto, Ontario

**SOUND PRODUCTS/3M**, 3M Center 225-45-10, St. Paul, MN 55144-1000 Tel.: 612-733-0447

Marketing Manager: Don Rada

Sales Manager: Jack Dingley

Products: music libraries for all purposes. Reliable players. Industrial quality intercoms, and vehicle detectors. Top-line message repeater. Speaker assemblies for distributed systems. Microphones, amplifiers and other sound system components.

# SOUNDSPHERE

**SOUNDSPHERE, SONIC SYSTEMS INC.**, 737 Canal St., Bldg. 23B, Stamford, CT 06902 Tel.: 203-356-1136

President: Peter Hamilton

Sales Manager: John Karamon

Products: various models of Soundsphere omnidirectional loudspeakers are used in live entertainment, churches, gymnasiums, airports, shopping malls and other locations that require sound reinforcement.

**SPECO DIV., Components Specialties, Inc.**, 1172 Rt. 109, P.O. Box 624, Lindenhurst, NY 11757 Tel.: 516-957-8700 (in NY) 1-800-645-5516 (outside NY)

President: Louis W. Keller

Vice President & General Manager: James Ganci

Vice President, Sales: Mel Halkower

Regional Sales Managers: Eric Forman, Bruce Kurtz

Products: PA horns, amplifiers, tuners, loudspeakers, wall baffles, speaker assemblies, outdoor speakers, sound columns, ceiling grilles, transformers, L-pads, attenuators, accessories, microphones, intercoms, alarm sirens, multimeters, oscilloscopes.

**TAD (Technical Audio Devices)**, 5000 Airport Plaza Dr., Long Beach, CA 90815 Tel.: 213-420-5700

President: Ken Noda

Sales and Marketing Manager: Mark Makabe

Products: loudspeakers, raw speakers, drivers, and a stabilized dispersion.

# TANNOY®

**TANNOY NORTH AMERICA INC.**, 300 Gage Ave. Unit -1, Kitchener, Ontario N2M2C8 Tel.: 519-745-1158

President: Wib Heuckroth

Sales Manager: Bill Calma

Other Personnel Order Desk: Rob Hofkamp

Credit: Kathy Kent

Products: a complete line of British manufactured, dual concentric - SGM series studio - broadcast monitors and Wildcat professional Hi-Fi PA. Both sound contractors & MI versions available.

District Offices:

World Wide Marketing, Miami, FL, 305-966-6622  
Protech Marketing, New Port Beach, CA, 714-675-4844  
Audio Associates, Glenwood, MD, 301-854-6122  
Hot House Marketing, Highland, NY, 914-691-6077  
Technical Marketing, Atlanta, GA, 404-457-0988  
Powerlines Marketing, Evanston, IL, 312-864-1147  
G.M.I., Avon, MA, 617-588-8043  
Joe Martin Sales, Austin, TX, 512-266-1113  
Blackhawk Marketing, Pacific Palisades, CA, 213-454-8196  
Disc Mastering, Nashville, TN, 615-254-8825

**TOA ELECTRONICS, INC., 480 Carlton Ct., S. San Francisco, CA 94080 Tel.: 415-588-2538**

President: Sam Sakata

Sales Manager, Commercial Division: Joe Green

Technical Support Manager: Bob Sweet

Products: engineered sound systems, commercial sound systems, amplifiers, dual amplifiers, tuners, equalizers, multi-functional preamplifiers, mixing consoles, speakers, horns, drivers, microphones, wireless systems, microcomputerized EXES intercom systems, CCTV, security systems.

See full listing under **Engineered Sound Systems**.

**UNIVERSITY SOUND, Electro-Voice, Inc., 600 Cecil St., Buchanan, MI 49107 Tel.: 616-695-6831**

President: Robert D. Pabst

Chief Engineer: Earl Harris

Vice President, Sales and Marketing: Paul McGuire

Director of Marketing: Jim Holt

Products: complete commercial sound line including: horns, PA and explosion-proof drivers, paging/talk-back speakers, weatherproof high-fidelity systems, submergence-proof and underwater speakers and transformers.

District Offices:

George M. Conneen Co., Inc., Springfield, PA  
Metropolis Audio Marketing, Inc., Edison, NJ  
R.J. Marketing Ltd., Rockville, MD  
The Smith Company, Hartford, CT  
Meyer Marketing, Deerfield Beach, FL  
Wilson Audio Sales, Nashville, TN  
Loppnow and Associates, Inc., Redmond, WA  
Randon and Associates, Mill Valley, CA  
Audio Resources, Westmont, IL  
B.C. Electronic Sales, Inc., Mission, KS  
Dick Bellew Sales, Inc., Dallas, TX  
C.L. Pugh & Assoc., Inc., Columbus, OH  
Riley & Petchell Sales, Inc., Detroit, MI  
Silver Peak Marketing Ltd., Wheat Ridge, CO  
Western Audio Sales, Glendale, CA

**VALCOM, INC., 1111 Industry Ave., Roanoke, VA 24013 Tel.: 703-982-3900**

President: J. W. Mason

Sales Manager: Donald Buck

Chief Engineer: D. Lynch

Products: telephone integrated paging and intercom systems, talkback, bell-buzzer, code call, PBX adapters, key telephone system ancillaries, loud-ringers, power supplies, amplified and talkback speakers.

See full listing under **Paging Systems**.

**WHELOCK, INC., 273 Branchport Ave., Long Branch, NJ 07740 Tel.: 201-222-6880**

President: Peter W. Tarlton

Vice President Sales/Marketing: William Goldstein

Vice President Engineering: Steve Andrews

Marketing Manager: J. Chris Olivieri

Products: audible/visual signaling devices for life safety and alarm systems and for telephone systems. Bells, horns, speakers, strobes, chimes and combinations, and paging systems.

See full listing under **Bell, Buzzers & Gongs**.

BB-64

**WHELEN ENGINEERING CO., INC., Route 145, Winthrop Road, Chester, CT 06412-1036 Tel.: 203-526-9504**

President: John F. Olson

Sales Manager: Howard M. Berke

Chief Mechanical Engineer: Wayne Lyons

Products: audible & visual signalling devices for automotive & industrial applications, including strobe & rotating beacons, light bars, vehicle sirens & public address systems, and high-power outdoor warning systems.

See full listing under **Alarm & Security**.

**WORKMAN ELECTRONIC PRODUCTS, P.O. Box 3828, 75 Packinghouse Rd., Sarasota, FL 33578 Tel.: 813-371-4242**

President: Linda Kast

Product Sales Manager: Roger Jeschke

Vice President Sales & Marketing: Jerry Able

Financial Comptroller: Robert Kast

Products: speakers, baffles, grilles, line transformers, L-pads, grilles and speakers and transformer combinations, baffles, speakers and trans. combinations; any combinations available.

District Offices:

Electronic Reps. Inc., Sarasota, FL, 813-351-4307  
Mid Central Sales, Fern Creek, KY, 502-239-5614  
Lectro Reps. Inc., Liberty, MO, 816-781-2522  
Don Forth Assoc., West Covina, CA, 818-919-2322  
Hank Miller Assoc., Cleveland, OH, 216-321-3900

**BOB WHITE ASSOCIATES, P.O. Box 39104, Solon, OH 44139 Tel.: 216-248-1317**

President: Bob White

Sales Manager: Tod White

Chief Engineer: George White

Products: professional sound products, disco systems, projection TV, professional lighting equipment.

See full listing under **Pro Audio Systems**.

## MAGNETIC TAPE SYSTEMS & SUPPLIES

**ACCURATE SOUND CORPORATION, 3515 Edison Way, Menlo Park, CA 94025 Tel.: 415-365-2843**

President: Ronald M. Newdell

Sales Manager: Don O'Bella

Chief Engineer: John Baxter

Products: high speed tape duplicating equipment, recording equipment, all professional audio products such as amplifiers, speakers, microphones, etc.

**AUDIO SERVICES CORPORATION, 4210 Lankershim Blvd., N. Hollywood, CA 91602 Tel.: 818-980-9891**

President: Richard Topnam, Sr.

General Manager: Richard Topnam, Jr.

Sales Manager: David Panfili

Chief Engineer: Michael Riner

Rental Manager: Tove Blue

Service Manager: Ron Meyer

Products: professional portable sound equipment, sales, rental, lease, service, consulting, design and manufacture.

**BURLINGTON AUDIO TAPES, INC., 106 Mott St., Oceanside, NY 11572 Tel.: 516-678-4414**

President: Ruth Schwartz

Vice President, Marketing: David J. Schwartz

Vice President: Rudy Schwartz

Products: all major brands of audio and video tapes, reels, cassettes and related supplies. Empty reels, hubs, boxes, etc.

Sound & Communications

**DETEC GAUSS**, 9130 Glenoaks Blvd., Sun Valley,  
CA 91352 Tel.: 213-875-1900

President: W. Mort Fujii

Sales Managers: J. Fleischmann, John Williams

Chief Engineer: J. Williams

Products: musical component loudspeakers, precision components for sound reinforcement, custom systems, high-speed tape duplicating equipment.

**EMS/MUSIC**, 2264 15th Ave. West, Seattle, WA  
98119 Tel.: 206-281-8686

Vice President National Music Service Sales: G. Bernard Kron

National Dealer Sales Desk: Mark Rubin, Steve Ducharme, Anne Walker

Products: automated Automixer system permits segues with EMS/Music foreground music tapes, tape cartridge players, foreground/background music services.

**FIDELIPAC CORP.**, 97 Foster Rd., P.O. Box 808,  
Moorestown, NJ 08110 Tel.: 609-235-3900

President: Robert S. Thanhauser, Jr.

Sales Manager: Jack M. Ducart

Vice President, Marketing: Arthur Constantine

Chief Engineer: Mike Sirkis

Products: broadcast equipment, audio broadcast equipment for the radio industry including DYNAMAX back-lubricated tape, cartridges, and DYNAMAX tape cartridge machines.

**GENEVA GROUP OF COMPANIES, INC.**, 7255 Flying  
Cloud Dr., Eden Prairie, MN 55344

Tel.: 612-829-1724

President: Edward E. Griffin

Sales Manager: James D. Kuhn

Chief Engineer: Mark Honnold

Products: accessories for audio tape, CD and video including head cleaners, demagnetizers, bulk erasers, splicing tabs and blocks, cables, alignment tapes, height gauges, cleaning solutions and swabs.

**GYR PRODUCTS**, 1515 S. Manchester Ave., Anaheim,  
CA 92802 Tel.: 714-772-1000

President: Crandall Gudmondson

Director of Marketing, Audio Products: Robert Hagemann

Director of Marketing, Video Products: Terry Tetirick

Products: multitrack audio tape recorders for conference and courtroom use; video cassette time lapse recorders for security use.

**GM COMMUNICATIONS, INC.**, 282 W. Kellogg Road,  
Bellingham, WA 98226 Tel.: 206-733-4567

President: Jim Wells

Sales Manager: Nick Solberg—Custom Systems

Sales Manager: Tom Ransom—Standard Systems

Chief Engineer: Jim Wolniakowski

Products: Go Cart random access cartridge playback unit. Instacart— instant access cartridge playback unit IGM-SC system controller.

**INFONICS, INC.**, 2302 E. Michigan Blvd., Michigan  
City, IN 46360 Tel.: 219-879-3381

President and Sales Manager: Carol Lant

Chief Engineer: David Smith

Service: Duane McKee

Products: professional, mid-speed audio duplication equipment; reel-to-reel, reel-to-cassette, cassette-to-cassette; cassette duplications.

**INTERNATIONAL TAPETRONICS CORPORATION/3M**, 2425 S. Main St., P.O. Box 241,  
Bloomington, IL 61702 Tel.: 309-828-1381

General Manager: Jack Hanks

Marketing Manager: Bob Bomar

Products: NAB broadcast cartridge machines & accessories.

**MACKENZIE LABORATORIES, INC.**, 5507 Peck Rd.,

P.O. Box 3029, Arcadia, CA 91006

Tel.: 800-423-4147 818-579-0440

President: A. R. Taylor

Sales: Joe M. Vitale

Vice President and Chief Engineer: N. Khattar

Products: solid-state, digital audio message repeaters, heavy-duty, endless-loop message repeaters, voice alarm and evac. equipment, voice security equipment, boardroom AV equipment control systems.

District Offices:

Avwest, Inc., Fountain Hills, AZ

Lex Lawson Assocs., Dallas, TX

Avcom, Inc., No. Olmstead, OH

Rancilio Assocs., St. Louis, MO

Warren Assocs., Santa Clara, CA

Piper Assocs., Needham, MA

Bencsik Assocs., Ocala, FL

The Media Man, Teaneck, NJ

Raleigh Perry & Assocs., Buford, GA

Ken Levy & Assocs., Chicago, IL

Design Factors, Hacienda Heights, CA

Austin Assocs., Middletown, MD

**NAKAMICHI U.S.A. CORP.**, 19701 South Vermont  
Ave., Torrance, CA 90502 Tel.: 213-538-8150

President: Yas Yamazaki

Sales Manager: Jeff Logan

Chief Engineer: Stephen Mascenik

Product Specialist: Michael Wuellner

Products: MR-1 three discrete head, rack mount, balanced/unbalanced professional cassette deck. MR-2 two head, three motor rack mount professional cassette deck.

**NORTRONICS CO., INC.**, 8101 Tenth Ave. No.,  
Minneapolis, MN 55427 Tel.: 612-545-0401

President: John A. Yngve

Marketing Manager: Ed Bedell

Engineering Manager: Mike Drees

Products: magnetic tape heads for reel-to-reel and cartridge tape recorders for the replacement and original equipment marketplace.

**PENTAGON INDUSTRIES, INC.**, 5115 N. Sheridan  
Rd., Chicago, IL 60640 Tel.: 312-271-8300  
800-621-3867

President: Lateef Khan

Sales Manager: Gopal Muntha

Chief Engineer: Batric Furundzic

Products: auto reverse cassette changer; four servo drive, sequentially operated, auto reverse cassette decks; provides over 8 hours of continuous background music; response to over 12,000 Hz.

See full listing under Audio-Visual Equipment & Systems.

**PHI TECHNOLOGIES, INC.**, 4605 N. Stiles, Oklahoma  
City, OK 73105 Tel.: 405-521-9000

President: Gary A. Zebrowski

Chief Engineer: Larry DeBell

Products: heavy-duty cassette tape transports, random-access message systems, cassette playback units for background music, message repeaters and digital audio message systems.

**SOUNDCRAFT USA**, 8500 Balboa Blvd., Northridge,  
CA 91329 Tel.: 818-893-4351

President: Ron Means

Sales Manager: Ken Lopez

Other Personnel: Linda Frank, Mark Gander, Shane Morris, Gary Lynn

Products: audio mixing consoles and multi-track tape machines. Applications include live recording sound reinforcement, studio recording, remote recording, broadcast and post production.

See full listing under Pro Audio Sound Systems & Products.

**TABER MFG. & ENG. CO.**, 1880 Embarcadero Rd.,  
Palo Alto, CA 94303 Tel.: 415-493-3811

President: Veldon F. Leverich  
Head Technician: Bob Souza  
Office Manager: Diane Leverich  
Products: bulk tape degaussers and audio replacement heads, distributor for McCurdy teleconference systems.  
District Office:  
AVSC, Inc., Palo Alto, CA, 415-493-3814

**TASCAM, Teac Professional Division**, 7733 Telegraph  
Road, Montebello, CA 90640 Tel.: 213-726-0303

President: Noria Tamura  
National Sales Manager: William Mohrhoff  
Director of Product Planning: Dave Oren  
Product/Service Manager: Jon Bliese  
Advertising Manager: Anders Madsen  
Products: a manufacturer committed to stereo, stereo plus cue and four-channel cassette and two-track up to 16 track open reel recorder/reproducers. Features include single-connector SMPTE interlock capability.  
See full listing under **Pro Audio Sound Systems & Products**.

**TOA ELECTRONICS, INC.**, 480 Carlton Court, S. San  
Francisco, CA 94080 Tel.: 415-588-2538

President: Sam Sakata  
Sales Manager: Joe Green  
Technical Services Manager: Bob Sweet  
Products: engineered sound systems, commercial sound systems, amplifiers, dual amplifiers, tuners, equalizers, multi-functional preamplifiers, mixing consoles, speakers, horns, drivers, microphones, wireless systems, microcomputerized EXES intercom systems, CCTV, security systems.  
See full listing under **Engineered Sound Systems**.

**UHER OF AMERICA**, 7067 Vineland Ave., N.  
Hollywood, CA 91605 Tel.: 818-764-1120

President: John Belgiorno  
Sales Manager: George Rose  
Products: heavy-duty open-reel and cassette recorders provide high performance and reliability along with innovative features for commercial and industrial applications. Choice of mono/stereo portable models. Film sync and long play speeds available.

## MESSAGE REPEATERS/ STORECASTERS

**ADVANCED MUSIC SYSTEMS**, Billington Road,  
Burnley, Lancs, England BB11 5ES  
Tel.: 0282-57011

President: Mark Crabtree  
Sales Manager: Stuart Nevison  
Chief Engineer: Ray Worrall  
Products: design and manufacture professional audio equipment including digital delay lines, reverberators and audio delay compensators.  
See full listing under **Audio Signal Processors**.

**AUDIOCOM, INC.**, 14645 N.W. 77th Ave., Suite 203,  
Miami Lakes, FL 33014  
Tel.: 305-825-HOLD (4653)

President: Ron Deblingler  
Marketing Manager: Stuart L. Ginsberg  
Chief Engineer: Kevin Morahan  
Director of Operations: Art Hecht  
Products: Promotions on Hold — Professionally produced, company-specific audio programming that provides a soft sell mix of messages and music to keep callers informed and entertained while they wait "on hold."  
See full listing under **Telephone System Peripherals**.

**ELTREX INTERNATIONAL**, 2 Columbia Dr., Amherst,  
NH 03031 Tel.: 603-886-3500 Telex: 953016

President: Thomas H. Sullivan  
Products: complete line of radio paging encoders, terminals, test equipment for 2-tone and 5-tone sequential solid state voice recorders and digital delay units for the broadcast industry.

**ELECTRONIC SYSTEMS GROUP, INC.**, 4405 Vineland  
Rd., Ste. C-8, Orlando, FL 32811  
Tel.: 305-423-2363

President: Martin Collins  
Sales Manager: Ron Neilson  
Chief Engineer: Martin Collins  
Products: Digimax solid-state audio storage systems using digital audio for message repeaters and tape replacement custom digital audio systems.

**IGM COMMUNICATIONS, INC.**, 282 West Kellogg  
Road, Bellingham, WA 98226  
Tel.: 206-733-4567

President: Jim Wells  
Sales Manager: Nick Solberg—Custom Systems  
Sales Manager: Tom Ransom—Standard Systems  
Chief Engineer: Jim Wolniakowski  
Products: Go Cart random access cartridge playback unit. Instacart— instant access cartridge playback unit. IGM-SC system controller.

**INTERNATIONAL TAPETRONICS CORPORATION/**  
**3M**, 2425 S. Main St., P.O. Box 241, Bloomington,  
IL, 61702 Tel.: 309-828-1381

General Manager: Jack Hanks  
Marketing Manager: Bob Bomar  
Products: NAB broadcast cartridge machines & accessories.

**MACKENZIE LABORATORIES, INC.**, 5507 Peck  
Rd., Arcadia, CA Tel.: 818-579-0440  
800-423-4147

President: A. R. Taylor  
Sales: Joe M. Vitale  
Vice President and Chief Engineer: N. Khattar  
Products: solid-state digital audio message repeaters and heavy duty single and multiple cartridge endless-loop message repeaters.  
See full listing under **Magnetic Tape Systems & Supplies**.

**MICROVOICE CORPORATION**, 23362 Peralta Drive,  
Laguna Hills, CA 92653 Tel.: 714-859-1091

President: Greg Peacock  
Sales Manager: Jim Grattan  
Products: Apex automated PBX attendant allows the caller to route their own calls to departments and extensions when the PBX operator is busy. Multivoice product is a multi-channel announcer.

**PHI TECHNOLOGIES, INC.**, 4605 N. Stiles, Oklahoma  
City, OK 73105 Tel.: 405-521-9000

President: Gary A. Zebrowski  
Chief Engineer: Larry DeBell  
Products: heavy-duty cassette tape transports, random-access message systems, cassette playback units for background music, message repeaters and digital audio message systems.

**RING GROUP OF NORTH AMERICA**, 230 Communi-  
ty Dr., Great Neck, NY 11021  
Tel.: 516-487-0250 800-645-9690

Vice President: Peter McLean  
Sales Manager: Stan Davis  
Chief Engineer: Jim Small  
Products: Ring 3000 school systems, duplex intercom (2 to 5,000 station, 2 alarm channels, 8 programmer channels, telephone interface, field programmable); speakers and baffles.  
See full listing under **Intercom Systems—Duplex**.

Sound & Communications

**SOUND PRODUCTS/3M**, 3M Center 225-45-10, St. Paul, MN 55144-1000 Tel.: 612-733-0447

Marketing Manager: Don Rada

Sales Manager: Jack Dingley

Products: music libraries for all purposes. Reliable players. Industrial quality intercoms, and vehicle detectors. Top-line message repeater. Speaker assemblies for distributed systems. Microphones, amplifiers and other sound system components.

**TAPE-ATHON CORP.**, 13633 Crenshaw Blvd., Hawthorne, CA 90250 Tel.: 213-676-6752

President: Leon Tate

Sales Manager: Robert Mayfield

Chief Engineer: Bernard Sayers

Products: complete line reel-to-reel play back from on-premise through completely automated central studio systems, portable and rack mount, chimes line; all speed customized music library — sale or lease.

See full listing under **Background/Foreground Music Systems**.

**TELEPHONE SALES & SERVICE CO.**, 25 DeForest St., Amityville, NY 11701 Tel.: 516-842-4800

President: Harry F. Bradley

Products: electronic PAX; Select-O-Phone II to 64 stations with 100% trunkage. Comtrac EPAX 64 to 4000 stations. Electronic code-call with telephone access. Message repeater.

**TOA ELECTRONICS, INC.**, 480 Carlton Court, S. San Francisco, CA 94080 Tel.: 415-588-2538

President: Sam Sakata

Sales Manager: Joe Green

Technical Services Manager: Bob Sweet

Products: engineered sound systems, commercial sound systems, amplifiers, dual amplifiers, tuners, equalizers, multi-functional preamplifiers, mixing consoles, speakers, horns, drivers, microphones, wireless systems, microcomputerized EXES intercom systems, CCTV, security systems.

See full listing under **Engineered Sound Systems**.

## MICROPHONES

**ACO PACIFIC, INC.**, 2604 Read Ave., Belmont, CA 94002 Tel.: 415-595-8588

President, Sales Manager & Chief Engineer: Norman L. Lewis

Vice President: Ana C. Lewis

Products: precision microphone and power supplies for ENG, stage, studio and measurements. ACOustic Interface™ adapts "alternative" type I mics to audio instrumentation. "Ghost" supplies phantom 48VDC.

District Offices:

Lee Associates, Huntsville, AL, 205-533-5896

Lee Associates, Charlotte, NC, 704-522-1839

**AKG ACOUSTICS, INC.**, 77 Selleck St., Stamford, CT 06902 Tel.: 203-348-2121

Vice President: S. R. Ravich

Sales Manager: D. Talbot

Technical Manager: D. Pilkington

Products: studio condenser microphones; prepolarized condenser microphones; professional dynamic microphones; cardioid dynamic microphones; special purpose microphones; stereo headphones; boom mics; accessories, reverb units, phonocartridges, digital delays, digital reverbs.

**ASTATIC CORP.**, Harbor & Jackson Sts., P.O. Box 120, Conneaut, OH 44030 Tel.: 216-593-1111

Chairman of the Board and President: Michael Chait

Corp. Manager, Sales & Marketing: Michael Chait

Chief Engineer: Stanley Maire

Products: microphones — dynamic, ceramic, crystal, carbon for public address, recording, entertainment, communications; magnetic phonograph cartridges and needles, pickups, headsets, audio accessories

Sales Representative:

Roburn Agency, New York, NY, 212-989-5939

**ATLAS SOUND**, 10 Pomeroy Rd., Parsippany, N.J. 07054 Tel.: 201-887-7800

Vice President, Sales & Marketing: Tom Erickson

Vice President, Consultant for Marketing: Herbert M. Jaffe

Director of Sales: Paul Grote

Chief Engineer: John Saller

Products: functional modern and widest selection of floor, boom, desk stands for all applications. Complete selection of microphone accessories, adaptors and fittings.

See full listing under **Loudspeakers & Accessories**.

**AUDIO SERVICES CORPORATION**, 4210 Lankershim Blvd., N. Hollywood, CA 91602 Tel.: 818-980-9891

President: Richard Topnam, Sr.

General Manager: Richard Topnam, Jr.

Sales Manager: David Panfili

Chief Engineer: Michael Riner

Rental Manager: Tove Blue

Service Manager: Ron Meyer

Products: professional portable sound equipment, sales, rental, lease service, consulting, design and manufacture.

**AUDIO TECHNICA U.S. INC.**, 1221 Commerce Dr. Stow, OH 44224 Tel.: 216-686-2600

President: Jon Kelly

Sales Manager: Mark Taylor

Vice President, Marketing: Ken Reichel

Chief Engineer: Steve Hebrock

Products: microphones and microphone accessories, recorder/mixers, cables, direct boxes, headphones, ENG mixers, mic stands.

**AUDIX**, P.O. Box 265, San Carlos, CA 94070 Tel.: 800-332-8349 (CA) 800-222-8349 (National)

Sales Manager: Cliff Castle

Products: dynamic microphones for stage, studio, and contractor. Space diversity and true diversity wireless systems for lavalier handheld and instrument. New products include ML-2 Microline electret condense lavalier for tie-clip or overhead use.

District Offices:

Gary Castelluccio, 201-278-2500

MBT Sales, 412-344-1360

Steve Endy, 919-365-6435

Gene Griffith, 404-924-2725

Pete Wood, 817-939-2076

**AUDRA INTERNATIONAL**, P.O. Box 38, Silverado, CA 92676 Tel.: 714-649-2207

Owner: Algis Renkus

Products: Precision miniature microphone, audio transformers, audio distribution systems.

**BEYER DYNAMIC, INC.**, 5-05 Burns Ave., Hicksville, NY 11801 Tel.: 516-935-8000

General Manager: Paul Murphy

Director of Sales & Marketing: Bob Lowie

Products: dynamic moving coil and ribbon microphones, studio condenser microphones, professional headphones and headsets, microphone stands, booms and accessories. Full line of sound contracting products.

**BOGEN, A Lear Siegler Company**, 50 Spring St., P.O.  
Box 575, Ramsey, NJ 07446  
Tel.: 201-934-8500

President: John H. Ochtera  
Vice President, Marketing: Carl C. Dorwaldt  
Vice President, Engineering: Mark Koller  
Products: commercial sound and communication systems and equipment including amplifiers, mixers, loudspeakers, microphones, telephone paging equipment, tuners, intercoms, audio surveillance and centralized sound systems.  
See full listing under **Engineered Sound Systems**.

**BRUEL & KJAER INSTRUMENTS, INC.**, 185 Forest  
St., Marlborough, MA 01752 Tel.: 617-481-7000

President: Teoff Perry  
Technical Director: Greg Michele  
Products: studio microphones, audio transducer and telephone measuring systems, time delay spectrometry, real time analyzers, sound level meters, other acoustic test instrumentation.  
See full listing under **Test Equipment**.

**CALRAD ENGINEERED ELECTRONIC PRODUCTS**,  
819 No. Highland Ave., Los Angeles, CA 90038  
Tel.: 213-465-2131

President: Joseph Shupper  
Vice President: Robert Shupper  
Sales Manager: Fred Crown  
Chief Engineer: Wes Black  
Products: microphones, headphones, public address amplifiers, power supplies, speakers, connecting cables, telephone accessories, potentiometers, connectors, switches, meters, control knobs.  
See full listing under **Audio Amplifiers**.

**CALZONE CASE CO.**, 225 Black Rock Ave.,  
Bridgeport, CT 06605 Tel.: 203-367-5766

President: Joseph E. Calzone III  
Vice President: Vincent J. Calzone  
Chief Engineer: Thomas M. Mackno  
Sales and Marketing Administrator: Barbara J. Honeycomb  
Products: full line of road and flight cases for the musical, audio, and video markets; ESCORT-ATA styled, 1/4" plywood, heavy-duty construction; PROLINE constructed of 1/4" plywood; CONVOY, lightweight, protective; ULTIMA, extremely lightweight case providing protection for keyboards, mixers, recorders, and drum machines during local transport.

**CETEC RAYMER**, 7315 Fulton Ave., N. Hollywood,  
CA 91605 Tel.: 213-875-0423  
Telex: 510 6003062

President: Hugh T. Wilcox  
Chief Engineer: C. L. Kogge, Jr.  
Sales Manager: Hugh T. Wilcox  
Products: background/foreground equipment: wall and shelf mount amplifiers, AM/FM tuners and paging receivers, microphone mixers, installation accessories and transformers, M-O-H and telephone interconnect devices, and test equipment.

**CETEC VEGA**, 9900 Baldwin Pl., El Monte, CA  
91731 Tel.: 818-442-0782

General Manager: Gary J. Stanfill  
National Sales Manager: Paul Baughman  
Director of Marketing: Kenneth M. Bourne  
Director of Engineering: Stan Foinler  
Products: wireless microphone systems with DYNEX® II audio processing; full-duplex beltback wireless intercom systems; tone signaling equipment.

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# COMTEK®

**COMTEK, INC.**, 357 W. 2700 S., Salt Lake City, UT  
84115 Tel.: 801-466-3463

Products: wireless microphone systems operating in high-band frequencies up to 216 MHz, and RF assistive listening systems for the hearing-impaired in auditoriums, churches and theaters.

**CROWN INTERNATIONAL INC.**, 1718 W. Mishawaka  
Rd., Elkhart, IN 46517 Tel.: 219-294-8000

President: Max W. Scholfield  
Marketing Manager: Charles W. Gushwa  
Engineering Manager: Verne E. Searer  
Products: full line of Pressure Zone Microphones® (PZM®) for use on surfaces. Eliminates phase interference and off-axis coloration. Excellent clarity and reach. PCC™ 160 Phase Coherent Cardioid™ surface mounted supercardioid microphone. GLM Series of miniature condenser mics.

**J. W. DAVIS & CO.**, 3215 Canton St., P.O. Box 26177,  
Dallas, TX 75226 Tel.: 214-651-7341  
1-800-442-1564 (Texas)  
1-800-527-5705 (outside Texas)

President: Charles Griffiths  
Vice President Sales: Jack W. Tucker  
Products: microphones for the professional entertainer and commercial sound installation. Dynamic and condenser types, both available including both wired and wireless configurations. Stands, cable and other accessories.  
See full listing under **Pro Audio Sound Systems & Products**.

**DUKANE CORPORATION**, 2900 Dukane Dr., St.  
Charles, IL 60174 Tel.: 312-584-2300

President: William B. Clark  
Sales Manager: Jim Shane  
Chief Engineer: Gordon Mielke  
Marketing Manager: Craig Lyons  
Products: nurse call, intercom, voice paging, clock, sound masking, staff registry and voice evacuation systems for health care, institutional and industrial markets.  
See full listing under **Paging Systems**.

**EDCOR**, 16782 Hale Ave., Irvine, CA 92714  
Tel.: 714-863-1529

President: Larry Weston  
Products: wireless microphones on "high" or "low" band. Tour Kits, diversity systems, multi channel systems. Four and eight channel phantom power supplies for electret or condenser microphones.

**ELECTRO-VOICE, INC.**, 600 Cecil St., Buchanan, MI  
49107 Tel.: 616-695-6831

President: Robert B. Pabst  
Vice President, Sales and Marketing: Paul McGuire  
Chief Engineer: Earl Harris  
Director of Marketing: Jim Holt  
Products: broadcast, recording, communications and PA microphones.  
See full listing under **Engineered Sound Systems**.

**GOTHAM AUDIO CORPORATION**, 1790 Broadway,  
New York, NY 10019 Tel.: 212-765-3410

President: Russ Hamm  
Sales Manager: Jerry Graham  
Chief Engineer: Joe Leung  
West Coast Sales Manager: Juergen Wahl

Products: EMT digital delay, Neumann condenser mics and accessories, NTP and EMT signal processors, Klein and Hummel active loudspeakers, and Gotham cable.

District Office:  
San Nuys, CA, 818-785-2211

**HEIL LTD., #2 Heil Drive, Marissa, IL 62257**  
Tel.: 618-295-3000

President: Bob Heil  
Products: mixing consoles, power amplifiers, parametric EQ, crossovers, satellite TV antennas, amateur radio and communication microphones.

**HM ELECTRONICS, INC., 9675 Business Park Ave., San Diego, CA 92120** Tel.: 619-578-8300

President: H. Y. Miyahira  
Sales Manager: Mike Hughes  
Chief Engineer: Ken Fasen  
Marketing: Tonnia Sills  
Products: professional wireless microphones, hand-held or bodypack transmitters with 115dB dynamic range, full duplex wireless intercom systems and a complete line of cabled intercom products.  
District Offices:  
John B. Anthony Co., Stamford, CT, 212-585-2027  
Sunwest Marketing, Orange, CA, 714-635-0190  
Applied Audio Marketing, Asheville, NC, 704-658-2291  
Madon & Associates, Mill Valley, CA, 916-923-2524  
Silver Peak Marketing, Wheat Ridge, CO, 303-467-9042

**MAGE DEVICES INTERNATIONAL, 1825 N.E. 149 St., Miami, FL 33181** Tel.: 305-945-1111

President: David Haylock  
Products: manufacture, rent, sell and maintain of professional motion picture, television and video production equipment.  
District Office:  
Image Devices International, Atlanta, GA

**KNOWLES ELECTRONICS, INC., 3100 N. Mannheim Rd., Franklin Park, IL 60131**  
Tel.: 312-455-3600

President: Hugh S. Knowles  
Vice President, Marketing: Reg. G. Garratt  
Products: subminiature transducers — magnetic, ceramic and condenser — electret microphones; microphone/speaker products; "beeper" speakers; vibration transducers.

**ELECTROSONICS, INC., 2100 Atrisco Dr., N.W., P.O. Box 12617, Albuquerque, NM 87195**  
Tel.: 505-831-1010

President: John Arasim, Jr.  
Sales Manager: Bruce C. Jones/J. D. Madden  
Chief Engineer: Larry Fisher  
Other Personnel: Keith Phillips, Gail Graham  
Products: wireless microphone systems of all types; VHF channels for fixed or travelling applications; diversity and single-antenna systems; miniature (ENG) systems; all metal transmitters & receivers.  
District Office:  
Gary Castelluccio & Assocs., Paterson, NJ, 201-278-2500

**MULTI-VOX LTD., 9967 St. Michel Blvd., Montreal H1H 5G7, Quebec, Canada** Tel.: 514-321-3131

President: Fernand Parent  
Sales Manager: Robert Girard  
Chief Engineer: Dominique Malenfant  
Operations Manager: Georges Morissette  
Products: audio amplifiers, electronic carillons and chimes, simplex and duplex intercom systems, solid state and microprocessor intercom systems for apartments, hospital and health care facilities, schools, institutions and industries, paging systems.

**NADY SYSTEMS, INC., 1145 65th St., Oakland, CA 94608** Tel.: 415-652-2411

President: John Nady  
Sales Manager: Peter Kalmen  
Chief Engineer: John Nady  
Products: wireless microphones, infrared listening systems, wireless intercoms and portable sound systems.

**NORCON ELECTRONICS, INC., 1260 Ralph Ave., Brooklyn, NY 11236** Tel.: 718-451-1112

President: Norman Schlaff  
Chief Engineer: Simon Kleyner  
Products: Norcon Talk-Thru communicator providing amplified hands-free communication through an environmental partition. Engineered sound reinforcement systems. Public address systems. Closed-circuit and master antenna television systems. Fire alarm systems.

**NUMARK ELECTRONICS PPD, 503 Raritan Center, Edison, NJ 08837** Tel.: 201-225-3222

President: Harry Kotovsky  
Sales Manager: Peter Horsman  
Products: power amplifiers, mixers, equalizers, noise reduction, expansion system, video sound processors.  
See full listing under **Pro Audio Sound Systems**.

**PANASONIC INDUSTRIAL COMPANY, RAMSA, 6550 Katella Ave., Cypress, CA 90630**  
Tel.: 714-895-7277

President: Scott Minakami  
Sales Manager: Steve Woolley  
Other Personnel: Gene Juall, Joe Crocco, Chris Foreman  
Products: pro audio and commercial sound products including mixers, mixer-amplifiers, power amplifiers, speakers, microphones, and a portable public address system with wireless microphones(s).  
See full listing under **Pro Audio Sound Systems & Products**.

**PASO SOUND PRODUCTS, INC., 14 First St., Pelham, NY 10803-1401** Tel.: 914-738-4800

Executive Vice President, Engineering: Paul Mastrangelo  
Operations Manager: Anthony Sgueglia  
Sales Manager: David Moore  
Product Manager (Engineering): Ken O'Brien  
Credit Manager: Marilyn Beckerson  
Customer/Representative Support: Tommi Paladino  
Sales Administration (Order Expedite): Stacy Appel  
Products: indoor, outdoor, portable, mobile amplifiers, preamplifiers, mixers, booster amplifiers, AC/DC integrated amplifiers and boosters intercom systems, multi-residential systems, microphones, wireless microphones, industrial grade auto reverse cassette machines, tuners sound columns, speakers, baffles, driver units, trumpets, horns, full range loudspeaker systems, stage monitors, stands, accessories, equipment racks.  
See full listing under **Engineered Sound Systems**.

**ROANWELL CORPORATION, 180 Varick St., New York, NY 10014** Tel.: 212-989-1090

President: James Foley  
Vice President: Anthony Mazzeo  
Sales Manager: C. Carl Hilsdorf  
Chief Engineer: Lech Poradowski  
Products: noise-cancelling microphones for headset, handset and hand-held applications; noise-attenuating headsets; cord sets and switchbox assemblies. Manufacturers of the patented Confidencer noise-cancelling microphone.  
District Offices:  
Jewett Company, No. Hollywood, CA  
Hykes Point Inc., Dayton, OH  
Tortech Marketing, Scarborough, Ont.  
Sullivan Associates, Ottawa, Ont.

**SAMSON PRODUCTS**, 124 Fulton Ave., Hempstead,  
NY 11550 Tel.: 516-489-2203

Sales Manager: Scott Goodman  
Chief Engineer: Doug Bryant  
Products: wireless systems including hand-held lavalier, and instrument  
mics. Stage series wireless system for video production.  
District Offices:  
Image Marketing, Costa Mesa, CA, 714-650-7718  
Jamm Distributing, Matteson, IL, 312-747-6363  
Ron Tunks Sales, Landerhill, FL, 305-741-5121  
Joe Martin Sales, Austin, TX, 512-266-1113  
Reflex Marketing, Hempstead, NY, 516-565-2323

**SCHELL ELECTRONICS, INC.**, 120 N. Lincoln,  
Chanute, KS 66720 Tel.: 316-431-2350

President: Jerry Schell  
Products: wireless hand-held, lapel, and head-mount microphones.  
Crystal controlled, FM transmitter and receiver. Receivers have  
on/off/volume control, squelch control, power and receive indicator  
lights.

**SENNHEISER ELECTRONIC CORP.**, 48 W. 38th  
St., New York, NY 10018  
Tel.: 212-944-9440

President: Andrew Brakhan  
Sales Manager: Tony Tudisco  
Chief Engineer: Horst Ankermann  
Products: full line of professional microphones including dynamics,  
electrets and condenser series as well as UHF and VHF wireless units.  
Sealed and open-air headphones available.

**SHURE BROTHERS INCORPORATED**, 222 Har-  
trey Ave., Evanston, IL 60202-3696  
Tel.: 312-866-2200

President: James Kogen  
Vice President, Marketing and Sales: Dick Murphy  
Chief Engineer: Bernie Jakobs  
Products: microphone and circuitry products for broadcast, recording  
and general sound reinforcement applications, teleconferencing  
equipment.  
Sales Representatives:  
Berman-Gravley Co., Costa Mesa, CA  
Peter E. Schmitt Co., Leonia, NJ  
S. K. MacDonald Inc., Philadelphia, PA  
Key Marketing, Plymouth, MI  
Millar Electronics, Atlanta, GA

**SOUND PRODUCTS/3M**, 3M Center 225-45-10, St.  
Paul, MN 55144-1000 Tel.: 612-733-0447

Marketing Manager: Don Rada  
Sales Manager: Jack Dingley  
Products: music libraries for all purposes. Reliable players. Industrial  
quality intercoms, and vehicle detectors. Top-line message repeater.  
Speaker assemblies for distributed systems. Microphones, amplifiers  
and other sound system components.

**SPECO DIV., Components Specialties, Inc.**, 1172  
Rt. 109, P.O. Box 624, Lindenhurst, NY  
11757 Tel.: 516-957-8700 (in NY)  
1-800-645-5516 (outside NY)

President: Louis W. Keller  
Vice President & General Manager: James J. Ganci  
Vice President, Sales: Mel Hulkower  
Regional Sales Managers: Eric Foreman, Bruce Kurtz  
Products: PA horns, amplifiers, tuners, loudspeakers, wall baffles,  
speaker assemblies, outdoor speakers, sound columns, ceiling grilles,  
transformers, L-pads, attenuators, accessories, microphones, intercoms,  
alarm sirens, multitestors, oscilloscopes.

**SWINTEK ENTERPRISES, INC.**, 587 Division St.,  
Campbell, CA 95008 Tel.: 408-378-8091

President: William Swintek  
Sales Manager: Darisa Hill  
Chief Engineer: Les Underwood  
Ad Assistant: Marilyn Roberts  
Products: switching diversity radio microphones, wireless headsets to  
RTS and Clearcom intercoms, min video camera wireless receivers,  
antenna systems.

**TELEX COMMUNICATIONS, INC.**, 9600 Aldrich  
Ave. S., Minneapolis, MN 55420  
Tel.: 612-887-5550

President: John Howe  
Sales Manager: Gary Fisher  
Director of Marketing: Donald Merein  
Products: dual antenna (diversity) wireless microphone systems, single  
antenna wireless microphone systems, wired microphones.  
District Offices:  
Wes Alderson, Jr., Wes-Tech Marketing, Culver City, CA  
Bill Bencsik, Bencsik Assoc., Ocala, FL  
Tony Monfort, Monfort Electronic Marketing, Indianapolis, IN  
Pier Vidoni, Mountain Representatives, Inc., Denver, CO  
Jack Cota, Murphy & Cota, Inc., Atlanta, GA  
Erv Wolter, Northland Assoc., Moorhead, MN  
Paul Pusecker, Pusecker Sales, Upper Montclair, NJ  
Chuck Rancillo, Rancillo Assocs., Inc., St. Louis, MO  
SAGA, Oswego, NY  
Signal Marketing, Devon, PA  
Jess Spoons, J.Y. Schoonmaker Co., Dallas, TX  
Ralph Wright, Weller Electronic Sales, Columbus, OH  
Burt Ziskind, Ziskind Assocs., Rolling Meadows, IL  
Trans-Canada Electronics, Scarborough, ONT., Canada  
Lynn Toussaint, Burcaw Company & Associates, Warren, MI  
Earl Fleehart, Fleehart & Sullivan, Inc., Seattle, WA  
Steve Lichtenauer, Lichtenauer & Associates, Pittsburg, CA

**TOA ELECTRONICS, INC.**, 480 Carlton Ct., S.  
San Francisco, CA 94080 Tel.: 415-588-2538

President: Sam Sakata  
Sales Manager, Commercial Director: Joe Green  
Technical Support Manager: Bob Sweet  
Products: engineered sound systems, commercial sound systems,  
amplifiers, dual amplifiers, tuners, equalizers, multi-functional  
preamplifiers, mixing consoles, speakers, horns, drivers, microphones,  
wireless systems, microcomputerized EXES intercom systems, CCTV,  
security systems.  
See full listing under **Engineered Sound Systems**.

**UHER OF AMERICA**, 7067 Vineland Ave., N.  
Hollywood, CA 91605 Tel.: 818-764-1120

President: John Belgiorno  
Sales Manager: George Rose  
Products: heavy-duty open-reel and cassette recorders provide high per-  
formance and reliability along with innovative features for commer-  
cial and industrial applications. Choice of mono/stereo portable models.  
Film sync and long play speeds available.

**WILLIAMS SOUND CORP.**, 5929 Baker Road, Min-  
netonka, MN 55345 Tel.: 800-328-6190

President: Gerald I. Williams  
Sales Manager: Jeff Peters  
Chief Engineer: Jay Kershaw  
Products: FM wireless hard-of-hearing systems; frequency-  
programmable diversity wireless microphone system; wireless tour guide  
& cueing systems.  
Sales Representatives:  
Sunrise Sales Co., Romeoville, IL, 815-886-2300  
J.W. Lehner Co., Stow, OH, 216-686-1965  
BC Electronic Sales, Mission, KS, 913-262-1720  
Secom Systems, Chamblee, GA, 404-455-0672  
Richard Pass Assocs., Langhorne, PA, 215-757-6100  
Bi-State Marketers, Ridgefield, NJ, 201-943-5888  
Ted Firaneck Sales, Pontiac, MI, 313-373-9595



**WISSCO**, 1599 Superior Ave., A-1, Costa Mesa, CA  
92627 Tel.: 714-645-1281

President: J. Wanlass

Products: wireless microphones and receivers, power megaphones, sound  
lecterns, mobile sound systems, portable PA systems, mixers, speakers,  
telephone intercom systems, professional sound systems, amplifiers,  
power supplies, AC regulators, IR links.

**WRIGHT MICROPHONES**, 2093 Faulkner Rd. N.E.,  
Atlanta, GA 30324 Tel.: 404-321-3886

President: Tom Wright

Sales Manager: Tom Wright

Products: TSR-2 transformerless condenser microphone for studio use.

## MIXERS & MIXING CONSOLES

**ALLEN AND HEATH BRENNEL (AHB)**, 5 Connair Rd.,  
Orange, CT 06477 Tel.: 203-795-3594

President: Neil Hauser

Sales Manager: Chuck Augustowski

Chief Engineer: Glenn Rogers

Service Manager: Kevin Macdowall

General Manager: Jean Ratgeber

U.S. Engineering: John Petrucelli

Products: mixers and mixing consoles for sound reinforcement and  
recording applications ranging from 8x2x1 to 40x24 mixers.

District Offices:

Audio Associates, Baltimore, MD, 301-854-6122

AMH Sales, Los Angeles, CA, 213-373-2034

Centurian Marketing, St. Louis, MO, 314-227-7222

GMI/New England, Avon, MA, 617-588-8043

Joe Martin Sales, Austin, TX, 512-266-1113

Jamm Distributing, Inc.

Loppnow and Associates, Redmond, WA, 206-833-3205

Metropolis, New York, NY, 201-225-0085

Ron Tunks Sales, Ft. Lauderdale, FL, 305-741-5121

Wm. J. Ray and Associates, Atlanta, GA, 404-351-6367

Charlie Winkler and Associates, Uniontown, OH, 216-699-9511

**ALTEC LANSING CORPORATION**, Box 26105,  
Oklahoma City, OK 73126 Tel.: 405-324-5311

President: F. Davis Merrey

Sales Manager: Gayle Campbell

Vice President of Engineering: Ed Rusch

Vice President of Marketing: Gary Rilling

Products: industrial and professional electronic and loudspeaker pro-  
ducts including mixers, power amplifiers, equalizers, high power  
speakers and compression drivers, constant directivity horns, crossovers  
and microphones.

See full listing under **Audio Amplifiers**.

**AMEK CONSOLES, INC.**, 10815 Burbank Blvd., N.  
Hollywood, CA 91601 Tel.: 818-508-9788

President: Arnold Toshner

Sales Manager: Bob Owsinski

Chief Engineer: Tim Wilson

Other Personnel: Toby Sali

Products: audio consoles for sound reinforcement, touring and theaters.  
Features include 8x8 matrix and foldback (monitor) consoles and  
crossovers.

**AUDIO SERVICES CORPORATION**, 4120 Lankershim  
Blvd., N. Hollywood, CA 91602  
Tel.: 818-980-9891

President: Richard Topnam, Sr.

General Manager: Richard Topnam, Jr.

Sales Manager: David Panfili

Chief Engineer: Michael Riner

Rental Manager: Tove Blue

Service Manager: Ron Meyer

Products: professional portable sound equipment, sales, rental, lease  
service, consulting, design and manufacture.

**AUDIO TECHNICA U.S., INC.**, 1221 Commerce Dr.,  
Stow, OH 44224 Tel.: 216-686-2600

President: Jon R. Kelly

Sales Manager: Mark Taylor

Chief Engineer: Steve Hebrock

Vice President, Marketing: Ken Reichel

Products: microphones, microphone accessories, recorders/mixers  
cables, direct boxes headphones, ENG mixers, mic stands.

See full listing under **Microphones**.

**BEL ELECTRONICS**, 745 109th St., Arlington, TX  
76011 Tel.: 817-640-6447

President: John Birkhead

Executive Vice President: Jerry Spohn

Sales Manager: Paul Westbrook

Chief Engineer: Tom Burrows

Products: digital delay processors, microprocessor-based BDE series  
analog flangers, noise reduction units.

District Offices:

Audio Resources, Westmont, IL, 312-655-1180

MarCon, Dallas, TX, 214-521-4313

Future Sales, Redmond, WA, 206-868-5577

ProMusica, Keene, NH, 603-352-4831

Evans Sales & Marketing, Nashville, TN, 615-297-7997

**BEYER DYNAMIC, INC.**, 5-05 Burns Ave., Hicksville  
NY 11801 Tel.: 516-935-8000

General Manager: Paul Murphy

Director of Sales & Marketing: Bob Lowie

Products: dynamic moving coil and ribbon microphones, studio con-  
denser microphones, professional headphones and headsets, microphon-  
stands, booms and accessories. Full line of sound contracting products.

**BIAMP SYSTEMS, INC.**, 14270 S.W. Science Park Dr.,  
Portland, OR 97209 Tel.: 503-641-7287

President: Don Waggoner

Sales Manager: Ralph Lockhart

Chief Engineer: Hans Geerling

Vice President of Finance: Jerry Payette

Products: professional sound reinforcement and audio production equip-  
ment, powered mixers, console mixers, power amplifiers, crossovers  
parametric equalizers, and limiters.

**BOGEN, A Lear Siegler Company**, 50 Spring St., P.O.  
Box 575, Ramsey, NJ 07446 Tel.: 201-934-8500

President: John H. Ochtera

Vice President, Marketing: Carl C. Dorwaldt

Vice President, Engineering: Mark Koller

Products: commercial sound and communication systems and equip-  
ment including amplifiers, mixers, loudspeakers, microphones, telephon-  
paging equipment, tuners, intercoms, audio surveillance and centraliz-  
ed sound systems.

See full listing under **Engineered Sound Systems**.

**BROADCAST AUDIO CORP.**, 11306 Sureo Dr., Ran-  
cho Cordova, CA 95670 Tel.: 916-635-1048

President: David W. Evans

Products: stereo audio consoles, monitor amplifiers, phono preamp-  
distribution amplifiers and audio processors.

**CALZONE CASE CO.**, 225 Black Rock Ave.,  
Bridgeport, CT 06605 Tel.: 203-367-5766

President: Joseph E. Calzone III  
Vice President: Vincent J. Calzone  
Chief Engineer: Thomas M. Mackno  
Sales and Marketing Administrator: Barbara J. Honeycomb  
Products: full line of road and flight cases for the musical, audio and video markets; ESCORT-ATA styled, 1/4" plywood, heavy-duty construction; PROLINE, constructed of 1/4" plywood; CONVOY, lightweight, protective; ULTIMA, extremely lightweight case providing protection for keyboards, mixers, recorders, and drum machines during local transport.  
See full listing under **Cabinets, Consoles, Cases & Racks.**

**CONNECTRONICS CORPORATION**, 652 Glenbrook  
Road, Stamford, CT 06906 Tel.: 203-324-2889

President: Stephen Ash  
Vice President: Richard Chilvers  
Products: ultra-flexible, colored wire and cable from mic cable to 32-pair foil shield. Also audio signal processors and portable mixing consoles.  
See full listing under **Wire & Cable.**

**DORROUGH ELECTRONICS**, 5221 Collier Pl.,  
Woodland Hills, CA 91364 Tel.: 818-999-1132

President: Mike Dorrough  
Sales Manager: Jon Churchill  
Chief Engineer: Tom Carngie  
Products: Dorrough Loudness Meter simultaneously displays in LED form the Peak and Average of audio on the same scale; Audio Processor Model 610, a tri-band audio processor for signal processing; Stereo Generator Model 80-B, a stereo signal generator for FM frequencies; broadcast console.  
See full listing under **Audio Signal Processors**

**DUKANE CORPORATION**, 2900 Dukane Dr., St.  
Charles, IL 60174 Tel.: 312-584-2300

President: William B. Clark  
Sales Manager: Jim Shane  
Chief Engineer: Gordon Mielke  
Marketing Manager: Craig Lyons  
Products: nurse call, intercom, voice paging, clock, sound masking, staff registry and voice evacuation systems for health care, institutional and industrial markets.  
See full listing under **Paging Systems.**

**ELECTRO-VOICE, INC.**, 600 Cecil St., Buchanan, MI  
49107 Tel.: 616-695-6831

President: Robert B. Pabst  
Vice President, Sales & Marketing: Paul McGuire  
Chief Engineer: Earl Harris  
Director of Marketing: Jim Holt  
Products: mixers and mixing consoles.  
See full listing under **Engineered Sound Systems.**

**HILL AUDIO, INC.**, 5002B N. Royal Atlanta Dr.,  
Tucuea, GA 30084 Tel.: 404-934-1851

President: David Ash  
Sales Manager: Bruce Forbes  
Chief Engineer: Bob Allen  
Products: power amplifiers from 100 to 3,000 watts and mixing consoles featuring 16 channel rack mount through to 48 channel modular.

**INNOVATIVE ELECTRONIC DESIGNS, INC.**, 9701  
Taylorsville Rd., Louisville, KY 40299  
Tel.: 502-267-7436

President: Hardison G. Martin  
Sales Manager: Tom Roseberry  
Chief Engineer: Ed Young  
Design Engineer: Bob Ponto

BB-72

Products: new "Class D" 200 W, 70.7 volt plug-in amplifiers, 7 inch rack frame holds 8 amplifiers; computer-controlled audio systems; smart automatic mixer; building block audio processing equipment.

**LITTLITE/CAE, INC.**, 10087 Industrial Drive, Hamburg,  
MI 48139 Tel.: 313-231-9373

President: James Fackert  
Sales Manager: Fred Mikeska  
Chief Engineer: Don Stauffer  
Other Personnel: Barbara Burns  
Products: gooseneck work lamps and accessories designed to unobtrusively illuminate any work panel or desk.

**LOGITEK**, 3320 Bering Dr., Houston, TX 77057  
Tel.: 800-231-5870 713-782-4592

President: Scott Hochberg  
Chief Engineer: Tag Borland  
Products: audio mixing consoles, audio distribution amps, speakers, speaker amps, phono amps, automatic crossfade units, timers, LED audio level indicators.  
District Offices:  
Midwest Communications, Charlotte, NC, 704-399-6336  
Holzberg, Inc., Sea Bright, NJ, 201-530-8555  
Giegler Broadcast Supply, Houston, TX, 713-774-3314  
Bradley Broadcast Sales, Gaithersburg, MD, 301-762-9222  
Televideo San Diego, San Diego, CA, 619-268-1100

**LPB INC.**, 28 Bacton Hill Rd., Frazer, PA  
19355 Tel.: 215-644-1123

President: Richard H. Crompton  
Sales Manager: Charles J. Sheridan  
Chief Engineer: Charles R. Bramhall  
Products: broadcast audio consoles, low power AM radio systems including systems for the hearing impaired and language translation.  
Sales Representative:  
Richard W. Burden, Canoga Park, CA, 818-340-4590

**McMARTIN INTERNATIONAL, INC.**, P.O. Box 4500,  
Gunnison, CO 81230 Tel.: 303-641-5500

President: Ray B. McMartin  
Financial Administrator: Robert W. McMartin  
Products: engineered and commercial sound amplifiers; mixers; accessories; background and foreground music amplifiers and sound systems; FM/SCA receivers; satellite modulators; demodulators.

**NUMARK ELECTRONICS/PPD**, 503 Raritan Center,  
Edison, NJ 08837 Tel.: 201-225-3222

President: Harry Kotovsky  
Sales Manager: Peter Horsman  
Products: power amplifiers, mixers, equalizers, noise reduction, expansion systems, video sound processors.  
See full listing under **Pro Audio Sound Systems & Products.**

**PANASONIC INDUSTRIAL COMPANY**, 6550 Katella  
Ave., Cypress, CA 90630 Tel.: 714-895-7277

President: Scott Minakami  
Sales Manager: Steve Woolley  
Other Personnel: Gene Juall, Joe Crocco, Chris Foreman  
Products: pro audio and commercial sound products including mixers, mixer-amplifiers, power amplifiers, speakers, microphones, and a portable public address system with wireless microphone(s).  
See full listing under **Pro Audio Sound Systems & Products.**

**PULSAR LABORATORIES**, 3200 Gilchrist Rd.,  
Mogadore, OH 44221 Tel.: 216-784-8022

President: G. Carr  
Sales Manager: G. Carr  
Chief Engineer: J. Boessneck

Sound & Communications

Studio Consultant; Bruce Hensal  
Products: professional touring consoles, frames, front, and monitor,  
recording consoles.

**RUPERT NEVE, INC.**, Berkshire Industrial Park, Bethel,  
CT 06801 Tel.: 203-744-6230

President: Barry J. Roche  
Vice President: Anthony H. Langley  
Products: audio consoles and NECAM moving fader automation  
systems for radio, TV, audio for video, film re-recording and music  
recording, and a line of limiter/compressors and audio distribution  
amplifiers.

Sales Representatives:  
Tom Semmes, Southeast Regional Manager, Nashville, TN,  
615-385-2727  
Rick Plushner, Western Regional Manager, Hollywood, CA,  
213-874-8124  
Phil Wagner, Eastern Regional Manager, New York, NY

**SOUNDCRAFT USA**, 8500 Balboa Blvd., Northridge,  
CA 91329 Tel.: 818-893-4351

President: Ron Means  
Sales Manager: Ken Lopez  
Other Personnel: Linda Frank, Mark Gander, Shane Morris, Gary Lynn  
Products: audio mixing consoles and multi-track tape machines. Ap-  
plications include live recording sound reinforcement, studio recording,  
remote recording, broadcast and post production.  
See full listing under **Pro Audio Sound Systems & Products**.

**SOUNDTRACS USA**, 745 109th St., Arlington, TX  
76011 Tel.: 817-640-6447

President: John Birkhead  
Executive Vice President: Jerry Spohn  
Sales Manager: Paul Westbrook  
Chief Engineer: Tom Burrows  
Products: Soundtracs mixing consoles, seven series. The FM and FMX  
Series of 19-inch rack-mount mixers featuring sweepable EQ, mono,  
stereo or monitor input modules. Bel digital delay/samplers.  
District Offices:  
Audio Resources, Westmont, IL, 312-655-1180  
MarCon, Dallas, TX, 214-521-4313  
Future Sales, Redmond, WA, 206-868-5577  
ProMusica, Keene, NH, 603-352-4831  
Evans Sales & Marketing, Nashville, TN, 615-297-7997

**TELEVISION TECHNOLOGY CORP.**, P.O. Box 1385,  
Broomfield, CO 80020-8385 Tel.: 303-465-4141

President: William Kitchen  
Chief Executive Officer: Bryon W. St. Clair  
Chief Engineer: Harold Rabinowitz  
Products: AM, FM & TV transmitters; FM & TV rebroadcast  
translators; audio cartridge machines and open-reel recorders.

**TOA ELECTRONICS, INC.**, 480 Carlton Court, S. San  
Francisco, CA 94080 Tel.: 415-588-2538

President: Sam Sakata  
Sales Manager: Joe Green  
Technical Services Manager: Bob Sweet  
Products: engineered sound systems, commercial sound systems,  
amplifiers, dual amplifiers, tuners, equalizers, multi-functional  
preamplifiers, mixing consoles, speakers, horns, drivers, microphones,  
wireless systems, microcomputerized EXES intercom systems, CCTV,  
security systems.  
See full listing under **Engineered Sound Systems**.

**WARD-BECK SYSTEMS LTD.**, 841 Progress Ave.,  
Scarborough, Ontario, Canada M1H 2X4  
Tel.: 416-438-6550

President: Ronald W. Ward  
Chief Engineer: Arthur A. Schubert, Jr., P. Eng.

Products: standard and custom-designed audio mixing consoles for pro-  
fessional application in broadcasting and sound reinforcement.  
Sales Representatives:  
William McFadden, Danvers, MA, 617-777-7228  
Duke McLane, Dallas, TX, 214-247-5999

**BOB WHITE ASSOCIATES**, P.O. Box 39104, Solon,  
OH 44139 Tel.: 216-248-1317

President: Bob White  
Sales Manager: Tod White  
Chief Engineer: George White  
Products: professional sound products, disco systems, projection TV,  
professional lighting equipment.  
See full listing under **Pro Audio Systems**.

## PAGING SYSTEMS

**A. E. ELECTRONICS CORPORATION**, 111 West 27  
St., New York, NY 10001 Tel.: 212-924-1225

President: Arthur S. Rich  
Sales Manager: Daniel Arthur  
Products: colored lights, flasher and delayed tone display discretely,  
repetitive messages requiring immediate action. Additional white lights  
represent the individuals involved in each communication.

**AIPHONE INTERCOM SYSTEMS**, 1700 130th Ave.  
N.E., Bellevue, WA 98005 Tel.: 206-455-0510

President: Hiko Shinoda  
Sales Manager: J. M. Morrison  
Chief Engineer: Jun Matsumoto  
Products: industrial, business, residential, loudspeaking, telephone,  
video intercom/security systems with paging talk-back; six  
microprocessor systems available; mixer amplifiers, paging speakers,  
horns, drivers, ceiling speakers.

**ARGOS PRODUCTS CO., INC.**, 600 S. Sycamore  
St., Genoa, IL 60135 Tel.: 815-784-5118

President: D. C. MacLaughlin  
Vice President, Marketing Manager: Ron Evers  
Products: indoor/outdoor sound columns, packaged sound systems,  
PA portable sound, lecterns, baffle/speaker combinations, baffles,  
speaker systems.  
See full listing under **Loudspeakers & Accessories**.

**ATKINSON DYNAMICS**, 10 W. Orange Ave., S. San  
Francisco, CA 94080 Tel.: 415-583-9845

Operations Manager: E. M. Watson  
Sales Manager: Asa Bullock  
Products: heavy-duty intercom units engineered specifically for high  
noise areas. Clear communications under most difficult conditions  
guaranteed. Weatherproof, sealed, transistorized, also full duplex  
systems available.

 **Auto Page Inc.**

**AUTO PAGE, INC.**, 1815 W. 205th St., #101, Torrance,  
CA 90501 Tel.: 213-328-2911

President: Geoff Farrer  
Sales Manager: Geoff Farrer  
Vice President: Tom Mogi  
Chief Engineer: H. Shima

Products: radio selective tone and voice paging, incorporating 6-channel encoder/transmitter with a 4-watt output to provide sufficient range and penetration; tone/voice one-way.

**BES/Bertagni Electroacoustical Systems, Inc.**, 12753  
Moore St., Cerritos, CA 90701  
Tel.: 213-926-0201 800-592-4644

President: K.L. Ching  
Sales Manager: Dennis Schulgen  
Chief Engineer: Alex Bertagni  
Products: hemispherically radiating ceiling speakers with 180-degree dispersion pattern. Models available for ceiling mount, surface mount, or corridor mount. Corridor mount models radiate in 360-degree pattern. These speakers replace conventional cone type speakers by as much as 8:1 reducing installation and materials cost.  
See full listing under **Loudspeakers & Accessories**.

**BEYER DYNAMIC, INC.**, 5-05 Burns Ave., Hicksville,  
NY 11801 Tel.: 516-935-8000

General Manager: Paul Murphy  
Director of Sales and Marketing: Bob Lowie  
Products: dynamic moving coil and ribbon microphones, studio condenser microphones, professional headphones and headsets, microphone stands, booms and accessories. Full line of sound contracting products.

**BOGEN, A Lear Siegler Company**, 50 Spring St., P.O.  
Box 575, Ramsey, NJ 07446 Tel.: 201-934-8500

President: John H. Ochtera  
Vice President, Marketing: Carl C. Dorwaldt  
Vice President, Engineering: Mark Koller  
Products: commercial sound and communication systems and equipment including amplifiers, mixers, loudspeakers, microphones, telephone paging equipment, tuners, intercoms, audio surveillance and centralized sound systems.  
See full listing under **Engineered Sound Systems**.

**BOSE CORPORATION**, The Mountain, Framingham,  
MA 01701 Tel.: 617-879-7330

President: Sherwin Greenblatt  
Sales Manager: John Stiernberg  
Chief Engineer: John Carter  
Other Personnel: Dave Bell, Barry Luz, Mark Mayfield, Ken Jacob  
Products: professional loudspeaker systems for portable and installed applications including sound reinforcement, commercial sound and foreground music. Modeler™ computer software for designing commercial sound systems.

**CALRAD ENGINEERED ELECTRONIC PRODUCTS**,  
819 No. Highland Ave., Los Angeles, CA 90038  
Tel.: 213-465-2131

President: Joseph Shupper  
Vice President: Robert Shupper  
Sales Manager: Fred Crown  
Chief Engineer: Wes Black  
Products: microphones, headphones, public address amplifiers, power supplies, speakers, connecting cables, telephone accessories, potentiometers, connectors, switches, meters, control knobs.  
See full listing under **Audio Amplifiers**.

**CAMBRIDGE ELECTRONICS LABORATORIES**, 20  
Chester St., Somerville, MA 02144  
Tel.: 617-629-2805

President: Dr. Jeffrey Race  
Sales Manager: Charlotte Bissell  
Products: specialized telecom accessories including digital music-on-hold source for PABX/key systems, mini telephone ringing generators, and two-way talk-back intercom unit.

**CETEC RAYMER**, 7315 Fulton Ave., N. Hollywood,  
CA 91605 Tel.: 213-875-0423

President: Hugh T. Wilcox  
Chief Engineer: Clifford L. Kogge Jr.  
Sales Manager: Hugh T. Wilcox  
Products: background/foreground equipment: wall and shelf mount amplifiers, AM/FM tuners and paging receivers, microphone mixers, installation accessories and transformers, M-O-H and telephone interconnect devices, and test equipment.

**CORNELL ELECTRONIC PRODUCTS, INC.**, 4911 W.  
Good Hope Rd., Milwaukee, WI 53223  
Tel.: 414-351-4660

President: Donald Glaubitz  
Vice President & Chief Engineer: Gary Butler  
Sales Manager: Pauline Haack  
Products: visual nurse call, audio visual nurse call, door monitors, apartment intercom, in/out register, institutional intercom, silent paging.  
See full listing under **Intercom Systems—Hospital & Health Care Facilities**.

**COMMUNICATIONS PRODUCTS INC.**, 13667 Floyd  
Circle, Dallas, TX 75243 Tel.: 214-238-9596  
800-527-4596

President: Perry W. Easterling  
Sales Manager: Jeff Persinger  
Products: accessories for commercial 2-way radios. Remote controls, extended local controls, radiophone patch and termination panels, signaling equipment.  
District Offices:  
Melby Communications  
Primus Electrobc, Joliet, IL  
Electro-Tek Sales, Aurora, CO  
Johnson Associates, Wellesley, MA  
Communications Marketing, Van Nuys, CA

**COMMUNITRON CORP.**, 1004 S. Main St., Hutchison,  
KS 67501 Tel.: 800-835-2256

President: Paul Bascom  
Products: paging telephone systems, telephones, amplifiers and control equipment. "Stor-Com" systems. Modular telephone accessories.

**J.W. DAVIS & CO.**, 3215 Canton St., Dallas, TX  
75226 Tel.: 214-651-7341  
TX WATS: 800-442-1564  
NAT. WATS: 800-527-5705

President: Charles Griffiths  
Vice President, Sales: Jack W. Tucker  
Products: amplifiers, tuners, loudspeaker assemblies, microphones, tone generators, horns drivers.  
See full listing under **Pro Audio Sound Systems & Products**.

**DUKANE CORPORATION**, 2900 Dukane Dr., St.  
Charles, IL 60174 Tel.: 312-584-2300

President: William B. Clark  
Sales Manager: Jim Shane  
Chief Engineer: Gordon Mielke  
Marketing Manager: Craig Lyons  
Products: nurse call, intercom, voice paging, clock, sound masking, staff registry and voice evacuation systems for health care, institutional and industrial markets.  
Sales Representatives:  
Jack Hollis, St. Charles, IL, 312-377-6632  
Don Mouritzen, St. Charles, IL, 312-584-2300  
Dennis Hansen, Piscataway, NJ, 201-463-3827  
Pete Kendall, Wilmington, DE, 302-995-1569  
Ed Nuhring, Portland, OR, 503-244-7441  
Gabriella Chambers, Westminster, CA, 714-839-8835  
Jack Brown, Dallas, TX, 214-943-7528  
Wally Smutts, Toronto, Ontario, Canada, 416-766-7845

**DYNAMIC SOUND INDUSTRIES**, P.O. Box 1395  
La Belle, FL 33935 Tel.: 813-675-0100,

Chief Engineer: U. L. Lahti

Products: products manufactured under patented pressure velocity formula for symmetrical dispersion. Speaker systems for ceiling, plenum, partition and floor. Custom designs for music paging and sound masking.

See full listing under **Background/Foreground Music**.

**ELECTRO-VOICE, INC.**, 600 Cecil St., Buchanan, MI  
49107 Tel.: 616-695-6831

President: Robert B. Pabst

Vice President, Sales & Marketing: Paul McGuire

Chief Engineer: Earl Harris

Director of Marketing: Jim Holt

Products: communications and PA microphones, public address loudspeakers and systems.

See full listing under **Engineered Sound Systems**.

**ELTREX INTERNATIONAL**, 2 Columbia Dr., Amherst,  
NH 03031 Tel.: 603-886-3500 Telex: 953016

President: Thomas H. Sullivan

Products: complete line of radio paging encoders, terminals, test equipment for 2-tone and 5-tone sequential, solid state voice recorders and digital delay units for the broadcast industry.

**FAMOUS TELEPHONE SUPPLY CO.**, P.O. Box 2172,  
Akron, OH 44309 Tel.: 216-762-8811  
800-321-9122

President: J. Blaushild

General Manager: Robert A. Fuzy

Products: wire and cable; general hardware; apparatus; paging equipment; power equipment; protection devices; tools; splicing equipment; closures; compounds; couplers and peripheral devices, plenum cable. Key systems and PABXs.

See full listing under **Hardware & Tools**.

**FANON COURIER CORP.**, 15300 San Fernando Mission Blvd., Mission Hills, CA 91345  
Tel.: 818-898-2237

President: Jay Steinbeck

Sales Manager: Murray Trotiner

Products: intercoms, speakerphones, PA amplifiers, paging horns, rumpets and drivers, megaphones, FM scanning monitors, satellite stereo receivers, c.b. transceivers.

**GAI-TRONICS**, P.O. Box 31, Reading, PA 19603  
Tel.: 215-777-1374

President: William Moore

Sales Manager: Don Mall

Industrial Sales Manager: Steve Pradon

Commercial Manager: Gene Heffner

Products: communications systems for use in high noise areas, corrosive atmospheres, extremes of temperature, dust, humidity and hazard areas, industrial telephones and telephone systems.

**HARRIS CORP., DRACON DIV.**, 809 Calle Plano,  
Camarillo, CA 93010 Tel.: 805-987-9511

Vice President, General Manager: John R. Mason

Director, Domestic Sales: Tom Erdmann

Chief Engineer: Joe Mader

Vice President, Sales & Marketing: Jack McGuigan

Products: PAGEPAC telephone integrated loudspeaker paging voice systems; linemen's test sets; craft tools; extensive line of relay racks.

District Offices:

John Muller, Chesapeake Beach, MD

Rob Lincoln, Alpharetta, GA

Chuck Ferreri, Succasunna, NJ

Don Bivens, Lake Elsinore, CA

Jim Orr, Aurora, CO

**INNOVATIVE ELECTRONIC DESIGNS, INC.**, 9701  
Taylorsville Rd., Louisville, KY 40299

Tel.: 502-267-7436

President: Hardison G. Martin

Sales Manager: Tom Roseberry

Chief Engineer: Ed Young

Design Engineer: Bob Ponto

Products: new "Class D" 200 W, 70.7 volt plug-in amplifiers, 7 inch rack frame holds 8 amplifiers; computer-controlled audio systems; smart automatic mixer; building block audio processing equipment.

**KOMTEK COMMUNICATIONS**, 11 White Lakes Road,  
Stanley, NM 87056 Tel.: 800-545-7000

President: Bill Patterson

Chief Engineer: Don Elibee

Products: custom and standard design light signalling systems, including light intercom nurse call, doctor message, room status and patient sequencing functions.

**LT ELECTRONICS, LTD.**, 2535 Gerrard St. East, Scarborough, Canada M1N 1W9 Tel.: 416-691-9406

President and Sales Manager: Jim Breedon

Chief Engineer: J. Hesse

Products: school intercoms, cone speakers, sound columns, packaged amplifiers, telephone amplifiers, speaker baffles, bass reflex speaker systems.

District Offices:

Trans Canada Electronics Ltd., Scarborough, Canada

Edcom, Inc., Lewiston, NY

**MCGOHAN ELECTRONICS, INC.**, 1033 Fairway Dr.,  
Bensonville, IL 60106 Tel.: 312-595-2342

President & Sales Manager: James M. McGohan

Chief Engineer: Bill Everhart

Products: solid state amplifiers for commercial sound, background, and telephone interconnect. Mic mixers, zone paging preamplifiers, mic and telephone line transformers and other accessories—off the shelf stock. See full listing under **Audio Amplifiers**.

**McMARTIN INTERNATIONAL, INC.**, P.O. Box 4500,  
Gunnison, CO 81230 Tel.: 303-641-5500

President: Ray B. McMartin

Vice President, Sales: Jay B. McMartin

Financial Administrator: Robert McMartin

Products: engineered and commercial sound amplifiers/mixers/accessories, background music amplifiers and sound systems. FM/SCA receivers, satellite modulators/demodulators.

See full listing under **Audio Amplifiers**.

**MG ELECTRONICS**, Ranick Rd., Hauppauge, NY  
11788 Tel.: 516-582-3400

President: Louis Maltz

Vice President: Elliott Maltz

Sales Manager: Stan Grey

Products: full line of paging horns, 5" through 12" with and without transformers.

**MIDWEST ELECTRONIC INDUSTRIES, INC.**, 4945 W.  
Belmont, Chicago, IL 60641 Tel.: 312-685-3500

Vice President/General Manager: H.D. Vicirus

Sales Managers: C.L. Madonia, J. Rusick

Products: manufacturers of the Mobilpage PA system for the transportation industry, including solid state amplifiers in models up to 100 watts and matched accessories including horns, microphones, radio and tape reproducing equipment.

**MILLBANK ELECTRONICS GROUP LTD.**, Bellbrook  
Industrial Estate, Uckfield, Sussex, TN22 1QL  
England Tel.: Uckfield 825-4811

Chairman: Tony Walker  
Director and General Manager: Brian Evans  
Client Services Director: Bernard Skinner  
Engineering Manager (Sales): Doug Edworthy  
Sales & Marketing: Doug Eaton  
Products: custom engineered sound systems; public address, telecon-  
ference, life-safety. Sound reinforcement systems: amplifiers,  
preamplifiers, background music, FM/AM tuners, alarm and tone signal  
generators, loudspeakers, microphones.  
See full listing under **Engineered Sound Systems**.

**MULTI-VOX LTD.**, 9967 St. Michel Blvd., Montreal  
H1H 5G7, Quebec, Canada Tel.: 514-321-3131

President: Fernand Parent  
Sales Manager: Robert Girard  
Chief Engineer: Dominique Malenfant  
Operations Manager: Georges Morissette  
Products: audio amplifiers, electronic carillons and chimes, simplex and  
duplex intercom systems, solid state and microprocessor intercom  
systems for apartments, hospital and health care facilities, schools, in-  
stitutions and industries, paging systems.

**MUSIC SUPPLY CO., INC.**, 809 N. Madison, Dallas,  
TX 75208  
Tel.: Texas call collect 214-946-8450  
All others 1-800-527-1522

President: W. E. Brown  
Products: speaker support trusses (T-bar bridge) to support 8" speakers.  
Prevent ceiling sag. For 2x4 and 2x2 and 4x4 lay-in type ceiling.  
Lightweight — 12 oz. — save freight. All steel. U.L. listed.

**MUSIC SUPPLY CO., INC.**, 809 N. Madison, Dallas,  
TX 75208  
Tel.: Texas call collect 214-946-8450  
All others 1-800-527-1522

President: W. E. Brown  
Products: speaker enclosure (black box-top hat) one piece, drawn con-  
struction. All Steel. U.L. listed.

**NATIONAL TELESYSTEM LTD., CANADA**, 438 Papin  
Ave., Ste. Foy, Quebec, CN G1P-379  
Tel.: 418-687-2031

President: Charles Sirois  
General Manager: Howard Bowles  
Chief Engineer: Christian Legare, Ing.  
Chief of Electronics: Marcel Langlois  
Products: systems and equipment for institutional intercoms, nurse call,  
paging, school systems, emergency systems, radio control; rental  
cabinets, audio-visual equipment systems.  
See full listing under **Intercom—School**.

**N E C AMERICA INC.**, 4936 W. Rosecrans Ave.,  
Hawthorne, CA 90250 Tel.: 213-973-2071

General Manager: K. Kato  
Chief Engineer: S. Sato  
Products: radio pagers and cellular telephones.  
District Office:  
NMI Corp., Dallas, TX, 214-233-5021

**NORCON ELECTRONICS, INC.**, 1260 Ralph Ave.,  
Brooklyn, NY 11236 Tel.: 718-451-1112

President: Norman Schlaff  
Chief Engineer: Simon Kleyner  
Products: Norcon Talk-Thru communicator providing amplified hands-  
free communication through an environmental partition. Engineered  
sound reinforcement systems. Public address systems. Closed-circuit  
and master antenna television systems. Fire alarm systems.

**PANASONIC INDUSTRIAL COMPANY**, 6550 Katella  
Ave., Cypress, CA 90630 Tel.: 714-895-7277

President: Scott Minakami  
Sales Manager: Steve Woolley  
Other Personnel: Gene Juall, Joe Crocco, Chris Foreman  
Products: pro audio and commercial sound products including mix-  
ers, mixer-amplifiers, power amplifiers, speakers, microphones, and  
a portable public address system with wireless microphone(s).  
See full listing under **Pro Audio Sound Systems & Products**.

**PASO SOUND PRODUCTS, INC.**, 14 First St., Pel-  
ham, NY 10803-1401 Tel.: 914-738-4800

Executive Vice President: Paul Mastrangelo  
Operations Manager: Anthony Sguiglia  
Sales Manager: David Moore  
Product Manager (Engineering): Ken O'Brien  
Credit Manager: Marilyn Beckerson  
Customer/Representative Support: Tommi Paladino  
Sales Administration (Order Expedite): Stacy Appel  
Products: indoor, outdoor, portable, mobile amplifiers, preamplifiers,  
mixers, booster amplifiers, AC/DC integrated amplifiers and boosters,  
intercom systems, multi-residential systems, microphones, wireless  
microphones, industrial grade auto reverse cassette machines, tuners,  
sound columns, speakers, baffles, driver units, trumpets, horns, full  
range loudspeaker systems, stage monitors, stands, accessories, equip-  
ment racks.  
See full listing under **Engineered Sound Systems**.

**POWERTRONIX**, 10623 Lawson River, Fountain Valley,  
CA 92708 Tel.: 714-963-5411

President: Robert Gehlke  
Sales Manager: Irv Weisman  
Products: 200W current drive distribution amplifiers with 24V-48 VDC  
emergency back-up power capability. 24 VDC mobile amplifier with  
3 electronically-switched, prioritized inputs. Preamp with 5  
electronically-switched, prioritized inputs.  
See full listing under **Audio Amplifiers**.

**PRECISION ELECTRONICS, INC.**, 9101 King St.,  
Franklin Park, IL 60131 Tel.: 312-678-5350

President: W. S. Grommes  
Sales Manager: W. Stow  
Chief Engineer: A. A. Hart  
Products: integrated audio amplifiers. Amps for mono or stereo power,  
line, music-on-hold. Mixer preamplifiers, 2 ch. limiters or compressors,  
graphic equalizers, FM-AM tuners, background music receivers and  
systems, public address systems, custom engineered sound reinforce-  
ment systems, sound columns, trumpets, driver units, baffles,  
microphones and microphone stands.  
See full listing under **Audio Amplifiers**.

**PROTECH AUDIO CORP.**, Flowerfield, Bldg. #1, St.  
James, NY 11780 Tel.: 516-584-5855

President: William Murphy  
Chief Engineer: Joseph Giambone  
Products: amplifiers—power, medium level, distribution, com-  
pressor/limiters, preamplifiers modular, automatic level controls, remote  
level controls, switching modules, line amplifiers, mixing/summing  
modules, audio transformers, hardware.

**REACH ELECTRONICS, INC.**, 1600 W. 13th St.,  
P.O. Box 308, Lexington, NE 68850  
Tel.: 308-324-6661

President: Russel Duvall  
Sales Manager: Michael Sutton  
Chief Engineer: Gary Gefford  
Product: pocket radio pagers and manual and dial access paging ter-  
minals. Pagers feature Lifeguard® circuitry for long battery life, with  
no chargers.

**ING GROUP OF NORTH AMERICA**, 230 Community Dr., Great Neck, NY 11021  
Tel.: 516-487-0250 800-645-9690

Vice President: Peter McLean  
Sales Manager: Stan Davis  
Chief Engineer: Jim Small  
Products: "Scanpager," pocket pager with full alpha-numeric message display, tieline, built-in memory, printer connection and out of range indicator.  
See full listing under **Intercom Systems—Duplex**.

**SAN MING ELECTRONIC SOUND EQUIPMENT CO., LTD.**, 12715 Western Ave., Garden Grove, CA 92641  
Tel.: 714-891-2252

President: Hugh C. Hsieh  
Sales Manager: Leon C. Hsieh  
Chief Engineer: S.W. Hsu  
International Sales: Hua C. Hsieh  
Products: high-intelligence multi-tap paging horns, heavy-duty driver units for PA and siren applications, extra-heavy-duty driver horns for community warning systems, megaphones.

**SIGNACOM CORP.**, 1032 Edwards Rd., Burlingame, CA 94010  
Tel.: 415-348-1188

President: W. Yee  
Sales Manager and Chief Engineer: V. Lain  
Products: light signaling paging systems, wireless and wired systems. Simple to computer controlled systems with integrated telephone and hands-free voice.

**SPANTEL CORP.** 968 NBC Center, Lincoln, NE 68508  
Tel.: 402-475-8881

Sales Manager: Deb Sandstedt  
Chief Engineer: Dick Maxwell  
Products: pagers — four-year battery life, no re-charging; manual encoders, dial access computer memory paging terminals. SCA pagers one and voice, digital display, generators, paging systems, voice mail.  
District Office:  
Ken Gray, Springfield, MO, 417-883-7595

**SPECO DIV., Components Specialties, Inc.**, 1172 Rt. 109, P.O. Box 624, Lindenhurst, NY 11757  
Tel.: 516-957-8700 (inside NY)  
1-800-645-5516 (outside NY)

President: Louis W. Keller  
Vice President & General Manager: James J. Ganci  
Vice President, Sales: Mel Hulkower  
Regional Sales Managers: Eric Forman, Bruce Kurtz  
Products: PA horns, amplifiers, tuners, loudspeakers, wall baffles, speaker assemblies, outdoor speakers, sound columns, ceiling grilles, transformers, L-pads, attenuators, accessories, microphones, intercoms, alarm sirens, multitestors, oscilloscopes.

**TALK-A-PHONE CO.**, 5013 N. Kedzie Ave., Chicago, IL 60625  
Tel.: 312-539-1100

President: Z. Liberman  
Sales Manager: Dan F. Kagan  
Products: intercom systems-manual and hands-free equipment-for industrial, institutional, commercial, home, apartment house, self-service gas station, fast food drive-thru and bank drive-up.

**TOA ELECTRONICS, INC.**, 480 Carlton Ct., S. San Francisco, CA 94080  
Tel.: 415-588-2538

President: Sam Sakata  
Sales Manager, Commercial Division: Joe Green  
Technical Support Manager: Bob Sweet  
Products: engineered sound systems, commercial sound systems, amplifiers, dual amplifiers, tuners, equalizers, multi-functional preamplifiers, mixing consoles, speakers, horns, drivers, microphones.

wireless systems, microcomputerized EXES intercom systems, CCTV, security systems.

See full listing under **Engineered Sound Systems**.

**UNIVERSITY SOUND, Electro-Voice, Inc.**, 600 Cecil St., Buchanan, MI 49107  
Tel.: 616-695-6831

President: Robert D. Pabst  
Chief Engineer: Earl Harris  
Vice President, Sales and Marketing: Paul McGuire  
Director of Marketing: Jim Holt  
Products: horns, drivers, paging/talkback speakers, and transformers.  
See full listing under **Loudspeakers and Accessories**.

**VALCOM, INC.**, 1111 Industry Ave., Roanoke, VA 24013  
Tel.: 703-982-3900

President: J. W. Mason  
Sales Manager: Donald Buck  
Chief Engineer: D. Lynch  
Products: telephone integrated paging and intercom systems, talkback, bell-buzzer, code call, PBX adapters, key telephone system ancillaries, loud-ringers, power supplies, amplified and talkback speakers.  
District Offices:  
Kristi Olsen, Cardiss By the Sea, CA, 619-463-2662  
Rich Perrigo, Terminal Sales, Seattle, WA, 206-441-9610  
Dick Kemar, McHenry, IL, 312-699-8656  
James F. Somers, Geneva, NY, 315-789-7938  
Sandra Sheppard, Carrollton, TX, 214-394-8472  
Bill H. Bailey, Hopewell, VA, 804-748-4149

**VERREX CORPORATION**, 1130 Route 22 West, Mountainside, NJ 07092  
Tel.: 201-232-7000

President: Thomas G. Berry  
Sales Manager: Richard Krochmal  
Chief Engineer: David G. Butz  
Products: supplier of engineered voice paging systems (wired) worldwide since 1946. Systems supplied to electrical contractors and end users. Sales, engineering, fabrication, installation, and service departments.

**WHEELOCK, INC.**, 273 Branchport Ave., Long Branch, NJ 07740  
Tel.: 201-222-6880

President: Peter W. Tarlton  
Vice President Sales & Marketing: William Goldstein  
Marketing Manager: J. Chris Olivieri  
Vice President Engineering: Steve Andrews  
Products: audible/visual signal devices for life safety and alarm systems and for telephone systems. Bells, horns, speakers, strobes, chimes, combinations, and paging systems.

**WHELEN ENGINEERING CO., INC.**, Route 145, Winthrop Road, Chester, CT 06412-1036  
Tel.: 203-526-9504

President: John F. Olson  
Sales Manager: Howard M. Berke  
Chief Mechanical Engineer: Wayne Lyons  
Products: audible & visual signalling devices for automotive & industrial applications, including strobe & rotating beacons, light bars, vehicle sirens & public address systems, and high-power outdoor warning systems.  
See full listing under **Alarm & Security**.

**XTEL**, 4301 Will Rogers Parkway, Suite 900, Oklahoma City, OK 73108  
Tel.: 405-946-1500

President: J. William Patterson  
Vice President: Glen Patterson  
Products: telephones and related products such as Voicepac paging/intercom systems, Keyflex 1A2 telephones, stand alone line status monitors, and PBX/Centrex answering positions.

# PATCHBAYS & ROUTING SWITCHERS

**AVTEC INDUSTRIES, INC.**, 5 Audrey Pl., Fairfield,  
NJ 07006 Tel.: 201-882-9460

President: James P. Tore  
Vice President: Sy Miller  
Sales Manager: Scott Curran  
Chief Engineer: Michael DeBlasio  
Products: engineer, design, fabricate and install audio/visual communication systems, specializing in boardroom interconferencing systems; specialized equipment sales (video projection, industrial video equipment, communications); manufacture Vantage Point™ multi-media lectern and Conferscan™ boardroom conference table designed to record meetings (audio and video).

**BENCHMARK MEDIA SYSTEMS**, 3817 Brewerton Rd.,  
N. Syracuse, NY 13212 Tel.: 315-452-0400

President and Chief Engineer: Allen H. Burdick  
Sales Manager: David G. May  
Products: audio processing and distribution electronics; input/output balancing amplifiers.

**BSM BROADCAST SYSTEMS, INC.**, P.O. Box 19007,  
Spokane, WA 99219 Tel.: 509-838-0110

President: Bruce Morse  
Sales Manager: Dave Poppe  
General Manager: J. Mike Fitzsimmons  
Products: manufacturers of audio and video routing switchers and distribution amplifiers; Modula system routing switcher, from 8x8 to 256x256 and up, including 20 remote control options.  
Sales Representative:  
Wayne Barrington, Atlanta, GA, 404-435-5040

**CONEX ELECTRO-SYSTEMS, INC.**, 1602 Carolina St.,  
P.O. Box 1342, Bellingham, WA 98227  
Tel.: 206-734-4323

President: John Plattner  
Sales Manager: Bob Tria  
Chief Engineer: Bill Hamelin  
Other Personnel: Jerry Huddle  
Products: 25Hz generators and sensors, remote controllable audio switchers with RS-232 option, and selectable input audio monitor amplifiers.  
District Offices:  
Allied Broadcast Equipment, Richmond, IN, 800-428-6954  
Broadcast Supply West, Tacoma, WA, 800-426-8434  
Barrett Associates, Inc., Oceanside, CA, 619-433-5600  
Broadcast Automation, Inc., Dallas, TX, 214-380-6800  
Harris Corp. Broadcast Div., Quincy, IL, 217-222-8200

**GAINES AUDIO**, P.O. Box 17888, Rochester, NY  
14617 Tel.: 716-266-0780

President: Jon Gaines  
Products: patchbays, cable testers, balanced input-output cards, direct boxes, mic preamps.

**GENTNER ENGINEERING CO., INC.**, 540 W. 3560  
South, Salt Lake City, UT 84115  
Tel.: 801-268-1117

President: Russell D. Gentner  
Sales Manager: Elaine Jones  
Chief Engineer: William H. Gillman  
President, RF Division: John E. Leonard, Jr.  
Products: complete selection of audio patch panels, telephone inter-

face systems for sound installations; remote control system with voice reporting over telephone line (for security systems).

District Office:

RF Products Division, San Jose, CA, 408-926-3400

**HEDCO**, P.O. Box 1985, Grass Valley, CA  
95945 Tel.: 916-273-9524

President: Peter Hughes  
Sales Manager: Ross Shelton  
Chief Engineer: Steve Miller  
Products: audio and video routing and distribution equipment.  
See full listing under **Audio Visual Equipment**.

**VERTIGO RECORDING PRODUCTS**, 12115 Magnolia  
Blvd. #116, N. Hollywood, CA 91607  
Tel.: 818-769-5232

President: Charles Bolois  
Sales Manager: Charles Bolois  
Chief Engineer: Charles Bolois  
Other Personnel: Kevin Kaiser  
Products: patch bay cleaning tools for ¼ inch/TRS and TT/Bantam jacks.

## PORTABLE SOUND SYSTEMS

**ANCHOR AUDIO, INC.**, 913 W. 223 St., Torrance, CA  
90502 Tel.: 213-533-5984

President: Jim Van Waay  
Sales Manager: Jon Peirson  
Chief Engineer: Tom Sawyer  
Products: portable public address systems, powered monitor speakers, intercom systems, and wireless microphones.

**ARGOS PRODUCTS CO., INC.**, 600 S. Sycamore St.,  
Genoa, IL 60135 Tel.: 815-784-5118

President: D.C. MacLaughlin  
Vice President: Ron Evers  
Products: indoor/outdoor sound columns, package sound systems, PA portable sound, lecterns, baffle/speaker combinations, baffles, speaker systems and enclosures.  
District Offices:  
Lewis & Dunnigen, Albany, NY  
G. McL. Cole Co., Parkridge, IL  
Wes Tech Marketing, Culver City, CA  
Bencsik Assoc., Ocala, FL

**AUDIO SERVICES CORPORATION**, 4210 Lankershim  
Blvd., N. Hollywood, CA 91602  
Tel.: 818-980-9891

President: Richard Topnam, Sr.  
General Manager: Richard Topnam, Jr.  
Sales Manager: David Panfili  
Chief Engineer: Michael Riner  
Rental Manager: Tove Blue  
Service Manager: Ron Meyer  
Products: professional portable sound equipment, sales, rental, lease, service, consulting, design and manufacture.

**BIAMP SYSTEMS, INC.**, 14270 S.W. Science Park Dr.,  
Portland, OR 97209 Tel.: 503-641-7287

President: Don Waggoner  
Sales Manager: Ralph Lockhart  
Chief Engineer: Hans Geerling  
Vice President of Finance: Jerry Payette



Products: professional sound reinforcement and audio production equipment, powered mixers, console mixers, power amplifiers, crossovers, parametric equalizers, and limiters.

**BOSE CORPORATION, The Mountain, Framingham,  
MA 01701 Tel.: 617-879-7330**

President: Sherwin Greenblatt  
Sales Manager: John Stiernberg  
Chief Engineer: John Carter  
Other Personnel: Dave Bell, Barry Luz, Mark Mayfield, Ken Jacob  
Products: professional loudspeaker systems for portable and installed applications including sound reinforcement, commercial sound and foreground music. Modeler™ computer software for designing commercial sound systems.

**CANARE CABLE, INC., 832 N. Victory Blvd., Burbank,  
CA 91502 Tel.: 818-840-0993**

President: K. Kawamoto  
General Manager: Barry Brenner  
Products: high definition, audio and video cable. Featuring Star Quad mic cable in 10 colors. Eight to 32 channel snakes, pigtails, junction boxes and cable reel systems.  
See full listing under **Wire & Cable**.

**INTERSONICS, INC., 3453 Commercial Ave.,  
Northbrook, IL 60062 Tel.: 312-272-1772**

President: Roy Whymark  
Sales Manager: Thomas Melzer  
Chief Engineer: Thomas Danley  
Other Personnel: Dr. Charles Rey  
Products: servo-drive loudspeakers, subwoofers run by a servo motor and driveshaft principle—no voice coils!  
See full listing under **Loudspeakers & Accessories**.

**MAGNA SOUND (Division of UXL Corp.), 108-02 Otis  
Ave., Corona, NY 11368 Tel.: 718-271-5200**

President: Ben Frankenstein  
Sales Manager: Neil Howard  
Chief Engineer: Salverio Guardì  
Other Personnel: Dorothy Davis  
Products: VoiceBeamer (sound lectern with optional cassette player in floor and table-top models with 10W, 20W and 50W power). Porta-Caster (battery-powered PA with half-mile range). Campaigner (removeable car top PA).

**McMARTIN INTERNATIONAL, INC., P.O. Box 4500,  
Gunnison, CO 81230 Tel.: 303-641-5500**

President: Ray B. McMartin  
Financial Administrator: Robert W. McMartin  
Products: engineered and commercial sound amplifiers; mixers; accessories; background and foreground music amplifiers and sound systems; FM/SCA receivers; satellite modulators; demodulators.

**NORCON ELECTRONICS, INC., 1260 Ralph Ave.,  
Brooklyn, NY 11236 Tel.: 718-451-1112**

President: Norman Schlaff  
Chief Engineer: Simon Kleyner  
Products: Norcon Talk-Thru communicator providing amplified hands-free communication through an environmental partition. Engineered sound reinforcement systems. Public address systems. Closed-circuit and master antenna television systems. Fire alarm systems.

**PANASONIC INDUSTRIAL COMPANY, 6550 Katella  
Ave., Cypress, CA 90630 Tel.: 714-895-7277**

President: Scott Minakami  
Sales Manager: Steve Woolley  
Other personnel: Gene Juall, Joe Crocco, Chris Foreman  
Products: pro audio and commercial sound products including mixers, mixer-amplifiers, power amplifiers, speakers, microphones, and a portable public address system with wireless microphone (s).  
See full listing under **Pro Audio Sound Systems & Products**.

**PULSAR LABORATORIES, 3200 Gilchrist Rd.,  
Mogadore, OH 44221 Tel.: 216-784-8022**

President: G. Carr  
Sales Manager: G. Carr  
Chief Engineer: J. Boessneck  
Studio Consultant: Bruce Hensal  
Products: professional touring consoles, frames, front, and monitor recording consoles.

**SAN MING ELECTRONIC SOUND EQUIPMENT CO.,  
LTD., 12715 Western Ave., Garden Grove, CA  
92641 Tel.: 714-891-2252**

President: Hugh C. Hsieh  
Sales Manager: Leon C. Hsieh  
Chief Engineer: S.W. Hsu  
International Sales: Hua C. Hsieh  
Products: high-intelligence multi-tap paging horns, heavy-duty driver units for PA and siren applications, extra-heavy-duty driver horns for community warning systems, megaphones.

**SIELER DESIGN PRODUCTS, 1308 W. 130th St.,  
P.O. Box 2128, Gardena, CA 90247  
Tel.: 213-324-9663**

President: Patrice Sieler Crane  
Chief Engineer: George Sieler  
Products: hand-held, high power, portable PA 30 watt amplifier, less than 4 lbs. ready to use, up to a year battery life, all cardioid mic with pushbutton power switch.  
District Offices:  
Sunrise Sales, Romeoville, IL, 815-886-2300  
A.I.D. Associates, Laurel, MD, 301-490-6363

**SOUND-CRAFT SYSTEMS, INC., Petit Jean Mt., Rt.  
#3, Box 319, Morrilton, AR 72110  
Tel.: 501-727-5476**

President: Earle Love  
Sales Manager: Hank Shaw  
Chief Engineer: Hugh Donnell  
Products: portable lecterns and sound systems, hailers, wireless microphones.

**SOUNDCRAFT USA, 8500 Balboa Blvd., Northridge,  
CA 91329 Tel.: 818-893-4351**

President: Ron Means  
Sales Manager: Ken Lopez  
Other Personnel: Linda Frank, Mark Gander, Shane Morris, Gary Lynn  
Products: audio mixing consoles and multi-track tape machines. Applications include live recording, broadcast and post production.  
See full listing under **Pro Audio Sound Systems & Products**.

**SPECO, DIV., COMPONENTS SPECIALTIES INC.,  
1172 Rt. 109, P.O. Box 624, Lindenhurst, NY  
11757 Tel.: 516-957-8700 (New York)  
1-800-645-5516 (Outside NY)**

President: Louis W. Keller  
Vice President, Sales: Mel Hulkower  
Vice President & General Manager: James Ganci  
Regional Sales Managers: Eric Forman, Bruce Kurtz  
Products: P.A. horns, amplifiers, tuners, loudspeakers, wall baffles, speaker assemblies, outdoor speakers, sound columns, ceiling grilles, transformers, L-pads, attenuators, accessories, microphones, intercoms, alarm sirens, multitestors, oscilloscopes.

**UHER OF AMERICA**, 7067 Vineland Ave., N.  
Hollywood, CA 91605 Tel.: 818-764-1120

President: John Belgiorno  
Sales Manager: George Rose  
Products: heavy-duty open-reel and cassette recorders provide high performance and reliability along with innovative features for commercial and industrial applications. Choice of mono/stereo portable models. Film sync and long play speeds available.

**BOB WHITE ASSOCIATES**, P.O. Box 39104, Solon,  
OH 44139 Tel.: 216-248-1317

President: Bob White  
Sales Manager: Tod White  
Chief Engineer: George White  
Products: professional sound products, disco systems, projection TV, professional lighting equipment.  
See full listing under **Pro Audio Sound Systems & Products**.

## POWER PROTECTION & CONDITIONERS

**NEMAL ELECTRONICS INTERNATIONAL INC.**,  
12240 N.E. 14th Ave., N. Miami, FL 33161  
Tel.: 305-893-3924

President: Benjamin Nemser  
Sales Manager: Hilda Manten  
Products: complete line of electronic wire, cable, connectors & SMATV equipment. Franchised distributors for Kings, Amphenol, Belden & Blonder-Tongue.

**PERMA POWER ELECTRONICS, INC.**, 5601 W.  
Howard Ave., Chicago, IL 60648  
Tel.: 312-647-9414

President: Norman Ackerman  
Sales Manager: Michael Shatz  
Marketing Manager: Jay Goldstein  
Products: portable public address sound systems; solid state, portable rostrums; sound column lecterns; mobile sound; hailers.  
See full listing under **Engineered Sound Systems**.

## PRO AUDIO SOUND SYSTEMS & PRODUCTS

**AB SYSTEMS, INC.**, 11480 Sunrise Gold Circle,  
Rancho Cordova, CA 95670 Tel.: 916-635-0890

President: Robert Bird  
Sales Manager: Irwin Laskey  
Chief Engineer: Jeff Kuells  
Other Personnel: George Anderson, Dona Maxcy  
Products: power amplifiers, mixer amplifiers, mono and dual bi-amplifiers and tri-amplifiers. Commercial ATD series power amplifiers, mixers, and loudspeakers. Provide full sound reinforcement and distributed system capabilities.  
See full listing under **Audio Amplifiers**.

**AIPHONE INTERCOM SYSTEMS**, 1700 130th Ave.  
N.E., Bellevue, WA 98005 Tel.: 206-455-0510

President: Hiko Shinoda  
Sales Manager: Jim Morrison  
Chief Engineer: Jun Matsumoto

BB-80

Products: industrial, business, residential loudspeaking, telephone, video intercom/security systems with paging talk-back; six microprocessor systems available, mixer amplifiers, paging speakers, horns, drivers, ceiling speakers, tuners, fast-food intercom systems, and special other products.

See full listing under **Intercom Systems—Duplex**.

**AKAI PROFESSIONAL**, 1316 E. Lancaster St., Fort  
Worth, TX 76102 Tel.: 817-336-5114

President: Jerry Freed  
Sales Manager: Chuck Murray  
Chief Engineer: Jim Cowser  
Products: mixing consoles, multi-track recorders, synthesizers, samplers, MIDI-effectors.

**AMEK CONSOLES, INC.**, 10815 Burbank Blvd., N.  
Hollywood, CA 91601 Tel.: 818-508-9788

President: Arnold Toshner  
Sales Manager: Bob Owsinski  
Chief Engineer: Tim Wilson  
Other Personnel: Toby Sali  
Products: audio consoles for sound reinforcement, touring and theaters. Features include 8x8 matrix and foldback (monitor) consoles and crossovers.

**APOGEE SOUND INC.**, 1150 Industrial Ave., Suite C,  
Petaluma, CA 94952  
Tel.: 707-778-8887 (National)  
800-528-3939 (CA)

President: Ken DeLoria  
Vice President Sales: Joe Manning  
Vice President Marketing: Brian Glenn  
Chief Engineer: Ken DeLoria  
Products: arrayable bi-amp portable loudspeaker, multipurpose 2-way single-amp portable loudspeakers, tri-amp portable loudspeaker. Speakers designed for stage monitoring, theater, and audio visual use. Include signal processors, equalization.  
District Offices:  
Pro-Mix, New Rochelle, NY, 914-633-3233  
Joe Manning, Irvine, CA, 714-730-6313

**ART—Applied Research & Technology Inc.**, 215  
Tremont St., Rochester, NY 14608  
Tel.: 716-436-2720

President: Philip A. Betette  
Sales Manager: Peter Beverage  
Chief Engineer: Richard Neatrou  
Customer Relations: Jim Stachowski  
Products: digital signal processors including software-updateable DR1 and DR2a digital reverberation systems; PD 3 1-in-3-out fixed installation delay; graphic equalizers; pitch transposer (time compression/expansion); 1500 delay line.  
See full listing under **Audio Signal Processors**.

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# ASHLY

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**ASHLY AUDIO INC.**, 100 Fernwood Ave., Rochester,  
NY 14621 Tel.: 716-544-5191 800-828-6308

President: Bill Thompson  
Sales Manager: Bob French  
Chief Engineer: Jon Gaines  
Products: manufacturers of professional sound products since 1972. Products include MOS-FET power amplifiers, graphic equalizers, noise gates, limiter-compressors, electronic crossovers, parametric equalizers, notch filters, and OEM products.  
District Offices:  
George Markunas Industries, 617-588-8043  
Ziskind Assocs., 312-577-1624

Sound & Communications

Triad Marketing, 201-696-8625  
A/V Marketing, 317-846-1034  
Dick Bellew Sales, 214-644-7881

**AUDIO CONTROL INDUSTRIAL, 6520 212th St. S.W.,  
Lynnwood, WA 98036 Tel.: 206-775-8461**

President: Thomas Walker  
Sales Manager: David Firestone  
Chief Engineer: Greg Mackie  
Products: third octave real time spectrum analyzers, patented bass restoration system, and equalizers.  
District Offices:  
North Shore Marketing, Seattle, WA, 206-284-9699  
L.P. Marketing, Oakland, CA, 415-532-5600  
Star Enterprises, Los Angeles, CA, 714-996-5622

**AUDIO/DIGITAL, INC., 1000 S. Bertelsen Rd., Ste. 4,  
Eugene, OR 97402 Tel.: 503-687-8412  
800-423-1082**

President: Gary Hartesty  
Sales Manager: Virginia Nott  
Chief Engineer: Gary Hartesty  
Products: digital signal processing equipment for permanent installation, touring, recording, studio and radio broadcasting applications, including the ADD series of 2 and 3 output microsecond digital delay.  
See full listing under **Audio Signal Processors**.

**AUDIO SERVICES CORPORATION, 4210 Lankershim  
Blvd., N. Hollywood, CA 91602  
Tel.: 818-980-9891**

President: Richard Topnam, Sr.  
General Manager: Richard Topnam, Jr.  
Sales Manager: David Panfili  
Chief Engineer: Michael Riner  
Rental Manager: Tove Blue  
Service Manager: Ron Meyer  
Products: professional portable sound equipment, sales, rental, lease, service, consulting, design and manufacture.

**AUDIO-TECHNICA U.S., INC., 1221 Commerce Dr.,  
Stow, OH 44224 Tel.: 216-686-2600**

President: Jon R. Kelly  
Sales Manager: Mark Taylor  
Vice President, Marketing: Ken Reichel  
Chief Engineer: Steve Hebrock  
Products: microphones and microphone accessories, recorder/mixers, cables, direct boxes, headphones, ENG mixers, mic stands.  
See full listing under **Microphones**.

**BEL ELECTRONICS, 745 109th St., Arlington, TX  
76011 Tel.: 817-640-6447**

President: John Birkhead  
Executive Vice President: Jerry Spohn  
Sales Manager: Paul Westbrook  
Chief Engineer: Tom Burrows  
Products: digital delay processors, microprocessor-based BDE series analog flangers, noise reduction units.

**BES/Bertagni Electroacoustical Systems, Inc., 12753  
Moore St., Cerritos, CA 90701  
Tel.: 213-926-0201 800-592-4644**

President: K.L. Ching  
Sales Manager: Dennis Schulgen  
Chief Engineer: Alex Bertagni  
Products: high-performance omnidirectional outdoor sound reinforcement speakers with 360-degree dispersion. Omnidirectional Thinline series for theaters, churches, and auditoriums. Hemispherically radiating ceiling speakers with 180-degree dispersion.  
See full listing under **Loudspeakers & Accessories**.

**BIAMP SYSTEMS, INC., 14270 S.W. Science Park Dr.,  
Portland, OR 97209 Tel.: 503-641-7287**

President: Don Waggoner  
Sales Manager: Ralph Lockhart  
Chief Engineer: Hans Geerling  
Vice President of Finance: Jerry Payette  
Products: professional sound reinforcement and audio production equipment, powered mixers, console mixers, power amplifiers, crossovers, parametric equalizers, and limiters.

**BOSE CORPORATION, The Mountain, Framingham,  
MA 01701 Tel.: 617-879-7330**

President: Sherwin Greenblatt  
Chief Engineer: John Carter  
Sales Manager: John Stiernberg  
Other Personnel: Dave Bell, Barry Luz, Mark Mayfield, Ken Jacob  
Products: professional loudspeaker systems for portable and installed applications including sound reinforcement, commercial sound and foreground music. Modeler™ computer software for designing commercial sound systems.  
See full listing under **Loudspeakers & Accessories**.

**CANARE CABLE, INC., 832 N. Victory Blvd., Burbank,  
CA 91502 Tel.: 818-840-0993**

President: K. Kawamoto  
General Manager: Barry Brenner  
Products: high definition, audio and video cable. Featuring Star Quad mic cable in 10 colors. Eight to 32 channel snakes, pigtailed, junction boxes and cable reel systems.  
See full listing under **Wire & Cable**.

**CERWIN-VEGA, INC., 12250 Montague St., Arleta, CA  
91331 Tel.: 818-896-0777**

President: Gene Czerwinski  
Sales Manager: Rich Mandella  
Chief Engineer: Marshall Buck, Ph.D.  
Products: a supplier of high-quality electronic & acoustic systems for over 30 years; domestic and auto sound systems; MI, sound reinforcement, motion picture, broadcast, recording, and commercial sound products.  
District Offices:  
Southwest Marketing, Burbank, CA, 818-848-7512  
MJA Sales, Millburn, NJ, 201-467-9898  
Image Marketing, Costa Mesa, CA, 714-650-7718  
AMPS, Cincinnati, OH, 513-321-8883  
Crescendo Assocs., Miramar, FL, 305-961-0886  
Jack Nead & Assocs., Shawnee Mission, KS, 913-268-8763  
Audio Assocs., Glenwood, MD, 301-854-6122  
Pro New England Marketing, Avon, CT, 203-673-1558  
Jack Nead & Assocs., Schaumburg, IL, 312-980-4131  
Ron Tunks Assocs., Ft. Lauderdale, FL, 305-581-5260  
Ron Tunks Assocs., Sheffield, AL, 205-383-4834  
Crescendo Assocs., Casselberry, FL, 305-657-6627  
Northwest Sales Firm, Tacoma, WA, 206-759-9995

**CETEC GAUSS, 9130 Glenoaks Blvd., Sun Valley, CA  
91352 Tel.: 213-875-1900**

President: W. Mort Fujii  
Sales Manager: J. Fleischmann, John Williams  
Chief Engineer: J. Williams  
Products: musical component loudspeakers, precision components for sound reinforcement, custom systems, high-speed tape duplicating equipment.

**COMMUNITY LIGHT & SOUND, INC., 333 E. 5th St.,  
Chester, PA 19013 Tel.: 215-876-3400**

President and Chief Engineer: Bruce Howze  
Sales Manager: John D. Strand  
Vice President, Engineering: John T. Wiggins  
Products: high efficiency loudspeakers, loudspeaker systems and enclosures, public address and sound reinforcement products, voice warning systems and OEM designs.

**District Offices:**

New Resource, Chet Flynn, Sandy Duffy, Norwell, MA, 617-659-1463  
Metrorep Sales, Inc., Sam Helms, Vinnie Macri, Freehold, NJ,  
201-462-1221

Audio Marketing Assoc., Bruce Hagen; Brecksville, OH, 216-526-2426  
Key Marketing, Inc., Glen Cordial, Plymouth, MI, 313-459-6040  
John Riley, Kalamazoo, MI, 616-375-1137

Pro Marketing Co., Inc., Pete Finney, Indianapolis, IN, 317-846-9591

Elrep Sales Co., Ben Van De Kroke, Tucker, GA, 404-938-7108

Bencsik Assocs., Bill Bencsik, Ocala, FL, 904-732-9775

Mel Foster Technical Sales, Inc., Ken Simons, Edina, MN, 612-941-9800

R.J. Throckmorton Sales Co., Bob Pfeiffer, Ballwin MO, 314-227-7222

JH Sales Co., Inc., Jerry Hudson, Irving, TX, 214-256-7665

Pearson & Pearson, John Pearson, Denver, CO, 303-722-6996

Gemini Electronics Marketing, Inc., Dean Nordquist, Edmonds, WA,  
206-776-3121

Tom Aye, San Jose, CA, 408-993-9428

Marshank Sales Co., Gary Marshank, Culver City, CA, 213-559-2591

Gencom Canada, Ltd., David James, Vancouver, BC, 604-689-1175

**CONQUEST SOUND, INC., 7319 Duvan Dr., Tinley  
Park, IL 60477 Tel.: 800-323-7671 (National)  
800-344-2667 (IL)**

President: Bob Jares, Sr.

Vice President: Larry Spalla

Sales Manager: Al Novak

Chief Engineer: Mike Sanfilippo

Other Personnel: Gary Wood

Products: 2,500 types of audio and video wiring products from mic  
cables to multi-line systems to 54-pair. We warehouse over 500,000 Switch-  
craft connectors and over one-million feet of Belden wire. Muters,  
direct boxes.

**J.W. DAVIS & CO., 3215 Canton St., Dallas, TX  
75226 Tel.: 214-651-7341  
TX WATS: 800-442-1564  
NAT. WATS: 800-527-5705**

President: Charles Griffiths

Vice President, Sales: Jack W. Tucker

Products: Patronis Pataxial Speaker Systems PA-150 and PA-70, Bessel  
Array Columns.

District Offices:

Bencsik Associates, Ocala, FL, 904-732-9775

David H. Brothers, Baltimore, MD, 301-764-7189

Murphy & Cota, Atlanta, GA, 404-875-2525

J.Y. Schoonmaker, Dallas, TX, 214-349-1650

**EASTERN ACOUSTICS WORKS, 59 Fountain St.,  
Framingham, MA 01701 Tel.: 617-670-1478**

President: Ken Berger

Sales Manager: Frank Loyko

Chief Engineer: Kenton Forsythe

Other Personnel: Sandy MacDonald

Products: professional loudspeaker products including full-range  
systems, bass and mid-bass horns, drivers, and studio monitor systems.  
See full listing under **Loudspeakers & Accessories**.

**EDCOR, 16782 Hale Ave., Irvine, CA 92714  
Tel.: 714-863-1529**

President: Larry Weston

Products: a complete line of pro sound contractor equipment including  
amplifiers, mixers, automatic mic mixers, wireless microphones systems.

**EDEN ELECTRONICS INC., Box 338, First St., Mon-  
trose, MN 55363 Tel.: 612-675-3650**

President: David D. Nordschow

Products: high quality commercial sound systems, mobile PA systems,  
stage monitors, constant directivity horns, crossovers, cabinets,  
fiberglass horns for O.E.M. application, horn-loaded bass systems.  
See full listing under **Engineered Sound Systems**.

**ELECTRO-VOICE, INC., 600 Cecil St., Buchanan, MI  
49107 Tel.: 616-695-6831**

President: Robert D. Pabst

Vice President, Sales and Marketing: Paul McGuire

Chief Engineer: Earl Harris

Director of Marketing: Jim Holt

Products: broadcast, recording, communications and PA micro-  
phones; public address and component high-fidelity loudspeakers and  
systems, high-performance compression drivers, horns, low-frequency  
systems, mixers, mixing consoles, signal processors and crossover  
networks.

See full listing under **Engineered Sound Systems**.

**ENVIRONMENTAL SOUND, 31220 La Baya Dr., Bldg.  
110, Westlake Village, CA 91362  
Tel.: 818-706-0228**

President: Pascal Delbuck

Sales Manager: Jean Pierre

Chief Engineer: Pascal Delbuck

Products: drop ceiling monitors that fit directly into a standard T-bar  
or grid ceiling. Pro Drop I 8-inch 2-way, ES-802 8-inch full range, ES-502  
2-way, ES-602 6-inch 2-way. All ES Series speakers have multiple moun-  
ting. Video monitor series. Limited edition Pascal 1 and Pascal 2 "mind  
soars" multiple driver arrangement, mounting between 16 inches on  
center studs, optional speaker mounting hardware.

**FM ACOUSTICS LTD., Tiefenhofstrasse 17,  
Waedenswil, CH (Switzerland) 8820  
Tel.: 01-780-6444**

President: Manuel Huber

Products: high power amplifiers from 150 to 7,000 Watts RMS; linear-  
phase electronic crossovers featuring 36 dB/Octave attenuation;  
forcelines high energy transfer cables.

See full listing under **Audio Amplifiers**.

**FSR, INC., 220 Little Falls Rd., Cedar Grover, NJ  
07009 Tel.: 201-239-0988**

President: William G. Fitzsimmons

Sales Manager: Janice Sandri

Chief Engineer: Joseph Fischer

Products: hotel ballroom combining systems; control systems for board-  
rooms, auditoriums, churches, homes; teleconferencing systems; IR con-  
trols; computer interfaces; custom engineering; custom panels; remote  
control modules for audio, video, and projector controls.

See full listing under **Audio-Visual Equipment & Systems**.

**GALAXY AUDIO, 625 East Pawnee, Wichita, KS 67211  
Tel.: 316-263-2852**

President: Brock M. Jabara

Sales Manager: R. D. Moneyhun

Chief Engineer: Brock M. Jabara

Products: "Hot Spot" personal monitors, including a powered model;  
"Pro Spot" speakers for installed or portable PA and monitors; eight,  
twelve, and sixteen channel mixing consoles.

**GOLD LINE, P.O. Box 115, W. Redding, CT 06896  
Tel.: 203-938-2588**

President: Martin E. Miller

Vice President, Marketing: Marj Miller

Products: audio spectrum analyzers both 10-band hand-held and  
30-band rack mountable, digital 1/3 octave RTA. Pink plus white noise  
generators. Loft crossovers and Loftech.

District Offices:

William B. Ray Assocs., Atlanta, GA, 404-351-6367

New Horizons, Bannockburn, IL, 312-234-5911

Richard Lewis Sales, Glenside, PA, 215-886-1555

Bob White Assoc., Solon, OH, 216-248-1317

**HEIL LTD., #2 Heil Drive, Marissa, IL 62257**  
Tel.: 618-295-3000

President: Bob Heil  
Products: mixing consoles, power amplifiers, parametric EQ, crossovers, satellite TV antennas, amateur radio and communication microphones.

**NOVATIVE ELECTRONIC DESIGNS, INC., 9701**  
Taylorsville Rd., Louisville, KY 40299  
Tel.: 502-267-7436

President: Hardison G. Martin  
Sales Manager: Tom Roseberry  
Chief Engineer: Ed Young  
Design Engineer: Bob Ponto  
Products: New "Class D" 200 W, 70.7 volt plug-in amplifiers, 7 inch rack frame holds 8 amplifiers; computer-controlled audio systems; smart automatic mixer; building block audio processing equipment.

**NTERSONICS, INC., 3453 Commercial Ave.,**  
Northbrook, IL 60062 Tel.: 312-272-1772

President: Roy Whymark  
Sales Manager: Thomas Melzer  
Chief engineer: Thomas Danley  
Other Personnel: Dr. Charles Rey  
Products: servo-drive loudspeakers, subwoofers run by a servo motor and driveshaft principle — no voice coils!  
See full listing under **Loudspeakers & Accessories.**

**MC/INTERNATIONAL MUSIC COMPANY, 1316 E.**  
Lancaster, Ft. Worth, TX 76179  
Tel.: 817-336-5114

President: Jerry Freed  
Sales Manager: Chuck Murray  
Chief Engineer: Jim Cowser  
Products: Akai—multitrack recorder, synthesizers. Studiomaster—recording and live mixing consoles. Ross—multitrack recorders, PA systems, guitar amps and effects. Fane—professional loudspeakers and compressor drivers.

**INTERNATIONAL TAPETRONICS CORPORA-**  
**TION/3M, 2425 S. Main St., P.O. Box 241, Bloom-**  
ington, IL 61702 Tel.: 309-828-1381

General Manager: Jack Hanks  
Marketing Manager: Bob Bomar  
Products: NAB broadcast cartridge machines & accessories.

**CLARK-TEKNIK ELECTRONICS INC., 30B Banfi Plaza**  
N., Farmingdale, NY 11735 Tel.: 516-249-3660

President: Jack Kelly  
Sales Manager: Keith Worsley  
Chief Engineer: Jim Jacobelli  
Products: digital reverberation systems, digital delay lines, 1/3 octave and 2/3 octave graphic equalizers, 1/3 octave R.T.A. with R.T. 60 measurement capabilities, Brooke Siren Systems crossovers, compressor limiters, DDA mixing consoles for recording, sound reinforcement, and ENG/film.  
See full listing under **Audio Signal Processors.**

**McMARTIN INTERNATIONAL, INC., P.O. Box 4500,**  
Gunnison, CO 81230 Tel.: 303-641-5500

President: Ray B. McMartin  
Financial Administrator: Robert W. McMartin  
Products: engineered and commercial sound amplifiers; mixers; accessories; background and foreground music amplifiers and sound systems; FM/SCA receivers; satellite modulators; demodulators.

**MEYER SOUND, 2832 San Pablo Ave., Berkeley, CA**  
94702 Tel.: 415-486-1166

President: John Meyer  
Sales Manager: Helen Meyer  
Operations Manager: Patrick Hayes

Products: complete line of professional loudspeakers and related electronics for sound reinforcement and studio applications. Company's SLM™ technique is available for electronic control of acoustic spaces.

**MODULAR AUDIO PRODUCTS, 50 Orville Dr.,**  
Bohemia, NY 11716 Tel.: 516-567-9620

President: Steve Summer  
Sales Manager: Chris Liptman  
Chief Engineer: Gary Pendola  
Products: mic preamps, line amps, solid state switchers, distribution amps, equalizers, compressors, op-amps, power supplies, monitor amplifiers, oscillators, noise generators, VU meter boards, VCAs.

**MODULAR SOUND SYSTEMS, INC., P.O. Box 488,**  
Barrington, IL 60010 Tel.: 312-382-4550

President: Jim Wischmeyer  
Sales Manager: Jim Wischmeyer  
Chief Engineer: Henry Heine  
Products: BAG END loudspeaker systems, custom cabinetry, rack mount enclosures, and sound system design.  
District Office:  
Greg Ouzonoff & Assoc., Yorktown Hts., NY, 914-245-6452

**THE MUSIC PEOPLE, INC., P.O. Box 648, West Hart-**  
ford, CT 06107 Tel.: 800-243-2888

President: James R. Hennessey  
Sales Manager: Earl "Buzz" Goodwin  
Chief Engineer: William Abaritis  
Products: ProForce horns, drivers, and crossovers; Hot Wires cables; in-line audio direct boxes; in-line transformers; audio spectrum microphones; in-line effects pedals; on-stage stands; Drumfire drum synthesizer.

**NORCON ELECTRONICS, INC. 1260 Ralph Ave.,**  
Brooklyn, NY 11236 Tel.: 718-451-1112

President: Norman Schloff  
Chief Engineer: Simon Kleyner  
Products: Norcon Talk-Thru communicator providing amplified hands-free communication through an environmental partition. Engineered sound reinforcement systems. Public address systems. Closed-circuit and master antenna television systems. Fire alarm systems.

**NUMARK ELECTRONICS/PPD, 503 Raritan Center,**  
Edison, NJ 08837 Tel.: 201-225-3222

President: Harry Kotovsky  
Sales Manager: Peter Horsman  
Products: power amplifiers, mixers, equalizers, noise reduction, expansion systems, video sound processors, turntables, CD players, video processors, loudspeaker systems, portable disco systems.  
District Office:  
Canoga Park, CA 91304

**O'BRIEN PARTITION CO., INC., 5301 E. 59th Street**  
Kansas City, MO 64130 Tel.: 816-361-2334

Vice President/General Manager: Stephen R. Nichols  
Sales Manager: Tim Hoiting  
Chief Engineer: Bob McGuire  
Products: Sound Sorbic® acoustical wall panels. Available fabric covered, Class A fire rated, in a number of shapes, sizes, and acoustical ratings.

**OMNIMOUNT SYSTEMS, 10850 Van Owen St., N**  
Hollywood, CA 91605 Tel.: 818-766-9000

President and Chief Engineer: Alexander Cyrell  
Sales Manager: Jim Schaller  
Vice President, Marketing: Susan Michelson  
Products: industrial quality mounts. Unique ebonite ball joint design adjustability, security features, invisible wiring capability, assorted models to support weights from four ounces to hundreds of pounds

**OMNI Q. INC.**, 925 Boblett St., Blaine, WA  
98230 Tel.: 206-384-1750

President: H.H. von Tiesenhausen  
Sales Manager: H.H. van Tiesenhausen  
Chief Engineer: Garry Musgrave  
Other Personnel: Werner Adam  
Products: sound, sound imaging systems, audio visual control systems,  
computerized response systems.

**OTARI CORPORATION**, 2 Davis Dr., Belmont, CA  
94002 Tel.: 415-592-8311

President: Jack Soma  
Sales Manager: David Roudebush  
Chief Engineer: Phil Sun  
Products: open reel, multi-channel professional tape recorder/repro-  
ducers, cassette duplicators and synchronizers.

**PANASONIC INDUSTRIAL COMPANY**, 6550 Katella  
Ave., Cypress, CA 90630 Tel.: 714-895-7277

President: Scott Minakami  
Sales Manager: Steve Woolley  
Other Personnel: Gene Juall, Joe Crocco, Chris Foreman  
Products: pro-audio and commercial sound products including mix-  
ers, mixer-amplifiers, power amplifiers, speakers, microphones, and  
a portable public address system with wireless microphone(s).  
District Offices:  
Western Region, James Murray, Cypress, CA, 714-895-7273  
Central Region, Greg Braithwaite, Chicago, IL, 312-364-7900

**PANASONIC INDUSTRIAL CO., Audio Video System  
Products Group**, One Panasonic Way, Secaucus,  
NJ 07094 Tel.: 201-348-7000

President and Chief Operating Officer: Kiyoshi Seki  
Vice President: Steve Yuhua  
Sales Manager: Steve Woolley  
Chief Engineer: Tom Nagai  
Marketing Manager: John McDonnell  
Products: Ramsa® professional power amplifiers, mixing consoles, por-  
table and stationary audio recording mixers and post production and  
recording consoles, compact speakers, integrated amplifiers, including  
mixer power amplifiers with AM/FM tuner, and accessories.  
See full listing under **CCTV/Video Systems & Products**.

**PEAVEY ELECTRONICS CORP.**, 711 A Street,  
Meridian, MI 39301 Tel.: 601-483-5365

President: Hartley Peavey  
Sales Manager: Melia Peavey  
Chief Engineer: Jack Sondermeyer  
Products: PA systems, mixing consoles, rack mount mixers, power  
amps, equalizers, digital effects processors, monitor system, sound rein-  
forcement, rawhorn speaker and other components.

**PENTAGON INDUSTRIES, INC.**, 5115 N. Sheridan  
Rd., Chicago, IL 60640 Tel.: 312-271-8300  
800-621-3867

President: Lateef Khan  
Sales Manager: Gopal Muntha  
Chief Engineer: Batric Furundzic  
Products: auto reverse cassette changer; four servo drive, sequentially  
operated, auto reverse cassette decks; provides over 8 hours of con-  
tinuous background music; response to over 12,000 Hz.  
See full listing under **Audio-Visual Equipment & Systems**.



**PROFESSIONAL AUDIO SYSTEMS**, 1224 West 252nd  
St., Harbor City, CA 90710 Tel.: 213-534-3570

President: Larry Doran  
Sales Manager: Roger Du Naier  
Products: Modular reinforcement systems with TOC™ time offset cor-  
rection; coaxial loudspeaker systems; full-range loudspeaker systems;  
musical instrument loudspeaker systems; stage monitor systems.  
District Offices:  
Clearview Marketing, Forest Hills, NY, 718-592-0710  
Professional Audio Associates, Burlington, MA, 617-229-6050  
MBT, Pittsburg, PA, 412-344-1360  
Applied Audio, Asheville, NC, 704-658-2291  
Tenicki and Associates, Houston, TX, 713-528-2005  
Innovative Sales and Marketing, Fountain Valley, CA, 714-549-7770  
Future Sales, Redmond, WA, 206-868-5577  
Charlie Winkler and Associates, Uniontown, OH, 216-699-9511  
Future Sales, Fairfax, CA, 415-459-6880  
Stan Sliz Associates, Broomfield, CO, 800-525-2670  
Omnimedia Corp., Dorval, Quebec, Canada, 514-636-9971  
PME Audio, West Germany, (7) 138-4160

**PROTECH AUDIO CORP.**, Flowerfield, Bldg. #1, St.  
James, NY 11780 Tel.: 516-584-5855

President: William Murphy  
Chief Engineer: Joseph Giambone  
Products: amplifiers—power, medium level, distribution, com-  
pressor/limiters, preamplifiers modular, automatic level controls, remote  
level controls, switching modules, line amplifiers, mixing/summing  
modules, audio transformers, hardware.

**PULSAR LABORATORIES**, 3200 Gilchrist Rd.,  
Mogadore, OH 44221 Tel.: 216-784-8022

President: G. Carr  
Sales Manager: G. Carr  
Chief Engineer: J. Boessneck  
Studio Consultant: Bruce Hensal  
Products: professional touring consoles, frames, front, and monitor,  
recording consoles.

**RAMKO RESEARCH, INC.**, 11355 "A" Folsom  
Blvd., Rancho Cordova, CA 95670  
Tel.: 916-635-3600 800-821-2545

President: Ray Kohfeld  
Sales Manager: Jim Lucy  
Products: audio consoles, audio DAs, mic/line amps, TT preamps,  
monitor amps, audio router/amps, turntables, R/R recorders, cassette  
and cart decks and portable mixers.

**RANE CORP.**, 6510 216th SW, Mountainlake Terr., WA  
98043 Tel.: 206-774-7309

President: Steve Brakken  
Sales Manager: Larry Winter  
Chief Engineer: Dennis Bohn  
Products: constant Q equalizers, realtime analyzers, 6-channel amplifiers  
(900w), distribution amps, 70 volt systems, headphone amplifiers,  
crossovers.

**RENKUS-HEINZ**, 17191 Armstrong Ave., Irvine, CA  
92714 Tel.: 714-250-0166

President: Harro Heinz  
Sales Manager: Greg McLagan  
Chief Engineer: Bill Gelow  
Director of Marketing: Jason Larson  
Products: high-frequency compression drivers, horns, networks, and processor-controlled professional sound reinforcement systems.

**ROH, Division of Anchor Audio, Inc.**, 913 W. 223rd  
St., Torrance, CA 90502  
Tel.: 213-533-1498

President: Jim Van Waay  
Sales Manager: Dan Garrigan  
Products: audio line monitors with switchable metering and inputs. Full feature intercom PL and IFB systems. Modular and portable audio distribution. Control and buffer amplifiers.

**ROSS**, 1316 East Lancaster St., Fort Worth, TX 76102  
Tel.: 817-336-5114

President: Jerry Freed  
Sales Manager: Chuck Murray  
Chief Engineer: Jim Cowser  
Products: Ross PA systems EQ's, speaker enclosures, power amplifiers and Studiomaster professional mixers and power amplifiers.

**RTS SYSTEMS, INC.**, 1100 W. Chestnut St., Burbank,  
CA 91506 Tel.: 818-840-7119

President: Bob Ringer  
Sales Manager: Shelley Harrison  
Chief Engineer: Stan Hubler  
Vice President, Marketing: Douglas Leighton  
Products: Professional intercom systems, conference line and dedicated line, IFB systems. Pro audio amplifier, phonopreamp, 10-watt monitor amp and buffer amp.

**SAN MING ELECTRONIC SOUND EQUIPMENT CO.,  
LTD.**, 12715 Western Ave., Garden Grove, CA  
92641 Tel.: 714-891-2252

President: Hugh C. Hsieh  
Sales Manager: Leon C. Hsieh  
Chief Engineer: S.W. Hsu  
International Sales: Hua C. Hsieh  
Products: high-intelligence multi-tap paging horns, heavy-duty driver units for PA and siren applications, extra-heavy-duty driver horns for community warning systems, megaphones.

**SELCO PRODUCTS CO.**, 7580 Stage Rd., Buena Park,  
CA 90621 Tel.: 714-521-8673

President: Bill Wilkinson  
Sales Manager: Celeste Martinez  
Other Personnel: Diane Duquette  
Products: Selco Collet knobs in matte finishes (10-38mm diameters). Audio level indicators type AL19, AL29 and AL39 with mask or bezel. Other meters are full spec. JU and PPM meters.  
District Offices:  
Crawford Associates, Andover, MA, 616-470-2122  
Pass Associates, Sunnyvale, CA, 408-735-9040  
HMC, Inc., Arcadia, CA, 818-447-0958

**SIMS VIBRATION DYNAMICS**, 17724 15th Ave. N.E.,  
Seattle, WA 98155 Tel.: 206-362-0700

President: Steve Sims  
Sales Manager: Nat A. Williams, Jr.  
Chief Engineer: Steve Sims  
Products: vibration isolation bases for turntables and compact disc players.  
See full listing under **Disco Systems & Products.**

**SONY PRO AUDIO PRODUCTS**, 1600 Queen Ann  
Road, Teaneck, NJ 07666 Tel.: 201-833-5200

President: William Connolly  
Vice President Sales: George Currie  
Products: professional wired & wireless mics, mixers, consoles, analog & digital tape recorders. Compact disc mastering, production & playback products.  
District Offices:  
Ken Myer, Sony Corp. of America, Compton, CA  
Graeme Goodall, Sony Corp. of America, Nashville, TN  
Gareth Nelson, Sony Corp. of America, Itasca, IL  
Gary Rosen, Sony Corp. of America, Paramus, NJ

**SOUNDCRAFT USA**, 8500 Balboa Blvd., Northridge  
CA 91329 Tel.: 818-893-4351

President: Ron Means  
Sales Manager: Ken Lopez  
Other Personnel: Linda Frank, Mark Gander, Shane Morris, Gary Lynn  
Products: audio mixing consoles and multi-track tape machines. Applications include live recording sound reinforcement, studio recording remote recording, broadcast and post production.  
Sales Representatives:  
Steve Armstrong, Northridge, CA, 818-893-8411  
Tom Walter, Barrington, IL, 312-382-4925  
Bill Hamilton, Folsom, PA, 215-543-4677  
Neil Conly, Bedford, TX, 817-540-3006

**SOUNDSPHERE, SONIC SYSTEMS INC.**, 737 Cana  
St., Bldg. 23B, Stamford, CT 06902  
Tel.: 203-356-1136

President: Peter Hamilton  
Sales Manager: John Karamon  
Products: various models of Soundsphere omnidirectional loudspeakers are used in live entertainment, churches, gymnasiums, airports, shopping malls and other locations that require sound reinforcement.

**SOUNDTRACS USA**, 745 109th St., Arlington, TX  
76011 Tel.: 817-640-6447

President: John Birkhead  
Executive Vice President: Jerry Spohn  
Sales Manager: Paul Westbrook  
Chief Engineer: Tom Burrows  
Products: Soundtracs mixing consoles, seven series. The FM and FM2 Series of 19-inch rack-mount mixers featuring sweepable EQ, mono stereo or monitor input modules. Bel digital delay/samplers.  
See full listing under **Mixers & Mixing Consoles.**

**STUDER REVOX AMERICA, INC.**, 1425 Elm Hill Pike  
Nashville, TN 37210 Tel.: 615-254-5651

President: Thomas E. Mintner  
Sales Manager: David Bowman  
Chief Engineer: G.T. Sanford III  
Products: full range of professional audio equipment, including open reel and cassette recorders, amplifiers, mixers, CD players, and language labs.

**TASCAM, Teac Professional Division**, 7733 Telegraph  
Road, Montebello, CA 90640 Tel.: 213-726-0300

President: Noria Tamura  
National Sales Manager: William Mohrhoff  
Director of Product Planning: Dave Oren  
Product/Service Manager: Jon Bliese  
Advertising Manager: Anders Madsen  
Products: A broad line of tape recorders and professional mixing consoles used in sound reinforcement, post production and professional audio recording applications.  
District Offices:  
Marketration, Phoenix, MD  
Western Hi Tech/Solomon, Van Nuys, CA  
Dobbs Stanford, Dallas, TX  
Steffey Marketing, Northbrook, IL  
IND, Fairfax, CA

**TOA ELECTRONICS, INC.**, 480 Carlton Ct., S. San Francisco, CA 94080 Tel.: 415-588-2538

President: Sam Sakata  
Sales Manager, Commercial Division: Joe Green  
Technical Support Manager: Bob Sweet  
Products: engineered sound systems, commercial sound systems, amplifiers, dual amplifiers, tuners, equalizers, multi-functional preamplifiers, mixing consoles, speakers, horns, drivers, microphones, wireless systems, microcomputerized EXES intercom systems, CCTV, security systems.  
See full listing under **Engineered Sound Systems**.

**TURBOSOUND, INC.**, 611 Broadway, New York, NY 10012 Tel.: 212-460-9940  
Sales, 608-767-3651

President: Alan Rick  
Sales Manager: Dan Abelson  
Products: exclusive U.S. agent for turbosound products manufactured in the UK. TMS Series full-range enclosures, TSW Series sub-woofer enclosures, TSE Series integrated enclosures, TMW Series low-profile floor monitors, TPC phase checker system.  
Sales Office:  
Dan Abelson, Nazomanie, WI, 608-767-3651

**UHER OF AMERICA**, 7067 Vineland Ave., N. Hollywood, CA 91605 Tel.: 818-764-1120

President: John Belgiorno  
Sales manager: George Rose  
Products: heavy-duty open-reel and cassette recorders provide high performance and reliability along with innovative features for commercial and industrial applications. Choice of mono/stereo portable models. Film sync and long play speeds available.

**VERREX CORPORATION**, 1130 Route 22 West, Mountaintainside, NJ 07092 Tel.: 201-232-7000

President: Thomas G. Berry  
Sales Manager: Richard Krochmal  
Chief Engineer: David G. Butz  
Products: supplier of engineered pro-audio sound systems worldwide since 1946. Sales, engineering, fabrication, installation and service departments.

**BOB WHITE ASSOCIATES**, P.O. Box 39104, Solon, OH 44139 Tel.: 216-248-1317

President: Bob White  
Sales Manager: Tod White  
Chief Engineer: George White  
Products: professional sound products, disco systems, projection TV, professional lighting equipment.  
District Offices:  
Bob White Assoc., Brooklyn, MI, 517-592-5138  
Jay Dill, Indianapolis, IN, 317-255-3437

**YAMAHA INTERNATIONAL CORP., Audio Products Division**, 6600 Orangethorpe, Buena Park, CA 90620 Tel.: 714-522-9011

National Sales Manager: Bob Shomaker  
General Manager: John Gatts  
Marketing Manager: Robert P. Davis  
Products: full line of audio mixing consoles, power amplifiers, speaker systems, and analog and digital signal processing equipment.

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## REMOTE CONTROLS



**AMX**, 11999 Plano Rd., Dallas, TX 75243  
Tel.: 214-644-3048

President: Scott Miller  
Sales Manager: Bruce Christianson  
Chief Engineer: Art Chace  
Products: SX series remote control systems, RF wireless and multiplexed softwire control systems for 8 to 64 channels for control of tape decks, screens, lights, slide projectors, audio level and more.  
District Offices:  
Milanese Associates, Philadelphia, PA, 215-763-2138  
Advanced Communications Mkg., Laguna Niguel, CA, 714-582-5167  
AV Marketing, Ft. Worth, TX, 817-246-9508  
Neeley & Associates, Ft. Lauderdale, FL, 305-524-1811  
Meyer Marketing, Deerfield Beach, FL, 304-481-9250

**OXMOOR CORPORATION**, 237 Oxmoor Circle, Birmingham, AL 35209 Tel.: 205-942-6779

President: Lynn McCroskey  
Sales Manager: Richard Mitchell  
Products: DCA-2 digital control attenuator, RC-16 remote control, 4x4 buffer amplifier, DQ-29 programmable equalizer.  
See full listing under **Audio Signal Processors**.

**VIDEO LINK, DIVISION OF XANTECH CORP.**, 12950 Bradley Ave., Sylmar, CA 91342  
Tel.: 818-362-0353

President: Herb Seymour  
Sales Manager: Eric Fleetwood  
Chief Engineer: Mike Robbins  
Other Department: Deo Adamo  
Products: xtra-link remote control extension system, 4x4 stereo, audio/video matrix switcher, A/V distribution amplifier, XL-400 IR remote control RF switcher, other accessories.

## SOUND MASKING

**ALTEC LANSING CORPORATION**, Box 26105, Oklahoma City, OK 73126-0105  
Tel.: 405-324-5311

President: F. Davis Merrey  
Vice President of Marketing: Gary Rilling  
Sales Manager: Gayle Campbell  
Products: industrial and professional electronic and loudspeaker products including mixers, power amplifiers, equalizers, high power speakers and compression drivers, constant directivity horns, crossovers and microphones.  
See full listing under **Audio Amplifiers**.

**AUTOMATION DEVICES, INC.**, Automation Park, Box AD, Fairview, PA 16415-0904  
Tel.: 814-474-5561

President: W. E. Walker  
Chief Engineer: Don Miller  
Products: noise-masking equipment.

Sound & Communications



**District Offices:**

Automation Methods, Orange, CA, 714-974-4000  
G. Crawford, Lebanon, NJ, 201-730-7688  
J. Schiefferle, Cleveland, OH, 814-838-6163  
J. Dixon, Charlotte, NC, 704-366-9661  
Bishop and Strek, Detroit, MI, 313-538-0595

**BES/Bertagni Electroacoustical Systems, Inc., 12753  
Moore St., Cerritos, CA 90701  
Tel.: 213-926-0201**

President: K.L. Ching  
Sales Manager: Dennis Schulgen  
Chief Engineer: Alex Bertagni  
Products: hemispherically-radiating ceiling speakers with 180-degree dispersion pattern. Closely resembles flat ceiling tiles. Interior Design Series has acoustical tile pattern embossed for total camouflage. All models radiate 180-degree dispersion pattern and can replace conventional cone type speakers in a ratio as high as 8:1 reducing installation and materials cost.

See full listing under **Loudspeakers & Accessories.**

**CONTROL ELECTRONICS, 107 Allen Blvd., Farmingdale, NY 11735 Tel.: 516-694-0125**

President: Jack Leonard  
Products: noise-masking equipment.

**J.W. DAVIS & CO., 3215 Canton St., Dallas, TX 75226  
Tel.: 214-651-7341 Texas WATS: 800-442-1564  
National WATS: 800-527-5705**

President: Charles Griffiths  
Sales Manager: Jack W. Tucker  
Products: loudspeakers, baffles, noise generators and equalizers for a total sound masking installation. Power amplifiers, mixers and exclusive SBA systems are also available.  
See full listing under **Pro Audio Sound Systems.**

**DUKANE CORPORATION, 2900 Dukane Dr., St. Charles, IL 60174 Tel.: 312-584-2300**

President: William B. Clark  
Sales Manager: Jim Shane  
Chief Engineer: Gordon Mielke  
Marketing Manager: Craig Lyons  
Products: nurse call, intercom, voice paging, clock, sound masking, staff registry and voice evacuation systems for health care, institutional and industrial markets.  
See full listing under **Paging Systems.**

**DYNAMIC SOUND INDUSTRIES, P.O. Box 1395, LaBelle, FL 33935 Tel.: 813-675-0100**

Chief Engineer: U. L. Lahti  
Products: products manufactured under patented pressure velocity formula for symmetrical dispersion. Speaker systems for ceiling, plenum, partition and floor. Custom designs for music paging and sound masking.  
See full listing under **Background/Foreground Music.**

**DYNA-SYSTEMS INC., 5371 Tennyson St., Denver, CO 80212 Tel.: 303-455-5400**

President: Dr. Robert C. Chanaud  
General Manager: Vincent Pietrabon  
Products: masking generators, small masking systems, self-contained maskers, master/slave masking units, mixer/equalizers, automatic level controls, plenum loudspeakers, duet loudspeakers, zone controls, zone power amplifiers, security masking systems, computerized design programs.

**INSUL-ART ACOUSTICS CORP., 107 Allen Blvd., Farmingdale, NY 11735 Tel.: 516-694-0002  
800-526-0908**

President: Jack D. Leonard  
Vice President Sales: Alfred D. Siliati  
Chief Engineer: Harold Goldstein  
Sales: Mike Russo  
Products: masking generators, 1/3-band & octave-band equalizers, masking loudspeakers with complete plenum assemblies, masking systems, paging systems, custom designed masking & paging systems.

**KLARK-TEKNIK ELECTRONICS, INC., 30 B Banfi Plaza N., Farmingdale, NY 11735**

Products: DDA mixing consoles for recording, sound reinforcement and ENG/film.  
See full listing under **Audio Signal Processors.**

**LYNTEC/TECHNICAL VISUALS, 7030 Grandview, Merriam, KS 66204 Tel.: 913-722-4047**

President: Lynn J. Potter  
Products: programmable audio controller generates one-to-seven channels of time of day/level-controlled pink noise. Slo-Start for occupied space. Also controls one-to-seven paging/music channels. Weekend control, battery backup.

**McMARTIN INTERNATIONAL, INC., P.O. Box 4500, Gunnison, CO 81230 Tel.: 303-641-5500**

President: Ray B. McMartin  
Financial Administrator: Robert W. McMartin  
Products: engineered and commercial sound amplifiers; mixers; accessories; background and foreground music amplifiers and sound systems; FM/SCA receivers; satellite modulators; demodulators.

**NORCON ELECTRONICS, INC., 1260 Ralph Ave., Brooklyn, NY 11236 Tel.: 718-451-1112**

President: Norman Schlaff  
Chief Engineer: Simon Kleyner  
Products: Norcon Talk-Thru communicator providing amplified hands-free communication through an environmental partition. Engineered sound reinforcement systems. Public address systems. Closed-circuit and master antenna television systems. Fire alarm systems.

**OFFICE TECHNOLOGIES, 4551 Bloomington Ave., S., Minneapolis, MN 55407 Tel.: 612-721-2457**

President: Steven J. Orfield  
Vice President Sales/Marketing: Marianne Seitz  
Chief Engineer: Bruce Runyan  
Products: sound masking system components; 70 volt masking systems; master units with masking generator, amp and equalizer; 8-inch speakers in enclosures; power supply and power cables; speakers and enclosures for central systems.

**POWERTRONIX, 10623 Lawson River, Fountain Valley, CA 92708 Tel.: 714-963-5411**

President: Robert Gehlke  
Sales Manager: Irv Weisman  
Products: 200W current-drive distribution amplifiers with 24V-48 VDC emergency back-up power capability. 24 VDC mobile amplifier with 3 electronically-switched, prioritized inputs. Preamp with 5 electronically-switched, prioritized inputs.  
See full listing under **Audio Amplifiers.**

**PRECISION INC., 3415 48th Ave., Minneapolis, MN 55429 Tel.: 612-537-9340**

President: D. R. Head  
Sales Manager: David Anderson  
Products: noise-masking equipment.

**PROTECH AUDIO CORP.**, Flowerfield Bldg. #1,  
St. James, NY 11780 Tel.: 516-584-5855

President: William Murphy  
Chief Engineer: Joseph Giambone  
Products: amplifiers—power, medium level, distribution, compressor/limiters, preamplifiers modular, automatic level controls, remote level controls, switching modules, line amplifiers, mixing/summing modules, audio transformers, hardware.

**SONOMASK SYSTEMS INC.**, 1130 Route 22 West,  
Mountainside, NJ 07092 Tel.: 201-232-7000

President: Thomas G. Berry  
Sales Manager: Glenn R. Berry  
Chief Engineer: David G. Butz  
Products: supplier of engineered sound masking systems and products since 1971. Systems and products sold to contractors and end users. Manufacturer of complete line of generators, attenuators and speakers.

**SOUNDOLIER**, 1859 Intertech Dr., Fenton, MO  
63026 Tel.: 314-962-9870

Vice President, Consultant for Marketing: Herbert M. Jaffe  
Director of Sales: Paul Grote  
Vice President & Marketing: Tom Erickson  
Chief Engineer: John Saller  
Products: high quality, commercial sound loudspeakers, enclosures and accessories for music, alarm and public address systems, baffles for ceilings and walls, matching transformers and backbox enclosures. See full listing under **Loudspeakers & Accessories**.

**SPECO, DIV., COMPONENTS SPECIALTIES INC.**,  
1172 Rt. 109, P.O. Box 624, Lindenhurst, NY  
11757 Tel.: 516-957-8700 (New York)  
1-800-645-5516 (Outside NY)

President: Louis W. Keller  
Vice President, Sales: Mel Hulkower  
Vice President & General Manager: James Ganci  
Regional Sales Managers: Eric Forman, Bruce Kurtz  
Products: P.A. horns, amplifiers, tuners, loudspeakers, wall baffles, speaker assemblies, outdoor speakers, sound columns, ceiling grilles, transformers, L-pads, attenuators, accessories, microphones, intercoms, alarm sirens, multitestors, oscilloscopes.



**WHITE INSTRUMENTS, INC.**, P.O. Box 698, Austin,  
TX 78767 Tel.: 512-892-0752

President: Carl Van Ryswyk  
Sales Manager: Emory E. Straus  
Products: real time analyzers; active and passive equalizers (broad band and narrow band); filters; low level crossover networks; masking noise generators and equalizers.  
See full listing under **Audio Signal Processors**.

## TELECONFERENCING SYSTEMS

**AMERICAN FIBERTEK, INC.**, 370 W. 35th St., 7th  
Floor, New York, NY 10001 Tel.: 212-868-2150

President: E. Robert Klein  
Sales Manager: E. Robert Klein  
Chief Engineer: Jim McLaughlin

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Technical Sales: Jack Krol  
Products: fiber optic transmission systems for closed-circuit television surveillance and data, general purpose, aerial, burial, and plenum fiber cables, termination and splice tool kits, SMA optical connectors, power test meter, light source, power supplies.

**AVTEC INDUSTRIES, INC.**, 5 Audrey Pl., Fairfield, NJ  
07006 Tel.: 201-882-9460

President: James P. Tore  
Vice President: Sy Miller  
Sales Manager: Scott Curran  
Chief Engineer: Michael DeBlasio  
Products: engineer, design, fabricate and install audio/visual communication systems, specializing in boardroom interconferencing systems; specialized equipment sales (video projection, industrial video equipment, communications); manufacture Vantage Point™ multimedia lectern and ConferScan™ boardroom conference table designed to record meetings (audio and video).

**CEAC, INC.**, 1500 Hunter Loop Rd., Montgomery, AL  
36108 Tel.: 205-263-2311

President: R.M. Pirnie III  
Sales Manager: Tom Johnston  
Chief Engineer: Dr. V.M. Griswold  
Vice President, Marketing/Sales: Art May  
Products: audio, audio/graphic teleconferencing bridges and room conferencing systems. ARCS II, advanced room conference system; AXIS series of conferencing bridges featuring the AXIS microprocessor controller.

**DELCOM CORP.**, 6019 S. 66th E. Ave., Tulsa, OK  
74145 Tel.: 918-494-9500  
800-331-5461

President: Sam Pate  
Sales Manager: Jerry Koerner  
Chief Engineer: Martin Brown  
Other Personnel: Buddy Schwartz  
Products: turnkey video systems, design and engineering services, custom and standard consoles and control room furnishings. Computerized cable and tracing for system documentation.  
See full listing under **CCTV/Video Systems**.

**FSR, INC.**, 220 Little Falls Road, Cedar Grove, NJ  
07009 Tel.: 201-239-0988

President: William G. Fitzsimmons  
Sales Manager: Janice Sandri  
Chief Engineer: Joseph Fischer  
Products: hotel ballroom combining systems; control systems for boardrooms, auditoriums, churches, homes; teleconferencing systems; IR controls; computer interfaces; custom engineering; custom panels; remote control modules for audio, video, and projector controls.  
See full listing under **Audio-Visual Equipment & Systems**.

**JENEL SYSTEMS & DESIGN, INC.**, 10307 Bernardin,  
Dallas, TX 75243 Tel.: 214-680-0502

President: Elmer E. Smalling III  
Executive Vice President: Jean C. Rinklin  
Products: consultants on design of television, satellite, and computer systems, acoustic designers of broad band and fiber lans.

**NORCON ELECTRONICS, INC.**, 1260 Ralph Ave.,  
Brooklyn, NY 11236 Tel.: 718-451-1112

President: Norman Schlaff  
Chief Engineer: Simon Kleyner  
Products: Norcon Talk-Thru communicator providing amplified hands-free communication through an environmental partition. Engineered sound reinforcement systems. Public address systems. Closed-circuit and master antenna television systems. Fire alarm systems.

Sound & Communications

**RAVEN ELECTRONICS CORPORATION**, 400 Wolver-  
ing Way, Sparks, NV 89431 Tel.: 702-359-3700

President: Carl A. Dawson  
Sales Manager: Davis S. Young  
Chief Engineer: Wook Shim  
Purchasing Agent: Jay W. Cigno  
Products: designs, engineers, and manufactures Engineering Service  
channel equipment, INTELSAT/DomSat earth station products, STL,  
VF, and TTY switching equipment for use in LOS microwave, satellite,  
wireline, and fiber optic transmission networks.  
District Offices:  
Act Communications, Hammonton, NJ, 609-561-2882  
Act Communications, Lilburn, GA, 404-925-2572  
Act Communications, Houston, TX, 713-531-6717  
Act Communications, Salt Lake City, UT, 801-261-1126  
Act Communications, Puyallup, WA, 206-841-4820

**TECHNICAL ACOUSTICS, INC.**, 114a Washington St.,  
Norwalk, CT 06854 Tel.: 203-838-1532

President: Adolph C. Nederland  
Sales Manager: David Nederland  
Products: pre-packaged voice reinforcement and teleconferencing  
systems, fully concealed ceiling speakers and mics.  
District Offices:  
Meyer Marketing, Boca Raton, FL, 305-481-9250  
Milanese Assoc., Philadelphia, PA, 215-763-2138  
Allwest Electronics., Camarillo, CA, 805-388-1789  
Chuck Olson Assoc., Renton, WA, 206-271-5416  
Audio Video Mktg., Fort Worth, TX, 817-246-7166

**UNEX, A Dynatech Company**, 4 Kidder Road,  
Chelmsford, MA 01824 Tel.: 617-256-8222

President: John D. Ela  
Sales Manager: Robert L. Birch  
Chief Engineer: Robert Lucey  
Marketing Director: Robert Harmon  
Products: The Communicator, an infrared full-duplex teleconferenc-  
ing unit for any size group, using AC power and standard telephone  
jack. Comes with base unit and 8 wireless receivers.  
See full listing under **Hearing Assistance Systems**.

**VERREX CORPORATION**, 1130 Route 22 West,  
Mountainside, NJ, 07092 Tel.: 201-232-7000

President: Thomas G. Berry  
Sales Manager: Richard Krochmal  
Chief Engineer: David G. Butz  
Products: supplier of engineered teleconferencing and communications  
systems worldwide since 1946. Systems supplied to electrical contrac-  
tors and end users. Sales, engineering, fabrication, installation, and ser-  
vice departments.

**WESTELL, INC.**, 7630 Quincy St., Willowbrook, IL  
60521 Tel.: 800-323-6883

President: Dan Finch  
Sales Manager: Ken Bird  
Chief Engineer: John Coyne  
Products: audio teleconference bridges, terminals, and speakerphones,  
for customer, premise or central office use.

## TELEPHONE SYSTEMS — KEYPHONES

**AMTEL SECURITY SYSTEMS, INC.**, 8525 N.W. 53rd  
Terrace, Miami, FL 33166 Tel.: 305-591-8200  
800-22-AMTEL

President: Suresh Gajwani  
Sales Manager: Moe H. Weiner  
Chief Engineer: Byron Blank

Regional Manager (N.E.): Jim Gall  
Products: telephone entry control systems which control access to  
buildings, card access control systems, and parking barrier gates.

**AUDIOCOM, INC.**, 14645 N.W. 77th Ave., Suite 203,  
Miami Lakes, FL 33014  
Tel.: 305-825-HOLD (4653)

President: Ron Deblinger  
Marketing Manager: Stuart L. Ginsberg  
Chief Engineer: Kevin Morahan  
Director of Operations: Art Hecht  
Products: Promotions on Hold — professionally produced, company-  
specific audio programming that provides a soft sell mix of messages  
and music to keep callers informed and entertained while they wait "on  
hold."  
See full listing under **Telephone System Peripherals**.

**FAMOUS TELEPHONE SUPPLY CO.**, P.O. Box 2172,  
Akron, OH 44309 Tel.: 216-762-8811  
800-321-9122

President: J. Blauschild  
General Manager: Robert A. Fuzy  
Marketing: John P. Cavataic  
Products: wire and cable; general hardware; apparatus; paging equip-  
ment; power equipment; protection devices; tools; splicing equipment;  
closures; compounds; couplers and peripheral devices; plenum cable.  
Key systems and PABXs.  
See full listing under **Hardware & Tools**

**GOLDSTAR TELECOMMUNICATIONS, INC.**,  
1 Madison St., E. Rutherford, NJ 07073  
Tel.: 201-777-6940

President: Hye Ho Lee  
Chief Engineer: M. J. Lee  
Products: full-featured key systems with 10 to 40 station and 5 to 20  
C.O. line capacities; DSS, paging, hands-free talkback, speaker-  
phone, 1-button random hunting C.O. expansion (6 outgoing) unit.

**INTER-TEL, INC.**, 6505 W. Chandler Blvd., Chandler,  
AZ 85226 Tel.: 602-961-9000

President: Steven G. Mihaylo  
Sales Manager: William G. Bray  
Executive Vice President: Maury Esperseth  
Vice President Marketing: Thomas C. Parise  
Products: Inter-Tel GX digital voice-data hybrid key/PBX that grows  
to 32 lines, 120 telephones, 112 single-line telephones, features true least-  
cost routing, station message detail accounting, DISA.  
Regional Representatives:  
Western: Ed Ziska, Chandler, AZ, 602-961-9000  
Northeastern: Mike Pergola, Kenilworth, NJ, 201-245-8700  
Central and Southern: Bob Vilumis, Hanover Park, IL, 312-830-0663  
Direct Sales Branches:  
Dean Moeller, Branch Manager: Tuscon, AZ, 602-792-0933  
Ray McCloud, Branch Manager: Phoenix, AZ, 602-243-4300  
Craig Rauchle, Vice President, Buena Park, CA, 714-522-3851  
213-802-1513  
Ryan Mullaney, Branch Manager, Englewood, CO, 303-790-7799  
Barry Wichansky, Branch Manager, Kenilworth, NJ, 201-245-8700  
Wayne Weinrich, St. Louis, MO, 314-291-3311  
Chris Brown, Clearwater, FL, 813-578-2888  
Ralph Nicosia, Branch Manager, Houston, TX, 713-680-3000  
Jack Hart, Branch Manager, San Diego, CA, 619-292-0055  
Lynne Weiss, Sales Manager, Van Nuys, CA, 818-901-1422

**IWATSU AMERICA INC.**, 430 Commerce Blvd., Carl-  
stadt, NJ 07072 Tel.: 201-935-8580

President: T. Tomari  
Sales Director: Lenn Berman  
Chief Engineer: Robert Beck  
Products: key telephone systems ranging from 1 line, 6 stations to 36  
trunks, 128 stations.

**NORTH SUPPLY COMPANY**, 600 Industrial Pkwy.,  
Industrial Airport, KS 66031 Tel.: 913-791-7000

President: Stan Fisher  
Product Line Manager: Leslie Gordon  
Products: national distributor of telecommunications equipment and security/alarm systems including Premier— electronic key systems, and telephones.  
Sales Representatives:  
Mike Godowns, Industrial Airport, KS, 913-791-7000  
Tony Stanford, Eads, TN, 901-853-8509  
Pete Yingling, Gettysburg, PA, 717-334-7544

**PLANT EQUIPMENT INC.**, 28075 Diaz Rd.,  
Temecula, CA 92390 Tel.: 714-676-4802

Sales Manager: Ruth Barnett  
Engineering Manager: Heinz Ross  
Products: key telephone dispatch systems, 911 emergency dispatch systems, traders consoles, 1A2 key telephone systems, Com Centrex key telephone dispatch systems.

**TELE-PATH INDUSTRIES, INC.**, 3361 Melrose Ave.  
N.W., Roanoke, VA 24017  
Tel.: 703-982-8844

President: Leon Harris  
Sales Manager: Jim Connor  
Products: key system intercoms; PBX paging adapters; code-call units, complete line of 1A2 key enhancement products.

**TIE/COMMUNICATIONS INC.**, 5 Research Dr., Shel-  
ton, CT 06484 Tel.: 203-926-2000

President: Thomas L. Kelly, Jr.  
Executive Vice President: William Merritt  
Senior Vice President: Gilbert Engels  
Vice President, Marketing: Patrick Courtin  
Products: electronic key telephone systems featuring privacy, simultaneous intercom calls with hands-free reply, multi-line conferencing, all-call paging, single button call-forwarding, automatic recall of calls placed on hold, memory dialing, camp-on, queuing, hotlines, do-not-disturb. New hybrid microprocessor based, digitally controlled communications systems.  
District Offices:  
Naperville, IL, 312-355-0808  
San Mateo, CA, 415-511-0500  
Norcross, GA, 404-447-1314  
Markham, Ontario, Canada, 416-475-5577

**TOSHIBA AMERICA, INC.**, Telecommunications  
Systems Div., 2441 Michelle Dr., Tustin, CA  
92680 Tel.: 714-669-5197

Vice President and General Manager: Paul Wexler  
Marketing Communications Supervisor: Vivienne Avetoom  
Products: the Strata series of electronic key systems that serves 2 to 56 users; microprocessor-based stored program control technology provides an abundance of quality features.  
See full listing under **Telephone Systems—PBX**.

**V BAND SYSTEMS, INC.**, 5 Odell Plaza, Yonkers, NY  
10701 Tel.: 914-964-0900

President: John R. Cootts  
Vice President, Marketing: Ronald E. Haworsen  
Chairman: Thomas E. Feil CEO  
Chief Engineer: Leonid Shor  
Products: electronic key telephone systems for the financial community, 911 applications, load control centers and military communications.

**WALKER TELECOMMUNICATIONS CORP.**, 200 Oser  
Hauppauge, NY 11788 Tel.: 516-435-1100

Chairman of the Board: Burt Walker  
President: Howard Laffler  
President, Telephone Systems Div.: Maurice Rodrigue

Products: Reliant electronic key telephone systems, from 3 lines and 8 stations to 30 lines and 96 stations; featuring off-hook, hands-free answerable, speed dialing, and automatic incoming call backup, POETS, an expandable keyphone system from 6 lines and 16 stations to 30 lines and 60 stations.

**XTEL**, 4301 Will Rogers Pkwy, Ste. 900, Oklahoma  
City, OK 73108 Tel.: 405-946-1500

President: J. William Patterson  
Vice President: Glen Patterson  
Products: "Keyflex 10" 10 button 1A2 telephone. "On-Hook" dialing, 9 number speed dial plus last number redial, multi-line conferencing, LED line status.

## TELEPHONE SYSTEMS—PBX

**AUDIOCOM, INC.**, 14645 N.W. 77th Ave., Suite 203,  
Miami Lakes, FL 33014  
Tel.: 305-825-HOLD (4653)

President: Ron Deblinger  
Marketing Manager: Stuart L. Ginsberg  
Chief Engineer: Kevin Morahan  
Director of Operations: Art Hecht  
Products: Promotions on Hold — professionally produced, company-specific audio programming that provides a soft sell mix of messages and music to keep callers informed and entertained while they wait "on hold."  
See full listing under **Telephone System Peripherals**.

**FAMOUS TELEPHONE SUPPLY CO.**, P.O. Box 2172,  
Akron, OH 44309 Tel.: 216-762-8811  
800-321-9122

President: J. Blauschild  
General Manager: Robert A. Fuzy  
Marketing: John P. Cavataio  
Products: wire and cable; general hardware; apparatus; paging equipment; power equipment; protection devices; tools; splicing equipment; closures; compounds; couplers and peripheral devices, plenum cable. Key systems and PABXs.  
See full listing under **Hardware & Tools**.

**HARRIS DIGITAL TELEPHONE SYSTEMS**, 1 Digital  
Dr., Novato, CA 94948 Tel.: 415-472-2500

Marketing Director: Ron Derechilo  
General Manager: William J. Adams  
Sales Director: Ron Klieves  
Chief Engineer: Paul Thomson  
Products: computerized digital PBXs from 8 to over 1,000 station lines, featuring communications cost management, redundancy, and network systems capability; alternate voice data providing PC interconnection is standard in the system; switches are DMI-SNA and x.25 protocols.  
Sales Representatives:  
Jane Straus, Schaumburg, IL, 312-303-1310  
Dennis Raymer, Walton, IN, 219-626-3115  
Thom Fehrman, Winslow, IL, 815-367-3811  
Pete Kallaof, Creve Coeur, MO, 314-878-3365  
District Offices:  
For office nearest you call 1-800-4HARRIS.

**INTER-TEL, INC.**, 6505 W. Chandler Blvd., Chandler,  
AZ 85226 Tel.: 602-961-9000

President: Steven G. Mihaylo  
Sales Manager: William G. Bray  
Chief Engineer:  
Executive Vice President: Maury Esperseth  
Vice President Marketing: Thomas C. Parise  
Products: Inter-Tel GX digital voice-data hybrid key/PBX that grows

to 32 lines, 120 telephones, 112 single-line telephones, features true least-cost routing, station message detail accounting, DISA.  
See full listing under **Telephone Systems—Keyphones.**

**ITT BUSINESS AND CONSUMER COMMUNICATIONS — PABX SYSTEMS**, 6131 Falls of Neuse Road, Raleigh, NC 27609 Tel.: 919-878-9510

Vice President & General Manager: Richard M. Beyer  
Sales Manager: John Flynn  
Director of PR & Advertising: Jeff Wood  
Products: System 3100 voice/data PBX.

**MITEL, INC.**, 5400 Broken Sound Blvd. N.W., Boca Raton, FL 33431 Tel.: 305-994-8500

Vice President, Marketing & Sales: Edward Burfine  
Executive Vice President, Marketing, Sales & Service: Franklin T. Julian  
Technical Service: Gordon Turner  
Assistant Vice President, Marketing Services: Lynn Riddele  
Products: PABX and electronic telephone sets, automatic call distributors.  
District Offices:  
Dallas, TX, 214-387-5581  
Irvine, CA, 714-261-0600  
Atlanta, GA, 404-396-7550  
Fairfax, VA, 703-591-0880  
Chicago, IL, 312-655-3930  
Tarrytown, NY, 914-332-1800

**SIEMENS COMMUNICATION SYSTEMS, INC.**, 5500 Broken Sound Blvd., N.W. Boca Raton, FL 33431 Tel.: 305-994-8100

President: Werner Krause  
Vice President, Sales & Marketing: Dietrich Arbenz  
Products: SD Series EPABX's for the small-to-medium-size business or hotel/motel. Saturn family of voice/data digital PABX's.  
District Offices:  
M. Kearns, Norcross, GA  
P. Beshel, Arlington, TX  
R. Lewis, Anaheim, CA  
L. White, Landover, MD  
W. Poole, Schaumburg, IL

**SOLID STATE SYSTEMS, INC.**, 1990 Delk Industrial Blvd., Marietta, GA 30067 Tel.: 404-952-2414

President: Ed Mills  
Sales Manager: Jason Schloss  
Chief Engineer: Joe Mehaffey  
Products: CBX, CBX/ACD computerized telephone and automatic call distributor systems; electronic Message Bank- and Watt-Shaver® energy management/building automation system.

**TELEDIAL DEVICES INC.**, 125 Schmitt Blvd., Farmingdale, NY 11735 Tel.: 516-293-8400

President: Paul Jacobs  
Sales Manager: Sydney Rubenstein  
Chief Engineer: Richard Chan  
Products: PBX and centrex feature-phones, secured memory phones, restriction and courtesy phones. Automatic memory dials — DTMF and Pulse; toll restriction dials — DTMF and Pulse; Pulse dials with last number recall; solid state tone dials; automatic single number dials. Data/voice phone and data sets.  
See full listing under **Telephone System Peripherals.**

**TIE/COMMUNICATIONS INC.**, 5 Research Dr., Shelton, CT 06484 Tel.: 203-926-2000

President: Thomas L. Kelly, Jr.  
Executive Vice President: William Merritt  
Senior Vice President: Gilbert Engels  
Vice President, Marketing: Patrick Courtin  
Products: electronic key telephone systems featuring privacy,

simultaneous intercom calls with hands-free reply, multi-line conferencing, all-call paging, single button call-forwarding, automatic recall of calls placed on hold, memory dialing, camp-on, queuing, hotlines, do-not-disturb. New hybrid microprocessor based, digitally-controlled communications systems.  
See full listing under **Telephone Systems — Key Phones.**

**TONE COMMANDER SYSTEMS, INC.**, 4320 150th N.E., Redmond, WA 98052-1039  
Tel.: 206-883-3600

President: Rod Proctor  
Director of Sales and Marketing: Dennis L. Nixon  
Director of Engineering: Vasco Rubio  
Products: PBX and Centrex answering consoles, small business PBX's, multi-link intercoms and key systems and enhancement products.

**TOSHIBA AMERICA, INC., Telecommunications Systems Div.**, 2441 Michelle Dr., Tustin, CA 92680 Tel.: 714-669-5197

Vice President and General Manager: Paul Wexler  
Marketing Communications Supervisor: Vivienne Avetoom  
Products: Perception electronic digital PBX, handles up to 32 incoming lines and 120 telephones; features integrated voice/data and lodging/health care as well as a host of standard features.  
District Office:  
Armonk, NY, 914-273-1750

**XTEL**, 4301 Will Rogers Parkway, Suite 900, Oklahoma City, OK 73108 Tel.: 405-946-1500

President: J. William Patterson  
Vice President: Glen Patterson  
Products: "Status" telephones and stand alone LSIs; monitoring for up to 60 stations, single line/4 line, built-in paging speaker, requires no KSU, two pair wiring.

## TELEPHONE SYSTEM PERIPHERALS

**ADC TELECOMMUNICATIONS, INC.**, 4900 W. 78th St., Minneapolis, MN 55435 Tel.: 612-835-6800

President: C.M. Denny  
Manager: Jack Brandmueller  
Chief Engineer: J. Deitch  
Products: insulation displacement, cross connect products for customer premise location, telephone test and access products, broadcast equipment.

**AMP NETCON, A Division of AMP Products Corporation**, P.O. Box 1776, Southeastern, PA 19482 Tel.: 215-647-1000

Chief Executive Officer: Walter Raab  
Marketing Manager: Bill Russo  
Products: products for the specialized needs of the premises-wiring networking, and construction industries.  
See full listing under **Wire and Cable.**

**AMTEL SECURITY SYSTEMS, INC.**, 8525 N.W. 53rd Terrace, Miami, FL 33166 Tel.: 305-591-8200  
800-22-AMTEL

President: Suresh Gajwani  
Sales Manager: Moe H. Weiner  
Chief Engineer: Byron Blank  
Regional Manager (N.E.): Jim Gall  
Products: telephone entry control systems which control access to buildings, card access control systems, and parking barrier gates.

# Audiocom®

**AUDIOCOM, INC.**, 14645 N.W. 77th Ave., Suite 203,  
Miami Lakes, FL 33014  
Tel.: 305-825-HOLD (4653)

President: Ron Deblinger  
Marketing Manager: Stuart L. Ginsberg  
Chief Engineer: Kevin Morahan  
Director of Operations: Art Hecht  
Products: Promotions on Hold—professionally produced, company-specific audio programming that provides a soft sell mix of messages and music to keep callers informed and entertained while they wait "on hold."

District Offices:  
Northeast Regional Director: Thomas Hood, New York, NY,  
212-688-9654  
Midwest Regional Director: Arthur Belkind, Chicago, IL,  
312-498-2255  
California Regional Director: George Jostlin, Santa Ana, CA,  
714-554-8520

**AUTOMATION ELECTRONICS CORP.**, 11501 Dublin  
Blvd., Dublin, CA 94568 Tel.: 415-828-2880

President: Buck Wilson  
Vice President, Regional Sales: Judd B. Presley  
Chief Engineer: John Giordano  
Vice President Finance: Edward S. Smith  
Vice President Sales & Marketing: Douglass S. Anderson  
Products: incoming call management systems, including automatic call sequencers, telephone management information systems, and multi-line announcers.

District Offices:  
George Bradley, Boulder, CO  
Shirley Wright, Fort Worth, TX  
Judy Taylor, Lakewood, OH  
Daryl Fierce, Atlanta, GA  
Bill Baume, Alton, IL

**FLOYD BELL INC.**, 897 Higgs Ave., Columbus, OH  
43212 Tel.: 614-488-3193

President: Don Foukal  
Sales Manager: Tom Shain  
Chief Engineer: Ely Zofan  
Products: electronic ringers for straight line, key, or PBX telephone systems. Pleasant warble tone 5 to 150 VAC/DC. Complete line of piezoelectric audio alarms.

**BFI COMMUNICATION SYSTEMS, INC.**, 1806 Robert  
Fulton Dr., Suite 210, Reston, VA 22090  
Tel.: 800-654-5097 703-860-3055

Products: Network access and System 4000 Teleflex (telephone enhancement product). Call DATA/TRAC (stand-alone call accounting system).

**BUSCOM SYSTEMS, INC.**, 490 Gianni St., Santa Clara,  
CA 95054 Tel.: 408-988-5200

President: Thomas F. Hood  
Marketing Manager: Steve Shelton  
Chief Engineer: Dr. Donald M. Bellenger  
Products: single/2-line smart telephones, automatic dialers, tone encoders, replacement handsets, call diverters in tone/pulse/remote, line/WATS extenders, hot-line telephones.

**CAMBRIDGE ELECTRONICS LABORATORIES**, 20  
Chester St., Somerville, MA 02144  
Tel.: 617-629-2805

President: Dr. Jeffrey Race  
Sales Manager: Charlotte Bissell

BB-92

Products: specialized telecom accessories including digital music-on-hold source for PABX/key systems, mini telephone ringing generators, and two-way talk-back intercom unit.

**CETEC RAYMER**, 7315 Fulton Ave., N. Hollywood,  
CA 91605 Tel.: 213-875-0423

President: Hugh T. Wilcox  
Chief Engineer: Clifford L. Kogge Jr.  
Sales Manager: Hugh T. Wilcox  
Products: background/foreground equipment: wall and shelf mount amplifiers, AM/FM tuners and paging receivers, microphone mixers, installation accessories and transformers, M-O-H and telephone interconnect devices, and test equipment.

**COMMAND COMMUNICATIONS INC.**, 8000 E.  
Girard, #416, Denver, CO 80231  
Tel.: 303-750-6434

President: William McClure  
Products: automatic message alerting systems for telephone answering machines; automatic alarm alerting and monitoring systems; remote call forwarding control and WATS extender; remote switching for telephone devices.

**DACON ELECTRONICS INC.**, 8 Industrial Ave.,  
Upper Saddle River, NJ 07458  
Tel.: 201-825-4640

President: Daniel J. Connelly  
Sales Manager: James N. Taylor  
Chief Engineer: Rich Van Tieghem  
Products: automatic call sequencers, call concentrators, call diverters, automatic call distributors, headsets, automatic bridging unit.

District Offices:  
Tracy Clagett, Fairfax, VA  
Larry Walthers, Kansas City, KS  
Russ McCarthy, Cypress, CA  
Joan Beachner, McLean, VA  
Gary Low, Cypress, CA

**ELECTRONIC SPECIALISTS, INC.**, 171 S. Main St.,  
P.O. Box 389, Natick, MA 01760  
Tel.: 617-655-1532 800-225-4876

President: Frank Stifter  
Sales Representative: Mary A. Ray  
Office Manager: Alice Brown  
Products: interference filters for FM, TV, VCR, CB and stereo equipment. Kleen Line® AC power interference filters and spike suppressors. UPS.

**FAMOUS TELEPHONE SUPPLY CO.**, P.O. Box  
2172, Akron, OH 44309 Tel.: 216-762-8811  
800-321-9122

President: J. Blauschild  
General Manager: Robert A. Fuzy  
Marketing: John P. Cavataio  
Products: wire and cable; general hardware; apparatus; paging equipment; power equipment, protection devices; tools; splicing equipment; closures; compounds; couplers and peripheral devices, plenum cable. Key systems and PABXs.  
See full listing under **Hardware & Tools**.

**HARRIS CORP., DRACON DIVISION**, 809 Calle Plano,  
Camarillo, CA 93010 Tel.: 805-987-9511

Vice President, General Manager: John R. Mason  
Director Domestic Sales: Tom Erdmann  
Vice President, Sales & Marketing: Jack McGuigan  
Chief Engineer: Joe Mader  
Products: PAGEPAC telephone integrated loudspeaker voice paging systems; linemen's test sets; craft tools; relay racks.  
See full listing under **Paging Systems**.

*Sound & Communications*

**INFORMATION DYNAMICS CORPORATION, 1251**  
Exchange Drive, Richardson, TX 75081  
Tel.: 214-783-8090

President: Charles L. Friedman  
Chief Engineer: Daniel Power  
Products: displays: busy visual displays, line status indicators, wall BVD  
& Centrex LSI's. Skinny wire displays in all sizes.

**TW LINX, 195 Algonquin Rd., Des Plaines, IL**  
60016 Tel.: 312-296-5469

Manager: Russ Duggan  
Chief Engineer: Grant Swick  
Products: metal and plastic components and custom assemblies for installers that simplify routing, fastening and assembly of cable networks.

**LT ELECTRONICS LTD., 2535 Gerrard St. East,**  
Scarborough, Canada M1N 1W9  
Tel.: 416-691-9406

President: Jim Breedon  
Sales Manager: Jim Breedon  
Chief Engineer: J. Hesse  
Products: school intercoms, cone speakers, sound columns, packaged amplifiers, telephone amplifiers, speaker baffles, bass reflex speaker systems.  
See full listing under **Paging Systems.**

**MELCO, A Division of Telzon, 1600 132 Ave NE,**  
Bellevue, WA 98005 Tel.: 206-462-6700

President: Ron Tarrant  
Vice President, Marketing & Sales: Louis Champan  
Executive Technical Director: Bill Blum  
Customer Service: Kay Barney  
Products: key system intercoms, paging equipment, MAX communication systems, service observing equipment, line hold units, telephone amplifiers, off premise equipment, modularized connecting panels, aligned status monitoring system.  
District Offices:  
Mike Anderson, Marietta, GA  
Robert King, Columbia, MD  
Tom O'Hara, Union Springs, AL  
Bob Weckherlin, Arlington, TX  
Earl Olsen, Los Angeles, CA

**MICROVOICE CORPORATION, 23362 Peralta Drive,**  
Laguna Hills, CA 92653 Tel.: 714-859-1091

President: Greg Peacock  
Sales Manager: Jim Grattan  
Products: Apex automated PBX attendant allows the caller to route his own calls to departments and extensions when the PBX operator is busy. Multivoice product is a multi-channel announcer.

**MITEL/DATACOM, INC., Hallmark Building, Suite 553,**  
13873 Park Center Road, Herndon, VA  
22071-3279 Tel.: 703-471-1000

President: George Gilmore  
Vice President Marketing: Peter Madsen  
Chief Engineer: Stuart Card  
Products: central office enhancement equipment, data security devices and key-stream enhancement equipment.  
District Offices:  
Atlanta, GA, 404-396-3311  
Chicago, IL, 312-961-1616  
Dallas, TX, 214-490-3344  
Denver, CO, 303-969-0300  
Albany, NY, 315-896-2686

**RADIONICS INCORPORATED, 920 Holt Rd., Webster,**  
NY 14580 Tel.: 716-872-2100

President: A. J. Ozminkowski  
Sales Manager: Susan Nephew  
Chief Engineer: Fred B. Cupp

Manager, Telecom. Marketing: Scott Ladin  
Products: Director One and Directory Plus electronic inquiry systems for PBX or Centrex users. On-line directory assistance for operators performs name searches in 2-3 seconds. Custom printed directories. Telephone cable and equipment inventory data.

**RAVEN ELECTRONICS CORPORATION, 400 Wolver-**  
ing Way, Sparks, NV 89431 Tel.: 702-359-3700

President: Carl A. Dawson  
Sales Manager: Davis S. Young  
Chief Engineer: Wook Shim  
Purchasing Agent: Jay W. Cigno  
Products: designs, engineers, and manufactures Engineering Service Channel equipment, INTELSAT/DomSat earth station products, STL, VF, and TTY switching equipment for use in LOS microwave, satellite, wireline, and fiber optic transmission networks.  
See full listing under **Teleconferencing Equipment.**

**RING GROUP OF NORTH AMERICA, 230 Community**  
Dr., Great Neck, NY 11021  
Tel.: 516-487-0250 800-645-9690

Vice President: Paul Ruggieri  
Chief Engineer: John Camello  
R & D Manager: Ken Solem  
Products: ACD/5000, DCD 600, full featured, software controlled ACD systems with comprehensive MIS packages. Specially designed agent station. Emergency 911 system includes automatic number identification (ANI). Automatic Line ID (ALI).  
See full listing under **Intercom Systems—Duplex.**

**RITRON, INC., 148 W. Carmel Dr., P.O. Box 1998,**  
Carmel, IN 46032 Tel.: 317-846-1201

President: E. W. Rice, III  
Sales Manager: Steve Rice  
Chief Engineer: Steve Henke  
Products: industrial and business portable radio/telephone system, phone line extender, local area bypass products.  
District Offices:  
Bassett Sales Corp., N. Hollywood, CA, 213-877-7129  
Marketing Analysts, Worthington, OH, 614-436-2808  
R.P. Moses & Co., Bellmore, NY, 516-679-8774  
Secom Systems, Atlanta, GA, 404-455-0672  
Conn Systems Assocs., Cameron, MO, 816-632-7616

**SOLID STATE SYSTEMS, INC., 1990 Delk Industrial**  
Blvd., Marietta, GA 30067 Tel.: 404-952-2414

President: Ed Mills  
Sales Manager: Jason Schloss  
Chief Engineer: Joe Mehaffey  
Products: CBX, CBX/ACD computerized telephone and automatic call distributor systems, electronic Message Bank- and Watt-Shaver® energy management/building automation system.

**TELE-ASSEMBLIES, 4 Ferndale Ave., Miller Place,**  
NY 11764 Tel.: 516-744-7433

President: Leon Goudikian  
Products: code call unit, telephone relay control, custom telephone circuits.

**TELEDIAL DEVICES INC., 125 Schmitt Blvd., Farm**  
ingdale, NY 11735 Tel.: 516-293-8400

President: Paul Jacobs  
Sales Manager: Sydney Rubenstein  
Chief Engineer: Richard Chan  
Products: automatic memory dials — DTMF and Pulse; toll restriction dials — DTMF and Pulse; Pulse dials with last number recall; solid state tone dials; automatic single number dials, PBX and Centre feature-phones, secured memory phones, and memory, restriction and courtesy phones. Data/voice phones and data sets.  
District Offices:  
North Supply, Kansas City, MO

Graybar Electric Co., Clayton, MO  
Texocom, Atlanta, GA  
Famous Telephone Supply, Akron, OH  
Anixter Supply, Chicago, IL

**TELEPHONE DYNAMICS CORP.**, 2473 Jerusalem  
Ave., Box 514, North Bellmore, NY 11710  
Tel.: 516-221-9470

President: Leonard Young  
Chief Engineer: Jack Mara  
Products: telephone answering systems — from 1-to-48 lines —  
telephone recorders — handsets — operators headsets — automatic  
answering dial-to-page. Armored cable telephone handsets.

**TELEPHONIC EQUIPMENT CORP.**, 17401 Arm-  
strong Ave., Irvine, CA 92714  
Tel.: 714-250-9400

President: H. V. McNulty  
Sales Manager: Gary Sprouse  
Chief Engineer: Bill Kelly  
Manager Inside Sales: Bill Barbarick  
Operations Manager: Chris Kast  
Products: automatic call sequencers, automated operators, ACD's, con-  
ferencing systems, 976 systems, remote access, radio/land-line telepat-  
chers, 400-E pipe line cards.  
Sales Representative:  
Jack Davey, Palo Alto, CA, 415-493-6264

**TELTONE CORPORATION**, 10801 120th Ave. NE,  
Kirkland, WA 98036 Tel.: 206-827-9626

President: Pat Welker  
Sales Manager: Mike Arndt, Lauren Pearson  
Chief Engineer: Jim Carefoot  
Products: T-310 telephone access unit—RS-232-C compatible controller  
for telephone lines, allowing computers to answer/originate calls,  
send/receive DTMF signals, couple audio sources onto lines.

**TIE/COMMUNICATIONS INC.**, 5 Research Dr., Shel-  
ton, CT 06484 Tel.: 203-926-2000

President: Thomas L. Kelly, Jr.  
Executive Vice President: William Merritt  
Senior Vice President: Gilbert Engels  
Vice President, Marketing: Patrick Courtin  
Products: electronic key telephone systems featuring privacy,  
simultaneous intercom calls with hands-free reply, multi-line conferenc-  
ing, all-call paging, single button call-forwarding, automatic recall of  
calls placed on hold, memory dialing, camp-on, queuing, hotlines, do-  
not-disturb. New hybrid microprocessor based, digitally-controlled com-  
munications systems.  
See full listing under Telephone Systems — Key Phones.

**TII INDUSTRIES, INC.**, 1375 Akron St., Copiague,  
NY 11726 Tel.: 516-789-5020

President: Timothy J. Roach  
Director, Business Development: Donald M. Worden  
Chief Engineer: Jack Cawley  
Products: AC power-line surge suppressors, AC line filter and surge sup-  
pressor, AC line monitor and surge suppressor.  
District Offices:  
Anixter Communications  
Graybar Electric  
North Supply  
GTE Supply  
Texocom

**TOA ELECTRONICS, INC.**, 480 Carlton Court, S. San  
Francisco, CA 94080 Tel.: 415-588-2538

President: Sam Sakata  
Sales Manager: Joe Green  
Technical Services Manager: Bob Sweet

Products: engineered sound systems, commercial sound systems,  
amplifiers, dual amplifiers, tuners, equalizers, multi-functional  
preamplifiers, mixing consoles, speakers, horns, drivers, microphones,  
wireless systems, microcomputerized EXES intercom systems, CCTV,  
security systems.  
See full listing under Engineered Sound Systems.

**WHELOCK SIGNALS, INC.**, 273 Branchport Ave.,  
Long Branch, NJ 07740 Tel.: 201-222-6880

President: Peter W. Tarlton  
Sales Manager: William Goldstein  
Vice President Engineering: Steve Andrews  
Marketing Manager: J. Chris Olivieri  
Products: audible/visual signaling devices for life safety and alarm  
systems and for telephone systems. Bells, horns, speakers, strobes,  
chimes and combinations, paging systems.  
See full listing under Bells, Buzzers, Gongs.

**WREN COMPANY**, 880 Reynard St., Cincinnati, OH  
45231 Tel.: 513-931-7160  
Marketing Dept.: 3413 Ardis Ave., Rowlett, TX  
75088 Tel.: 214-475-0721

President: David M. Stoner  
Marketing Director: William Fowle  
Chief Engineer: Joseph Kappes  
Product: "Computerfone"—a call costing and accounting system for  
smart PABX's or Key systems having an SMDR output. Software for  
hotel/motel, business, and client bill back.

**XTEL**, 4301 Will Rogers Pkwy., Suite 900, Oklahoma  
City, OK 73108 Tel.: 405-946-1500

President: J. William Patterson  
Vice President: Glen Patterson  
Products: "HVP 700" hazardous voltage protection for grandfather  
and registered telephone equipment. Eliminates letter of agency and  
accompanying insurance ticket. "Voicepac" intercoms, "Status" stand  
alone line monitors.

## TELEPHONE SYSTEM REPLACEMENT PRODUCTS

**AMPHENOL PRODUCTS**, 4300 Commerce Court,  
Lisle, IL 60532 Tel.: 312-983-3500

President: P. W. Arneson  
Vice President Sales: M.W. Dixon  
Chief Engineer: R. Price  
Products: electrical, electronic and fiber optic connectors, cable and  
cable assemblies and related accessories.  
District Offices:  
San Francisco, Nick Ladis, 408-986-0870  
Chicago, Bob Lomas, 312-986-2330  
New York, Roger Terrel, 516-582-4466  
Los Angeles, Lou Lipomi, 213-532-3180  
Dallas, John Davis, 214-343-8420

**CALRAD ENGINEERED ELECTRONIC PRODUCTS**  
819 No. Highland Ave., Los Angeles, CA 90038  
Tel.: 213-465-2131

President: Joseph Shupper  
Vice President: Robert Shupper  
Sales Manager: Fred Crown  
Chief Engineer: Wes Black  
Products: microphones, headphones, public address amplifiers, powe  
supplies, speakers, connecting cables, telephone accessories, poten-  
tiometers, connectors, switches, meters, control knobs.  
See full listing under Audio Amplifiers.



**CAMBRIDGE ELECTRONICS LABORATORIES, 20**  
Chester St., Somerville, MA 02144  
Tel.: 617-629-2805

President: Dr. Jeffrey Race  
Sales Manager: Charlotte Bissell  
Products: specialized telecom accessories including digital music-on-hold source for PABX/key systems, mini telephone ringing generators, and two-way talk-back intercom unit.  
See full listing under **Telephone System Peripherals**.

**TELEDIAL DEVICES INC., 125 Schmitt Blvd., Farmingdale, NY 11735** Tel.: 516-293-8400

President: Paul Jacobs  
Sales Manager: Sydney Rubenstein  
Chief Engineer: Richard Chan  
Products: automatic memory dials — DTMF and Pulse; toll restriction dials — DTMF and Pulse; Pulse dials with last number recall; solid state tone dials; automatic single number dials, PBX and Centrex feature-phones, secured memory phones, restriction and courtesy phones. Data/voice phone, data sets, and customer service phones.  
See full listing under **Telephone System Peripherals**.

**TELEPHONE COMPONENTS, INC., 3180 Expressway Dr. S., Islip, NY 11722** Tel.: 516-582-4745

President: P. Crescentini  
Sales Manager: James Costa  
Products: telephone handsets, hangers, hook switches, cradles; operator readsets; plugs and jacks; for standard and special application, such as mobile, interconnect etc. Retractable and straight telephone cords.

**TELEPHONE EXTENSION CORP., 83 E. Central Ave., Pearl River, NY 10965**  
Tel.: 914-735-7877

President: Irving Gudin  
Sales Manager: Howard Harris  
Chief Engineer: Jean St. Fleur  
Products: telephones, telephone accessories, bells, buzzers, wire, gongs.

**VALCOM, INC., 1111 Industry Ave., Roanoke, VA 24013** Tel.: 703-982-3900

President: J. W. Mason  
Sales Manager: Donald Buck  
Chief Engineer: D. Lynch  
Products: telephone integrated paging and intercom systems, talkback, bell-buzzer, code call, PBX adapters, key telephone system ancillaries, loud ringers, power supplies, amplified and talkback speakers.  
See full listing under **Paging Systems — All Types**.

## TEST EQUIPMENT & TOOLS

**ACO PACIFIC, INC., 2604 Read Ave., Belmont, CA 94002** Tel.: 415-595-8588

President, Sales Manager & Chief Engineer: Norman L. Lewis  
Vice President: Ana C. Lewis  
Products: precision microphone and power supplies for ENG, stage, studio and measurements. ACOustic Interface™ adapts "alternative" type 1 mics to audio instrumentation. "Ghost" supplies phantom 48 VDC.  
See full listing under **Microphones**.

**ACOUSTILOG, INC., 19 Mercer St., New York, NY 10013** Tel.: 925-1365

Sales Manager: Greg Guarino  
Products: 232-A Reverberation Timer, which measures T 60 in 19 banks, and Impulser, speaker polarity, room acoustics, and more.

**AMERICAN FIBERTEK, INC., 370 W. 35th St., 7th Floor, New York, NY 10001** Tel.: 212-868-2150

President: E. Robert Klein  
Sales Manager: E. Robert Klein  
Chief Engineer: Jim McLaughlin  
Technical Sales: Jack Krol  
Products: fiber optic transmission systems for closed-circuit television surveillance and data, general purpose, aerial, burial, and plenum fiber cables, termination and splice tool kits, SMA optical connectors, power test meter, light source, power supplies.

**AUDIO PRECISION, INC., P.O. Box 2209, Beaverton, OR 97075** Tel.: 503-297-4837

President: Robert Metzler  
Product Marketing Manager: Adolfo Rodriguez  
Engineers: Bruce Hofer, Richard Cabot  
Products: System One, automated audio test package, controlled by the IBM PC, can be used to test tape machines, audio channels on VCR's, power amplifiers, equalizers, signal processors, preamplifiers, line and distribution amplifiers, satellites, microwave equipment, wire line links, and a variety of other audio equipment.

**BRUEL & KJAER INSTRUMENTS, INC., 185 Forest St., Marlborough, MA 01752** Tel.: 617-481-7000

President: Teoff Perry  
Technical Director: Greg Michele  
Products: manufacturers of studio microphones, audio transducer and telephone measuring systems, time delay spectrometry, real time analyzers, sound level meters, other acoustic test instrumentation.  
District Offices:  
Bruel & Kjaer Instruments, Inc., W. Caldwell, NJ  
Bruel & Kjaer Instruments, Inc., Gaithersburg, MD  
Bruel & Kjaer Instruments, Inc., Livonia, MI  
Bruel & Kjaer Instruments, Inc., Hoffman Estates, IL  
Bruel & Kjaer Instruments, Inc., Anaheim, CA  
Bruel & Kjaer Instruments, Inc., Atlanta, GA  
Bruel & Kjaer Instruments, Inc., Houston, TX  
Bruel & Kjaer Instruments, Inc., Foster City, CA  
Bruel & Kjaer Instruments, Inc., Seattle, WA

**CETEC IVIE, 1366 Center St., Orem, UT 84057**  
Tel.: 801-224-1800

President: Craig Berry  
Sales Manager: Glen Meyer  
Chief Engineer: Greg Greenwood  
Products: audio spectrum real-time analyzers and SPL meters, laboratory precision air condenser measurement microphones, microprocessor, acoustic and reverberation analysis systems, pink and white noise generators.  
See full listing under **Audio Signal Processors**.

**CETEC RAYMER, 7315 Fulton Ave., No. Hollywood, CA 91605** Tel.: 213-875-0423

President: Hugh T. Wilcox  
Chief Engineer: Clifford L. Kogge, Jr.  
Sales Manager: Hugh T. Wilcox  
Products: background/foreground equipment: wall & shelf mount amplifiers, AM/FM tuners & paging receivers, microphone mixers, installation accessories & transformers, M-O-H & telephone interconnect devices and test equipment.

**COMMUNICATIONS CO., INC., 3490 Noell St., San Diego, CA 92110** Tel.: 714-297-3261

President and Sales Manager: Peter T. Jordan  
Chief Engineer: David Johnson  
Order Department: Laura McCullough  
Products: programmable two-way intercom amplifier w/vox., media distribution amplifier, projector patch, room combining systems, record patch, RT-60 reverberation measuring device, burst octave noise generator, 1/3 octave real time analyzer, 27 B.I.T. oscilloscope display adaptor.  
See full listing under **Intercom Systems — Institutional**.

**CROWN INTERNATIONAL INC.**, 1718 W. Mishawaka Rd., Elkhart, IN 46517 Tel.: 219-294-8000

President: Max W. Scholfield  
Marketing Manager: Charles W. Gushwa  
Engineering Manager: Verne E. Scarer  
Products: RTA-2 real-time analyzer, BDP-2 computer spectrum analyzer, TEF System 10 portable computer using time delay spectrometry to measure room acoustics and loudspeakers.

**DIALIGHT CORPORATION/NEUTRIK PRODUCTS**, Atlantic Ave., Manasquan, NJ 08736  
Tel.: 201-223-9400

President: Harry Miller  
Product Manager: Jim Cowan  
Chief Engineer: Fred Kaufman  
Products: 3, 4, 5, 6-pin XLR connectors, panel and P.C. Test probes and oscilloscope probes.  
District Offices:  
John B. Rudy Co., Long Beach, CA, 213-636-6934  
Instock Products, Newton, MA, 617-964-6200  
Distex Corp., Bremen, GA, 404-537-4821

**JOHN FLUKE MFG. CO., INC.**, P.O. Box 9090, Everett, WA 98206 Tel.: 800-426-0361

President: George Winn  
Sales Manager: William Hoffman  
Products: electronic test equipment, such as digital multimeters, calibrators and standards, communications equipment, dataloggers, instruments controllers, digital thermometers, and automated test equipment.

**HARRIS CORP., Dracon Division**, 809 Calle Plano, Camarillo, CA 90310 Tel.: 805-987-9511

Vice President, General Manager: John R. Mason  
Director, Domestic Sales: Tom Erdmann  
Vice President, Sales & Marketing: Jack McGuigan  
Chief Engineer: Joe Mader  
Products: Pagepac telephone integrated loudspeaker voice paging systems; linemen's test sets; craft tools; relay racks.  
See full listing under **Paging Systems**.

**IQS, INC.**, 12812-J Garden Grove Blvd., Garden Grove, CA 92641 Tel.: 714-539-7842

President: William Elder  
Sales Manager: Douglas Evered  
Products: line of signal analyzers for a variety of applications; all spectrum analyzers are designed to work with Apple or IBM PC's and are available from 1-16 channels and come complete with software to allow any kind of audio signal analysis. Analyzers come as complete systems or as add-ons to existing PC's.

**KINEMATRICS/TRUETIME**, 3243 Santa Rosa Ave., Santa Rosa, CA 95407 Tel.: 707-528-1230

President: John Van Groos  
Sales Manager: Rick Dielman  
Chief Engineer: Ed Petroka  
Products: NBS and UTC synchronized digital clocks, WWVB frequency comparators.

**LEADER INSTRUMENTS CORP.**, 380 Oser Ave., Hauppauge, NY 11788 Tel.: 516-231-6900  
800-645-5104

President: S. Hirota  
Vice President of Sales: B. Storch  
Director of Marketing: B. Sparks  
Products: oscilloscopes, video products, stereo test equipment, audio products, frequency counters, meters and bridges, function and RF signal generators, display and imaging products, power supplies, instrument carts.

**METRO-TEL CORP.**, 15 Burke Lane, Syosset, NY 11791 Tel.: 516-364-3377

President: V. J. Indelicato  
Chief Engineer: Bob Grastataro  
Products: linemen's test sets, cable locators, power supplies, splicers test sets, volt/ohm meters, explorin, coils, headsets.

**MUSIC SUPPLY CO., INC.**, 809 N. Madison, Dallas, TX 75208 Tel.: Texas call collect 214-946-8450  
All others 800-527-1522

President: W. E. Brown  
Products: Testset, Model TS-1 for use in all audio work. Ideal for background music and sound equipment service and installation. Its usefulness is up to your ingenuity. No batteries or switches. Pictorial instruction sheet included. 30 days free trial.

**NON-LINEAR SYSTEMS, Division of Kaypro Corp.**, 533 Stevens Ave., Solana Beach, CA 92075  
Tel.: 619-481-3900

President: David Kay  
Regional Field Sales: Jeanne Simmons  
Chief Engineer: Kurt Bilinski  
Chief Financial Officer: Andrew Kay  
Products: portable oscilloscopes, digital multimeters, frequency meters, temperature meters, digital panel meters.

**NORTH AMERICAN SOAR CORP.**, 1126 Cornell Ave., Cherry Hill, NJ 08002 Tel.: 609-488-1060

President: Robert J. Liska  
Vice President Finance: Jane A. Liska  
Operations Manager: Lys Grebla  
Products: electronic instrumentation featuring oscilloscopes, power supplies, hand-held and bench DMMs, clamp testers, frequency counters, VOMs, cable checkers, logic analyzers, digital levels, earth testers, LCR meters, resistance substitution boxes.  
District Offices:  
Steve Fisher Electronic Assoc., Teaneck, NJ, 201-837-1200  
Bidwell Sales, Gardena, CA, 213-770-0300  
Carelli EMA, Burlingame, CA, 415-343-4514  
Promar Enterprises, Northbrook, IL, 312-564-3510  
Anderson Sales Assoc., Braintree, MA, 617-848-9194

**PLATT LUGGAGE, INC.**, 2301 S. Prairie Ave., Chicago, IL 60616 Tel.: 1-800-222-1555

President: Paul Platt  
Sales Manager: Dennis Platt  
Chief Engineer: Joseph March  
Products: tool cases.

**PROGRESSIVE ELECTRONICS, INC.**, 325 S. El Dorado, Mesa, AZ 85202  
Tel.: 602-966-2931, 800-528-8224

Products: cable and pipe locators, cable fault locators, test sets for cable installation and repair, tone generators, voltage, resistance, capacitance, testsets, inductive amplifier probe.

**QUEST ELECTRONICS (Division of La Belle Ind., Inc.)** 510 S. Worthington St., Oconomowoc, WI 53066 Tel.: 414-567-9157

President: Robert J. Wurm  
Sales Manager: Paul James  
Chief Engineer: Robert Krug  
Products: complete line of sound measuring and analyzing instrumentation including microprocessor noise dosimeters with time history analysis.  
Sales Representatives:  
Robert Gugerty, Timonium, MD, 301-252-3347  
Al Berry, Renton, WA, 206-226-5907  
Paul James, Acworth, GA, 404-974-1484

**RE INSTRUMENTS**, 31029 Center Ridge Rd., Westlake,  
OH 44145 Tel.: 216-871-7617

President: F. Pedersen  
Sales Manager: M. Sciulli  
Chief Engineer: George Mayhew  
Advertising Manager: T. Zavesky  
Products: dual channel audio analyzer, BTSC TV stereo generator.

**SIMPSON ELECTRIC CO.**, 853 Dundee Ave., Elgin,  
IL 60120 Tel.: 312-697-2260

President: I.C. Rebeschini  
Director, Sales: M. O. Buehring  
Director, Engineering: H. Washburn  
Products: electrical/electronic, analog and digital, measuring, control-  
ing and recording test equipment. VOMs, DMMS, frequency counters;  
and sound level measurement equipment, oscilloscopes and communica-  
tions equipment testers.

District Offices:

Simpson Instrument Sales, Great Neck, L.I., NY, 516-482-3103  
Simpson Electric Company, Downey, CA, 213-862-4259  
Seacom Sales Company, Lauderdale Lakes, FL, 305-486-0260

**SPECO DIV., Components Specialties, Inc.**, 1172 Rt.  
109, P.O. Box 624, Lindenhurst, NY 11757  
Tel.: 516-957-8700 (in NY)  
1-800-645-5516 (outside NY)

President: Louis W. Keller  
Vice President & General Manager: James J. Ganci  
Vice President Sales: Mel Hulkower  
Regional Sales Manager: Eric Forman, Bruce Kurtz  
Products: PA horns, amplifiers, tuners, loudspeakers, wall baffles,  
speaker assemblies, outdoor speakers, sound columns, ceiling grilles,  
transformers, L-pads, attenuators, accessories, microphones, intercoms,  
alarm sirens, multitestors, oscilloscopes.

**TECHNICAL PROJECTS, INC.**, 449 Princeton Ave.,  
P.O. Box 1449, Barrington, IL 60010  
Tel.: 312-381-5350 800-562-5872

Executive Vice President: Glenn Mullis  
Other Personnel: Bill Griffis, Sibbelina Mullis  
Products: complete duplex communications systems, including headsets,  
headset stations, master stations, power supplies, talkback/paging  
loudspeaker stations, adaptors and accessories. Also MJS401D Audio  
Test and Measurement system with IEEE interface capability.

District Offices:

Professional Audio Marketing, New York, NY, 516-367-8620  
Design Factors, La Habla, CA, 213-697-7576  
William M. Linz Associates, Deerfield, IL, 312-227-7222  
Jerry Hudson, Irving, TX, 214-256-7665  
Vector, Seattle, WA, 206-322-4343

**TELEMATIC (Division of UXL Corp.)**, 108-02 Otis  
Ave., Corona, NY 11368 Tel.: 718-271-5200

President: Ben Frankenstein  
Sales Manager: Neil Howard  
Chief Engineer: Salverio Guardi  
Other Personnel: Dorothy Davis  
Products: Color (TV) Monitor Test Jig, which includes leaded glass  
CRT with built-in 35kV meter and audio speaker for substitution/test  
on most popular color monitors. CRT brighteners (isolation and regular  
boost).



**WHITE INSTRUMENTS, INC.**, P.O. Box 698, Austin,  
TX 78767 Tel.: 512-892-0752

President: Carl Van Ryswyk  
Sales Manager: Emory E. Straus  
Products: real time analyzers; active and passive equalizers (broad band  
and narrow band); filters; low level crossover networks; masking noise  
generators and equalizers.  
See full listing under **Audio Signal Processors**.

## TUNERS

**AIPHONE INTERCOM SYSTEMS**, 1700 130th Ave.  
N.E., Bellevue, WA 98005 Tel.: 206-455-0510

President: Hiko Shinoda  
Sales Manager: Jim Morrison  
Chief Engineer: Jun Matsumoto  
Products: industrial, business, residential loudspeaking, telephone, video  
intercom/security systems with paging talk-back; six microprocessor  
systems available, mixer amplifiers, paging speakers, horns, drivers,  
ceiling speakers, tuners, fast-food intercom systems, and special order  
products.  
See full listing under **Intercom—Duplex**.

**BOGEN, A Lear Siegler Company**, 50 Spring St., P.O.  
Box 575, Ramsey, NJ 07446 Tel.: 201-934-8500

President: John H. Ochtera  
Vice President, Marketing: Carl C. Dorwaldt  
Vice President, Engineering: Mark Koller  
Products: commercial sound and communication systems and equip-  
ment including amplifiers, mixers, loudspeakers, microphones, telephone  
paging equipment, tuners, intercoms, audio surveillance and centraliz-  
ed sound systems.  
See full listing under **Engineered Sound Systems**.

**CETEC RAYMER**, 7315 Fulton Ave., N. Hollywood,  
CA 91605 Tel.: 213-875-0423

President: Hugh T. Wilcox  
Chief Engineer: C. L. Kogge, Jr.  
Sales Manager: Hugh T. Wilcox  
Products: background/foreground equipment: wall and shelf mount  
amplifiers, AM/FM tuners and paging receivers, microphone mixers,  
installation accessories and transformers, M-O-H and telephone inter-  
connect devices and test equipment.

**CONSOLIDATED ELECTRONICS**, 20 Celestial Way,  
#205 Juno Beach, FL 33408 Tel.: 305-626-1126

President: Leonard L. Jezorek  
Products: antenna systems, tuners, etc.

**DUKANE CORPORATION**, 2900 Dukane Dr., St.  
Charles, IL 60174 Tel.: 312-584-2300

President: William B. Clark  
Sales Manager: Jim Shane  
Chief Engineer: Gordon Mielke  
Marketing Manager: Craig Lyons  
Products: nurse call, intercom, voice paging, clock, sound masking,  
staff registry and voice evacuation systems for health care, institutional  
and industrial markets.  
See full listing under **Paging Systems**.

**JOHNSON ELECTRONICS INC.,** P.O. Box 4728,  
Winter Park, FL 32793-4728 Tel.: 305-677-4030

Chief Executive Officer: Ralph L. Weber  
President: Charles Gabrielson  
Vice President of Engineering: Kenneth St. John  
Director of Marketing: Mel Kelch  
Products: tuners, tuner/amplifiers, solid state audio amplifiers and accessories, DATAVOX-, data transmission equipment.

**McMARTIN INTERNATIONAL, INC.,** P.O. Box 4500,  
Gunnison, CO 81230 Tel.: 303-641-5500

President: Ray B. McMartin  
Vice President, Sales: Jay B. McMartin  
Financial Administrator: Robert McMartin  
Products: engineered and commercial sound amplifiers/mixers/accessories, background and foreground music amplifiers and sound systems, SCA multiplex receivers, SCA receivers, satellite modulators/demodulators.  
See full listing under **Audio Amplifiers**.

**PASO SOUND PRODUCTS, INC.,** 14 First St., Pelham, NY 10803 Tel.: 914-738-4800

Vice President, Engineering: Paul Mastrangelo  
Operations Manager: Anthony Sgueglia  
Sales Manager: David Moore  
Product Manager (Engineering): Ken O'Brien  
Credit Manager: Marilyn Beckerson  
Custom/Representative Support: Tommi Paladino  
Sales Administration (Order Expedite): Stacy Appel  
Products: indoor, outdoor, portable, mobile amplifiers, preamplifiers, mixers, booster amplifiers, AC/DC integrated amplifiers and boosters, intercom systems, multi-residential systems, microphones, wireless microphones, industrial grade auto reverse cassette machines, tuners, sound columns, speakers, baffles, driver units, trumpets, horns, full range loudspeaker systems, stage monitors, stands, accessories, equipment racks.  
See full listing under **Engineered Sound Systems**.

**PRECISION ELECTRONICS, INC.,** 9101 King St., Franklin Park, IL 60131 Tel.: 312-678-5350

President: W. S. Grommes  
Sales Manager: W. Stow  
Chief Engineer: A. A. Hart  
Products: integrated audio amplifiers. Amps for mono or stereo power, line, music-on-hold. Mixer preamplifiers, 2 CH. limiters or compressors, graphic equalizers, FM-AM tuners, background music receivers and systems; public address systems, custom engineered sound reinforcement systems, sound columns, trumpets, driver units, baffles, microphones and microphone stands.  
See full listing under **Audio Amplifiers**.

**SEVEN SYSTEMS, INC.,** 2602 Artie St., Huntsville, AL 35805 Tel.: 205-533-2193

President: Clay Durrett  
Products: subcarrier communication equipment for the background/foreground music industry: tuners; field strength meters; tuner/amplifiers.

**SPECO DIV., Components Specialties, Inc.,** 1172 Rt. 109, P.O. Box 624, Lindenhurst, NY 11757  
Tel.: 516-957-8700 (in NY)  
1-800-645-5516 (outside NY)

President: Louis W. Keller  
Vice President & General Manager: James Ganci  
Vice President, Sales: Mel Hulkower  
Regional Sales Managers: Eric Forman, Bruce Kurtz  
Products: PA horns, amplifiers, tuners, loudspeakers, wall baffles, speaker assemblies, outdoor speakers, sound columns, ceiling grilles, transformers, L-pads, attenuators, accessories, microphones, intercoms, alarm sirens, multitestors, oscilloscopes.

**TOA ELECTRONICS, INC.,** 480 Carlton Ct., S. San Francisco, CA 94080 Tel.: 415-588-2538

President: Sam Sakata  
Sales Manager, Commercial Division: Joe Green  
Technical Support Manager: Bob Sweet  
Products: engineered sound systems, commercial sound systems, amplifiers, dual amplifiers, tuners, equalizers, multi-functional preamplifiers, mixing consoles, speakers, horns, drivers, microphones, wireless systems, microcomputerized EXES intercom systems, CCTV, security systems.  
See full listing under **Engineered Sound Systems**.

## USED/REBUILT EQUIPMENT & EQUIPMENT BROKERS

**AUDIO SERVICES CORPORATION,** 4120 Lankershim Blvd., N. Hollywood, CA 91602  
Tel.: 818-980-9891

President: Richard Topnam, Sr.  
General Manager: Richard Topnam, Jr.  
Sales Manager: David Panfili  
Chief Engineer: Michael Riner  
Rental Manager: Tove Blue  
Service Manager: Ron Meyer  
Products: professional portable sound equipment, sales, rental, lease, service, consulting, design and manufacture.

**BUSINESS COMMUNICATIONS INC.,** 1266 Logan Circle, Atlanta, GA 30318 Tel.: 404-355-8040

President: Jim Alexander  
Product: new and remanufactured telephone equipment.

**COMMUNICATION EQUIPMENT BROKERS, INC.,** 1500 W. Carroll, Chicago, IL 60607  
Tel.: 312-829-8810 800-621-4397

President: John Presti  
Sales Manager: Mark Hastings  
Chief Engineer: Toni Karpilovsky  
Products: repair and remanufacture all types of telephones and telephone equipment. Also repairs of amplifiers; preamplifiers; power amplifiers; mixers; equalizers; telephone intercoms; FM-AM tuners and receivers; power supplies; Panasonic and Code-a-Phone repair.  
Sales Representatives:  
Lizabeth Husko, Chicago, IL

## WIRE & CABLE

**ALPHA COMMUNICATIONS,** 89-D Cabot Ct., Hauppauge, NY 11788-3717 Tel.: 516-434-8080

President: Mark S. Goldberg  
Products: intercom and video/intercom systems for apartment, home, and industry, custom-made vandal-resistant lobby panels and apartment stations for new and retrofit, 2-wire apartment intercom, non-coax video/intercom.  
See full listing under **Intercom Systems—Apartment & Residential**.

**AMERICAN FIBERTEK, INC.,** 370 W. 35th St., 7th Floor, New York, NY 10001 Tel.: 212-868-2150

President: E. Robert Klein  
Sales Manager: E. Robert Klein

Chief Engineer: Jim McLaughlin  
Technical Sales: Jack Krol  
Products: fiber optic transmission systems for closed-circuit television surveillance and data, general purpose, aerial, burial, and plenum fiber cables, termination and splice tool kits, SMA optical connectors, power test meter, light source, power supplies.

**AMP NETCON, A Division of AMP Products Corporation, P.O. Box 1776, Southeastern, PA 19482 Tel.: 215-647-1000**

Chief Executive Officer: Walter Raab  
Marketing Manager: Bill Russo  
Products: products for the specialized needs of the premises-wiring, networking, and construction industries.

District Offices:  
George McKenna, Framingham, MA, 617-626-2951  
Richard Herwig, Schaumburg, IL, 312-351-7837  
Bruce Foster, Irving, TX, 214-550-2265  
Cliff Brown, Compton, CA, 213-639-1691  
Kent Worthen, Cupertino, CA, 408-725-4904  
Bill Golias, Irving, TX, 214-550-1911  
Peter McCulloch, Parsippany, NJ, 201-299-8055  
Dale Brown, Altamonte Springs, FL, 305-869-6766

**AUDIO-TECHNICA U.S., INC., 1221 Commerce Dr., Stow, OH 44224 Tel.: 216-686-2600**

President: Jon R. Kelly  
Sales Manager: Mark Taylor  
Vice President Marketing: Ken Reichel  
Chief Engineer: Steve Hebrock  
Products: microphones and microphone accessories, recorder/mixers, cables, direct boxes, headphones, ENG mixers, mic stands.  
See full listing under **Microphones**.

**BELDEN ELECTRONIC WIRE & CABLE, P.O. Box 1980, Richmond, IN 47375 Tel.: 317-983-5200**

Sales Manager: Bill Donahoe  
Products: electronic wire and cable.  
Sales Representatives:  
Atlanta, GA  
Oakbrook, IL  
Dallas, TX  
Framingham, MA  
Irvine, CA

# Berk-Tek



**BERK-TEK, INC., RD 1, Box 888, New Holland, PA 17557 Tel.: 717-354-6200**

President: J. L. Boscov  
Vice President Sales & Marketing: Sue Stefan  
Sales Manager: Chet Klinke  
Marketing Manager: Carl Bump  
Products: communications and life-safety wires and cables, plenum, co-axial, interface, J/O, fiber optic, power, audio communication, computer hook-up and lead, special data, coil cords, PVC and Teflon™, coaxial connectors.

District Offices:  
Robert Peckrul, Stone Mountain, CA  
Jerry L. Petty, Dallas, TX  
Frank Smith, Huntingtown, MD  
David Zaabel, Schaumburg, IL  
Chris Isetts, Torrance, CA

**BI-TRONICS, INC., P.O. Box 125, Tuckahoe, NY 10707 Tel.: 212-585-1645 800-522-7377 (outside NY)**

President: J. Schwartz  
Sales Manager: Ron Huppert  
Products: Mogami ultra-flexible audio and video cables and connectors. Custom cable assemblies for Japanese audio and video equipment, including hard-to-find connectors and hardware.

**BRIM ELECTRONICS INC., 120 Home Pl., Lodi, NJ 07644 Tel.: 201-796-2886**

President: B. Danziger  
Products: wire, cable (including shielded braiding, retracile cords); tubing, sleeving; ceramic insulators; adhesive-backed fastening devices; nylon, brass hardware; solderless terminals; plugs, jacks, switches.  
District Office:  
R.G. Assocs., Stow, MA, 617-897-1741

**CABLETRONIX, Div. Storm King Industries, Inc., 366 Washington St., P.O. Box 3003, Newburgh, NY 12550 Tel.: 914-565-7570 800-431-WIRE (outside NY State) 800-942-WIRE (inside NY State)**

President: Stephen L. Roth  
Vice President: Leonard Ellentuch  
Products: "Amp" connectors; staplers, staples; "B" connectors; bridging clips; drive rings; tie wraps; drive pins; electrical, masking and packing tape; molly and toggle bolts; panhead screws and plastic anchors, pole-line hardware, modular blocks (flush and base mount), modular cords and RJ31X jacks, adhesive cable duct.

**CAL SWITCH, 13717 S. Normandie Ave., Gardena, CA 90249 Tel.: 213-770-2330**

President: Irwin Perlman  
Vice President: Robert Andrade  
Sales Manager: Bert Vincent  
Products: audio connector from 3 to 9 pins for audio and RF circuits  
Jack panels, switches, wire and cable, I.D. collars, fuses.

**CANARE CABLE INC., 832 N. Victory Blvd., Burbank, CA 91502 Tel.: 818-840-0993**

President: K. Kawamoto  
General Manager: Barry Brenner  
Products: high-definition audio and video cable. Featuring Star Quac mic cable in 10 colors. 8-32-channel snakes, pigtailed, junction boxes and cable reel systems.  
District Offices:  
Triad Marketing, Wayne, NJ, 201-696-8625  
Bill Bencsik & Assocs., Ocala, FL, 904-732-9775  
Sound Marketing Co., Westland, MI, 313-480-3575  
Peregrine S.W. Reps., Houston, TX, 713-772-6765  
RM Assocs., Shawnee, KS, 913-631-7606  
Yore Co., White Bear Lake, MN, 612-770-9760  
Derek Allen Assocs., Toluca Lake, CA, 818-840-8327  
Pro Rep Co., Foster City, CA, 415-570-5055  
Northmar, Seattle, WA, 206-524-5170  
Sliz & Assocs., Broomfield, CO, 800-525-2670

**CHESTER CABLE (Div. of Celwave System, Inc.) 26 Oakland Ave., Chester, NY 10918 Tel.: 914-469-2141**

President: Frank Leibold  
Sales Manager: Yves Bonnamour  
Chief Engineer: Mahesh Patel  
Broadcast Products Manager: Nancy L. Spadinger  
Products: broadcast cables, audio, video, coaxials, instrumentation microphone, speaker, and guitar cable.

**District Offices:**

G. Thelan Co., Fort Mitchell, KY, 606-341-8181  
S. States Wires, Atlanta, GA, 404-455-4075  
R. Mayo Assoc., Boulder, CO, 303-499-2155  
K. Wyant, Sherwood, MI, 517-741-3472  
A. Matthews, Arlington Heights, IL

**CLIFFORD, INC., P.O. Box 51, Bethel, VT 05032**

Tel.: 800-451-4381 Toll Free  
802-234-9921 Collect

President: Richard L. Huntley  
Sales Manager: James McNulty

Products: inside and outside telephone communications cable and wire: aerial and duct, figure "8" self-supporting, direct earth burial, air plenum, computer cable, electronic cable, alarm wire, instrumentation cable, and fiber optic cable.

**CONNECTRONICS CORPORATION, 652 Glenbrook Rd., Stamford, CT 06906 Tel.: 203-324-2889**

President: Stephen G. Ash

Vice President: Richard J. Chilvers

Products: ultra-flexible, colored wire and cable from Mic Cable to 32 pr. foil shielded. Also audio signal processors, portable mixing consoles, low-cost XLR connectors.

**District Offices:**

Worldwide Electronics, Miramar, FL, 305-966-6622

GMI, Avon, MA, 617-588-8043

New Horizons Electronic Marketing, Bannockburn, IL, 312-234-5911

Pusecker Sales, Upper Montclair, NJ, 201-744-1834

North Coast Marketing, Erie, PA, 814-456-6435



**CONQUEST SOUND, INC., 7319 Duvan Dr., Tinley Park, IL 60477 Tel.: 800-323-7671 (National) 800-344-2677 (IL)**

President: Bob Jares, Sr.

Vice President: Larry Spalla

Sales Manager: Al Novak

Chief Engineer: Mike Sanfilippo

Other Personnel: Gary Wood

Products: 2,500 types of audio and video wiring products from mic cables to multi-line systems to 54-pair. We warehouse over 500,000 Switchcraft connectors and over one-million feet of Belden wire. Muters, direct boxes.

**CURRENT CABLE CO., INC., 2610 W. Chicago Ave., Chicago, IL 60622 Tel.: 312-486-7100 1-800-821-2432**

President: Arthur Shaiman

Sales Manager: Rachel Klugman

Chief Engineer: John Rudd

Products: cables for burglar and fire alarm systems, communications and control systems, direct burial and low voltage/low cost E-Series multi conductor and zip cord cables. CCTV coaxial cables, multipair UO 1007 and UO 1015 hook-up wire.

**C Z LABS, INC., 55 Railroad Ave., Garnerville, NY 10923 Tel.: 914-947-1554**

President: Harry Zipkin

Sales Manager: Steven Zipkin

Sales Associate: Keith Scott

Products: coaxial cable, multi-conductor cable, satellite cable, connectors, computer access, telephone access, video access, crimping tools, cable assemblies, adapters, switches.

**District Offices:**

Hank Miller Sales, Chagrin Falls, OH

Forristal Young Sales Co., St. Louis, MO

MEG Electronic Sales, Great Neck, NY

Gil Rothstein, Raleigh, NC

J-J Sales Company, Dallas, TX

Russell Electronic Associates, Birmingham, AL

M. Schlarman & Associates, Wanaque, NJ

**DABURN ELECTRONICS & CABLE CORP., 70 Oak St., Norwood, NJ 07648 Tel.: 201-768-5400**

President: Howard Danziger

Sales Manager: Randy Hibshman

Inside Sales: Steve Kirton

Products: wire and cable, shrink tubing, retractile cords, cable assemblies, modular cords, electronic hardware, lacing cord, shielded braid modules, insulators, plugs, jacks, coaxial cable, alarm & computer cable, speaker wire.

**District Offices:**

Impact Sales, Anaheim, CA, 714-533-1351

Markar Sales, Elgin, IL, 312-888-2207

John Olson Co., Cincinnati, OH, 513-922-8885

SRT Marketing, Tampa, FL, 813-884-4805

L&M Marketing, Gun Barror City, TX, 214-887-1316

**DELTA WIRE & CABLE, Box 833, N. Chicago, IL 60064 Tel.: 312-473-4990**

President: Matt Coleman

Sales: Perry Stein

Products: wire and cable for audio, telephone, electronic and electric products.

**D.J. ASSOCIATES, INC., 8411 S. Zepo, Unit 5, Ft. Smith, AR 72903 Tel.: 501-452-3987**

President: D.G. Beck

Sales Manager: Mike Beck

Products: connectors, terminals, cable clamps, wire ties, lacing tape, heat shrink tubing.

**ELECTRICAL CONDUCTORS, INC., 2500 Commonwealth Ave., North Chicago, IL 60064 Tel.: 312-689-9090**

President: Allan Coleman

Executive Vice President: Jim Coleman

Vice President, Marketing: Kerry Glicken

Sales Manager: Don Prochilo

Products: wire and cable for security sound and electronics. Made of vinyl and plenum.

**FAMOUS TELEPHONE SUPPLY CO., P.O. Box 2172, Akron, OH 44309 Tel.: 216-762-8811 800-321-9122**

President: J. Blaushild

General Manager: Robert A. Fuzy

Products: wire and cable, general hardware, apparatus; paging equipment; power equipment; protection devices; tools, splicing equipment; closures; compounds; couplers and peripheral devices, plenum cable. See full listing under **Hardware & Tools**.

**IDEAL WIRE PRODUCTS INC., Lorum St., Tewksbury, MA 01876 Tel.: 617-851-4541**

President: Robert T. Leahy

Products: engineered cables for the intercom and sound contractor.

**KING WIRE & CABLE CORP.**, 179-45 110th Ave.,  
Jamaica, NY 11434 Tel.: 718-657-4422

President: Lester Dorfman  
Sales Manager: Robert Dorfman  
Chief Engineer: Martin C. Newman  
Products: all types of electronic wire and cable.  
District Offices:

King Wire & Cable, Dallas, TX, 214-484-8600  
King Wire & Cable, Phoenix, AZ, 602-867-1222  
King Wire & Cable, Ft. Lauderdale, FL, 305-735-1300  
King Wire & Cable, Cleveland, OH, 216-431-1234

**LEE DAN COMMUNICATIONS, INC.**, 155 Adams  
Ave., Hauppauge, NY 11788-3699  
Tel.: 800-231-1414 (In NY), 516-231-1414  
800-LEE-DAN1 (In U.S.)

President: Leon Goldberg  
Sales Manager: Lawrence Goldberg  
Chief Engineer: Sanford Hoffman  
Products: multi-conductor intercom wire and cable, including special  
purpose cables for CCTV and music systems.

**MARSHALL ELECTRONICS INC.**, P.O. Box 2027,  
Culver City, CA 90230 Tel.: 213-390-6608

President: Henry Shultz  
Sales Manager: Leonard Marshall  
Products: MOGAMI Superflexible microphone, video, audio, computer  
and multi-conductor cables. TAJIMI electronic connectors for audio,  
video and broadcasting communications. Video, speaker and intercon-  
nect cables.

**MONSTER CABLE PRODUCTS, INC.**, 101 Townsend  
St., San Francisco, CA, 94107  
Tel.: 415-777-1355

President: Noel Lee  
Sales Manager: Paul Stubblebine  
Chief Engineer: James Hassi  
Operations Manager: Nicolette Stultz  
Products: Prolink® series high resolution audio cables; Soundex  
acoustical control products; high performance speaker cables;  
connectors.  
District Offices:  
Audio Associates, Vernona, NJ, 201-239-3727  
Morris-Tait, N. Hollywood, CA, 213-877-4424  
Evans Sales, Nashville, TN, 615-297-7997  
J.P. Marketing, Oakland, CA, 415-532-5600  
New Resource, Norwell, MA, 617-659-1463

**MUSIC SUPPLY CO., INC.**, 809 Madison, Dallas, TX  
75208 Tel.: 1-800-527-1522  
Texas call collect: 214-946-8450

President: W. E. Brown  
Products: EASY-KARY- wire reel holders. Holds spools of wire and  
cable for easy reeling off on job site. All components stow in hollow  
frame. Takes up no room in truck. 30 days free trial.

**MUSIC SUPPLY CO., INC.**, 809 Madison, Dallas, TX  
75208 Tel.: 1-800-527-1522  
Texas call collect: 214-946-8450

President: W. E. Brown  
Products: Push-Pull rods. Set of twenty, lightweight, aluminum alloy,  
1/2 oz. per rod. Joins together for 45 ft. span. Pushes or pulls wire  
or cable through impossible places. 30 days free trial.

**MUSIC SUPPLY CO., INC.**, 809 Madison, Dallas, TX  
75208 Tel.: 1-800-527-1522  
Texas call collect: 214-946-8450

President: W. E. Brown  
Products: extension cords. Three conductor with grounding plugs, 3  
feet and 10 feet, U.L. listed.

**NATIONAL ELECTRIC CABLE**, 1730 Elmhurst Rd.,  
Elk Grove Village, IL 60007 Tel.: 312-593-8100

President: R. G. Sass  
General Manager: Don McGuire  
Sales Manager: Harry Reeb  
Products: electric and electronic cable and assemblies; custom, mold-  
ed, fibre optic, coiled cords, coaxial, computer, audio/video and custom  
connectors.  
District Offices:  
Jeff Cook, Portland, OR, 503-620-9400  
Greg Dunn, Hayward, CA, 415-785-1277

**NEMAL ELECTRONICS INTERNATIONAL INC.**,  
12240 N.E. 14th Ave., N. Miami, FL 33161  
Tel.: 305-893-3924

President: Benjamin Nemser  
Sales Manager: Hilda Manten  
Products: complete line of electronic wire, cable, connectors & SMATV  
equipment. Franchised distributors for Kings, Amphenol, Belden &  
Blonder-Tongue

**NORMACO WIRE & CABLE CO., LTD.**, 4185 Dawson  
St., Burnaby, B.C. V5C 4B3, Canada  
Tel.: 604-298-2133

President: George D. McNeil  
Sales Manager: Ken Brown  
Products: electrical and electronic wire and cable.  
District Offices:  
Noramco Wire & Cable Co. Ltd., Edmonton, Alberta, 403-468-5670  
Noramco Wire & Cable Co. Ltd., Calgary, Alberta, 403-291-2955

**OLFLEX WIRE & CABLE, INC.**, 30 Plymouth St.,  
Fairfield, NJ 07006 Tel.: 201-575-1101

Vice President: John P. Ciccone  
Sales Manager: Michael Picone  
Products: electrical and electronic flexible wire and cable.  
Sales Representative:  
Robert Thomas, Fremont, CA, 415-659-1222

**QUABBIN WIRE & CABLE, INC.**, 10 Maple St., Ware  
MA 01082 Tel.: 413-967-6281

President: Paul Engel  
Sales Manager: Joseph Cooper  
Products: cables used in the areas of computers, instrumentation  
alarm/security, communications and control systems, multi conduc-  
tor and twisted pairs, shielded and unshielded.

**REMEE WIRE PRODUCTS CORP.**, 41 Bridge St.,  
Florida, NY 10921 Tel.: 914-651-4431

President: Elias Muhrad  
Sales Manager: Kenneth Pimental  
Products: plenum cables for all NEC codes—electronic PVC wire and  
cable, coax, audio, data, RS 232, instrumentation, assemblies, fibre  
optic cables and assemblies.  
Sales Representatives:  
Teqni-Rep., Mike Rennor, Sun Valley, CA, 818-768-4223  
Steve Olsen & Assoc., Stevel Olsen, Foster City, CA, 415-572-8888

**SAXTON WIRE AND CABLE PRODUCTS, INC.**, 21  
N. Rt. 303, Congers, NY 10920  
Tel.: 914-268-6846

Vice President: Charles Chodash  
Sales Manager: William Cullen  
Products: wire and cable—coaxial, multi-conductor, fire alarm, burglar  
alarm, power limited, telephone, sound and speaker, TV-MA TV-CATV  
wire, and plenum cable.  
District Office:  
Pico Rizer, CA

**SIGNAL CABLE**, 2500 Commonwealth Ave., North  
Chicago, IL 60064 Tel.: 312-689-9090

President: Allan Coleman  
Sales Manager: Don Prochilo  
Executive Vice President: Jim Coleman  
Vice President, Marketing: Kerry Glicken  
Products: vinyl and plenum wire and cable for security, sound and electronics.

**STANDARD WIRE & CABLE CO.**, 2345 Alaska Ave.,  
El Segundo, CA 90245 Tel.: 213-536-0006  
800-447-0006 (In CA), 800-821-5276 (Outside CA)

Chairman of the Board: Dick Hampikian  
President: Russ Skrable  
Vice President: Jerry Gaither  
Sales Manager: Bruce Boisvert  
International Sales: Jim Bonnet  
Government Sales: Lenora Johnson  
Products: all types of electronic, electrical and fiber optic wire and cable serving the entire security, communications and computer systems marketplace.  
District Offices:  
Warwick, RI, 401-732-3105  
Phoenix, AZ, 602-269-2501  
Addison, IL, 312-543-1300  
Mountain View, CA, 415-961-1922  
San Diego, CA, 619-281-4397  
Bellevue, WA, 206-643-0761

**TELEDYNE THERMATICS**, P.O. Box 909, Elm City,  
NC 27822 Tel.: 919-236-4311

President: Roy L. Inscore  
Vice President, Sales: Franklin B. Brice  
Chief Engineer: William D. Strickland  
Vice President, Marketing: Tom McClave  
Products: Plenair™ (Plenum) wire and cable, U.L. classified for NEC Articles 800, 760 and 725. Sound, broadcast, audio, communications, control, instrumentation, computer, paging, energy management, fire alarm, security, local area networks.  
District Offices:  
Claude Booth & Associates, Inc., Chicago, IL, 312-237-7910  
R. F. Carlson Co., Sarasota, FL, 813-921-2992  
Rothkopf & Assocs., Inc., St. Louis, MI, 314-961-4485  
Carlyle Technical Sales, Seattle, WA, 206-575-6750  
M/S Sales & Assocs., Inc., Ft. Wayne, IN, 219-436-3023  
Marden/Taylor Assocs., Inc., Cazenovia, NY, 315-655-8487  
Warren Mount Co., Bethesda, MD, 301-657-9333  
Warren Mount Co., Jenkintown, PA

N. L. Pitch & Assocs., Hauppauge, NY, 516-234-7118  
The Wire & Cable Co., Los Angeles, CA, 213-545-5256  
Southern States Agency, Norcross, GA, 404-455-4075  
Del Steffen & Assocs., Inc., Cleveland, OH, 216-461-8333  
Wilco Wire and Cable Co., Inc., San Jose, CA, 408-926-8880  
Spec Tech Ltd., Worcester, MA, 617-795-7250  
R. F. Mayo & Assocs., Boulder, CO, 303-499-2155  
Chenault & Assocs., Dallas, TX, 214-388-4796

**TW COMCORP**, 122 Cutter Mill Rd., Great Neck, NY  
11021 Tel.: 516-482-8100

President: Ed Goodstein  
Sales Manager: Thomas Pazaras  
Chief Engineer: Gary Martellucci  
Products: wholesale distributor of communication wire and cable; installation supplies; station apparatus; telephone equipment; compute and CATV products; tools; hardware.



**WEST PENN WIRE CORP.**, P.O. Box 762, Washington  
PA 15301 Tel.: 412-222-7060, 800-245-4964

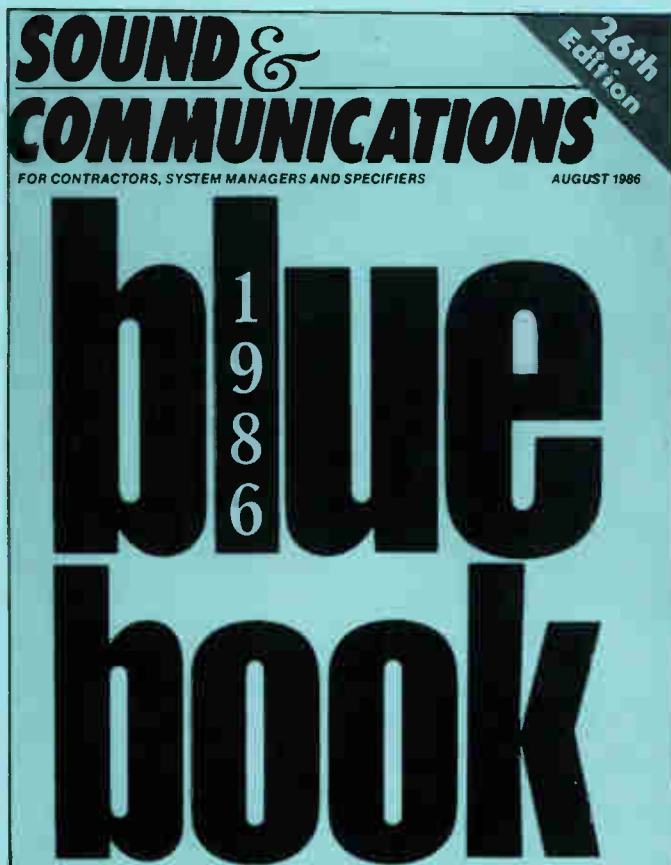
Vice President: Donald J. Hastings  
Sales Manager: Louis Valente  
Products: wire and cable for the total communication systems market specializing in plenum (non-conduit) cables, fire alarm, CCTV, co-ax for MATV and security, health care cables, data cables, lo-cap data cables, plenum coax, dual 59 coax.

**WIREWOKS CORP.**, 380 Hillside Ave., Hillside  
NJ 07205 Tel.: 201-686-7400

President: G. J. Krulewicz  
Sales Manager: Larry J. Williams  
Customer Service Manager: Angela DiCicco  
Products: Cable Tester, mic cable, audio multicable multipin disconnect assemblies, transformer splitters, audio/video cables and A/V multicable assemblies. Wide range stock channel sizes and lengths. Custom configurations by special order.



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COMMUNICATIONS**

*is not just a magazine, it's an industry.*

# BRAND NAME INDEX

## A

**AARMOR HTH** Aarmor Case Co.  
**ABFUSSOR™** RPG Diffusor Systems  
**ACCENT I** Pyle Industries, Inc.  
**ACCESSIT** Connectronics Corp.  
**ACCUTONE STUDIOS** Industrial Acoustics  
**ACO** ACO Pacific, Inc.  
**ACOUSTECH** AVL Systems, Inc.  
**ACOUSTICAL INTERFACE™** ACO Pacific, Inc.  
**ADCO INTERCOMS** Atkinson Dynamics  
**ADVANTAGE** The Valley People  
**AEI** Audio Environments Inc.  
**AF-1** Modern Sound Systems, Inc.  
**AHB** Allen & Heath Brenell  
**ALC** Auernheimer Labs & Co.  
**ALLEN & HEATH** Allen & Heath Brenell  
**ALPHA** LPB, Inc.  
**ALTERNATIVE** ACO Pacific, Inc.  
**ALTECOM** Altec Lansing Corp.  
**AMBICON** ProTech Audio Corp.  
**AMBIEN SOUND ALARM** Sieler Design Products  
**AMCRON** Crown International  
**AMGATE 880** Amtel Security Systems  
**AMPIVOX** Perma Power Electronics  
**AMPICALL** Rauland-Borg  
**AMPLICOLUMN** Paso Sound Products  
**AMPLIVOICE** Paso Sound Products  
**AMPLYPHONE** Amplyvox/USA Security  
**AMPRO/SCULLY** Television Technology  
**AMPTECH** LT Electronics Ltd.  
**AMRAD DIVISION** D.J. Associates  
**AMS** Advanced Music Systems  
**APEX™** Microvoice Corp.  
**ARGUS** National Telesystems Ltd.  
**ASAP®** Command Communications Inc.  
**ATA STAR** Star Case  
**ATD** AB Systems  
**AUDIOCOM** Telex Communications  
**AUDIO DEVELOPMENTS** Portland Instruments  
**AUDIO-LINE** Audio Accessories  
**AUDIOLITE SIGNAL PRODUCTS** Atlas Sound  
**AUDIOLOGIC®** D.O.D. Electronics  
**AUDIO MASTER** Tape-Athon Corp.  
**AUDIORACK** Logitek  
**AUDIO SPECTRUM** The Music People  
**AUDIO VOICE** Paso Sound Products

**AUDITEL™** Edcom  
**AURATONE®** Auratone Corp.  
**AUTOMIXER™** EMS/Music  
**AUTO TEN** Protech Audio Corp.  
**AVE SYNC™** Touch Technologies

## B

**BABYVISION** GBC Closed Circuit TV  
**BEL** BEL Electronics  
**BES** Bertagni Electroacoustical Systems, Inc.  
**BGW** BGW Systems, Inc.  
**BLACK MAGIC** Cambridge Electronics  
**BOGEN®** Bogen  
**BOGEN-PHONE** Bogen  
**BRIFLON** Brim Electronics  
**BRIGHT-VU** Logitek  
**BRIMCROM** Brim Electronics  
**BRIMFLEX** Brim Electronics  
**BRIMFLYX** Brim Electronics  
**BRIMGARD** Brim Electronics  
**BRIMLON** Brim Electronics  
**BRIM/TV** Brim Electronics  
**BRYON** Brim Electronics  
**BSS** Klark-Teknik  
**B-T** Blonder-Tongue Labs Inc.  
**BURNISHER** Vertigo Recording Products  
**BUSINESSCOM™** TIE Communications, Inc.

## C

**CALL-A-NURSE** Rauland-Borg  
**CALL TRAC** BFI Communication Systems  
**CAMPAIGNER** MagnaSound  
**CARAMATE** Telex Communications  
**CARRY STAR** Star Case  
**CASCADE 400** Teltone Corp.  
**CAVOX** Tape-Athon Corp.  
**CDA™** EMS/Music  
**CENTRACOM** Tone Commander Systems  
**CENTRALLITE** Insul-Art Acoustics, Inc.  
**CHALLENGER** Equipto Electronics  
**CHIEF** Talk-A-Phone Co.  
**CHV** Brim Electronics  
**CINE-NAVITAR** D.O. Industries  
**CITATION** LPB, Inc.  
**CLASSIC II** Amtel Security Systems

**CLEARVOICE** Amplyvox/USA Security  
**CLS-2** Bose Corp.  
**CMDS** Paso Sound Products  
**COLUMNAR** Atlas Sound  
**COM CENTREX** Plant Equipment  
**COMELIT** Alpha Communications  
**COMMUNICATOR UNEX**  
**COMMUNITEL**® Bose Corp.  
**COMPACT 20** Paso Sound Products  
**COMPEX** Audio ± Design Calrec  
**"COMPLIMITER"™** Spectra Sonics  
**COMPUCOM** Paso Sound Products  
**COMTRAC** Telephone Sales & Service  
**CONFERSCAN™** Avtec Industries  
**CONTEMPO** Tape-Athon Corp.  
**CONTATA** Sound Products/3M  
**CONVOY** Calzone Case Co.  
**COPYETTE** Telex Communications  
**CROSSFIRE** Logitek  
**CROWN** Crown International  
**CUE-AMP** Conex Electro-Systems  
**CVX** Cetec Vega

## D

**DAFLEX** Daburn Electronics  
**DAFLON** Daburn Electronics  
**DALITE** Daburn Electronics  
**DANYON** Daburn Electronics  
**DAPRENE** Daburn Electronics  
**DATAVOX** Johnson Electronics  
**DATUS™** Reach Electronics, Inc.  
**DAX** Micro Audio  
**DAX EQ POD** Micro Audio  
**DDA** Klark-Teknik  
**DELTA** International Tapetronics Corp.  
**DELTACOM** Delta Communications  
**DIGACOM** Signacom Corp.  
**DIGIMAX** Electronic Systems Group  
**DIRECTOR** Rauland-Borg  
**DIRECTORY PLUS** Radionics, Inc.  
**DISC-PATCHER™** ATI  
**DISPLAYCOM** Radionics, Inc.  
**dj** LPB, Inc.  
**DL-64** FSR, Inc.  
**DMR** Mackenzie Labs  
**D.O.D. DIGITEK** D.O.D. Electronics  
**DOORMAN** Cambridge Electronics Labs.  
**DOORMAN** Speco Div.  
**DRUMFIRE** The Music People  
**DUPLEX**® Altec Lansing Corp.  
**DYNAMAX** Fidelipac  
**DYNA-MITE** Valley People  
**DYNEX** Cetec Vega

## E

**EAW** Eastern Acoustics Works

**ECS 100** ITT Data Equipment & Systems  
**EDSTAN** Time & Sound Co.  
**EIGHT PLUS** Soundolier  
**EKTACOM** Fisher Berkeley Corp.  
**ELECTOTUNE** Paso Sound Products  
**ELECTROTONE** Paso Sound Products  
**ELF** E.M. Long Associates  
**ELVOX** Paso Sound Products  
**EMS** EMS/Music  
**EMT** Gotham Audio Corp.  
**ENCORE SERIES™** ATI  
**ENDURA** Roadrunner Cases  
**ENHANCER** McGohan Electronics, Inc.  
**EQUIPTO** Equipto Electronics  
**ESCORT** Calzone Case Co.  
**E-SERIES** Current Cable Co.  
**ESL V** International Tapetronics Corp.  
**EXES** TOA Electronics, Inc.  
**E-Z CALL** Telephone Sales & Service

## F

**FB-1** International Tapetronics Corp.  
**FORSYTHE** Eastern Acoustics Works  
**FOUR PLUS** Soundolier  
**FRAMELOCK™** Elbex America  
**FREEDOMIKE**® Lectrosonics  
**FX RACK** Four Designs

## G

**GAIN BRAIN** Valley People  
**GATEX** Valley People  
**GENEVA** Geneva Group  
**THE GHOST** ACO Pacific  
**GIANT VOICE**® Altec Lansing Corp.  
**GLADIATOR CABLES** Conquest Sound  
**GLX, GX** Inter-Tel, Inc.  
**GOLD LINKS** Video Link  
**GREAT BRITISH SPRING** Connectronics Corporation  
**GROMMES PRECISION ELECTRONICS**  
Precision Electronics

## H

**THE HANDLERS** Paso Sound Products  
**HARMONIA-MUNDI ACOUSTICA** Gotham Audio  
**HARMONIZER**® Eventide, Inc.  
**HEXCOLUMN** Paso Sound Products  
**H. H. SMITH** Dialight Corp.  
**HI "D" CABLES** Conquest Sound  
**HI TEK™** Bogen  
**H-MAC** Aarmor Case Co.  
**HORIZON** Pyle Industries, Inc.  
**HOT SPOT** Galaxy Audio  
**HPT SPEAKER CABLES** Conquest Sound  
**HUSH CABLES** Conquest Sound  
**HY-GAIN** Telex Communications, Inc.

# I

**IDI** Image Devices International  
**IED** Innovative Electronic Design  
**IMAGECOM** Paso Sound Products  
**IMPAC** Modular Audio Products  
**INCREMENTAL POWER®** Altec Lansing Corp.  
**INDESTRO** Jeron Electronic Systems, Inc.  
**INJECTOR** Vertigo Recording Products  
**IN-LINE AUDIO** The Music People  
**IN-LINE EFFECTS** The Music People  
**IN-LINE TRANSFORMER** The Music People  
**INSTRUMAX** Cetec Vega  
**INTEGRA III** Protech Audio Corp.  
**INTERLINK** Monster Cable Products

# K

**KEPEX** Valley People  
**KEY TECHNOLOGY** Connectronics Corporation  
**K&H** Gotham Audio Corp.  
**KIT PAGER** Spantel Corporation  
**KUDOS** Connectronics Corporation

# L

**LANDCOM** Telex Communications, Inc.  
**LECTERNETTE** Sound Craft Systems  
**LECTRUM** Ansett Technologies, Inc.  
**LEKTRON** Paso Sound Products  
**LEVELLER** Valley People  
**LEVEL-MATIC™** Industrial Research Products  
**LFD™** RPG Diffusor Systems  
**LIFESTYLE** Seeburg Music Satellite Network

# M

**MACS** Dukane Corp.  
**MAGNIPHONE MAX** Melco Labs, Inc.  
**MANTARAT** Altec Lansing Corp.  
**MASKER** Soundolier  
**MASTERLINE®** Blonder-Tongue Labs  
**MATCHMAKER™** ATI  
**MAX** Melco  
**MAX™** Touch Technologies, Inc.  
**MAXI-Q** Valley People  
**MBI** Allen & Heath Brenell  
**MBI/AHB** Allen & Heath Brenell  
**MED-TEK** Engineered Electronics, Inc.  
**MEGA VOICE** Paso Sound Products  
**MELLOTONE®** Mellotone  
**MESSAGE BANK™** Solid State Systems  
**MESSENGER II** Tape-Athon  
**MG** MG Electronics  
**MICRO-AMP SERIES** ATI  
**MICROLINE** Audix

**MICRO-MIKE** Image Devices Int'l.  
**MICROPASS®** Racon, Inc.  
**MICROWAFER** Stanton Magnetics, Inc.  
**MINI-MAC** Mackenzie Laboratories  
**MINI-MAX** GBC Closed Circuit TV Corp.  
**MINI-MON-MIX** Four Designs Co.  
**MISSING LINK** Conquest Sound, Inc.  
**ML** FSR, Inc.  
**MLMS** Touch Technologies  
**MOBILPAGE** Midwest Electronics  
**MODELER™** Bose Corp.  
**MODULA** BSM Broadcast Systems, Inc.  
**MOGAMI** Marshall Electronics, Inc.  
**MUFFLE MODULE** Automated Devices, Inc.  
**MULTIGRAPHIC®** Bogen  
**MULTIVOICE™** Microvoice  
**MUSICMAN** Cambridge Electronics  
**MUSIC MASTER** Tape-Athon Corp.  
**MUSIFLEX** Connectronics Corp.

# N

**NAVITAR** D.O. Industries  
**NAVITRON** D.O. Industries  
**NEARFIELD MONITOR** E.M. Long Associates  
**NEOFLEX** Olfex Wire & Cable  
**NEUMANN** Gotham Audio Corp.  
**NEUTRIK** Dialight Corp.  
**NEWVICON** Panasonic Industrial Inc.  
**NFM** EM Long Associates  
**NOALA®** Altec Lansing Corp.  
**NORTRONICS** Geneva Group  
**NTP** Gotham Audio Corp.

# O

**OMEGA** International Tapetronics  
**OMEGA-PHONE** Iwatsu America  
**OMNIPRESSOR®** Eventide, Inc.  
**OMNISPEAKER** Portland Instruments  
**OMNI-VIDEO MATRIX 1000™** Javelin Electronics  
**ON-STAGE STANDS** The Music People  
**ORATOR** Cetec Vega

# P

**PAARFLEX** Olfex Wire & Cable  
**PAGEKOM** Soundolier  
**PARAMOUNT SPEAKERS** Portland Instruments  
**PAS** Professional Audio Systems  
**PASO** Paso Sound Products, Inc.  
**PERSONAL PA** Williams Sound Corp.  
**PETCOM** Poetker Communications  
**PHI DECK** PHI Technologies, Inc.  
**PHOENIX/HITEC** Inter-Tel Inc.  
**PIGNOSE** Roadrunner Cases  
**PLENAIR™** Teledyne Thermatics  
**POCKETALKER** Williams Sound Corp.

**POETS** Walker Telecommunications  
**POS-I-PHASE DIVERSITY** Telex Communications  
**POWER COMMANDER** Perma Power  
**POWERLINE® 2** Monster Cable Products  
**POW R LOOP** Williams Sound Corp.  
**PPD** Numark Electronics  
**PREMIER®** North Supply Co.  
**PROFORCE** The Music People  
**PROLINK®** Monster Cable Products  
**PRO, PRO PLUS** Cetec Vega  
**PRO SPOT** Galaxy Audio  
**PSS** Paso Sound Products  
**PYLE DRIVER** Pyle Industries, Inc.  
**PZM®** Crown International

## Q

**QRD™** RPG Diffusor Systems  
**QUICK-CALL** MetroTel  
**QUIPTVOR** Equipto Electronics

## R

**RA II MIC CABLES** Conquest Sound, Inc.  
**RACKRATE** Four Designs Co.  
**RADIO-AIDE** LPD, Inc.  
**RADIO-CINE** LPD, Inc.  
**RAMSA** Panasonic Industrial Co.  
**RANGE FINDER™** Elbex America  
**RAYMER** Cetec Raymer  
**RCF** Eastern Acoustics Works  
**RELIANT** Walker Telecommunications  
**RESPONDER** Rauland-Borg  
**REVOX** Studer Revox Inc.  
**RIDS** Racon, Inc.  
**RINGMASTER** Ring Group of N. America  
**ROADRUNNER** Roadrunner Cases  
**ROCKMOUNT** Four Designs Co.  
**ROCTRONICS** Roctronics Lighting & Special Effects  
**ROTORACK** Aarmor Case Co.  
**RPG™** RPG Diffusor Systems  
**RTS 321** Four Designs Co.

## S

**SATELLITE** Insul-Art Acoustics  
**SCAMP** Insul-Art Acoustics  
**SCAMP MODULAR SYSTEM** Audio ± Design/Calrec  
**SCS** Sound Code Systems  
**SCV, Inc.** Portland Instruments  
**SDL** Intersonics, Inc.  
**SECK** Connectronics Corp.  
**SECURICOMM** MultiVox Ltd.  
**SELCO/SIFAM** Selco Products Co.  
**SELECTOPHONE II** Telephone Sales & Service  
**SENTEX** Sentex Systems, Inc.  
**SENTINEL®** American Zettler Corp.  
**SENTRY VISION™** American Fibertek

**SEQR®** Altec Lansing Corp.  
**SERIES 2** Aarmor Case Co.  
**SERIES 3** Aarmor Case Co.  
**SERIES II B CABLES** Conquest Sound, Inc.  
**SERVO-DRIVE** Intersonics  
**SET-IT-TO-HERE** Yale Audio  
**SHELFMATES** Speco Div.  
**SIGNATURE** LPB, Inc.  
**SILICONE** Olfex Wire & Cable  
**SIM™** Meyer Sound  
**SLIMLINE** Pyle Industries, Inc.  
**SMART-1™** Mitel/Datacom  
**SMART SYSTEMS** Renkus-Heinz  
**SOCKETS-PLUS** Perma Power Electronics  
**SOFTTOUCH®** Buscom Systems, Inc.  
**SOLID SYSTEM** Equipto Electronics Corp.  
**SONALERT®** Mallory Capacitor Co.  
**SOUNDCASTER** Paso Sound Products, Inc.  
**SOUND DIRECTOR®** Argos Products  
**SOUND ENHANCER** Speco Div.  
**SOUNDEX** Monster Cable Products  
**SOUND FIELD MC** Audio ± Design/Calrec  
**SOUNDGUARD™** Bogen  
**SOUND MASTER** Speco Div.  
**SOUNDBAK II** Argos Products  
**SOUNDSCAPE** Electrical Systems Group  
**SOUNDSPHERE** Sonic Systems, Inc.  
**SOURCE** Pyle Industries, Inc.  
**SPACE STATION** Ursa Major, Inc.  
**SPECO INT'L** Speco Div.  
**SPECTRA SOUND** Spectra Sound  
**SPECTRUM MASTER** Rauland-Borg  
**SPEECH DIRECTOR®** Argos Products  
**SPT** Touch Technologies, Inc.  
**STEIL KLIPS** Daburn Electronics  
**STEREOHEDRON** Stanton Magnetics  
**STEREORACK** Logitek  
**STEREOWAFER** Stanton Magnetics  
**STOR-COM** Communitron Corp.  
**STR** Alpha Communications  
**STUDIFLEX** Connectronics Corporation  
**STUDIO 1000** Yesco Foreground Music  
**STUDIO MASTER** International Music Co.  
**STYLE "E"™** Lee Dan Communications, Inc.  
**SUPER CABLE** Audio-Technica U.S., Inc.  
**SUPER GOLD MONITOR (SGM)**

Tannoy N. America

**SUPER STAR** Star Case  
**SVS** Surveillance Video System  
**SWEMAR** Leader Instruments Corp.  
**SYSTEM 1000** Benchmark Media Systems  
**SYSTEM 3100** ITT Business & Consumer Comm.  
**SYSTEM 4000** BFI Communication Systems  
**SYSTEMS 2000** Professional Audio

## T

**T-310** Teltone Corporation

**TA** E.M. Long Associates  
**TA-12** Modular Sound Systems  
**TABERASER** Taber Mfg.  
**TAC** Amek Consoles  
**TAI** Technical Acoustics, Inc.  
**TAIL VISION™** Elbex America  
**TALK-A-PHONE** Talk-A-Phone Co.  
**TALK-THRU** Norcon Electronics, Inc.  
**TANGERINE®** Altec Lansing Corp.  
**T/E 2000** UNEX  
**TECHNICART** Leader Instruments Corp.  
**TEC-PRO** Technical Projects, Inc.  
**TEK-CARE,™ TEK-COM,™ TEK-DOOR,™**  
**TEK-ENTRY,™ TEK-SELECT,™ TEK-SOUND,™**  
**TEK-TRIO,™ TEK-VIEW™**

Lee Dan Communications, Inc.

**TEK-LIGHT** Berk-Tek, Inc.  
**TEL-2** FSR, Inc.  
**TEL AID** Metro Tel Corp.  
**TEL DEC** Gotham Audio Corp.  
**TELECENTER** Rauland-Borg  
**TELECOR™** Edcom  
**TELECOURIER** Stentofon Communications, Inc.  
**TELE HOLD** Melco Labs, Inc.  
**TELE-LINE** Perma Power Electronics  
**TELEPROCESSOR** Gentner Engineering Co.  
**TELETALE** Poetker Communications Ltd.  
**TEL TRAK 2** Radionics, Inc.  
**TELEVOX** National Telesystems Ltd.  
**TEQ™** Industrial Research Products  
**TESTING 123** Four Designs Co.  
**TIME ALIGNED** EM Long Associates  
**TIME ALIGNED™** UREI  
**TIMESQUEEZE®** Eventide, Inc.  
**TITAN** Roadrunner Cases  
**TI-TITE** Daburn Electronics  
**TOC™** Professional Audio  
**TOUR KITS** Edcor  
**TRAKKER** Poetker Communications Ltd.  
**TRANSCON MFG.** D.J. Associates  
**TRANSWAVE** Schell Electronics, Inc.  
**TRIDEX** Ring Group of N. America  
**TR SERIES** Paso Sound Products  
**TSKCOM** T-S-K Electronics, Inc.  
**TUBE TRAP™** ASC, Acoustic Sciences Corp.  
**TV SENTRY** GBC Closed Circuit TV  
**TV SOUND PLUS** UNEX  
**"TW"** RTS Systems Inc.

## U

**ULTIMA** Calzone Case Co.  
**ULTRAMONITOR™** Meyer Sound  
**ULTRASTAR** Star Case  
**ULTRAVOX** Paso Sound Products  
**UNICALL** Amtel Security Systems  
**UNITRONIC** Olflex Wire & Cable

## V

**VANGUARD SERIES™** ATI  
**VANTAGE POINT™** Avtec Industries, Inc.  
**V BAND** V Band Systems, Inc.  
**VECTA** Cetec Vega  
**VEGA** Cetec Vega  
**VENTEL** UNEX  
**VERSAPATCH** Gentner Engineering  
**VIDEO DOORMAN** Amplyvox/USA  
**VIDEO DOOR VISION** GBC Closed Circuit TV  
**VIDEO INTERPHONE™** Elbex America  
**VIDEOVOX** Alpha Communications  
**VIDICON** Panasonic Industrial  
**VIDITEK** Video Link  
**VIP** Alpha Communications  
**VIP® II** Reach Electronics, Inc.  
**VISACOM** A.E. Electronics Corporation  
**VOCAL STRESSOR** Audio + Design/Calrec  
**VOICE AMP** Sieler Design Products  
**VOICEBEAMER** MagnaSound  
**VOICE DIRECTOR®** Argos Products  
**VOICE-MATIC™** Industrial Research Products  
**VOICE OF THE THEATRE®** Altec Lansing Corp.  
**VOICEPAC** Xtel  
**VOICE/TONE** Atlas Sound  
**VOIDEX 1000/2000** Amtel Security Systems  
**V.S.A.** Aarmor Case Co.

## W

**WILDCATS™** Tannoy N. America  
**WILKINSON** Television Technology Corp.  
**WILLIAMS WIRELESS** Williams Sound Corp.  
**WIRELESS SOUND®** WISSCO  
**WONDERBOX** PA Concepts  
**WRAPPER CABLES** Conquest Sound, Inc.

## X

**X-TERMINATOR®** Monster Cable Products  
**XTRA LINK** Video Link

## Z

**ZETCOM®** American Zettler  
**Z-MAC** Mackenzie Labs

## #

**3M** Sound Products/3M  
**511E** ITT Data Equipment & Systems Div.  
**99B** International Tapetronics  
**4j** Fourjay Industries, Inc.  
**102** Bose Corp.  
**402** Bose Corp.  
**802 SERIES II** Bose Corp.  
**302 TANDEM TUNED SYSTEM** Bose Corp.



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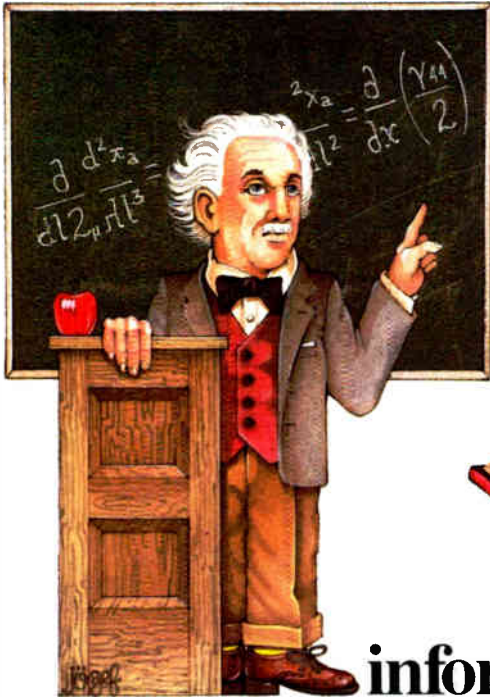
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