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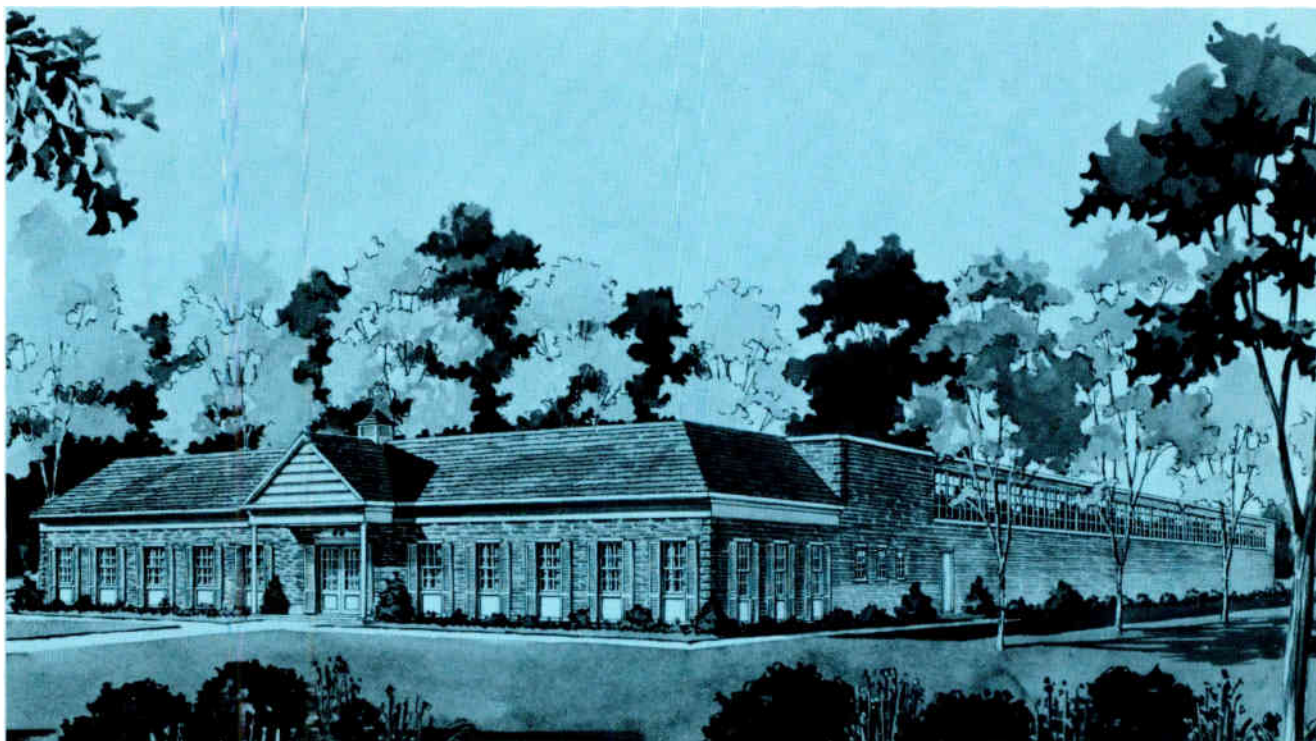
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1969
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Broadcast Engineering

The technical journal of the broadcast-communications industry

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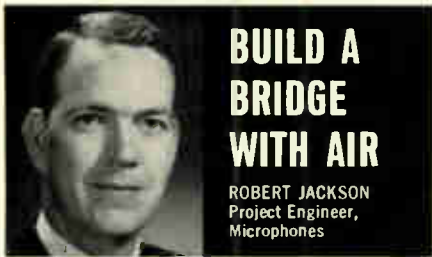
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One of a series of brief discussions
by Electro-Voice engineers



BUILD A BRIDGE WITH AIR

ROBERT JACKSON
Project Engineer,
Microphones

If you closely examine a modern microphone, you'll often find some bits of cloth, fiberglass wool, felt, or sintered metal employed in the air stream. These porous materials are usually included to add an acoustic resistance to the design, either to control frequency response by damping the diaphragm, to control polar pattern by shifting phase, or both.

Despite the ubiquitous presence of these materials, they are difficult to control precisely. The relative porosity of cloth, felt, or other "loose" materials can vary widely, even in a single bolt of material. Unless the actual acoustic resistance of a given piece of material is known, it may be impossible to accurately predict the performance of a microphone.

Measurement of acoustic resistance is not normally an easy task. The conventional approach is to measure the air flow rate through a sample of the material under test, using a source of constant air pressure. But the flow rate is dependent on both resistance and air pressure (thus a measurement made at high pressure may bear no useful relationship to the behaviour of the same material at low pressure). In addition, absolutely constant air pressure is difficult to achieve and maintain.

Indeed, it is rare that an absolute measure of acoustic resistance is needed. More often it is desired to compare a new microphone assembly with a "standard" either for lab development or quality control. And so a technique has been developed to provide comparative measurements with ease and accuracy.

In essence, the new instrument developed is the pneumatic equivalent of a Wheatstone bridge. A source of air pressure is connected to two tubes with equal, fixed acoustic resistance. Joining these tubes is a differential pressure meter (designed to prohibit air flow through the meter). The "standard" microphone and the unit under test form the other two legs of the bridge. Air passing through these microphones is exhausted into the atmosphere to provide the return path. Accuracy is unaffected by variations in air pressure (although sensitivity increases with higher pressure).

This new measurement technique offers several significant advantages to E-V engineers. Materials can be tested as installed in their acoustic environment (including the case and internal structures). More accurate adjustment of resistance permits mass assembly of more sophisticated designs. Closer control of production quality can also be achieved for higher product uniformity. In addition, time spent in trial and error can be reduced when developing new designs.

For reprints of other discussions in this series,
or technical data on any E-V product, write:
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LETTERS TO THE EDITOR

John Morgan's short article in the October issue of BE reminds me of a piece which appeared in one of the Amateur journals several years back, on basically the same topic.

It was labeled "The umpteenth corollary of Finagle's third law of applied electronic technology" (which incidentally states that anything that can go wrong will go wrong).

As I remember it, the corollary went this way:

A) In any given shipment of parts, the part which either is back-ordered or arrives broken will be the part most vital to the operation of the equipment as a whole; and will be the single part without which the other parts cannot operate.

B) Any new part, which arrives defective and is installed by mistake will malfunction in such a way that the maximum amount of harm is done to the maximum number of components.

C) Any part designed to interchange with, or take the place of, any other part, won't.

D) Any parts which require a special tool to install will either not fit the tool, or will arrive the day after you break the tool.

These would be awfully funny, if they weren't so damn true.

John King
Chief Engineer, KGAL

Who's Who?

In the November issue of **Broadcast Engineering**, the byline for the WTMJ automation article was given to Phil Dean. Actually, Jim Wulliman, the WTMJ CE, deserves the credit. Phil Dean, of Phil Dean Associates, is not a member of the WTMJ staff. Jim deserves extra credit, too. Converting to automated switching requires a tremendous amount of engineering time and effort. We can all benefit from their experience.

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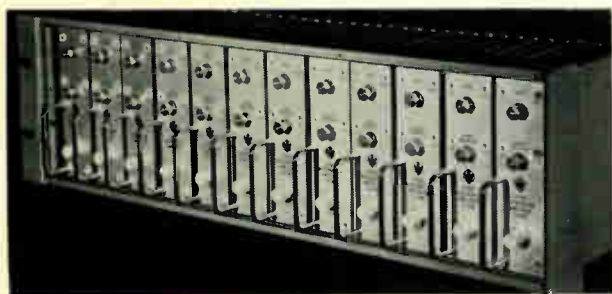
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AES: serving audio engineering

■ The Audio Engineering Society is the only professional society devoted exclusively to audio technology. Its members include leading engineers, scientists and other authorities in audio in this country and abroad. AES influence and position in the field of audio is worldwide.

Prior to the organization of the Audio Engineering Society, the need for a technical organization devoted exclusively to the profession of audio engineering was definitely asserting itself. Audio, as a distinct and separate branch of the profession of communication engineering, had come of age. It was not merely asking recognition, since this had been virtually accomplished. It was seeking a forum for discussion and interchange of ideas.

The Beginning

As an indication of the general feeling, a letter from Frank E. Sherry, Jr. was published in **Audio Engineering** magazine. It recognized the need for and suggested the organization of an audio group. This letter, entirely unsolicited, brought forth many replies of agreement.

At this time, C. J. LeBel, a professional engineer of notable standing, discussing the situation with his friends and associates, was inspired to test the case. He interviewed many audio engineers in the New York area, and made an open bid for support of a new society in the letter columns of **Audio Engineering** magazine. The general approbations and encouragement he received constituted the real beginnings of the Society.

A meeting of interested audio engineers was called for January 8, 1948 at the Hotel Sheraton, New York City. A steering committee was appointed: C. J. LeBel, John D. Colvin, C. G. McProud, Norman C. Pickering, Chester A. Rackey.

In February, the formal organization meeting was held at the RCA Victor studios at 155 East 24th Street, New York City. A gratifying and unexpectedly large turnout, 137 persons, assembled at this meeting.

Membership in the Audio Engineering Society steadily increased from 722 in October, 1948 to 1,000 in 1952, 2,000 in 1957, 3,000 in 1965, and now it is over 4,000.

The first West Coast Convention was held in 1954. Two Conventions have been held annually since that time. The Spring Convention is held on the West Coast and the Fall Convention in New York City. Exhibits have been a part of these Conventions for a number of years.

AES Journal

The Audio Engineering Society started to publish its own Journal in January 1953. Started as a quarterly, it contains engineering studies and reports from audio authorities in the United States and abroad. Topics in the forefront of audio news reach the **Journal** promptly and are given treatment that reflects their importance.

The AES serves members, industry and the public by stimulating and directing advances in this vital technology. It makes new developments promptly and widely known through semiannual technical sessions and through the **AES Journal**, a professional publication.

Conventions

AES conventions are held twice each year—in the Fall in New York City and in the Spring on the West Coast. Both include a full program of technical sessions for the presentation and discussion of papers describing current research and developments in audio. Exhibits of professional equipment from manufacturers here and from other countries give AES members a first-hand look at the latest products for audio application.

The 36th convention of the AES is scheduled for April 28—May 1, 1969 at the Hollywood Roosevelt Hotel in Hollywood, California. In October, the 37th convention will get underway on the 13th in the New York Hilton in New York City.

Membership

Honorary Memberships and Fel-

lowships are given for past contributions to the profession.

Qualifications for membership in the Audio Engineering Society are as follows:

A **Member** may be any person active in audio engineering who has an academic degree, or its equivalent in scientific or professional experience in the field of audio engineering and its allied arts, and who is familiar with the application of engineering principles and data in that field.

An **Associate** may be any person interested in the objectives of the Audio Engineering Society.

A **Student** may be any student interested in audio engineering and enrolled in a recognized school, college or university.

At the present time the scope of the Society's concern, while still including the areas delineated at the time of its organization 20 years ago, has expanded in order to keep pace with new technological developments in audio and in order to better meet the Society's responsibility to the engineering community and to society at large.

The membership of the Society includes engineers, scientists, administrators, and technicians involved in research, development, design or operation of all forms of audio apparatus and systems; executives, sales engineers, and technical personnel involved in the production, marketing and installation of audio equipment; and educators who use audio apparatus in teaching or who teach acoustics, electronics, or other sciences basic to audio engineering, sound reproduction and allied fields.

The AES serves its membership by offering opportunities for the exchange of technical information, for self-improvement and for professional recognition. The vigorous and progressive state of audio technology at this time will surely be matched by the growth and contributions of the Society during the next two decades of its existence.

For further information on AES membership, write to: Audio Engineering Society, Room 428, 60 East 42nd Street, New York City, 10017.

IBS: Worldwide collegiate broadcasting

■ The Intercollegiate Broadcasting System (IBS) is the trade association of collegiate and educational radio stations in the United States, Canada, and overseas. The System has members east to Holland and west to Australia.

IBS was founded in 1939 by 13 college radio stations to act as a trade association, assisting the stations in obtaining national advertising, representing them to the FCC, and furnishing information to other schools interested in educational radio or constructing campus stations. The System is a non-profit Rhode Island corporation.

There were high points in activity and membership in 1948 and 1955, and during these periods IBS member stations enjoyed many augmented services, including particularly increased national advertising revenue and many fine IBS-produced program series.

Until the more recent past, however, IBS membership never grew very large, because the number of college and university stations cooperating in the media beyond the local station's bounds was small. Before 1963 the record membership was 1955's 105 member stations. Since then IBS has grown to over 350 members, representing a 400% increase in the past 4 years.

Although these statistics are impressive, the real story of IBS growth is in the area of its services to the industry. These include the availability of IBS printed forms, the College Radio Placement Service (an annual poll of commercial stations on their requirements and qualifications for summer positions),

a programming service, Iota Beta Sigma national honorary, an annual National Convention, **College Radio** magazine (published monthly during the academic year), and FCC representation . . . especially Call Letter reservation. The System strives to expand both the depth and the scope of its programs and services . . . instituting new services and improving existing ones.

IBS Services

Two services of particular interest to new stations are the IBS general, technical and sales consultation service, and the IBS **Master Handbook**. The **MH** is a complete manual of station operation encompassing programming, sales, technical, and administrative information. Since IBS's inception, a prime effort has been to furnish stations with technical data and assistance. The System has technical requirements (as well as other codes) for Voting membership, and a significant portion of the **MH** is devoted to engineering information.

IBS has also developed a regional activity and runs periodic regional conferences. Regions publish newsletters, run programming exchanges, regional sales offices, and even news networks.

A recent addition to IBS services is being instituted by the Record Company Relation Department. The RCRD is publishing a weekly IBS Charts & Review section as a feature of **College Radio** magazine. In addition, the RCRD will furnish to Record Manufacturers' promotional offices data on IBS member stations.

Membership

Industry Affiliate membership is another new facet of IBS. As a result of a complete revision of IBS organizational structure and By-Laws two years ago, the System offers Affiliate membership to firms in the industry wishing to cooperate with our membership. Three classes of Industry Affiliate membership are offered.

As outlined in the By-Laws, a broadcast group related to an institution of higher or secondary education, or an organization whose purpose coincides in whole or in part with that of the System is eligible for membership. IBS does not offer individual membership. Station dues are \$45 per year.

Conferences in IBS's 14 regions are held once a year, and a National Convention is held each spring. This year, IBS will hold its 30th annual national convention, dubbed Convo 30, in Washington, D.C. In recent years the convention has been held in conjunction with either the International Radio and Television Society's College Major's Conference in New York, or the national convention of the NAB. Last year's convention was held in Chicago March 29-31, and delegates were admitted to the NAB exhibit floor Sunday, March 31. Among speakers were former FCC chairman Newton Minow, **Broadcasting** editor Sol Taishoff, Comm. Lee Loevinger, Cox Broadcasting's J. Leonard Reinsch, Steinman's Clair McCollough, WCFL's Ken Draper and Jim Stagg, Chickenman, SIO's Roy Danish, and Gates' Loring Fisher and George Yazell.

Convo 30 will be held March 21-23, 1969 at the Washington Hilton in Washington, D.C., again in conjunction with the NAB show. The convention is organized into sessions on industry trends and segments, workshops on station management, programming and engineering, music industry and equipment exhibits and a general caucus, as well as a Dinner Banquet.

Further information on the IBS may be obtained by writing to: Intercollegiate Broadcasting System, Bethlehem, Pa. ▲



General Caucus: J. Leonard Reinsch of Cox Broadcasting addressing the IBS convention last March. Seated, FCC commissioner Loevinger, Sol Taishoff, **Broadcasting**, and Clair McCollough of the Steinman stations.



Production session of the Chicago convention. Left to right are Mike King, Richard Orkin, Bruce Swedien and Ken Nordine.



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Licensing panel: Ben Wolfe, Al Chismark, Curtis Plummer, Otis Hanson, Kenneth Cox, Cliff Gorsuch.

IEEE: Looking to the electronic future

■ Back in 1884 a group of engineers got together and formed an organization. And for all their interest, they couldn't have guessed that their organization, to be known as the Institute of Electrical and Electronics Engineers, would become a national organization. From there, it spread across the world until today there are more than 160,000 members.

Unlike many organizations designed to meet the needs of one specific area of broadcasting, the IEEE includes those not yet in the field. Currently, there are student branches of the IEEE at more than 300 institutions of higher learning around the world.

Throughout the year the many sections of the IEEE hold many meetings, conferences and symposiums for the purpose of keeping all members informed on the latest innovations, experiments, and possible future directions.

While many groups have split into specific interest areas, they remain aligned with the IEEE. And this includes Canadian broadcasters. The call is out now for technical papers for the International Elec-

tronics Conference scheduled for Oct. 6-8. The conference is sponsored by the Canadian Region of the IEEE. (Summary and abstract of paper should be sent to: Dr. Rudi de Buda, International Electronics Conference, 1819 Yonge Street, Toronto 7, Canada.)

Fifteen nationally prominent industrial and military executives have been named to the 1969 Winter Convention on Aerospace and Electronics System (WINCON) advisory committee. The 10th annual conference is slated for Feb. 11-13 at the Biltmore Hotel in Los Angeles.

Frederick Stevens, WINCON general chairman and vice president of Northrop Corporation, said the following men have agreed to serve on the panel: Dr. William F. Ballhaus, president, Beckman Instruments; Lt. Gen. Austin W. Betts, Army chief of research; Hon. Alexander H. Flax, assistant secretary of Air Force research and development; Hon. John S. Foster, Defense Department director of research and development.

Dr. Eugene G. Fubini, vice president and group executive, IBM; Adm. I. J. Galantin, USN, chief of Naval material; Dr. Ivan Getting,

president, Aerospace Corp.; Adm. J. J. Hyland, USN, Pacific Fleet commander in chief; A. Carl Kotchian, president, Lockheed Aircraft Corp.

Hon. Russell D. O'Neal, Army assistant secretary, research and development; Lt. Gen. John W. O'Neill, USAF, commander, SAMSO.

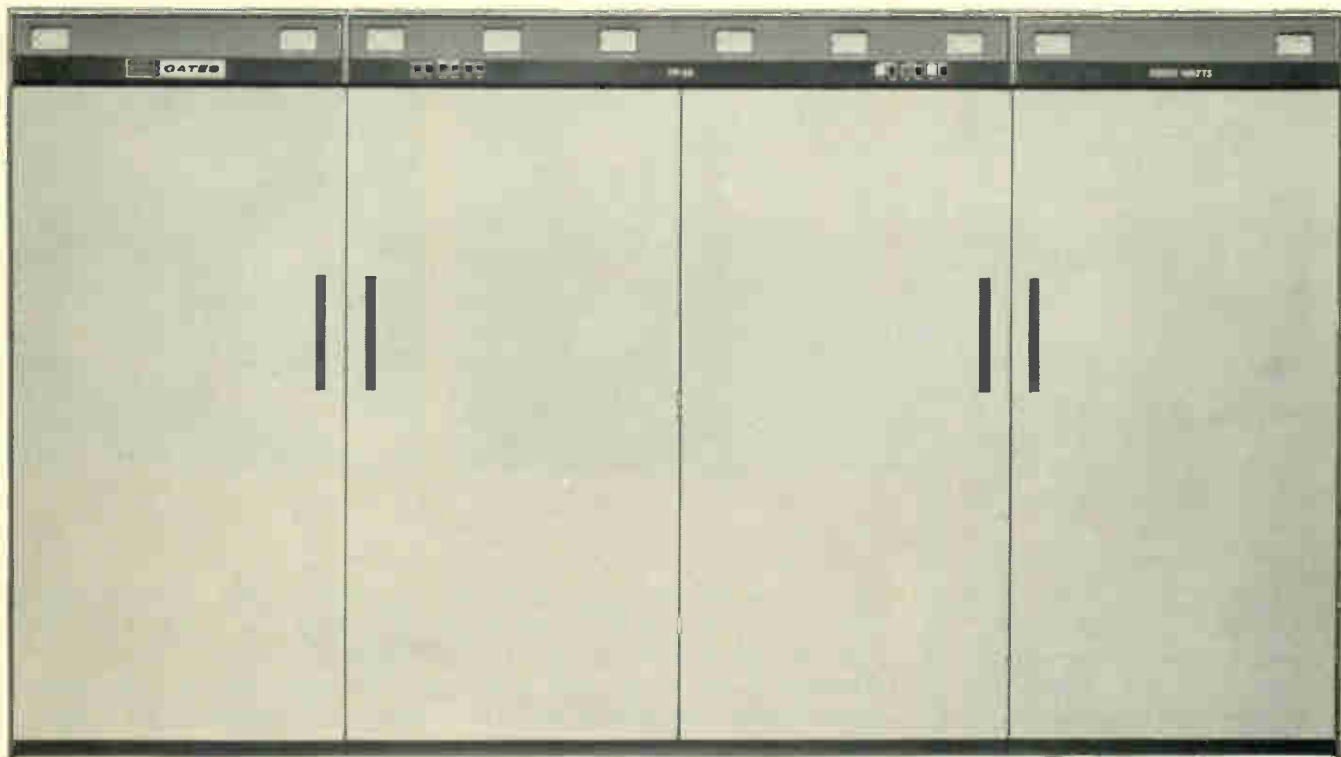
Dr. William H. Pickering, director, Jet Propulsion Lab.; Dr. Allen E. Puckett, executive vice president, Hughes Aircraft Co.; and Dr. Henry E. Singleton, chairman of the board, Teledyne, Inc.

WINCON provides a forum for the exchange of ideas on current development, problems and solutions in the electronics field.

A concurrent classified symposium, sponsored by the Air Force and Hughes Aircraft Company, will offer additional opportunities for technical discussions for those who qualify.

IEEE members mutually join in sponsoring a variety of meetings—local meetings for Section members, a special symposia and conferences for those active and interested in particular technical fields, and gen-

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IEEE members flood to convention in the New York Hilton.



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eral meetings that provide a cross-section of all IEEE interests.

The International Convention and Exhibition is the world's largest technical meeting of electrical and electronics engineers. It is held in New York City each March. Its four-day program consistently draws over 50,000 scientists and engineers who come together to discuss and learn about the latest developments. More than 850 exhibitors provide a backdrop of technological displays which complement the technical sessions.

Meetings

Throughout the year the IEEE groups sponsor, or cosponsor with other appropriate organizations, a number of major conferences in their special areas of interest. These meetings provide members with two distinct advantages: they eliminate duplication, thus making it easier to concentrate on meetings in special fields; they provide thorough

coverage of specific topics. Typical examples of this type of meeting are: the International Solid State Circuits Conference; Joint Automatic Control Conference; INTERMAG, Spring and Fall Joint Computer Conferences; Winter Power Meeting.

Special annual meetings sponsored by IEEE Regions and Sections bring members a smaller-scale equivalent of the annual International Convention and Exhibition. These meetings are held in a location that is geographically close and convenient to members.

Many of the activities for members of IEEE are concentrated locally in one of the more than 197 IEEE Sections. These Sections, which are the heart of local activity in the IEEE, have a number of interests such as career guidance, inspection trips to nearby laboratories and plant facilities, and the continuing technical education of their members. Usually they hold monthly

meetings at which prominent speakers present the latest findings on technical subjects.

There are many ways the Sections can serve members. They provide local versions of IEEE standing committees, and provocative all-day meetings that attract hundreds of engineers.

The Medal of Honor, the Institute's equivalent of a Nobel Prize, and the Major Annual Awards aim at the recognition of individual achievements having general significance for the profession. The Field Awards recognize unusual accomplishment in a particular field of interest to the society. Names such as, Marconi, De Forest, Kennelly, Westinghouse, Bell, Tesla . . . to name but a few, indicate the level and caliber of these awards. The Prize Paper Awards recognize publications significant for their excellence.

In addition, the IEEE Awards program plays an active role in the



Expansive exhibit area typical of the major conventions.

selection of nominees for other scientific and engineering awards not exclusive to IEEE, but of interest to you and your colleagues.

Spectrum

IEEE Spectrum is a monthly magazine which contains technical articles on the limitless variety of subjects of interest and importance to its diverse readership. Since Spectrum is the general or "core" publication of the IEEE, its articles are written so as to be meaningful to a wide audience of electrical and electronics engineers and scientists.

Articles range from those reporting on new developments and reporting the state of the art in specific fields, to those which have primarily a tutorial content. Regular news sections give information about the IEEE and the activities of its units and members as well as other news of the profession and the industry. Also included are abstracts of papers appearing in other IEEE

publications, book reviews, and letters to the editor.

Membership

Interest in electrical/electronics engineering is the fundamental requirement for membership in the IEEE. The degree of interest will determine the grade of membership for which one should apply.

Registered undergraduate or graduate students enrolled in regular courses of study in electrical engineering, electronics, radio, and allied branches of engineering or the related arts and sciences may apply for student membership.

For admission or advancement to **Associate** grade, the applicant must satisfy the IEEE that he is interested in and capable of rendering service to electrical engineering, electronics, radio, allied branches of engineering or the related arts and sciences and that his admission to this grade will contribute to the welfare of the IEEE.

Member is a professional grade limited to those who have demonstrated professional competence in the fields of electrical engineering, electronics, radio, allied branches of engineering, or the related arts and sciences.

Senior Member is the highest professional grade for which application may be made. This grade requires experience or attainment reflecting professional maturity.

The grade of **Fellow** is one of unusual professional distinction and is conferred only by invitation of the Board of Directors upon a person of outstanding and extraordinary qualifications and experience in the fields of electrical engineering, electronics, radio, allied branches of engineering, or the related arts and sciences.

For further information on the IEEE, write to: The Institute of Electrical and Electronic Engineers, Inc., 345 East 47th Street, New York, N.Y. 10017. ▲

NAB:

Serving broadcasters and the public

■ The National Association of Broadcasters has one major aim in mind—to best serve the public interest of those who tune in on the nation's more than 270 million radio receivers and 75 million television sets.

The NAB started in a modest enough way with a handful of members, back in 1922. A non-profit organization, its goal was "to foster and promote the development of the arts of aural and visual broadcasting in all its forms; to protect its members in every lawful and proper manner from injustices and unjust exactions; to do all things necessary and proper to encourage and promote customs and practices which will strengthen and maintain the broadcasting industry to the end that it may best serve the public."

Association activities center on this aim, and today NAB has among its members over 3,800 radio and television stations throughout the 50 states.

Growing Pains

The National Association of Broadcasters grew out of a need to deal with the growing pains of this fledgling communications industry. The pioneers who organized it, along with the late Eugene F. McDonald, Jr. as the first president, concerned themselves with bringing order out of a chaotic situation which existed at the time. The chaos resulted from the undisciplined use of air waves. Without adequate channels or frequency separations, radio was becoming a barrage of

sounds in the night, and appeared unlikely to be able to fulfill its role as a great medium of mass communication. Laws pertaining to radio were inadequate because they were designed to cope only with the problems of safety of life at sea and ship-to-shore communication. With the enactment of the Radio Act of 1927—which was the beginning of the American system of broadcasting as we know it today—a way was devised to apportion the radio spectrum through station licensing but still avoid government control of a station's business operations or its programming.

Structure

The Association's Board of Directors is composed of representative radio and television broadcasters who are elected by their fellow members. This Joint Board has its own chairman, and is subdivided into a Radio and a Television Board, each with its own chairman. Members of the NAB set the policy and make the decisions on industry-wide matters through the Board. The NAB also has an extensive committee structure, enabling it to utilize the specialized knowledge of its members in considering industry problems and in offering recommendations to the Board of Directors.

Function of NAB

The function of the National Association of Broadcasters is to represent the industry before Congress, at the White House and before ad-


ministrative agencies. It has been the channel through which the industry has been moved to alert the public to the effectiveness of radio and television, both as informational and entertainment media and as a means to help move the nation's goods and services. In this latter function it proves to be a very important source in stimulating and boosting the national economy.

Another vital function of the NAB is to oppose schemes to convert the American system of broadcasting from a powerful means of free communication into a medium of special interest enjoyed by a privileged few who can pay for their programs. In its stand against pay television, the Association has had the general support of the public and the leaders throughout the country.

Goals Achieved

The NAB also has been instrumental in promoting various activities leading to the betterment of the communications industry. Some of these are:

1. Instituting voluntary codes for radio and television which provide broadcasters with guideposts in determining acceptable programming and advertising practices.
2. Upholding the American system of broadcasting, free from government censorship.
3. Combatting discriminatory legislation proposals.
4. Obtaining more liberal acceptance of radio and television



Okay, so my studio's boomy
on the bottom end.
With my ear I can equalize
as good as anybody.

Sure. But "close" is good only in horseshoes. It used to be okay in equalizing, too. But that was before a revolutionary new method called *Acousta-Voice*.™

Acousta-Voice is a scientific and acoustically sophisticated method of tuning a sound system to a room in much the same way that an organ is voiced to the particular auditorium.

So? So think about it. You know that a studio, even with identical equipment in every room, has different sound characteristics in each of these rooms. You have to compensate, by ear, for each of those sound characteristics.

Now, what if every room could be made the same acoustically, in effect? *Acousta-Voice* has done it for Century Records. Two stereo disc mastering rooms, and the quality control room have been *Acousta-Voiced*. That's three rooms. All exactly the same.

Century Records' Chief Engineer, Bob Metcalf, says *Acousta-Voicing* gives you the same base to start equalizing from. Now that's a real edge in itself, especially if what you're working on has been recorded in other than studio conditions. You know, like a gym, a club, a cafeteria or outdoors.

Another thing. The fatigue factor is very low with an *Acousta-Voiced* studio. The ear stays fresh much longer because due to uniform frequency response the loudness doesn't have to be raised to hear a detail. That means the monitor doesn't have to be up so high. Metcalf has installed A-B switches in all three rooms. The difference is amazing.

If a person is really fussy about sound, an *Acousta-Voiced* studio should be investigated. You don't have to wait to build a new studio. It can be done right now. But only by certain Altec factory-trained CE Sound Contractors who've invested a lot of money in test equipment and a lot of hours in very intensive training.

So, for full information about *Acousta-Voice*, write to Altec Lansing, 1515 So. Manchester Ave., Anaheim, Calif. 92803.



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Circle Item 9 on Tech Data Card



NAB president Vincent T. Wasilewski, left, presents 1968 Distinguished Service Award to Lowell Thomas at opening general assembly of NAB's 48th Annual Convention as Grover C. Cobb, right, chairman of the joint NAB Board of Directors, looks on.



President Johnson addressing opening general assembly of NAB's 1968 convention in Chicago's Conrad Hilton Hotel.

- coverage of public proceedings.
5. Improving the industry's relationship with public service groups.
 6. Achieving fair labor relations laws and wage-hour regulations.
 7. Improving the efficiency of broadcasting operations by gaining authorization by the FCC for remote control for radio and television stations, drafting engineering and recording standards universally acceptable by the broadcasting industry, and introducing simplified program and engineering logs which meet FCC requirements.

Conventions

Since 1923 the Association has held annual spring conventions attended by top management of the industry. Later additions to the convention are the Broadcast Engineering Conference and the exposition of broadcast equipment. Each fall six conferences are held throughout the country for management and for those station executives who will move into managerial positions in the future. The 1969 schedule of meetings for NAB are as follows: 47th Annual Convention, March 23-26, held at the Shoreham and Sheraton Park Hotels, Washington, D.C.; and the six fall conferences—October 23-24, held in Chicago at the Palmer House; October 27-28, Boston, at the Statler Hilton; October 30-31, Atlanta, at the Atlanta Marriott; November 13-14, held at Rallas at the Marriott; November 17-18, scheduled for the Brown Palace in Denver; and November 20-21, held in Portland, Oregon at the Sheraton Portland.

Radio and Television Codes

Both the radio and television codes were designed after many months of patient and time-consuming efforts by NAB committees. The Television Code Review Board, of nine outstanding broadcasters from

station and networks, and the Radio Code Board, consisting of 11 leading station and network executives, supervise respectively, the Television and Radio Codes.

The purpose of the Radio Code is "cooperatively to establish and maintain a level of radio programming which gives full consideration to the educational, informational, cultural, economic, moral and entertainment needs of the American public to the end that more and more people will be better served."

Composed of eleven members, the Radio Code Board is authorized and directed "to recommend to the Radio Board amendments to the Radio Code: to consider in its discretion any appeal from any decision made by the Code Authority Director with respect to any matter which has arisen under the Code, and to suspend, reverse, or modify any such decision; to prefer formal charges, looking toward the suspension or revocation of the subscription and/or Visual Symbols, to the Radio Code by a subscriber; to be available to the Code Authority Director for consultation on any and all matters affecting the Radio Code."

The Chairman and members of the Code Board are appointed by the President of NAB, subject to confirmation by the Radio Board, and may include no more than two members as representatives of subscribing nationwide radio networks. All Code Board members are selected from subscribers to the Radio Code. Eligible subscribers are any individual, firm or corporation which operates a radio broadcast station in the United States or its dependencies. Such eligibility is subject to the approval of the Radio Board. Each station or network merits one subscription.

Subscriber fees are in accordance with the existing schedule at a given time, and under such conditions as are determined from time to time by the Radio Board.

The purpose of the Television Code is "cooperatively to maintain

a level of television programming which gives full consideration to the educational, informational, cultural, economic, moral and entertainment needs of the American public to the end that more and more people will be better served."

Subscribers who are eligible consist of any individual, firm or corporation engaged in the operation of a TV broadcast station or network, holding a construction permit for a television broadcast station in the United States or its dependencies. Subscribers are subject to approval by the Television Board of Directors. Again—one subscription is given for each station and/or network.

Affiliate subscribers are composed of individuals, firms or corporations engaged in the production or distribution, lease or sale of recorded programs for television presentation, subject to approval of the Television Code Review Board, which is a committee of not more than nine members, all of whom are subscribers to the Television Code. Appointed by the Television Board, they may include one member from

each of the subscribing nationwide television networks. Meetings shall be at least twice a year on a date determined by the Chairman.

The National Association of Broadcasters also accepts associate members in fields allied to broadcasting.

Present Officers and Executive Committee

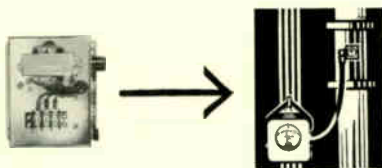
Present officers of the NAB are as follows: President, Vincent T. Wasilewski; James H. Hulbert, vice-president and assistant to the president; Everett E. Revercomb, secretary-treasurer; Stockton Helffrich, director of Code Authority, New York; George W. Bartlett, vice-president, engineering department; Paul B. Comstock, vice-president, government affairs department; Douglas A. Anello, general counsel, legal department; Dr. Harold Niven, vice-president, planning and development; John M. Couric, vice-president, public relations service; Charles M. Stone, vice-president radio department; Howard Mandel, vice-president, research department; William Carlisle, vice-president.

television department; William L. Walker, director of broadcast management department; and Alvin M. King, station relations department director.

The executive committee members are: Grover C. Cobb, Chairman of the Joint Board of Directors, KVGB, Great Bend, Kansas; Richard D. Dudley, Chairman of the Radio Board of Directors, Forward Communications Corporation, Wausau, Wisconsin; Donald A. Thurston, Vice Chairman of the Radio Board of Directors, WMNB, North Adams, Massachusetts; Charles H. Tower, Chairman of the Television Board of Directors, Corinthian Broadcasting Corporation, New York, New York; Harold Essex, Vice Chairman of the Television Board of Directors, Triangle Broadcasting Corporation, Winston-Salem, North Carolina; John F. Dille, Jr., Immediate past Chairman, Joint Board Communicana Group of Indiana, Elkhart, Indiana.

Further information on the NAB may be obtained from its Washington headquarters at 1812 K Street, N.W. Washington, D.C. 20006. ▲

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NAEB: Progress and Growing Pains

■ The National Association of Educational Broadcasters met in Washington, D.C. late in November. And the more than 4,500 members who attended were treated to demands, forecasts and basics.

McGeorge Bundy, president of the Ford Foundation, set the stage by telling NAEB members that jumping from the pony express to the jet age will not be an easy task for educational broadcasters. Bundy warned that the transition would require major adjustments in operational procedures and program scheduling.

And there was a concern among members that perhaps too much emphasis was being placed on program origination, especially in the Northeastern megapolis centers. Aware of this opinion, Bundy said that the Ford Foundation will not forget about educators "west of the Hudson River."

The Ford Foundation has been a consistent donor to ETV, thus it was not unusual that Bundy complained that there is not yet a final decision on future financing for the Corporation for Public Broadcasting. The initial \$5 million set aside by Congress is \$35 million short of the funds recommended by the Carnegie Commission.

Bundy further complained that there is still only one national pro-

gramming center. He added that there are still only a few ETV stations with major independent programming strength. Then hitting at financing again, Bundy said that there was too much dependence on donations from the Ford Foundation. But in concluding his address, Bundy announced that Ford Foundation grants will continue to be given to local stations, NET, and Public Broadcasting Laboratory.

Calling much of current commercial television and radio programming "pure, unadulterated trash," Secretary of Health, Education, and Welfare Wilbur J. Cohen challenged educational broadcasters to come to grips with the nation's pressing social problems.

Secretary Cohen said much that we see and hear is unworthy of our people, our ideals, and our potentialities. "If some of it just reached the heights of being a wasteland, it would be making progress," he said.

Secretary Cohen cited racial inequality and discrimination as the most crucial domestic problem demanding national solution. He told the educational broadcasters they must deal with it if equality of opportunity is to become a reality.

The Secretary counted off six other vital national issues which must command the attention of communicators. They are:

- The widespread presence of poverty.

- The future of the American system of education.

- The inadequacy of our health care system.

- The poor quality of our environment.

- The communication gap among the races, and between the young and old, the poor and well-to-do.

- The inability or unwillingness of essential institutions to respond promptly and effectively to the needs of society.

According to Secretary Cohen, many national problems are rooted in ignorance. He said the mass media must understand and accept their special responsibility to inform and enlighten society if these problems are to be mastered.

"I believe educational television has a unique and priceless opportunity in this regard," the Secretary told the broadcasters. "We need your imagination and your creativity. You can bring to every classroom and every living room the kinds of knowledge, experience, and insight that can widen the dialogue and help find the common ground for solutions."

FCC commissioner Nicholas Johnson warned educational broadcasters that there are alternatives to noncommercial broadcasting. He said that it might be more economical to purchase time on the commercial networks in order to reach a wider audience. Or it might be as reasonable to put these funds into some cultural activities.

Pointing to the need for educational broadcasters to think conscientiously about justifying their position on receiving government funds, Johnson continued his warning. Cable TV, home audio tapes, and movies are additional alternatives to educational broadcasting.

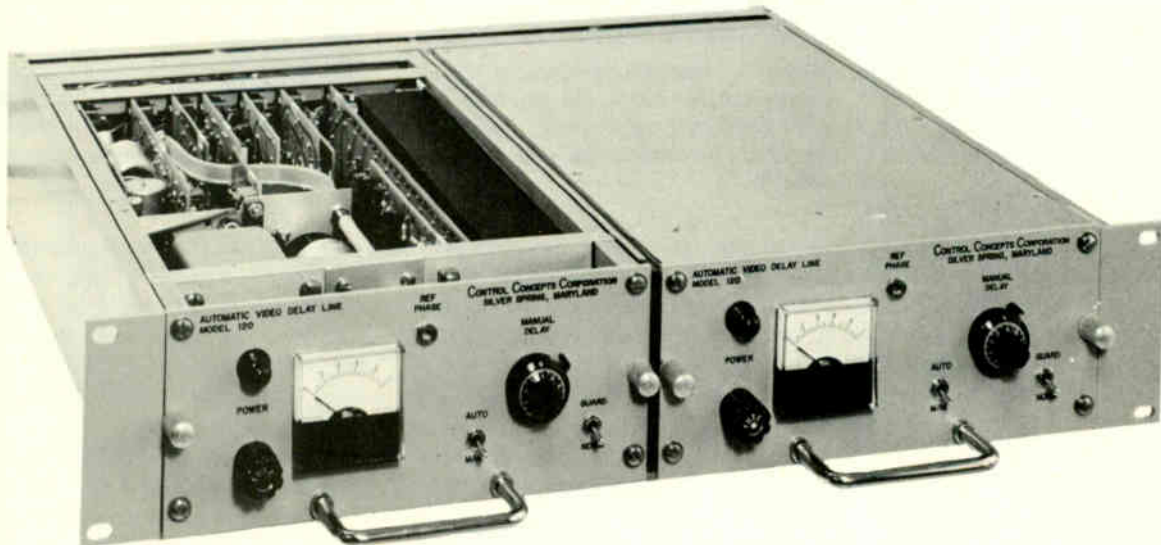
Other convention speakers included Sterling McMurrin, chairman of the Commission on Instructional Technology; Jesse Jackson, executive director of Operation Breadbasket; Nathan Wright, national



Wilbur Cohen addressing NAEB members at the November national convention in Washington, D.C.

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McGeorge Bundy, president of the Ford Foundation, promises ETV continued backing for 1969.



James B. Tharpe, president of Visual Electronics, presents the Second Annual Educom Scholarship award to Zbigniew Koryzma at the national convention.



Bill Clark, Chadron State College, inspects equipment exhibit.

chairman of the Black Power Conference; Actor Greg Morris of the TV series Mission Impossible; William Grier, co-author of "Black Rage"; and Frank Pace, chairman of the Corporation for Public Broadcasting.

While there were many meaningful technical sessions planned for the NAEB members, of especial interest were those panels on color-casting, new developments in in-

structional radio, and the engineering sections on automation, interconnection and technical potpourri. In addition, the FCC offered a consultation service for members wishing to discuss individual station problems. Coordinator for the session was Dr. Robert Hillard, Chief of the FCC's Educational Broadcasting Branch.

Visual Electronics Corporation's Second Annual Educom Scholarship

Award of \$1,000 was presented to this year's winner—Zbigniew Koryzma, a student at Covell College, University of the Pacific at Stockton, California—at a special reception hosted by Visual during the convention.

Information on NAEB membership may be obtained by writing to: National Association of Broadcasters, 1346 Connecticut Avenue, N.W., Washington, D.C. 20036. ▲

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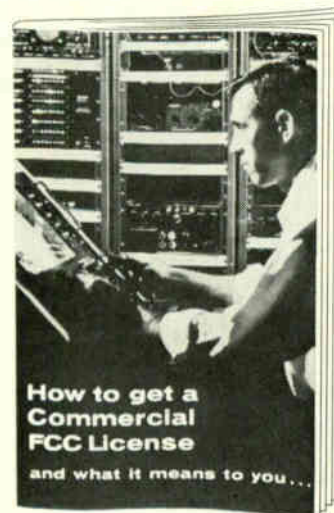
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So if you dream of making broadcasting your life work, you need that Government FCC License.

But how do you go about getting it? Where do you apply, and when? How do you get ready for it?

To help you, we have published a 24-page booklet, "How to Get a Commercial FCC License." It tells you exactly which types of licenses and permits are issued by the Federal Communications Commission, and what kinds of electronic equipment each type allows you to operate and maintain.

You will learn which subjects must be mastered for each kind of license. Thirty typical exam questions will give you an idea of the level of training required. You'll be told where and how often the exams are held, and how to find out about the exams held nearest your home.

Frankly, the FCC exams are rough if you're unprepared. Two

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says Matt Stuczynski, senior transmitter operator, Station WBOE. "Even though I had only six weeks of high school algebra, CIE's AUTO-PROGRAMMED® lessons make electronics theory and fundamentals easy. After completing my CIE course, I took and passed the 1st Class FCC Exam. I now have a good job in studio operation, transmitting, proof of performance, equipment servicing. Believe me, CIE lives up to its promises. I really enjoy my work and I'm on my way up!"

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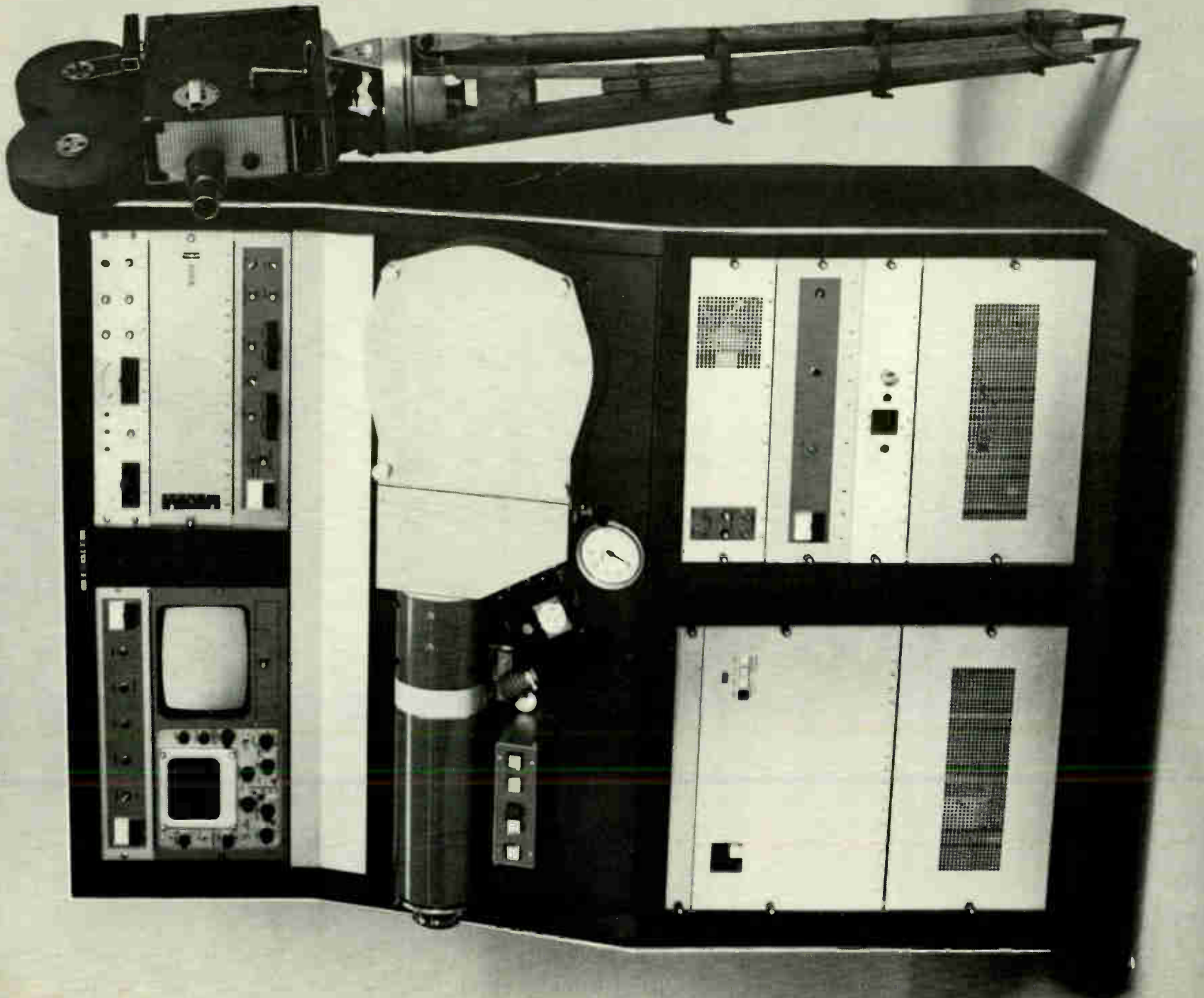
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BE-55

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GOOD-BYE KINE HELLO EBR-100

Television raster lines (right) enlarged from 16mm film frames.
Lower: EBR-100 recording on 3M fine-grain (less than 0.1 micron) electron recording film. Top: kinescope recording on television recording film. Line-to-line spacing in both pictures is approximately 0.00058 inches or 14.7 microns.

TRANSFER LIVE OR TAPE TV TO 16 MM FILM ELECTRONICALLY AND GET PRINTS WITH 1000-LINE RESOLUTION.

3M's new Electron Beam Recorder is the first system to produce 16mm monochrome film copies comparable to the original live or video tape signal. It has no energy-wasting optical system. It employs direct electron bombardment of the film, eliminating phosphor granularity, face-plate halation and camera-lens losses and distortions.

The 3M Brand EBR-100 far surpasses the conventional kinescope in reproduction quality and in the ability to produce consistently good films. It opens new horizons for TV taping and mass film distribution for educational and training purposes.

The EBR-100 is a machine that every major TV studio, dubbing center, film lab and government communications center will want to employ. Easy to install, completely self-contained.

Direct beam monitoring provides simple,

positive adjustment of exposure and gamma. Secondary electrons imaging the film target verify that focus, size, and linearity are correct. You can choose between a direct positive or a film negative with the flick of a switch. The system also is switchable from US standard 525-line to European 625-line requirements.

The EBR-100 records on low-cost fine grain film. Overall resolution exceeds 1000 lines. The film uses conventional processing and is shown on standard 16mm projectors.

The unit is 68 inches tall, 46 inches wide, 34 inches deep, weighs approximately 1000 lb. and costs about \$55,000. Optical or magnetic sound is available at extra cost.

For details, call our EBR-100 information phone. The number is (805) 482-1911, ext. 216. Or write to EBR-100 Dept. at the address below.

Mincom Division **3M**
COMPANY
300 SOUTH LEWIS ROAD • CAMARILLO, CALIFORNIA 93010
Circle Item 16 on Tech Data Card

GUIDE TO MANUFACTURERS

Company names, addresses, of over 500 manufacturers serving the broadcast industry. Listings have been compiled from questionnaires completed by the manufacturers.

ATV RESEARCH
13TH & BROADWAY
DAKOTA CITY NB 68731

ACCURATE SOUND CO
15 NORTH TYLER
SAN ANGELO TX 76903

ACME FILM & VIDEO TAPE L
1161 N HIGHLAND AVE
LOS ANGELES CA 90038

ADVANCE INDUSTRIES
2301 BRIDGEPORT DRIVE
STOUC CITY IA 51101

ADVANCED HIGH VOLTAGE CO
8635 YOLANDA AVE
NORTHRIUGE CA 91324

AEROVOX CORP
740 BELLEVILLE AVE
NEW BEDFORD MA 02741

ALCO ELECTRONIC PROD
BOX 1348
LAWRENCE MA 01842

ALCOR INC
215 S TIIGA ST
ITHICA NY 14850

ALFORD MFG CO
120 CROSS ST
WINCHESTER MA 01890

ALLEN AVIONICS INC
255 E 2ND ST
MINEOLA NY 11501

ALLIED ELECTRONIC CO
SUB P F ALLIED RADIO
100 N WESTERN AVE
CHICAGO IL 60612

ALMA ENGINEERING
7990 DAGGET ST
SAN DIEGO CA 92111

ALPHA WIRE
711 LOGGERWOOD AVE
ELIZABETH NJ 07207

ALTEC LANSING
1515 S MANCHESTER
ANAHEIM CA 92802

AMECO INC
2949 W OSBORN RD
PHOENIX AZ 85017

AMER CARLE ELECTRONICS
9888 WELSHIRE BLVD
BEVERLY HILLS CA 90210

AMER ELECTRONIC LAB
BOX 552
LANSOALE PA 19446

AMER GELOSO ELECTRONICS
251 PARK AVE SOUTH
NEW YORK NY 10010

AMERLINE CORP
SUB OF REVLOK CORP
1800 W FULLERTON AVE
CHICAGO IL 60614

AMPEREX CORP
75 COMMERCE WAY
HACKENSACK NJ 07601

AMPERITE CO
600 PALISADE AVE
UNION CITY NJ 07087

AMPEX CORP
401 BROADWAY
REDWOOD CITY CA 94063

AMPHENOL CORP
OAKBROOK NORTH
OAKBROOK IL 60521

ANACONOA ELECTRONICS
1430 S ANAHEIM BLVD
ANAHEIM CA 92803

ANCHA ELECTRONICS INC
7055 W HIGGINS AVE
CHICAGO IL 60656

ANDERSEN LABS INC
1280 BLUE HILLS AVE
BLOOMFIELD CN 06002

ANDREW CORP
10500 W 153RD ST
ORLAND PARK IL 60462

ANDREWS TOWERS INC
1420 LAYTON AVE
FT WORTH TX 76117

ANTENNA PROD DIV
ALL PRODUCTS CO
BOX 9588
AUSTIN TX 78757

APPLIED ELECT MECHANICS
2350 DUKE ST
ALEXANDRIA VA 22314

ARROR SYSTEMS INC
BOX 1325
ANN ARBOR MI 48106

ARRIFLEX CORP OF AMER
25 20 BERKLYN ON EXP W
WOODSIDE NY 11377

ATLANTIC RESEARCH
SHIRLEY HIGHWAY & EDSALL
ALEXANDRIA VA 22314

ATLAS SOUND DIV
AMER TRADING & PROD
10 POMEROY RD
PARSIPPANY NJ 07054

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GILSUM NH 03448

AUDIO OERICES
235 E 42ND ST
NEW YORK NY 10017

AUDIO DISTRIBUTOR INC
2342 S DIVISION AVE
GRAND RAPIDS MI 49507

AUDIO MAGNETICS CORP
14600 S BROADWAY
GARDENA CA 90247

8&K INSTRUMENTS INC
5111 W 164TH ST
CLEVELAND OH 44142

BARDWELL & MCALISTER INC
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HOLLYWOOD CA 90038

BARKER & WILLIAMSON
SUNSHINE MINING CO
CANAL ST
BRISTOL PA 19007

BAUER ELECTRONICS CO
BROADCAST PROD DIV
1601 CALIFORNIA AVE
PALO ALTO CA 94304

BELAR ELECTRONICS LAB
8329 DELAWARE AVE
UPPER DARBY PA 19028

BELDEN CORP
415 S KILPATRICK AVE
CHICAGO IL 60644

BELL & HOWELL TAPF DIV
7100 MCCORMICK RD
CHICAGO IL 60645

BELL P A PROD CORP
1209 N FIFTH ST
COLUMBUS OH 43201

BELL SOUND STUDIOS
A & B DUPLICATORS DIV
635 W 55TH ST
NEW YORK NY 10019

BENDIX CORP
COMMUNICATIONS DIV
E JOPPA ROAD
BALTIMORE MD 21204

BEREKLEY COLORTAN INC
1015 CHESTNUT ST
BURBANK CA 91502

BIRD ELECTRONIC CORP
30303 AURORA ROAD
CLEVELAND OH 44139

BIRNBACH CO INC
P O BOX 592
FREEPORT NY 11520

BLONDER TONGUE LAB INC
9 ALLING ST
NEWARK NJ 07102

BOGEN COMMUNICATIONS
LEAR SIGLER INC
BOX 500
PARAMUS NJ 07652

BOONTON ELECTRONICS
RT 287 SMITH RD
PARSIPPANY NJ 07054

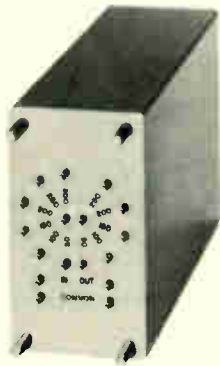
TV LINE EQUALIZER

TYPE AV-535

IMMEDIATE DELIVERY!

The AV-535 Equalizer compensates for losses in RG-11/U (75 ohm) cable and its equivalents. It is capable of equalizing 50 to 300 ft. in 50 ft. increments. Terminals are arranged to provide for simplified strapping of different cable lengths. Units are foamed and hermetically sealed in steel cans.

Impedance: 75 ohms ± 2 ohms to 8 megs.
Attenuation of Cable plus Equalizer: 3 db.
Size: 2 x 3½ x 5" (excl. mounting stud length).



PULSE & VIDEO DELAY LINE

TYPE AV-397

IMMEDIATE DELIVERY

These units are used with any 75 ohm system for either pulse or video delay. Although intended primarily for equalizing the delays in various lengths of coaxial cable, the line can be used wherever an appropriate delay is needed. Each AV-397 consists of 7 individual delay lines, each having its own input & output terminals. By connecting the output of 1 to the input of another, 83 different time delays are available in .025µs steps from 0.25µs to 2.075µs. The total time delay is the sum of the delays of the individual lines that are connected.



LUMPED CONSTANT DELAY LINES



HIGHEST TIME DELAY RISE TIME RATIO EVER BUILT!

These Delay Lines have the highest ratio of time delay to rise time that has ever been built in a Lumped Constant Line. Unlike other types of high ratio lines, the Lumped Constant Delay Line has a passband from D.C. to its cutoff frequency and maintains a constant delay over these frequencies. These lines are also unique in that they offer relatively low insertion loss.

This group of lines is characterized by tight time delay tolerances, low pulse distortion, excellent phase linearity and good temperature stability.

For laboratory use, any time delays from 10 microseconds to 100 microseconds can be built into variable decade instruments with ratios of over 100/1. These units could have a resolution of up to 1/5000 of the total delay.

Series "HF"

50/1 RATIO
Max. Attenuation 9db. Time Delay .5µs-4.75µs.
75/1 RATIO
Max. Attenuation 12db. Time Delay 1.5µs-4.75µs.
100/1 RATIO
Max. Attenuation 15db. Time Delay 2.0µs-4.75µs.

Series "HR"

100/1 RATIO
Max. Attenuation 8db. Time Delay 5µs-50µs.
130/1 RATIO
Max. Attenuation 9db. Time Delay 5µs-100µs.

Series "VHR"

150/1 RATIO
Max. Attenuation 16db. Time Delay 10µs-70µs.
200/1 RATIO
Max. Attenuation 18db. Time Delay 10µs-75µs.
250/1 RATIO
Max. Attenuation 20db. Time Delay 20µs-100µs.

LOWPASS

L-C FILTERS

HIGHPASS

LOWPASS FILTERS—SERIES "FL"

Size: 1¼ x 7/8 x 5/8 inches
Impedance: 100Ω
1db maximum ripple in passband
1db maximum insertion loss (referenced at 350kc)
20db Min. Attenuation at 3db cut-off Freq. x 1.15
40db Min. Attenuation at 3db cut-off Freq. x 1.4

Maximum 3db Attenuation	Minimum 20db Attenuation	Minimum 40db Attenuation
30 meg.	34.50 meg.	42.00 meg.
29	33.40	41.60
28	32.20	39.20
27	31.05	37.80
26	29.90	36.40
25	28.75	35.00
24	27.60	33.60
23	26.45	32.20
22	25.30	30.80
21	24.15	29.40
20	23.00	28.00
19	21.85	26.60
18	20.70	25.20
17	19.55	23.80
16	18.40	22.40
15	17.25	21.00
14	16.10	19.60
13	14.95	18.20
12	13.80	16.80
11	12.65	15.40
10	11.50	14.00
9	10.35	12.60
8	9.20	11.20
7	8.05	9.80
6	6.90	8.40
5	5.75	7.00

IMMEDIATE DELIVERY!

The "FL" & "FH" Filter Series are a group of 9 Pole Tchebycheff Low & Highpass Filters which are diminutive in size. Both Filter Groups contain components made to meet the requirements of the latest applicable Mil-Specs and conform to the best electrical and mechanical design practice.

A VERY USEFUL APPLICATION is the series connection of a Lowpass & Highpass unit to produce an effective Bandpass Filter.

ALL FILTERS LISTED CAN BE DELIVERED FROM STOCK

CUSTOM-BUILT FILTERS

Types: Low Pass, High Pass, Band Pass, Band Stop.
Freq. Range: 1 Kilocycle to 50 Megacycles.
Construction: Epoxy encapsulated or hermetically sealed in steel cans.
Delivery: Prototypes can be delivered in one week.

HIGHPASS FILTERS—SERIES "FH"

Size: 1¼ x 7/8 x 5/8 inches
Impedance: 100Ω
1db maximum ripple in passband
1db maximum insertion loss (referenced at 30 meg.)
20db Min. Attenuation at 3db cut-off Frequency 1.15
40db Min. Attenuation at 3db cut-off Frequency 1.40

Maximum 3db Attenuation	Minimum 20db Attenuation	Minimum 40db Attenuation
20.0 meg.	17.40 meg.	14.30 meg.
19.0	16.50	13.55
18.0	15.65	12.85
17.0	14.75	12.15
16.0	13.90	11.45
15.0	13.05	10.70
14.0	12.15	10.00
13.0	11.30	9.30
12.0	10.45	8.55
11.0	9.55	7.85
10.0	8.70	7.15
9.0	7.80	6.40
8.0	6.95	5.70
7.0	6.10	5.00
6.0	5.20	4.30
5.0	4.35	3.55
4.0	3.48	2.86
3.0	2.61	2.14

TO ORDER SPECIFY "FL" FOR LOWPASS OR "FH" FOR HIGHPASS AND THE CUT-OFF FREQUENCY

Circle Item 17 on Tech Data Card

BOSTON INSULATED WIRE & CABLE CO 65 BAY ST DORCHESTER MA 02125	CASCADE ELECTRONICS ELECTRONIC AVE PORT MONDY VANCOUVER BC CN	COMMUNICATION PROD D PHILIPS DODGE ELEC PROD RTF 79 MARLBORO NJ 07746	DELTA ELECTRONICS INC 4206 WHFELEER AVE ALEXANDRIA VA 22304
BRADFORD INFORMATION SYS 4911 N F 12TH AVE FT LAUDERDALE FL 33308	THE CATFL CORP 517 MARINE VIEW AVE BELMONT CA 94002	COMREX CORP BOX 51 W CONCORD MA 01781	DENRAD MFG CO INC 312 W WOODARD ST DENISON TX 75020
W H BRADY CO 727 W GLENDALE AVE MILWAUKEE WI 53201	CENTRAL DYNAMICS CORP CHERRY HILL IND CENTER CHERRY HILL NJ 08034	CONANT LABS INC LINCOLN NB 68510	DIALIGHT CORP 60 STEWART AVE BROOKLYN NY 11237
BRAND RFX BOX 498 WILLIMANTIC CT 06226	CENTRAL TRANSFORMER 850 W JACKSON BLVD CHICAGO IL 60607	CONCORD ELECT CORP 1935 ARMACOST AVE LOS ANGELES CA 90023	DIAMOND ELECTRONICS BOX 415 LANCASTER OH 43130
BROADCAST ELECTRONICS 8810 BROOKVILLE ROAD SILVER SPRING MD 20910	CENTRALAR BOX 591 MILWAUKEE WI 53201	CONRAC CORP CRAMER DIV OLD SAYBROOK CT 06475	DIAMOND EXPANSION RD GENERAL CABLE CORP 500 NORTH AVE GARWOOD NJ 07027
BROADCAST PROD CO INC 3814 EVERETT ST KENSINGTON MD 20795	CENTURY LIGHTING INC 3 ENTIN ROAD CLIFTON NJ 07014	CONTINENTAL ELECTRONICS BOX 17040 DALLAS TX 75217	DIAMOND TOOL HORSESHOE 4702 GRAND AVE DULUTH MN 55807
BUD RADIO INC WILLOUGHBY OH 44094	CHANNEL MARKETING INC 342 MADISON AVE NEW YORK NY 10017	COOK ELECTRIC CO 200 E DANIELS RD PALATINE IL 60067	DIVERSIFIED CONSULTANTS BOX 395 CLOUDCROFT NM 88317
CLFVITE CORP BURGFSS BATTERY DIV FREEPORT IL 61032	CHANNFLOCK INC S MAIN ST MEADVILLE PA 16335	COOKE ENGINEERING CO 735 N SAINT ASAPH ST ALEXANDRIA VA 22314	DRESSER CRANE HOIST AND TOWER DIV 875 MICHIGAN AVE COLUMBUS OH 43215
BURKE & JAMES 333 W LAKE ST CHICAGO IL 60606	CHESTER ELECTRONIC LAB WINTHROP ROAD CHESTER CT 06412	CORNELL DUBILIER ELEC 921 PROVIDENCE HWY NORWOOD MA 02062	DIJOTONE CO INC 6875 S W 81ST ST S MIAMI FL 33143
CAF INDUSTRIES LTD 387 SUTHERLAND AVE WINNEPEG 4MAN CN	CHRONO LOG CORP 2583 W CHESTER PIKE BROOMALL PA 19008	CROWN INTERNATIONAL BOX 1000 ELKHART IN 46514	DU VAL I FIT CORP GULF STATES BLDG DALLAS TX 75201
CATV EQUIPMENT CO 1422 34TH ST SEATTLE WA 98122	CINE SONIC SOUND INC 485 8TH AVE NEW YORK NY 10001	CUSH CRAFT 621 HAYWARD ST MANCHESTER NH 03103	DYANCOOL MFG CO INC 1 RUSSEL ST SAUGERTIES NY 12477
CBS LABS 227 HIGH RIDGE RD STANFORD CN	CLFVFLAND ELECTRONIC DEFLECTION COMPONENTS 2000 HIGHLAND RD TWINSBURG OH 44087	CUSTOM CRAFT DESIGNS 2135 DREXEL ST W HYATTSVILLE MD 20783	DYNAIR ELECTRONICS 6360 FEDERAL BLVD SAN DIEGO CA 92114
CCA ELECTRONICS 716 JERSEY AVE GLOUCESTER NJ 08030	CLEVELAND ELECTRONIC SPFAKER DIV 1974 E 61ST CLEVELAND OH 44103	D AND B ELECTRONICS CO BOX 6006 PHILADELPHIA PA 19114	DYNAMIC OPTICS INC 38 S MAIN ST FAIRPORT NY 14450
CEI 7255 CANOGA AVE CANOGA PARK CA 91303	COMU ELECTRONICS INC BOX 623 SAN DIEGO CA 92112	DAGE BELL DIV RAYTHEON CO 455 SHERIDAN AVE MICHIGAN CITY IN 46360	DYNASCIENCES CORP TOWNSHIP LINE ROAD BLUE BELL PA 19422
C COR ELECTRONICS 60 DECIBEL ROAD ST COLLGFG PA 16801	COLLINS RADIO CO MAIL STOP 407 023 DALLAS TX 75207	DATA PULSE 10150 JEFFERSON CULVER CITY CA 90230	E Z HOOK TEST PRODUCTS 1536 WOODBURN AVE COVINGTON KY 41012
CREI HOME STUDY DIV MCGRAW HILL BOOK CO 3224 16TH ST N W WASHINGTON DC 20010	COLORADO VIDEO INC BOX 928 ROLDORF CO 80302	DAVCO ELECTRONICS CORP DRAWER R61 BATESVILLE AR 72501	E Z WAY PROD INC BOX 17196 TAMPA FL 33612
CALBEST ELECTRONICS 4801 EXPOSITION BLVD LOS ANGELES CA 90016	COLUMBIA BROADCASTING 227 HIGH RIDGE RD STAMFORD CT 06905	DEARBORN ELECTRONICS SPRAGUE ELECTRIC CO BOX 530 ORLANDO FL 32802	EASTMAN KODAK CO 343 STATE ST ROCHESTER NY 14650
CALIF INSTRUMENTS CORP 3511 MIDWAY DRIVE SAN DIEGO CA 92110	COLUMBIA ELECTRIC MFG CO 4519 HAMILTON AVE CLEVELAND OH 44114	DEFENSE ELECTRONICS DFI EQUIPMENT ROCKVILLE MD 20850	EIDSON ELECTRONIC CO 1902 N THIRD ST TEMPLE TX 76501
CALVERT ELECTRONICS INC 220 EAST 23RD ST NEW YORK NY 10010	COLUMBIA ELECTRONIC CBL 150 HAMLFT AVE WODNSOCKET RI 02895	DELCO RADIO GENERAL MOTORS CORP 700 E FIRMIN ST KOKOMO IN 46901	VARIAN ASSOCIATES EIMAC DIV 301 INDUSTRIAL WAY SAN CARLOS CA 94070
CANDGA ELECT CO 8966 COMANCHE AVE CHATSWORTH CA 91311	COMM RADIO MONITORING 103 S MARKET LEES SUMMIT MD 64063	DELTA ELECTRONICS INC 145 FAYETTE ST WINSTON SALEM NC 27101	ELECTRO VOICE INC 600 CECIL STREET BUCHANAN MI 49107

ELFCTRODYNE CORP
7315 GREENBRUSH AVE
N HOLLYWOOD CA 91605

ELECTROLINE TV EQUIP INC
405 SERRANO DR
SAN FRANCISCO CA 94132

ELECTRONIC DESIGNERS INC
84 NEWTON PLAZA
PLAINVIEW NY 11803

ELECTRONIC INST & SPEC C
71 CROSS ST
WINCHESTER MA 01890

ELECTRONIC LIGHTS INC
1701 N ASHLAND AVE
CHICAGO IL 60622

ELECTRONIC MOBILE UNITS
788 PATERSON AVE
E RUTHERFORD NJ 07072

ELECTRONIC SYSTEM ENG
120 1 2 N CLEVELAND
CUSHING OK 74023

ELECTRO VOICE INC
600 CECIL ST
BUCHANAN MN 49107

ENCLOSURE CORP
1701 INDUSTRIAL BLVD
PENNSAUKEN NJ 08110

ENGINEERING ASSOC
434 PATTERSON RD
DAYTON OH 45419

ENTRON INC
2141 INDUSTRIAL PKWY
SILVER SPRING MD 20904

EQUIPTD
225 S HIGHLAND
AURORA IL 60507

ESSEX WIRE CO RBM DIV
131 GODFREY ST
LOGANSPORT IN 46947

ESSEX WIRE CORP MKT DIV
2501 W ADDISON
CHICAGO IL 60618

FB CECO INC
315 W 43RD ST
NEW YORK NY 10036

FAIRCHILD INDUSTRIAL
2215 FAIRCHILD AVE
PLAINVIEW NY 11803

FAIRCHILD RECORDING EQPT
10 40 45TH AVE
LONG ISLAND NY 11101

FAIRLANE ELECTRONICS
BOX 335
LONG VALLY NJ 07853

FIBRE PRODUCTS MFG CO
601 W 26TH ST
NEW YORK NY 10001

FIDELITONE INC
6415 N RAVENSWOOD AVE
CHICAGO IL 60626

FILMLINE CORP
43 ERNA STREET
MILFORD CT 06460

FINNFY CO
34 W INTERSTATE ST
RODFORD OH 44014

FISHER BERKELEY CORP
5800 CHRISTIF AVF
EMERYVILLE CA 94608

FORT WORTH TOWER CO
5201 BRIDGE ST BX 8597
FT WORTH TX 76112

FOTOMATIC CORP
BOX 22115
INDIANAPOLIS IN 46222

GAF CORP
140 W 51 STREET
NEW YORK NY 10020

G8C CCTV
74 5TH AVE
NEW YORK NY 10011

G C ELECTRONICS
400 S WYMAN ST
ROCKFORD IL 61101

COMMERCIAL PROD DIV
BOX 4197
LYNCHBURG VA 24502

G E DISTRIBUTOR SALES DP
PAK BROOK EXEC PLAZA
OAK BROOK IL 60521

G E ELECTRONIC COPONENTS
1 RIVER ROAD
SCHENECTADY NY 12305

G E PICKUP TUBE OPERATN
ELECTRONICS PK B0G 6
SYRACUSE NY 13201

GE VISUAL COMM PROD
ELECTRONICS PARK
SYRACUSE NY 13201

GPL DIV SINGER GEN
PRECISION INC
PLEASANTVILLE NY 10570

GARDNER LAB INC
BOX 5728
BETHESDA MD 20014

GATELY ELECTRONICS
57 W HILLCREST AVE
HAVERSTOWN PA 19083

GATES RADIO CO
123 HAMPSHIRE STREET
QUINCY IL 62301

GAUSS ELECTROPHYSICS
1653 12TH ST
SANTA MONICA CA 90404

GENERAL CABLE CORP
730 THIRD AVE
NEW YORK NY 10017

GEN ELECTRODYNAMICS
4430 FOREST LANE
GARLAND TX 75040

GENERAL MICROWAVE CORP
155 MARINE ST
FARMINGDALE NY 11735

GENERAL RADIO CO
22 BAKER AVE
W CONCORD MA 01781

GENERAL TELEVISION NTWK
901 LIVFRNOIS
FERNDALE MN 48220

G1885 MFG & RESFARCH CO
450 N MAIN ST
JANESVILLE WI 53545

GILBERT ENGINEERING CO
3700 N 36TH ST
PHOENIX AZ 85019

GOTHAM AUDIO CORP
2 W 46TH ST
NEW YORK NY 10036

GRANTHAM SCHOOL OF ENGR
1505 N WFTERN AVE
HOLLYWOOD CA 90027

GRASS VALLEY GROUP
GRASCO SALES
6515 SUNSET BLVD
LOS ANGELES CA 90028

GRAY RESEARCH & DEV
150 PARK AVE
E HARTFORD CT 06108

GREENLEE TOOL CO
2136 12TH ST
ROCKFORD IL 61101

GRINNAN FIXTURE CO
16041 GFORGETOWN ST NE
MINERVA OH 44657

GULF ELECTRO SALES INC
6325 BEVERLY HILL
HOUSTON TX 77027

HAMMARLUND MFG
7388 HAMMARLUND DR
MARS HILL NC 28754

HARTLEY PROD CORP
BARNET PLACE
HO HO KUS NJ 07423

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60 CROSSWAYS PARK WEST
WOODBURY L I NY

HARWOOD MFG CO
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CHICAGO IL 60610

HEATH CO
BENTON HARBOR MI 49022

HEINTZ AND KAUFMAN LTD
3650 HAYDEN AVE
CULVER CITY CA 90230

HEWLETT PACKARD CO
1501 PAGE MILL RD
PALO ALTO CA 94304

HICKOK ELEC INSTRUMENT
10514 DUPONT AVE
CLEVELAND OH 44108

HOLLAND ELECTRONICS
675 HINSDALE ST
BROOKLYN NY 11207

HOLLINGSWORTH SOLDERLES
NUTT & FENCH CREEK RDS
PHOENIXVILLE PA 19460

HONEYWELL INC
TEST INSTRUMENTS DIV
4800 E DRY CREEK R
DENVER CO 80217

HOUSTON ELECTRONICS
7103 WALKWAY ST
HOUSTON TX 77036

HOUSTON FEARLESS CORP
11801 W OLYMPIC BLVD
LOS ANGELES CA 90064

HOUSTON PHOTO PROD INC
655 E 20TH ST
YUMA AR 85364

HUGHEY & PHILLIPS INC
3050 N CALIFORNIA ST
BURBANK CA 91503

IRC DIV TRW INC
401 N BROAD STREET
PHILADELPHIA PA 19108

ITT ELECTRON TURE DIV
BOX 100
EASTON PA 18042

ITT JENNINGS
970 MCLAUGHLIN AVE
SAN JOSE CA 95108

IKEGAMI CO LTD
21 MOTOKI
KAWASAK JAPAN

INDUSTRIAL DEVICES INC
EDGEWATER NJ 07020

INDUSTRIAL ELECTRIC REEL
1509 CHICAGO ST
OMAHA NB 68102

INDUSTRIAL ELEC
HARDWARE CROP
109 PRINCE ST
NEW YORK NY 10012

INTERNATIONAL ELEC RES
135 W MAGNOLIA BLVD
BURBANK CA 91502

INTERNTL GOOD MUSIC INC
BOX 943
BELLINGHAM WA 98225

INTERNTL INSTRUMENT INC
8877 MARSH HILL RD
ORANGE CT 06477

INTERNTL NUCLEAR CORP
608 NORRIS AVE
NASHVILLE TN 37204

INTERNAT WIRE & CABLE
1300 W FLETCHER ST
CHICAGO IL 60657

INSTRUMENT LAB CORP
315 W WALTON PLACE
CHICAGO IL 60610

ITT PREMIUM DUTY TRANSMITTING TUBES

There when you need them

Communications has been our business for almost fifty years. We understand what it means to run at reduced power when you lose a transmitting tube and we have what it takes to get you back to full power faster. What's more, mesh cathode construction and double vacuum processing used on all of our newer tube types is designed to keep you at full power longer.

A partial listing of the popular types of ITT tubes available appears below. Call or write for a complete catalog and the name of the nearest ITT Regional Tube Specialist. He's prepared to discuss ahead of time the means for delivering factory fresh tubes to you when you need them fast.

F-6696A	F-7482	F-8550
F-6697A	F-8388	F-7007
8161/3CX2500A3	8242A/3CW5000A3	
8162A/3CX3000F7	8251/3CX2500F3	
8238A/3CX3000A1	8169/4CX3000A	
8239A/3CX3000F1	8170/4CX5000A	
8240A/3CW5000A1	8171/4CX10,000D	
8241A/3CW5000F1	8281/4CX15,000	

ELECTRON TUBE DIVISION **ITT**

P. O. Box 100, Easton, Pennsylvania 18042

JAMPRO ANTENNA CO 6939 POWER INN ROAD SACRAMENTO CA 95828	L W PHOTO INC 15451 CARRITO ROAD VAN NUYS CA 91406	MAGNFCRAFT ELECTRIC CO 5575 N LYNCH AVE CHICAGO IL 60630	MICHIGAN MAGNETICS 203 W THIRD ST VERMONTVILLE MI 49096
THE JANSON INDUSTRIES BOX 985 CANTON OH 44701	LAFAYETTE RADIO ELECTRON 111 JERICHO TURNPIKE SYOSSET NY 11791	MAGNETIC PROD DIV 3M COMPANY 3M CFNTR ST PAUL MN 55101	MICOM INC R55 COMMERCIAL ST PALO ALTO CA 94303
JENSEN MFG DIV THE MUTER CO 5655 W 73RD CHICAGO IL 60638	LAMPKIN LAB INC R400 9TH AVE N W BRADENTON FL 33505	MAGNETIC STUDIOS CORP 1670 W FIRST AVE COLUMBUS OH 43212	MICROELFCT CO INC 3575 25TH ST S F SALFM OR 97302
JERROLD ELECTRONICS CO 401 WALNUT ST PHILADELPHIA PA 19105	LANG ELECTRONICS INC 507 FIFTH AVE NEW YORK NY 10017	MAGNISONIC DEVICES INC 200 FRANK RD HICKSVILLE NY 11802	MICROLAR 10 MICROLAR RD LIVINGSTON NJ 07039
JFD ELECTRONICS CO SYSTEMS DIVISION 15TH AVE AT 62ND STREET BROOKLYN NY 11219	LEADER INSTRUMENTS CORP 24 20 JACKSON AVE LONG ISLAND C NY 11101	MALLORY 101 S PARKER AVE INDIANAPOLIS IN 46206	MICRO LINK DIV VARIAN ASSOCIATES 19 WARTBURG AVE COPIAGUIF NY 11726
JOA CARTRIDGE SERVICE BOX 3087 PHILADELPHIA PA 19150	ELECTRONIC RES LABS INC 715 ARCH ST PHILADELPHIA PA 19106	MARATHON BROADCAST EQUIP 57 N PUTNAM ST DANVERS MA 01923	MICROWAVE ASSOC INC BURLINGTON MA 08103
JOSLYN ELECTRONIC SYS BOX 817 GOLETA CA 93017	LENKURT ELECTRIC CO INC 1105 COUNTRY ROAD SAN CARLOS CA 94070	MARCONI INC 709 RAILROAD AVE W DES MOINES IA 50265	MICROWAVE ASSOC INC NW INDUSTRIAL PRK BURLINGTON MA 01803
JUMP ELECTRONICS BOX 97 PORT SULPHUR LA 70083	LEFRRO ELECTRICAL CORP 3125 N BROAD ST PHILADELPHIA PA 19132	MARCONI DIV THE ENGLISH ELEC CORP ONE PARK AVE NEW YORK NY 10016	MILFS REPRODUCER CO 598 BROADWAY NEW YORK NY 10012
KAAR ENGR CO 2250 CHARLESTON RD MOUNTAINVIEW CA 94040	LIGHTING UNLIMITED 560 W BFECH ST LONG BEACH NY 11561	MARTEL ELECTRONICS INC 2339 S COTNER AVE LOS ANGLFS CA 90064	MILLER STEPHENSON CO ROUTE 7 DANBURY CN 06810
KAHN RESEARCH LAB INC 81 S BERGEN PLACF FREEPORT NY 11520	LIPPS INC 1630 EUCLID ST SANTA MONICA CA 90404	MARTI ELECTRONICS 105 POINDEXTER BOX 661 CLFBIHRNF TX 76031	MINNEAPOLIS MAGNETICS 2915 HUNTINGTON AVE MINNEAPOLIS MN 55416
KAISER COX CORP 505 S WOODBURY RD PITTMAN NJ 08071	LIPSNER SMITH 7334 N CLARK ST CHICAGO IL 60626	THE MCINTIRE CO OKNER PARKWAY LIVINGSTON NJ 07039	MIRATEL DIV BALL BRD RESEARCH CORP 3600 RICHARDSON ST ST PAUL MN 55112
THE KALART CO INC PLAINVILLE CT 06062	LISTFC TV EQUIP CORP 35 CAIN DR PLAINVIFW NY 11803	MCKENZIE LABS 1357 N FAIR OAKS AVE PASADENA CA 91103	MOLE RICHARDSON CO 937 N SYCAMORE AVE HOLLYWOOD CA 90038
KAPPA NETWORKS 165 ROOSEVELT AVE CARTERET NJ 07008	LITTLE JOE ENTERPRISES 400 3RD ST PORT ST JOE FL 32456	MCMARTIN INDUSTRIES INC 605 N 13TH ST OMAHA NR 68102	MOSELEY ASSOC INC 111 CASTILLIAN DRIVE GOLETA CA 93017
KARG LAB INC 162 FLY AVENUE S NORWALK CT 06856	LOW POWFR BROADCAST CO 248 SWEDESFORD ROAD MALVERN PA 19355	MELCOR ELECTRONICS CORP 1750 NEW HIGHWAY FARMINGDALE NY 11735	MOSELEY ELECTRONICS 4610 LINDBERGH BLVD BRIDGETON MD 63042
KATO ENGINEERING CO 1415 FIRST AVE MANKATO MI 56002	MTI DIV KMS INDUSTRIES 10534 YORK ROAD COCKEYSVILLE MD 21030	MEMORFX CORP 1180 SHULMAN AVE SANTA CLARA CA 95050	DONALD P MOSSMAN INC BOX 265 ARWSTER NY 10509
KATONA ELECTRONICS CO 140 FORSYTHIA DR NORTH LEVITTOWN PA 19056	MA CARTA 709 RAILROAD AVE W DES MOINES IA 50265	METRICS DIV THE SINGER CO 915 PEMARROKE ST BRIDGPORT CT 06608	MOTOROLA SEMICONDUCT MOTOROLA INC 505 E MCDOWELL RD PHOENIX AZ 85008
KAY ELECTRIC CO 19 MAPLE AVE PINEBROOK NJ 07058	MACHLETT LAB DIV RAYTHEON CO 1063 HOPF ST STAMFORD CT 06907	METROLOGIE COMPAGNIE BOX 30 CHEMIN DE LA CROIX RGE ANNECY FRANCE	MULTIMETRICS INC 401 CONCORD AVE BRONX NY 10454
KLIEGL ARDS LIGHTING 3232 48TH AVE LONG ISLAND NY 11101	MAGNATECH CO 3745 MONTEREY DRIVE MINNEAPOLIS MN 55416	MEFRON INSTRUMENTS 1051 S PLATTE RIVER DR DENVER CO 80223	MULTRONICS INC 5712 FREDERICK AVE ROCKVILLE MD 20852
KLINE IRON & STEEL CO 1225 HUGER ST COLUMBIA SC 29202	MAGNA TECH CORP 2300 AMPFX AVE OPELIKA AL 36801	METROPOLITAN ELF MFG CO 2250 STEINWAY ST LONG ISLAND NY 11105	N F ELECTRONICS CORP BOX 649 CONCORD NH 03301
KOSS ELECTRONICS INC 2227 N 31 STREET MILWAUKEE WI 53208	MAGNECORP DIV OF TELEX 9600 ALDRICH AVE S MINNEAPOLIS MN 55420	METROTECH INC 670 NATIONAL AVE MOUNTAIN VIEW CA 94040	NARDA MICROWAVE CORP COMMERCIAL ST PLAINVIFW NY 11803

NFMD RECORDING LABS BOX 505 TIMES SQ STA NEW YORK NY 10036	POTOMAC INSTRUMENTS INC 932 PHILADELPHIA AVE SILVER SPRING MD 20910	RAVEN SCREEN CORP 124 EAST 124TH ST NEW YORK NY 10035	SCALA RADIO CORP 1970 REPUBLIC AVE SAN LEANDRO CA 94577
NEUMADP PROD CORP 720 WHITE PLAINS RD SCARSDALE NY 10583	POWER OPTICS INC BOX 266 FAIRVIEW VILL PA 19409	RAYTHEON CO 1415 BOSTON PRVON HWY NORWOOD MA 02062	SCANTLIN ELECTRONICS 2231 BARRINGTON AVE LOS ANGELES CA 90064
P K NEUSES INC 1401 ROHLWING RD ROLLING MEADOW IL 60008	POWER SOURCES TECH OPER SOUTH AVENUE BURLINGTON MA 01803	RECORDEX CORP 3227 CAINS HILL PLACE ATLANTA GA 30305	ALBERT SCHULTZ INC 116 WEST 14 ST NEW YORK NY 10011
ROLLER CONTROL SYSTEMS 150 E STANDARD AVE RICHMOND CA 94801	PRECISION FLEET INC 9101 KING ST FRANKLIN PARK IL 60131	RECORDS RESERVE CORP 751 CLAY RD ROCHESTER NY 14623	SCOVILL DIV AURICORD 35 41 29TH ST LONG ISLAND NY 11106
NORTH AMER ELECTRONICS 723 THIRD AVE WEST BIRMINGHAM AL 35204	PRECISION PIFZO SERV 427 MAYFLOWER ST BATON ROUGE LA 70802	RESALAB INC 4000 CAMPBELL AVENUE MENLO PARK CA 94025	SCULLY RECORDING INS DICTAPHONE CORP 480 BUNNELL ST BRIDGEPORT CT 06607
NORTH AMER PHILIPS AKG 100 EAST 42ND ST NEW YORK NY 10017	PRECISION LAB PRECISION CINE FORMNT 894 F 51ST ST BROOKLYN NY 11203	RICHMOND HILL LABORATORIES LIMITED 1610 MIDLAND AVE SCARBOROUGH ON CAN	SEACOR INC 598 BROADWAY NORWOOD NJ 07648
NORTH AMERICAN PHILIPS 299 ROUTE 17 PARAMUS NJ 07652	PRESEARCH INC 8720 GEORGIA AVE SILVER SPRING MD 20910	RIKER VIDEO INDUSTRIES 100 PARKWAY DR SOUTH HAUPPAUGE NY 11787	SELA ELECTRONICS CO 545 WEST END AVE NEW YORK NY 10024
NORTON ASSOC INC 10 DI THOMAS COURT COPAIGUF NY 11726	PRIMO CO LTD 1 25 6 CHOME MURF MITAKASHI TOKYO JAPAN	ROHDE & SCHWARZ SALES 111 LEXINGTON AVE PASSAIC NJ 07055	SENCORF INC 426 S WESTGATE DR ADDISON IL 60101
NORTRONICS CO INC 8101 10TH AVE NORTH MINNEAPOLIS MN 55427	PRODFLIN INC BOX 131 HIGHTSTOWN NJ 08520	ROHN MFG CO BOX 2000 PEORIA IL 61601	SENNHUISER ELECTRONICS 500 FIFTH AVENUE NEW YORK NY 10036
OKTRON INDUSTRIES INC 930 30TH ST MONROE WI 53566	PRO TFX REEL BAND CO 200 FILM BLDG CLEVELAND OH 44114	ROME CABLE DIV CYPRUS MINES CO 421 RIDGE ST ROME NY 13440	SETCHELL CARLSON INC NEW BRIGHTON ST PUAL MN 55112
OMITE MFG CO 3601 HOWARD ST SKOKIE IL 60076	PRUZAN CO 1963 1ST AVE SEATTLE WA 98134	ROUND HILL ASSOC R F MORRIS 325 HUSONN ST NEW YORK NY 10013	PAUL SHEPARD INC 1675 GALVEZ AVE SAN FRANCISCO CA 94214
ORBIT RADIO AND VIDEO 1863 ARLINGTON BOX 1644 LOUISVILLE KY 40201	PULSE TECHNIQUES INC 1411 PALASADF AVENUE W ENGLEWOOD NJ 07666	RUSSELL FILM LAB BOX 693R JACKSONVILLE FL 32205	SHIRADEN CORP OF AMER 58 25 BROOKLYN QUEENS E WOODSIDE NY 11377
PACKARD BELL ELFC SPACF & SYSTEMS DIV 649 LAWRENCE DR NEWBURY PARK CA 91320	ORF ELECTRONIC PROD 2125 N BARTON AVE FRESNO CA 93703	RUSSCO ELECTRONICS MFG 6879 N SUNNYSIDE CLOVIS CA 93612	SHINTRON CO INC 144 RINGERS ST CAMBRIDGE MA 02142
PAINTON INC 109 WHEELER AVE PLEASANTVILLE NY 10570	RCA BROADCAST & COMM PROD FRONT & COPPER ST CAMDEN NJ 08102	RUST CORP 168 TRFOMT ST EVERETT MA 02149	SHURE BROTHERS INC 222 HARTREY AVE EVANSTON IL 60204
PARABAM INC 12822 YUKON AVE HAWTHORNE CA 90250	RCA ELECTRONIC COMP DEV 415 SOUTH 5TH ST HARRISON NJ 07029	RUISTRAK INSTRUMENT GULTON IND INC MUNICIPAL AIRPORT MANCHESTER NH 03103	SIGMA INDUSTRIES INC 11150 O'BRIEN DRIVE MENLO PARK CA 94025
PENTA LAB BOX 1469 SANTA BARBARA CA 93102	RCA SERVICE CO CHERRY HILL OFFICES CAMDEN NJ 08101	F B RYAN MFG CO INC BOX 451 CHARITON IA 50049	SIMPSON ELECTRIC CO 5208 W KINZIE ST CHICAGO IL 60644
PHILIPS DODGE ELECTRONIC 60 DODGE AVE BOX 187 NEW HAVEN CT 06437	RFE LABS BOX 535 BERKLEY CA 94701	RYDER MAGNETICS SALES 1147 N VINE ST HOLLYWOOD CA 90028	SINGER PROD CO INC 95 BROAD ST NEW YORK NY 10004
PHOTO LAB INC 3825 GEORGIA AVE NW WASHINGTON DC 20011	R F SYSTEMS 155 KING ST COHASSET MA 02025	SAREX CORP 1001 ROOSEVELT AVE CARTERT NJ 07008	SITCO ANTENNA CO 10330 N E MARX PORTLAND OR 97220
PHOTO RESEARCH CORP 3000 N HOLLYWOOD WAY BURBANK CA 91502	JULES RACINE CO INC 521 FIFTH AVENUE NEW YORK NY 10017	SARKES TARZIAN INC FAST HILLSIDE DR BLOOMINGTON IN 47401	SKIRPAN ELECTRONICS INC 4143 24TH STREET LONG ISLAND C NY 11101
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NEW YORK NY 10016

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SACRAMENTO CA 95828

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BOSTON MA 02135

STAINLESS INC
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N WALES PA 19454

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N HOLLYWOOD CA 91601

STANTON MAGNETICS INC
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HICKORY NC 28601

SUPERSCOPE INC
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SUN VALLEY CA 91352

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NEW YORK NY 10036

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CHICAGO IL 60630

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REDFORD MA 01730

SYLVANIA LIGHTING PROD
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DANVERS MA 01923

SYLVANIA SEMICONDUCTOR
100 SYLVAN ROAD
WOBURN MA 01801

TRW CAPACITOR DIV
CRYSTAL PLANT
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LOVELAND CO 80537

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TARFR MFG & ENGR CO
RX2365 BLD LR21 OAK AIR
OAKLAND CA 94614

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BERGEN & FOSALL RLVD
PALISADES PRK NJ 07650

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PELHAM NY 10803

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INGLEWOOD CA 90307

TAPECASTER
BOX 662
ROCKVILLE MD 20851

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GREENLAWN NY 11740

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NEW YORK NY 10017

TEKTRONIX INC
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BRAVERTON OR 97005

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CORONA NY 11368

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ARCADIA CA 91006

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SALT LAKE CT UT 84115

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CLIFTON NJ 07014

TELEMET CO
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AMITYVILLE NY 11701

TELEQUIP CORP
224 GLEN COVE AVE
GLEN COVE NY 11524

TELEVISION PRESENTATIONS
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NEW YORK NY 10022

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MAGNACORD CORP
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MINNEAPOLIS MN 55420

TELEPHONIC INSTRUMENTS
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BEECH GROVE IN 46107

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NEW YORK NY 10011

TEXAS ELECTRONICS
BOX 7225 INWOOD STA
DALLAS TX 75209

TEXAS INSTRUMENT
SEMICONDUCTOR COMP DIV
BOX 5012
DALLAS TX 75221

TEXSCAN CORP
7707 RECORDS ST
INDIANAPOLIS IN 46226

TEXWIPE CO
P O BOX 278
HILLSDALE NJ 07642

THOR ELECTRONICS CORP
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ELIZABETH NJ 07207

TIMES WIRE AND CABLE
SUB OF INSILCO CORP
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WALLINGFORD CT 06492

TIPAZ INC
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TRACOR IND INST DIV
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- BROAD GAIN CHARACTERISTICS
- EXTREME STABILITY • EXCELLENT SELECTIVITY
- ULTRA LINEARITY

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WOODLYN, PA. 19094

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Circle Item 19 on Tech Data Card

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TRIPLETT FLEC INSTRUMENT
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BLUFFTON OH 45817

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CHATSORTH CA 91311

TRUSONIC
389 N FAIR OAKS AVE
PASADENA CA 91103

TURNER MICROPHONE CO
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CEDAR RAPIDS IA 52402

ULTIMATION SYSTEMS
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SACRAMENTO CA 95816

ULTRA AUDIO PRODUCTS
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BEVERLY HILL CA 90213

UNITED RECORDING
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N HOLLYWOOD CA 91605

UTICA ELECTRONICS
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CHICAGO IL 60618

UNITED RADIO SUPPLY INC
829 W BURNSIDE
PORTLAND OR 97209

UNITED STATE TOWERS
249 BARTOW LANE
PETERSBURG KY 41080

UNIVERSAL AUDIO INC
11922 VALERIO
N HOLLYWOOD CA 91603

UP RIGHT SCAFFOLDS
1013 PARDEE ST
BERKELEY CA 94710

UPSON TOOLS INC
BOX 4750
ROCHESTER NY 14612

VIF INTERNATIONAL
BOX 1555
MOUNTAIN VIEW CA 94040

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510 N DEARBORN ST
CHICAGO IL 60610

VALAD FLECT HEATING CO
71 COURTLANDT ST
TARRYTOWN NY 10591

VENT RAK INC
5258 S WEBSTER
INDIANAPOLIS IN 46219

VIDEOMETRICS INC
33 CAIN DRIVE
PLAINVIEW NY 11803

VIDEON CORP
140 F MAIN ST
HUNTINGTON NY 11743

VIKOA INC
400 9TH ST
HOBOKEN NJ 07030

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356 W 40TH
NEW YORK NY 10018

VISUAL FLECTRONIC LABS
725 SAN ALFONSO AVE
SUNNYVALE CA 94086

VITAL INDUSTRIES
3614 S W ARCHER RD
GAINSVILLE FL 32601

WTTW RECORDING SFRV
5400 N ST LOUIS AVE
CHICAGO IL 60625

WABER ELECTRONICS INC
200 N 2ND ST
PHILADELPHIA PA 19122

WARD ELECTRONIC INDUS
142 CENTRAL PARK AVE
CLARK NJ 07066

WATERS MFG INC
533 BOSTON POST ROAD
WAYLAND MA 01778

WEINSCHL ENGINEERING CO
BOX 577 CLOPPER ROAD
GAITHERSBURG MD 20760

WESTINGHOUSE ELEC CO
ELECTRIC TUBE DIV
BOX 284
ELMIRA NY 49502

WIDE RESPONSE
2926 BENTLEY AVE
LOS ANGELES CA 90064

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WOODLYN PA 19094

H WILSON CORP
555 W TAFT DRIVE
S HOLLAND IL 60473

XCFLITE
THORNE & BANKS STS
ORCHARD PARK NY 14127

ZIOLACK CORP
DRAWER R39
CAPE GIRAROU MD 63701

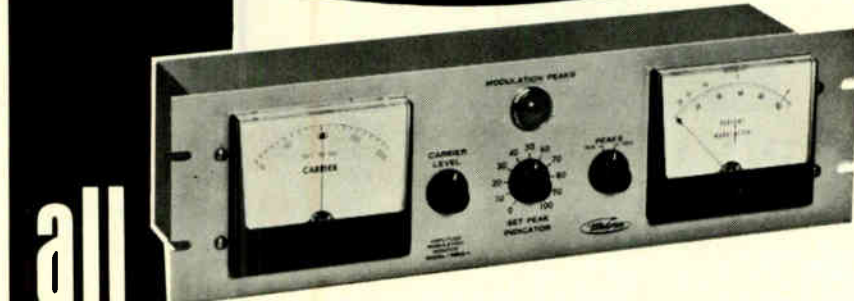
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The Metron Model 506B-1 Amplitude Modulation Monitor is a high quality instrument, field-proven for several years.

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An unfortunate characteristic of solid-state power supplies is that they can go into over-voltage and "run away". This happened to a recording studio recently. Result: 3 out of 4 amplifiers and power supply severely damaged. Sorely needed recorder out of service 3 days. Repair cost of \$230!

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without notice.



Circle Item 21 on Tech Data Card

NO GAMBLING in Las Vegas

when it comes to
selecting Vital
switchers for
KSHO-TV

Give your production people a Vital Industries switcher and make them feel like "Cecil B. De Mille". The VIX-108 vertical interval switcher is like a computer... a real money-making production tool. You no longer have to search and wonder if your video is composite or non-composite, synchronous or not, equalized re-entry or not, burst on black or not, etc. The VIX-108 thinks for you and minimizes errors caused by the unfamiliarity of the operator with color electronics.

FEATURES:

- Extensive use of integrated circuits with solid state cross points for long term stable performance.
- Basic matrix housing 108 crosspoints and associated logic and output electronics, comes in 5¼" of rack space and has no coax inter-connections. This means no delays of signals in any path and no crosstalk.
- Production oriented design with automatic sync and clamping on all inputs for bounce-free switching of video with varying luminance levels.
- True composite additive/non-additive mixer with automatic inhibit of non-synchronous dissolves.

- Fade network color to network black burst with automatic inhibit.
- Fade to monochrome, maintain color burst or choose to drop color burst. Only one reshaped burst and constant level sync during all dissolves.
- Custom built production or routing switching with the latest state of the art accessories designed as an integrated system are all furnished by Vital Industries, Inc.

OTHER VITAL PRODUCTS:

- VI-1000 video proc. amp. with automated features.
- VI-500 stab. amp. with AGC.
- Video and pulse distribution equipment.

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Circle Item 22 on Tech Data Card

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PRODUCT DIRECTORY

A listing of over 600 products and services compiled from questionnaires completed by the manufacturers.

A

Adapters, Connector

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APPLIED ELECT MECHANICS
ATLAS SOUND DIV
BLONDER TONGUE LAB INC
BOSTON INSULATED
CATV EQUIPMENT CO
DAVCO ELECTRONICS CORP
G C ELECTRONICS
GENERAL RADIO CO
MICROLAB
PRODELIN INC
SINGER PROD CO INC
SWITCHCRAFT INC
TERMINAL HUDSON ELECTRS
TROMPETER ELECTRONICS
WEINSCHEL ENGINEERING CO

Adapters, FM Stereo

HEATH CO
KARG LAB INC
SINGER PROD CO INC

Adapters, Test

SINGER PROD CO INC

Adapters, Tube

EIMAC DIV
G C ELECTRONICS
METROLOGIE COMPAGNIE GEN

Alarm, Fault

BIRD ELECTRONIC CORP
DIVERSIFIED CONSULTANTS
GOTHAM AUDIO CORP
HOUSTON ELECTRONICS
MALLORY
MOSELEY ELECTRONICS
NOLLER CONTROL SYSTEMS
RUST CORP
SINGER PROD CO INC

Alarm, Signal

DIVERSIFIED CONSULTANTS
ELECTRONIC DESIGNERS INC
ENGINEERING ASSOC
RFE LABS
RUST CORP
TREPAC CORP AMERICA
VIDEOMETRICS INC

Ammeters, AC

G E ELECTRONIC COPONENTS
METRICS DIV
METROLOGIE COMPAGNIE GEN
SIMPSON ELECTRIC CO
TERMINAL HUDSON ELECTRS
TRIPLETT ELEC INSTRUMENT

Ammeters, AC Thermocouple

METRICS DIV
SIMPSON ELECTRIC CO
TRIPLETT ELEC INSTRUMENT

Ammeters, DC

G E ELECTRONIC COPONENTS

GENERAL RADIO CO
HICKOK ELEC INSTRUMNT
INTERNL INSTRUMENT INC
METRICS DIV
METROLOGIE COMPAGNIE GEN
SIMPSON ELECTRIC CO
SINGER PROD CO INC
TERMINAL HUDSON ELECTRS
TRIPLETT ELEC INSTRUMENT

Ammeters, RF

C COR ELECTRONICS
SINGER PROD CO INC
TERMINAL HUDSON ELECTRS
TRIPLETT ELEC INSTRUMENT

Amplifier, AF, AGC

ALTEC LANSING
AMFCO INC
BAUER ELECTRONICS CORP
CCA ELECTRONICS
C COR ELECTRONICS
COLLINS RADIO CO
FAIRCHILD RECORDING EQPT
GE VISUAL COMM PROD
GATES RADIO CO
GRASS VALLEY GROUP
MARTI ELECTRONICS
MELCOR ELECTRONICS CORP
TAPF ATON CORP
VISUAL ELECTRONICS CORP
WARD ELECTRONIC INDUS
WILKINSON ELECT INC

Amplifier, AF, Compressing

ALTEC LANSING
BAUER ELECTRONICS CORP
BOGEN COMMUNICATIONS
CBS LABS
CCA ELECTRONICS
COLLINS RADIO CO
ELECTRODYNE CORP
FAIRCHILD RECORDING EQPT
GATELY ELECTRONICS
GATES RADIO CO
MARTI ELECTRONICS
MCMARTIN INDUSTRIES INC
MELCOR ELECTRONICS CORP
MULTRONICS INC
PRECISION ELECT INC
ULTRA AUDIO PRODUCTS
UNIVERSAL AUDIO INC
WARD ELECTRONIC INDUS
WILKINSON ELECT INC

Amplifier, AF, General Purpose

ALLIED ELECTRONIC CORP
ALTEC LANSING
AMFR GELOSO ELECTRONICS
AMPFX CORP
ARBOR SYSTEMS INC
B K INSTRUMENTS INC
BAUER ELECTRONICS CORP
BELL P A PROD CORP
BOGEN COMMUNICATIONS
BRADFORD INFORMATION SYS
BROADCAST PROD CO INC
C COR ELECTRONICS
CALBEST ELECTRONICS
COLLINS RADIO CO
CROWN INTERNATIONAL
CUSTOM CRAFT DESIGNS
DENRAD MFG CO INC
DYNAIR ELECTRONICS
ELECTRODYNE CORP
ELECTRONIC DESIGNERS INC
ELECTRO VOICE INC

G F ELECTRONIC COPONENTS
GE VISUAL COMM PROD
GATELY ELECTRONICS
GATES RADIO CO
GRASS VALLEY GROUP
GRAY RESEARCH DEV
HEWLETT PACKARD CO
INTERNL NUCLEAR CORP
MARTI ELECTRONICS
MCMARTIN INDUSTRIES INC
MELCOR ELECTRONICS CORP
NORTH AMER PHILIPS AGK
NORTH AMERICAN PHILIPS
PRECISION ELECT INC
PRECISION LAB
RANGERTON ELECTRONICS
ROUND HILL ASSOC
SINGER PROD CO INC
ULTRA AUDIO PRODUCTS
UNIVERSAL AUDIO INC
VISUAL ELECTRONICS CORP
WARD ELECTRONIC INDUS

Amplifier, AF, Peak Limiting, AM

ALTEC LANSING
BAUER ELECTRONICS CORP
BOGEN COMMUNICATIONS
CBS LABS
CCA ELECTRONICS
COLLINS RADIO CO
ELECTRODYNE CORP
ELECTRONIC SYSTEM ENG
FAIRCHILD RECORDING EQPT
GATELY ELECTRONICS
GATES RADIO CO
MELCOR ELECTRONICS CORP
MULTRONICS INC
SINGER PROD CO INC
TARTAN ELECTRONICS CORP
UNIVERSAL AUDIO INC
WARD ELECTRONIC INDUS
WILKINSON ELECT INC

Amplifier, AF, Peak Limiting, FM

BAUER ELECTRONICS CORP
BOGEN COMMUNICATIONS
CBS LABS
CCA ELECTRONICS
COLLINS RADIO CO
ELECTRODYNE CORP
ELECTRONIC SYSTEM ENG
FAIRCHILD RECORDING EQPT
GATELY ELECTRONICS
GATES RADIO CO
SINGER PROD CO INC
UNIVERSAL AUDIO INC
VISUAL ELECTRONICS CORP
WILKINSON ELECT INC

Amplifier, AF, Remote

ALTEC LANSING
ARBOR SYSTEMS INC
BOGEN COMMUNICATIONS
BROADCAST ELECTRONICS
COLLINS RADIO CO
FAIRCHILD RECORDING EQPT
GATELY ELECTRONICS
GATES RADIO CO
ROUND HILL ASSOC
SHURE BROTHERS INC
SINGER PROD CO INC
TAPEMASTER
ULTRA AUDIO PRODUCTS
UNIVERSAL AUDIO INC
VISUAL ELECTRONICS CORP
WARD ELECTRONIC INDUS

Amplifier, AF, Reverberation

ALTEC LANSING
BAUER ELECTRONICS CORP
ELECTRONIC DESIGNERS INC
GATELY ELECTRONICS
GOTHAM AUDIO CORP
NORTH AMER PHILIPS AGK
NORTH AMERICAN PHILIPS
SINGER PROD CO INC
ULTRA AUDIO PRODUCTS
VISUAL ELECTRONICS CORP

Amplifier, AF, Stereo

ALLIED ELECTRONIC CORP
ALTEC LANSING
BAUER ELECTRONICS CORP
BOGEN COMMUNICATIONS
CALBEST ELECTRONICS
COLLINS RADIO CO
CROWN INTERNATIONAL
ELECTRO VOICE INC
ELECTRONIC DESIGNERS INC
ELECTRO VOICE INC
GATELY ELECTRONICS
GATES RADIO CO
HEATH CO
KOSS ELECTRONICS INC
MAGNECORD
MELCOR ELECTRONICS CORP
PRECISION ELECT INC
ALBERT SCHULTZ INC
SHURE BROTHERS INC
SINGER PROD CO INC
STANDARD RADIO CORP
SUPERSCOPE INC
TARTAN ELECTRONICS CORP
TELEXCOMMUNICATIONS DIV
VISUAL ELECTRONICS CORP

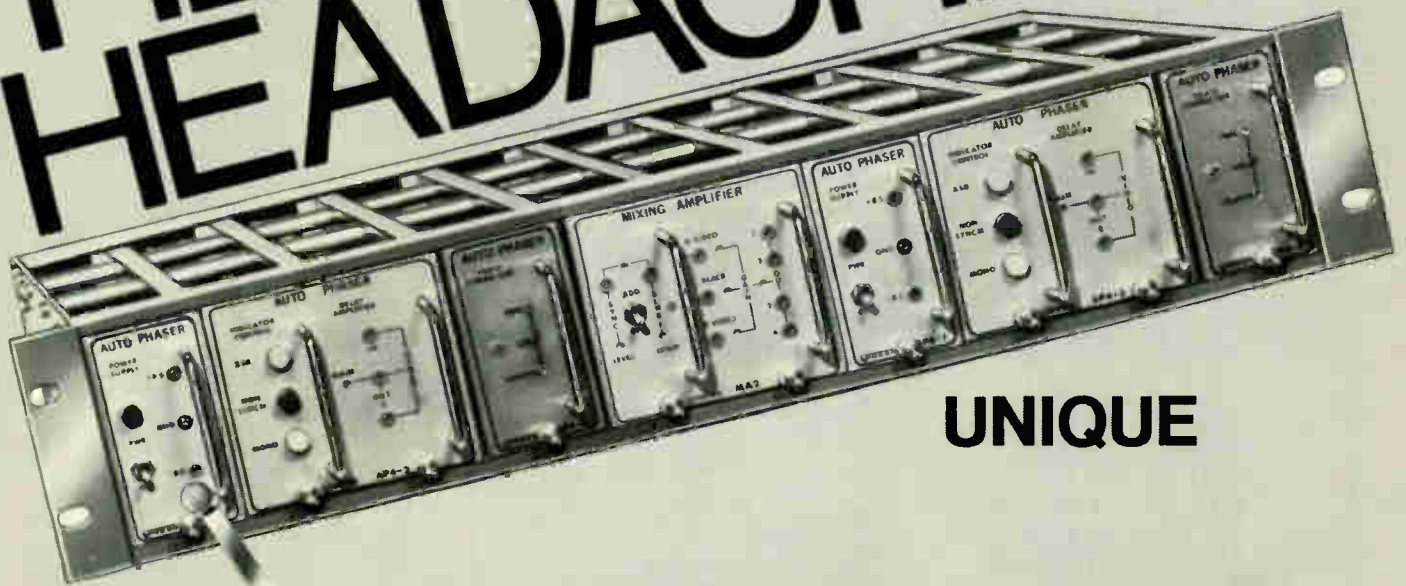
Amplifier, Bridging

AMFCO INC
ANACONDA ELECTRONICS
ARBOR SYSTEMS INC
BAUER ELECTRONICS CORP
C COR ELECTRONICS
COLLINS RADIO CO
COMREX CORP
DELTA ELECTRONICS INC
DENRAD MFG CO INC
DYNAIR ELECTRONICS
GATELY ELECTRONICS
GATES RADIO CO
INTERNL NUCLEAR CORP
JFD ELECTRONICS CO
KATONA ELECTRONICS CO
MCMARTIN INDUSTRIES INC
RUST CORP
SINGER PROD CO INC
SPENCER KENNEDY LAB
ULTRA AUDIO PRODUCTS
UNIVERSAL AUDIO INC
VIKOA INC
VISUAL ELECTRONICS CORP
WARD ELECTRONIC INDUS

Amplifier, CATV

ALMA ENGINEERING
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END COLOR FIDELITY HEADACHES



UNIQUE



\$4450
IMMEDIATE DELIVERY

**HFM1 HIGH FIDELITY
COLOR MIXER:**

The first in Videon's growing family of high fidelity color systems.

Make mixing, blending, fading and lap dissolving easy. Automatically prevent loss of color fidelity and eliminate elaborate preset of color shots.

The HFM1 performs three channel mixing of color video with absolutely constant output video level throughout a continuous video fade (to black or to a third signal). The operator can fade or mix continuously while the HFM1 automatically corrects the

subcarrier phase of each signal to preserve the color balance. Input signals may be selected rapidly and at random giving the director unrivaled and immediate high fidelity color mixing. The HFM1 does not require any preset delay equalization of video signals.

Portions of HFM1 available individually are:

1. *AP4 Auto Phaser:** Maintains constant subcarrier phase when switching or mixing video signals of different phase at the input.
2. *MA2 Mixer:** A three channel Mixing Amplifier with a constant output video level.

3. *FA1 Fader:* Mixes or fades remotely two video signals.
4. *PS10 Rack Frame:* Custom wired; 19" x 3.5" x 15" D. All available on 30-day free trial offer.

The rapidly growing new line of Videon's High Fidelity Color Products Includes:

- Color Encoders & Color Bar Generators
- Burst Adders
- High Fidelity Distribution Amplifiers
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 BLONDER TONGUE LAB INC
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 C COR ELECTRONICS
 CALBEST ELECTRONICS
 COLLINS RADIO CO
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 KAY ELECTRIC CO
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 RUST CORP
 VIKOA INC
 VISUAL ELECTRONICS CORP
 WILKINSON ELECT INC
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Amplifier, RF, Peak Limiting

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Amplifier, RF, Power

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 C COR ELECTRONICS
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The Spotlight Is on

Spotmaster

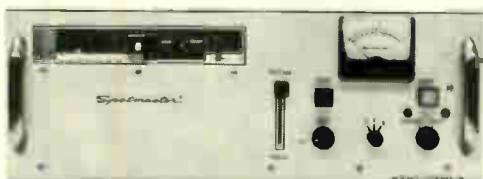
Superior Tape Cartridge Recording and Playback Equipment



Model 500 C



Model 400 A



Model 500 CR

COMPACT 500 C SERIES—Completely solid state, handsome 500 C equipment features functional styling and ease of operation, modular design, choice of 1, 2, or 3 automatic electronic cueing tones, automatic record pre-set, separate record and play heads, A-B monitoring, biased cue recording, triple zener controlled power supply, transformer output . . . adding up to pushbutton broadcasting at its finest. Specs and performance equal or exceed NAB standards. Record-play and playback-only models are available.

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For complete details about these and other Spotmaster cartridge units (stereo, delayed-programming and multiple-cartridge models, too), write, wire or call today. Remember, Broadcast Electronics is the No. 1 designer/producer of broadcast quality cartridge tape equipment. . . worldwide!

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Antennas, CATV

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Antennas, LF

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MULTRONICS INC
RCA BROADCAST COMM PRD
SINGER PROD CO INC

Antennas, MF

ANTENNA PROD DIV
COLLINS RADIO CO
CONTINENTAL ELECTRONICS

MARCONI DIV
MULTRONICS INC
SINGER PROD CO INC

Antennas, Microwave

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AMER ELECTRONIC LAB
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ANDREWS TOWERS INC
COLLINS RADIO CO
DU VAL I FIT CORP
JERROLD ELECTRONICS CO
LFCETRONIC RES LABS INC
METRICS DIV
MICRO LINK DIV
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MICROWAVE ASSOC INC
NARDA MICROWAVE CORP
PRODELIN INC
RCA BROADCAST COMM PRD
R F SYSTEMS
RAYTHEON CO
SINGER PROD CO INC

Antennas, Mobile

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ANDREWS TOWERS INC
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COMMUNICATION PROD DIV
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MARTI ELECTRONICS
MICROWAVE ASSOC INC
PRODELIN INC
RCA BROADCAST COMM PRD
R F SYSTEMS
SINGER PROD CO INC
UTICA ELECTRONICS
WATERS MFG INC

Antennas, Remote Pickup

COMMUNICATION PROD DIV
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MICROWAVE ASSOC INC
PRODELIN INC
SCALA RADIO CORP
SINGER PROD CO INC

Antennas, TV

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ALLIED ELECTRONIC CORP
AMFCO INC
BLONDER TONGUE LAB INC
CUSH CRAFT
DU VAL I FIT CORP
FINNEY CO
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GE VISUAL COMM PROD
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Antennas, 2500 Mhz

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MICROWAVE ASSOC INC
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RCA BROADCAST COMM PRD
RAYTHEON CO
SCALA RADIO CORP
SINGER PROD CO INC

Antennas, Systems, HF

ANDREW CORP
ANTENNA PROD DIV
COLLINS RADIO CO
CONTINENTAL ELECTRONICS
MARCONI DIV
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- Six 75 ohm Outputs
- Input-Pulse Level Meters
- Full Front Panel Operation

PD Series Pulse Distribution Amplifiers provide six outputs and feature unique input-pulse level meters permitting continuous recognition of pulse deterioration even though the regenerated output pulses may not yet be affected. Exceeding all NTSC color and monochrome specifications, the units also feature full front panel monitoring of all input and output cables, notation cards for routing records, and low input pulse acceptability.

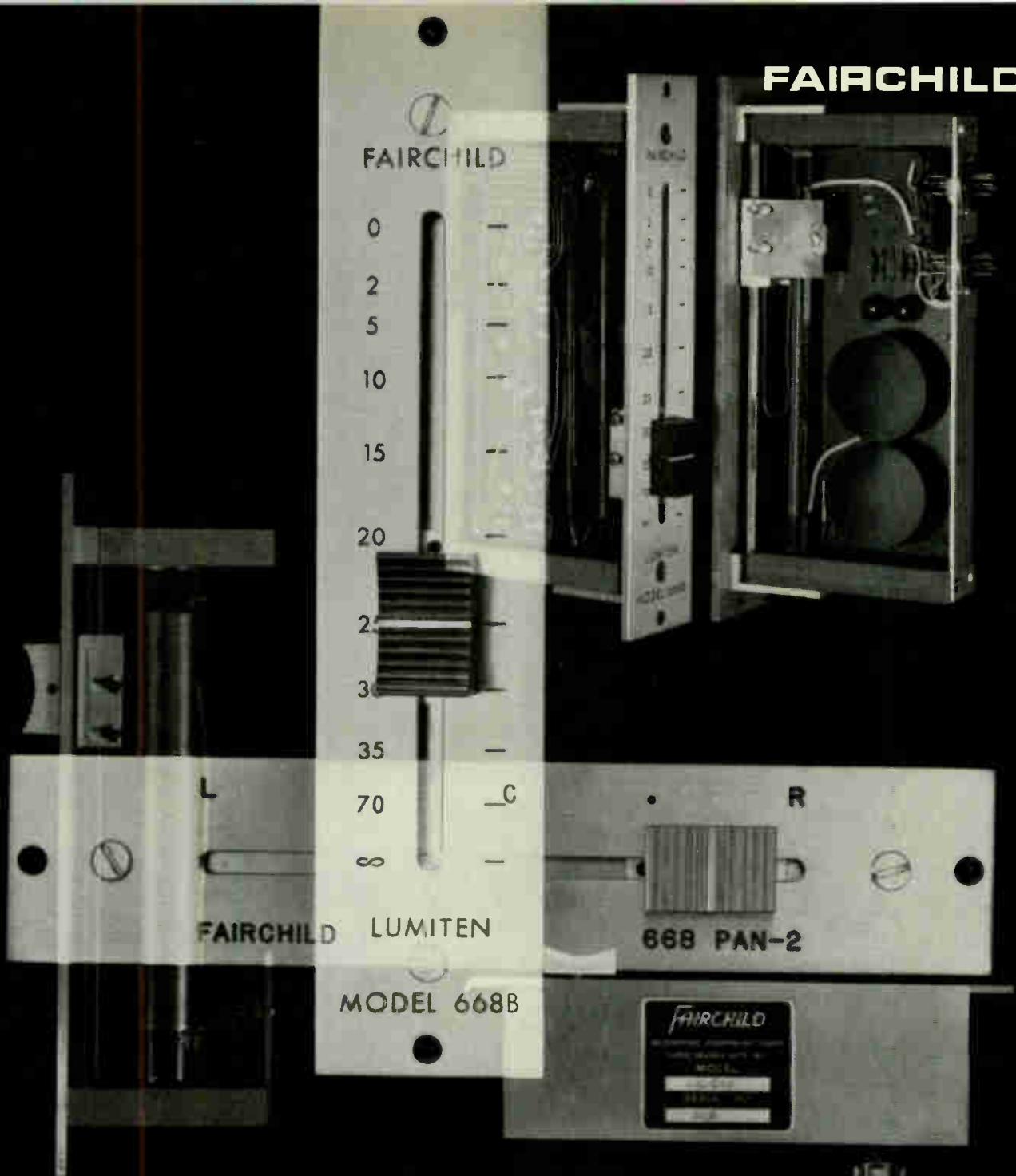


**APPLIED ELECTRO
MECHANICS, INC.**

2350 Duke Street
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Phone: (703) 548-2166

Circle Item 24 on Tech Data Card

FAIRCHILD



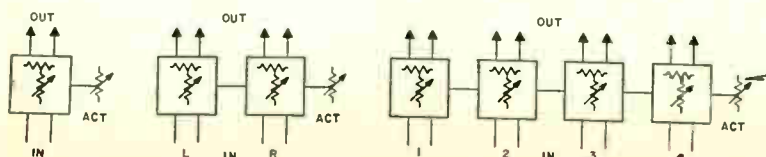
THE NEW FAIRCHILD LUMITENS

Fairchild introduces a complete new line of noiseless attenuators with 7 new advantages: 1. Transistorized drives require only minute current to actuate circuit. 2. Multi-channel operation with common light sources to all channels guarantees tracking to within 1/2 db between channels. 3. 4 channels or more can be driven by a single actuator. 4. Infinite resolution from 0-∞. 5. Plug-in light source allows instantaneous replacement. 6. Improved mechanical construction of slide faders' precious metal sliding contacts gives long trouble free life, offers adjustable feel. 7. Plug-in, remote, and slide-wire models range from one to four channels and are designed with ultimate versatility in packaging; compact cards range in size from 1 3/4" x 4" to 5 1/4" x 6 1/4"; housings from 7" x 1 1/2" x 1 3/4" to 7" x 1 1/2" x 3".

All Fairchild Lumiten attenuators use the same light principle. As light intensity is made to vary, cadmium sulphide cells within the circuitry effect identical and simultaneous variations of the audio signal. The Fairchild Lumiten is, in fact, as noiseless as a beam of light.

Fairchild Lumitens (available in 600 and 150 ohms) include: 668II Attenuator, 668 PAN-2 Pan Pot Actuator, 668 ACT Remote Cell Actuator, 668 STII Stereo Attenuator, 668 RSB Remote Stereo Attenuator, 668 MC 4-channel Master Control Attenuator card, 668 RAB Remote Attenuator packaged on compact PC card, 692 D1 Single Remote Attenuator, 692 D2 Two independent Attenuators. Slide Wire Fader: SWL 600 (600 ohm L pad).

Contact your Fairchild Recording Distributor or write **FAIRCHILD RECORDING EQUIPMENT CORPORATION**, Dept. BE-1, 10-40 45th Avenue, Long Island City, New York 11101.



Circle Item 25 on Tech Data Card

**if you need
attenuators
you need
this catalog!**

**AUDIO AND RF
ATTENUATORS TO
MEET ANY REQUIREMENT**

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Reference Charts, Circuit Diagrams, Types and Uses, Current and Voltage Ratio Tables, Ratings, Etc., make this a handy and invaluable reference.

SEND FOR YOUR FREE COPY TODAY.

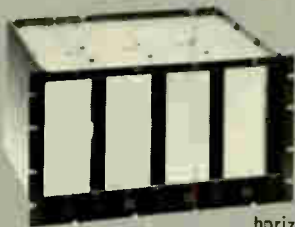


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Four independent transport modules, each with its own direct motor/capstan drive transport & individual transistorized program and cue amplifiers. Vertical cabinet or horizontal rack mountings \$1650. Stereo Model \$2095.



300C PLAYBACK
Solid state amplifiers, relays and bias stages. 1000 HZ stop cue tone standard. 2nd & 3rd cue tones available. For rack or custom cabinet installation \$550. Record/Playback Model \$795.



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PORTABLE PLAYBACK**
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Arms, Tone

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OMITE MFG CO
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WEINSCHEL ENGINEERING CO

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GENERAL MICROWAVE CORP
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MICROWAVE ASSOC INC
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TROMPETER ELECTRONICS
WEINSCHEL ENGINEERING CO
UNITED RECORDING

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KAY ELECTRIC CO
ELECTRONIC RES LABS INC
METRICS DIV
MICROLAB
MICROWAVE ASSOC INC
NARDA MICROWAVE CORP
ROHOE SCHWARZ SALES
TELONIC INSTRUMENTS
WEINSCHEL ENGINEERING CO

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DAVCO ELECTRONICS CORP
GENERAL MICROWAVE CORP
HOLLAND ELECTRONICS
JERKOLD ELECTRONICS CO
KATONA ELECTRONICS CO
KAY ELECTRIC CO
ELECTRONIC RES LABS INC

METRICS DIV
MICROWAVE ASSOC INC
NARDA MICROWAVE CORP
ROHOE SCHWARZ SALES
TECH LABORATORIES INC
TELONIC INSTRUMENTS
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PAINTON INC
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VIDEO CORP
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WARD ELECTRONIC INDUS
ZOOMAR INC
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MA CARTA
SPARIA ELECT CORP
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SYLVANIA LIGHTING PROD

Balluns

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COLLINS RADIO CO
FINNEY CO
JERKOLD ELECTRONICS CO
MULTIIONICS INC
SINGER PROD CO INC
TELONIC INSTRUMENTS
VIKOA INC
KAPPA NETWORKS

Base Station

COLLINS RADIO CO
MAXII ELECTRONICS
MUSELEY ELECTRONICS
RCA BROADCAST COMM PROD
SINGER PROD CO INC
UTICA ELECTRONICS

Batteries, Dry Cell

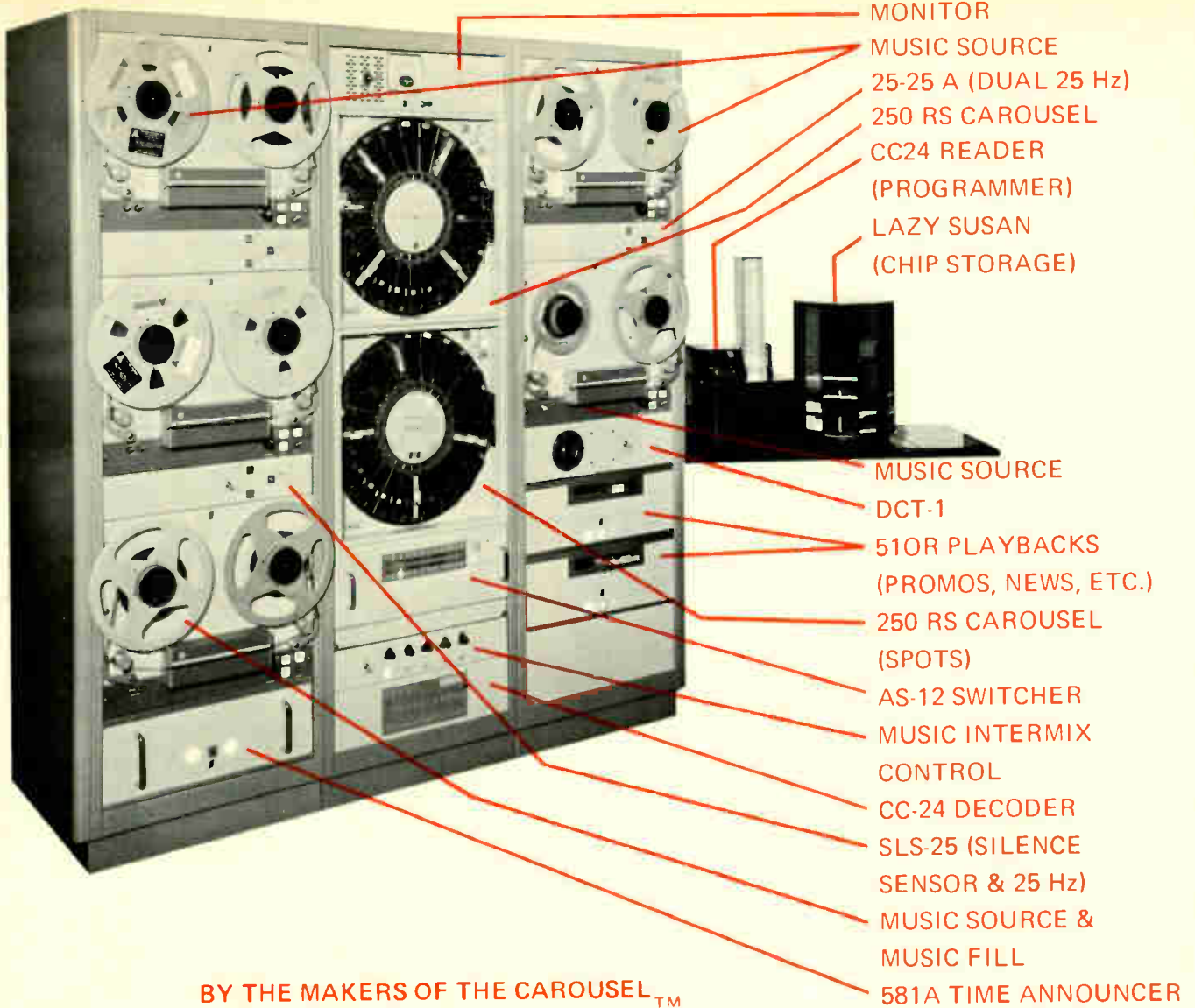
BURGESS BATTERY DIV
FB CECO INC
RCA ELECTRONIC COMP DEV
ZENITH SALES CORP

Batteries, Lead Acid

FB CECO INC

Batteries, Nickel Cadmium

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BY THE MAKERS OF THE CAROUSELTM

This completely automated programming system WILL TURN YOU ON AT A PRICE YOU CAN AFFORD

The MaCarTa Automatic Programming System is completely flexible. Carousel units provide for a combination of live programming with pre-programmed material, or for all-day operation without attention. No dead spots either, because one Carousel is indexing while another is in operation . . . for perfect continuity.

In addition, the System features the Carousel Programmable Random Selector Control Cell. This

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Call or write today for complete details and information on the modest investment involved compared to other automatic units.



MaCarTa

CAROUSELS
RECORD CENTERS
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TAPE CARTRIDGES

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Telephone 515-274-3869

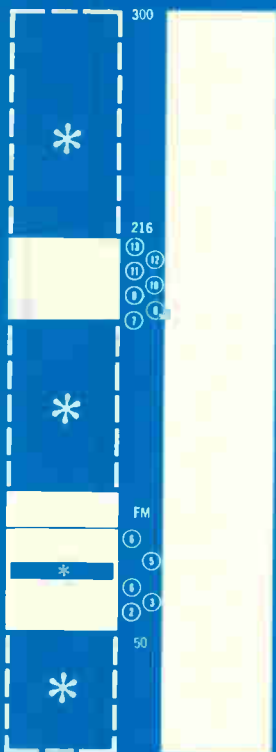
Circle Item 28 on Tech Data Card



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MANUFACTURING ENGINEERS

Room at the top.

(At the bottom and in between, too!)



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Superior Extended Spectrum Coaxials cover the full range to 300 MHz and beyond with no discontinuities.

Specify Superior Extended Spectrum Coaxials for continuous coverage to 300 MHz and beyond.

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Extended Spectrum Coaxials are now available in the right construction for every application. With exclusive Coppergard or Alumagard shielding. In aerial or direct burial types.

When you buy coaxials today, be sure they offer full-range performance with *no gaps*. Specify Superior Extended Spectrum Coaxials. The ones with the extra room built-in.

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P. O. Box 2327 Hickory, North Carolina 28601
Phone 704/328-2171



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KOHDE SCHWARZ SALES

Boxes, Decade, Inductor

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GENERAL RADIO CO
HONEYWELL INC
LECTRONIC RES LABS INC

Boxes, Decade, Resistor

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GENERAL RADIO CO
HEATH CO
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TECH LABORATORIES INC

Bridges

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COLLINS RADIO CO
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DELTA ELECTRONICS INC
G E ELECTRONIC COMPONENTS
GENERAL MICROWAVE CORP
GENERAL RADIO CO
HEATH CO
LECTRONIC RES LABS INC
METROLOGIE COMPAGNIE GEN
KOHDE SCHWARZ SALES
WEINSCHEL ENGINEERING CO
ATLANTIC RESEARCH
HEWLETT PACKARD CO

C

Cabinets, Metal

ACME FILM VIDEO TAPE L
AMECO INC
BUD RADIO INC
CATV EQUIPMENT CO
CANOGA ELECT CO
COLLINS RADIO CO
DU VAL I FIT CORP
ENCLOSURE CORP
EQUIPTO
GATES RADIO CO
HARWOOD MFG CO
NEUMADE PROD CORP
RCA BROADCAST COMM PRD
MUSIKAK INSTRUMENT DIV
SINGER PROD CO INC
TERMINAL HUDSON ELECTRS
VENT RAK INC
WABEK ELECTRONICS INC
H WILSON CORP

Cabinets, Storage, Disc

ACME FILM VIDEO TAPE L
BURKE JAMES
GATES RADIO CO
GRINNAN FIXTURE CO
NEUMADE PROD CORP

Cabinets, Storage, Film

ACME FILM VIDEO TAPE L
BURKE JAMES
FB CECO INC
GATES RADIO CO
GRINNAN FIXTURE CO
NEUMADE PROD CORP
H WILSON CORP

Cabinets, Storage, Magnetic Tape

ACME FILM VIDEO TAPE L
AMEK GELUSO ELECTRONICS
BROADCAST ELECTRONICS
BROADCAST PROD CO INC
COLLINS RADIO CO
GATES RADIO CO
GENERAL TELEVISION NTWK
GRINNAN FIXTURE CO
MAGNETIC PROD DIV
NEUMADE PROD CORP
SINGER PROD CO INC

WABEK ELECTRONICS INC
H WILSON CORP

Cabinets, Storage, Slide

BURKE JAMES
GAF CORP
GATES RADIO CO
GRINNAN FIXTURE CO
NEUMADE PROD CORP
H WILSON CORP

Cabinets, Wood

BROADCAST PROD CO INC
COLLINS RADIO CO
GATES RADIO CO
GRINNAN FIXTURE CO
JENSEN MFG DIV
SUPERSCOPE INC

Cable, Armored

ALPHA WIRE
AMPHENOL CORP
BIRNBACH CO INC
ROSTON INSULATED
GENERAL CABLE CORP
INC DIV TRW INC
LISTEC TV EQUIP CORP
PHELPS DODGE ELECTRONIC
SAXTON PROD INC
SINGER PROD CO INC
SUPERIOR CONTINENTAL CO

Cable, Assemblies

ALPHA WIRE
AMPHENOL CORP
ANDREW CORP
ANDREWS TOWERS INC
RFLDEN CORP
BIRNBACH CO INC
BOSTON INSULATED
D AND B ELECTRONICS CO
G C ELECTRONICS
GENERAL CABLE CORP
HOLLAND ELECTRONICS
INC DIV TRW INC
INDUSTRIAL ELECTRONIC
LISTEC TV EQUIP CORP
PHELPS DODGE ELECTRONIC
SAXTON PROD INC
SINGER PROD CO INC
TIMES WIRE AND CABLE
THOMPETER ELECTRONICS
VIKOA INC
WABEK ELECTRONICS INC
WEINSCHEL ENGINEERING CO

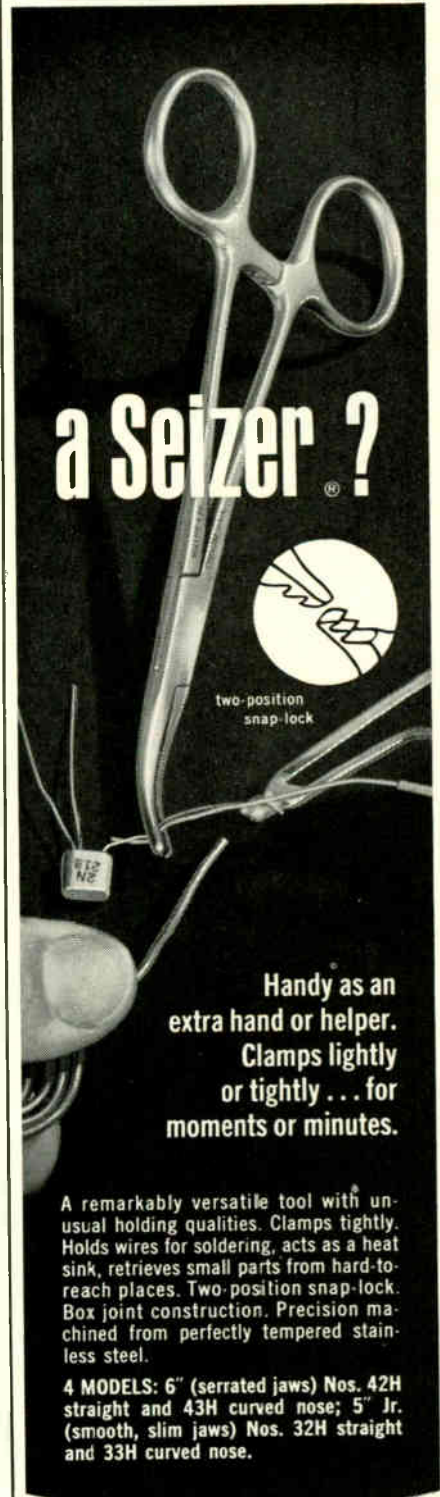
Cable, Camera

BELDEN CORP
BIRNBACH CO INC
BOSTON INSULATED
BRAND REX
COLUMBIA ELECTRONIC CBL
FB CECO INC
GE VISUAL COMM PROD
GENERAL CABLE CORP
INC DIV TRW INC
LISTEC TV EQUIP CORP
RCA BROADCAST COMM PRD
SAXTON PROD INC
SINGER PROD CO INC
TIMES WIRE AND CABLE
VIKOA INC

Cable, CATV, Hardware

AMECO INC
AMPHENOL CORP
ANAONDA ELECTRONICS
BIRNBACH CO INC
COLUMBIA ELECTRONIC CBL
DIAMOND EXPANSION BOLT
ENTRON INC
GENERAL CABLE CORP
INC DIV TRW INC
JERROLD ELECTRONICS CO
KAISER COX CORP
KATONA ELECTRONICS CO
LISTEC TV EQUIP CORP
PHELPS DODGE ELECTRONIC
PRUZAN CO
SINGER PROD CO INC
SUPERIOR CONTINENTAL CO
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how often could you have used...



a Seizer?

two-position
snap-lock

Handy as an
extra hand or helper.
Clamps lightly
or tightly... for
moments or minutes.

A remarkably versatile tool with unusual holding qualities. Clamps tightly. Holds wires for soldering, acts as a heat sink, retrieves small parts from hard-to-reach places. Two-position snap-lock. Box joint construction. Precision machined from perfectly tempered stainless steel.

4 MODELS: 6" (serrated jaws) Nos. 42H straight and 43H curved nose; 5" Jr. (smooth, slim jaws) Nos. 32H straight and 33H curved nose.

XCELITE

XCELITE, INC., 118 Bank St., Orchard Park, N. Y. 14127
In Canada contact Charles W. Pointon, Ltd.

Circle Item 30 on Tech Data Card

If our 4-tube color great... who'll buy You might.

It all depends on

The TK-42 is the camera for the broadcaster who must have the most accurate and realistic color reproduction of a sponsor's product. This is the camera that delivers crisp, clean color in almost perfect degree. Now, over 400 are in use by top TV stations. It's the camera with the big I.O.—that gives top resolution and eliminates the need for contouring. Better than any other camera, it handles the problem of large contrasts between highlights and shadows, or variations in light levels.

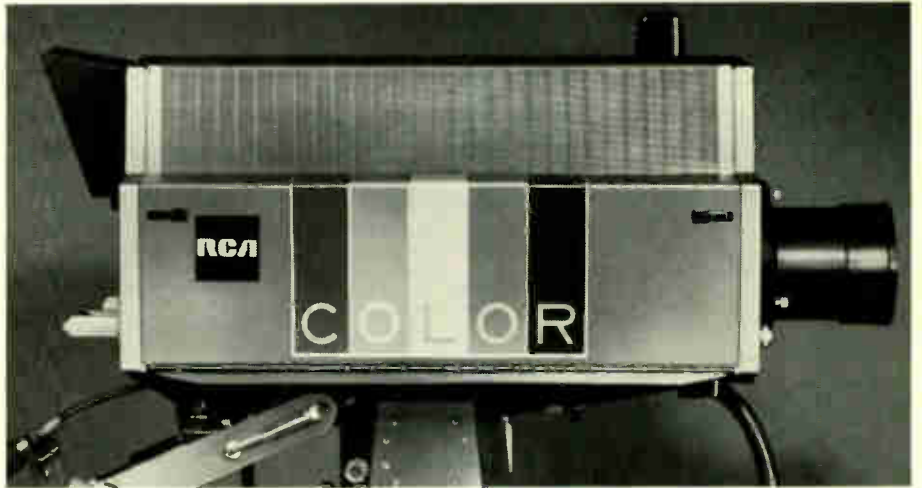
Now let's look at the TK-44A. This is the lightweight, easy-to-handle, simple to set-up, color camera. It solves different problems.

It's the latest design in 3-tube cameras. It uses RCA's exclusive "contours with a comb" that produces snappy, brisk colors without raising the noise level. It weighs in at only 98 pounds (without the lens), ideal for field use. And RCA has as many lenses for both field and studio applications as you will ever need. The TK-44A also has built-in "Chromacomp" that will precisely color-match the output of the TK-42, or of any other color camera. "Chromacomp" can also produce striking special color effects.

Call your RCA Field Man for complete information. Or write: RCA Broadcast Equipment, Bldg. 15-5, Camden, N.J. 08102.

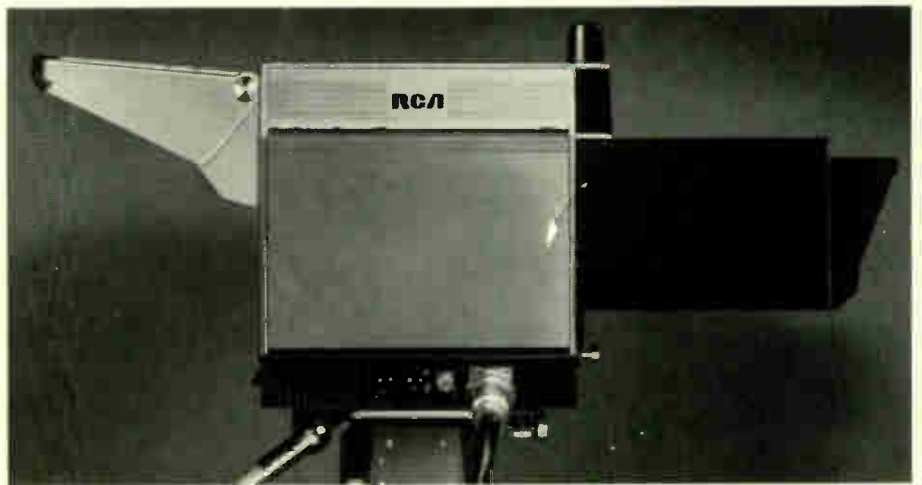
Circle Item 35 on Tech Data Card

camera is so our new 3-tuber?



RCA TK-42
(4-TUBE)

your needs!



RCA TK-44A
(3-TUBE)

RCA

TV CABLE SUPPLY CO
TIMES WIRE AND CABLE
VIKOA INC

Cable, Coaxial, Flexible

ALPHA WIRE
AMECO INC
AMPHENOL CORP
ANACONDA ELECTRONICS
ANDREW CORP
ANDREWS TOWERS INC
BELDEN CORP
BIRNBACH CO INC
BOSTON INSULATED
BRAND REX
CATV EQUIPMENT CO
COLUMBIA ELECTRONIC CBL
COMMUNICATION PROD DIV
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GENERAL CABLE CORP
GOTHAM AUDIO CORP
GULF ELECTRO SALES INC
IRC DIV TRW INC
JAMPRO ANTENNA CO
JERROLD ELECTRONICS CO
KATONA ELECTRONICS CO
LISTEC TV EQUIP CORP
PHELPS DODGE ELECTRONIC
PRODELIN INC
PRUIZAN CO
ROME CABLE DIV
SAXTON PROD INC
SAXTON PROD INC
SINGER PROD CO INC
SUPERIOR CONTINENTAL CO
TERMINAL HUDSON ELECTRS
TIMES WIRE AND CABLE
VIKOA INC
WEINSCHL ENGINEERING CO

Cable, Coaxial, Rigid

ALPHA WIRE
AMPHENOL CORP
ANDREW CORP
ANDREWS TOWERS INC
COLUMBIA ELECTRONIC CBL
COMMUNICATION PROD DIV
GATES RADIO CO
GENERAL CABLE CORP
IRC DIV TRW INC
JAMPRO ANTENNA CO
PHELPS DODGE ELECTRONIC
PRODELIN INC
ROME CABLE DIV
SAXTON PROD INC
SAXTON PROD INC
SINGER PROD CO INC
TIMES WIRE AND CABLE
WEINSCHL ENGINEERING CO

Cable, Direct-Burial

ALPHA WIRE
AMPHENOL CORP
ANACONDA ELECTRONICS
ANDREWS TOWERS INC
BELDEN CORP
BIRNBACH CO INC
BOSTON INSULATED
BRAND REX
COLUMBIA ELECTRONIC CBL
GENERAL CABLE CORP
KATONA ELECTRONICS CO
LISTEC TV EQUIP CORP
PHELPS DODGE ELECTRONIC
PRODELIN INC
ROME CABLE DIV
SAXTON PROD INC
SAXTON PROD INC
SINGER PROD CO INC
SUPERIOR CONTINENTAL CO
TV CABLE SUPPLY CO
TIMES WIRE AND CABLE
VIKOA INC

Cable, Shielded, Audio

ALPHA WIRE
AMPHENOL CORP
BELDEN CORP
BIRNBACH CO INC
BOSTON INSULATED
BRAND REX
COLUMBIA ELECTRONIC CBL
D AND B ELECTRONICS CO
G C ELECTRONICS
GATES RADIO CO
GENERAL CABLE CORP
GOTHAM AUDIO CORP
IRC DIV TRW INC

NORTRONICS CO INC
SAXTON PROD INC
SINGER PROD CO INC
VIKOA INC

Cable, Telephone

ALPHA WIRE
AMECO INC
BIRNBACH CO INC
BRAND REX
COLUMBIA ELECTRONIC CBL
G C ELECTRONICS
GENERAL CABLE CORP
GULF ELECTRO SALES INC
IRC DIV TRW INC
SAXTON PROD INC
SINGER PROD CO INC
SUPERIOR CONTINENTAL CO
VIKOA INC

Calibration Service, Instrument

B K INSTRUMENTS INC
COMM RADIO MONITORING
EIDSON ELECTRONIC CO
HONEYWELL INC
INSTRUMENT LAB CORP
POTOMAC INSTRUMENTS INC
SIMPSON ELECTRIC CO
WEINSCHL ENGINEERING CO
HEWLETT PACKARD CO

Calorimeters

BIRD ELECTRONIC CORP
CALVERT ELECTRONICS INC
NARDA MICROWAVE CORP
SINGER PROD CO INC
HEWLETT PACKARD CO

Camera, Mounting Equipment

AMECO INC
BURKE JAMES
DU VAL I FIT CORP
FB CECO INC
GBC CCTV
HOUSTON FEARLESS CORP
LISTEC TV EQUIP CORP
POWER OPTICS INC
PRECISION LAB
RCA BROADCAST COMM PRD
SHIRADEN CORP OF AMER
SINGER PROD CO INC
SYLVANIA COMM ELECTRONIC
TELEDYNE CO
TELEMATION INC
TELEQUIP CORP
VIKOA INC
VISUAL ELECTRONICS CORP
ZOOMAR INC
HEWLETT PACKARD CO

Camera, Remote (Control Equipment)

AMECO INC
DU VAL I FIT CORP
FB CECO INC
GBC CCTV
IKEGAMI CO LTD
INDUSTRIAL INSTRUMENT
LISTEC TV EQUIP CORP
POWER OPTICS INC
RCA BROADCAST COMM PRD
SHIRADEN CORP OF AMER
SONOCRAFT CORP
SYLVANIA COMM ELECTRONIC
TELE CINE INC
TELEMATION INC
TREPAC CORP AMERICA
TRACOR IND INST DIV

Cameras, Film, Cine

AMECO INC
ARRIFLEX CORP OF AMER
COHU ELECTRONICS INC
EASTMAN KODAK CO
FB CECO INC
FAIRCHILD INDUSTRIAL
GAF CORP
NORTH AMER PHILIPS AKG
NORTH AMERICAN PHILIPS
PRECISION LAB
TELEDYNE CO
TELEMATION INC

Cameras, Film, Still

BURKE JAMES
COHU ELECTRONICS INC
EASTMAN KODAK CO
GAF CORP
NORTH AMER PHILIPS AKG
NORTH AMERICAN PHILIPS
TRAIT CORP

Cameras, Oscilloscope

AMECO INC
FAIRCHILD INDUSTRIAL
METRICS DIV
TEKTRONIX INC
TELE CINE INC
TELEMATION INC
HEWLETT PACKARD CO

Cameras, TV, Color

AMECO INC
BELL HOWELL TAPE DIV
CATV EQUIPMENT CO
COHU ELECTRONICS INC
DU VAL I FIT CORP
GBC CCTV
GE VISUAL COMM PROD
IKEGAMI CO LTD
THE JANSON INDUSTRIES
LERRO ELECTRICAL CORP
MARCONI DIV
NORTH AMER PHILIPS AKG
NORTH AMERICAN PHILIPS
PACKARD BELL ELECTRONIC
RCA BROADCAST COMM PRD
SARKES TARZIAN INC
SHIRADEN CORP OF AMFR
TELE MEASUREMENTS INC

Cameras, TV, Monochrome

ATV RESEARCH
AMECO INC
BELL HOWELL TAPE DIV
BENDIX CORP
BRANFORD INFORMATION SYS
CATV EQUIPMENT CO
CANOGA ELECT CO
COHU ELECTRONICS INC
COLORADO VIDEO INC
CONCORD ELECT CORP
DAGE BELL DIV
DIAMOND ELECTRONICS
DU VAL I FIT CORP
GBC CCTV
GE VISUAL COMM PROD
GPL DIV SINGER GENERAL
GEN ELECTRODYNAMICS
GENERAL TELEVISION NTWK
IKEGAMI CO LTD
THE JANSON INDUSTRIES
JERROLD ELECTRONICS CO
LERRO ELECTRICAL CORP
MARCONI DIV
NEMO RECORDING LABS
NORTH AMER PHILIPS AKG
NORTH AMERICAN PHILIPS
PACKARD BELL ELECTRONIC
RCA BROADCAST COMM PRD
SARKES TARZIAN INC
SHIRADEN CORP OF AMER
SHINTRON CO INC
SONOCRAFT CORP
SONOCRAFT CORP
SONY CORP OF AMERICA
SYLVANIA COMM ELECTRONIC
TELEMATION INC
TELE MEASUREMENTS INC
VIKOA INC

Capacitors, Fixed, General

AMPEREX CORP
BUD RADIO INC
CORNELL DUBILIER ELEC
D AND B ELECTRONICS CO
G E DISTRIBUTOR SALES OP
G E ELECTRONIC COPONENTS
SEACOR INC

Capacitors, Fixed, Air

AMPEREX CORP
GENERAL RADIO CO
SINGER PROD CO INC

Capacitors, Fixed, Ceramic

AEROVOX CORP
AMPEREX CORP
CENTRALAB
CORNELL DUBILIER ELEC
D AND B ELECTRONICS CO
MALLORY
SINGER PROD CO INC
TELEFUNKEN SALES CORP
TERMINAL HUDSON ELECTRS

Capacitors, Fixed, Electrolytic

AEROVOX CORP
AMPEREX CORP
CORNELL DUBILIER ELEC
D AND B ELECTRONICS CO
G E DISTRIBUTOR SALES OP
G E ELECTRONIC COPONENTS
MALLORY
SINGER PROD CO INC
TELEFUNKEN SALES CORP
TERMINAL HUDSON ELECTRS

Capacitors, Fixed, Film

AEROVOX CORP
CORNELL DUBILIER ELEC
DEARBORN ELECTRONICS DIV
G E DISTRIBUTOR SALES OP
G E ELECTRONIC COPONENTS
MALLORY
SEACOR INC
SINGER PROD CO INC
TELEFUNKEN SALES CORP
TERMINAL HUDSON ELECTRS
TEXAS INSTRUMENT

Capacitors, Fixed, Metalized

AEROVOX CORP
CENTRALAB
CORNELL DUBILIER ELEC
DEARBORN ELECTRONICS DIV
G E ELECTRONIC COPONENTS
SEACOR INC
SINGER PROD CO INC
TERMINAL HUDSON ELECTRS

Capacitors, Fixed, Mica

AEROVOX CORP
CORNELL DUBILIER ELEC
GENERAL RADIO CO
SINGER PROD CO INC
TERMINAL HUDSON ELECTRS

Capacitors, Fixed, Oil-Filled

AEROVOX CORP
CORNELL DUBILIER ELEC
DEARBORN ELECTRONICS DIV
G E ELECTRONIC COPONENTS
SINGER PROD CO INC
TERMINAL HUDSON ELECTRS

Capacitors, Fixed, Paper

AEROVOX CORP
CORNELL DUBILIER ELEC
DEARBORN ELECTRONICS DIV
G E ELECTRONIC COPONENTS
SEACOR INC
SINGER PROD CO INC
TERMINAL HUDSON ELECTRS

Capacitors, Fixed, Other

AEROVOX CORP
CALVERT ELECTRONICS INC
CORNELL DUBILIER ELEC
DEARBORN ELECTRONICS DIV
G E ELECTRONIC COPONENTS
ITT JENNINGS
MALLORY
OMITE MFG CO
SINGER PROD CO INC
TERMINAL HUDSON ELECTRS

Capacitors, Variable

RUD RADIO INC
CALVERT ELECTRONICS INC
CENTRALAB
GENERAL RADIO CO
HAMMARLUND MFG
ITT JENNINGS
SARKIS TARZIAN INC
SINGER PROD CO INC
TELEFUNKEN SALES CORP
TERMINAL HUDSON ELECTRS

Carrier Current Equipment

BAUER ELECTRONICS CORP
G E ELECTRONIC COMPONENTS

Cartridges, Magnetic Tape

AMERLINE CORP
BROADCAST ELECTRONICS
CHANNEL MARKETING INC
CINE SONIC SOUND INC
GATES RADIO CO
INTERNL GOOD MUSIC INC
MAGNATECH CO
MAGNA TECH CORP
MAGNETIC PROD DIV
MARATHON BROADCAST EQUIP
MACARTA INC
RCA BROADCAST COMM PRD
SINGER PROD CO INC
TAPECASTER
TELEXCOMMUNICATIONS DIV
AUDIO DEVICES
SPARTA FLECT CORP
STANTON MAGNETICS INC

Cartridges, Phone

BROADCAST ELECTRONICS
ELECTRO VOICE INC
G E DISTRIBUTOR SALES OP
G F ELECTRONIC COMPONENTS
GATES RADIO CO
GOTHAM AUDIO CORP
SHURE BROTHERS INC
SINGER PROD CO INC
SPARTA ELECT CORP
STANTON MAGNETICS INC

Cartridge, Tape (Recording Service)

BROADCAST ELECTRONICS
CINE SONIC SOUND INC
MAGNA TECH CORP
SINGER PROD CO INC
STANTON MAGNETICS INC

Cases, Portable (Electronic Equipment)

ENCLOSURE CORP
FIBRE PRODUCTS MFG CO
METROLOGIE COMPAGNIE GEN

CATV Equipment & Components (Also See Other Categories)

AMER CARLE ELECTRONICS
AMER ELECTRONIC LAB
ANACONDA ELECTRONICS
BIRNBACH CO INC
BLONDER TONGUE LAB INC
BRADFORD INFORMATION SYS
CATV EQUIPMENT CO
C COR ELECTRONICS
CASCADE ELECTRONICS LTD
DAVE BELL DIV
DAVCO ELECTRONICS CORP
DYNAIR ELECTRONICS
ELECTROLINE TV EQUIP INC
ESSEX WIRE CO RRM DIV
FORT WORTH TOWER CO
INTERNL GOOD MUSIC INC
JERROLD ELECTRONICS CO
KAISER COX CORP
KATONA ELECTRONICS CO
MICROWAVE ASSOC INC
PRUZAN CO
R F SYSTEMS
SCANTLIN ELECTRONICS
SPENCER KENNEDY LAB
SURFACE CONSTRUCTION
TV CABLE SUPPLY CO
TAPE ATHON CORP
TELE MEASUREMENTS INC
TELEVISION PRESENTATIONS
TEXAS ELECTRONICS
TEXSCAN CORP
ULTRA AUDIO PRODUCTS
VIDEOMETRICS INC

CATV, Cable Terminals

BIRNBACH CO INC
CATV EQUIPMENT CO
C COR ELECTRONICS
ENTRON INC
ESSEX WIRE CO RRM DIV
JERROLD ELECTRONICS CO
KAISER COX CORP
PRUZAN CO
SAXTON PROD INC
SPENCER KENNEDY LAB
TV CABLE SUPPLY CO
VIKOA INC

CATV, Channel Amplifiers

AMER ELECTRONIC LAB
BLONDER TONGUE LAB INC
CATV EQUIPMENT CO
CASCADE ELECTRONICS LTD
JERROLD ELECTRONICS CO
KAISER COX CORP
KATONA ELECTRONICS CO
PRUZAN CO
SPENCER KENNEDY LAB
TV CABLE SUPPLY CO
VIKOA INC

CATV Head-End Equipment

AMER ELECTRONIC LAB
ANACONDA ELECTRONICS
BLONDER TONGUE LAB INC
CATV EQUIPMENT CO
C COR ELECTRONICS
COHU ELECTRONICS INC
DYNAIR ELECTRONICS
ENTRON INC
JERROLD ELECTRONICS CO

KAISER COX CORP
KAISER COX CORP
MICROWAVE ASSOC INC
MICROWAVE ASSOC INC
PRUZAN CO
R F SYSTEMS
ROHN MFG CO
SPENCER KENNEDY LAB
TV CABLE SUPPLY CO
VIKOA INC

CATV, Origination Equipment

ALMA ENGINEERING
AMER CARLE ELECTRONICS
AMER ELECTRONIC LAB
BLONDER TONGUE LAB INC
CATV EQUIPMENT CO
THE CATFL CORP
COHU ELECTRONICS INC
DAVE BELL DIV
DIAMOND ELECTRONICS
DYNAIR ELECTRONICS
GPL DIV SINGR GENERAL
GEN ELECTRODYNAMICS
KAISER COX CORP
KATONA ELECTRONICS CO
MICROWAVE ASSOC INC
ORBIT RADIO AND VIDEO
RCA BROADCAST COMM PRD
SCANTLIN ELECTRONICS
SHINTRON CO INC
SONY CORP OF AMERICA
SYLVANIA COMM ELECTRONIC
TV CABLE SUPPLY CO
TAPE ATHON CORP
TAPECASTER
TARTAN ELECTRONICS CORP
TELEVISION INC
TELEVISION PRESENTATIONS
TEXAS ELECTRONICS
VIKOA INC
ZOOMAR INC

Cavities, Microwave

MICROLAR
MICROWAVE ASSOC INC

NARDA MICROWAVE CORP
RCA ELECTRONIC COMP DEV

Chargers, Battery

ALLIED ELECTRONIC CORP
AMPHENOL CORP
G F ELECTRONIC COMPONENTS
KATO ENGINEERING CO
POWER SOURCES TECH OPER
SENCORE INC
SINGER PROD CO INC

Chassis (See Hardware)

VENT RAK INC

Chokes, Waveguide

ELECTRONIC RFS LABS INC
MICROLAR
MICROWAVE ASSOC INC
NARDA MICROWAVE CORP

Choppers

ENGINEERING ASSOC
G E ELECTRONIC COMPONENTS
SINGER PROD CO INC

Circuit Breakers

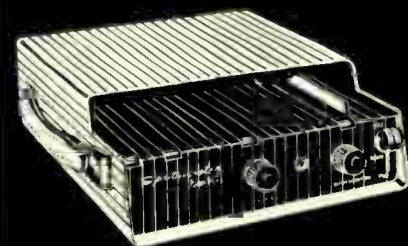
G E ELECTRONIC COMPONENTS
HOUSTON ELECTRONICS
ITT JENNINGS
MALLORY

Circuits, Printed

ATV RESEARCH
AMECO INC
COLLINS RADIO CO
D AND R ELECTRONICS CO

Manu-
fac-
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Ad-
dress
List
Begins
on page
24

SPOTMASTER



PortaPak I Cartridge Playback Unit

Your time salesmen will wonder how they ever got along without it! Completely self-contained and self-powered, PortaPak I offers wide-range response, low distortion, plays all sized cartridges anywhere and anytime. It's solid state for rugged dependability and low battery drain, and recharges overnight from standard 115v ac line. Packaged in handsome stainless steel with a hinged lid for easy maintenance, PortaPak I weighs just 11½ lbs. Vinyl carrying case optional.

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Spotmaster

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Satisfaction Guaranteed!



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ANDREWS TOWERS INC
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G C ELECTRONICS
GENERAL CABLE CORP
SINGER PROD CO INC
TV CABLE SUPPLY CO
TFLQUIP CORP

Clamps, Component

BIRNBACH CO INC
INTERNATIONAL ELEC RES
SINGER PROD CO INC

Clamps, Ground

AMECO INC
BIRNBACH CO INC
DIAMOND EXPANSION BOLI
G C ELECTRONICS
PRUZAN CO
SINGER PROD CO INC

Clamps, Tube

BIRNBACH CO INC
INTERNATIONAL ELEC RES
SINGER PROD CO INC

Cleaners, Air

TEFWIPE CO

Cleaners, Chemical (Also See Solvents)

GAF CORP
NEUMADE PROD CORP
SINGER PROD CO INC
TEFWIPE CO
MILLER STEPHENSON CO

Cleaners, Lens

BURKE JAMES
FB CECO INC
TEFWIPE CO

Cleaners, Other (Also See Solvents)

FB CECO INC
MINNEAPOLIS MAGNETICS
TEXWIPE CO

Clips, Test

E Z HOOK TEST PRODUCTS

Clocks & Chronographs

BRADFORD INFORMATION SYS
BROADCAST PROD CO INC
CHRONO LOG CORP
ELECTRODYNE CORP
GIBBS MFG RESEARCH CO
INTERNL GOOD MUSIC INC
LISTEC TV EQUIP CORP
PARABAM INC
RIKER VIDEO INDUSTRIES
VISUAL ELECTRONICS CORP

Coils (Also See inductances)

DELTA ELECTRONICS INC

Coils, Antenna Loading

COLLINS RADIO CO
DELTA ELECTRONICS INC
GATES RADIO CO

Coils, Choke, RF

BARKER WILLIAMSON DIV
CALBEST ELECTRONICS
TERMINAL HUDSON ELECTRS

Coils, Deflection and Focusing

ATV RESEARCH
CLEVELAND ELECTRONICS

Coils, Telephone

GULF ELECTRO SALES INC

Colorimeters

GARDNER LAB INC
HONEYWELL INC
ZOOMAR INC

Communications Systems

CB
AMPHENOL CORP
HEATH CO
MICROWAVE ASSOC INC
RCA ELECTRONIC COMP DEV
SINGER PROD CO INC
UTICA ELECTRONICS

Communications Systems

Intercom, Wired
ALCO ELECTRONIC PROD

ALCOR INC
AMER GELOSO ELECTRONICS
BOGEN COMMUNICATIONS
CALBEST ELECTRONICS
CANOGA ELECT CO
CENTRAL DYNAMICS CORP
COMREX CORP
FAIRCHILD RECORDING EQUIP
FISHER BERKELEY CORP
GULF ELECTRO SALES INC
HEATH CO
MCMARTIN INDUSTRIES INC
ROUND HILL ASSOC
SINGER PROD CO INC
SURFACE CONSTRUCTION
ULTRA AUDIO PRODUCTS
VISUAL ELECTRONICS CORP
WARD ELECTRONIC INDUS

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Plus . . . offering the Industry's First 3-Month Guarantee On All Tape Cartridges.

SPECIAL REDUCED PRICES! WRITE FOR LATEST PRICE LIST!

Complete Service Also on Re-loading Tape Cartridges With Long Lasting Lubricated Tape.

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tape heads --
completely**



**send for free
samples and
literature.**

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and MOTION PICTURE

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GRAND RAPIDS, MICHIGAN 49507

616-452-0309

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Communications Systems, Intercom, Wireless

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ALLIED ELECTRONIC CORP
ROGEN COMMUNICATIONS
CANOGA ELECT CO
FB CECO INC
HEATH CO
MILES REPRODUCER CO
ROUND HILL ASSOC
SURFACE CONSTRUCTION
VISUAL ELECTRONICS CORP

Communications Systems, Land, Mobile

CANOGA ELECT CO
COLLINS RADIO CO
COMREX CORP
HAMMARLUND MFG
MARTI ELECTRONICS
MOSELEY ASSOC INC
MOSELEY ELECTRONICS
RCA BROADCAST COMM PRD
SINGER PROD CO INC
SURFACE CONSTRUCTION

Communications Systems, Microwave

AMER ELECTRONIC LAB
ANDREW CORP
CANOGA ELECT CO
COLLINS RADIO CO
COLLINS RADIO CO
JERROLD ELECTRONICS CO
LENKURT ELECTRIC CO INC
MARTI ELECTRONICS
MICRO LINK DIV
MICROWAVE ASSOC INC
MICROWAVE ASSOC INC
MOSELEY ASSOC INC
MOSELEY ELECTRONICS
PRODELIN INC
RCA BROADCAST COMM PRD
SARKES TARZIAN INC
SINGER PROD CO INC
SURFACE CONSTRUCTION
TELEFUNKEN SALES CORP

Communications Systems, Multiplex

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CALBEST ELECTRONICS
CANOGA ELECT CO
COLLINS RADIO CO
COLLINS RADIO CO
LENKURT ELECTRIC CO INC
MOSELEY ASSOC INC
MOSELEY ELECTRONICS
NOLLER CONTROL SYSTEMS
RCA BROADCAST COMM PRD
RFE LABS
SCANTLIN ELECTRONICS
SINGER PROD CO INC
SURFACE CONSTRUCTION
TELEFUNKEN SALES CORP

Communications Systems, Teleprinter

COLLINS RADIO CO
MARCONI DIV
SCANTLIN ELECTRONICS
SINGER PROD CO INC
TREPAC CORP AMERICA

Computer Equipment

COLLINS RADIO CO
COLORADO VIDEO INC
G F ELECTRONIC COPONENIS
HEATH CO
INTERNL GOOD MUSIC INC
SARKES TARZIAN INC
SCANTLIN ELECTRONICS
HARVEY RADIO CO INC

Connectors, AF & Microphone

AMPHENOL CORP
DIALIGHT CORP
SINGER PROD CO INC
SWITCHCRAFT INC

Connectors, Antenna

AMPHENOL CORP
ANDREW CORP

G C ELECTRONICS
GATES RADIO CO
GILBERT ENGINEERING CO
INDUSTRIAL ELECTRONIC
PHELPS DODGE ELECTRONIC
PRODELIN INC
SINGER PROD CO INC
TERMINAL HUDSON ELECTRS

Connectors, Coaxial Cable

AMER CABLE ELECTRONICS
AMPHENOL CORP
ANACONDA ELECTRONICS
ANDREW CORP
ANDREWS TOWERS INC
BLONDER TONGUE LAB INC
CATV EQUIPMENT CO
CEI
COMMUNICATION PROD DIV
D AND B ELECTRONICS CO
G C ELECTRONICS
GATES RADIO CO
GILBERT ENGINEERING CO
JERROLD ELECTRONICS CO
KAISER COX CORP
KATONA ELECTRONICS CO
ELECTRONIC RES LABS INC
NARDA MICROWAVE CORP
PHELPS DODGE ELECTRONIC
POTOMAC INSTRUMENTS INC
PRODELIN INC
SAXTON PROD INC
SINGER PROD CO INC
SOLITRON DEVICES INC
SUPERIOR CONTINENTAL CO
TV CABLE SUPPLY CO
TERMINAL HUDSON ELECTRS
TIMES WIRE AND CABLE
TROMPETER ELECTRONICS
VIKOA INC
WEINSCHTEL ENGINEERING CO

Connectors, Power

AMPHENOL CORP
SINGER PROD CO INC
SOLITRON DEVICES INC
TERMINAL HUDSON ELECTRS

Connectors, RF

AMPHENOL CORP
ANDREW CORP
ANDREWS TOWERS INC
BIRD ELECTRONIC CORP
BLONDER TONGUE LAB INC
COMMUNICATION PROD DIV
COOKE ENGINEERING CO
D AND B ELECTRONICS CO
GATES RADIO CO
GENERAL RADIO CO
MICROWAVE ASSOC INC
NARDA MICROWAVE CORP
PHELPS DODGE ELECTRONIC
POTOMAC INSTRUMENTS INC
PRODELIN INC
SINGER PROD CO INC
SOLITRON DEVICES INC
SUPERIOR CONTINENTAL CO
SWITCHCRAFT INC
TERMINAL HUDSON ELECTRS
TIMES WIRE AND CABLE
TROMPETER ELECTRONICS
VIKOA INC
WEINSCHTEL ENGINEERING CO

Console, Audio, AM

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ALMA ENGINEERING
ANCHA ELECTRONICS INC
ARBOR SYSTEMS INC
BAUER ELECTRONICS CORP
COLLINS RADIO CO
ELECTRODYNE CORP
FAIRCHILD RECORDING EQUIP
GE VISUAL COMM PROD
GATELY ELECTRONICS
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Broadcast Quality Audio Transformers (Input & Output) UNDER \$500 !!!

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AUDIO INPUT TRANSFORMER T-1087

Frequency Response: 20-20,000 Cycles,
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Input Impedance: Design Center 100
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50-150 Ohm Microphones)
Output Impedance: Design Center
1500 Ohms Unbalanced (May be
used to drive 2000-3000 Ohm
Loads)
Mounting: Flanges for Printed Circuit
Board
Size: $1\frac{1}{8}$ " Wide, $1\frac{1}{2}$ " Long, $1\frac{1}{4}$ " High
Weight: 4 Ounces
Shielding: MU Metal Shield, 20 DB
Connections: Wire Leads
Price: \$4.95

AUDIO OUTPUT TRANSFORMER T-1088

Frequency Response: 20-20,000 Cycles,
 $\pm 1/2$ DB
Power: 200 MW
Input Impedance: 8 Ohms (DC currents
up to 300 MA)
Output Impedance: 8 Ohms and 600
Ohms
Mounting: Flanges for Printed Circuit
Board
Size: $1\frac{1}{4}$ " Wide, $1\frac{3}{4}$ " Long, $1\frac{1}{2}$ " High
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MODEL SX 824

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Console, Audio, FM

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ALMA ENGINEERING
ANCHA ELECTRONICS INC
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BAUFR ELECTRONICS CORP
COLLINS RADIO CO
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ELECTRODYNE CORP
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GE VISUAL COMM PROD
GATELY ELECTRONICS
GATFS RADIO CO
GOTHAM AUDIO CORP
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IKEGAMI CO LTD
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SINGER PROD CO INC
TARTAN ELECTRONICS CORP
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UNITED RADIO SUPPLY INC
VISUAL ELECTRONICS CORP
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WILKINSON ELECT INC
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BAUFR ELECTRONICS CORP
BROADCAST PROD CO INC
COLLINS RADIO CO
COLLINS RADIO CO
DELTA ELECTRONICS INC
ELECTRODYNE CORP
FAIRCHILD RECORDING EQPT
GATELY ELECTRONICS
GATFS RADIO CO
GOTHAM AUDIO CORP
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MCMARTIN INDUSTRIES INC
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NORTH AMER PHILIPS AKG
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SHURE BROTHERS INC
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ULTRA AUDIO PRODUCTS
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VISUAL ELECTRONICS CORP
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WILKINSON ELECT INC
HARVEY RADIO CO INC
SPARTA ELECT CORP

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ARBOR SYSTEMS INC
BAUFR ELECTRONICS CORP
BROADCAST PROD CO INC
COLLINS RADIO CO
COLLINS RADIO CO
ELECTRODYNE CORP
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GATELY ELECTRONICS
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HOUSTON ELECTRONICS
LANG ELECTRONICS INC
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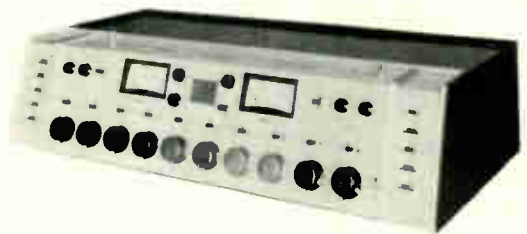
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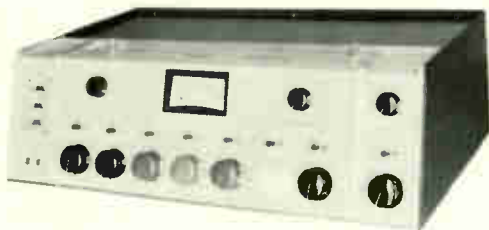
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A standard Wilkinson console must meet the Wilkinson standards for value, performance, and versatility.

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MODEL TACS-2B STEREO DUAL-CHANNEL CONSOLE



MODEL TAC-1B MONAURAL AUDIO CONSOLE

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MODEL TACS-3 DUAL CHANNEL CONSOLE

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Console, Audio, TV

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COLLINS RADIO CO
ENCLOSURE CORP
FAIRCHILD RECORDING EQPT
GATES RADIO CO

GRINMAN FIXTURE CO
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VENT RAK INC
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GRC CCTV
INTERNL NUCLEAR CORP
RIKER VIDEO INDUSTRIES
SARKES TARZIAN INC
SHIBADEN CORP OF AMER
SHINTRON CO INC
TARTAN ELECTRONICS CORP
WARD ELECTRONIC INDUS

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GRC CCTV
GE VISUAL COMM PROD
GPL DIV SINGER GENERAL
INTERNL NUCLEAR CORP
RCA BROADCAST COMM PRD
RIKER VIDEO INDUSTRIES
SARKES TARZIAN INC
SHIBADEN CORP OF AMER
SONOCRAFT CORP
SYLVANIA COMM ELECTRONIC
TARTAN ELECTRONICS CORP
UNIVERSAL AUDIO INC
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CANOGA FLECT CO
G E ELECTRONIC COPONENTS
HONEYWELL INC
KATO ENGINEERING CO
MICRO LINK DIV
SINGER PROD CO INC

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KATONA ELECTRONICS CO
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EIMAC DIV

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BIRNBACH CO INC
G C ELECTRONICS
SINGFR PROD CO INC

Cords, Lacing

BIRNBACH CO INC
SINGER PROD CO INC

Cords, Patch

AUDIO ACCESSORIES INC
BIRNBACH CO INC
CEI
D AND B ELECTRONICS CO
G C ELECTRONICS
GATES RADIO CO
GENERAL CABLE CORP
GULF ELECTRO SALES INC
HOLLAND ELECTRONICS
IRC DIV TRW INC
SARKES TARZIAN INC
SINGER PROD CO INC
SWITCHCRAFT INC
TROMPETER ELECTRONICS
APPLIED ELECT MECHANICS

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COLUMBIA ELECTRONIC CBL

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Cores, Transformer and Coil

G E ELECTRONIC COPONENTS

Counters, Frequency

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ENGINEERING ASSOC
G E ELECTRONIC COPONENTS
GENFRAL RADIO CO
HICKOK ELEC INSTRUMENT
HONEYWELL INC
KAY ELECTRIC CO
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GOTHAM AUDIO CORP

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AEROVOX CORP
G C ELECTRONICS
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LANG ELECTRONICS INC
MINNEAPOLIS MAGNETICS
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HEWLETT PACKARD CO
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Demagnetizers, Head

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LANG ELECTRONICS INC
SINGER PROD CO INC
SUPFRSCOPF INC
SPARTA ELECT CORP

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BELAR ELECTRONICS LAB
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Desiccants

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SPENCER KENNEDY LAB
TELONIC INSTRUMENTS
WEINSCHEL ENGINEERING CO

Detectors, Microwave

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G F ELECTRONIC COPONENTS
MICPOLAR
MICROWAVE ASSOC INC
NARDA MICROWAVE CORP
SOLITRON DEVICES INC
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Detectors, Standing Wave

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COLLINS RADIO CO

NARDA MICROWAVE CORP
ROHDF SCHWARZ SALFS
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TFXSCAN CORP
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IRC DIV TRW INC
MALLORY
SINGER PROD CO INC

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G E DISTRIBUTOR SALES OP
G E ELECTRONIC COPONENTS
IRC DIV TRW INC
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THOR ELECTRONICS CORP

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- Provides Black Burst or Colored Screen
- Full 360° Subcarrier Accommodation
- Two Outputs
- Only 1 3/4" High

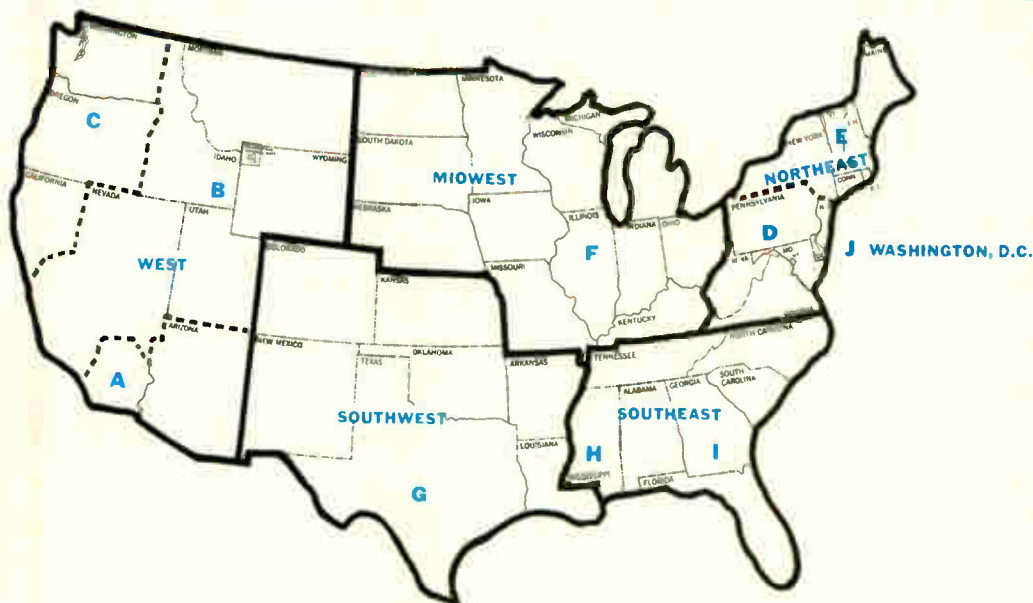
The CBG-1 Colored/Black Burst Generator lets you go to red, green, blue or any other hue by generating a synthetic color video signal. A single control knob permits selection of black burst or variable hue screen. The CBG-1 provides adjustable burst, sync, minimum blanking, luminance, chrominance and hue, and allows the color signal to be used as background for other material. With all front panel controls and monitors, the CBG-1 features full 360° subcarrier phase shift and two 75-ohm outputs within its compact 1 3/4" high configuration.



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Leonard Wolff, Sales Engineer

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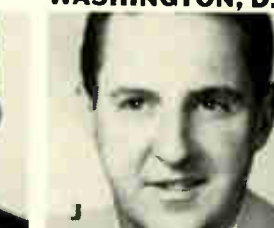
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Gino Nappo, Regional Manager



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Tel: 301/292-3690



Norelco

**PHILIPS BROADCAST
EQUIPMENT CORP.**

One Philips Parkway, Montvale, N.J. 07645 • 201/391-1000
Circle Item 44 on Tech Data Card

Dividers, Frequency

COLLINS RADIO CO
G E ELECTRONIC COPONENTS
HARTLEY PROD CORP
JENSEN MFG DIV
MICROLAB
PRFSFARCH INC
HEWLETT PACKARD CO

Dividers, Power

ALFDRD MFG CO
COLLINS RADIO CO
MICROLAB
MICROWAVE ASSOC INC
NARDA MICROWAVE CORP
TROMPETER ELECTRONICS
WEINSCHEL ENGINEERING CO

Dividers, Voltage

COLLINS RADIO CO
G E ELECTRONIC COPONENTS
GENERAL RADIO CO
ITT JENNINGS
OMITF MFG CO

Dollies, Camera (Dollies, Test Equipment)

REKLEY COLORTRAN INC
CANOGA ELECT CO
DU VAL I FIT CORP
FB CFCO INC
HOUSTON FEARLESS CORP
POWER OPTICS INC
PRECISION LAB
RCA BROADCAST COMM PRD
SHIBADEN CORP OF AMFR
SONOCRAFT CORP
SYLVANIA COMM ELECTRONIC
TEKTRONIX INC
TELEQUIP CORP
VISUAL ELECTRONICS CORP
WABER ELECTRONICS INC
ZOOMAR INC

Drafting Equipment

GAFF CORP

Dropout Compensator, Video Tape

RIKER VIDEO INDUSTRIES
VISUAL ELECTRONICS CORP

Ducts, Wiring

WABER ELECTRONICS INC

Dummy Load

AMER ELECTRONIC LAB
BIRD ELECTRONIC CORP
CCA ELECTRONICS
COLLINS RADIO CO
CONTINENTAL ELECTRONICS
GATES RADIO CO
JAMPRO ANTENNA CO
LECTRONIC RES LABS INC
MICROLAB
MULTRONICS INC
ROHDE SCHWARZ SALES
SINGER PROD CO INC
SOLITRON DEVICES INC
TROMPETER ELECTRONICS
WATERS MFG INC
WEINSCHEL ENGINEERING CO

E

Earphones, Headphones

AMER GELOSO ELECTRONICS
DUOTONE CO INC
FR CFCO INC
G C ELECTRONICS
GOTHAM AUDIO CORP
HEATH CO
JENSEN MFG DIV
KOSS ELECTRONICS INC
NORTH AMER PHILIPS AKG

NORTH AMERICAN PHILIPS
SENNHEISER ELECTRONICS
SINGER PROD CO INC
SUPERSCOPE INC
SYLVANIA COMM ELECTRONIC
TELEXCOMMUNICATIONS DIV
MAGNECORD

Echo Devices (See Amplifiers, Reverberation Devices)

FAIRCHILD RECORDING EQPT
GATELY ELECTRONICS
GOTHAM AUDIO CORP
NORTH AMER PHILIPS AKG
ORBIT RADIO AND VIDEO
UNIVERSAL AUDIO INC

Editors, Audio Tape

NFMO RECORDING LABS
RANGERTONE ELECTRONICS

Editors, Film

BURKE JAMES
FB CFCO INC
THE KALART CO INC
NFUMADP PROD CORP

Editors, Video Tape

CENTRAL DYNAMICS CORP
GBC CCTV
GOTHAM AUDIO CORP
RCA BROADCAST COMM PRD
SHIBADEN CORP OF AMER
VISUAL ELECTRONICS CORP

Education Facilities, Publishers

DIVERSIFIED CONSULTANTS
GRANTHAM SCHOOL OF ENGR
JENSEN MFG DIV
NORTH AMER PHILIPS AKG
NORTH AMERICAN PHILIPS
RECORDEX CORP
SINGER PROD CO INC

Education Facilities, Equipment

ALCOR INC
CANOGA ELECT CO
COMREX CORP
DAGE BELL DIV
DELTA ELECTRONICS INC
ELECTRONIC DESIGNERS INC
GATES RADIO CO
GENERAL TELEVISION NTWK
INTERNL GOOD MUSIC INC
THE JANSON INDUSTRIES
LEROE ELECTRICAL CORP
MCMARTIN INDUSTRIES INC
MICRO LINK DIV
NORTH AMER PHILIPS AKG
NORTH AMERICAN PHILIPS
RCA BROADCAST COMM PRD
RECORDEX CORP
RUST CORP
SONOCRAFT CORP
SYLVANIA COMM ELECTRONIC
TECH FILM LABS INC
TREPAC CORP AMERICA
WABER ELECTRONICS INC
H WILSON CORP
MAGNECORD

Education Facilities, Schools

ALCOR INC
CREI HOME STUDY DIV
GRANTHAM SCHOOL OF ENGR
INTERNL GOOD MUSIC INC
MCMARTIN INDUSTRIES INC
MICRO LINK DIV
RECORDEX CORP
RUST CORP
SHINTRON CO INC
TECH FILM LABS INC

Electric Motors (See Hardware)

G E ELECTRONIC COPONENTS
KATO ENGINEERING CO

Enclosures, Speaker

ALCOR INC
ELECTRO VOICE INC
GATES RADIO CO
HARTLEY PROD CORP
NORTH AMER PHILIPS AKG
NORTH AMERICAN PHILIPS
SINGER PROD CO INC

Enhancers, TV Image

COLORADO VIDEO INC
DYNASCIENCES CORP
GEN ELECTRODYNAMICS
GRASS VALLEY GROUP
SARKES TARZIAN INC
VISUAL ELECTRONICS CORP
CRS LABS

Equalizers, Audio Emphasis

B K INSTRUMENTS INC
ELECTRODYNE CORP
FAIRCHILD RECORDING EQPT
GATELY ELECTRONICS
GOTHAM AUDIO CORP
GRAY RESEARCH DEV
LANG ELECTRONICS INC
MELCOR ELECTRONICS CORP
PAINTON INC
PULSE TECHNIQUES INC
ULTRA AUDIO PRODUCTS

Escutcheons

W H BRADY CO

Erasers, Magnetic (See Heads And Demagnetizers)

CHANNEL MARKETING INC
DUOTONE CO INC
GATES RADIO CO
LANG ELECTRONICS INC
MINNEAPOLIS MAGNETICS
NORTRONICS CO INC
ALBERT SCHULTZ INC

Exciters, FM

AMER ELECTRONIC LAB
BELAR ELECTRONICS LAB
CCA ELECTRONICS
COLLINS RADIO CO
COLLINS RADIO CO
GATES RADIO CO
MARTI ELECTRONICS
MOSELEY ELECTRONICS
SINGER PROD CO INC
WILKINSON ELECT INC

Exposure Meter (See Meters, Light)

BURKE JAMES
FB CFCO INC
PHOTO RESEARCH CORP
ZOOMAR INC

F

Facsimile Equipment

SHINTRON CO INC
SINGER PROD CO INC

Film, Photographic

EASTMAN KODAK CO
FR CFCO INC
GAFF CORP

Film, Processing Service

EASTMAN KODAK CO
PHOTO LAB INC
RUSSELL FILM LAB
TECH FILM LABS INC
WTTW RECORDING SERV
HOUSTON PHOTO PROD INC
JAMIESON FILM CO
LIPSNER SMITH
TREISE ENGINEERING

Filters, Antenna

BIRD ELECTRONIC CORP
COLLINS RADIO CO
G C ELECTRONICS
MCMARTIN INDUSTRIES INC

MICROLAB
SINGER PROD CO INC
TT ELECTRONICS INC
TV CABLE SUPPLY CO
VIKOA INC
JFD ELECTRONICS CO

Filters, Audio

AEROVOX CORP
ALCOR INC
ALLEN AVIONICS INC
ALTEC LANSING
B K INSTRUMENTS INC
BROADCAST PROD CO INC
COLLINS RADIO CO
CORNELL DUBILIER ELEC
D AND B ELECTRONICS CO
ELECTRODYNE CORP
FAIRCHILD RECORDING EQPT
GENERAL RADIO CO
GOTHAM AUDIO CORP
INTERNL GOOD MUSIC INC
MCMARTIN INDUSTRIES INC
MULTIMETRICS INC
PULSE TECHNIQUES INC
SINGER PROD CO INC
TT ELECTRONICS INC
TREPAC CORP AMERICA
ULTRA AUDIO PRODUCTS
UNIVERSAL AUDIO INC
KAPPA NETWORKS

Filters, RF

ALLEN AVIONICS INC
AMER ELECTRONIC LAB
BIRD ELECTRONIC CORP
BLONDER TONGUE LAB INC
CCA ELECTRONICS
COLLINS RADIO CO
CORNELL DUBILIER ELEC
D AND B ELECTRONICS CO
ENTRON INC
GE VISUAL COMM PROD
JAMPRO ANTENNA CO
KATONA ELECTRONICS CO
LECTRONIC RES LABS INC
MULTIMETRICS INC
NARDA MICROWAVE CORP
SINGER PROD CO INC
SOLITRON DEVICES INC
SPENCER KENNEDY LAB
TT ELECTRONICS INC
TEXSCAN CORP
VIKOA INC

Filters, Other

ALLEN AVIONICS INC
CATV EQUIPMENT CO
COLLINS RADIO CO
CORNELL DUBILIER ELEC
FB CFCO INC
GAFF CORP
MICROLAB
MOLE RICHARDSON CO
MULTIMETRICS INC
PIEZO CRYSTAL CO
TT ELECTRONICS INC
VIDEOON CORP
WATERS MFG INC
HEWLETT PACKARD CO
KAPPA NETWORKS

Flashers, Tower

GATES RADIO CO
HOUSTON ELECTRONICS
LITTLE JOE ENTERPRISES
SINGER PROD CO INC
HUGHFY PHILLIPS INC

Frames, Mounting

BURKE JAMES

Frequency Measurement Services (See Calibration Service, Frequency)

COMM RADIO MONITORING
EIDSON ELECTRONIC CO
JUMP ELECTRONICS
SIMPSON ELECTRIC CO

Fuses

G E ELECTRONIC COPONENTS
SINGER PROD CO INC

G

Gaussmeter

G E ELECTRONIC COPONENTS
HEWLETT PACKARD CO

Generators, FM, Stereo

ALLIED ELECTRONIC CORP
AMER ELECTRONIC LAB
BELAR ELECTRONICS LAB
CCA ELECTRONICS
COLLINS RADIO CO
COLLINS RADIO CO
COLLINS RADIO CO
GATES RADIO CO
HEATH CO
HICKOK ELEC INSTRUMENT
KARG LAB INC
LEADER INSTRUMENTS CORP
MCMARTIN INDUSTRIES INC
MOSELEY ASSOC INC
MOSELEY ELECTRONICS
RCA ELECTRONIC COMP DEV
ROHDE SCHWARZ SALES
SFNCORF INC
SINGER PROD CO INC
TEXSCAN CORP
WILKINSON ELECT INC

Generators, FM, Subcarrier

AMER ELECTRONIC LAB
CCA ELECTRONICS
COLLINS RADIO CO
COLLINS RADIO CO
GATES RADIO CO
HICKOK ELEC INSTRUMENT
MARTI ELECTRONICS
MCMARTIN INDUSTRIES INC
MOSELEY ASSOC INC
MOSELEY ELECTRONICS
SINGER PROD CO INC
WILKINSON ELECT INC

Generators, Power Electric Motor

COLUMBIA ELECTRIC MFG CO
G E ELECTRONIC COMPONENTS
KATO ENGINEERING CO

Generators, Power, Gasoline Engine

FB CECO INC
GATES RADIO CO
KATO ENGINEERING CO
MOLE RICHARDSON CO
SINGER PROD CO INC
TV CABLF SUPPLY CO
Generators, Signal, AF
B K INSTRUMENTS INC
BARKER WILLIAMSON DIV
DELTA ELECTRONICS INC
GENERAL RADIO CO
GIBBS MFG RESEARCH CO
HEATH CO
HICKOK ELEC INSTRUMENT
KAY ELECTRIC CO
LEADER INSTRUMENTS CORP
METROLOGIE COMPAGNIE GEN
N F ELECTRONICS CORP
RCA ELECTRONIC COMP DEV

ROHDE SCHWARZ SALES
TEXSCAN CORP
HEWLETT PACKARD CO

Generators, Signal, Color Bar

ALLIED ELECTRONIC CORP
ENGINEERING ASSOC
HEATH CO
HICKOK ELEC INSTRUMENT
LEADER INSTRUMENTS CORP
MARCONI DIV
METROLOGIE COMPAGNIE GEN
RCA BROADCAST COMM PRD
RCA ELECTRONIC COMP DEV
RICHMOND HILL
RIKER VIDEO INDUSTRIES
SHIBADEN CORP OF AMER
TELEMATION INC
TELE MEASUREMENTS INC
TELEMET CO
VIDEOMETRICS INC
VIDFON CORP
VISUAL ELECTRONICS CORP

Generators, Signal, Dot Bar

COLORADO VIDEO INC
HEATH CO
HICKOK ELEC INSTRUMENT
LEADER INSTRUMENTS CORP
MARCONI DIV
RCA ELECTRONIC COMP DEV
RICHMOND HILL
RIKER VIDEO INDUSTRIES
SFNCORF INC
SHIBADEN CORP OF AMER
TEKTRONIX INC
TELEMATION INC
TELE MEASUREMENTS INC
VIDEOMETRICS INC
VIDEON CORP
VISUAL ELECTRONICS CORP

Generators, Signal Marker

BLONDER TONGUE LAB INC
KAY ELECTRIC CO
LEADER INSTRUMENTS CORP
METROLOGIE COMPAGNIE GEN
RCA ELECTRONIC COMP DEV
SHIBADEN CORP OF AMER
TEKTRONIX INC
HEWLETT PACKARD CO

Generators, Signal Pulse

CANOGA ELECT CO
DATA PULSE
FB CECO INC
GENERAL RADIO CO
HICKOK ELEC INSTRUMENT
HONEYWELL INC
NARDA MICROWAVE CORP
RICHMOND HILL
TEKTRONIX INC
VIDEOMETRICS INC
VISUAL ELECTRONICS CORP
HEWLETT PACKARD CO

Generators, Signal, RF

ALLIED ELECTRONIC CORP
BLONDER TONGUE LAB INC
CANOGA ELECT CO
DELTA ELECTRONICS INC
ENGINEERING ASSOC
GENERAL RADIO CO
GIBBS MFG RESEARCH CO
HEATH CO
HICKOK ELEC INSTRUMENT
KAY ELECTRIC CO
LEADER INSTRUMENTS CORP
NARDA MICROWAVE CORP
RCA ELECTRONIC COMP DEV
RICHMOND HILL
ROHDE SCHWARZ SALES
SHIBADEN CORP OF AMER
SPENCER KENNEDY LAB
TEXSCAN CORP
TRIPLETT ELEC INSTRUMENT
WEINSCHEL ENGINEERING CO
HEWLETT PACKARD CO

Generators, Signal, Special Effect

B K INSTRUMENTS INC
CENTRAL DYNAMICS CORP
COLORADO VIDEO INC
CONCORD ELECT CORP
DYNAIR ELECTRONICS
GRASS VALLEY GROUP
MARCONI DIV



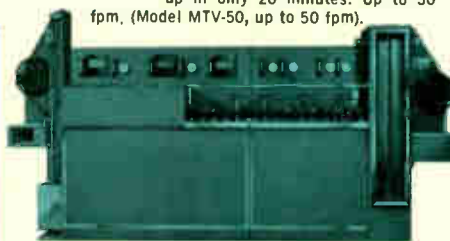
You gain profit & prestige when you show local news in COLOR!

Treise offers color processors in any size... any speed... any type to meet your TV Station needs!

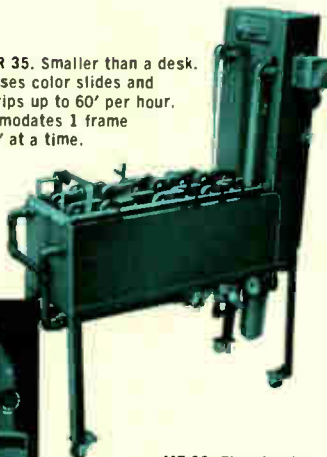
When you film your local news in color, you gain added interest from your community... enhance your value to advertisers... and brighten your profit picture. Treise makes it possible by offering you a complete line of professional quality color processors that will have your local news "on the air" in color minutes after it happens.

We provide color processors in any size, speed, or type — from small "desk-size" models to giant high-speed 150 fpm processors. Moreover, we will custom design or build units to meet your individual needs. If you have special requirements, our technical staff will be happy to study them and offer the best solution.

MTV-30. Compact, self-contained unit can be operated in 17' x 9' area. Warms up in only 20 minutes. Up to 30 fpm. (Model MTV-50, up to 50 fpm).



JUNIOR 35. Smaller than a desk. Processes color slides and filmstrips up to 60' per hour. Accommodates 1 frame to 100' at a time.



MT-20. Finest color processor ever created. Up to 70 fpm. Designed for TV stations requiring high volume in a short period of time.



WRITE FOR FREE CATALOG

TREISE ENGINEERING, INC.
1941 FIRST ST. • SAN FERNANDO, CALIF. 91340 • (213) 365-3124
Circle Item 45 on Tech Data Card

RICHMOND HILL
RIKER VIDEO INDUSTRIES
SHIBADEN CORP OF AMER
SHINTRON CO INC
TELEMATION INC
TELE MEASUREMENTS INC
TELFMET CO
VIDFON CORP
APPLIED ELECT MECHANICS

Generators, Signal, Square Wave

GENERAL RADIO CO
HFATH CO
HICKOK ELEC INSTRUMENT
LEADER INSTRUMENTS CORP
PARARAM INC
SHIBADEN CORP OF AMER
TEKTRONIX INC
TELEMATION INC
TELE MEASUREMENTS INC
TELFMET CO
UNIVERSAL AUDIO INC
VIDEOMETRICS INC
WFINSCHER ENGINEERING CO
HEWLETT PACKARD CO

Generators, Signal, TV Synchronizing

CENTRAL DYNAMICS CORP
CHRONO LOG CORP
COMU ELECTRONICS INC
COLORADO VIDEO INC
CONCORD ELECT CORP
DAGE BELL DIV
DU VAL I FIT CORP
DYNAIR ELECTRONICS
ELECTRONIC DESIGNERS INC
GE VISUAL COMM PROD
GPL DIV SINGER GENERAL
GEN ELECTRODYNAMICS
GRASS VALLEY GROUP
IKFGAMI CO LTD
INDUSTRIAL INSTRUMENT
MARCONI DIV
PRESEARCH INC
RCA BROADCAST COMM PRD
RICHMOND HILL
RIKER VIDEO INDUSTRIES
ROHDE SCHWARZ SALES
SARKES TARZIAN INC
SHIBADEN CORP OF AMER
SHINTRON CO INC
SYLVANIA COMM ELECTRONIC
TEKTRONIX INC
TELEMATION INC
TELE MEASUREMENTS INC
TELFMET CO
TEXSCAN CORP
VIDEOMETRICS INC
VIDEON CORP
TRACOR IND INST DIV

Generators, Signal, VITS

ELECTRONIC DESIGNERS INC
RICHMOND HILL
RIKER VIDEO INDUSTRIES
ROHDE SCHWARZ SALES
TEKTRONIX INC
TELE MEASUREMENTS INC
TELEMET CO
VIDEOMETRICS INC
VIDEON CORP

H

Hardware, Chassis

BUD RADIO INC
SAREX CORP
SINGER PROD CO INC
VENT RAK INC
WABER ELECTRONICS INC

Hardware, Dial Pointers

BIRNBACH CO INC
IRC DIV TRW INC
SINGER PROD CO INC

Hardware, Fixtures, Holding

BUD RADIO INC
SINGER PROD CO INC
UPSON TOOLS INC

Hardware, General

BIRNBACH CO INC
PRUZAN CO
SINGER PROD CO INC

SWITCHCRAFT INC
TV CABLE SUPPLY CO
UPSON TOOLS INC

Hardware, Gromets

BIRNBACH CO INC
G C ELECTRONICS
SINGER PROD CO INC

Hardware, Louvers, Ventilating

BUD RADIO INC

Hardware, Mounts

BUD RADIO INC
G C ELECTRONICS
SINGER PROD CO INC
H WILSON CORP

Hardware, Panel

BOSTON INSULATED
BUD RADIO INC
RCA BROADCAST COMM PRD
TELEQUIP CORP

Hardware, Rack

BOSTON INSULATED
BUD RADIO INC
COLLINS RADIO CO
GE VISUAL COMM PROD
RCA BROADCAST COMM PRD
SARKES TARZIAN INC
SINGER PROD CO INC
UPSON TOOLS INC
VENT RAK INC

Hardware, Retailing Rings

SINGER PROD CO INC
VACO PRODUCTS CO

Hardware, Tools (See Tools)

CHANNFLOCK INC
P K NEUSES INC
TV CABLE SUPPLY CO

UPSON TOOLS INC
VACO PRODUCTS CO

Hardware, Tubing, Metal

SINGER PROD CO INC
TELEQUIP CORP

Hardware, Tubing, Plastic

BIRNBACH CO INC
BRAND REX
G C ELECTRONICS
SINGER PROD CO INC

Head-End Equipment (See CATV Head-End Equipment)

AMER ELECTRONIC LAB
ANACONDA ELECTRONICS
BLONDER TONGUE LAB INC
COMU ELECTRONICS INC
DYNAIR ELECTRONICS
JFRROLD ELECTRONICS CO
KATONA ELECTRONICS CO
MICROWAVE ASSOC INC
R F SYSTEMS
SPENCER KENNEDY LAB

Heads, Disc Recording

GOTHAM AUDIO CORP
SINGER PROD CO INC

Heads, Erase, Magnetic

LIPPS INC
MAGNA TECH CORP
MAGNUSONIC DEVICES INC
MICHIGAN MAGNETICS
MINNEAPOLIS MAGNETICS
NORTRONICS CO INC
RECORDEX CORP
SINGER PROD CO INC
TABER MFG ENGR CO
TAPECASTER

Heads, Recording, Magnetic

LIPPS INC
MAGNUSONIC DEVICES INC

MICHIGAN MAGNETICS
MINNEAPOLIS MAGNETICS
NORTRONICS CO INC
RANGERTONE ELECTRONICS
RECORDEX CORP
SINGER PROD CO INC
TABER MFG ENGR CO
TAPECASTER

Heat Sinks

DFLCO RADIO
EIMAC DIV
G C ELECTRONICS
INTERNATIONAL ELEC RFS
BIRNBACH CO INC
CHANNFLOCK INC

Heating Elements

G E ELECTRONIC COMPONENTS
SINGER PROD CO INC
VALAD ELECT HEATING CO

Holders, Crystal

INDUSTRIAL ELECTRONIC
SINGER PROD CO INC

Holders, Fuse

G E ELECTRONICS
INDUSTRIAL ELECTRONIC
SINGER PROD CO INC

Housings, Antenna

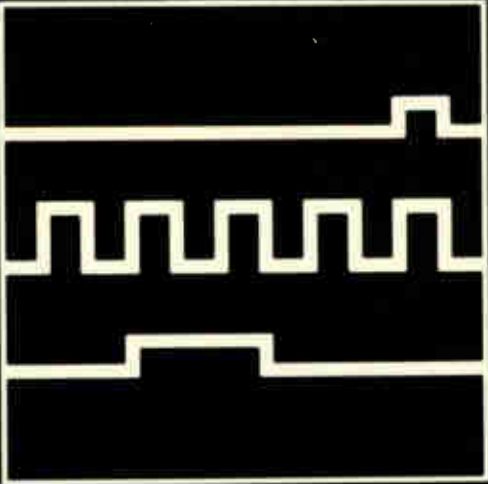
COLLINS RADIO CO

Image Motion Stabilizing Equipment

DYNASCIENCES CORP
FB CECO INC
VISUAL ELECTRONICS CORP

Inductances (Also See Coils)


CALBEST ELECTRONICS
MULTRONICS INC



DIGILOGIC

Discover how digital computer techniques have revolutionized television broadcast equipment.

From:

 **SARKES TARZIAN SYSTEMS**
Bloomington, Indiana

Circle Item 46 on Tech Data Card

Inductances, Fixed

CALBEST ELECTRONICS
GENERAL RADIO CO
MULTRONICS INC
SINGER PROD CO INC
KAPPA NETWORKS

Inductances, Variable

GENERAL RADIO CO
MULTRONICS INC
PRUZAN CO
SINGER PROD CO INC
KAPPA NETWORKS

Industrial TV (Also See TV, Closed Circuit)

ATV RESEARCH
ALCOR INC
ALMA ENGINEERING
ANACONDA ELECTRONICS
BLONDER TONGUE LAB INC
BRADFORD INFORMATION SYS
CANOGA ELECT CO
COMU ELECTRONICS INC
COLORADO VIDEO INC
CONCORD ELECT CORP
DAGB BELL DIV
DIAMOND ELECTRONICS
DU VAL I FIT CORP
DYNAIR ELECTRONICS
GBC CCTV
G E ELECTRONIC COMPONENTS
GF VISUAL COMM PROD
GEN ELECTRODYNAMICS
IKEGAMI CO LTD
THE JANSON INDUSTRIES
KATONA ELECTRONICS CO
LEROE ELECTRICAL CORP
MARCONI DIV
ORBIT RADIO AND VIDEO
RCA BROADCAST COMM PRD
RIKER VIDEO INDUSTRIES
RUST CORP
SETCHILL CARLSON INC
SHIRADEN CORP OF AMER
SHINTRON CO INC
SINGER PROD CO INC
SONOCRAFT CORP
SYLVANIA COMM ELECTRONIC
TEKTRONIX INC
TELEMATION INC
TELEVISION PRESENTATIONS
VIKOA INC
VISUAL ELECTRONICS CORP
ZOOMAR INC

Insulators, Antenna

BIRNBACH CO INC
CENTRALAB
G C ELECTRONICS
SINGER PROD CO INC

Insulators, Feed Through

BIRNBACH CO INC
CENTRALAB
SINGER PROD CO INC

Insulators, Stand-Off

BIRNBACH CO INC
CENTRALAB
G C ELECTRONICS
SINGER PROD CO INC

Insulators, Other

BIRNBACH CO INC
CENTRALAB
TELEQUIP CORP

Integrated Circuits (Also See Semiconductors)

CENTRALAB
COLLINS RADIO CO
G E DISTRIBUTOR SALES OP
MICROLAB
MOTOROLA SEMICONDUCTOR
RCA ELECTRONIC COMP DEV
TEXAS INSTRUMENT
THOR ELECTRONICS CORP

Inverters, DC to AC, Chopper

SINGER PROD CO INC

Inverters, DC to AC, Solid State

ALLIED ELECTRONIC CORP
G E ELECTRONIC COMPONENTS
POWER SOURCES TECH OPER
SINGER PROD CO INC
TEXAS ELECTRONICS
TREPAC CORP AMERICA

Inverters, DC to AC, Vibrators

SINGER PROD CO INC

J**Jack Panel Assemblies**

ALTEC LANSING
AUDIO ACCESSORIES INC
CEI
COLLINS RADIO CO
COOKE ENGINEERING CO
GATES RADIO CO
GULF ELECTRO SALES INC
HOLLAND ELECTRONICS
PHELPS DODGE ELECTRONIC
POTOMAC INSTRUMENTS INC
RCA BROADCAST COMM PRD
SARKES TARZIAN INC
SINGER PROD CO INC
SWITCHCRAFT INC
TERMINAL HUDSON ELECTRS
TROMPETER ELECTRONICS

Jacks

AUDIO ACCESSORIES INC
BIRNBACH CO INC
COOKE ENGINEERING CO
G C ELECTRONICS
GATES RADIO CO
GULF ELECTRO SALES INC
MALLORY
PHELPS DODGE ELECTRONIC
POTOMAC INSTRUMENTS INC
SINGER PROD CO INC
SWITCHCRAFT INC
TERMINAL HUDSON ELECTRS
TROMPETER ELECTRONICS

Joints, Rotary, Coaxial

ANDREWS TOWERS INC
COLLINS RADIO CO
SINGER PROD CO INC

Joints, Rotary, Waveguide

ANDREWS TOWERS INC
COLLINS RADIO CO
MICROWAVE ASSOC INC
SINGER PROD CO INC

K**Kits**

ALLIED ELECTRONIC CORP
BARDWELL MCALISTER INC
ENGINEERING ASSOC
G C ELECTRONICS
HEATH CO
JENSEN MFG DIV
MOLE RICHARDSON CO
P K NEUSFS INC
SINGER PROD CO INC
UPSON TOOLS INC
VACO PRODUCTS CO
WARER ELECTRONICS INC

Knobs

ALCO ELECTRONIC PROD
BIRNBACH CO INC
G C ELECTRONICS
MALLORY
SEACOR INC
SINGER PROD CO INC
TERMINAL HUDSON ELECTRS

L**Lamp Assemblies**

AUDIO ACCESSORIES INC
BARDWELL MCALISTER INC

BEREKLEY COLORTAN INC
DIALIGHT CORP
INDUSTRIAL DEVICES INC
SINGER PROD CO INC
TERMINAL HUDSON ELECTRS

Lamp, ARC

FB CECO INC

Lamps, Exciter

FB CECO INC
PRECISION LAB
SYLVANIA LIGHTING PROD

Lamps, Glow

DIALIGHT CORP
G E DISTRIBUTOR SALES OP
TERMINAL HUDSON ELECTRS

Lamps, Panel

DIALIGHT CORP
G E DISTRIBUTOR SALES OP
INDUSTRIAL DEVICES INC
SINGER PROD CO INC
TERMINAL HUDSON ELECTRS

Lamps, Projection

BARDWELL MCALISTER INC
FB CECO INC
LIGHTING UNLIMITED
SINGER PROD CO INC
SYLVANIA LIGHTING PROD
H WILSON CORP

Lathe, Disc Recording

GOTHAM AUDIO CORP
SCULLY RECORDING INSI
SINGER PROD CO INC

Leader, Film

FB CECO INC
NEUMADP PROD CORP

Leads, Test

E Z HOOK TEST PRODUCTS
G C ELECTRONICS
INDUSTRIAL DEVICES INC

Lenses, Optical, Fixed

BURKE JAMES
CONCORD ELECT CORP
DAGE BELL DIV
DYNAMIC OPTICS INC
FB CECO INC
GBC CCTV
GEN ELECTRODYNAMICS
RCA BROADCAST COMM PRD
SHIRADEN CORP OF AMER
TELE CINE INC
TELEDYNE CO
VISUAL ELECTRONICS CORP
ZOOMAR INC

Lenses, Optical, Zoom

BURKE JAMES
CONCORD ELECT CORP
DAGE BELL DIV
DYNAMIC OPTICS INC
FB CECO INC
GBC CCTV
RCA BROADCAST COMM PRD
SHIRADEN CORP OF AMER
SONOCRAFT CORP
TELE CINE INC
TELEDYNE CO
VISUAL ELECTRONICS CORP
ZOOMAR INC

Letters and Numbers, Pressure Sensitive

W H BRADY CO
G C ELECTRONICS

Lifts, Aerial, Truck mounted

BURKE JAMES

Lighting, TV Components

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CENTURY LIGHTING INC

FB CECO INC
GBC CCTV
HARWOOD MFG CO
KLIEGL BROS LIGHTING
LIGHTING UNLIMITED
METROPOLITAN ELE MFG CO
MOLE RICHARDSON CO
RCA BROADCAST COMM PRD
SINGER PROD CO INC
SYLVANIA LIGHTING PROD
TELE MEASUREMENTS INC
TELEQUIP CORP
VISUAL ELECTRONICS CORP
SKIRPAN ELECTRONICS INC

Lighting, TV, Controls

BEREKLEY COLORTAN INC
BURKE JAMES
CENTURY LIGHTING INC
FB CECO INC
HOUSTON ELECTRONICS
THE JANSON INDUSTRIES
KLIEGL BROS LIGHTING
LIGHTING UNLIMITED
METROPOLITAN ELE MFG CO
MOLE RICHARDSON CO
RCA BROADCAST COMM PRD
SINGER PROD CO INC
TELE MEASUREMENTS INC
ULTRA AUDIO PRODUCTS
VISUAL ELECTRONICS CORP
SKIRPAN ELECTRONICS INC

Lighting, TV, Systems

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BEREKLEY COLORTAN INC
BURKE JAMES
CENTURY LIGHTING INC
DU VAL I FIT CORP
FB CECO INC
THE JANSON INDUSTRIES
KLIEGL BROS LIGHTING
LIGHTING UNLIMITED
METROPOLITAN ELE MFG CO
MOLE RICHARDSON CO
RCA BROADCAST COMM PRD
SINGER PROD CO INC
SONOCRAFT CORP
TELE MEASUREMENTS INC
TELEQUIP CORP
VISUAL ELECTRONICS CORP
SKIRPAN ELECTRONICS INC

Lighting Arresters

COLLINS RADIO CO
G C ELECTRONICS
G E ELECTRONIC COMPONENTS
SINGER PROD CO INC
VIKOA INC
JOSLYN ELECTRONIC SYS
SKIRPAN ELECTRONICS INC

Lights, Tower, Obstruction

GATES RADIO CO
HARWOOD MFG CO
LITTLE JOE ENTERPRISES
RCA BROADCAST COMM PRD
ROHM MFG CO
SINGER PROD CO INC
ELECTRONIC LIGHTS INC
HUGHEY PHILLIPS INC

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GATELY ELECTRONICS
GATES RADIO CO
KAHN RESEARCH LAB INC
LANG ELECTRONICS INC
UNIVERSAL AUDIO INC
UNIVERSAL AUDIO INC
VIDEON CORP

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ACME FILM VIDEO IAPE L

Lubricants

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SINGER PROD CO INC
MILLER STEPHENSON CO

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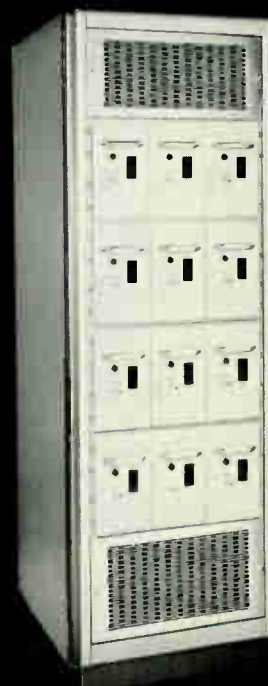


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SHURE SM60

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MODEL SM51 DYNAMIC LAVALIER



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Circle Item 48 on Tech Data Card

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COLLINS RADIO CO
JOA CARTRIDGE SERVICE
RCA SERVICE CO
PAUL SHEPARD INC
SINGER PROD CO INC

Maintenance Services, FM

AMER ELECTRONIC LAB
COLLINS RADIO CO
LITTLE JOE ENTERPRISES
RCA SERVICE CO
PAUL SHEPARD INC
TABER MFG ENGR CO

Maintenance Services, Microwave

AMER ELECTRONIC LAB
COLLINS RADIO CO
MICRO LINK DIV
RCA SERVICE CO
PAUL SHEPARD INC

Maintenance Services, Steeple Jack

LITTLE JOE ENTERPRISES
PAUL SHEPARD INC

Maintenance Services, TV

ALCOR INC
GRC CCTV
GE VISUAL COMM PROD
SARKFS TARZIAN INC
PAUL SHEPARD INC
TABER MFG ENGR CO
TELE MEASUREMENTS INC

Meters (See Specific Type)

HICKOK ELEC INSTRUMENT
LAMPKIN LAB INC
N E ELECTRONICS CORP
POTOMAC INSTRUMENTS INC
PRODELIN INC
RUSTRAK INSTRUMENT DIV
SIMPSON ELECTRIC CO
ZOOMAR INC

Meters, DB and VU

BRADFORD INFORMATION SYS
COLLINS RADIO CO
GATES RADIO CO
INTERNL INSTRUMENT INC
INSTRUMENT LAB CORP
N E ELECTRONICS CORP
SIMPSON ELECTRIC CO
SINGER PROD CO INC
TRIPLETT ELEC INSTRUMENT
UNIVERSAL AUDIO INC
CBS LABS

Meters, DB and VU, Wide Range

B K INSTRUMENTS INC
COLLINS RADIO CO
SIMPSON ELECTRIC CO
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TERMINAL HUDSON ELECTRS
CBS LABS

Meters, Field Strength, AM & FM

ANACONDA ELECTRONICS
ENGINEERING ASSOC
LEADER INSTRUMENTS CORP
MCMARTIN INDUSTRIES INC
METRICS DIV
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SIMPSON ELECTRIC CO
SINGER PROD CO INC
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Meters, Field Strength, TV, UHF

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CATV EQUIPMENT CO
ENGINEERING ASSOC
KATONA ELECTRONICS CO
LEADER INSTRUMENTS CORP
POTOMAC INSTRUMENTS INC
ROHDE SCHWARZ SALES
SENCORE INC
SIMPSON ELECTRIC CO
TV CABLE SUPPLY CO
VIKOA INC
DEFENSE ELECTRONICS INC
JFD ELECTRONICS CO

Meters, Flutter & WOW

GOTHAM AUDIO CORP
KAY ELECTRIC CO
LEADER INSTRUMENTS CORP
MICOM INC

Meters, Frequency

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COLLINS RADIO CO
ENGINEERING ASSOC
G E ELECTRONIC COMPONENTS
GENERAL RADIO CO
HICKOK ELEC INSTRUMENT
LAMPKIN LAB INC
METROLOGIE COMPAGNIE GEN
MICROLAB
NARDA MICROWAVE CORP
SIMPSON ELECTRIC CO
SINGER PROD CO INC
WATERS MFG INC
HEWLETT PACKARD CO

Meters, Frequency Calibrating

HICKOK ELEC INSTRUMENT
MICROLAB
MICRO LINK DIV
NARDA MICROWAVE CORP
SINGER PROD CO INC
HEWLETT PACKARD CO

Meters, Light

ALLIED ELECTRONIC CORP
FB CECO INC
FOTOMATIC CORP
METROLOGIE COMPAGNIE GEN
PHOTO RESEARCH CORP
SIMPSON ELECTRIC CO
SINGER PROD CO INC
ZOOMAR INC

Meters, Phase Angle

G E ELECTRONIC COMPONENTS
METRICS DIV

POTOMAC INSTRUMENTS INC
ROHDE SCHWARZ SALES

Meters, Power

BIRD ELECTRONIC CORP
ENGINEERING ASSOC
GENERAL MICROWAVE CORP
MICRO LINK DIV
NARDA MICROWAVE CORP
ROHDE SCHWARZ SALES
SIMPSON ELECTRIC CO
HEWLETT PACKARD CO

Meters, Standing Wave

BIRD ELECTRONIC CORP
GENERAL MICROWAVE CORP
METROLOGIE COMPAGNIE GEN
NARDA MICROWAVE CORP
ROHDE SCHWARZ SALES
SINGER PROD CO INC
WEINSCHTEL ENGINEERING CO
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RCA SERVICE CO
SENNHEISER ELECTRONICS
SHURE BROTHERS INC
SINGER PROD CO INC
SONY CORP OF AMERICA
TELE MEASUREMENTS INC
TURNER MICROPHONE CO
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Microphone Stand & Boom

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AMER GELOSO ELECTRONICS
ATLAS SOUND DIV
CENTURY LIGHTING INC

CUSTOM CRAFT DESIGNS
FB CECO INC
GATES RADIO CO
GOTHAM AUDIO CORP
HOUSTON FEARLESS CORP
LANG ELECTRONICS INC
MOLE RICHARDSON CO
NORTH AMER PHILIPS AKG
NORTH AMERICAN PHILIPS
RCA ELECTRONIC COMP DEV
RCA SERVICE CO
SENNHEISER ELECTRONICS
SINGER PROD CO INC
TURNER MICROPHONE CO
ZOOMAR INC
PRIMO CO LTD

Microphones, Condenser

ALTEC LANSING
B K INSTRUMENTS INC
FB CECO INC
GATES RADIO CO
GOTHAM AUDIO CORP
LANG ELECTRONICS INC
NORTH AMER PHILIPS AKG
NORTH AMERICAN PHILIPS
ORBIT RADIO AND VIDEO
RCA ELECTRONIC COMP DEV
RCA SERVICE CO
SENNHEISER ELECTRONICS
SINGER PROD CO INC
SONOCRAFT CORP
SUPERSCOPE INC
TRUSONIC
PRIMO CO LTD
SPARTA ELECT CORP

Microphones, Dynamic

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AMER GELOSO ELECTRONICS
COLLINS RADIO CO
ELECTRO VOICE INC
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G C ELECTRONICS
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Microphones, Velocity

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 GATES RADIO CO
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 SHURE BROTHERS INC
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Microphones, Wireless

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 ANDREWF CORP
 ANDREWS TOWERS INC

BIRD ELECTRONIC CORP
 CALVERT ELECTRONICS INC
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 EIMOC DIV
 FORT WORTH TOWER CO
 G E ELECTRONIC COPONENTS
 LECTRONIC RES LARS INC
 MICROLAB
 MICROWAVE ASSOC INC
 MICROWAVE ASSOC INC
 MOTOROLA SEMICONDUCTOR
 NARDA MICROWAVE CORP
 PHELPS DODGE ELECTRONIC
 PRODELIN INC
 RCA SFRVICF CO
 RAYTHEON CO
 SINGER PROD CO INC
 SOLITRON DEVICES INC
 SYLVANIA SEMICONDUCTOR
 TFLFQUIP CORP
 TEXAS INSTRUMENT
 TEXSCAN CORP
 WEINSCHTEL ENGINEERING CO

Microwave Systems, STL

ANDREW CORP
 COLLINS RADIO CO
 DU VAL I FIT CORP
 GE VISUAL COMM PROD
 LENKURT ELECTRIC CO INC
 MARTI ELECTRONICS
 MICRO LINK DIV
 MICROWAVE ASSOC INC
 MICROWAVE ASSOC INC
 MOSFLY ASSOC INC
 MOSFLY ELECTRONICS
 RCA BROADCAST COMM PRO
 RCA SERVICE CO
 RAYTHEON CO
 SARKES TARZIAN INC
 SHIBADEN CORP OF AMFR
 SINGER PROD CO INC
 SURFACE CONSTRUCTION

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 CHESTER ELECTRONIC LAB

COLLINS RADIC CO
 LERRO ELECTRICAL CORP
 MICRO LINK DIV
 MICROWAVE ASSOC INC
 RCA BROADCAST COMM PRD
 RCA SERVICE CO
 RAYTHEON CO
 SHIBADEN CORP OF AMFR
 SINGER PROD CO INC
 SURFACE CONSTRUCTION

Microwave Systems, Other

ANDREWF CORP
 COLLINS RADIO CO
 MICROELECT CO INC
 MICROLAB
 MICRO LINK DIV
 MICROWAVE ASSOC INC
 MICROWAVE ASSOC INC
 NARDA MICROWAVE CORP
 NOLLER CONTROL SYSTEMS
 RCA BROADCAST COMM PRD
 RCA SERVICE CO
 RAYTHEON CO
 SHIBADEN CORP OF AMFR
 SURFACE CONSTRUCTION

Mixers (Also See Consoles)

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 BRADFORD INFORMATION SYS
 COLLINS RADIO CO
 DELTA ELECTRONICS INC
 FB CECO INC
 GATELY ELECTRONICS
 HOUSTON ELECTRONICS
 LANG ELECTRONICS INC
 MCMARTIN INDUSTRIES INC
 METROLOGIE COMPAGNIE GEN
 MICROWAVE ASSOC INC
 NORTH AMER PHILIPS AKG
 NORTH AMERICAN PHILIPS
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 SHURE BROTHERS INC
 TARTAN ELECTRONICS CORP
 VISUAL ELECTRONICS CORP
 WEINSCHTEL ENGINEERING CO
 HARVEY RADIO CO INC
 SPARTA ELECT CORP

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 COMREX CORP
 DELTA ELECTRONICS INC
 COMMERCIAL PROD DIV
 HAMMARLUND MFG
 MARTI ELECTRONICS
 MICROWAVE ASSOC INC
 RCA BROADCAST COMM PRD
 RCA SERVICE CO
 SINGER PROD CO INC
 SUPERIOR CONTINENTAL CO
 SURFACE CONSTRUCTION
 UTICA ELECTRONICS
 VISUAL ELECTRONICS CORP
 WILSON CORP
 SPARTA ELECT CORP

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 MICROWAVE ASSOC INC
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 RCA SERVICE CO
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 SURFACE CONSTRUCTION
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 TELE MEASUREMENTS INC
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 THE CATEL CORP
 DYNAIR ELECTRONICS
 GATES RADIO CO
 KATONA ELECTRONICS CO
 MICRO LINK DIV
 ORBIT RADIO AND VIDEO

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 RCA SERVICE CO
 TELE MEASUREMENTS INC

Monitors, AM Systems

ARROR SYSTEMS INC
 BELAR ELECTRONICS LAB
 CCA ELECTRONICS
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 COLLINS RADIO CO
 ELECTRO VOICE INC
 GATES RADIO CO
 MELCOR ELECTRONICS CORP
 POTOMAC INSTRUMENTS INC
 RCA SERVICE CO
 SINGER PROD CO INC
 WILKINSON ELECT INC

Monitors, FM Systems, Mono

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 COLLINS RADIO CO
 COLLINS RADIO CO
 GATES RADIO CO
 KARG LAB INC
 MCMARTIN INDUSTRIES INC
 RCA SERVICE CO
 SINGER PROD CO INC
 UTICA ELECTRONICS

Monitors, FM Systems, SCA

RFLAR FLFCTRONICS LAB
 COLLINS RADIO CO
 COLLINS RADIO CO
 GATES RADIO CO
 HAMMARLUND MFG
 KARG LAB INC
 MCMARTIN INDUSTRIES INC
 SINGER PROD CO INC

Monitors, FM Systems, Stereo

AMFCO INC
 BELAR ELECTRONICS LAB
 COLLINS RADIO CO
 COLLINS RADIO CO
 ELECTRO VOICE INC
 GATES RADIO CO
 KARG LAB INC
 MCMARTIN INDUSTRIES INC
 SINGER PROD CO INC

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 CCA ELECTRONICS
 COLLINS RADIO CO
 COLLINS RADIO CO
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 MCMARTIN INDUSTRIES INC
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 SINGER PROD CO INC
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 GATES RADIO CO
 LAMPKIN LAB INC
 MCMARTIN INDUSTRIES INC
 METRON INSTRUMENTS
 MICRO LINK DIV
 SINGER PROD CO INC
 WILKINSON ELECT INC

Monitors, Phase

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UNI-DIRECTIONAL MICROPHONE
 (with tone control)




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- Cartridge: DM-49
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RE55 OMNIDIRECTIONAL DYNAMIC MICROPHONE

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The RE55, like its predecessor the 655C, is an extremely wide-range omnidirectional dynamic. And in most electrical particulars it is not greatly different. RE55 frequency response is a bit wider, and perhaps a trifle flatter. An impressive achievement when you consider that the 655C has been extensively used as a secondary frequency response standard. Output level is 2 db hotter, and the exclusive E-V Acoustalloy® diaphragm of the RE55 can provide undistorted output in sound fields so intense as to cause ear damage.

The biggest changes in the RE55 are mechanical. For this microphone is even more rugged than the 655... long known as one of the toughest in the business. There's a solid steel case and new, improved internal shock mounting for the RE55. Plus a satin nickel finish that looks great on TV long after most microphones have been scarred and scratched almost beyond recognition.

For convenience we've made the barrel of the RE55 just 3/4" in diameter. It fits modern 3/4" accessories. It also fits the hand (and its length makes the RE55 perfect for hand-held interviews). We also provide XLR-3 Cannon-type connectors to help you standardize your audio wiring. Detail refinements that make the RE55 more dependable, easier to use.

Finally, the RE55 has the exclusive Electro-Voice 2-year *unconditional* guarantee. No matter what happens, if an RE55 fails to perform during the first two years — for any reason — we'll repair it at no charge.

Try the Electro-Voice RE55 today. The more you listen, the better it looks!

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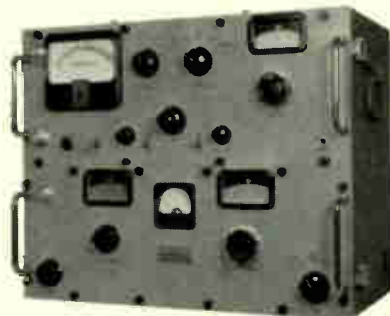


Model FIM-120E (WX2C)

Four reliable reasons why experienced broadcast engineers prefer Nems-Clarke equipment ...now available from DEI

In the broadcast industry, the quality, reliability, accuracy, and durability of Nems-Clarke equipment have earned it a reputation that is unique. DEI, now manufacturing and distributing this famous equipment, can assure you that it will continue to adhere to the same high standards that built this unmatched reputation.

Field Intensity Meter Model FIM-120E A compact, lightweight, portable instrument for measurements in the 540 to 1600 kHz range. Sensitivity range is from 10 uv per meter to 10 v per meter. Performance data includes a 540 to 1600 kHz frequency range and a 10 uv/m to 10 v/m intensity range. Power supplied by internal alkaline batteries, insures operation at 32°F and below and can be calibrated at any frequency at either high or low temperatures. Both linear and logarithmic indications permit use with recording equipment. Accuracy of this unit is essentially independent of battery voltage ambient temperature and modulation. Accuracy, linearity, and stability are vastly superior to any currently available solid state field intensity meter. Over 1,000 of these field-proven units are currently in use.



Model FIM-107A (Test Set)

Field Intensity Meter Model FIM-107A (Test Set) Includes in one portable unit a radio receiver of laboratory quality with a metered output and an accurately calibrated signal generator. It covers a frequency range of 54 to 240 MHz without band changing. Operates from automobile batteries or standard 117 vac line. Performance data includes a



Model PM-112

1.0 uv sensitivity. Signal generator output level is adjustable from 1 uv to o.l.v. A calibrated dipole provides 1.6 uv/m to 16 v/m field intensity measurements at 54 MHz.

Phase Monitor Model PM-112 This new solid-state unit replaces our model 108E and monitors phase and current relationships in directional AM arrays. Adaptable to remote control. Provision for switching of day-night reference levels can be provided. Performance data includes ± 1 degree phase accuracy, 0.5 degree phase resolution and 2% repeatable current accuracy. Will monitor up to 9 towers. Outputs are available for a digital voltmeter to provide increased resolution. Well over 100 of these units are now in world-wide use.

Precision Phase Monitor Model PPM-101 This unit is designed for use with critical directional AM arrays where a high degree of resolution and stability is required. Provides both phase and current indications. Contains digital counter. Nuistor and solid-state design. Repeatable phase accuracy is ± 0.1 degree, phase resolution is 0.1 degree and repeatable current accuracy is within $\pm 0.1\%$. Will monitor up to 12 towers.



Model PPM-101

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Monitors, Waveform

CALIF INSTRUMENTS CORP
 IKEGAMI CO LTD
 MARCONI DIV
 MICROLAB
 MIRATEL DIV BALL PROS
 RCA BROADCAST COMM PRD
 SONY CORP OF AMERICA
 TEKTRONIX INC
 TELFMATION INC
 TELE MEASUREMENTS INC
 HEWLETT PACKARD CO

Mounts, Antenna, Fixed

ANDREW CORP
 ANDREWS TOWERS INC
 G C ELECTRONICS
 GATES RADIO CO
 MICROELECT CO INC
 PRODELIN INC
 R F SYSTEMS
 RAYTHEON CO
 ROHN MFG CO
 SINGER PROD CO INC

Mounts, Antenna, Mobile

G C ELECTRONICS
 GATES RADIO CO
 PRODELIN INC
 RAYTHEON CO
 SINGER PROD CO INC
 UTICA ELECTRONICS

Mounts, Instrument

SINGER PROD CO INC

Mounts, Vibration and Shock

FB CECO INC

Multiplexers

THE CATEL CORP
 COLLINS RADIO CO
 GE VISUAL COMM PROD
 GPL DIV SINGER GENERAL
 RFE LABS
 SINGER PROD CO INC
 SONOCRAFT CORP
 TELEMATION INC
 TELE MEASUREMENTS INC

N

Nameplates

W H BRADY CO
 W H BRADY CO
 ZIOLACK CORP

Narrow Band FM Equipment

COLLINS RADIO CO
 COMREX CORP
 HAMMARLUND MFG
 MARTI ELECTRONICS
 SINGER PROD CO INC

Needles, Cutting (See Styl)

DUOTONE CO INC

GOTHAM AUDIO CORP
 ALBERT SCHULTZ INC

Needles, Playback (See Styl)

DUOTONE CO INC
 ELECTRO VOICE INC
 FIDELITONE INC
 ALBERT SCHULTZ INC
 SHURE BROTHERS INC

Networks, Matching, Audio

COLLINS RADIO CO
 ELECTRODYNE CORP
 JENSEN MFG DIV
 SINGER PROD CO INC
 TT ELECTRONICS INC
 UNIVERSAL AUDIO INC
 KAPPA NETWORKS

Networks, Matching, RF

ALFORD MFG CO
 BLONDER TONGUE LAB INC
 COLLINS RADIO CO
 CONTINENTAL ELECTRONICS
 GATES RADIO CO
 MULTRONICS INC
 NARDA MICROWAVE CORP
 SINGER PROD CO INC
 TT ELECTRONICS INC
 KAPPA NETWORKS

Networks, Phasing

AMER ELECTRONIC LAB
 CCA ELECTRONICS
 COLLINS RADIO CO
 COLLINS RADIO CO
 CONTINENTAL FLCTRONICS
 GATES RADIO CO
 MULTRONICS INC
 PRESEARCH INC
 WARD ELECTRONIC INDUS
 KAPPA NETWORKS

O

Ohmmeters

CONANT LABS INC
 HEATH CO
 HICKOK ELEC INSTRUMENT
 HONFYWELL INC
 LEADER INSTRUMENTS CORP
 METROLOGIE COMPAGNIE GEN
 RCA ELECTRONIC COMP DEV
 SIMPSON ELECTRIC CO
 SINGER PROD CO INC
 TERMINAL HUDSON ELECTRS
 TRIPLETT ELEC INSTRUMENT
 HEWLETT PACKARD CO

Oscillators, AF and RF, (Also See Generators)

EIMDC DIV
 ELECTRODYNE CORP
 ENGINEERING ASSOC
 GIBBS MFG RESEARCH CO
 HEATH CO
 HICKOK FLEC INSTRUMENT
 LEADER INSTRUMENTS CORP
 METROLOGIE COMPAGNIE GEN
 MICOM INC
 N E ELECTRONICS CORP
 NARDA MICROWAVE CORP
 SINGER PROD CO INC
 UNIVERSAL AUDIO INC
 HEWLETT PACKARD CO

Oscillators, AM

ARROR SYSTEMS INC
 ENGINEERING ASSOC
 GIBBS MFG RESEARCH CO
 HEATH CO
 LEADER INSTRUMENTS CORP
 SINGER PROD CO INC
 TREPAC CORP AMERICA

Oscillators, FM

BELAR ELECTRONICS LAB
 HEATH CO
 LEADER INSTRUMENTS CORP
 MICROWAVE ASSOC INC

TRACOR/SULZER
CHROMAFIX and
RAPIDFRAME

Automatically maintains phase-lock on raster sync and color sub-carrier between master station and any number of remotes.

Rapidframe and Chromafix utilizing ultra high stability crystal or atomic frequency standards—maintain sync for any number of remotes over any distance on low-cost Telco circuits.

INSTANT SWITCHING WITH NO PICTURE DEGRADATION OR INTERRUPTIONS.

Raster sync is maintained within 100 nanoseconds; chroma phase error is held to less than ± 1.5 degrees between cameras.

For Data Sheet
 on the
TRACOR/SULZER
CHROMAFIX
AND
RAPIDFRAME,



write:



Industrial Instruments Division
 6500 Tracor Lane
 Austin, Texas 78721

NEW FROM TRACOR: To rate your sync generator carrier oscillator/time base against NBS; use the 890A low cost VLF/LF phase tracking receiver.

Check Item 54 on Tech Data Card

Oscillators, TV

HEATH CO
RIKER VIDEO INDUSTRIES
TEKTRONIX INC

Oscillators, Other

EIMDC DIV
GIBBS MFG RESEARCH CO
INDUSTRIAL INSTRUMENT
N E ELECTRONICS CORP
NARDA MICROWAVE CORP
NORTONICS CO INC
TRACOR IND INST DIV
HEWLETT PACKARD CO

Oscilloscopes

ALLIED ELECTRONIC CORP
HEATH CO
HICKOK ELEC INSTRUMENT
LEADER INSTRUMENTS CORP
METROLOGIE COMPAGNIE GEN
RCA ELECTRONIC COMP DEV
SENCORE INC
SINGER PROD CO INC
TEKTRONIX INC
TEXSCAN CORP
HEWLETT PACKARD CO

Ovens, Crystal

COLLINS RADIO CO
SINGER PROD CO INC

P

Panels (See Hardware)

D AND B ELECTRONICS CO
GATES RADIO CO
SHINTRON CO INC
TELEQUIP CORP
VENT RAK INC
WABER ELECTRONICS INC

Panels, Instrument, for Rack Mounting (Also See Hardware)

BUD RADIO INC

G E ELECTRONIC COPONENTS
RUSTRAK INSTRUMENT DIV
SHINTRON CO INC
SINGER PROD CO INC
TELEQUIP CORP

Phasing Units (See Networks Phasing)

GATES RADIO CO
MULTRONICS INC
PRESEARCH INC
VIDEON CORP

Phonograph Turntables (See Turntables)

GATES RADIO CO
GOTHAM AUDIO CORP
ALBERT SCHULTZ INC
SONOCRAFT CORP
SUPERSCOPE INC

Pickup (See Musical Instruments)

CUSTOM CRAFT DESIGNS
ALBERT SCHULTZ INC

Plugs, Coaxial

AMPHENOL CORP
BLONDER TONGUE LAB INC
D AND B ELECTRONICS CO
G C ELECTRONICS
GOTHAM AUDIO CORP
PHELPS DODGE ELECTRONIC
POTOMAC INSTRUMENTS INC
RCA BROADCAST COMM PRD
SINGER PROD CO INC
SOLITRON DEVICES INC
TROMPETER ELECTRONICS

Plugs, Phone

AMPHENOL CORP
AUDIO ACCESSORIES INC
BIRNBACH CO INC
G C ELECTRONICS

GULF ELECTRO SALES INC
MALLORY
SINGER PROD CO INC
SWITCHCRAFT INC

Pole Climbing Equipment

PRUZAN CO
TV CABLE SUPPLY CO

Potentiometers, Carbon

AMPHENOL CORP
CENTRALLAB
GOTHAM AUDIO CORP
IRC DIV TRW INC
OMITE MFG CO
SINGER PROD CO INC
TERMINAL HUDSON ELECTRS

Potentiometers, Wirebound

AMPHENOL CORP
CENTRALLAB
IRC DIV TRW INC
OMITE MFG CO
SINGER PROD CO INC
TERMINAL HUDSON ELECTRS
WATERS MFG INC

Power Supplies, AC

ADVANCED HIGH VOLTAGE CO
ALTEC LANSING
AMECO INC
ANACONDA ELECTRONICS
CATV EQUIPMENT CO
COLLINS RADIO CO
DELTA ELECTRONICS INC
ENGINEERING ASSOC
ESSEX WIRE CO RRM DIV
FR CECO INC

FAIRCHILD RECORDING EQPT
G E ELECTRONIC COPONENTS
HEATH CO
HONEYWELL INC
IKEGAMI CO LTD
MOLE RICHARDSON CO
SINGER PROD CO INC
TERMINAL HUDSON ELECTRS
TOPAZ INC

Power Supplies, Precision

ADVANCED HIGH VOLTAGE CO
ALTEC LANSING
COLLINS RADIO CO
ENGINEERING ASSOC
FAIRLANE ELECTRONICS
HEATH CO
MULTIMETRICS INC
PRECISION LAB
RESALAB INC
HEWLETT PACKARD CO

Preamplifiers, Audio

ALCOR INC
ALMA ENGINEERING
ALTEC LANSING
AMECO INC
ARROR SYSTEMS INC
B K INSTRUMENTS INC
BAUER ELECTRONICS CORP
BELL P A PROD CORP
BOGEN COMMUNICATIONS
BRADFORD INFORMATION SYS
COLLINS RADIO CO
CROWN INTERNATIONAL
DELTA ELECTRONICS INC
DENRAD MFG CO INC
DYNAR ELECTRONICS
ELECTRODYNE CORP
ELECTRONIC DESIGNERS INC
FAIRCHILD RECORDING EQPT
GE VISUAL COMM PROD
GATELY ELECTRONICS
GATES RADIO CO
GRASS VALLEY GROUP
INTERNL NUCLEAR CORP

KC 24.25 KC 25 KC 28.65 KC 31 KC 33.25 KC 36.5 KC 39.75 KC 41 KC 42 KC 44.25 KC 44.75 KC 45 KC 45.20 KC
.33 KC 46 KC 47.25 KC 49.68 KC 51.76 KC 52 KC 53.7 KC 55.25 KC 56.5 KC 58.95 KC 59 KC 60 KC 60.95 KC 60.

UNLIMITED SCA FREQUENCY SELECTION!

C 61 KC 64.44 KC 65 KC 66.1 KC 67 KC 69 KC 70 KC 70.75 KC 71 KC 75.5 KC 78.9 KC 79 KC 79.95 KC 80 KC 80.
.75 KC 81 KC 83.5 KC 85.7 KC 86.5 KC 89.4 KC 91.3 KC 94 KC 96.5 KC 97 KC 98.9 KC 98.67 KC 99 KC 99.5 KC 99

Only Belar—by incorporating interchangeable crystals into its unique design—offers unlimited frequency selection with just one monitor. Why be locked in by single frequency monitors when Belar enables you to choose or change frequencies according to your own requirements! Here's how . . .

1. Select the one to four frequencies best suited to your application.
2. Plug in the appropriate crystals.
3. Monitor four channels by means of push button selection.
4. To test other frequencies or to change frequencies in the future, merely plug in new crystals.



- Peak flash indicator for SCA modulation.
- Narrow band monitoring for remote telemetering.
- Wide band monitoring for background music.
- All solid-state design.
- Measures SCA frequency.

WHY DELAY? ORDER TODAY FOR IMMEDIATE DELIVERY.



BELAR ELECTRONICS LABORATORY, INC.

DELAWARE AND MONTROSE AVENUES, UPPER DARBY, PA. 19084 • BOX 83

Circle Item 55 on Tech Data Card

**this
rek-o-kut
b-12 gh
turntable
is basically
unchanged for
nearly 10 years**



**and it works, and
works, and works and
works and works.....**

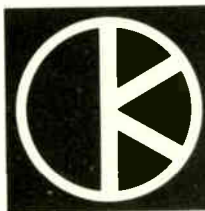
Take a look through control and audition rooms of the stations in your community and count the number of Rek-O-Kut turntables that keep going and going and going. Minimum maintenance, practically no repair. Faithful, reliable sound. Year after year after year. Ask those station engineers how long they've had Rek-O-Kut installed. You'll find some of those turntables have been around a long time.

Rek-O-Kut turntables are built to take it. They are simple in design and operation, strong in construction. If you have a Rek-O-Kut now, we'd hardly be able to sell you a replacement. But we'd like to sell you another!

specifications:

SPEEDS: 33 $\frac{1}{3}$, 45, 78 rpm. NOISE LEVEL: —59db below 5 cm/sec average recorded level. MOTOR: custom-built computer type heavy-duty hysteresis synchronous motor. 45 RPM HUB: instantaneously removable by hand. PILOT LIGHT: neon light acts as an "on/off" indicator. FINISH: grey and aluminum. DECK DIMENSIONS: 14 x 15 $\frac{1}{8}$ ". Minimum Dimensions: (for cabinet installation) 17 $\frac{3}{4}$ " w. x 16" d. x 3" above deck x 6 $\frac{1}{4}$ " below. PRICE: B-12 GH Turntable \$124.95. S-320 Tonearm \$44.95. Optional BH Base for audition room \$18.95.

rek-o-kut turntables by



KOSS

KOSS ELECTRONICS INC.
2227 N. 31st Street • Milwaukee, Wis. 53208

Export: Koss Electronics S.r.l.
Via Bellini 7, 20054/Nova Milanese, Italia

Export Cable: Stereolone



Circle Item 56 on Tech Data Card

KOSS ELECTRONICS INC
LANG ELECTRONICS INC
LEADER INSTRUMENTS CORP
MARTI ELECTRONICS
MCMARTIN INDUSTRIES INC
MELCOR ELECTRONICS CORP
NORTH AMER PHILIPS AKG
NORTH AMERICAN PHILIPS
ORBIT RADIO AND VIDEO
ORK ELECTRONIC PROD
RUSSCO ELECTRONICS MFG
SHURE BROTHERS INC
SINGER PROD CO INC
STANDARD RADIO CORP
SUPERSCOPE INC
TAPE ATHON CORP
TELEXCOMMUNICATIONS DIV
UNIVERSAL AUDIO INC
VIF INTERNATIONAL
VISUAL ELECTRONICS CORP
WARD ELECTRONIC INDUS

Preamplifiers, Video

AEROVOX CORP
AMECO INC
FAIRLANE ELECTRONICS
INTERNL NUCLEAR CORP
PRESEARCH INC
SHINTRON CO INC
TV CABLE SUPPLY CO
TELE MEASUREMENTS INC
VISUAL ELECTRONICS CORP
WARD ELECTRONIC INDUS

Pressurization Equipment, Transmission Line

ANDREW CORP
ANDREWS TOWERS INC
COLLINS RADIO CO
SUPERIOR CONTINENTAL CO

Printers, Logging

COLLINS RADIO CO
GATES RADIO CO
HICKOK FLEC INSTRUMENT
MOSELEY ELECTRONICS
POTOMAC INSTRUMENTS INC
RUST CORP
SINGER PROD CO INC

Printers, Teletype

COLLINS RADIO CO
SHINTRON CO INC
SINGER PROD CO INC
TREPAC CORP AMERICA

Probes, Oscilloscope

ARBOR SYSTEMS INC
HICKOK ELEC INSTRUMENT
LEADER INSTRUMENTS CORP
METROLOGIE COMPAGNIE GEN
RCA ELECTRONIC COMP DEV
SENCORE INC
TEKTRONIX INC
TEXSCAN CORP
HEWLETT PACKARD CO

Probes, Test Lead

E Z HOOK TEST PRODUCTS
G C ELECTRONICS
HICKOK ELEC INSTRUMENT
RCA ELECTRONIC COMP DEV

Processors, Film, B & W

BURKE JAMES
FB CECO INC
FAIRCHILD INDUSTRIAL
FILMLINE CORP
HOUSTON FEARLESS CORP
TECH FILM LABS INC

Processors, Film, Color

FB CECO INC
FILMLINE CORP
HOUSTON FEARLESS CORP
TECH FILM LABS INC

Projectors, Film

ARRIFLEX CORP OF AMER
OU VAL I FIT CORP
EASTMAN KODAK CO
FB CECO INC

GAF CORP
THE KALART CO INC
L W PHOTO INC
LISTEC TV EQUIP CORP
RCA BROADCAST COMM PRD
TELE CINE INC
TRAID CORP
VISUAL ELECTRONICS CORP

Projectors, Film, Rear

FB CECO INC
FAIRCHILD INDUSTRIAL
THE KALART CO INC
H WILSON CORP

Projectors, Slide

CENTURY LIGHTING INC
EASTMAN KODAK CO
FB CECO INC
GAF CORP
GRAY RESEARCH DEV
THE KALART CO INC
RCA BROADCAST COMM PRD
VISUAL ELECTRONICS CORP

Projectors, TV, Large Screen

FB CECO INC
GBC CCTV
GPL DIV SINGER GENERAL
GENERAL TELEVISION NTKW
THE JANSON INDUSTRIES
THE KALART CO INC
RCA BROADCAST COMM PRD
TELE MEASUREMENTS INC

R

Racks, Mounting (Also See Hardware)

BELL HOWELL TAPE DIV
BUO RADIO INC
COLLINS RADIO CO
ENCLOSURE CORP
EQUIPTO
GE VISUAL COMM PROD
GATES RADIO CO
LANG ELECTRONICS INC
PACKARD BELL ELECTRONIC
RCA BROADCAST COMM PRD
RAYTHEON CO
SHINTRON CO INC
UPSON TOOLS INC
VENT RAK INC
WABER ELECTRONICS INC

Radar, Weather

CANOGA ELECT CO
COLLINS RADIO CO
GEN ELECTRODYNAMICS
KAAR ENGR CO

Radomes

ADVANCE INDUSTRIES
ANDREWS TOWERS INC
COLLINS RADIO CO
JAMPRO ANTENNA CO
PARABAM INC

Receivers, AM

BOGEN COMMUNICATIONS
COLLINS RADIO CO
COMREX CORP
DELCO RADIO
GATES RADIO CO
HAMMARLUND MFG
HEATH CO
IRC DIV TRW INC
KAHN RESEARCH LAB INC
NORTH AMER PHILIPS AKG
NORTH AMERICAN PHILIPS
SINGER PROD CO INC
UTICA ELECTRONICS

Receivers, FM

AMECO INC
BELAR ELECTRONICS LAB
BOGEN COMMUNICATIONS
COMREX CORP
DFLCO RADIO
GATES RADIO CO
HAMMARLUND MFG

HEATH CO
IRC DIV TRW INC
MARTI ELECTRONICS
NORTH AMER PHILIPS AKG
NORTH AMERICAN PHILIPS
SINGER PROD CO INC
UTICA ELECTRONICS
WILKINSON ELFT INC

Receivers, HF

AMER ELECTRONIC LAB
COLLINS RADIO CO
ELECTRO VOICE INC
ENGINEERING ASSOC
HAMMARLUND MFG
KARG LAB INC
MULTRONICS INC
NARDA MICROWAVE CORP
SINGER PROD CO INC

Receivers, Multiplex

BELAR ELECTRONICS LAB
BOGEN COMMUNICATIONS
CALBEST ELECTRONICS
ELECTRO VOICE INC
ELECTRO VOICE INC
GOTHAM AUDIO CORP
HEATH CO
KARG LAB INC
ALBERT SCHULTZ INC
SINGER PROD CO INC
STANDARD RADIO CORP
SUPERSCOPE INC

Receivers, SCA

BELAR ELECTRONICS LAB
CALBEST ELECTRONICS
KARG LAB INC
MARTI ELECTRONICS
MCMARTIN INDUSTRIES INC
SINGER PROD CO INC

Receivers, TV, Color

AMECO INC
HEATH CO
SFTCHELL CARLSON INC
SINGER PROD CO INC
SONY CORP OF AMERICA
STANDARD RADIO CORP
SYLVANIA COMM ELECTRONIC

Receivers, TV, Monochrome

AMECO INC
HEATH CO
NEMO RECORDING LABS
SETCHELL CARLSON INC
SINGER PROD CO INC
SONY CORP OF AMERICA
STANDARD RADIO CORP
SYLVANIA COMM ELECTRONIC

Recorders, Disc, Magnetic

COLORADO VIDEO INC
GEN ELECTRODYNAMICS
GOTHAM AUDIO CORP
ALBERT SCHULTZ INC
TELECTRO SYSTEMS CORP
VISUAL ELECTRONICS CORP
VISUAL ELECTRONIC LABS

Recorders, Film, Light

VISUAL ELECTRONICS CORP

Recorders, Film, Magnetic

RANGERTONE ELECTRONICS
TELECTRO SYSTEMS CORP
VISUAL ELECTRONICS CORP

Recorders, Logging, Magnetic

AMPEX CORP
LANG ELECTRONICS INC
METROTECH INC
MILES REPRODUCER CO
RANGERTONE ELECTRONICS
SCOVILL DIV
TAPE ATHON CORP
TELECTRO SYSTEMS CORP

Recorders, Magnetic, Tape, Audio

ACCURATE SOUND CO
ALCOR INC

ALLIED ELECTRONIC CORP
AMER GELOSO ELECTRONICS
AMPEX CORP
AUDIO MAGNETICS CORP
B K INSTRUMENTS INC
BELL HOWELL TAPE DIV
BROADCAST ELECTRONICS
CINE SONIC SOUND INC
CONCORD ELFT CORP
CROWN INTERNATIONAL
GATES RADIO CO
GAUSS ELECTROPHYSICS
GOTHAM AUDIO CORP
HEATH CO
INTERNL GOOD MUSIC INC
LANG ELECTRONICS INC
MAGNATECH CO
MAGNA TECH CORP
MCKENZIE LABS
METROTECH INC

MILFS REPRODUCER CO
NFM RECORDING LABS
NORTH AMER PHILIPS AKG
NORTH AMERICAN PHILIPS
ORBIT RADIO AND VIDEO
RCA BROADCAST COMM PRD
RANGERTONE ELECTRONICS
RECORDEX CORP
RYDER MAGNETICS SALES
ALBERT SCHULTZ INC
SCOVILL DIV
SCULLY RECORDING INST
SINGER PROD CO INC
SONOCRAFT CORP
STANDARD RADIO CORP
SUPERSCOPE INC
TABER MFG ENGR CO
TANDBERG OF AMERICA INC
TAPE ATHON CORP
TELECTRO SYSTEMS CORP
TELEXCOMMUNICATIONS DIV
VIF INTERNATIONAL
VISUAL ELECTRONICS CORP
MAGNECORD
MARTFL ELECTRONICS INC
SPARTA ELFT CORP

Recorders, Magnetic Tape, Audio, Cartridge

AMER GELOSO ELECTRONICS
AUDIO MAGNETICS CORP
BROADCAST ELECTRONICS
BROADCAST PROD CO INC
CINE SONIC SOUND INC
COLLINS RADIO CO
CONCORD ELECT CORP
GATES RADIO CO
INTERNL GOOD MUSIC INC
LANG ELECTRONICS INC
MAGNA TECH CORP
MACARTA INC
MCKENZIE LABS
NEMO RECORDING LABS
POWER OPTICS INC
RANGERTONE ELECTRONICS
RECORDEX CORP
ALBERT SCHULTZ INC
SCOVILL DIV
SINGER PROD CO INC
STANDARD RADIO CORP
SUPERSCOPE INC
TANDBERG OF AMERICA INC
TAPFCASTER
TELECTRO SYSTEMS CORP
TFLEXCOMMUNICATIONS DIV
MARTEL ELECTRONICS INC
SPARTA ELECT CORP

Recorders, Magnetic Tape, Logging

AMPEX CORP
CROWN INTERNATIONAL
GATES RADIO CO
HONEYWELL INC
METROTECH INC
SCOVILL DIV
TELECTRO SYSTEMS CORP
TFLEXCOMMUNICATIONS DIV

Recorders, Magnetic Tape, Video

BELL HOWELL TAPE DIV
CATV EQUIPMENT CO
CONCORD ELECT CORP
OAGE BELL DIV
GRC CCTV
GPL DIV SINGER GENERAL
GENERAL TELEVISION NTKW
IKEGAMI CO LTD
LERRO ELECTRICAL CORP

Attention TV Stations:

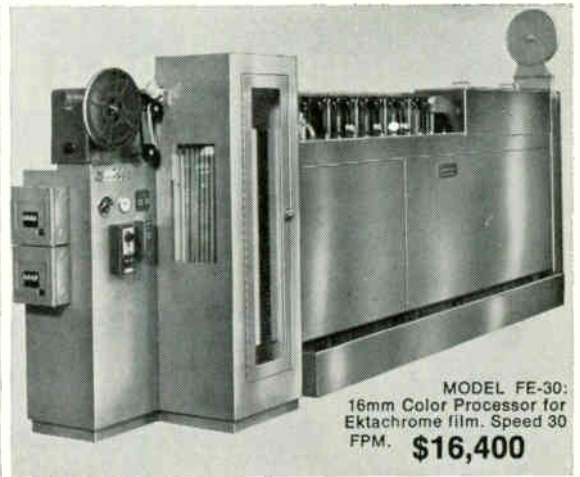
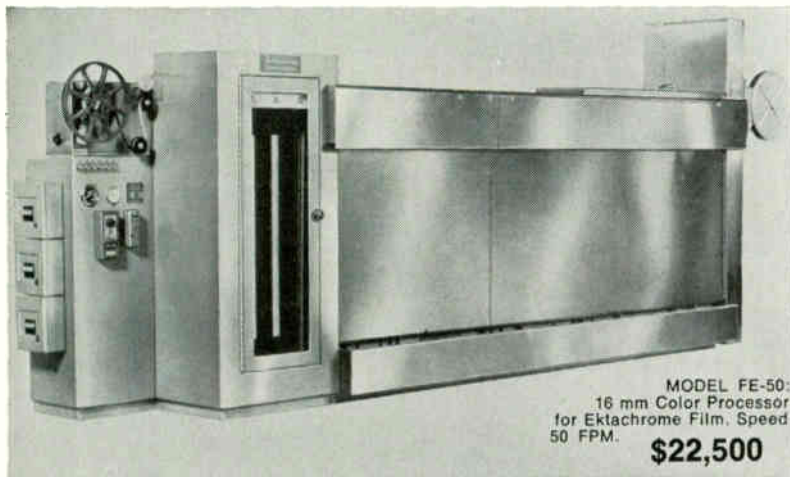
We've got news for you!

FILMLINE'S professional color film processors now available for TV NEWS

The FILMLINE Models FE-30 and FE-50 are exciting new color film processors designed specifically for use in television station news departments. The design is backed by Filmline's reputation as the world's leading manufacturer of professional film processors for the commercial motion picture laboratory industry.

Now for the first time the television industry can enjoy the benefits of professional caliber equipment incorporating exclusive FILMLINE features that have paced the state-of-the-art in commercial laboratories, at a cost lower than processors offering less.

After you check these exclusive Filmline features you'll want to install a Filmline processor in your news department NOW!



● "FILMLINE OVERDRIVE FILM TRANSPORT SYSTEM"

This marvel of engineering completely eliminates film breakage, pulled perforations, scratches and operator error. The film can be deliberately stalled in the machine without film breakage or significant change of film footage in solutions. The heart of any film processor is the drive system. No other film drive system such as sprocket drive, bottom drive or simple clutch drives with floating lower assemblies can give you the performance capability of the unique Filmline Overdrive Film Transport System.

- "TORQUE MOTOR TAKE-UP" gives you constant film take-up and does not impose any stress or strain on the film itself. Completely independent of the film transport system. This FILMLINE feature is usually found in professional commercial processors but is incorporated on the FE-30 and

FE-50 models as standard equipment. Don't settle for less!

- "TEMP-GUARD" positive temperature control system. Completely transistorized circuitry insures temperature control to well within processing tolerances. Temp-Guard controls temperatures accurately and without the problems of other systems of lesser sophistication.
- "TURBO-FLOW" impingement dryer. Shortens dry-to-dry time, improves film results, and carefully controls humidity content of your valuable (and sometimes rare) originals. Immediate projection capability is assured because the film dries flat without the usual curl associated with other film processors.
- "ZERO DOWN TIME" The reputation of any film processor is only as good as its reliability. The

combination of the exclusive and special added Filmline features guarantees trouble-free operation with absolute minimum down-time and without continual operator adjustments. Recapture your original investment in 2 years on maintenance savings alone. Filmline's "Push the button and walk-away processing" allows inexperienced operators to turn out highest quality film.

- "MATERIALS, CONSTRUCTION AND DESIGN" All Filmline machines are constructed entirely of metal and tanks are type 316 stainless steel, heliarc welded to government specifications. The finest components available are used and rigid quality control standards are maintained. Compare Filmline features to other processors costing more money. Feature-by-feature, a careful evaluation will convince you that Filmline offers you more for your investment.

Additional Features included in price of machine (Not as extras).

Magazine load, daylight operation ■ Feed-in time delay elevator (completely accessible) ■ Take-up time delay elevator (completely accessible) ■ Red brass bleach tank, shafts, etc. Prehardener solution filter ■ Precision Filmline Venturi air squeegee prior to drybox entry ■ Air vent on prehardener ■ Solid state variable speed D.C. drive main motor ■ Bottom drains and valves on all tanks ■ Extended development time up to two additional camera stops at 50 FPM ■ Pump recirculation of all eight solutions thru spray bars ■ Temperature is sensed in the recirculation line ■ All solutions temperature controlled, no chilled water required ■ Built-in air compressor ■ Captive bottom assemblies assure you constant footage in each solution ■ Change over from standard developing to extended developing can be accomplished in a matter of seconds ■ Impingement dryer allows shorter put through time.

Partial listing of Filmline Color Installations: — NBC- New York, NBC- Washington, NBC- Cleveland, NBC- Chicago, CBS & ABC Networks, Eastman Kodak, Rochester.

Laboratories: De Luxe Labs, General Film Labs (Hollywood), Pathe-Labs, Precision Labs, Mecca Labs, Color Service Co., Capital Film Labs, Byron Film Labs, MGM, Movie Lab, Lab-TV, Technical Film Labs, Telecolor Film Labs, Guffanti Film Labs, A-One Labs, All-service Labs, NASA Cape Kennedy, Ford Motion Picture Labs.

TV Stations: WAPI-TV, KTVI-TV, WXYZ-TV, WTPA-TV, WBTV-TV, WEAT-TV, WMAL-TV, WSYR-TV, WDSU-TV, WVUE-TV, WJXT-TV, WTOP-TV, WAVY-TV, KTAR-TV, WTVR-TV, WFBC-TV, WMAR-TV, WKCT-TV, WAVE-TV, WCPQ-TV, WAPA-TV, WCIV-TV, WJIM-TV, WWL-TV, KYW-TV, KETV-TV, WNBQ-TV, KSLA-TV, WSAZ-TV, WHP-TV, WHCT-TV, WTWO-TV.



"When you buy quality Filmline Costs Less"

All prices F.O.B.
MILFORD, CONN.

Circle Item 57 on Tech Data Card

Dept. BJ-69

Send for Literature.

Time & Lease
Plans Available.



STANTON 681EE CALIBRATION STANDARD

"The tracking was excellent and distinctly better in this respect than any other cartridge we have tested....The frequency response of the Stanton 681EE was the flattest of the cartridges tested, within ± 1 dB over most of the audio range."

From the laboratory tests of eleven cartridges, conducted by Julian D. Hirsch and Gladden B. Houck, as reported in *HiFi/Stereo Review*, July, 1968.

To anyone not familiar with the Stanton 681, this might seem to be an extraordinary statement. But to anyone else, such as professional engineers, these results simply confirm what they already know.

Your own 681 will perform exactly the same as the one tested by Hirsch-Houck. That is a guarantee. Every 681 is tested and measured against the laboratory standard for frequency response, channel separation, output, etc. The results are written by hand on the specifications enclosed with every 681.

You don't have to be a professional to hear the difference a Stanton 681 will make in your system, especially with the "Longhair" brush that provides the clean grooves so essential for flawless tracking and clear reproduction.

The 681EE, with elliptical stylus, is \$60.00. The 681T, at \$75.00, includes both an elliptical stylus (for your records) and an interchangeable conical stylus (for anyone else's records). For free literature, write to Stanton Magnetics, Inc., Plainview, L.I., N.Y.



Circle Item 58 on Tech Data Card

NEMO RECORDING LABS
NORTH AMER PHILIPS AKG
NORTH AMERICAN PHILIPS
ORBIT RADIO AND VIDEO
RCA BROADCAST COMM PRD
SONOCRAFT CORP
SONY CORP OF AMERICA
SYLVANIA COMM ELEC TRONIC
TAPE ATION CORP
TELECTRO SYSTEMS CORP
TFLF MEASUREMENTS INC
VISUAL ELECTRONICS CORP
VISUAL ELECTRONIC LABS
CAE INDUSTRIES LTD

Recorders, Paper Logging and Graphic

R K INSTRUMENTS INC
BAUER ELECTRONICS CORP
G E ELECTRONIC COPONENTS
HEATH CO
HICKOK ELEC INSTRUMENT
MOSFLEY ELECTRONICS
RUST CORP
RUSTRAK INSTRUMENT DIV
SIMPSON ELECTRIC CO

Recorders, Video, Kinescope

DIAMOND ELECTRONICS
RCA BROADCAST COMM PRD
SHIBADEN CORP OF AMER
SONOCRAFT CORP
TELECTRO SYSTEMS CORP
TFLF MEASUREMENTS INC

Recording Service, Audio, Tape

ACCURATE SOUND CO
AEROVOX CORP
ALCOR INC
AUDIO MAGNETICS CORP
CINE SONIC SOUND INC
DUOTONE CO INC
INTERNL GOOD MUSIC INC
MAGNETIC STUDIOS CORP
NEMO RECORDING LABS
ORBIT RADIO AND VIDEO
SINGER PROD CO INC
SOUND STUDIOS INC
ULTRA AUDIO PRODUCTS

Record Players (See Turntables)

COLLINS RADIO CO
GOTHAM AUDIO CORP
GRAY RESEARCH DIV
ALBERT SCHULTZ INC
SUPERSCOPE INC

Records, Blank Acetate, For Recording

DUOTONE CO INC
GATES RADIO CO
ALBERT SCHULTZ INC
SINGER PROD CO INC

Records, Blank Lacquer, for Recording

SINGER PROD CO INC
AUDIO DERICFS

Records, Sound Effect

ALBERT SCHULTZ INC
SINGER PROD CO INC

Records, Test

B K INSTRUMENTS INC
G C ELECTRONICS
GOTHAM AUDIO CORP
NORTH AMERICAN PHILIPS
ALBERT SCHULTZ INC
SINGER PROD CO INC
CRS LABS

Rectifiers (Also See Semiconductors)

CALVERT ELECTRONICS INC
COLLINS RADIO CO
CONANT LABS INC
G E DISTRIBUTOR SALES OP
G E ELECTRONIC COPONENTS

MOTOROLA SEMICONDUCTOR
SARKES TARZIAN INC
SINGER PROD CO INC
SOLITRON DEVICES INC
TEXAS INSTRUMENT
WILKINSON FLECT INC

Rectifiers, Selenium

CALVERT ELECTRONICS INC
COLLINS RADIO CO
G E ELECTRONIC COPONENTS
IRC DIV TRW INC
SARKES TARZIAN INC
SINGER PROD CO INC

Reels, Cable, Automatic

BOSTON INSULATED
ELECTRO VOICE INC
INDUSTRIAL ELECTRIC REEL
SINGER PROD CO INC

Reels, Film

FB CECO INC
NEUMADE PROD CORP
RCA BROADCAST COMM PRD
AUDIO DERICFS

Reels, Tape

AMERLINE CORP
AUDIO MAGNETICS CORP
BROADCAST ELECTRONICS
CINE SONIC SOUND INC
EASTMAN KODAK CO
G C ELECTRONICS
GATES RADIO CO
MAGNETIC PROD DIV
MAGNETIC STUDIOS CORP
RCA BROADCAST COMM PRD
RECORDS RESERVE CORP
ALBERT SCHULTZ INC
SINGER PROD CO INC
STANDARD RECORD MFG CO
SUPERSCOPE INC
WIDE RESPONSE
AUDIO DERICES
MAGNECORD

Reflectometers, Time Domain

COLLINS RADIO CO
ROHDE SCHWARZ SALES
SINGER PROD CO INC
HEWLETT PACKARD CO

Reflectors, Passive

ADVANCE INDUSTRIES
COLLINS RADIO CO
FORT WORTH TOWER CO
MICROELECT CO INC
ROHN MFG CO

Regulators, Frequency

COLLINS RADIO CO
G E ELECTRONIC COPONENTS

Regulators, Current

COLLINS RADIO CO
G E ELECTRONIC COPONENTS

Regulators, Voltage

ARBOR SYSTEMS INC
B K INSTRUMENTS INC
COLLINS RADIO CO
ENGINEERING ASSOC
G E ELECTRONIC COPONENTS
KATO ENGINEERING CO
TERMINAL HUDSON ELECTRS

Relays, Antenna

COLLINS RADIO CO
GATES RADIO CO
ITT JENNINGS
JAMPRO ANTENNA CO
LECTRONIC RES LABS INC
MAGNECRAFT ELECTRIC CO
MULTRONICS INC
SINGER PROD CO INC
TROMPETER ELECTRONICS

Relays, Break in

ESSEX WIRE CORP MKT DIV
GATES RADIO CO

Relays, Coaxial

COLLINS RADIO CO
GATES RADIO CO
ITT JENNINGS
JAMPRO ANTENNA CO
ELECTRONIC RES LABS INC
MAGNECRAFT ELECTRIC CO
SINGER PROD CO INC
TROMPETER ELECTRONICS

Relays, General Purpose

ALLIED ELECTRONIC CORP
COOK ELECTRIC CO
CORNELL DUBILIER ELEC
ELECTRONIC INST SPEC C
ESSEX WIRE CO RBM DIV
ESSEX WIRE CORP MKT DIV
G E ELECTRONIC COPONENTS
ITT JENNINGS
MAGNECRAFT ELECTRIC CO
OMITE MFG CO
TERMINAL HUDSON ELECTRS

Relays, Latching

COOK ELECTRIC CO
ELECTRONIC INST SPEC C
ESSEX WIRE CO RBM DIV
GATES RADIO CO
ITT JENNINGS
MAGNECRAFT ELECTRIC CO
OMITE MFG CO

Relays, Light Indicating

COOK ELECTRIC CO
GATES RADIO CO

Relays, Overload

COOK ELECTRIC CO
ESSEX WIRE CO RBM DIV
ESSEX WIRE CORP MKT DIV
G E ELECTRONIC COPONENTS
ITT JENNINGS

Relays, Photoelectric

COOK ELECTRIC CO
G E ELECTRONIC COPONENTS
HOUSTON ELECTRONICS
HUGHEY PHILLIPS INC

Relays, Power

COOK ELECTRIC CO
ESSEX WIRE CO RBM DIV
ESSEX WIRE CORP MKT DIV
ITT JENNINGS
MAGNECRAFT ELECTRIC CO
OMITE MFG CO
SINGER PROD CO INC

Relays, Sequencing

COOK ELECTRIC CO
ESSEX WIRE CO RBM DIV
ESSEX WIRE CORP MKT DIV

Relays, Stepping

COOK ELECTRIC CO
CORNELL DUBILIER ELEC
ITT JENNINGS

Relays, Telephone

COOK ELECTRIC CO
CORNELL DUBILIER ELEC
ELECTRONIC INST SPEC C
ESSEX WIRE CO RBM DIV
ESSEX WIRE CORP MKT DIV
ITT JENNINGS
OMITE MFG CO

Relays, Thermal

COOK ELECTRIC CO
DIALIGHT CORP
ESSEX WIRE CO RBM DIV
ESSEX WIRE CORP MKT DIV
G E ELECTRONIC COPONENTS
THOR ELECTRONICS CORP

Relays, Time Delay

AMPERITE CO
CONRAC CORP
COOK ELECTRIC CO
CORNELL DUBILIER ELEC
DIALIGHT CORP
ENGINEERING ASSOC
ESSEX WIRE CO RBM DIV
ESSEX WIRE CORP MKT DIV
G E ELECTRONIC COPONENTS
HOUSTON ELECTRONICS
OMITE MFG CO
TERMINAL HUDSON ELECTRS
THOR ELECTRONICS CORP
TREPAC CORP AMERICA

Remote Control Systems

AEROVOX CORP
ANDREWS TOWERS INC
BAUER ELECTRONICS CORP
CCA ELECTRONICS
COLLINS RADIO CO
ENGINEERING ASSOC
G E ELECTRONIC COPONENTS
GATES RADIO CO
MARTI ELECTRONICS
MICRO LINK DIV
MOSELEY ASSOC INC
MOSELEY ELECTRONICS
RCA BROADCAST COMM PRD
RFE LABS
RUST CORP
SINGER PROD CO INC
TREPAC CORP AMERICA
VISUAL ELECTRONICS CORP

Resistors, Fixed, Carbon

AMPEREX CORP
IRC DIV TRW INC
OMITE MFG CO
PAINTON INC
SINGER PROD CO INC
TELEFUNKEN SALES CORP
TEXAS INSTRUMENT

Resistors, Fixed Noninductive

AMPEREX CORP
IRC DIV TRW INC
OMITE MFG CO
SINGER PROD CO INC

Resistors, Fixed, Precision

AMPHENOL CORP
IRC DIV TRW INC
MALLORY
OMITE MFG CO
PAINTON INC
SINGER PROD CO INC
TERMINAL HUDSON ELECTRS
TEXAS INSTRUMENT

Resistors, Fixed, Wirebound

AMPHENOL CORP
G E ELECTRONIC COPONENTS
IRC DIV TRW INC
MALLORY
OMITE MFG CO
PAINTON INC
SINGER PROD CO INC
TERMINAL HUDSON ELECTRS

Resistors, Fixed, Other

IRC DIV TRW INC
OMITE MFG CO
PAINTON INC
SINGER PROD CO INC
SOLITRON DEVICES INC

Resistors, Variable, Carbon

AMPHENOL CORP
IRC DIV TRW INC
MALLORY
OMITE MFG CO
SINGER PROD CO INC
TELEFUNKEN SALES CORP
TERMINAL HUDSON ELECTRS

Resistors, Variable, Wirebound

AMPHENOL CORP
IRC DIV TRW INC
MALLORY
OMITE MFG CO
PAINTON INC
SINGER PROD CO INC

Reverberation Devices (Also See Amplifiers)

BAUER ELECTRONICS CORP
CLEVELAND ELECTRONICS
ELECTRONIC DESIGNERS INC
FAIRCHILD RECORDING EQPT
GATELY ELECTRONICS
GIBBS MFG RESEARCH CO
GOTHAM AUDIO CORP
ORBIT RADIO AND VIDEO
SINGER PROD CO INC
ULTRA AUDIO PRODUCTS
SPARTA ELECT CORP

Rewinders, Film

FR CECO INC
NEUMADE PROD CORP
PRECISION LAB
RCA BROADCAST COMM PRD

Rewinders, Tape

BELL SOUND STUDIOS
NEUMADE PROD CORP
RECORDEX CORP
SINGER PROD CO INC
HARVEY RADIO CO INC
SPARTA ELECT CORP

Rheostats

G E ELECTRONIC COMPONENTS
MALLORY
NEUMADE PROD CORP
OMITE MFG CO
SINGER PROD CO INC
TFCH LABORATORIES INC

Rings, Retaining (See Hardware)

VACO PRODUCTS CO

Rods, Ground

G C ELECTRONICS
GATES RADIO CO
TV CABLE SUPPLY CO

S

Safety Devices, Climbing

PAUL SHEPARD INC

Schools, Facilities & Equipment (See Education Facilities)

ALCOR INC
DU VAL I FIT CORP
GATES RADIO CO
MCMARTIN INDUSTRIES INC
SIMPSON ELECTRIC CO
TREPAC CORP AMERICA
WABER ELECTRONICS INC

Scramblers, Speech

COLLINS RADIO CO
KAHN RESEARCH LAB INC
SINGER PROD CO INC
TREPAC CORP AMERICA
HEWLETT PACKARD CO

Screens, Projection, Front

FR CFCO INC
RAVEN SCREEN CORP
SONOCRAFT CORP

Screens, Projection, Rear

FR CFCO INC
RAVEN SCREEN CORP
SONOCRAFT CORP
H WILSON CORP

Semiconductor, Diodes

AMER ELECTRONIC LAB
AMPEREX CORP

CALVERT ELECTRONICS INC
G F DISTRIBUTOR SALES OP
G E ELECTRONIC COMPONENTS
HEINTZ AND KAUFMAN LTD
IRC DIV TRW INC
JSH ELECT CO
MICROWAVE ASSOC INC
MOTOROLA SEMICONDUCTOR
RCA ELECTRONIC COMP DEV
SARKES TARZIAN INC
SINGER PROD CO INC
SOLITRON DEVICES INC
SYLVANIA SEMICONDUCTOR
TELEFUNKEN SALES CORP
TERMINAL HUDSON ELECTRS
TEXAS INSTRUMENT
THOR ELECTRONICS CORP
HEWLETT PACKARD CO

Semiconductor, Rectifiers, General

AMPEREX CORP
CALVERT ELECTRONICS INC
COLLINS RADIO CO
G E DISTRIBUTOR SALES OP
G E ELECTRONIC COMPONENTS
HEINTZ AND KAUFMAN LTD
IRC DIV TRW INC
JSH ELECT CO
MALLORY
MOTOROLA SEMICONDUCTOR
RCA ELECTRONIC COMP DEV
SARKES TARZIAN INC
SINGER PROD CO INC
SYLVANIA SEMICONDUCTOR
TERMINAL HUDSON ELECTRS
TEXAS INSTRUMENT
THOR ELECTRONICS CORP

Semiconductor, Rectifiers High Voltage

AMPEREX CORP
CALVERT ELECTRONICS INC
COLLINS RADIO CO
G E DISTRIBUTOR SALES OP
HEINTZ AND KAUFMAN LTD
JSH ELECT CO
MOTOROLA SEMICONDUCTOR
RCA ELECTRONIC COMP DEV
SARKES TARZIAN INC
SINGER PROD CO INC
TERMINAL HUDSON ELECTRS
TEXAS INSTRUMENT
THOR ELECTRONICS CORP
WILKINSON ELECT INC

Semiconductor, Rectifiers, Power

AMPEREX CORP
CALVERT ELECTRONICS INC
CALVERT ELECTRONICS INC
COLLINS RADIO CO
G E DISTRIBUTOR SALES OP
G E ELECTRONIC COMPONENTS
HEINTZ AND KAUFMAN LTD
JSH ELECT CO
MALLORY
MOTOROLA SEMICONDUCTOR
RCA ELECTRONIC COMP DEV
SARKES TARZIAN INC
SINGER PROD CO INC
SYLVANIA SEMICONDUCTOR
TERMINAL HUDSON ELECTRS
TEXAS INSTRUMENT
THOR ELECTRONICS CORP

Semiconductor, Rectifiers, Silicon Controlled-SCR

AMPEREX CORP
CALVERT ELECTRONICS INC
COLLINS RADIO CO
DELCO RADIO
G E ELECTRONIC COMPONENTS
HEINTZ AND KAUFMAN LTD
JSH ELECT CO
KLIEGL BROS LIGHTING
MOTOROLA SEMICONDUCTOR
RCA ELECTRONIC COMP DEV
SARKES TARZIAN INC
SINGER PROD CO INC
TERMINAL HUDSON ELECTRS
TEXAS INSTRUMENT
THOR ELECTRONICS CORP

Semiconductors, Thyristors

CALVERT ELECTRONICS INC
HEINTZ AND KAUFMAN LTD
JSH ELECT CO
KLIEGL BROS LIGHTING
MOTOROLA SEMICONDUCTOR
RCA ELECTRONIC COMP DEV
SINGER PROD CO INC
TERMINAL HUDSON ELECTRS
TEXAS INSTRUMENT
THOR ELECTRONICS CORP

Semiconductors, Transistors, AF

CALVERT ELECTRONICS INC
DELCO RADIO
HEINTZ AND KAUFMAN LTD
JSH ELECT CO
MOTOROLA SEMICONDUCTOR
RCA ELECTRONIC COMP DEV
SINGER PROD CO INC
SYLVANIA SEMICONDUCTOR
TELEFUNKEN SALES CORP
TERMINAL HUDSON ELECTRS
TEXAS INSTRUMENT
THOR ELECTRONICS CORP

Semiconductors, Transistors, FE

AMPEREX CORP
CALVERT ELECTRONICS INC
HEINTZ AND KAUFMAN LTD
JSH ELECT CO
MOTOROLA SEMICONDUCTOR
RCA ELECTRONIC COMP DEV
SINGER PROD CO INC
TERMINAL HUDSON ELECTRS
TEXAS INSTRUMENT
THOR ELECTRONICS CORP

Semiconductor, Transistors, General

BOONTON ELECTRONICS
CALVERT ELECTRONICS INC
DELCO RADIO
G E ELECTRONIC COMPONENTS
HEINTZ AND KAUFMAN LTD
JSH ELECT CO
MOTOROLA SEMICONDUCTOR
RCA ELECTRONIC COMP DEV
SINGER PROD CO INC
SYLVANIA SEMICONDUCTOR
TELEFUNKEN SALES CORP
TERMINAL HUDSON ELECTRS
TEXAS INSTRUMENT
THOR ELECTRONICS CORP

Semiconductor, Transistors, RF

CALVERT ELECTRONICS INC
HEINTZ AND KAUFMAN LTD
JSH ELECT CO
MOTOROLA SEMICONDUCTOR
RCA ELECTRONIC COMP DEV
SINGER PROD CO INC
SOLITRON DEVICES INC
SYLVANIA SEMICONDUCTOR
TELEFUNKEN SALES CORP
TEXAS INSTRUMENT
THOR ELECTRONICS CORP

Services, Frequency-Measurement (See Calibration Devices, Frequency)

INDUSTRIAL INSTRUMENT
JUMP ELECTRONICS
TRACOR IND INST DIV

Services, Maintenance (See Maintenance Services)

ALCOR INC
JUMP ELECTRONICS
LITTLE JOE ENTERPRISES

Shielding, Tube

BIRNBACH CO INC
INTERNATIONAL ELEC RES
SINGER PROD CO INC

Shifters, Phase, Microwave

COLLINS RADIO CO
MICROLAB

MICROWAVE ASSOC INC
NARDA MICROWAVE CORP
WEINSCHEL ENGINEERING CO
HEWLETT PACKARD CO

Shunts, Meter

G E ELECTRONIC COMPONENTS
TRIPLETT ELFC INSTRUMENT

Slides, Chassis

BUD RADIO INC

Slotted Sections

ALFORD MFG CO
MICROLAB
NARDA MICROWAVE CORP
PHELPS DODGE ELECTRONIC

Sockets, Crystal

INDUSTRIAL ELECTRONIC
SINGER PROD CO INC

Sockets, Lamp

AUDIO ACCESSORIES INC
DIALIGHT CORP
INDUSTRIAL DEVICES INC
INDUSTRIAL ELECTRONIC
SINGER PROD CO INC

Sockets, Relay

INDUSTRIAL ELECTRONIC
OMITE MFG CO
SINGER PROD CO INC

Sockets, Semiconductor

SINGER PROD CO INC
TERMINAL HUDSON ELECTRS

Sockets, Tube

BIRNBACH CO INC
CALVERT ELECTRONICS INC
EIMOC DIV
G C ELECTRONICS
INDUSTRIAL ELECTRONIC
SINGER PROD CO INC

Solder

G C ELECTRONICS
SINGER PROD CO INC

Solvents and Cleaners

G C ELECTRONICS
MINNEAPOLIS MAGNETICS
NEUMADE PROD CORP
SINGER PROD CO INC
TFXWIPE CO

Sound Systems, Outdoor

AEROVOX CORP
ALCOR INC
ALLIED ELECTRONIC CORP
ALTEC LANSING
AMER GELOSO ELECTRONICS
BELL P A PROD CORP
BOGEN COMMUNICATIONS
ELECTRODYNE CORP
HOUSTON ELECTRONICS
JENSEN MFG DIV
MAGNETIC STUDIOS CORP
MCMARTIN INDUSTRIES INC
NORTH AMER PHILIPS AKG
RCA BROADCAST COMM PRD
RANGERTONE ELECTRONICS
ULTRA AUDIO PRODUCTS
APPLIED ELECT MECHANICS
AUDIO DISTRIBUTOR INC
HARVEY RADIO CO INC

Sound Systems, Portable

AEROVOX CORP
ALCOR INC
ALLIED ELECTRONIC CORP
ALTEC LANSING
AMER GELOSO ELECTRONICS
BELL P A PROD CORP
BOGEN COMMUNICATIONS
COMREX CORP
ELECTRODYNE CORP
HOUSTON ELECTRONICS
JENSEN MFG DIV
MAGNETIC STUDIOS CORP



up to 4 subcarrier channels —including video— in STL's or intracity relays

One subcarrier channel for TV audio, two for FM stereo audio, and one for AM audio or SCA. With Collins microwave systems, that's what you get with color or black-and-white video in studio-transmitter links and intracity relay.

In the 6.8- to 7.1-GHz band, Collins offers this capability in the high performance 1-watt remodulating MW-408D for short systems, and the 5-watt IF heterodyne MW-409E for medium to long systems.

Both systems are completely solid state except for the 408D's transmitter klystron, and the 409E's traveling wavetube. Both meet

COMMUNICATION/COMPUTATION/CONTROL

NTSC color video transmission requirements. Both are available in non-standby or hot-standby space diversity configurations. And the quality of both is the same as Collins' broadcast quality.

Customer services are the same too: field survey, frequency planning, installation or installation assistance, financing, and training.

For details, contact your Collins sales engineer or Microwave Marketing Division, Collins Radio Company, Dallas, Texas 75207.



MCMARTIN INDUSTRIES INC
NORTH AMER PHILIPS AKG
NORTH AMERICAN PHILIPS
RCA BROADCAST COMM PRD
RANGERTONE ELECTRONICS
ULTRA AUDIO PRODUCTS
APPLIED ELECT MECHANICS
AUDIO DISTRIBUTOR INC
HARVEY RADIO CO INC

Sound Systems, Theater

AEROVOX CORP
ALCOR INC
AMER GELOSO ELECTRONICS
BOGEN COMMUNICATIONS
ELECTRODYNE CORP
HOUSTON ELECTRONICS
JENSEN MFG DIV
MAGNETIC STUDIOS CORP
MCMARTIN INDUSTRIES INC
NORTH AMER PHILIPS AKG
NORTH AMERICAN PHILIPS
RCA BROADCAST COMM PRD
RANGERTONE ELECTRONICS
TARTAN ELECTRONICS CORP
UNIVERSAL AUDIO INC
AUDIO DISTRIBUTOR INC
HARVEY RADIO CO INC

Speaker Components

ALTEC LANSING
AMER GELOSO ELECTRONICS
JENSEN MFG DIV
NORTH AMER PHILIPS AKG
NORTH AMERICAN PHILIPS
OAKTRON INDUSTRIES INC
SINGER PROD CO INC
SUPERSCOPE INC
TANDBERG OF AMERICA INC

Speakers

ALCOR INC
ALLIED ELECTRONIC CORP
ALTEC LANSING
AMER GELOSO ELECTRONICS
ATLAS SOUND DIV
BOGEN COMMUNICATIONS
CLEVELAND ELECTRONICS
ELECTRO VOICE INC
ELECTRO VOICE INC
GOTHAM AUDIO CORP
HARTLEY PROD CORP
JENSEN MFG DIV
KOSS ELECTRONICS INC
NORTH AMER PHILIPS AKG
NORTH AMERICAN PHILIPS
OAKTRON INDUSTRIES INC
ALBERT SCHULTZ INC
SINGER PROD CO INC
SUPERSCOPE INC
TANDBERG OF AMERICA INC

Splicers, Magnetic Tape & Film

FB CECO INC
G C ELECTRONICS
NEUMADE PROD CORP
PRECISION LAB
RCA BROADCAST COMM PRD
SINGER PROD CO INC

Stands, Television Monitor

H WILSON CORP

STL Equipment

ANDREWS TOWERS INC
COLLINS RADIO CO
COLLINS RADIO CO
COMREX CORP
DYNAIR ELECTRONICS
GE VISUAL COMM PRD
GATES RADIO CO
MARTI ELECTRONICS
MICRO LINK DIV
MICROWAVE ASSOC INC
MOSELEY ASSOC INC
MOSELEY ELECTRONICS
RCA BROADCAST COMM PRD
SARKES TARZIAN INC
SINGER PROD CO INC
TEKTRONIX INC

Strobe, Disc

G C ELECTRONICS

Strobe Lights

SINGER PROD CO INC
HUGHEY PHILLIPS INC

Styl, Cutting

DUOTONE CO INC
GOTHAM AUDIO CORP
ALBERT SCHULTZ INC
SINGER PROD CO INC

Styl, Playback

DUOTONE CO INC
ELECTRO VOICE INC
FIDELITONE INC
ALBERT SCHULTZ INC
SHURE BROTHERS INC
SINGER PROD CO INC

Switchers

BRADFORD INFORMATION SYS
DYNAIR ELECTRONICS
ESSEX WIRE CO RBM DIV
RICHMOND HILL
RIKER VIDEO INDUSTRIES
SHIRADFN CORP OF AMFR
SINGER PROD CO INC
TARTAN ELECTRONICS CORP
TERMINAL HUDSON ELECTRS
VIDEON CORP
VISUAL ELECTRONICS CORP
WARD ELECTRONIC INDUS

Switches, Coaxial

ALFORD MFG CO
AMER ELECTRONIC LAB
ANDREW CORP
ANDREWS TOWERS INC.
BIRD ELECTRONIC CORP
BLONDRF TONGUE LAB INC
CEI
COLLINS RADIO CO
ITT JENNINGS
JAMPRO ANTENNA CO
KAY ELECTRIC CO
LECTRONIC RES LABS INC
MICROLAB
MICROWAVE ASSOC INC
NARDA MICROWAVE CORP
PRODELIN INC
SINGER PROD CO INC
TELONIC INSTRUMENTS
TEFSCAN CORP
TROMPETER ELECTRONICS
WATERS MFG INC
WEINSCHTEL ENGINEERING CO

Switches, Crossbar

ANDRFW CORP
COLLINS RADIO CO
DYNAIR ELECTRONICS
GRASS VALLEY GROUP
RUST CORP
SINGER PROD CO INC
TAPE ATHON CORP
TROMPETER ELECTRONICS
VITAL INDUSTRIES

Switches, Foot

ALCO ELECTRONIC PROD
G E ELECTRONIC COPONENTS
HUGHEY PHILLIPS INC

Switches, Illuminated

ALCO ELECTRONIC PROD
COLLINS RADIO CO
DIALIGHT CORP
G E ELECTRONIC COPONENTS
DONALD P MOSSMAN INC
SEACOR INC
SINGER PROD CO INC
SWITCHCRAFT INC
TECH LABORATORIES INC

Switches, Interlock

ALCO ELECTRONIC PROD
COLLINS RADIO CO
G E ELECTRONIC COPONENTS
DONALD P MOSSMAN INC
SEACOR INC

Switches, Knife

BIRNBACH CO INC
COLLINS RADIO CO
G E ELECTRONIC COPONENTS
SINGER PROD CO INC

Switches, Lever

BIRNBACH CO INC
CENTRALAB
COLLINS RADIO CO
G E ELECTRONIC COPONENTS
MALLORY
DONALD P MOSSMAN INC
SINGER PROD CO INC

Switches, Mechanically Actuated

COLLINS RADIO CO
G E ELECTRONIC COPONENTS
ITT JENNINGS
MAGNECRAFT ELECTRIC CO
MICROWAVE ASSOC INC
SINGER PROD CO INC
TECH LABORATORIES INC

Switches, Multicontact

ALCO ELECTRONIC PROD
CENTRALAB
COLLINS RADIO CO
G E ELECTRONIC COPONENTS
ITT JENNINGS
DONALD P MOSSMAN INC
SEACOR INC
SINGER PROD CO INC
TECH LABORATORIES INC

Switches, Pushbutton

ALCO ELECTRONIC PROD
BIRNBACH CO INC
CENTRALAB
COLLINS RADIO CO
G C ELECTRONICS
G E ELECTRONIC COPONENTS
MALLORY
DONALD P MOSSMAN INC
PAINTON INC
SCANTLIN ELECTRONICS
SEACOR INC
SINGER PROD CO INC
TELEFUNKEN SALES CORP

Switches, Rotary

ALCO ELECTRONIC PROD
BIRNBACH CO INC
CENTRALAB
COLLINS RADIO CO
G C ELECTRONICS
G E ELECTRONIC COPONENTS
INDUSTRIAL DEVICES INC
JAMPRO ANTENNA CO
MALLORY
OMITE MFG CO
SEACOR INC
SINGER PROD CO INC
TECH LABORATORIES INC
WEINSCHTEL ENGINEERING CO

Switches, Slide

ALCO ELECTRONIC PROD
BIRNBACH CO INC
CENTRALAB
G C ELECTRONICS
G E ELECTRONIC COPONENTS
SEACOR INC
SWITCHCRAFT INC

Switches, Snap

ALCO ELECTRONIC PROD
COLLINS RADIO CO
G C ELECTRONICS
SINGER PROD CO INC

Switches, Telephone Type

COLLINS RADIO CO
G C ELECTRONICS
DONALD P MOSSMAN INC
SINGER PROD CO INC
SWITCHCRAFT INC

Switches, Thermal

COLLINS RADIO CO
ESSEX WIRE CO RBM DIV
G E ELECTRONIC COPONENTS
SINGER PROD CO INC

Switches, Toggle

ALCO ELECTRONIC PROD
BIRNBACH CO INC
COLLINS RADIO CO
G C ELECTRONICS
G F FLCTRONIC COPONFNTS
MICROWAVE ASSOC INC
PAINTON INC
SINGER PROD CO INC

Switches, Waveguide

ANDREWS TOWERS INC
COLLINS RADIO CO
LECTRONIC RFS LABS INC
MICROLAB
MICROWAVE ASSOC INC
SINGER PROD CO INC
SOLITRON DEVICES INC

Switching, Matrices

ALMA ENGINEERING
ANDREW CORP
ANDREWS TOWERS INC
CEI
CANOGA ELECT CO
COHU ELECTRONICS INC
COLLINS RADIO CO
DYNAIR ELECTRONICS
GRASS VALLEY GROUP
HOLLAND ELECTRONICS
ITT JENNINGS
RICHMOND HILL
SARKES TARZIAN INC
SINGER PROD CO INC
SWITCHCRAFT INC
TEKTRONIX INC
TREPAC CORP AMERICA
TROMPETER ELECTRONICS
VIDEON CORP
VISUAL ELECTRONICS CORP
WARD ELECTRONIC INDUS

Switching Systems

ALMA ENGINEERING
ANDREW CORP
ANDREWS TOWERS INC
ARBOR SYSTEMS INC
BRADFORD INFORMATION SYS
CANOGA ELECT CO
CENTRAL DYNAMICS CORP
COHU ELECTRONICS INC
COLLINS RADIO CO
DYNAIR ELECTRONICS
GRASS VALLEY GROUP
HOLLAND ELECTRONICS
RCA BROADCAST COMM PRD
RICHMOND HILL
RIKER VIDEO INDUSTRIES
RUST CORP
SARKES TARZIAN INC
SINGER PROD CO INC
SWITCHCRAFT INC
TARTAN ELECTRONICS CORP
TELEMATION INC
TREPAC CORP AMERICA
TROMPETER ELECTRONICS
VIDEON CORP
VIKOA INC
WARD ELECTRONIC INDUS
VITAL INDUSTRIES

T

Tape, Accessories

ACCURATE SOUND CO
CHANNEL MARKETING INC
DUOTONE CO INC
G C ELECTRONICS
GATES RADIO CO
MAGNATECH CO
MAGNETIC PROD DIV
MAGNETIC STUDIOS CORP
MCKENZIE LABS
MILES REPRODUCER CO
NORTRONICS CO INC
PRO TEX REEL BAND CO
RANGERTONE ELECTRONICS
RECORDEX CORP
ALBERT SCHULTZ INC
SINGER PROD CO INC
SUPERSCOPE INC

TELE CINE INC
WIDE RESPONSE
SPARTA ELECT CORP
Tape, Decks, Magnetic
ACCURATE SOUND CO
AMPEX CORP
BELL HOWELL TAPE DIV
BROADCAST ELECTRONICS
COLLINS RADIO CO
CROWN INTERNATIONAL
GATES RADIO CO
GOTHAM AUDIO CORP
INTERNL GOOD MUSIC INC
LANG ELECTRONICS INC
MAGNA TECH CORP
MCKENZIE LABS
RCA BROADCAST COMM PRD
RECORDEX CORP
ALBERT SCHULTZ INC
SINGER PROD CO INC
SUPERSCOPE INC
TANBERG OF AMERICA INC
TAPE ATHON CORP
TELEXCOMMUNICATIONS DIV
VISUAL ELECTRONICS CORP
WIDE RESPONSE
HEWLETT PACKARD CO
MAGNECORD
SPARTA ELECT CORP
Tape Duplicators
ACCURATE SOUND CO
AEROVOX CORP
ALCOR INC
AMPEX CORP
BELL SOUND STUDIOS
CROWN INTERNATIONAL
LANG ELECTRONICS INC
MAGNA TECH CORP
MAGNETIC STUDIOS CORP
MINNEAPOLIS MAGNETICS
ORBIT RADIO AND VIDEO
RECORDEX CORP
SONOCRAFT CORP
TELECTRO SYSTEMS CORP
TELEXCOMMUNICATIONS DIV
WTTW RECORDING SERV
HARVEY RADIO CO INC
MAGNECORD
Tape, Magnetic Recording, Audio
ALLIED ELECTRONIC CORP
AMER GELOSO ELECTRONICS
AMPEX CORP
AUDIO MAGNETICS CORP
BROADCAST ELECTRONICS
CHANNEL MARKETING INC
CONCORD ELECT CORP
DUOTONE CO INC
EASTMAN KODAK CO
MAGNATECH CO
MAGNETIC PROD DIV
MAGNETIC STUDIOS CORP
MILES REPRODUCER CO
RCA BROADCAST COMM PRD
RECORDEX CORP
RYDER MAGNETICS SALES
SARKES TARZIAN INC
ALBERT SCHULTZ INC
SINGER PROD CO INC
SONOCRAFT CORP
SUPERSCOPE INC
TANBERG OF AMERICA INC
WIDE RESPONSE
AUDIO DERIVES
Tape, Magnetic Recording, Audio, Cartridges
AMER GELOSO ELECTRONICS
AUDIO MAGNETICS CORP
BROADCAST ELECTRONICS
BROADCAST PROD CO INC
CHANNEL MARKETING INC
CONCORD ELECT CORP
JOA CARTRIDGE SERVICE
MAGNETIC PROD DIV
MARATHON BROADCAST EQUIP
MCKENZIE LABS
NEMO RECORDING LABS
RCA BROADCAST COMM PRD
RECORDEX CORP
ALBERT SCHULTZ INC
SINGER PROD CO INC
SUPERSCOPE INC
TAPECASTER
AUDIO DERIVES
SPARTA ELECT CORP
Tape, Magnetic Recording, Computer

MAGNETIC PROD DIV
MEMOREX CORP
SINGER PROD CO INC
WIDE RESPONSE
AUDIO DERIVES
Tape, Magnetic Recording, Test
AMPEX CORP
NORTRONICS CO INC
RCA BROADCAST COMM PRD
ALBERT SCHULTZ INC
TABER MFG ENGR CO
AUDIO DERIVES
Tape, Magnetic Recording, Video
CINE SONIC SOUND INC
CONCORD ELECT CORP
GBC CCTV
LERO ELECTICAL CORP
MAGNETIC PROD DIV
MEMOREX CORP
RCA BROADCAST COMM PRD
RECORDEX CORP
SHRADFN CORP OF AMFR
SONOCRAFT CORP
SONY CORP OF AMERICA
TELECTRO SYSTEMS CORP
TELE MEASUREMENTS INC
WTTW RECORDING SERV
WIDE RESPONSE
AUDIO DERIVES
Tape, Magnetic, Graphic
AUDIO DERIVES
Tape, Recording, Logging
CINE SONIC SOUND INC
TELE CINE INC
WIDE RESPONSE
AUDIO DERIVES
Telephone Equipment
B K INSTRUMENTS INC
COLLINS RADIO CO
COMREX CORP
DELTA ELECTRONICS INC
MCMARTIN INDUSTRIES INC
MILES REPRODUCER CO
TAPECASTER
TEKTRONIX INC
ZIOLACK CORP
Terminal Blocks
AUDIO ACCESSORIES INC
BIRNBACH CO INC
COLLINS RADIO CO
ESSEX WIRE CO RBM DIV
G E ELECTRONIC COPONENTS
GULF ELECTRO SALES INC
SINGER PROD CO INC
Terminal Boards
COLLINS RADIO CO
G E ELECTRONIC COPONENTS
INDUSTRIAL ELECTRONIC
SINGER PROD CO INC
Terminal Cards
ACME FILM VIDEO TAPE L
COLLINS RADIO CO
SINGER PROD CO INC
Terminal Strips
ALCO ELECTRONIC PROD
COLLINS RADIO CO
ESSEX WIRE CO RBM DIV
G C ELECTRONICS
G E ELECTRONIC COPONENTS
INDUSTRIAL ELECTRONIC
SINGER PROD CO INC
Terminals, Barrier
SINGER PROD CO INC
Terminals, High Voltage
PHELPS DODGE ELECTRONIC
SINGER PROD CO INC
Terminals, Solder
ESSEX WIRE CO RBM DIV
G C ELECTRONICS
SINGER PROD CO INC

Terminals, Solderless
ESSEX WIRE CO RBM DIV
G C ELECTRONICS
HOLLINGSWORTH SOLDERLES
SINGER PROD CO INC
VACO PRODUCTS CO
Testers, Battery
G E ELECTRONIC COPONENTS
HICKOK ELEC INSTRUMENT
INDUSTRIAL DEVICES INC
MALLORY
SIMPSON ELECTRIC CO
SINGER PROD CO INC
Testers, Capacitor
HICKOK ELEC INSTRUMENT
ROHDE SCHWARZ SALES
SIMPSON ELECTRIC CO
SINGER PROD CO INC
Testers, Insulation
G E ELECTRONIC COPONENTS
SINGER PROD CO INC
TEKTRONIX INC
TELEMET CO
Testers, Semiconductor
AMER ELECTRONIC LAB
COLLINS RADIO CO
DELTA ELECTRONICS INC
HICKOK ELEC INSTRUMENT
ROHDE SCHWARZ SALES
SENCORE INC
SINGER PROD CO INC
TEKTRONIX INC
TRIPLETT ELEC INSTRUMENT
Testers, Vacuum Tube
ALLIED ELECTRONIC CORP
HICKOK ELEC INSTRUMENT
RCA ELECTRONIC COMP DEV
SENCORE INC
SINGER PROD CO INC
TRIPLETT ELEC INSTRUMENT
Testers, FET

AMER ELECTRONIC LAB
HICKOK ELEC INSTRUMENT
SENCORE INC
SIMPSON ELECTRIC CO
Thyristors (See Semiconductors)
CALVERT ELECTRONICS INC
Timers, Electric
CONRAC CORP
ENGINEERING ASSOC
G E ELECTRONIC COPONENTS
HICKOK ELEC INSTRUMENT
MAGNECRAFT ELECTRIC CO
MALLORY
PARABAM INC
SELA ELECTRONICS CO
Timers, Manual
COOK ELECTRIC CO
G E ELECTRONIC COPONENTS
GOTHAM AUDIO CORP
NEUMADE PROD CORP
JULES RACINE CO INC
Tools, Clamps
CHANNELOCK INC
SINGER PROD CO INC
Tools, Crimpers
BLONDER TONGUE LAB INC
CATV EQUIPMENT CO
G C ELECTRONICS
HOLLINGSWORTH SOLDERLES
SINGER PROD CO INC
TV CABLE SUPPLY CO
VACO PRODUCTS CO
VIKOA INC
Tools, Cutters
BLONDER TONGUE LAB INC
CHANNELOCK INC
DIAMOND TOOL HORSESHOE
G C ELECTRONICS
SINGER PROD CO INC
VACO PRODUCTS CO
VIKOA INC

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Tools, Hand

CHANNELOCK INC
DIAMOND EXPANSION BOLT
DIAMOND TOOL HORSESHOE
HOLLINGSWORTH SOLDERLEES
P K NEUSES INC
PRUZAN CO
SINGER PROD CO INC
TV CABLE SUPPLY CO
UPSON TOOLS INC
VACO PRODUCTS CO

Tools, Hole Cutters

SINGER PROD CO INC

Tools, Pliers

CHANNELOCK INC
DIAMOND TOOL HORSESHOE
PRUZAN CO
SINGER PROD CO INC
VACO PRODUCTS CO
XCELITE

Tools, Punch, Chassis

GREENLEE TOOL CO
SINGER PROD CO INC

Tools, Screwdriver

CHANNELOCK INC
P K NEUSES INC
PRUZAN CO
SINGER PROD CO INC
UPSON TOOLS INC
VACO PRODUCTS CO
XCELITE

Tools, Soldering Aids

CHANNFLOCK INC
G C ELECTRONICS
PRUZAN CO
SINGER PROD CO INC

Tools, Soldering Irons, Gun

SINGER PROD CO INC

Tools, Soldering Iron, Industrial

G E ELECTRONIC COPONENTS
SINGER PROD CO INC

Tools, Wrenches

CHANNELOCK INC
DIAMOND TOOL HORSESHOE
PRUZAN CO
SINGER PROD CO INC
UPSON TOOLS INC
VACO PRODUCTS CO
XCELITE

Towers, Antenna

ADVANCE INDUSTRIES
DRESSER CRANE
E Z WAY PROD INC
FORT WORTH TOWER CO
G C ELECTRONICS
GATFS RADIO CO
JAMPRO ANTENNA CO
KLINE IRON STEEL CO
LITTLE JOE ENTERPRISES
MICROELECT CO INC
MULTRONICS INC
R F SYSTEMS
PAUL SHEPARD INC
STAINLESS INC
UP RIGHT SCAFFOLDS

Towers, Antenna, CATV Head-End

ADVANCE INDUSTRIES
AMECO INC
E Z WAY PROD INC
FORT WORTH TOWER CO
KATONA ELECTRONICS CO
KLINE IRON STEEL CO
LITTLE JOE ENTERPRISES
PRUZAN CO
R F SYSTEMS
ROHN MFG CO
PAUL SHEPARD INC
STAINLESS INC
TV CABLE SUPPLY CO
UNITED STATE TOWERS

Towers, Antenna, Receiving

AMECO INC
ANTENNA PROD DIV
DRESSER CRANE
E Z WAY PROD INC
LITTLE JOE ENTERPRISES
MICROELECT CO INC
R F SYSTEMS
ROHN MFG CO
SINGER PROD CO INC
STAINLESS INC

Towers, Antenna, Transmitting, AM

ADVANCE INDUSTRIES
ANTENNA PROD DIV
COLLINS RADIO CO
COLLINS RADIO CO
DRESSER CRANE
E Z WAY PROD INC
FORT WORTH TOWER CO
GATES RADIO CO
JAMPRO ANTENNA CO
KLINE IRON STEEL CO
LITTLE JOE ENTERPRISES
MICROELECT CO INC
RCA BROADCAST COMM PRD
ROHN MFG CO
PAUL SHEPARD INC
SINGER PROD CO INC
STAINLESS INC
UNITED STATE TOWERS
VISUAL ELECTRONICS CORP

Towers, Antenna, Transmitting, FM

ADVANCE INDUSTRIES
ANTENNA PROD DIV
COLLINS RADIO CO
COLLINS RADIO CO
DRESSER CRANE
E Z WAY PROD INC
FORT WORTH TOWER CO
GATES RADIO CO
JAMPRO ANTENNA CO
KLINE IRON STEEL CO
LITTLE JOE ENTERPRISES
MICROELECT CO INC
RCA BROADCAST COMM PRD
ROHN MFG CO
SINGER PROD CO INC
STAINLESS INC
UNITED STATE TOWERS
VISUAL ELECTRONICS CORP

Towers, Antenna, Transmitting, TV

ADVANCE INDUSTRIES
ANTENNA PROD DIV
DRESSER CRANE
E Z WAY PROD INC
JAMPRO ANTENNA CO
KLINE IRON STEEL CO
MICROELECT CO INC
RCA BROADCAST COMM PRD
ROHN MFG CO
PAUL SHEPARD INC
SINGER PROD CO INC
STAINLESS INC
UNITED STATE TOWERS
VISUAL ELECTRONICS CORP

Track, Scenery, Perimeter

THE JANSON INDUSTRIES

Transformers, Audio, Isolation

ALTEC LANSING
B K INSTRUMENTS INC
CENTRAL TRANSFORMER
ELECTRODYNE CORP
ESSEX WIRE CO RBM DIV
GATES RADIO CO
GOTHAM AUDIO CORP
GULF ELECTRO SALES INC
JENSEN MFG DIV
LAFAYETTE RADIO ELECTRON
SINGER PROD CO INC

Transformers, Audio, Matching

ALLIED ELECTRONIC CORP
ALTEC LANSING
ATLAS SOUND DIV
B K INSTRUMENTS INC

ROGEN COMMUNICATIONS
CENTRAL TRANSFORMER
ELECTRODYNE CORP
ESSEX WIRE CO RBM DIV
ESSEX WIRE CORP MKT DIV
GATES RADIO CO
GOTHAM AUDIO CORP
JENSEN MFG DIV
LAFAYETTE RADIO ELECTRON
NORTH AMER PHILIPS AKG
SENNHEISER ELECTRONICS
SINGER PROD CO INC

Transformers, Audio, Power Output

ALLIED ELECTRONIC CORP
ALTEC LANSING
CENTRAL TRANSFORMER
ESSEX WIRE CO RBM DIV
ESSEX WIRE CORP MKT DIV
GATES RADIO CO
LAFAYETTE RADIO ELECTRON
SINGER PROD CO INC
TERMINAL HUDSON ELECTRONICS

Transformers, Auto

ALTEC LANSING
CENTRAL TRANSFORMER
ESSEX WIRE CO RBM DIV
ESSEX WIRE CORP MKI DIV
G E ELECTRONIC COPONENTS
JENSEN MFG DIV
LAFAYETTE RADIO ELECTRON
SINGER PROD CO INC

Transformers, Coupling

ALLIED ELECTRONIC CORP
ALTEC LANSING
CENTRAL TRANSFORMER
ESSEX WIRE CORP MKT DIV
GOTHAM AUDIO CORP
JENSEN MFG DIV
SINGER PROD CO INC
JFD ELECTRONICS CO

Transformers, Filament

ALLIED ELECTRONIC CORP
ALTEC LANSING
CENTRAL TRANSFORMER
ESSEX WIRE CO RBM DIV
ESSEX WIRE CORP MKI DIV
G E ELECTRONIC COPONENTS
LAFAYETTE RADIO ELECTRON
SINGER PROD CO INC

Transformers, General

ALLIED ELECTRONIC CORP
ALTEC LANSING
AMER ELECTRONIC LAB
ANACONDA ELECTRONICS
CATV EQUIPMENT CO
CENTRAL TRANSFORMER
ESSEX WIRE CO RBM DIV
ESSEX WIRE CORP MKI DIV
G E ELECTRONIC COPONENTS
LAFAYETTE RADIO ELECTRON
NORTRONICS CO INC
SINGER PROD CO INC

Transformers, Plate

ALTEC LANSING
CENTRAL TRANSFORMER
ESSEX WIRE CORP MKI DIV
SINGER PROD CO INC

Transformers, Power

ALLIED ELECTRONIC CORP
CENTRAL TRANSFORMER
ESSEX WIRE CO RBM DIV
ESSEX WIRE CORP MKT DIV
G E ELECTRONIC COPONENTS
LAFAYETTE RADIO ELECTRON
MOLE RICHARDSON CO
HUGHEY PHILLIPS INC

Transformers, RF

AMER CABLE ELECTRONICS
BARKER WILLIAMSON DIV
BLONDER TONGUE LAB INC
CALBEST ELECTRONICS
CENTRAL TRANSFORMER
COLLINS RADIO CO

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ESSEX WIRE CO RBM DIV
ESSEX WIRE CORP MKI DIV
JAMPRO ANTENNA CO
KATONA ELECTRONICS CO
PRODELIN INC
SINGER PROD CO INC
VIKOA INC
KAPPA NETWORKS

Transformers, Transistor

ALLIED ELECTRONIC CORP
ALTEC LANSING
CFNTRAL TRANSFORMER
ESSEX WIRE CO RBM DIV
ESSEX WIRE CORP MKI DIV
GOTHAM AUDIO CORP
LAFAYETTE RADIO ELECTRON
SINGER PROD CO INC

Transformers, Variable

ESSEX WIRE CO RBM DIV
ESSEX WIRE CORP MKI DIV
G E ELECTRONIC COPONENIS
JENSEN MFG CO
OMITF MFG CO
SINGER PROD CO INC

Transistors (See Semiconductors)

G E ELECTRONIC COPONENIS

Transistor Systems

COLLINS RADIO CO
IKEGAMI CO LTD
RCA BROADCAST COMM PRD

Transmission Lines

AMECO INC
ANDREW CORP
ANDREWS TOWERS INC
GATES RADIO CO
NARDA MICROWAVE CORP
PHELPS DODGE ELECTRONIC
RCA BROADCAST COMM PRD
SINGER PROD CO INC
SURFACE CONSTRUCTION

Transmission Test Sets

NARDA MICROWAVE CORP
PHELPS DODGE ELECTRONIC
RIKER VIDEO INDUSTRIES
TELEMATION INC
UNIVERSAL AUDIO INC
VIDEOMETRICS INC
HEWLETT PACKARD CO
UNITED RECORDING

Transmitter Kits

ALLIED ELECTRONIC CORP
BAUER ELECTRONICS CORP
GATES RADIO CO

Transmitters, AM, Carrier

COLLINS RADIO CO
LOW POWER BROADCAST CO
MARCONI DIV
SINGER PROD CO INC
TELEFUNKEN SALES CORP

Transmitters, AM, Low Power

BAUER ELECTRONICS CORP
CCA ELECTRONICS
COLLINS RADIO CO
GATES RADIO CO
LOW POWER BROADCAST CO
MARCONI DIV
RCA BROADCAST COMM PRD
SINGER PROD CO INC
VISUAL ELECTRONICS CORP

Transmitters, AM, 250 Watts

AMER ELECTRONIC LAB
BAUER ELECTRONICS CORP
CCA ELECTRONICS
COLLINS RADIO CO
COLLINS RADIO CO
GATES RADIO CO
SINGER PROD CO INC
VISUAL ELECTRONICS CORP

Transmitters, AM, 500 Watts

AMER ELECTRONIC LAB
CCA ELECTRONICS
COLLINS RADIO CO
COLLINS RADIO CO
GATFS RADIO CO
SINGER PROD CO INC
VISUAL ELECTRONICS CORP

Transmitters, AM, 1 kw

AMER ELECTRONIC LAB
BAUER ELECTRONICS CORP
CCA ELECTRONICS
COLLINS RADIO CO
COLLINS RADIO CO
GATES RADIO CO
MARCONI DIV
RCA BROADCAST COMM PRD
SINGER PROD CO INC
VISUAL ELECTRONICS CORP
WILKINSON ELECT INC

Transmitters, AM, 5 kw

AMER ELECTRONIC LAB
BAUER ELECTRONICS CORP
CCA ELECTRONICS
COLLINS RADIO CO
COLLINS RADIO CO
CONTINENTAL ELECTRONICS
GATES RADIO CO
RCA BROADCAST COMM PRD
SINGER PROD CO INC
VISUAL ELECTRONICS CORP
WILKINSON ELECT INC

Transmitters, AM, 10 kw

AMER ELECTRONIC LAB
BAUER ELECTRONICS CORP
CCA ELECTRONICS
COLLINS RADIO CO
COLLINS RADIO CO
CONTINENTAL ELECTRONICS
GATES RADIO CO
MARCONI DIV
RCA BROADCAST COMM PRD
SINGER PROD CO INC
VISUAL ELECTRONICS CORP
WILKINSON ELECT INC

Transmitters, AM, 25 kw

AMER ELECTRONIC LAB
CCA ELECTRONICS
CONTINENTAL ELECTRONICS
GATES RADIO CO
RCA BROADCAST COMM PRD
SINGER PROD CO INC
VISUAL ELECTRONICS CORP

Transmitters, AM, 50 kw

AMER ELECTRONIC LAB
CCA ELECTRONICS
CONTINENTAL ELECTRONICS
GE VISUAL COMM PRD
GATES RADIO CO
RCA BROADCAST COMM PRD
SINGER PROD CO INC

Transmitters, AM, over 50 kw

AMER ELECTRONIC LAB
CCA ELECTRONICS
COLLINS RADIO CO
CONTINENTAL ELECTRONICS
GATES RADIO CO
MARCONI DIV
SINGER PROD CO INC
VISUAL ELECTRONICS CORP

Transmitters, AM, to order

CCA ELECTRONICS
COLLINS RADIO CO

CONTINENTAL ELECTRONICS
GATES RADIO CO
MARCONI DIV
RCA BROADCAST COMM PRD
SINGER PROD CO INC
WILKINSON ELECT INC

Transmitters, FM

AMER ELECTRONIC LAB
CCA ELECTRONICS
THE CATEL CORP
GATES RADIO CO
MARCONI DIV
MILES REPRODUCER CO
RCA BROADCAST COMM PRD
SINGER PROD CO INC
TELEFUNKEN SALES CORP
UTICA ELECTRONICS
VISUAL ELECTRONICS CORP
WILKINSON ELECT INC

Transmitters, FM, 10 Watts

AMER ELECTRONIC LAB
CCA ELECTRONICS
COLLINS RADIO CO
COLLINS RADIO CO
GATES RADIO CO
MARTI ELECTRONICS
MOSELEY ELECTRONICS
SINGER PROD CO INC
VISUAL ELECTRONICS CORP
WILKINSON ELECT INC

Transmitters, FM, 50 Watts

CCA ELECTRONICS
COLLINS RADIO CO
GATES RADIO CO
HAMMARLUND MFG
MOSELEY ELECTRONICS
SINGER PROD CO INC
UTICA ELECTRONICS
VISUAL ELECTRONICS CORP
WILKINSON ELECT INC

Transmitters, FM, 100 Watts

CCA ELECTRONICS
COLLINS RADIO CO
GATES RADIO CO
HAMMARLUND MFG
MARTI ELECTRONICS
SINGER PROD CO INC
VISUAL ELECTRONICS CORP
WILKINSON ELECT INC

Transmitters, FM, 250 Watts

AMER ELECTRONIC LAB
CCA ELECTRONICS
COLLINS RADIO CO
COLLINS RADIO CO
GATES RADIO CO
SINGER PROD CO INC
VISUAL ELECTRONICS CORP
WILKINSON ELECT INC

Transmitters, FM, 1 kw

AMER ELECTRONIC LAB
CCA ELECTRONICS
COLLINS RADIO CO
COLLINS RADIO CO
GATES RADIO CO
MARCONI DIV
RCA BROADCAST COMM PRD
SINGER PROD CO INC
VISUAL ELECTRONICS CORP
WILKINSON ELECT INC

Transmitters, FM, 3 kw

AMER ELECTRONIC LAB
CCA ELECTRONICS
COLLINS RADIO CO
GATES RADIO CO
RCA BROADCAST COMM PRD
SINGER PROD CO INC
VISUAL ELECTRONICS CORP
WILKINSON ELECT INC

Transmitters, FM, 5 kw

AMER ELECTRONIC LAB
CCA ELECTRONICS
COLLINS RADIO CO
COLLINS RADIO CO

GATES RADIO CO
MARCONI DIV
RCA BROADCAST COMM PRD
SINGER PROD CO INC
VISUAL ELECTRONICS CORP
WILKINSON ELECT INC

Transmitters, FM, 7.5 kw

AMER ELECTRONIC LAB
CCA ELECTRONICS
COLLINS RADIO CO
GATES RADIO CO
SINGER PROD CO INC
VISUAL ELECTRONICS CORP
WILKINSON ELECT INC

Transmitters, FM, 10 kw

AMER ELECTRONIC LAB
CCA ELECTRONICS
COLLINS RADIO CO
COLLINS RADIO CO
GATES RADIO CO
RCA BROADCAST COMM PRD
SINGER PROD CO INC
VISUAL ELECTRONICS CORP
WILKINSON ELECT INC

Transmitters, FM, 15 kw

CCA ELECTRONICS
COLLINS RADIO CO
GATES RADIO CO
SINGER PROD CO INC
VISUAL ELECTRONICS CORP

Transmitters, FM, 20 kw

AMER ELECTRONIC LAB
CCA ELECTRONICS
COLLINS RADIO CO
COLLINS RADIO CO
GATES RADIO CO
RCA BROADCAST COMM PRD
SINGER PROD CO INC
WILKINSON ELECT INC

Transmitters, FM, 40 kw

CCA ELECTRONICS
COLLINS RADIO CO
COLLINS RADIO CO
GATES RADIO CO
SINGER PROD CO INC
VISUAL ELECTRONICS CORP

Transmitters, FM, 50 kw

CCA ELECTRONICS
GATES RADIO CO
RCA BROADCAST COMM PRD
SINGER PROD CO INC

Transmitters, FM, 100 kw

CCA ELECTRONICS
GATES RADIO CO
RCA BROADCAST COMM PRD
SINGER PROD CO INC

Transmitters, FM, to order

CCA ELECTRONICS
GATES RADIO CO
RCA BROADCAST COMM PRD
SINGER PROD CO INC

Transmitters, TV

DU VAL I FIT CORP
GATES RADIO CO
IKEGAMI CO LTD
THE JANSON INDUSTRIES
MARCONI DIV
MICRO LINK DIV
RCA BROADCAST COMM PRD

**NEED A SPARTA
CONSOLE?**

CONTACT **CCA** (WE STOCK THEM)

CCA

CCA ELECTRONICS CORP.
GLOUCESTER CITY, N. J.
(609) 456-1716

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MICROPHONE?**

CONTACT **CCA** (WE STOCK THEM)

CCA

CCA ELECTRONICS CORP.
GLOUCESTER CITY, N. J.
(609) 456-1716

Transmitters, TV, 1 watt

DYNAIR ELECTRONICS
GATES RADIO CO
MICRO LINK DIV
ROHDE SCHWARZ SALES

Transmitters, TV, 10 watts

GATES RADIO CO
MARCONI DIV
MICRO LINK DIV

Transmitters, TV, 20 watts

GATFS RADIO CO

Transmitters, TV, 60 watts

GATES RADIO CO

Transmitters, TV, 100 watts

GE VISUAL COMM PROD
GATES RADIO CO

Transmitters, TV, 500 watts

GATES RADIO CO
MARCONI DIV

Transmitters, TV, 1 kw

GE VISUAL COMM PROD
GATES RADIO CO
MARCONI DIV
RCA BROADCAST COMM PRD
SARKES TARZIAN INC

Transmitters, TV, 2 kw

GATES RADIO CO

Transmitters, TV, 5 kw

GE VISUAL COMM PROD
GATES RADIO CO
MARCONI DIV
RCA BROADCAST COMM PRD

Transmitters, TV, 6 kw

GE VISUAL COMM PROD

Transmitters, TV, 10 kw

MARCONI DIV
RCA BROADCAST COMM PRD

Transmitters, TV, 11 kw

GE VISUAL COMM PROD

Transmitters, TV, 12 kw

RCA BROADCAST COMM PRD

Transmitters, TV, 15 kw

GE VISUAL COMM PROD
MARCONI DIV

Transmitters, TV, 25 kw

MARCONI DIV
RCA BROADCAST COMM PRD

Transmitters, TV, 30 kw

GE VISUAL COMM PROD
RCA BROADCAST COMM PRD

Transmitters, TV, 35 kw

GE VISUAL COMM PROD

Transmitters, TV, 50 kw

GE VISUAL COMM PROD
MARCONI DIV
RCA BROADCAST COMM PRD

Transmitters, TV, 55 kw

RCA BROADCAST COMM PRD

Transmitters, TV, 100 kw

GE VISUAL COMM PROD
RCA BROADCAST COMM PRD

Transmitters, TV, Specify Power

GE VISUAL COMM PROD
GATES RADIO CO
MULTRONICS INC
RCA BROADCAST COMM PRD

Transmitters, TV, to order

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MULTRONICS INC
RCA BROADCAST COMM PRD
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Tubing (See Hardware)

SIGMA INDUSTRIES INC

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BOGEN COMMUNICATIONS
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GATES RADIO CO
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MTI DIV KMS INDUSTRIES
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VISUAL ELECTRONICS CORP
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NORTH AMERICAN PHILIPS
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VISUAL ELECTRONICS CORP

Vacuum Tubes, Camera, Vidicon

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SINGER PROD CO INC
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SINGER PROD CO INC
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RCA ELECTRONIC COMP DEV
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BOONTON ELECTRONICS
CALIF INSTRUMENTS CORP
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HICKOK ELEC INSTRUMENT
HONEYWELL INC
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LEADFR INSTRUMENTS CORP
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RCA ELECTRONIC COMP DEV
SIMPSON ELECTRIC CO
SINGER PROD CO INC
TRIPLETT ELEC INSTRUMENT
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W

Wattmeters

BIRD ELECTRONIC CORP
BOONTON ELECTRONICS
G E ELECTRONIC COPONENTS
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ALPHA WIRE
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BIRNBACH CO INC
BRAND REX
COLUMBIA ELECTRONIC CBL
D AND B ELECTRONICS CO
GENERAL CABLE CORP
IRC DIV TRW INC
ROME CABLE DIV
SAXTON PROD INC
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TERMINAL HUDSON ELECTRS
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INTERNAT WIRE CABLE

Wire, Shielded

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BOSTON INSULATED
BRAND REX
COLUMBIA ELECTRONIC CBL
D AND B ELECTRONICS CO
GENERAL CABLE CORP
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ROME CABLE DIV
SAXTON PROD INC
TV CABLE SUPPLY CO
TERMINAL HUDSON ELECTRS
VIKOA INC
INTERNAT WIRE CABLE

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ATV RESEARCH
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**Manufacturer's
Addresses**

**Start on
Page
24**

**ideo by
ndersen**

**Still
trimming
with
cable?**

Trimming with cable is a quaint Early-American custom but it's a very time consuming and expensive way to correct chrominance delay. Andersen Laboratories — world's leading producer of all types of delay equipment — allows you to eliminate this problem with a new development: The Chrominance Delay Equalizer. CDE consists of a module for multiple mounting in a standard 19" x 5¼" rack drawer (up to 6 modules may be mounted in a single drawer), and provides complete chrominance delay correction with a simple screw adjustment. This simple adjustment allows a full 360° shift of sub-carrier phase (279 nanoseconds). Because it employs a simple, straightforward design concept, it is reliable and inexpensive. It makes cable trimming primitive.

NOTE: Andersen Laboratories is the leading manufacturer of delay devices and produces a far greater range of types for a wider frequency range than any other concern. The Company is also the leading manufacturer of delay oriented signal processing equipment for radar, computers and many other military and commercial applications. Send for information.

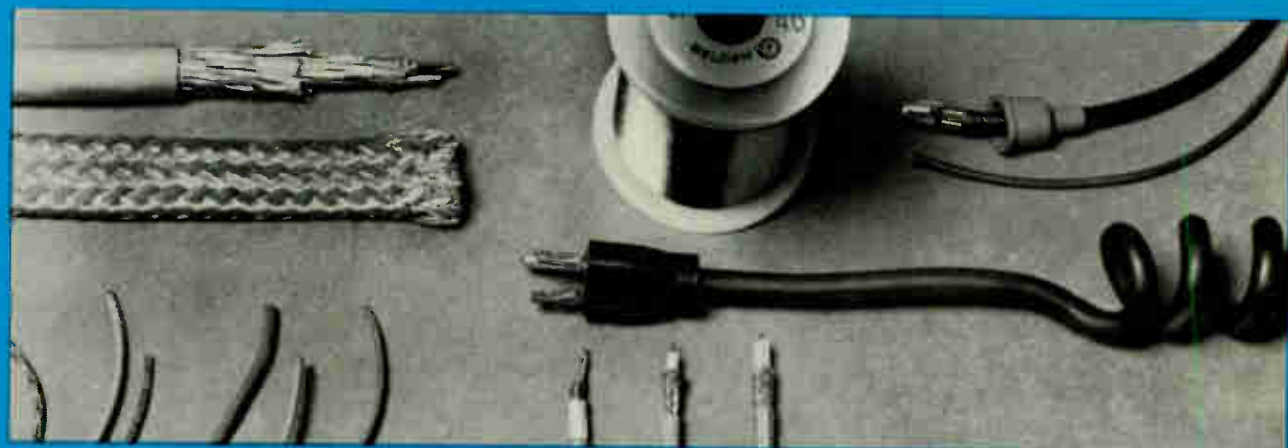
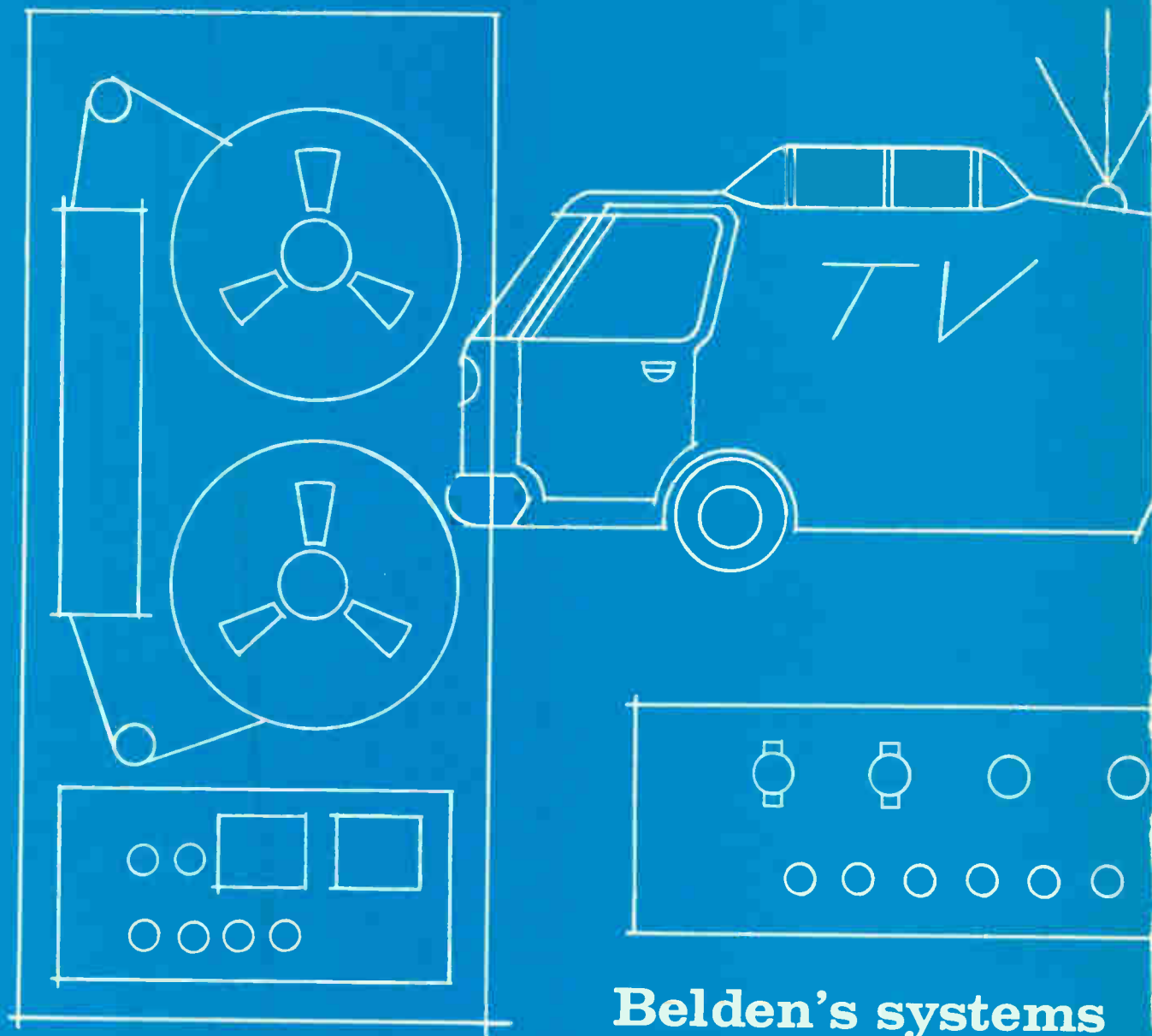
**ANDERSEN
LABORATORIES**

1280 Blue Hills Avenue

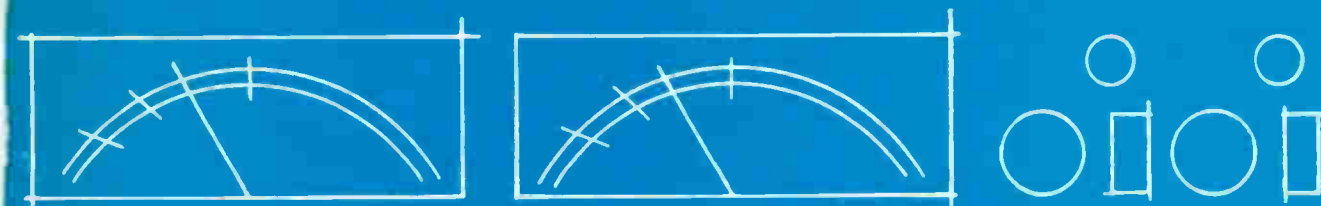
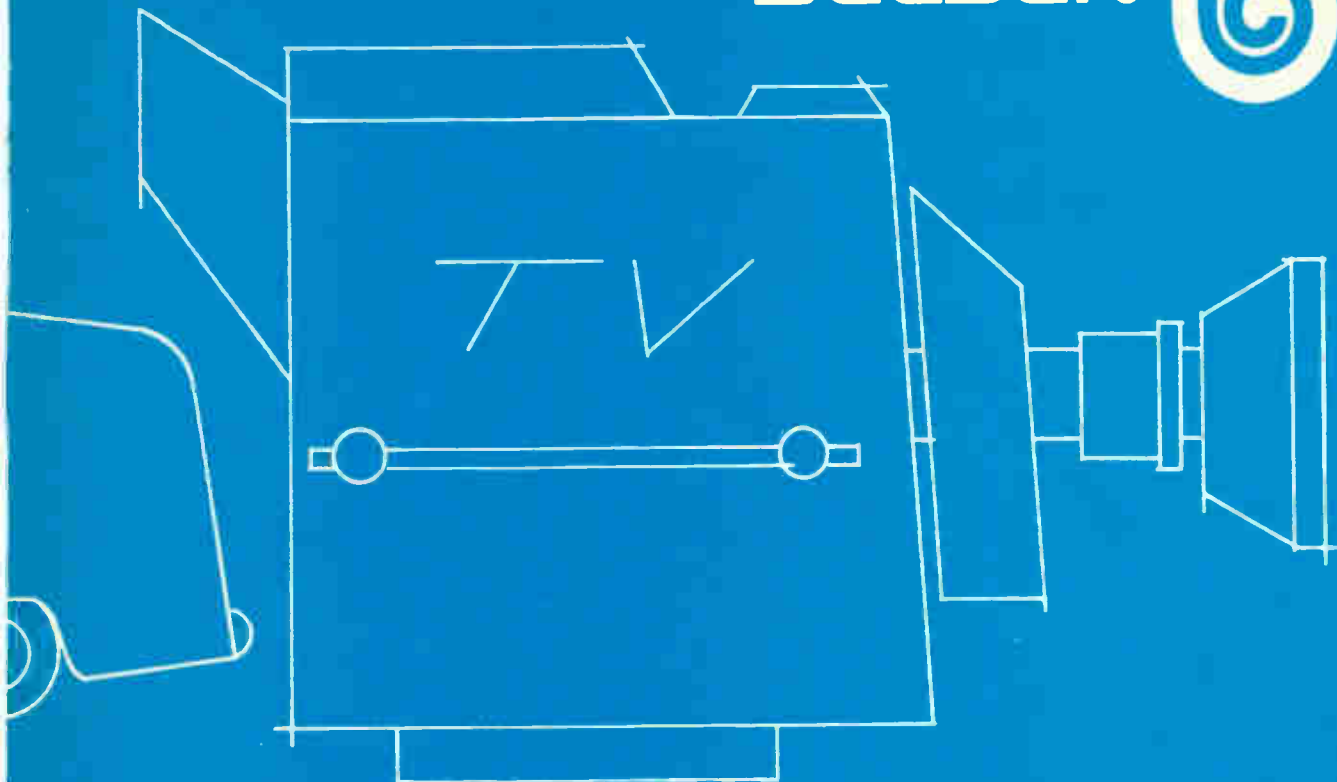
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There are two ways to sell wire and cable. Item by item without regard for the collective effect on economy and operation. And the Belden way: By exploring the requirements of the entire electrical system to determine what package of wire and cable will give the best overall value for the dollar. We make every type of wire and cable used in broadcasting . . . and are continually introducing **new** cable and wire innovations. Our Wire Systems Specialists often can suggest new types of cables that do a better job . . . or last longer . . . or give added value. Or provide a

more economical put-up*. What better dollars and cents reason could there be to talk to the people who make all kinds of wire for all kinds of systems? Belden Corporation, P.O. Box 5070-A, Chicago, Illinois 60680. Ask for our catalog, and the reprint article, "Key Questions and Answers on Specifying Electronic Cable."

*For example: You can get Belden cables in a one-piece put-up. No extra splice due to the usual two-piece put-up. So: less installation time . . . less chance for trouble.

G-4-B

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ANDREW

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SBE: Serving Broadcasters For 5 Years

In 1963 the Institute of Broadcast Engineers was formed. It was conceived mostly because no other professional society served the professional interests of the broadcast engineer, exclusively.

During the 1964 National Association of Broadcasters convention, the Society's first general meeting was held. And it was at this meeting that the name was changed to the Society of Broadcast Engineers. One year later the Society was incorporated in Washington, D.C. as a nonprofit organization.

Since its beginning, the SBE objectives have been to: provide a forum for the exchange of professional discussion of mutual broadcast engineering problems; to provide for and maintain professional recognition of members; to group together broadcast engineers gener-

ally in a body to assist in the professional education, and to raise the technical standards of the broadcast engineers and to advance the broadcast technician and the novice; and to encourage a continuing interest in the broadcast engineering field by students of technical and engineering courses on broadcasting.

Membership

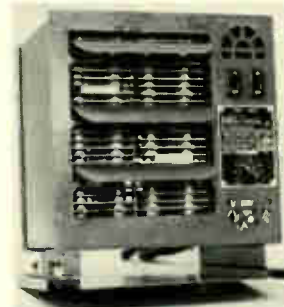
The grades of membership are: Student, Associate, Member, Senior Member, and Fellow. Qualifications for Member grade are at last a first

class radio telephone license or equivalent and adequate experience. Detailed requirements for all grades of membership are included in the "Constitution and By-Laws," sent to all accepted members.

The cost of membership is \$10, and this includes a subscription to **The Journal of the Society of Broadcast Engineers**.

Further information on the Society of Broadcast Engineers may be obtained by writing to: The Society of Broadcast Engineers, Inc., Box 1124, Binghamton, N.Y.

MOBILE BROADCAST VAN HEATER

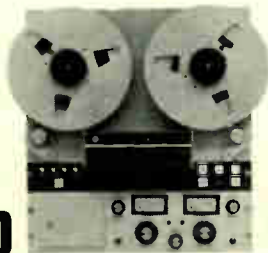


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(Except our famous slow-speed logger.)**



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SMPTE: On the move since 1916

The SMPTE is a non-profit organization concerned with the engineering aspects of motion pictures, television, instrumentation, high-speed photography and the allied arts and sciences.

The objectives of the society are to provide an organization and a climate in which persons of like interests can meet, exchange ideas, and present technical papers for the advancement of, and education within, the sphere of interest of the society.

The SMPTE also provides a technical publication for the presentation of technical papers and for the maintenance of a record of progress. The organization also seeks to foster the advancement of engineering technology and to sponsor lectures, exhibitions and conferences designed to advance the theory and practice of engineering within the scope of the society.

SMPTE Journal

The monthly **Journal of the SMPTE** is sent to all members. It contains technical articles, product information and industry news keyed to the interest of the members. **Journal** papers of special interest are reprinted and made available from Society headquarters.

The **Journal** subject matter of interest to broadcast engineers ranges over the following subject areas: Acoustics, cameras, color, lighting, sound recordings, sound TV equipment, closed circuit TV, TV recording and video tape.

Engineering committees are established to study and develop information relating to current technological problems, to define terminology, to develop standards and to recommend practices. These committees include: Color, Film Dimensions, Film Projection Practice, In-

strumentation and High-Speed Photography, Sound, Television, Video Tape Recording, Television Lighting and the Standards Committee.

The Ryerson Polytechnical Institute, Toronto, Canada, will be the site of the Winter Television Conference sponsored by the Society of Motion Picture and Television Engineers, January 17-18. According to Program Chairman Harold Wright, R.R. #2, Gormley, Ont., Canada, the Conference will center on the problem areas of Color Television Broadcasting and will be broadly based, taking into consideration recent developments in techniques and equipment. Eighteen invited papers plus five panel discussions will make up the Conference Program.

Panelists will discuss five major topics in an attempt to get at basic problems that trouble broadcasters. Questions submitted to the Program Chairman will be answered by each of the panels. "Lighting," will be evaluated by a group of lighting directors, moderated by E. Carleton Winckler of CBS. "Problems in the Application of Video-Tape Recording to Broadcasting," are to be debated by a panel of Video-tape users and members of the SMPTE Video-Tape Recording Committee, Fred W. Remley, University of Michigan TV Center, moderator.

"Transmitters and Transmission," will be discussed on Saturday morning by a panel of five. "Receivers," will be described by a panel with Don Harrold, Electrohome Ltd., as moderator. "Film and Telecine," will be moderated by Stanley F. Quinn, Canadian Broadcasting Corp., with panelists, K. Blair Benson, CBS, D. H. McRae, Canadian Broadcasting Corp., Gerow Brill, CBS, Lloyd Harrop, Canadian Broadcasting Corp., Daan Zwick, Eastman Kodak Co., and LeRoy DeMarsh, Eastman Kodak Co.

There will be two luncheons: the first, a Get-Together Luncheon; on Saturday, the Annual Television Luncheon will feature Roy Cahoon,

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Manufacturer's
Guide Begins On
Page 24

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This, plus a precision guide path which assures the best possible handling of your tape, guarantees maximum broadcast quality every time you use the tape, not merely "most of the time." And you'll get considerably greater tape life.

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Circle Item 74 on Tech Data Card

the Chief Engineer of the Canadian Broadcasting Corp., as guest speaker.

Active personal membership in the SMPTE is open to qualified individuals upon application approved by the admissions committee.

Active members must qualify by a minimum age of 25; 3 years' experience in responsible positions relating to technical, engineering, or scientific activities in motion pictures, television or allied arts, or as executive supervisor directly responsible for such activity; or 3 years' experience teaching a major course in motion pictures, television or allied subjects in a school of recognized standing; or science in motion pictures, television or allied arts. One Honorary, Fellow or Active Member sponsor is required. Dues are \$20.00 per year.

Associate standing is open to qualified individuals, also pending approval by the admissions committee. Qualifications include: minimum age, 18; interest in the study of technical and engineering aspects of motion pictures, television or related arts and sciences. Applicants must have as a sponsor one mem-

ber or two individuals from motion picture or television industries as references. The dues are \$15.00 per year.

Grade of **Student** is open to qualified persons, subject to admissions committee approval. Qualifications entail registration for at least a half-time program as a student in a college or university or other recognized educational institution who shows interest in the study of the technology of the motion-picture, television or related arts and sciences. The applicant must be sponsored by one SMPTE member or reference from a staff member of the applicant's college department not necessarily a member of the Society.

The degree or grade of **Fellow** is made by selection of the Society. Qualified individuals with a minimum age of 30 are chosen from the Active grade who have demonstrated proficiency in and have contributed significantly to the field, attaining an outstanding rank among engineers or executives in motion pictures, television or related industries. Approval is passed by the Board of Governors, based upon

recommendation of Fellow Membership Committee. Dues are \$20.00 per year.

Life membership is open to qualified Active and Fellow members upon written application approved by the Executive Committee. The applicant must be of a minimum age of 65 and is chosen from the ranks of Active or Fellow members who have retired from active business life; have been an Active or Fellow for a total of 20 years; and who have at least 5 years continuous Active or Fellow membership immediately prior to application. Qualified applicants holding the grade of Fellow will be named as Life Fellows. Qualified Active members will become Life Members. There are no dues for this category.

Honorary membership is by selection, and an individual qualifies who has performed eminent service in the advancement of engineering in motion pictures, television or allied arts and sciences. Recommendation must be made by the Honorary Membership Committee and approved by the Board of Governors.

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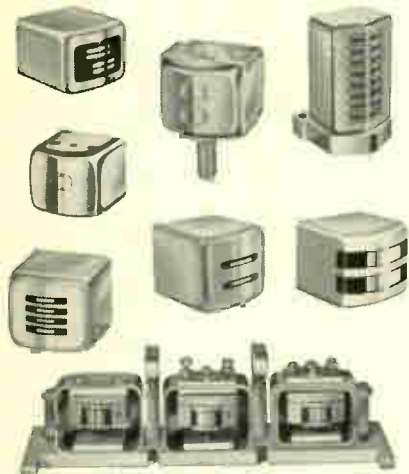


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Association on Broadcasting
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Audio Engineering Society
60 East 42nd Street
New York, N.Y. 10017

Broadcasters Foundation
589 5th Avenue
New York, N.Y. 10017

Broadcasting Foundation of
America
Suite 1810
52 Vanderbilt Avenue
New York, N.Y.

Canadian Association of
Broadcasters
P.O. Box 627
Station "B"
Ottawa, Ontario, Canada

Catholic Broadcasters Association
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Room 450
New York, N.Y. 10017

Community Broadcasters
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Educational Communication
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National Association of Broadcasters
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Washington, D.C. 20036

National Association of Educational Broadcasters
1346 Connecticut Avenue, N.W.
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National Cable Television Association
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National Community Antenna TV Association of Canada
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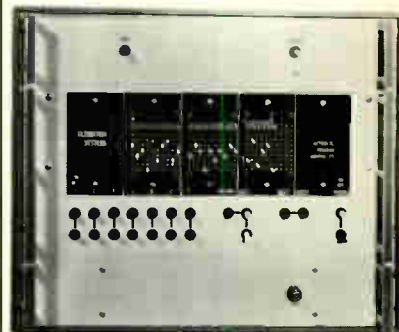
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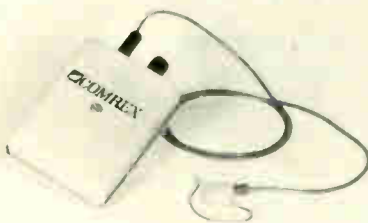


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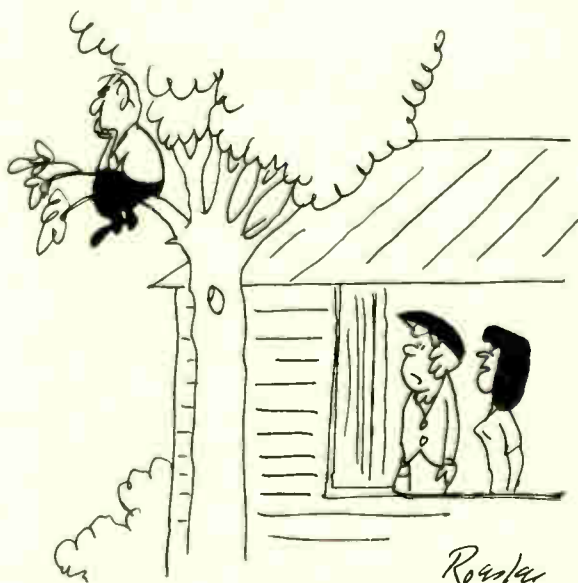
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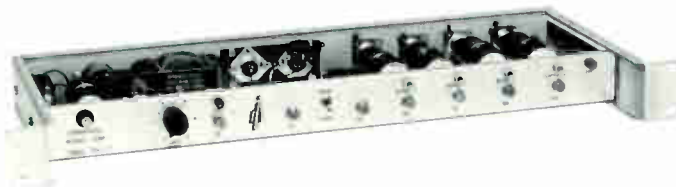


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