

BROADCAST AN INTERTEC PUBLICATION November 15, 1993

ENGINEERING

Includes

Buyers Guide

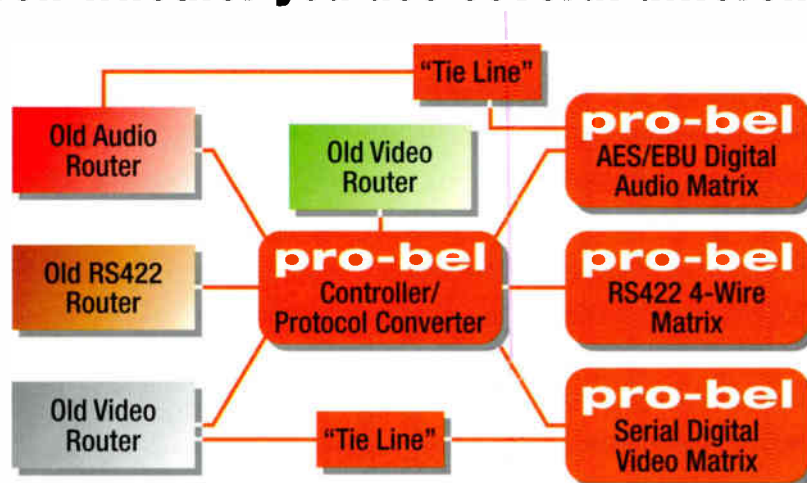
1994



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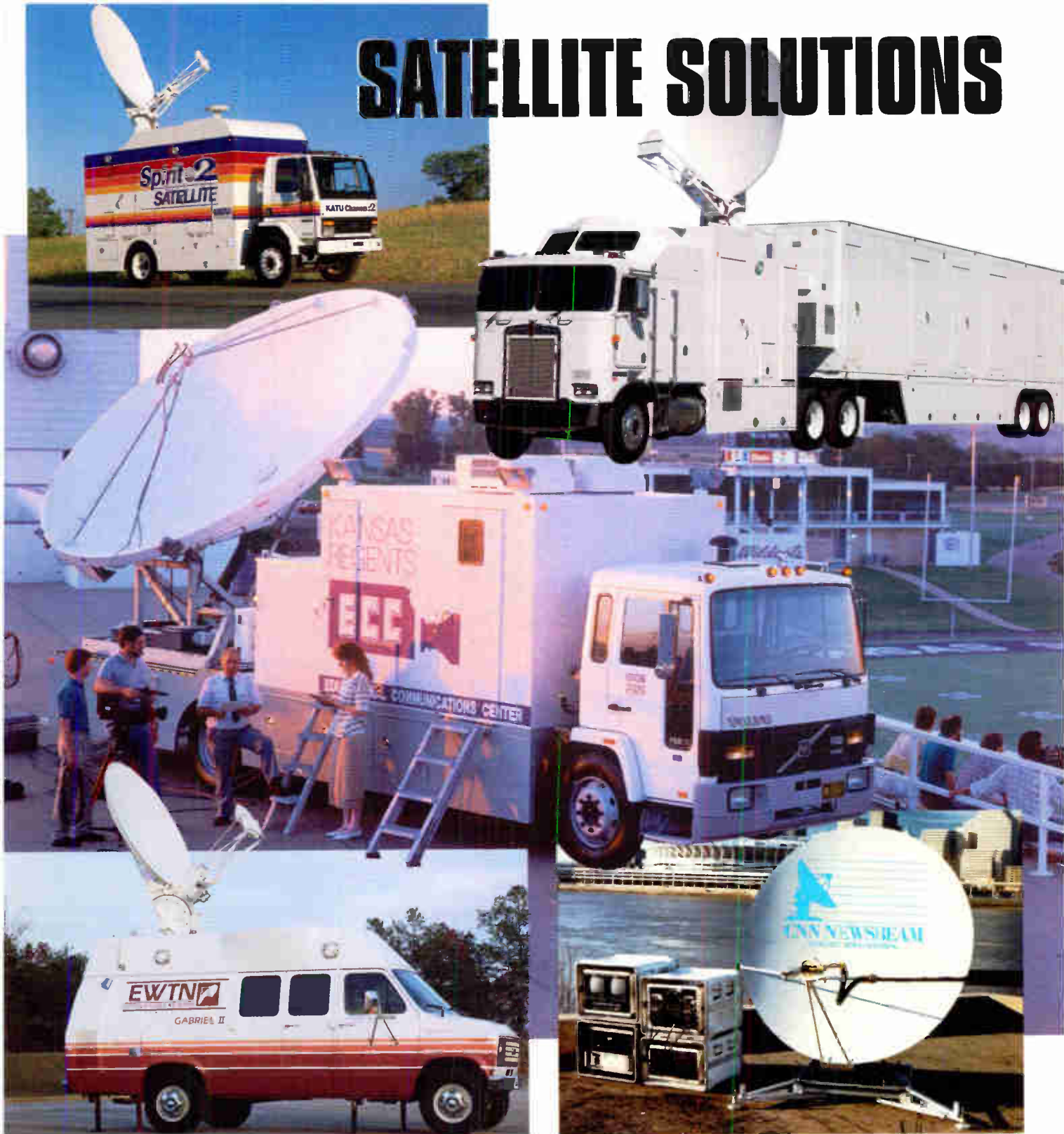
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World Radio History

SATELLITE SOLUTIONS



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ON THE COVER

The Buyers Guide is a comprehensive directory for radio and TV broadcasters. This special *BE* publication can be used as a guidebook whenever an equipment purchase is being planned. Keep this annual publication on your desk for reference throughout the year. (*Design by Erica Andrews, associate art director*)

BROADCAST
engineering

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BROADCAST ENGINEERING is edited for corporate management, engineers/technicians and other station management personnel at commercial and educational radio and TV stations, teleproduction studios, recording studios, CATV and CCTV facilities and government agencies. Qualified persons include consulting engineers and dealer/distributors of broadcast equipment.

BROADCAST ENGINEERING (ISSN 0007-1994) is published monthly (plus three special issues) and mailed free to qualified persons within the United States and Canada in occupations described above. Second-class postage paid at Shawnee Mission, KS, and additional mailing offices. **POSTMASTER:** Send address changes to Broadcast Engineering, P.O. Box 12960, Overland Park, KS 66282-2960.

SUBSCRIPTIONS: Non-qualified persons may subscribe at the following rates: United States and Canada; one year, \$50.00. Qualified and non-qualified persons in all other countries; one year, \$60.00 (surface mail); \$115.00 (air mail). Subscription information: P.O. Box 12937, Overland Park, KS 66282-2937.

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Our competition is making a lot of noise about their wireless. Trouble is, their wireless make a lot of noise too.



Experience the Nady 950 UHF. The first quiet multichannel UHF wireless.

Fact: Due to problems inherent to UHF technology, like phase noise and residual frequency modulation, UHF wireless systems tend to be noisy.

Fact: Other companies offer high end UHF wireless systems that are 5-10 dB noisier than their VHF systems, and VHF systems that are 10-30 dB noisier than any Nady.

Fact: Some companies that do offer a quiet UHF system don't advertise how they make it quiet: by sacrificing headroom. So you're asked to accept less critical performance—to choose between noise and clipping.

Fact: Nady devoted extensive R&D to testing, simulating and modifying our UHF systems. Our engineers utilized circuit modeling and analog simulation software to optimize our design and compensate for manufacturing tolerances and variations in device parameters.

Fact: Nady engineers achieved the first truly quiet RF link for UHF wireless. The Nady 950's proprietary com-

ponents and circuitry yield radio link carriers that are up to 20 dB quieter than any other UHF system. And Nady's specialized companding noise reduction delivers the best dynamic range—and headroom—in wireless today.

Fact: The Nady 950 features state of the art frequency synthesis. With several ten channel models in the 490-950 MHz range, and a 40 channel version in the 800 MHz range. Plus exclusive hiss mute circuitry, which maintains audio quality as the transmitter moves toward the outside limits of operating range. Variable bass boost. Balanced and unbalanced output. Switchable 115/220 and DC power. Available frequency bands for worldwide use.

Fact: You could pay a lot more for a UHF wireless system, and get a lot more noise. So choose the Nady 950 UHF.

Call us—we'll send you more info.



NADY SYSTEMS, INC. • 6701 Bay Street • Emeryville, CA 94608 • 510/652-2411

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World Radio History

Editorial

Step right up...

Welcome to the 1994 *Broadcast Engineering* Buyers Guide. Continuing the tradition, this 13th reference issue contains a wealth of information regarding manufacturers and many facts on the latest equipment for broadcast, cable and production environments.

Buying hardware today is difficult and there is an abundance of equipment and options available. The task for the engineering manager is to select the best product for the given application. That can be a difficult task. Fortunately, the Buyers Guide is your key to making the correct hardware purchases.

We've incorporated several features to make your search for the best equipment even easier. The fold-out tab pages quickly guide you to different product specification sections of this issue: Video Specs, Audio Specs and Digital Interface. Included in this third specification section is RF and Test & Measurement.

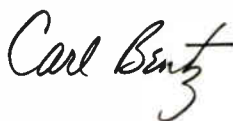
As usual, the Manufacturers' Addresses and Buyers Guide Product Listings can be found in the front half of this issue. Color highlighting throughout the issue alerts you to those companies that have their products advertised in this issue.

In the Product Directory, a number of closely related categories (for example, audio mixers, microphones and transmitters) have been combined to make your search faster. One list shows all players, with logical code letters following their names to indicate which type of equipment they offer.

This issue contains the most complete listing of products and specifications available in one source for this industry. The information is based on data provided by those companies responding to our request for assistance. Multiple requests for information were directed to all participants of previous directories, to new companies exhibiting at trade shows and those appearing in our New Products columns during the year.

There are more than 1,000 companies listed in the Manufacturer Address listing. If a company is missing from this compendium, it is because we did not receive information from that company after repeated requests.

Thank you for helping *Broadcast Engineering* in its efforts to continue the tradition of serving the industry in a first-class form. If we can be of further assistance, please let us know.

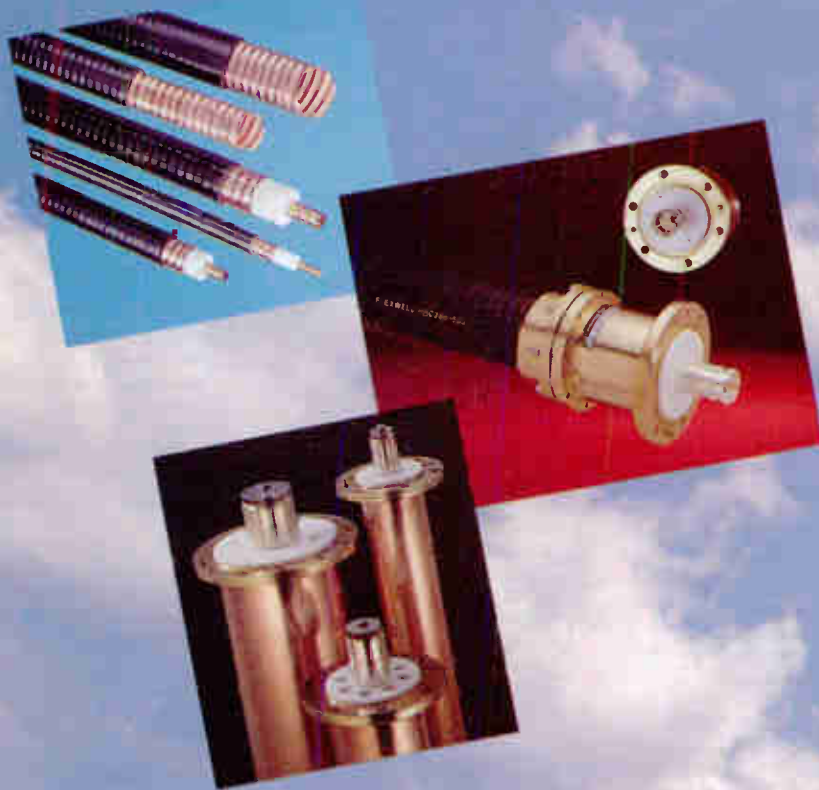


Carl Bentz
Directory Editor



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- FLEXWELL® radiating cables
- Coaxial cable and elliptical waveguide R.F. connectors
- Installation accessories
- Pressurization equipment



**Radio Frequency
Systems, Inc.**

Cablewave Systems Division

Cablewave Systems

60 Dodge Ave.
North Haven, CT 06473
☎ (203) 239-3311
FAX (203) 234-7718

Manufacturers Address Directory

Note: Color highlighted company names indicate advertisers. To locate the additional information provided by that company, please see the advertising index. Companies with a bullet [*] before the name were unable to respond to our request for update information. We offer no assurance that address and phone/fax information for those companies is still correct. To the best of our knowledge, the companies are still serving the broadcasting and production industries.

A

Aarmor Case Co.
2100 Lapo Rd.
Lake Odessa, MI 48849
616-374-5651; 800-722-5763
Fax: 616-374-8686



**AAVS/Advanced Audio Visual
Systemes**

222-226 Rue de Rosny
Montreuil, France F-93100
33-1-48-57-21-64

Fax: 33-1-48-57-33-58

AAVS/Sencore

3200 Sencore Dr.
Sioux Falls, SD 57107
605-339-0100; 800-769-2287
Fax: 605-335-6379

Advanced Audio Visual Systems designs, manufactures and markets a variety of specialized products for the broadcast and professional video industries. These include the S310 All Format Digital Video Analyzer, the S90 Video Image Multiplexer and EVA, a package for network station automation. The S310 is a modular test system designed to test the performance and to troubleshoot digital video systems. It is compatible with composite or component formats, and has serial and parallel inputs. The unit provides a quick go/no go test as well as in depth information on all signal parameters.

Abbate Video Inc.
14 Ross Ave. Fl. 3
Millis, MA 02054-1545
508-376-3712; 800-283-5553
Fax: 508-376-3714



A Carlton Company

Abekas Video Systems
101 Galveston Dr.
Redwood City, CA 94063
415-369-5111; 800-777-9787
Fax: 415-369-4777

Ac-cetera, Inc.
3120 Banksville Rd.
Pittsburgh, PA 15216
412-344-8609; 800-537-3491
Fax: 412-344-0818

Accom, Inc.
1490 O'Brien Dr.
Menlo Park, CA 94025
415-328-3818; Fax: 415-327-2511

Accurate Sound
3475-A Edison Way
Menlo Park, CA 94025
415-365-2843; Fax: 415-365-3057

Accu-Weather, Inc.
619 W. College Ave.
State College, PA 16801
814-234-9601; Fax: 814-238-1339

Acoustech Corp.
306 Maple Ridge #2
Ann Arbor, MI 48103
313-663-7013; Fax: 313-663-7013

Acoustic Sciences Corp.
PO Box 1189, Eugene, OR 97440
503-343-9727; 800-272-8823
Fax: 503-343-9245

Acoustic Systems
PO Box 3610, Austin, TX 78764
512-444-1961; 800-749-1460
Fax: 512-444-2282

Acrobatic Muffin Works
22126 Del Valle St.
Woodland Hills, CA 91364
818-347-3505; Fax: 818-347-3579

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Acrodyne Industries Inc.

516 Township Line Road
Blue Bell, PA 19422
215-542-7000; 800-523-2596
Fax: 215-540-5837

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Adams-Smith
34 Tower St., Hudson, MA 01749
508-562-3801; Fax: 508-568-0404



ADC Telecommunications, Inc.

4900 W. 78th St.
Minneapolis, MN 55435
612-946-3000; 800-726-4266
Fax: 612-946-3050

Adcour, Inc.
18 Billings St., Sharon, MA 02067
617-784-8123; 800-232-3557
Fax: 617-784-5563

ADM Systems
2328 Livernois, #A, Troy, MI 48084
313-524-2100; Fax: 313-689-8108

Adrienne Electronics Corp.
11994 Marjon Dr.
Nevada City, CA 95959
916-274-1616; 800-782-2321
Fax: 916-274-2619

ADT (Applied Digital Technology)
3622 NE 4th St.
Gainesville, FL 32609
904-338-0516; Fax: 904-338-1108

Adtec Productions, Inc.
1201 Kenwood Dr.
Nashville, TN 37216
615-226-7503; Fax: 615-227-2616

Advance Products Co.
PO Box 2178, Wichita, KS 67201
316-263-4231; Fax: 316-263-4245

Advanced Broadcast Systems
1659 Production Dr.
Burlington, KY 41005
606-282-7580; Fax: 606-282-7581

Advanced Designs Corp.
PO Box 1907
Bloomington, IN 47402
812-333-1922; Fax: 812-333-2030

Advanced Digital Imaging
1250 N. Lakeview, #O
Anaheim, CA 92807
714-779-7772; Fax: 714-779-7773

Advent Communications, Ltd.
Alma Road
Chesham, Bucks, England HP5 3HE
44-494-774400
Fax: 44-494-791127

AEQ SA
C/Rey Pastor 36, P.I. Leganes
Madrid, Spain E-28914
34-1-686-1300; Fax: 34-1-686-4492

Aerosonic USA
8242 McCormick Blvd.
Skokie, IL 60076
708-673-5454; Fax: 708-673-1389

AESI/StediWatt
205 Lincoln Way E.
Chambersburg, PA 17201
717-263-5681; 800-345-1280
Fax: 717-263-1040

AEV SNC di Vaccari G. & C.
Via Saviolo I/E - Le Budrie
San Giovanni Persiceto (BO)
Italy I-40017
39-051-950249
Fax: 39-051-950201



AF Associates Inc.
100 Stonehurst Court
Northvale, NJ 07647
201-767-1200; Fax: 201-784-8637

Agfa Corp.
100 Challenger Rd.
Ridgefield Park, NJ 07660
201-440-2500; Fax: 201-440-2865

AIR corp
3727 Northridge Dr.
Irving, TX 75038
214-255-0550; Fax: 214-252-0020

Akai Digital
PO Box 2344, Fort Worth, TX 76113
817-336-5114
Fax: 817-870-1271



AKG Acoustics
1525 Alvarado St.
San Leandro, CA 94577
510-351-3500; Fax: 510-351-0500

AKG Akustische u. Kino-Geräte
Brunhildengasse 1 (PF 584)
Vienna, Austria A-1150
43-1-981-24-0
Fax: 43-1-981-24-245

Alamar Electronics USA, Inc.
489 Division St.
Campbell, CA 95008
408-866-9373; Fax: 408-866-4367

Alan Dick & Co. Ltd.
The Barlands, London Rd.
Cheltenham, Glos.
England GL52 6UT
44-242-518500
Fax: 44-242-510191

Alden Electronics, Inc.
40 Washington St.
Westboro, MA 01581
508-366-8851; Fax: 508-898-2427

Alesis Corp.
3630 Holdrege Ave.
Los Angeles, CA 90016
310-558-4530; 800-5-ALESIS
Fax: 310-836-9192

Alexander Batteries
PO Box 1508, Mason City, IA 50402
515-423-8955; 800-526-ALEX
Fax: 515-423-1644

Allen Avionics, Inc.
224 E. Second St.
Mineola, NY 11501
516-248-8080; Fax: 516-747-6724

Allen & Heath
8760 S. Sandy Pkwy
Sandy, UT 84070
801-566-8800; Fax: 801-566-7005

Allen Osborne Associates
256 Lakefield Rd. #5
Westlake Village, CA 91361
805-495-8420

Allied Tower Co., Inc.
12450 Galveston Rd.
Webster, TX 77598
713-486-7691; 800-332-0025
Fax: 713-486-6562

**Alpha Audio Acoustics,
Acoustical Solutions, Inc.**
2720 Enterprise Pkwy. #101
Richmond, VA 23220
804-346-8350; 800-782-5742
Fax: 804-346-8808

Alpha Image Ltd./Dynatech Video
4 Votec Centre, Hambridge Lane
Newbury, England RG14 5TN
44-635-521939
Fax: 44-635-528387

Alpha Image Inc./Dynatech Video
969 High Ridge Rd. #206
Stanford, CT 06905
203-329-3777; Fax: 203-967-4121

Alpha Technologies
3767 Alpha Way
Bellingham, WA 98226
206-647-2360; Fax: 206-671-4936

Alpha Video & Electronics Co.
200 Keystone Dr.
Carnegie, PA 15106
412-429-2000; Fax: 412-429-2015

Alpha Wire Corp.
711 Lidgerwood Ave.
Elizabeth, NJ 07207-0711
908-925-8000; 800-52-ALPHA
Fax: 908-925-7429

Alta Group, Inc./Dynatech Video
180 Wright Brothers Rd, #670
Salt Lake City, UT 84116
801-328-8872; Fax: 801-328-3668

Altec Lansing Corp.
PO Box 26105
Oklahoma City, OK 73126-0105
405-324-5311; Fax: 405-324-7601

Altronic Research Inc.
PO Box 249, Yellville, AR 72687
501-449-4093; 800-482-5623
Fax: 501-449-6000

Amco Engineering Co.
3801 N. Rose St.
Schiller Park, IL 60176
708-671-6670; 800-833-3156
Fax: 708-671-9469

THOMSON BROADCAST would like to thank the National Academy of Television Arts and Sciences for once again recognizing the experience and savoir-faire of the mother of digital with an Emmy Award. In 1993, THOMSON BROADCAST's continual efforts to promote serial digital

STATE OF THE DIGITAL ART

technology, enhanced by the technical mastery of THOMSON-CSF/LER and super-efficient SGS-THOMSON VLSI components, have been unanimously lauded by the video domain. As both a manufacturer and systems integrator, THOMSON BROADCAST offers a full gamut of digital products which operate at the peak of performance. Cameras, routing switchers, color correctors, interfaces, production and post-production switchers, still stores, and master control rooms have all been conceived within the most sophisticated realm of research and development so that you can reap the benefits of tomorrow's technology today. Our drive to push the envelope of efficiency is visible in the 9200 switcher and the whole range of the 9000 series, which capitalize on the advantages of the latest THOMSON BROADCAST digital technology for the greatest satisfaction of video professionals.

M'BAYE GADJIGO & ASSOCIATES



THOMSON BROADCAST



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 USA - THOMSON BROADCAST, Inc - 49, Smith Street - P.O. Box 5266 - ENGLEWOOD NJ 07631 - USA - ☎ (1 - 201) 569 1650 - Fax : (1 - 201) 569 1511
 UNITED KINGDOM - THOMSON BROADCAST, Ltd - 18, Horton Road - DATCHET - BERKSHIRE SL3 9ES - ENGLAND - ☎ (44 - 753) 581 122 - Fax : (44 - 753) 581 196

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Fax: +44-61-834-0593

AMEK/TAC US Operations
10815 Burbank Blvd.
North Hollywood, CA 91601
818-508-9788; Fax: 818-508-8619

American Broadcast Systems, Inc.
8222 Jamestown Dr. #109B
Austin, TX 78758
512-837-3737; 800-950-2223
Fax: 512-837-3791

American Laser Systems
POB 6944, Santa Barbara, CA 93160
805-967-0423; Fax: 805-683-4382

American Lightwave Systems, Inc./ADC Telecomm.
999 Research Parkway
Meriden, CT 06450-8323
203-630-5770
Fax: 203-630-5701

American Power Conversion, Inc.
132 Fairgrounds Rd.
West Kingston, RI 02892
401-789-5735; 800-788-2208
Fax: 401-782-0250

American Studio Equipment
8468 Kewen Ave.
Sun Valley, CA 91352
818-768-8922; Fax: 818-768-0564

Ameritron
921 Louisville Rd.,
Starkville, MS 39759
601-323-8211; Fax: 601-323-6551

Ametek, Lamb Electric Div.
GCS-PO Box 4239
New York, NY 10163

AMP
PO Box 3608, Harrisburg, PA 17105
717-564-0100; 800-522-6752
Fax: 717-986-7575

AMPEX
DCT

Ampex Corp.
401 Broadway
Redwood City, CA 94063
415-367-3888 Fax: 415-367-4669

• **AMS Industries, A Siemens Co.**
7 Parklawn Dr., Bethel, CT 06801
203-792-4997 Fax: 203-730-8549

AMS Neve PLC
Billington Road
Burnley, Lancs., England BB11 5ES
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Fax: +44-282-39542

• **Amtel Systems, Inc.**
310 Judson St. #6
Toronto, Ont., Canada M8Z 5T6
416-251-2748; 416-251-3355
Fax: 416-251-2748

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Dallas, TX 75243
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Fax: 305-256-6657

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33-77-30-62-10
Fax: 33-77-30-6875

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Placerville, CA 95667
916-621-2015; Fax: 916-622-3274

Antenna Technology
1128 E. Greenway, Mesa, AZ 85203
602-264-7275; Fax: 602-898-7667

Antex Electronics
16100 S. Figueroa St.
Gardena, CA 90248
310-532-3092; 800-338-4231
Fax: 310-532-8509



Anthro Corp.
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Portland, OR 97210
503-241-7113; 800-325-3841
Fax: 800-325-0045



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Fax: 203-929-9935

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City of Industry, CA 91745
818-968-4100; 800-359-2684
Fax: 818-968-1703

Aphex Systems
11068 Randall St.
Sun Valley, CA 91358
818-767-2929; Fax: 818-767-2641

API-Audio Products Inc.
7655-G Fullerton Rd.
Springfield, VA 22153
703-455-8188; Fax: 703-455-4240

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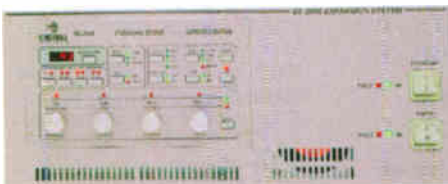
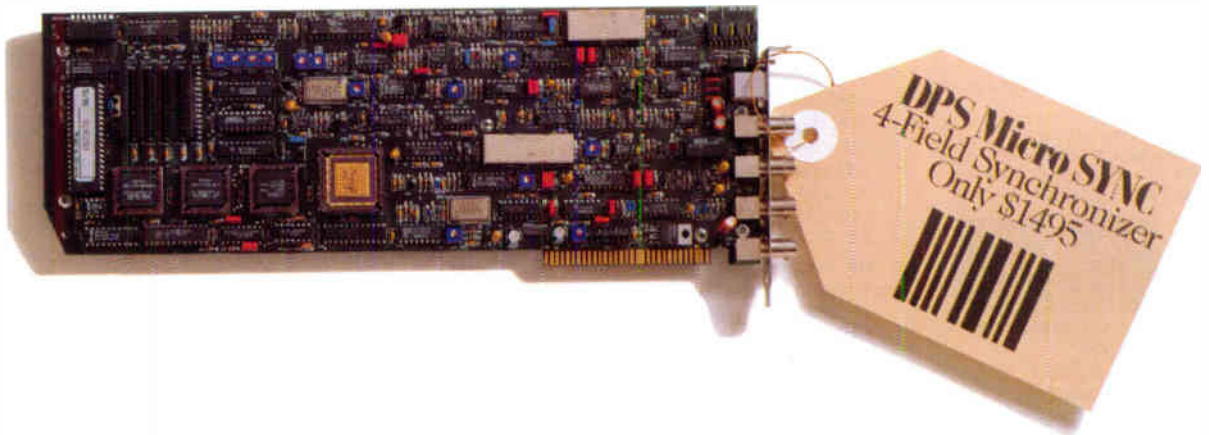
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Advanced wireless intercom system



Vega Q600

- Rugged, reliable, metal belt-pack remotes
- Hybrid UHF/VHF operation to conserve scarce VHF frequencies
- Inexpensive VHF monitor receivers to lower system costs
- High-quality, low-noise, low-distortion audio
- Up to six belt-packs per master station
- Designed specifically for broadcast and production
- Directly compatible with all standard wired intercoms
- Many advanced circuit and system design features

In the studio or on the set, Vega's wireless intercom systems are the choice of professionals who demand ruggedness, reliability, broadcast-quality audio, and a full set of professional features. Designed from the ground up for broadcast and production work, the Q600 UHF/VHF system provides all the functions and technical capa-

bilities required for these demanding applications.

The Q600 system provides continuous, full-duplex, hands-off communications between up to six people plus an unlimited number of "listen-only" users.

The QTR-600 belt-pack remotes are extremely easy to use and provide operation similar to that of hard-wired intercom belt-packs. They are compatible with popular dynamic or electret headsets, such as Beyer, Clear-Com, and Telex. The cases are welded aircraft aluminum alloy with a high-impact, molded Cycolac (ABS) control panel that will withstand the roughest use.

One QX-600 master station supports up to six QTR-600 remotes with "hands-free" two-way communications, and an unlimited number of PL-2 receivers for listen-only users. Circuitry is provided to interface external line audio with the system or to link two QX-600s into a 12-user system. The master station is directly compatible with all standard wired intercom systems such as Clear-Com, RTS, ROH, Telex, and many others via internal programming switches. A local headset position and extensive

control, adjustment, and monitoring provisions are also included.

The PL-2 VHF mini-receiver provides a high-performance, low-cost solution to providing one-way "listen-only" communications. Very often, individuals need to receive instructions but are not required to speak. Using PL-2 receivers for this application avoids the expense of additional full two-way remotes and can significantly lower the cost of a typical system. The PL-2 is fully compatible with the Q600 system and is designed to provide reliable communications in the most demanding RF environments.

When the job demands hands-free, full-duplex operations in the most demanding environment, go with the Vega Q600, the system recommended by professionals worldwide.



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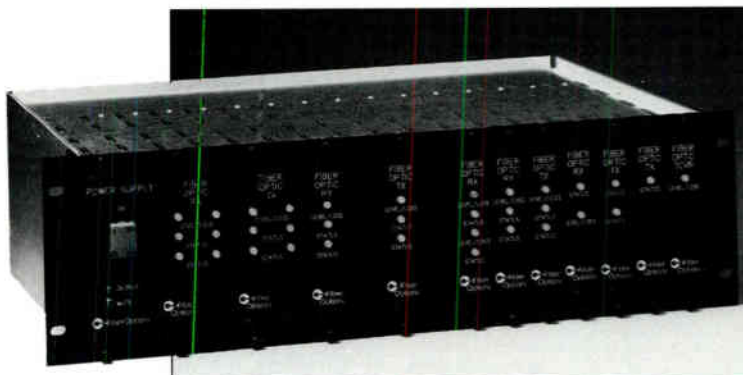
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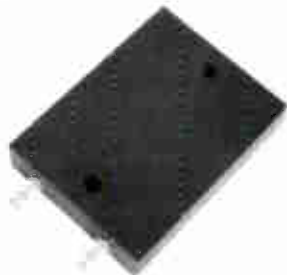
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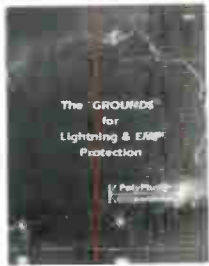
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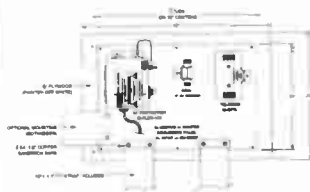
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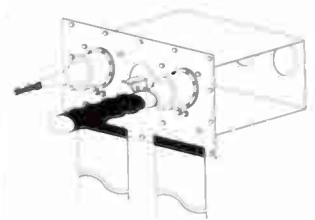
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Fax: 916-939-4114

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605-343-7200; Fax: 605-343-7240

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619-552-2090; 800-368-5719
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Salt Lake City, UT 84116
801-359-0077; Fax: 801-359-0216

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Santa Clara, CA 95051
408-727-7272; 800-347-3383
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1792 Union Ave.
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410-467-1225; Fax: 410-467-1289

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310-603-1976; Fax: 310-603-1929

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216-871-9900; Fax: 216-871-8320

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3M Center, 223-5N-01
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612-736-4179; Fax: 612-737-5583

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Austin, TX 78726
512-984-3400; 800-426-8626
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4131-771-2829
Fax: 4131-771-2842

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Tokyo, Japan 105
03-3457-3244; Fax: 03-5476-4057

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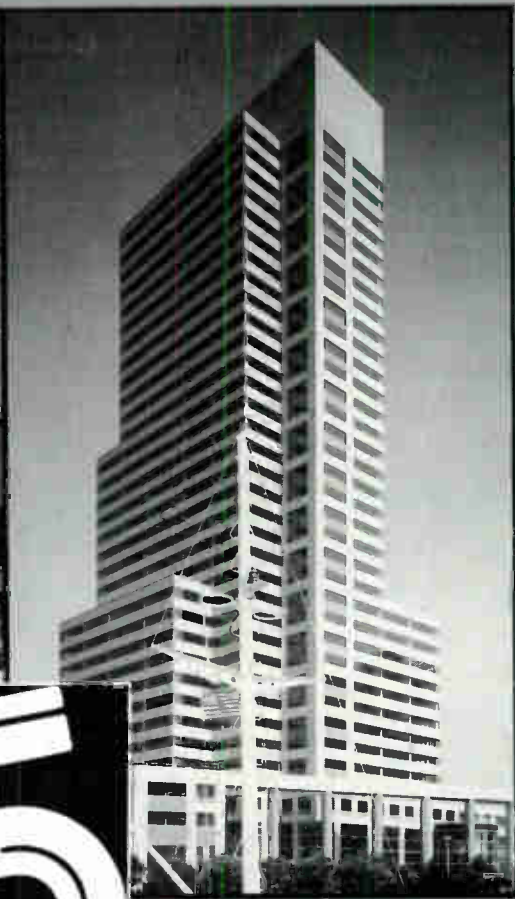
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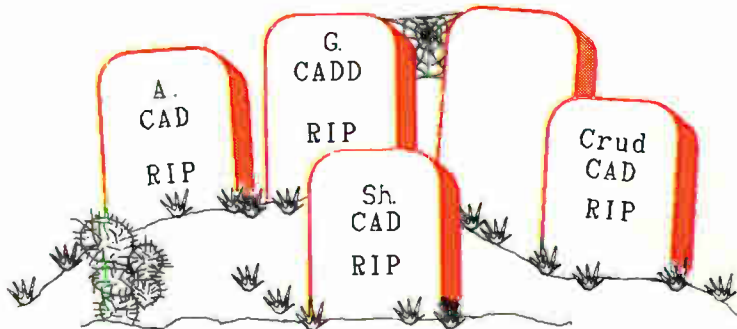
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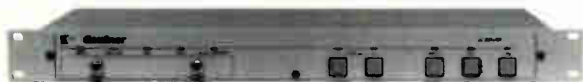


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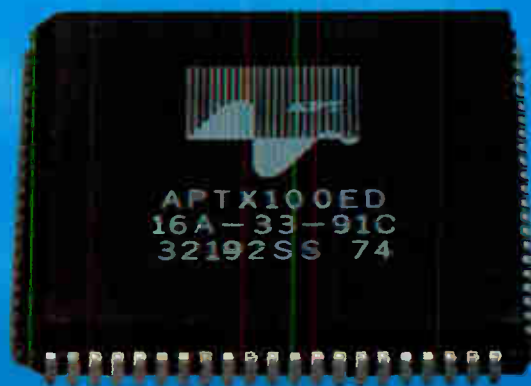
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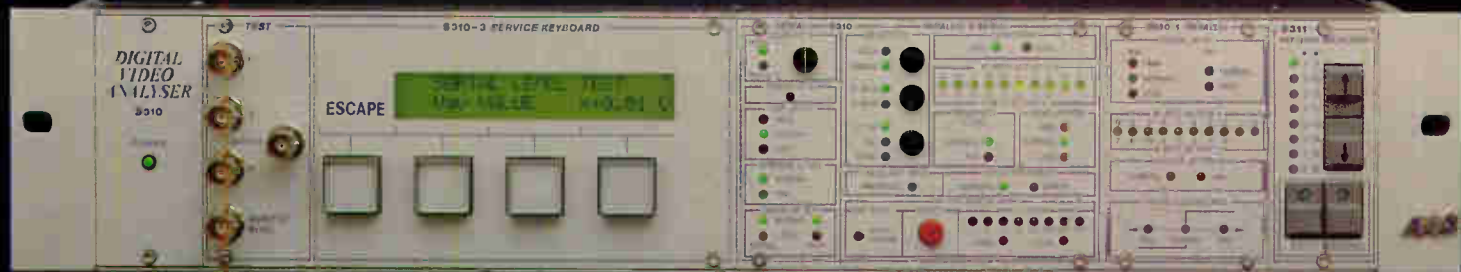
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- Performance test or troubleshoot any digital video signal or system.
- Perform continuous, real time, on-line conformance testing.
- Gain detailed signal information for troubleshooting or maintenance purposes.
- Set user selectable alarm functions that provide instant warning of signal parameters failing to meet set standards.
- Do remote monitoring and data logging through RS-232C and RS-422 data ports.
- Use a complete digital pattern generator that offers up to 34 different test and troubleshooting patterns.

Product Directory

Audio Products

Amplifiers, Audio

D distribution; M monitor/power; P pre-amp

AAVS DMP

Acoustech M

AEQ DM

AIR Corp. DM

Alesis M

Allen Avionics D

• Altec Lansing DMP

AMEK Systems & Controls P

Aphex Systems D

API-Audio Products DMP

• Arrakis Systems DMP

Ashley Audio MP

ATI-Audio Technologies DMP

Audio Developments Ltd. D

Audio Intervisual Design DMP

Audio Services Corp. DMP

Audiotronics, Inc. DMP

• Audix Ltd. DP

Avitel D

BAL Broadcast D

Benchmark Media Systems DMP

BFE Ferneldetechnik & Elektronik D

BGW Systems DM

Biamp Systems DMP

Bogen Communications MP

Broadcast Devices DMP

• Bryston/Brystonvermont MP

BSM/West Starr Int'l D

• Channelmatic D

Clyde Electronics DMP

Conex Electro Systems DMP

Continental Electronics DMP

Cooper Sound Systems P

• Crown M

Datatek DMP

dbx Professional Products AKG Acoustics DMP

DH Satellite M

Di-Tech D

DT Electronics DM

DTL Broadcast D

Dwight Cavendish D

DYMA Engineering DMP

DYNAIR Electronics D

Dynatech Video Group D

EDCOR Electronics P

EELA Audio MP

Electro-Voice P

E-N-G Mobile Systems D

ESE D

Farrtronics DMP

D.W. Fearn D

FM Acoustics DMP

FM Systems D

Focusrite Audio Engineering DMP

For-A Corp. of America D

Full Compass Systems DMP

Furman Sound MP

GEE Broadcast Systems D

Gentner Communications/Prof. Audio Products D

GML P

Grass Valley Group D

Group One P

Harris Allied Broadcast HEDCO D

Henry Engineering DMP

HES Electronics DMP

HHB Communications MP

Hill Audio M

Image Video MD

IRP Professional Sound DMP

IRT Electronics DM

ITI Electronics P

Ivie Technologies M

JBL Professional M

Jensen Transformers P

The J-Lab Co./BCS D

JNS Electronics

Lelch

Link Electronics

Logitek Electronic Systems DMP

LPB DM

Media Concepts

• Mobile-Cam Products

Modular Audio Products

Morenz Development DM

• MTC/Mycomp Technologies D

Multidyne D

• Georg Neumann P

Nova Systems D

NTP Elektronik DP

NVision D

Omicron Video D

Opamp Labs DMP

• Optical Electronics P

Orban Associates

AKG Acoustics DMP

Pacific Recorders & Engineering DP

Panasonic Broadcast & Television Systems Co. DMP

Panasonic Pro Audio/Ramsa M

PESA Switching Systems D

Philip Drake Electronics DMP

PKE Int'l DMP

Portland Instrument DMP

Print Products Int'l P

Pro-Bel D

Professional Sound Corp. DMP

ProTech Audio DMP

QSC Audio Products DM

Radio Design Labs DMP

Radio Systems D

Ramko Research DMP

Rane DMP

• RE UK D

Richmond Sound Design M

• ROH Products DMP

Sandar Electronics DM

Scantex Labs DMP

Sescom DMP

Shintron D

Shure DMP

• Siemens Osterreich Audio-Video MP

Sierra Video Systems D

Sigma Electronics D

• H.A. Solutec D

• Somich Engineering M

Sonosax MP

Spectra Sonics DMP

Studer Digitec M

Studer Editec DP

Studio Technologies P

Symetrix MP

Target Technology DM

Tel-Test DMP

TOA Electronics M

Total Audio Concepts P

UREI M

Utah Scientific

Dynatech Video Group D

Video Accessory Corp. D

Videoquip Research DMP

Videotek DM

Vortex Communications DMP

Ward-Beck Systems DP

Whirlwind Music DM

Wiltronix D

Wohler Technologies M

Yamaha DMP

Yamashita Engineering Mfg. D

CD Equipment

Recorders & players for CD & MO media

Akai Digital

Asaca/Shibasoku

• Audio Design

Audio Follow

BARCO-EMT, Audio

Continental Electronics Corp.

Denon America

DIC Digital

Digital Broadcast Associates

Fairlight/DSG

Gefen Systems

• Gotham Technology Group

Grozik Associates

HHB Communications

Kowa

LPB

• The Management

Optical Media Int'l

Pioneer New Media Technologies

Roland Audio/Video Group

Rorke Data

Scott Studios

Sonifex

Sony Business & Professional Group

• Studer Revox America

TASCAM

Tayo Industries

Wide Range Electronics

Yamaha

Zonal

Coders & Decoders, Digital Audio

Antex Electronics

Astroguide

Audio Intervisual Design

Audio Processing Technology

BARCO-EMT, Audio

CCS Audio Products

Circuit Research Labs

Comrex

Dolby Laboratories

DT Electronics

DMP

GEE Broadcast Systems

Ikegami Electronics (USA)

Intralex

ITAME

JNS Electronics

Moseley

Moseley Associates

NVision

OMB Sistemas Electronicos

QEI

Questech

Rohde & Schwarz

Studer Digitec

Telos Systems

Tel-Test

TFT

VistaCom

Vortex Communications

WavePhore

Converters, Digital Audio

A A-D/D-A; R sampling rate

Alesis R

Antex Electronics AR

Apogee Electronics AR

Asaca/Shibasoku A

• Audio Design AR

Audio Intervisual Design AR

Audio Services Corp. AR

BEC Technologies A

CEDAR Audio AR

Circuit Research Labs AR

• Computer Concepts A

Datatek A

Digital Audio Research R

DT Electronics A

DYNAIR Electronics AR

Fidelipac R

GEE Broadcast Systems AR

Gefen Systems R

GML A

• Gotham Technology Group

Grass Valley Group A

HHB Communications AR

Image Video A

JNS Electronics A

Lester Labs A

Lexicon A

LNR Communications R

NTP Elektronik A

NVision AR

Optical Media Int'l A

Philip Drake Electronics A

Pro-Bel AR

Questech AR

• RE UK AR

RGB Spectrum R

• ROH Products A

Roland Audio/Video Group AR

Schafer World Communications A

• Schmid Telecom A

Scott Studios A

• Siemens Osterreich Audio & Video AR

• Siemens Audio A

Sonic Solutions A

Sony Broadcast Int'l A

Spectral Synthesis AR

ST Keltec A

Studer Digitec A

Studer Editec A

Tayo Industries AR

Tel-Test AR

TFT A

Video Associates Labs A

Videotek A

WavePhore A

Wohler Technologies A

Yamaha Corp AR

Z-Systems AR

Delay systems and devices

introducing audio delays to compensate for signal delays in video processing; excludes audio effects, reverb.

Allen Avionics

• Altec Lansing

Audio/Digital

BARCO-EMT, Audio

BBE Sound

• Dalanco Spry

Digital Processing Systems

D&R Electronica

Eventide

• Gotham Technology Group

Hotronic

Image Video

International Tapetronics Corp.

IRP Professional Sound Products

Klark Teknik

• Merlin Engineering Works

• Georg Neumann

NVision

Pacific Recorders & Engineering

Panasonic Pro Audio/Ramsa

Philip Drake Electronics

Questech

Ramko Research

Rane

• Siemens

Sonifex

Tel-Test

Wiltronix

Yamaha

A FAMILY OF COMPATIBLE PRODUCTS



Scenaria



OmniMix

SSL DIGITAL

Multiple Systems • Multiple Users



ScreenSound

With SSL's unique family of digital products, audio post-production for film and video moves to new heights of speed, accuracy and creative potential.

SoundNet – The world's only multi-user digital audio network system. ScreenSound, Scenaria and OmniMix users can work on the same, or diverse, projects without having to waste time up- or down-loading. SoundNet also provides a central database of all audio held on hard disk or optical discs, removing the need to duplicate sound libraries.

ScreenSound – An integrated digital audio-for-video editing suite. Hard disk recording, editing and mixing, combined with multiple machine control.

Scenaria – 24-track random access recorder, multi-channel editor, 38-channel digital mixing system, and random access video are just some of the features which enable Scenaria to set new standards in audio post production.

OmniMix – All the features of Scenaria, plus a configurable output bus structure, suitable for 4, 5 or 6-channel surround sound and a variety of stem mixes. *MotionTracking™* dynamically automates panning to an exact position within the surround sound field. *Spatial Processing™* provides advanced digital audio effects to emulate the characteristics of objects moving in space and time.

Solid State Logic

International Headquarters:- Begbroke, Oxford, England, OX15 1RU. Tel: (0865) 842300
Paris (1) 43 60 46 66 • Milan (2) 262 24956 • Darmstadt (6151) 93 86 40 • Tokyo (3) 54 74 11 44
New York (212) 315 1111 • Los Angeles (213) 463 4444
In USA call Toll Free: 800-343 0101

Circle (34) on Reply Card

World Radio History



The Queen's Award for
Technological Achievement

Digital Audio Workstations

Hard disk recorders, software.
 AEQ
 Akai Digital
 AKG Acoustics
 AMS Neve/Siemens
 ASC Audio Video
 • Audio Design
 Audio Follow
 Audio Intervisual Design
 Audio Services Corp.
 Augan Instruments
 AVID Technology
 • A/Z Associates
 BARCO-EMT, Audio
 BASYS Automation Systems
 CBSI-Custom Business Systems
 (Digital Universe)
 CDR Systems
 CEDAR Audio
 • Dalanco Spry
 DALET
 Digidesign
 Digital Audio Labs
 Digital Audio Research
 Digital Broadcast Associates
 • Doremi Labs
ENCO Systems
 Fairlight/DSG
 Fidelipac
 Fostex
 Future Editing Equipment
 Design/FED
 • Gotham Technology Group
 • Harmonia Mundi Acustia
Henry Engineering
 • IGM Communications
 JLCoooper Electronics
 Lexicon
 • The Management
 Media Touch Systems
 Micro Technology UnLtd.
Orban Associates
AKG Acoustics
 • Otari
 Pacific Recorders & Engineering
 Philip Drake Electronics
 PKE Int'l
 • Plasmecc Systems
Pro-Bel
 Prophet Systems
 Publison
 Radio Computing Services
 Ram Broadcast Systems
 Roland Audio/Video Group
SADIE
 Schafer World Communications
 Scott Studios
 • Siemens Osterreich Audio & Video
 • Siemens Audio
 Softimage
Solid State Logic
 Solidyne
 Sonic Solutions
 Sonifex
 Spectral Synthesis
 Studer Editech
 • Studer Revox America
Studio Audio & Video/SADIE
 Studio Technologies
 The Synclavier Co.
 TASCAM
 Tayo Industries
360 Systems
 • Turtle Beach Systems
 Videoquip Research
 Wiltronix
 Yamaha

Digital Musical Instruments, MIDI Equipment

includes specialized instrumental

pickups/microphones.
 Akai Digital
 Alesis
 Allen Avionics
 Antex Electronics
 • E-mu Systems
 Fairlight/DSG
 JLCoooper Electronics
 • Lone Wolf
 Penny & Giles
 Rane
 Richmond Sound Design
 Roland Audio/Video Group
 Softimage
 Spatial Sound
 Spectral Synthesis
 Tayo Industries
 Toletto Fastners Int'l/Cord-Lox
 Yamaha

Digital Terminal Equipment, Modems

Antex Electronics
 Artel Communications
 CBSI-Custom Business Systems
 (Digital Universe)
Fiber Options
Intraplex
ITAME
 JNS Electronics
Orban Associates
AKG Acoustics
 Philip Drake Electronics
Pro-Bel
 Schafer World Communications
 Sonic Solutions
 Telos Systems
 Tel-Test
 TFT
 Vortex Communications
 Wegener Communications
 Wiltronix

Dynamics Processor

Including compression, limiting, expansion, noise reduction, de-essing, spectral enhancements.
 AEV
 AIR Corp.
 Alesis
 • Altec Lansing
 AMEK Systems & Controls
 AMEK/TAC US Operations
 Antex Electronics
 Aphex Systems
 API-Audio Products
 Ashly Audio
ATI-Audio Technologies
 • Audio Design
 Audio Developments
 Audio Intervisual Design
Audio Processing Technology
 Audio Services Corp.
 BARCO-EMT, Audio
 BFE Ferneldetechnik & Elektronik
 Biamp Systems
 BSS/AGK Acoustics
 Circuit Research Labs
 Cutting Edge Technologies
 Dan Dugan Sound Design
 dbx Professional Products/AGK
 Acoustics
 DOD Electronics
 Dolby Laboratories
 Dorrough Electronics
 Eventide
 Focusrite Audio Engineering
 Furman Sound
Gentner Communications/Prof. Audio Products Div.
 GML
 • Gotham Technology Group
 Group One

HHB Communications
 Inovonics
 IRP Professional Sound Products
ITAME
 Ivie Technologies
 JBL Professional
 JTL Communications
 KINTEK
 Klark Teknik
 LPB
 • The Management
 Mark IV Pro Audio Group
 Modular Audio Products
 Modulation Sciences
 • Georg Neumann
 NTP Elektronik
Orban Associates
AKG Acoustics
 Pacific Recorders & Engineering
 Panasonic Pro Audio/Ramsa
 ProTech Audio
 Publison
 Radio Design Labs
 Radio Systems
 Ramko Research
 Rane
 Roland Audio/Video Group
 Sabine Musical Mfg.
SADIE
 Sescom
 • Siemens Osterreich Audio & Video
 • Siemens Audio
Solid State Logic
 Solidyne
 • Somich Engineering
 Sonic Solutions
 Spatial Sound
 Symetrix
 Tayo Industries
 Tel-Test
 UREI
 Yamaha
 Z-Systems

Effects Processors

Plate/room simulation, reverb, flanging, chorus functions; profanity delays; may include simple delay function but excludes delay-only compensation.
 Alesis
 AMS Neve/Siemens
 Audio Services Corp.
 BARCO-EMT, Audio
 dbx Professional Products/AGK
 Acoustics
 Dimension Music and Sound Effects
 DOD Electronics
 Eventide
 HHB Communications
 Klark Teknik
 Lexicon
Orban Associates/AGK Acoustics
 Panasonic Pro Audio/Ramsa
 Publison
 Questech
 Roland Audio/Video Group
 Spatial Sound
 Symetrix
 Tel-Test
 Yamaha
 Z-Systems

Equalizers

HP-/LP-Filters, parametric, psophometric, swept.
 Alesis
 Allen Avionics
 • Altec Lansing
 AMEK Systems & Controls
 AMEK/TAC US Operations
 Aphex Systems
 API-Audio Products

Ashly Audio
 Audio Developments
 Audio Intervisual Design
 Audio Services Corp.
 AudioControl Industrial
 Auditorics
 • Audix Ltd.
 BARCO-EMT, Audio
 Biamp Systems
 BSS/AGK Acoustics
 dbx Professional Products/AGK
 Acoustics
 DOD Electronics
 DYNAIR Electronics
Electro-Voice
 Focusrite Audio Engineering
 Furman Sound
 GML
 • Gotham Technology Group
 Group One
 HHB Communications
 IRP Professional Sound Products
 Ivie Technologies
 JBL Professional
 Klark Teknik
 Modular Audio Products
 • Georg Neumann
Orban Associates
AKG Acoustics
 Panasonic Pro Audio/Ramsa
 Radio Design Labs
 Ramko Research
 Rane
 Roland Audio/Video Group
 Sabine Musical Mfg.
SADIE
 Sescom
 • Siemens Osterreich Audio & Video
Solid State Logic
 Solidyne
 Spectra Sonics
 Symetrix
 Tel-Test
 Total Audio Concepts
 TTE
 UREI
 White Instruments/C Van R
 Yamaha
 Z-Systems

Headphones, Headsets

AKG Acoustics
 AKG Akustische u. Kino-Geräte
 Audio Intervisual Design
 Audio Services Corp.
 Audio-Technica U.S.
 beyerdynamic
 Clear-Com Systems
Continental Electronics Corp.
 David Clark Co.
 Farrtronics
 Fostex
 HHB Communications
 Koss
 LPB
 Media Concepts
Nady Systems
 Philip Drake Electronics
 Plantronics
 Professional Sound Corp.
 R-Columbia Products
 • ROH Products
 Roland Audio/Video Group
 Sennheiser Electronic Corp.
 Setcom
Sony Business & Professional Group
 Stanton Magnetics
 Systems Wireless
 Yamaha

Audio Products, cont'd

Intercoms

All types
 Audio Services Corp.
 Auditorics
 BAF Communications
 Bogen Communications
 Clear-Com Systems
 David Clark Co.
Dynatech Spectrum
 Farrtronics
 GEE Broadcast Systems
 HES Electronics
 HM Electronics
 Image Video
 ITI Electronics
 JNS Electronics
 JT Communications
 Lee Dan Communications
 PESA Switching Systems
 Philip Drake Electronics
 PKE International
 Portland Instrument
 ProTech Audio Corp.
 R-Columbia Products
 Ram Broadcast Systems
 • ROH Products
 Setcom
Sierra Automated Systems Engineering
 Studio Technologies
 Swintek
 Systems Wireless
 Television Engineering Corp.
 TOA Electronics
 Vortex Communications
 Ward-Beck Systems

Panasonic Pro Audio/Ramsa ALW
 Professional Sound Corp. ABHLW
 Theodore A. Rapp Associates L
 • Samson Technologies W
 Sanken Microphones L
 Schalltechnik Dr.-Ing. Schoeps ABH
 • Seam-Tech A
 Sennheiser Electronic AHLW
 Sescom A
 Shure ABHLW
 Sony Broadcast Int'l AHLW
 Sony Business &
 Professional Group HLW
 Spectra Sonics HLW

Swintek
 Systemus Wireless
 Tannoy/TGI North America
 Telex Communications
 • Vega/Mark IV
 Videoquip Research
 Whirlwind Music

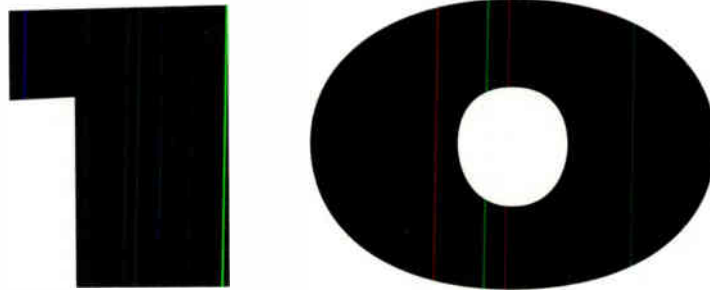
Mixers

O on-air; P portable, ENG, remote; S studio production, reinforcement, ESAM, recording
AAVS
 OPS
 OPS
 OP

LW AEV
 HLW Alesis
 AH • Altec Lansing
 HLW AMEK Systems & Controls
 W AMS Neve
 A • Arrakis Systems
 A Ashly Audio
ATI-Audio Technologies
 OPS Audioarts Engineering
 P Audio Developments
 S Audio Intervisual Design
 PS Audio Services Corp.
 P Audio-Technica U.S.
 OS Auditorics

Microphones

A accessories, windscreens, direct boxes, stands, booms, other; B boundary, surface-mount; H hand-held, stand, shotgun mics; L lavalier; W wireless
 Ac-cetera A
 AKG Acoustics ABHLW
 • Altec Lansing HW
 AMS Industries H
ATI-Audio Technologies A
 Atlas/Sondolier A
 Audio Intervisual Design ABLW
 Audio Services Corp. ABHLW
 Audio-Technica U.S. ABHLW
 Audio Visual Assistance A
 beyerdynamic ABHLW
 Black Audio Devices A
 Bogen Communications AH
 Canare Cable A
 Comprehensive Video Supply ALW
 Comtek W
Continental Electronics ABH
 Countryman Associates ABHLW
 • Crown BH
 Danish Pro Audio/Brüel & Kjær AH
Electro-Voice Inc. AHLW
 Fostex H
 Full Compass Systems H
 • Gotham Technology Group AH
 Group One ABH
 • Har-Ken Specialties A
 Karl Heitz A
 HHB Communications ABHLW
 Jensen Transformers A
 Lectrosonics, Inc. W
 Light Wave Systems A
 LTM A
 Media Concepts AHLW
 Micron Audio Products BLW
 • Milab Microphones ABH
Nady Systems HLW
 Neumann USA ABH
 • Georg Neumann ABH
 Neutrik USA A
Panasonic Broadcast & Television Systems BHLW



If you look at this and see "ten," not "two," we've got the digital audio system for you.

The **DAD 486x Digital Audio Delivery System** lets you reap all the benefits of a powerful, CD quality digital audio system without having to hire computer wizards to operate it. With your **DAD** on the job, you can throw away your cart and floppy disk machines, the carts, the disks and all the problems and expenses they've caused you. But since **DAD's** basic operation *emulates* standard cart machines, you won't have to waste time learning unusual operating methods or incur brain damage trying to figure out complex computer screens. **DAD's** easy, intuitive touchscreen operation lets you put it right to work boosting your audio quality,

improving your audio operations and paying dividends on your investment quickly and efficiently.

But, underneath **DAD's** easy to operate touchscreen is a powerful, hard disk-based production and playback system. **DAD** can even be configured as a networked system with multiple users and locations for even greater versatility and economy. With virtually unlimited stereo audio storage capacity, *graphic* waveform editing capability and versatile automation, interface and operating features, your **DAD** system is far more than just a replacement for cart machines. It really is a *complete* Digital Audio Delivery System!

The DAD 486x



To receive more information or to find out how to put our DAD to work for you, call us at 1-800-ENCO SYS.

ENCO 1866 Craigshire Drive St. Louis, MO 63146
 SYSTEMS, INC. Phone: 1-800-362-6797 Fax: 314-453-0061

Circle (35) on Reply Card

Audio Products, cont'd

<ul style="list-style-type: none"> • Audix Ltd. O BARCO-EMT, Audio S Biamp Systems OPS Broadcast Electronics O • Cellcast Remote Broadcast O Clyde Electronics OS Comrex P Continental Electronics OP Cooper Sound Systems PS Dan Dugan Sound Design S Dateq/QMI O Dav Tronics S dbx Professional Products S Div. of AKG Acoustics S DDA OS DOD Electronics S • Doremi Labs S D&R Electronica OPS EELA Audio OPS Electro-Voice PS E-N-G Mobile Systems P Euphonix S Fidelipac O Focusrite Audio Engineering S Fostex S Furman Sound P GLW OS GML Inc. S • Gotham Technology Group S Graham-Patten Systems S Grass Valley Group S Hallikainen & Friends OP Harris Allied Broadcast O Harrison by GLW OS Henry Engineering PS HHB Communications OPS Hill Audio S JLCooper Electronics S Lectrosonics S Logitek Electronic Systems OPS LPB O Mackie Designs PS Mark IV Pro Audio Group OS Media Concepts PS Media Touch Systems O Micron Audio Products P Modular Audio Products S Nady Systems P Neotek OS • George Neumann S OMB Sistemas Electronicos O • Otari S Pacific Recorders & Engineering OPS Panasonic Broadcast & Television Systems PS Panasonic Pro Audio/Ramsa S Philip Drake Electronics S PKE Int'l OP Pro-Bel OS Professional Sound Corp. OPS ProTech Audio OS Radio Design Labs P Radio Systems O Ram Broadcast Systems OS Ramko Research OPS Rane S • Samson Technologies S Schafer World Communications OS Scott Studios O Seem Audio OPS Sennheiser Electronic P 	<ul style="list-style-type: none"> Sony Broadcast Int'l S Sony Business & Professional Group OPS Soundcraft Electronics OPS Soundtracs OS Spectra Sonics PS • Studer Revox America OPS TASCAM PS Telex Communications P Telfax Communications P Tel-Test PS TM Century O TOA Electronics P Total Audio Concepts PSS Trident Audio USA OS Unitronic OP Ward-Beck Systems OS Wheatstone OPS Whirlwind Music S Yamaha OP Zaxcom S 	<ul style="list-style-type: none"> Henry Engineering D HHB Communications DHRS Image Video H International Tapetronics Corp. CH JLCooper Electronics DH KABA Research & Development M Kowa H LPB CDH Lyrec Mfg. MR • The Management SD Media Concepts D Media Touch Systems DH Nagra Kudelski D • Otari CDMRS Pacific Radio Electronics S Pacific Recorders & Engineering CH Panasonic Broadcast & Television Systems D Panasonic Pro Audio/Ramsa D Perfectone Corp. R Philip Drake Electronics D PKE Int'l H • Plasmeq Systems H PolyQuick RS Prophet Systems DH Publison D Questech H Radio Computing Service H Radio Systems CD RAM Broadcast Systems H Roland Audio/Video Group H Rorke Data H Schafer World Communications CH • Siemens Audio D Scott Studios CH Solid-state Logic DH Solidyne SH SONDOR Will Hungerbuhler R Sonic Solutions H Sonifex CDHM Sony Broadcast Int'l SD Sony Business & Professional Group DR Spectral Synthesis H Studer Digitec CD Studer Editech H • Studer Revox America DRS Studio Audio & Video H TASCAM CDRS Tayo Industries DH 360 Systems CH • Turtle Beach Systems H Uher of America RS Videoquip H Yamaha CSD Zonal DRS 	<ul style="list-style-type: none"> Fuji Photo Film HHB Communications International Tapetronics Corp. Maxell Pacific Radio Electronics Panasonic Pro Audio/Ramsa PolyQuick Sony Recording Media Products Group 3M Professional A/V & Specialty Products Zonal
<div style="display: flex; justify-content: space-between;"> <div style="width: 20%; border: 1px solid black; padding: 5px;"> <p style="text-align: center; margin: 0;">Recorders, Audio</p> <p style="font-size: small; margin: 0;"><i>C cartridge, NAB and digital products emulating standard cart machines; H hard-disk systems; S cassette; D digital (all formats); R analog reel; M duplicators</i></p> </div> <div style="width: 20%; border: 1px solid black; padding: 5px;"> <p style="text-align: center; margin: 0;">Recording Heads, Audio</p> <p style="font-size: small; margin: 0;"><i>All audio formats</i></p> </div> <div style="width: 20%; border: 1px solid black; padding: 5px;"> <p style="text-align: center; margin: 0;">Routing Switchers</p> <p style="font-size: small; margin: 0;"><i>A audio; V video; S single-bus, utility</i></p> </div> <div style="width: 20%; border: 1px solid black; padding: 5px;"> <p style="text-align: center; margin: 0;">Recording Tapes</p> <p style="font-size: small; margin: 0;"><i>All audio formats</i></p> </div> </div>			
<ul style="list-style-type: none"> Sescom P • Siemens Audio OS Solid State Logic OS Solidyne OPS Sonic Solutions S Sonosax OPS 	<ul style="list-style-type: none"> Accurate Sound MRS ADT (Applied Digital Technology) H AEQ H AEV H Akai Digital DH AKG Acoustics DH AMS Neve H Antex Electronics H Asaca/Shibasoku C • Audi-Cord C Audio Follow H Audio Intervisual Design CDH Audio Kinetics UK DHR Audiopak C Audio Processing Technology H Audio Services Corp. DRS • Audix Ltd. D • A/Z Associates D BARCO-EMT, Audio C • Basys C BLU Electronics H Broadcast Automation CR • Broadcast Cartridge Service CRS Broadcast Electronics CH CBSI-Custom Business Systems (Digital Universe) H CEDAR Audio H • Computer Concepts D Continental Electronics Corp. D • Dalanco Spry D DALET H Denon America SD DIC Digital CS Digidesign H Digigram H Digital Audio Labs H Digital Audio Research H Digital Broadcast Associates CDH • Doremi Labs D Dwight Cavendish M ENCO Systems H Eventide D Fairlight/DSG H Fidelipac CDH Fostex SDH Fuji Photo Film S Full Compass Systems SD Future Editing Equipment Design/FED H Gauss M Gentner Communications/Prof. Audio H • Gotham Technology Group D Graff Electronic Machines MS Hall Electronics C • Harmonia Mundi Acustia H 	<ul style="list-style-type: none"> Avitel S Benchmark Media Systems D Bio-Electronics V Biamp Systems A Broadcast Video Systems S BSM/West Starr Int'l AVS BTS Broadcast TV Systems AV Burk Technology A • CEL Broadcast VS Cohu, Electronics V • Computer Concepts A Conex Electro Systems A Crestron AV Datek AVS Di-Tech AVS D&R Electronica A DT Electronics AV Dwight Cavendish VS DYMA Engineering A DYNAIR Electronics AV Dynatech Video Group VS For-A AVS FSR A Full Compass Systems A • Ghilmetti APV GLW A Grass Valley Group AVS Harrison by GLW A HEDCO VS • IGM Communications A Ikon Video VS Image Video AVS Inline VS Integrated Switching Systems AVS International Tapetronics Corp. A IRIS Technologies VS IRP Professional Sound Products A IRT Electronics AS Ivie Technologies A The J-Lab Co./BCS S JLCooper Electronics A JNS Electronics A Kaitronics AVS Leightronix V Leitch AVS Link Electronics S Logitek Electronic Systems A Media Concepts AVS Monroe Electronics S Multidyne AVS MultiVideo Image Display V 	
<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: right;"> <p style="margin: 0;">Sescom</p> <p style="font-size: small; margin: 0;">• Siemens Audio</p> <p style="margin: 0;">Solid State Logic</p> <p style="font-size: small; margin: 0;">Solidyne</p> <p style="font-size: small; margin: 0;">Sonic Solutions</p> <p style="font-size: small; margin: 0;">Sonosax</p> </div> </div>			



AutoPatch/XN Technologies AVS



Three-Way Access To The Digital World.

Whether it's digital audio, digital video or machine control between VTRs and edit controllers, ADC's digital patch panels provide for the access, monitor and test of digital circuits throughout your studio or station.

Digital Video Panels

All ADC coax video jack panels are designed for composite analog, HDTV and serial digital video circuits, including D1, D2 and D3.

Digital Audio Panels

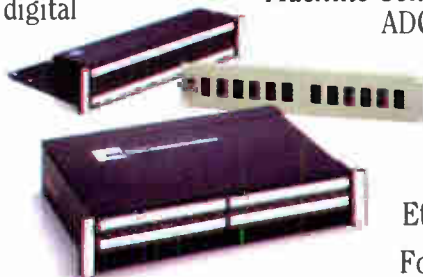
ADC's fully-normalled digital jackfields patch AES/EBU signals up to 100 meters. High-speed, data-grade cabling assures error-free transfer of the digital signal. The patented QCP split

cylinder contact ensures gas-tight connections that can be reconfigured up to 200 times.

Machine Control Panels

ADC Patch By Exception bays allow you to cost-effectively increase the number of ports available for your edit controllers and handle data applications up to 20 Mb/s, including 10 Mb/s Ethernet, T1 and ISDN.

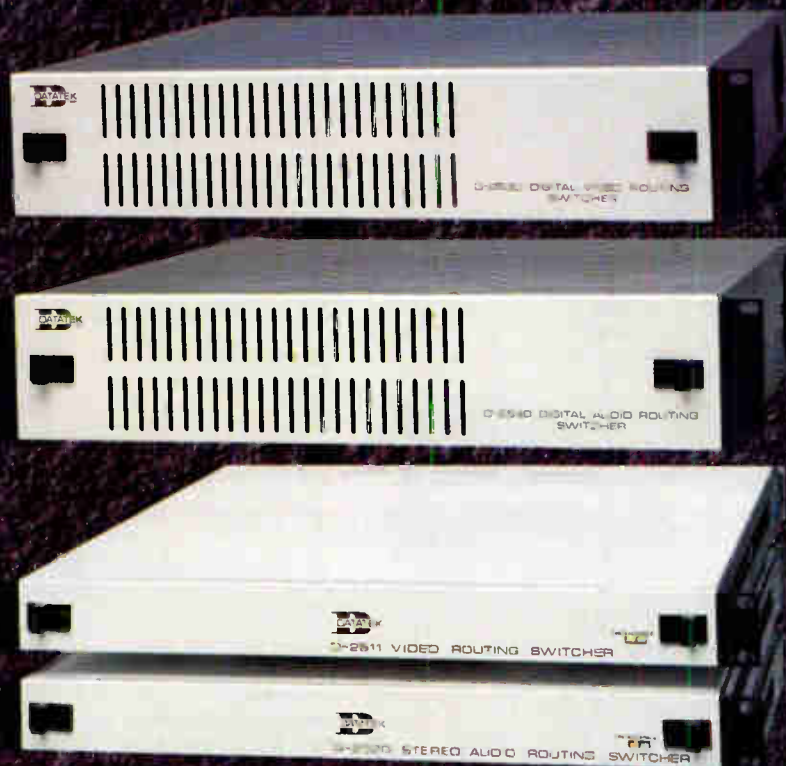
For more information on ensuring the quality of your digital signal with ADC's full line of digital patching products, circle the reader service number below or call us at 1 800 726-4266.



ADC Telecommunications

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Analog Video • Analog Audio**



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- The **D-2530** Serial Digital Video Switcher for D1, D2 and D3 signals (10x10, 20x10, or 20x20 in 2 Rack Units only).
- The companion **D-2540** Digital Audio Switcher routes AES/EBU or consumer format signals with sample frequencies to 48 kHz.

For more information, call or Fax:

D
DATATEK
CORP.

- The **D-2511** Analog Video Switcher features a 40 MHz bandwidth and 20x10 switching in 1 RU or 20x20 switching in 2 RU.
- The **D-2535** Wideband Video Switcher is a 100 MHz system for 20x10 in 1 RU.
- The **D-2520** Stereo Switcher features matched left and right channel performance with .05% THD at +26 dBu (20x10 in 1 RU or 20x20 in 2 RU).

Each of these cost-effective switchers includes RS-232C or RS-422 control as standard for computer or modem control. A wide selection of control panels is also available for reprogrammable, X-Y, alphanumeric, keypad, pushbutton per source, etc.

Please call or Fax Datatek for more information.

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JLCooper Electronics
 Kavouras
 Laurentel Systems
 Linker Systems
 Lyon Lamb Video Animation
 Matrox Electronic Systems
 Media Concepts
 Neilson-Hordell
 Parallax Graphics Systems
Pinnacle System
 Quantel
 Questech
 Sanyo
 Sofimage
 • TDI America
 Technical Aesthetics Operations
 United Media
 Videomedia
 Videssence
 Viewpoint DataLabs
 Visionetics Int'l
 WeatherNews America
 WSI
 Yamashita Engineering Mfg.

Cameras, Video

C 1-piece camera recorder products & still video acquisition systems; **E** ENG/EFP portables, may include docking facilities; **S** Studio production, OB production; **H** HDTV; **M** Miniature & special purpose

Ampex Corp. E
 BTS Broadcast TV Systems CEHS
 Canon USA C
Chori M
 Hitachi Denshi America CEHS
 Ikegami Electronics CEHS
JVC Professional Products ES
Nikon Corp. H



Panasonic Broadcast & Television Systems Co. CEHS
 Sharp Electronics/LCD Products C
 Sony Broadcast Int'l CEHS
Sony Business & Professional Group CES
Thomson Broadcast. CEHS
 Toshiba CEHS

Camera Cables

Multi-core, triaxial.
AAVS
 Avtech Systems
Belden Wire & Cable/Cooper Industries
 • Bi-Tronics
 Canare Cable
 Carmen Abato Enterprises/CAE
Clark Wire & Cable
Cole Wire & Cable
 Comprehensive Video Supply
 CV Technologies
Gepeco Int'l
 The J-Lab Co./BCS
 Marshall Electronics
 Media Concepts
 Newark Electronics
 • PERROTT 'The Battery People'
 VRI (Video Rentals)

Camera Imaging Devices

Tubes, CCDs.
 Avtech Systems
 CCTV
 Cohu, Electronics
 Daily Electronics
 EEV
 Fusion Electronics
 MII

Nytone
Panasonic Broadcast & Television Systems
 • Philips Components Discrete Products
Sony Business & Professional Group
 Toshiba

Camera Lens Systems

Fixed & zoom for video cameras, including adapters, extenders.

Ampex Corp.
 Angenieux
 Avtech Systems
 BURLE INDUSTRIES
 Canon USA
 CCTV
 Century Precision Optics
 Film/Video Equipment Service
 Fuji Photo Optical
 Fujinon Inc.
 Innovation Optics
Nikon
 Print Products Int'l
 • Schneider
 Supercircuits
 Tamron Industries
 Tiffen Mfg.
 Vicon Industries
 VRI (Video Rentals)

Camera Support, Pan/Tilt Heads & Controls

Including automated camera positioning products. P Pan/tilt heads; T Tripods, pedestals, dollies, cranes; S Camera stabilizer (specialized lens systems and other support products reducing image vibration, operator or mounting instability); R remote camera control systems, may include lens control, camera positioning and CCU capabilities

AAVS PT
AF Associates PRT
Ampex Corp. PT
 • Amtel Systems P
 AMX R
 • Arriflex P
 Avtech Systems P
 BiDirectional Microwave R
 Bogen Photo Corp. T
 BTS Broadcast TV Systems R
 BURLE INDUSTRIES RP
 Canon USA PST
 Carter Cartop Mfg. S
 CCTV P
 Chapman/Leonard Studio Eqpt. PST
 Cinema Products RS
 Cohu, Electronics PR
 Concept W Systems R
 Crestron PR
 CSI Camera Support Int' PRST
 Fuji Photo Optical P
 Fujinon P
 Karl Heitz PT
 Innovation Optics PRST
 The J-Lab Co./BCS R
 Matthews Studio Group PT
 • Matthews/ITE PT
 Micron Tool/Cammate Boom Systems PST
 Miller Fluid Heads PT
 • Mitchell Camera Corp. PT
 • Mobile-Cam Products PS
 Neilson-Hordell PR
 Nytone R
 O'Connor Engineering PT
Panasonic Broadcast & Television Systems R
 • Panther PT
 Penny & Giles P
 Precision Specialties PT

Quickset Int'l
 Radamec EPO
 The M.S. Russin Group
 Sachtler
 Shotmaker Dollies & Cranes
 Telemetrics
 Tiffen Mfg.
 TMT electronics
 TSM
 ULTIMATTE
 Vicon Industries
 Vinten Broadcast
 VRI (Video Rentals)
 Wescam
 Wiltronix

Captioning, VBI Data Systems

Includes Teletext, Videotext equipment.
 Broadcast Video Systems
 Cavena Image Products
 Cheetah Systems
 Computer Prompting & Captioning
 Dynatech Video Group
 EDS Portaprompt
 EEG Enterprises
 Ensemble Designs
 Image Logic Corp.
 Inscrber Character Generator
 Interface Engineering
 JLCooper Electronics
 Media Concepts
 Norpak
 QTV
 • Softel Systems
 Sofimage
 Tally Display
 • VG Electronix

Character Generators, Titlers

Video titling systems; excludes time code character insertion.

AAVS
 Abekas Video Systems
AF Associates
Ampex Corp.
 Aston Electronic Designs
 • Aston from Paltext
 Bio-Electronics
 Brek Connor Group
 BTS Broadcast TV Systems
 CDR Systems
 Chyron/PESA Chyron Group
 Comprehensive Video Supply
 CoSA-Company of Science & Art
 CV Technologies
 Display Systems Int'l
 GolorGraphics/Dynatech Video
 EEG Enterprises
 Evertz Microsystems
 FAST Electronic
 GEE Broadcast Systems
 Grass Valley Group
Horita
 ImMIX
 InnoVision Technology
 Inscrber Character Generator
 Interface Engineering
 Laurentel Systems
 Magni Systems
 Matrox Electronic Systems
 Media Concepts
 MFJ Enterprises
 Multidyne
 • Omni Q
 • Outland Technology
Panasonic Broadcast & Television Systems
 PESA Switching Systems
 QSI Systems
 Quanta/Dynatech Video Group
 Quantel
 Shereff Systems

PT Tally Display
 PT • TDI America
 P Teledac
 PT • Texscan MSI
 RT **Thomson Broadcast.**
 PR Vicon Industries
 PT Video Data Systems
 P VRI (Video Rentals)
 PRT Yamashita Engineering Mfg.

Color Correction

Providing color balance, component level adjustments, color enhancement.
 Broadcast Systems Design
 CEL Broadcast

Digital Processing Systems

Digital Vision
 Dynatech Video Group
 For-A Corp.
 • Hamlet Video Int'l
 Hewlett-Packard/VID Div.
 Intelvideo
 Media Concepts
 Minolta/Instrument Systems
 Philips Broadband Networks
 Quantel
 Sierra Video Systems
 Snell & Wilcox
Sony Business & Professional Group
Thomson Broadcast.

Delays, Pulse/Video

Includes simple delay-lines and packaged delay systems.

AAVS
 Allen Avionics
 Avitel
 BAL Broadcast
 Broadcast Video Systems
 DT Electronics
 DTL Broadcast
 Eventide
Faraday Technology
 Grass Valley Group
 Hotronic
 Image Video
 Intelvideo
Leitch
 Link Electronics
 Matthey Electronics
 Miranda Technologies
 Omicron Video
Pro-Bel
 Sigma Electronics
 Stanford Research Systems
 Television Equipment Associates
 Tel-Test
Thomson Broadcast
 Vortex Communications
 Wiltronix

Desktop Video & Production Systems

May include functions of time base correction, switching, effects, graphics.

Accom
 Advanced Digital Imaging
 Audio Interviewal Design
 AVID Technology
 BCD
 Bio-Electronics
 BTS Broadcast TV Systems
 CDR Systems
 CV Technologies
 Data Translation MultiMedia Group
Digital Processing Systems
 Dubner Int'l
 ECHolab
 Ensemble Designs
 ESE
 FAST Electronic

Video Products, cont'd

Fast Forward Video
 Feral Industries
 FutureVideo
 Grass Valley Group
 Hotronic
 Ikon Video
 Image Logic
 Imagine Products
 ImMIX
 InnoVision Technology
 Inscribe Character Generator
 Intelligent Resources
 Interface Engineering
 James Grunder & Associates
 The J-Lab Co./BCS
 Lyon Lamb Video Animation
 Magni Systems
 Matrox Electronic Systems
 Media Concepts
 Miranda Technologies
 Nova Systems
 Optibase
 Paltex Int'l
Panasonic Broadcast & Television Systems
 Precision Equipment Photron
 Prime Image
 Quantel
 Questech
 Sanyo
 Sierra Video Systems
 Sony Broadcast Int'l
 Spectral Synthesis
 Technical Aesthetics Operations
 Tel-Test
 Toshiba
 United Media
 Video Associates Labs
 Videomedia
 Visionetics Int'l
 VistaCom
Vistek Electronics

Digital Graphics Systems
 Dedicated and PC-based products; software packages
AAVS
 Accu-Weather
 • Aurora Systems/PESA Chyron Group
 Axiom Software
 BCD
 CDR Systems
 CEL Broadcast
 Chyron/PESA Chyron Group
 CoSA-Company of Science & Art
 Diaquest
 Discreet Logic
 Dynatech Video Group
 EVS Broadcast Equipment
 GEE Broadcast Systems
 Getris Images
 InnoVision Technology
 Inscribe Character Generator
 Intelligent Resources
 Interface Engineering
 JLC Cooper Electronics
 Kavouras
 Laurentel Systems
 Linker Systems
 Magni Systems
 Matrox Electronic Systems
 Media Concepts
 Microtime
 Parallax Graphics Systems
Pinnacle System
 QSI Systems
 Sanyo
 Softimage
 Teledac
Thomson Broadcast.
 • Time Arts
 Visionetics Int'l
 WeatherNews America
 WSI
 Yamashita Engineering Mfg.

Detail Correctors, Enhancers

Accom
 Brek Connor Group
 CEL Broadcast
 Digital Vision
Faroudja Laboratories
 GEE Broadcast Systems
 Intelvideo
 Nova Systems
 • Optical Electronics
 Philips Broadband Networks
 Snell & Wilcox
Vistek Electronics

Digital Effects Systems

Abekas Video Systems
 Alta Group/Dynatech Video Group
Ampex Corp.
 AVID Technology
 AVS Broadcast
 BTS Broadcast TV Systems
 CDR Systems
 CEL Broadcast
 CoSA-Company of Science & Art
 Diaquest
 Discreet Logic
 Dynatech Video Group
 ECHOLab
 Eventide
 EVS Broadcast Equipment
 FAST Electronic
 Feral Industries
 For-A Corp.
 GEE Broadcast Systems
 Getris Images
 Grass Valley Group
 Hotronic
 • I.Den Videotronics
 • Imaging Systems

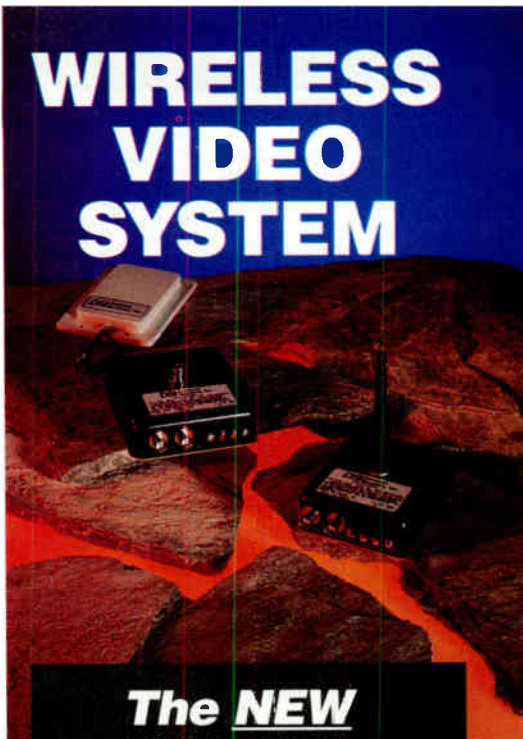
ImMIX
 Intelligent Resources
 James Grunder & Associates
 JLC Cooper Electronics
 KUB Systems
 Linker Systems
 Matrox Electronic Systems
 Media Concepts
 Microtime
 Miranda Technologies
 • Omni Q
 Parallax Graphics Systems
Pinnacle System
 Quantel
 Questech
 Sierra Video Systems
 Snell & Wilcox
 Softimage
Sony Business & Professional Group
 • TDI America
Thomson Broadcast.
 Toshiba
 VGV
 VideoFusion
 WeatherNews America

Digital Graphics Systems

Dedicated and PC-based products; software packages
AAVS
 Accu-Weather
 • Aurora Systems/PESA Chyron Group
 Axiom Software
 BCD
 CDR Systems
 CEL Broadcast
 Chyron/PESA Chyron Group
 CoSA-Company of Science & Art
 Diaquest
 Discreet Logic
 Dynatech Video Group
 EVS Broadcast Equipment
 GEE Broadcast Systems
 Getris Images
 InnoVision Technology
 Inscribe Character Generator
 Intelligent Resources
 Interface Engineering
 JLC Cooper Electronics
 Kavouras
 Laurentel Systems
 Linker Systems
 Magni Systems
 Matrox Electronic Systems
 Media Concepts
 Microtime
 Parallax Graphics Systems
Pinnacle System
 QSI Systems
 Sanyo
 Softimage
 Teledac
Thomson Broadcast.
 • Time Arts
 Visionetics Int'l
 WeatherNews America
 WSI
 Yamashita Engineering Mfg.

Digital Video Converters

A A-D/D-A; S Serial-Parallel/Parallel-Serial
AAVS A
 Accom A
 Alpha Image/Dynatech Video AS
 American Lightwave Systems/ADC Telecomm. A
 Antex Electronics A
 Audio Intervisual Design A
 Avitel AS
 BAL Broadcast AS



The **NEW** GN-1000 Wireless Video System

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- Multiple Channels
- FCC Certified Under Part 15

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 BTS Broadcast TV Systems AS
 CEL Broadcast AS
 Digidesign A
 DT Electronics A
 DVS A
 DYNAIR Electronics AS
 Dynatech Video Group AS
 Ensemble Designs A
 Everetz Microsystems S
 Fast Forward Video A
 GEE Broadcast Systems A
 Grass Valley Group AS
 Hewlett-Packard/VID Div. AS
 Image Video AS
Leitch AS
 LNR Communications A
 Lyon Lamb Video Animation A
 Mira Vision A
 Miranda Technologies AS
 National Transcommunications A
 • Optical Electronics A
Pro-Bel AS
 Questech A
 Raytheon Semiconductor A
 • RE UK A
 Snell & Wilcox AS
 Sony Broadcast Int'l A
 ST Keltec A
 Tel-Test AS
Thomson Broadcast AS
 VGV A
 Video Associates Labs A
 Visionetics Int'l A
Vistek Electronics AS
 Vortex Communications AS
 Wiltronix AS

Duplicators, Video

DNF Industries
 Dwight Cavendish
 Fusion Electronics
 Future Network
JVC Professional Products
 Media Concepts



Panasonic Broadcast & Television Systems
 Telex Communications

Editing Controllers

Includes cuts-only, A/B roll, large scale on-line, off-line; ATR and transport synchronizer (not frame synchronizer) equipment.
 Abekas Video Systems
 Accom
Ampex Corp.
 • Amtel Systems
 Audio Kinetics UK
 Broadcast Electronic Services
 Calaway Editing/Dynatech Video
 CDR Systems
 CEL Broadcast
 • Channelmatic
 Cheetah Systems
 CMX/PESA Chyron Group
 CV Technologies
 Diaquest
 Dynatech Video Group
 Eastman Kodak
 Editing Machines Corp./EMC
 Editing Technologies Corp./ETC
 FAST Electronic
 FutureVideo
 Imagine Products
 ImMIX
JVC Professional Products
 Lightworks/USA

Media Concepts
 Montage
 • NEC America Broadcast Equipment
 • NTSC Productions
 • Omni Q
 Paltex Int'l



Panasonic Broadcast & Television Systems Co.
 RGB Computer & Video
Sony Business & Professional Group



Strassner Editing Systems
 Sundance Technology Group
 Time Logic
 • TouchVision Systems
 United Media
 Videomedia
 VRI (Video Rentals)

Encoders, Decoders, Scan Converters

E encoders/decoders, S Scan conversion; component-to-composite, composite-to-component; computer-to-video.

Accom
 Allen Avionics
Asaca/Shibasoku
 BAL Broadcast
 BPI/Porta-Pattern
 Broadcast Systems Design
 Broadcast Video Systems
 CEL Broadcast
 Chromatek Scan Process
 Colorado Video
 Communications Specialties
 Ensemble Designs
Faroudja Laboratories
 For-A Corp.
 Grass Valley Group
 • I.Den Videotronics
 Ikegami Electronics (USA)
 Ikon Video
 Inline
 • Instant Replay
 Intelvideo
Intraplex

James Grunder & Associates
Leitch
 Lyon Lamb video Animation
 Magni Systems
 • Merlin Engineering Works
 Mira Vision
 National Transcommunications
 Nova Systems
 Omicron Video
 • Optical Electronics
Panasonic Broadcast & Television Systems
 Precision Equipment/Photron
 Quanta Corp./Dynatech Video
 Questech
 RGB Spectrum
 Sigma Electronics
 • Snell & Wilcox
Sony Business & Professional Group
Thomson Broadcast
 • TouchVision Systems
 ULTIMATTE
 VGV
 Video Int'l
Vistek Electronics Ltd.
 Vortex Communications

Yamashita Engineering S
Film Cameras/Editors
Includes motion picture film cameras and editing equipment.
 • Arriflex
 AVID Technology
 For-A Corp.
 • Keystone Metal Products
 Lightworks/USA
 • Mitchell Camera Corp.
 • Steenbeck

Filters, Optics

Includes visual effect, ND illumination level compensation and color correction.
 The Great American Market
 KR Electronics
 • Lee Filters
 Rosco Labs
 • Schneider
 Tel-Test

Format Translators

For inter-format conversions among video component types.

AAVS
 Avitel
 AVS Broadcast
 Broadcast Systems Design
 Broadcast Video Systems
 CEL Broadcast
 Ensemble Designs
 Grass Valley Group
 Hewlett-Packard/VID Div.
 Ikon Video
 Inline
 Intelvideo
 The J-Lab Co./BCS
Leitch
 E Microtime
 Miranda Technologies
 S Nova Systems
 • Optical Electronics
 ES Raytheon Semiconductor
 E Sierra Video Systems
 ES Sigma Electronics
 E Snell & Wilcox
 E Tel-Test
 ES **Thomson Broadcast**
 ES **Vistek Electronics**
 S Vortex Communications
 S Wiltronix

Generators, Safe Area/Source ID

AAVS
Asaca/Shibasoku
 Broadcast Video Systems
 DT Electronics
 ESE
Gray Engineering Labs
Horita
 The J-Lab Co./BCS
 Link Electronics
 Lyon Lamb Video Animation
 E Multidyne
 S NVision
 E QSI Systems
 E Skotel
 E Snell & Wilcox
 E Tally Display
 ES **Tektronix**
 Videoquip Research
 Vortex Communications
 Wiltronix

Hardcopy Printers, Video

CDR Systems
 Diaquest Inc
 GEE Broadcast Systems
 Hewlett-Packard/Video Div.

Media Concepts
Nikon
Panasonic Broadcast & Television Systems
Sony Business & Professional Group

HDTV, ATV Equipment

Forming images of more than 1,000-line structure; interlace, sequential scans; excludes computer CAD and non-video products.

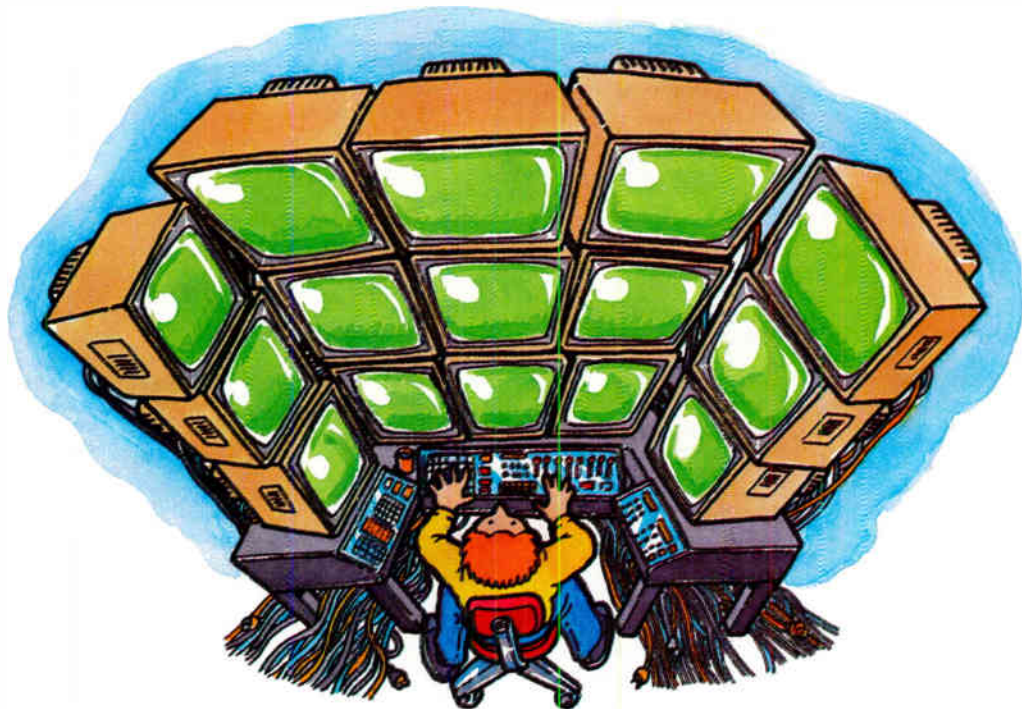
AAVS
Asaca/Shibasoku
 Astre Systems
 BTS Broadcast TV Systems
 Chromatek Scan Process
 David Sarnoff Research Center
 Digital Vision
 DVS
 DYNAIR Electronics
 Eastman Kodak
 ESE
Faroudja Laboratories
 For-A Corp.
 Hitachi Denshi America
 Ikegami Electronics (USA)
 Intelligent Resources
 • Keystone Metal Products
 Mira Vision
 National Transcommunications
 Omicron Video
Panasonic Broadcast & Television Systems
 Quantel
 Rank Cintel
 Rohde & Schwarz
 Sierra Video Systems
 Snell & Wilcox
Sony Business & Professional Group
Tektronix
 Television Equipment Associates
Thomson Broadcast
 Toshiba
 Videomedia
 Vortex Communications

Keyers

DSK, chroma, linear, luminance, compositing
AAVS

Accom
 Alpha Image/Dynatech Video
 Brek Connor Group
 Broadcast Video Systems
 BTS Broadcast TV Systems
 DT Electronics
 Dynatech Video Group
 Ensemble Designs
 GEE Broadcast Systems
 Grass Valley Group
 • Imaging Systems
 ImMIX
 Intelligent Resources
 Interface Engineering
 Microtime
 Mira Vision
 Paltex Int'l
 Precision Equipment Photron
Pro-Bel
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 Sierra Video Systems
 Tel-Test
Thomson Broadcast
 ULTIMATTE
 VGV
Vistek Electronics
 Vortex Communications
 Wiltronix

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VIEWPLEX-2000 is ideal for monitoring in a closed circuit set-up, broadcasting multiple images in a collage, or broadcasting sequential images for instructional formats.

If you're thinking of upgrading, don't get

more equipment; just get the one you really need.

Features include: • Video signal format NTSC. • High quality 8 bit picture resolution. • 16 maximum input channels. • 40 different display configurations. • Completely programmable. • Real time picture refreshing at 30 frames/sec. • 8 color character generator built in. For dealer inquiries and further

information, contact:
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U.S.A., Incorporated.
Telephone: (310)782-0227
Facsimile: (310)782-0211



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World Radio History

Lamps, Studio & Projection

Apollo Presentation Products
 Celco
 Cool-Lux Lighting Industries
 Fusion Electronics
 GE Lighting
 ILC Technology
 Lowel-Light Mfg.
 Lumitrol
 Media Concepts
 Mole-Richardson
 L.E. Nelson Sales
 Packaged Lighting Systems
 Premier Lighting & Production
 Sachtler
 • Strand Lighting
 Sylvania Lighting
 Ushio America
 Vantage Lighting
 Videssence
 Wiltronix

Lighting Consoles & Dimmers

includes dimmer units and control systems.
 American Studio Equipment
 AMX
 Celco
 Chapman/Leonard Studio Eqpt.
 Chimera
 Colortran
 Desisti Lighting/Desmar
 Dove Systems
 Electronic Theatre Controls
 Electronics Diversified
 Leprecon/CAE
 Lumitrol
 Mole-Richardson
 L.E. Nelson Sales
 Packaged Lighting Systems
 Premier Lighting & Production
 Richmond Sound Design
 Sachtler
 • Strand Lighting
 Walter Brewer

Lighting Instruments, etc.

American Studio Equipment



Anton/Bauer
 APS Professional Video Products
 • Arriflex
 Celco
 Chapman/Leonard Studio Eqpt.
 Chimera
 Cine 60
 Colortran
 Comprehensive Video Supply
 Cool-Lux Lighting Industries
 Dedotec USA
 Desisti Lighting/Desmar
 Electronic Theatre Controls
 Frezzolini Electronics
 • G&M Power Products
 The Great American Market
 Innovation Optics
 • Keystone Metal Products
 Kobold Licht/Beleuchtungstechnik
 • Lee Filters
 The Lightmaker Co.
 Lowel-Light Mfg.
 LTM
 Lumitrol
 Mole-Richardson
 Nalpak Video Sales
 L.E. Nelson Sales
 Packaged Lighting Systems
 PEP
 Premier Lighting & Production

Sachtler
 • Strand Lighting
 Toletto Fastners Int'l/Cord-Lox
 Union Connector
 Videssence
Vistek Electronics
 Walter Brewer
 Wiltronix

Monitors, Video

Includes C color/mono, H HDTV displays; M multi image display; monitor accessories; S hoods, sunshades; R replacement & rebuilt CRTs; W videowall equipment; Z monitor support devices.
AAVS/Sencore
Asaca/Shibasoku
 Avtech Systems
Barco, Inc.
 BTS Broadcast TV Systems
 BURLE INDUSTRIES
 Cohu, Electronics
 DNF Industries
 Dotronix
 Electrohome
 Electronic Visuals
 Electrosonic Systems
 Hitachi Denshi America
 Hoodman
 Ikegami Electronics (USA)
 Ikon Video
 Inline
JVC Professional Products
 Media Concepts
 Melford Electronics
 Minolta/Instrument Systems
 Mitsubishi Prof. Electronics
 Modgraph
 MultiVideo Image Display



Panasonic Broadcast & Television Systems
 Peerless Industries
 PESA Switching Systems
 RGB Spectrum
 Sanyo
 Sharp Electronics/LCD Products
 Sony Broadcast Int'l
Sony Business & Professional Group
 Sprague Magnetics
Sumitomo Electric USA
 Tally Display Corp.
 Telex Communications
Thomson Broadcast
 Toshiba
 Vicon Industries
 Video Display Corp.
 Video Visions/Delcom
 Videotek
Vistek Electronics

Noise Reduction Systems

Accom
AF Associates
 Audio Interval Design
 AVS Broadcast
 CEL Broadcast
 Circuit Research Labs
 Digital Vision
 For-A Corp.
 Intelvideo
 Nova Systems
 • Optical Electronics
 Philips Broadband Networks
 Snell & Wilcox
Sony Business & Professional Group

Projectors, Video

Large screen systems using CRT, LCD light sources.
 Apollo Presentation Products
Barco
 Display Devices
 Electrohome
 GE Projection Display Products
 Ikegami Electronics (USA)
 Media Concepts
 Mitsubishi Prof. Electronics
 Nytone
Panasonic Broadcast & Television Systems
 Sanyo
 Sharp Electronics/LCD Products
 George R. Snell Associates
 Sony Broadcast Int'l
Sony Business & Professional Group
 Telex Communications
 Toshiba
Prompting Systems, Software
Dedicated and PC-based.
 BDL Autoscript
 • Blue Feather
 CDR Systems
 Comprehensive Video Supply
 Comprompter
 Computer Prompting & Captioning
 CV Technologies
 Dreamdata/Intelliprompt
 EDS Portaprompt
 Farpoint Technologies
 Grozik Associates
 Imagine Products
 InnoVision Technology
 JLCoooper Electronics
 Listec Video
 Lynn Greenberg Electronic
 Magic Teleprompting
 QTV
 Tekskil Industries
 Telescript
 Vertigo Technology
 Yamashita Engineering Mfg.

Recorders, Video

A Analog 1/2" (Betacam/SP, S-VHS/-C); C Type C 1"; D digital component formats; E 8mm, Hi8; F digital composite formats; U 3/4".
 Alpha Video & Electronics
Amplex Corp.
 BTS Broadcast TV Systems
 Canon USA
 Instant Replay
JVC Professional Products
Panasonic
 Broadcast & Television Systems Company
Panasonic Broadcast & Television Systems
 Sanyo
 Sharp Electronics/LCD Products
 Sony Broadcast Int'l
Sony Broadcast & Professional Group
 Toshiba

Recorders, Solid-state/RAM

DNF Industries
 DVS
 EVS Broadcast Equipment
 Fast Forward Video
 • Merlin Engineering Works
 • NEC America Broadcast Eqpt
 Questech
 Toshiba

Recorders, Still Stores

Includes still video reproduction products; optical and magnetic videodisc systems.
 Abekas Video Systems
 Accom
 ADT (Applied Digital Technology)
 Advanced Digital Imaging
Asaca/Shibasoku
 Aston Electronic Designs
 • Aston from Paltex
BTI Computer Systems
 CEL Broadcast
 Chyron/PESA Chyron Group
Digital Processing Systems
 DNF Industries
 Dynatech Video Group
 Fast Forward Video
 Future Editing Eqpt. Design/FED
 Mira Vision
Nikon Photo Electronic Imaging
 • Optical Disc Corp.
 Optical Media Int'l
Panasonic Broadcast & Television Systems Co.
Pinnacle System
 Pioneer New Media Technologies
 Precision Equipment Photron
 Prime Image
 Questech
 Rank Cintel
Sony Business & Professional Group
 Sundance Technology Group
Thomson Broadcast
 Wiltronix

Recording Heads, Video

Amplex Corp.
 • CMC-Datatape
 Int'l Electro-Magnetics
 JRF Magnetic Sciences
 Northern Magnetics
Panasonic Broadcast & Television Systems
 Saki Magnetics
 Sprague Magnetics
 Taber Mfg. & Engineering
Videomagnetics

Recording Tape, Video

All video formats
 • Agfa
Amplex Corp.
 Audio Interval Design
 Carpel Video
 CoarcVideo
 DIC Digital
 Fuji Photo Film Div.
 Maxell
 Media Concepts
 MSE Video Tape Services
Panasonic Broadcast & Television Systems
 PolyQuick
 Sony Broadcast Int'l
 Sony Recording Media Products
 Studio Film & Tape
 3M Professional AV & Specialty Products

Standards Converters

Inter-standard conversion between composite video; NTSC, PAL/-N/-M, SECAM; may include video component input and output capabilities.
AAVS
AF Associates
 AVS Broadcast
 BAL Broadcast
 CEL Broadcast
 Chromatek Scan Process
 Digital Vision

News Flash.

Speeding Graphics System Breaks the News Barrier. Flash Grafix Composer from Pinnacle. Under \$30,000.

Here's the scoop... Still Store, Paint, Titling, 3D Modeling and Animation go on-line in this affordable graphics composition system. Live production becomes a creative event. Late-breaking, on-air changes are fast and easy to make.

Each Flash Grafix Composer function is a full-featured performer in its own right. For instance, the Still Store encompasses Pinnacle's popular FlashFile technology with instant access and a visual interface. Add complete paint, titling, and 3D modeling and animation. Now you have a system that goes all out for broadcast quality production graphics.

Network throughout your facility—from production control, to master control, to the news room—to any combination of Flash Grafix and FlashFiles. You can even import and export to and from other popular graphic formats.

You won't find this powerful combination of features anywhere else. At any price. Don't just read all about it. Make your own front-page news with Pinnacle's Flash Grafix Composer.

Call now for a FREE demonstration video tape that will show you just how effective Flash Grafix Composer can be. Call 1-800-4-PINNACLE or Fax us at 408-720-9674.

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870 West Maude Avenue, Sunnyvale, CA 94086 Phone: (408)720-9669 Sales Offices: Midwestern U.S. & Canada: Phone: (515)416-3168 Northeastern U.S. & Canada: Phone: (205)870-8051 Southeastern U.S.: Phone: (904)769-4061 Western U.S., Canada & Mexico: Phone: (408)720-9669 Northern & Eastern Europe: Phone: +44-952-848806 (United Kingdom) Southern Europe, Africa & Middle East: Phone: +32-41-442450 (Belgium)
Circle (43) on Reply Card

• I.Den Videotronics
 Ikon Video
 Imagine Products
Leitch
 Media Concepts
 Prime Image
 Snell & Wilcox
 Sony Broadcast Int'l
Thomson Broadcast
 Toshiba
 Video Int'l
Vistek Electronics
 Wiltronix

Switchers, Video

M TV master control on-air switching;
P production and edit suite
 Abekas Video Systems P
AF Associates Inc. P
 Alpha Image/Dynatech Video MP
 Alta Group/Dynatech Video P
 AVS Broadcast P
 BTS Broadcast TV Systems MP
 CEL Broadcast P
 DNF Industries MP
 Dynatech Video Group MP
 Echolab P
 Grass Valley Group MP
 I-Den Videotronics P
 Image Video M
 The J-Lab Co./BCS P
 Media Concepts MP
 NVision M
 • Omni Q P
Pro-Bel M
Ross Video P
 • Siemens/Osterreich Audio/Video M
Sony Business & Professional Group MP
 Tally Display Corp. M
 Tech Electronics M
 Tel-Test MP
Thomson Broadcast MP
 Utah Scientific/Dynatech Video MP
 VGV P
VEDCO MP
 Videotek MP

Sync/Pattern Generators

Produces video drive pulses, subcarrier, blackburst, color bar, test patterns.
AAVS
Asaca/Shibasoku
 BAL Broadcast
 Bio-Electronics
Digital Processing Systems
 DT Electronics
 ESE
 Grass Valley Group
HEDCO

Horita
Leitch
 Link Electronics
 Lyon Lamb Video Animation
 Media Concepts
 Multidyne
 Network Technologies
 Nova Systems
 NVision
 • Optical Electronics
Pro-Bel
 • RE UK
 Shintron
 Sigma Electronics
 Snell & Wilcox
Tektronix
 Tel-Test
Thomson Broadcast
 Video Accessory Corp.
 Videotek
 Vortex Communications
 VRI (Video Rentals)
 Wiltronix
 Yamashita Engineering Mfg.

TBCs, Synchronizers

Video signal timing correction equipment.
 Alta Group/Dynatech Video
 Broadcast Electronic Services
 CDR Systems
 CEL Broadcast
 CV Technologies
Digital Processing Systems
 Dynatech Video Group
 Ensemble Designs
 FAST Electronic
 Feral Industries
 For-A Corp.
 • Hamlet Video Int'l
 Hotronic
 • I.Den Videotronics
 Ikon Video
 James Grunder & Associates
Leitch
 Media Concepts
 Microtime
 Nova Systems
 Prime Image
 Questech
 Snell & Wilcox
 Sony Broadcast Int'l
Sony Business & Professional Group
 Toshiba
 Videotek
Vistek Electronics
 VRI (Video Rentals)
 WavePhore

Wiltronix

Telecine Systems

Film-to-video presentation, transfer systems.
 BTS Broadcast Television Systems
 Hitachi Denshi America
 Ikegami Electronics (USA)
 Media Concepts
 Perfectone Corp.
 Rangertone Research
 Rank Cintel
 SONDOR Willy Hungerbuhler
 • Steenbeck
 Tamron Industries
 Time Logic

Teleconferencing Systems

Alpha Video & Electronics
 American Lightwave Systems/ADC
 Telecomm.
 BAF Communications
 Colorado Video
 Crestron
 DYMA Engineering
Fiber Options
 FSR
 Grass Valley Group
 Hitachi Denshi America
 LNR Communications
Macrovision
 • Microdyne
 Mira Vision



Panasonic Broadcast & Television Systems Co.

PESA Switching Systems
 Philip Drake Electronics
 Sandar Electronics
 Shure
Sierra Automated Systems Engineering
 George R. Snell Associates
Sony Business & Professional Group
Sumitomo Electric USA
 Vicon Industries
 VistaCom

Time Code Equipment

Generators, readers, character insertion; film frame counting, film data products.
AAVS
 • Adams-Smith

Adrienne Electronics
 Alesis
 Audio Kinetics UK
 Avitel
 • A/Z Associates
 BCD
 Bio-Electronics
 CEDAR Audio
 Cipher Digital
 Denecke
 Diaquest
 Dubner Int'l
 ESE
 Evertz Microsystems
 Fast Forward Video
 For-A Corp.
 FutureVideo
Gray Engineering Labs
Horita
 Imagine Products
 JRF Magnetic Sciences
 Media Concepts
 Richmond Sound Design
 Shintron
 Skotel
Sony Business & Professional Group
 Tally Display
 Telcom Research
Thomson Broadcast
 TimeLine Vista
 • TouchVision Systems
 United Media
 • Vid-Video
 VideoLab Para Technologies
 Videomedia
 VRI (Video Rentals)

Weather Displays, Radar

Dedicated weather graphics display systems and radar electronics.
Accu-Weather
 • Advanced Designs Corp.
 Alden Electronics
 Chyron/PESA Chyron Group
 Display Systems Int'l
 ColorGraphics/Dynatech Video
 GEE Broadcast Systems
 Grass Valley Group
 Kavouras
 Norpak
 Quest Research & Development
 ULTIMATTE
 Video Data Systems
 WeatherNews America
 WSI
 Yamashita Engineering Mfg.

RF/Radio Products

Antenna Remote Indicators

Burk Technology
Continental Electronics Corp.
 Flying Fur Industries
Gentner Communications
 • Gorman-Redlich Mfg.
 Hallikainen & Friends
Harris Allied Broadcast
 JNS Electronics
 LBA Technology
 Phasetek
 Potomac Instruments
 SSAC
 Tally Display
 Trilithic

Antenna Sampling Equipment Cablewave Systems

Continental Electronics Corp.

• Delta Electronics
 Frontier Communications
 JNS Electronics
 LBA Technology
 Lightning Prevention Systems
 Phasetek

Antenna Positioning Systems

Microwave and ES/TVRO antenna controllers.
 Antenna Technology
 Astroguide
 Comtech Antenna Systems
 CPS Lanmear
 FloriCal Systems
 LBA Technology
 Loma Scientific

• Microdyne
 • Mobile-Cam Products
 • NSI/N Systems
 Precision Specialties
Radiation Systems
 RF Technology
 Rohde & Schwarz
 ST Olektron Systems
 Utility Tower

Antenna Tuning Units

Alan Dick & Co.
Continental Electronics Corp.
 Frontier Communications
Harris Allied Broadcast
ITAME
 • Kintronic Labs
 LBA Technology

Lightning Prevention Systems
 Phasetek
 Radiotechniques Engineering
 • Telefunken Sendertechnik

Antennas, AM Directional Arrays

Alan Dick & Co.
 Central Tower
 Dav Tronics
 ERI-Electronics Research
 Frontier Communications
 • Gorman-Redlich Mfg.
Harris Allied Broadcast
 • Kintronic Labs
 LBA Technology
 LDL Communications
 LeBlanc & Royle Telcom

Lightning Prevention Systems
Lawrence L. Morton Associates
Phasetek
Radiotechniques Engineering
Swager Communications
• Telefunken Sendertechnik
Utility Tower

Antennas, FM Transmitting

Alan Dick & Co.



Antenna Concepts
Broadcast Communications
• CED
Central Tower
Comark Communications/A
Thomson-CSF Co.

Continental Electronics Corp.

• CTE Int'l
• DB Elettronica Telecomunicazioni
Dielectric Communications/ General
Signal

ERI-Electronics Research

Frontier Communications

FUBA Hans Kolbe & Co.

Harris Allied Broadcast

Hitachi Denshi

Jampro Antennas

• Kathrein-Werke

Lance Industries

LeBlanc & Royle Telcom

Marcom

OMB Sistemas Electronicos

PESA Micro Communications

Rohde & Schwarz

Scala Electronic

Shively Labs

SIRA Sistemi Radio

SWR

Technosystem

• Telefunken Sendertechnik

Television Technology Corp.

Tennaplex Systems

Thomson-LGT

Utility Tower

Antennas, Microwave

ENG, ITFS, MDS, STL/ICR.

Andrew Corp.

Arden Technologies

BAF Communications

Broadcast Communications

• Broadcast Microwave Services

Cablewave Systems

• CED

Conifer

Continental Microwave

CPS Lanmear

• CTE Int'l

• DB Elettronica Telecomunicazioni

• Elenos

EMCEE Broadcast Products

E-N-G Mobile Systems

ERI-Electronics Research

• Hans Kolbe & Co./FUBA

Gabriel Electronics

GEC-Marconi Communications

Hitachi Denshi

Ikegami Electronics (USA)

JNS Electronics

• Kathrein-Werke

Lance Industries

LBA Technology

LeBlanc & Royle Telcom

Loma Scientific

Loral Microwave-Narda

Marcom

Microwave Filter Co.

Microwave Radio Corp.

• NSI/N Systems
Nucomm
OMB Sistemas Electronicos
Racon
Radiation Systems Mark Antennas
RF Technology
Rohde & Schwarz
Scala Electronic
Shively Labs
SIRA Sistemi Radio
Technosystem



Tekno Telecom
Television Technology Corp.
Thomson-LGT
Utility Tower

Antennas, Satellite R/T, TVRO

Advent Communications

Andrew Corp.

Antenna Technology

Astroguide

• Blonder-Tongue Labs

Comtech Antenna Systems

CPS Lanmear

DH Satellite

EMCEE Broadcast Products

Fairchild Data Corp.

FUBA Hans Kolbe & Co.

GEC-Marconi Communications



Hero Productions

• Kathrein-Werke

LNR Communications

Loma Scientific

Magnavox/Nav-Com

• Microdyne

Miralite Communications

National Transcommunications

• Prodelin

Radiation Systems

RF Technology

Richardson & Associates

Rohde & Schwarz

Antennas, TV Transmitting

Alan Dick & Co.

Andrew Corp.

Antenna Concepts

Astre Systems

Broadcast Communications

Cablewave Systems

• CED

• DB Elettronica Telecomunicazioni

Dielectric Communications/ General
Signal

EMCEE Broadcast Products

ERI-Electronics Research

FUBA Hans Kolbe & Co.

Harris Allied Broadcast

• Kathrein-Werke

Lance Industries

LBA Technology

LDL Communications

LeBlanc & Royle Telcom

Loma Scientific

Marcom

OMB Sistemas Electronicos

PESA Micro Communications

Rohde & Schwarz

Scala Electronic

SIRA Sistemi Radio

SWR

Technosystem

• Telefunken Sendertechnik

Television Technology Corp.

Tennaplex Systems

Thomson-LGT

Utility Tower

CATV System Components

Alpha Technologies

American Lightwave Systems/ADC

Telecomm.

Antenna Technology

Arden Technologies

Cadco

Display Systems Int'l

FM Systems

FUBA Hans Kolbe & Co.

Richard Hirschmann

Microwave Filter Co.

Monroe Electronics

Ortel

Philips Broadband Networks

• Philips Components

Pioneer New Media Technologies

T.R. Pitts

Richardson & Associates

Rohde & Schwarz

Standard Communications

TFT

United Technologies Photonics

Wegener Communications

De-icer Systems

Antenna Technology

Comtech Antenna Systems

Continental Electronics Corp.

Dielectric Communications/ General
Signal

Environmental Technology

ERI-Electronics Research

Loma Scientific

Utility Tower

ENG Components, Electronics

Avocet Instruments

BAF Communications

Bi-Directional Microwave

• Broadcast Microwave Services

Comrex Corp.

Continental Microwave

Eagle Wichita

E-N-G Mobile Systems

FM Systems

Microwave Radio Corp.

Modulation Sciences

• NSI/N Systems

Nucomm

RF Technology

Shook Electronics USA

Tectan

TFT

Exciters, Generators, AM/Stereo

Audio Interviewal Design

Broadcast Electronics

Continental Electronics Corp.

Continental Microwave

• Delta Electronics

• Kahn Communications

LPB

• Marconi Communications

• Motorola AM Stereo

Rohde & Schwarz

Exciters, Generators, FM/Stereo, SCA

AEV

Avocet Instruments

• Axxess USA

Broadcast Electronics

Browning Labs
Cemtys
Continental Electronics Corp.

• CTE Int'l

Cutting Edge Technologies

• DB Elettronica Telecomunicazioni

• Elenos

• ELIT-Elettronica Italiana

FM Systems

Harris Allied Broadcast

Inovonics

ITAME

ITELCO

JT Communications

LPB

• Marconi Communications

Modulation Sciences

OMB Sistemas Electronicos

Orban Associates/AKG Acoustics

QEI

Rohde & Schwarz

SCA Data Systems

Siel Sistemi Elettronici

Technosystem

Tectan

Teko Telecom

• Telefunken Sendertechnik

Tepeco

TFT

• VG Electronics

Exciters, Generators, TV/Stereo, SAP, PRO

Asaca/Shibasoku

Avocet Instruments

Comark Communications/A

Thomson-CSF Co.

Comwave

Continental Microwave

• DB Elettronica Telecomunicazioni

• ELIT-Elettronica Italiana

EMCEE Broadcast Products

FM Systems

Harris Allied Broadcast

ITELCO

LDL Communications

• Marconi Communications

Modulation Sciences

Orban Associates/AKG Acoustics

Rohde & Schwarz

Technosystem

Tectan

• Teko Telecom

TFT

ITFS, MDS Components, Electronics

Arden Technologies

Browning Labs

• CED

Comwave

Conifer

EMCEE Broadcast Products

FM Systems

ITS Corp.

Loma Scientific

Marcom

Microwave Filter Co.

Richardson & Associates

Modulators, TV

Advent Communications

Asaca/Shibasoku

• Blonder-Tongue Labs

Cadco

Comark Communications/A

Thomson-CSF Co.

Continental Microwave

• CTE Int'l

• DB Elettronica Telecomunicazioni

• ELIT-Elettronica Italiana

EMCEE Broadcast Products

FUBA Hans Kolbe & Co.
Richard Hirschmann
• ISS Engineering
ITS Corp.
Loma Scientific
LPB
Marcom
OMB Sistemas Electronicos
• Philips TV Test Equipment
T.R. Pitts
Rohde & Schwarz
Standard Communications
Technosystem
Tectan
Teko Telecom
Television Technology Corp.
TFT

Power Amplifiers, Cavities

Ameritron
Audio Intervisual Design
Cemlys
Comark Communications A
Thomson-CSF Co.
Continental Electronics Corp.
Continental Microwave
• CTE Int'l
• DB Elettronica Telecomunicazioni
• ELIT-Elettronica Italiana
EMCEE Broadcast Products
GEC-Marconi Communications
Harris Allied Broadcast
Richard Hirschmann
ITAME
ITELCO
ITS Corp.
Marcom
MCL
MFJ Enterprises
Microwave Solutions
Mu-Del Electronics
Nucomm
OMB Sistemas Electronicos
QEI
RCA Boradcast/GE Support Svcs
Rohde & Schwarz
ST Keltec
Technosystem
Teko Telecom
Television Technology Corp.
Tepco
TFT
Thomson Components & Tubes
Toshiba
Varian Associates Power Grid Tubes
Varian Associates

Power Combiners & Diplexers

• Blonder-Tongue Labs
Comark Communications A
Thomson-CSF Co.
Continental Electronics Corp.
Continental Microwave
• CTE Int'l
• DB Elettronica Telecomunicazioni
Dielectric Communications/ General
Signal
Eagle Wichita
EMCEE Broadcast Products
FUBA Hans Kolbe & Co.
Harris Allied Broadcast
Richard Hirschmann
ITELCO
• Kintronic Labs
LBA Technology
LDL Communications
Loral Microwave-Narda
Marcom
Microwave Filter Co.
Mu-Del Electronics
North Hills Signal Processing

OMB Sistemas Electronicos
PESA Micro Communications
Phasetek
RCA Boradcast/GE Support Svcs
Rohde & Schwarz
Shively Labs
SIRA Sistemi Radio
Technosystem
Teko Telecom
• Telefunken Sendertechnik
Television Technology Corp.
Tennaplex Systems
TFT
TTE
UTE Microwave

Power Dividers

Andrew Corp.
AVCOM of Virginia
• Blonder-Tongue Labs
Cablewave Systems
Comark Communications A
Thomson-CSF Co.
Continental Microwave
Dielectric Communications/ General
Signal
DYMA Engineering
Eagle Wichita
FUBA Hans Kolbe & Co.
Harris Allied Broadcast
LBA Technology
LDL Communications
Loma Scientific
Loral Microwave-Narda
Marcom
Microwave Solutions
Mu-Del Electronics
MYAT
North Hills Signal Processing
OMB Sistemas Electronicos
PESA Micro Communications
Rohde & Schwarz
Scala Electronic
Shively Labs
SIRA Sistemi Radio
SWR
Technosystem
Teko Telecom
Television Technology Corp.
Tennaplex Systems
TFT
UTE Microwave

Pressurization Equipment

Andrew Corp.
Cablewave Systems
Continental Electronics Corp.
Dielectric Communications/ General
Signal
Environmental Technology
LDL Communications
LeBlanc & Royle Telcom
Marcom
Shively Labs
SIRA Sistemi Radio
Technosystem
Television Technology Corp.

RDS Encoders, Monitoring Eqpt.

AEV
Asaca/Shibasoku
Broadcast Electronics
Inovonics
ITELCO
Modulation Sciences
QEI
Rohde & Schwarz
SCA Data Systems
Tally Display
Tectan
TFT

Receivers, AM, FM, SCA

Advent Communications
Antenna Technology
Audio Intervisual Design
Avocet Instruments
• Access USA
Bext
Burk Technology
Continental Electronics Corp.
Continental Microwave
• CTE Int'l
Dav Tronics
• DB Elettronica Telecomunicazioni
• Delta Electronics
• Gorman-Redlich Mfg.
Inovonics
ITELCO
JNS Electronics
• Marconi Communications
Marti Electronics
Modulation Sciences
T.R. Pitts
Potomac Instruments
QEI
Rohde & Schwarz
SCA Data Systems
Sennheiser Electronic
Tectan
Television Technology Corp.
TFT

Receivers, Satellite

Includes associated LNA, LNC products.
Advent Communications
Antenna Technology
AVCOM of Virginia
BAF Communications
• Blonder-Tongue Labs
Continental Microwave
Fairchild Data Corp.
FUBA Hans Kolbe & Co.
Richard Hirschmann
Intraplex
• ISS Engineering
• Kathrein-Werke
Marcom
• Microdyne
Microwave Solutions
Mu-Del Electronics
Nucomm
T.R. Pitts
RF Technology
Richardson & Associates
SpaceCom Systems
Standard Communications
Tectan
Wegener Communications

Remote Pickup Components, Electronics

Bi-Directional Microwave
Comrex
Continental Electronics Corp.
Intraplex
ITAME
Microwave Radio Corp.

Moseley

Moseley Associates

• NSI/N Systems
RF Technology
Spectrum Communications
Telos Systems
TFT

Satellite T/R Components, Electronics

Excludes antennas.
Advent Communications

Antenna Technology
Astroguide
Continental Microwave
CPS Lanmear
EEV
Fairchild Data Corp.
• Hans Kolbe & Co./FUBA
Intraplex
• ISS Engineering
• Kathrein-Werke
LNR Communications
Magnavox/Nav-Com
MCL
• Microdyne
Ortel
Radiation Systems
Richardson & Associates
Spar/ComStream
Standard Communications
Tectan
TFT
Varian Associates Microwave Eqpt.
Wegener Communications

STL Components & Electronics

Excludes antennas.
American Laser Systems
Artel Communications
BEC Technologies
Bext
Bi-Directional Microwave
• Broadcast Microwave Services
Browning Labs
• CED
Cemlys
Continental Electronics Corp.
Continental Microwave
Dolby Laboratories
• Elenos
EMCEE Broadcast Products
Hitachi Denshi
Intraplex
ITAME
JNS Electronics
M/A-Com
Marti Electronics
• Microwave Networks
Microwave Radio Corp.
Modulation Sciences

Moseley

Moseley Associates

• NSI/N Systems
Nucomm
OMB Sistemas Electronicos
QEI Corp.
RF Technology
Siel Sistemi Elettronici
Technosystem
Tectan
TFT
Wegener Communications

Transmitters

A AM/SW; F FM; X FM Translator
• ABB Infocom

ANTENNA CONCEPTS INC.

Antenna Concepts	X
Bext Inc.	FX
Broadcast Electronics	AF
Browning Labs	FX
CCA Electronics	AF
• CED	F
Cemlys	FX
Continental Electronics Corp.	AFX
• CTE Int'l	FX
• DB Elettronica Telecom	FX

- ElenosX FX
- ELIT-Elettronica Italiana AFX
- Energy-Onix AF
- Frontier Communications FX
- FUBA Hans Kolbe & Co. AF
- GEC-Marconi Communications AF
- Harris Allied Broadcast AF**
- ITAME AFX**
- ITELCO FX
- JT Communications F
- Kahn Communications A
- LPB AF
- Marcom FX
- National Transcommunications AFX
- Nautel Maine AF**
- OMB Sistemas Electronicos F
- RIZ-Transmitters AF
- Rohde & Schwarz AFX
- Siel Sistemi Elettronici F
- Technosystem FX



- Teko Telecom FX
- Telefunken Sendertechnik AX
- Television Technology Corp. FX**
- Tepeco X
- TFT FX
- Thomson-LGT FX**

Transmitters, TV

- T standard transmitters; X translators.
- Acrodyne Industries TX**
 - Advanced Broadcast Systems T
 - American Laser Systems T
 - Astre Systems T
 - Bext T
 - Browning Labs TX
 - CED T
 - Comark Communications A T
 - Thomson-CSF Co. T
 - Continental Microwave TX
 - CTE Int'l TX
 - DB Elettronica Telecom TX
 - ELIT-Elettronica Italiana TX
 - EMCEE Broadcast Products TX**
 - FUBA Hans Kolbe & Co. TX
 - GEC-Marconi Communications T
 - Harris Allied Broadcast T**
 - Richard Hirschmann TX
 - ITELCO TX
 - ITS Corp. TX
 - LDL Communications T
 - Loma Scientific TX
 - Marcom TX
 - National Transcommunications TX
 - OMB Sistemas Electronicos TX
 - Pauza & Co. T
 - PESA Micro Communications TX
 - RCA Broadcast/GE Support Svcs T
 - Richardson & Associates T
 - Rohde & Schwarz TX
 - Supercircuits T
 - Technosystem TX

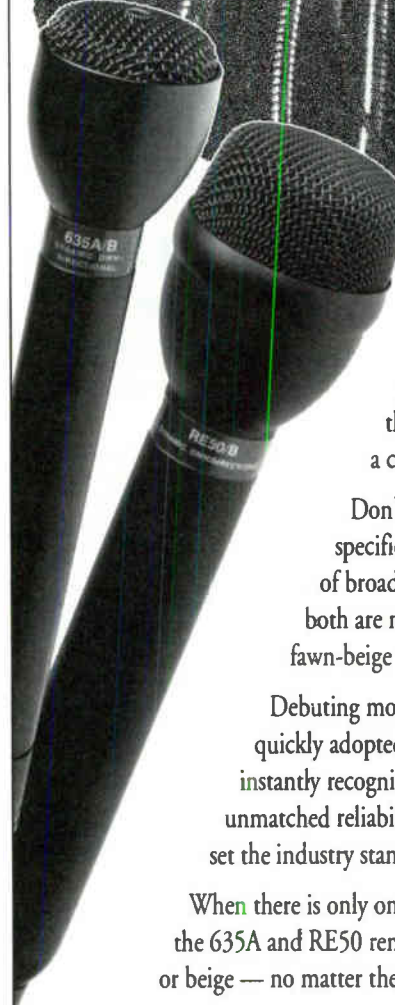


- Teko Telecom TX
- Telefunken Sendertechnik T
- Television Technology Corp. TX**
- Tepeco X
- Thomson-LGT TX**
- Toshiba T

Switchers, RF Coaxial

- American Lightwave Systems/ADC Telecomm.
- Comark Communications A Thomson-CSF Co.
- Continental Electronics Corp.**
- Delta Electronics

The Industry Standards have *Changed.*



Now they're also available in BLACK.

A lot of microphones have come and gone, but the Electro-Voice 635A and RE50 have remained a constant. *Until now.*

Don't panic! The 635A and RE50 are still designed specifically to meet the challenging, "real-world" rigors of broadcasting on location. The only change is that both are now available in black, as well as their original fawn-beige color. Everything else is exactly the same.

Debuting more than two decades ago, field and ENG crews quickly adopted the 635A and RE50 as industry standards, instantly recognizing their trendsetting shape and design, unmatched reliability and clean sound. And they continue to set the industry standard like no other microphones!

When there is only one chance to get it right, the 635A and RE50 remain *the* choice — in black or beige — no matter the conditions.



Electro-Voice, Inc., a MARK IV company, 600 Cecil St., Buchanan, MI 49107 616-695-6831 800-234-6831 In Canada: 613-382-2141

Circle (44) on Reply Card

Dielectric Communications/ General Signal
 EEV
 • Hans Kolbe & Co./FUBA
Harris Allied Broadcast
 ITELCO
 LDL Communications
 Loral Microwave-Narda
 Marcom
 MFJ Enterprises
 Monroe Electronics
 PESA Micro Communications
 RIZ-Transmitters
 Rohde & Schwarz
 Sandar Electronics
 Shively Labs
 SIRA Sistemi Radio
 ST Olektron Systems
 SWR
 Technosystem
Television Technology Corp.
 Tennaplex Systems
 TFT
 Trilithic

Towers, Antenna Support

A antenna support, P portable/masts
 Alan Dick & Co. Ltd.
 Allied Tower Co.
 Andrew Corp.
 Broadcast Communications
 • CED
 Central Tower
Continental Electronics Corp.
EMCEE Broadcast Products
 ERI-Electronics Research
 Express Tower Co.
 Fred A. Nudd
 FWT
 Kline Towers
 LBA Technology
 LDL Communications
 LeBlanc & Royle Telcom
 Magnum Towers
 Malouf Engineering Int'l
 • Marconi Communications
 Microflect Co.
 OMB Sistemas Electronicos, SA
 PiROD
 ROHN
 SG Communications
 SIRA Sistemi Radio
 • Stainless
 Stellar Communications
 Swager Communications
 Technosystem SPA
 • Telefunken Sendertechnik GmbH
Television Technology Corp.
 Transmission Structures Ltd.
 Utility Tower Co.
 Valmont Industries/ICPD

Tower Lighting Systems

Broadcast Communications
 Central Tower
Continental Electronics Corp.
 • Crouse-Hinds Airport Lighting Products
EMCEE Broadcast Products
 ERI-Electronics Research
 Express Tower Co.
 Flash Technology of America
 Flying Fur Industries
 Fred A. Nudd
 FWT
 Hughey & Phillips
 Kline Towers
 LDL Communications
 LeBlanc & Royle Telcom
 Microflect Co.
 Phasetek
 Racal Decca Canada Ltd.
 ROHN
 SG Communications

SSAC
 • Stainless
 Stellar Communications
 Swager Communications
Television Technology Corp.
 TWR Lighting
 Utility Tower Co.
 Xcel Controls

Tower Guys, Insulators, Accessories

Allied Tower Co.
 Broadcast Communications
 Central Tower
Cole Wire & Cable Co.
Continental Electronics Corp.
 ERI-Electronics Research
 Express Tower Co.
 Fred A. Nudd
 FWT
 Ice Krackers
 Kline Towers
 LBA Technology
 LDL Communications
 LeBlanc & Royle Telcom
 Lightning Master
 Microflect Co.
 Racal Decca Canada Ltd.
 ROHN
 SG Communications
 • Stainless
 Stellar Communications
 • Telefunken Sendertechnik GmbH
Television Technology Corp.
 United Ropeworks USA
 Utility Tower Co.
 Xcel Controls

Towers, Portable, Masts

Broadcast Communications
 Central Tower
 E-N-G Mobile Systems
 Express Tower Co.
 Fred A. Nudd
 FWT
 Kline Towers
 LBA Technology
 LDL Communications
 LeBlanc & Royle Telcom
 Magnum Towers
 Precision Specialties
 RF Technology
 SG Communications
 SIRA Sistemi Radio
 • Stainless
 Stellar Communications
 Swager Communications
 Technosystem SPA
 Television Engineering
 Utility Tower Co.
 Valmont Industries/ICPD
 Will-Burt

Transformers, Power, Modulation

Computer Power
 Dielectric Communications/ General Signal
 North Hills Signal Processing
 • Peter Dahl
 RCA Broadcast/GE Support Services
 Rohde & Schwarz
 Staco Energy Products
 Technosystem SPA
 TTE

Transmission Line, Waveguide

Andrew Corp.
 Arden Technologies
 Broadcast Communications

Cablewave Systems
 • CED
 Comark Communications A
 Thomson-CSF Co.
Continental Electronics Corp.
 Dielectric Communications/ General Signal
 EEV
EMCEE Broadcast Products
 JoLida
 LeBlanc & Royle Telcom
 Loral Microwave-Narda
 Marcom
 Microflect Co.
 MYAT
 • NSI/N Systems
 PESA Micro Communications
 Phasetek
 RIZ-Transmitters
 Scala Electronic
 Shively Labs
 SIRA Sistemi Radio
 SWR
Television Technology Corp.
 UTE Microwave
 Utility Tower Co.

Transmitter Remote Control, Telemetry

Includes transmitter logging systems.
 Advanced Broadcast Systems
Conex Electro Systems
Continental Electronics Corp.
 • CTE Int'l
 • Elenos
Genner Communications/Prof. Audio Products Div.
 Hallikainen & Friends
Harris Allied Broadcast
Intraplex
 LDL Communications
 Marcom



Moseley Associates
 National Transcommunications Ltd.
 • NSI/N Systems
 Ortel
 Paltext Int'l
 Potomac Instruments
 RF Technology
 Rohde & Schwarz
 • Schmid Telecom AG
 • Telefunken Sendertechnik GmbH

Tubes, Rectifiers

Vacuum tube & solid-state
 Audio Interval Design
 Avtech Systems
 Computer Power
 Fusion Electronics
 • Motorola Semiconductor Products
 Newark Electronics



Penta Labs
 Philips Components
 Svetlana Electron Devices
Television Technology Corp.
Thomson Components & Tubes
 Thor Electronics
 Vacuum Tube Industries

Tubes, RF Power, Microwave

Klystrons, Klystrodes, IOT devices, TWT satellite uplink power devices.
 Advent Communications, Ltd.

Astre Systems
 BAF Communications
 California Tube Lab
 Comark Communications A
 Thomson-CSF Co.
 Daily Electronics
 Econco
 EEV
 Fusion Electronics
 JoLida
 Marcom
 • Pauza & Co., Ltd



Penta Labs
 Philips Components
 ST Keltec
 Svetlana Electron Devices
Television Technology Corp.
Thomson Components & Tubes
 • Varian Associates Microwave Power Tubes
 Varian Associates Power Grid Tubes
 Varian Associates Microwave Eqpt.

Tubes, RF Power Triodes, Tetrodes

Avtech Systems
 BURLE INDUSTRIES
 California Tube Lab
 Comark Communications A
 Thomson-CSF Co.
 Daily Electronics
 • DB Elettronica Telecomunicazioni
 Econco
 EEV
 Fusion Electronics
 JoLida
 Marcom
 • Motorola Semiconductor Products Sector
 OMB Sistemas Electronicos, SA



Penta Labs
 Svetlana Electron Devices
Television Technology Corp.
Thomson Components & Tubes
 Thor Electronics
 Vacuum Tube Industries
 Varian Associates Power Grid Tubes
 Varian Associates

Vacuum Contactors

Advanced Broadcast Systems
 JoLida



Penta Labs
 Phasetek
 Surcom Associates
Television Technology Corp.
 Thor Electronics
 Vacuum Tube Industries

Weather Radar RF Products

• Advanced Designs Corp.
 Kavouras
 Precision Specialties
 Technosystem
 Varian Associates

Automation & Computer Products

Business Automation

Includes supporting software.
 CBSI-Custom Business Systems
 Columbine Systems
 Computer Assisted Technologies
Continental Electronics Corp.
 D.A.T.A. Business Publishing
 Datacount
 Decision
 Gefen Systems
 • The Management
 MBS Technologies
 Multidyne
 Panasonic Pro Audio/Ramsa
 PKE Int'l
 Remote Control Int'l - TeleMayz
Sony Business & Professional Group
 Xymox Systems

Commercial Insertion Systems

VCR sequencing systems; includes control, switching for video, audio signals for LPTV, CATV, etc.
 Adtec Productions
 Alamar Electronics USA
 American Broadcast Systems
Asaca/Shibasoku
 AVID Technology
 • Channelmatic
 Display Systems Int'l
 DNF Industries
 Dynatech Video Group
 FloriCal Systems
 • IGM Communications
 Louth Automation

MATCO

MATCO
 • Outland Technology
Panasonic Broadcast & Television Systems
 Planon Telexpertise
Pro-Bel
 RCS Traffic (Decision)
 • H.A. Solutech Ltd.
 Sundance Technology Group
 Tech Electronics
 Tel-Test
 • Texscan MSI
Thomson Tubes Electroniques
 Time Logic
 Videomedia

Computers & Peripherals

Includes PCs, VDT terminals, touch-screen control adaptations; engineering management, maintenance and non-production software.
 Adrienne Electronics
 Antex Electronics
 Aydin Controls
 B&B Electronics Mfg., Co.
Beiden Wire & Cable
 BGW Systems
BTI Computer Systems
 CDR Systems
 CH Products
 Computer Power
 J.E. Cuesta Co.
 Diaquest
 DNF Industries
ENCO Systems
 Image Logic
 Imagine Products
 Interface Engineering
 J.L. Cooper Electronics
 Koss
 Lazerus
 Lightwave Communications
 • The Management
 Media Touch Systems
 Meirick

Modgraph
 NDG Phoenix
 Network Technologies
 Newark Electronics
 • Opcode Systems



Optical Media Int'l
 Prophet Systems
 Rathbone Energy Systems
 Richmond Sound Design, Ltd.
 Rorke Data
 Sola/Hevi-Duty Electric
 Sonifex Ltd.
Sony Business & Professional Group
 Sprague Magnetics
 Tamron Industries
 TECH-SA-PORT
 Tel-Test
 Tripp Lite
Video Design Pro
 Xcel Controls

Engineering Software

CAD, diagnostics, maintenance
 Aerosonic USA
 Alamar Electronics USA
 • Altec Lansing
 American Small Business Computers/DesignCAD
 Autodesk
 B&B Electronics Mfg., Co.
 • CEL Broadcast
 Computer Assisted Technologies
 D.A.T.A. Business Publishing
 EDX Engineering
Electro-Voice
 Jem-Fab
 Jensen Transformers
 Lazerus
 Nesbit Systems
 PKE Int'l
 ScheduALL by VizuAll
 • Schmid Telecom AG
 Tel-Test
 Video Communications
Video Design Pro
 Xcel Controls

Newsroom Automation

Dedicated, PC-based, supporting software packages.
 Abbate Video
 Alamar Electronics USA
 AVID Technology
 A-Ware Software
 BASYS Automation Systems
 Broadcast Software
 Comprompter
 Computer Prompting & Captioning
 Dan Dugan Sound Design



DCM
 Designing Minds
 DNF Industries
 Dynatech Video Group
 ESE
 GLW
 Imagine Products
 Inscribe Character Generator
 Interface Engineering
 • IRIS Technologies
 J.L. Cooper Electronics
 Louth Automation
 Media Computing
 Nesbit Systems
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 Studer Digitec
 Studer Editech
 Tally Display
 Tel-Test
Thomson Tubes Electroniques
 Time Logic
 Videoquip Research Ltd.
Vistek Electronics

Playback Automation

Audio/radio systems.
AAVS
 AEV
 Alamar Electronics USA
 Antex Electronics
Asaca/Shibasoku
 Audio Follow
Audio Processing Technology.
 A-Ware Software
 BGW Systems
 BLU Electronics
 Broadcast Automation
 Broadcast Electronics
 CBSI-Custom Business Systems
 CBSI/Digital Universe

CEDAR Audio Ltd.
 • Channelmatic
 Computer Assisted Technologies
Conex Electro Systems
 Dan Dugan Sound Design
 Dynatech Video Group
ENCO Systems
 ESE
 Fidelipac
 Gefen Systems
Gentner Communications
 • IGM Communications
 Image Video Ltd.
 JLCoooper Electronics
 • The Management
 Media Touch Systems
 Nesbit Systems
 NewsMaker Systems
 NTP Elektronik A/S
 PKE Int'l
 Planon Telexpertise
Pro-Bel
 Prophet Systems
 Radio Computing Services
 Schafer World Communications
 Scott Studios
 Sentry Systems
Sierra Automated Systems
Engineering
 Sonifex Ltd.
 Studer Digitec
 Studer Editech
 Studer Int'l/Studer Revox
 Tel-Test
Thomson Tubes Electroniques

Time Logic
 TM Century
Record/Playback Automation
Video/TV systems
AAVS
AAVS/Sencore
 Abbate Video
 Adtec Productions
 Alamar Electronics USA
 American Broadcast Systems
Asaca/Shibasoku
 BASYS Automation Systems
 BGW Systems
 CEDAR Audio Ltd.
 Cipher Digital
 Columbine Systems
 Comprompter
 Computer Assisted Technologies
 • Cycle-Sat
 Diaquest
 DNF Industries
 Dynatech Video Group
ENCO Systems
 ESE
 Fast Forward Video
 FloriCal Systems
 Future Editing Equipment
 Design/FED GmbH
 GLW
 Image Video Ltd.
 Inscribe Character Generator
 Intelligent Resources Integrated Systems
 Interface Engineering

JLCoooper Electronics
 Leightronix
 Louth Automation
 Media Computing
 • Merlin Engineering Works
 NDG Phoenix
 Nesbit Systems
 NewsMaker Systems
 Nytone
Odetics Broadcast



Panasonic Broadcast & Television Systems
 Planon Telexpertise
Pro-Bel
 Sonifex
 Sundance Technology Group
 Tally Display
 Tech Electronics
 Tel-Test
 • Texscan MSI
 Time Logic
 Utah Scientific/Dynatech Video Group
 Video Data Systems
 VideoFusion
 Videomedia
Vistek Electronics Ltd.
 Vortex Communications
 WeatherNews America

Test & Maintenance Products

Analyzers, Audio System

includes distortion measurement and automated test systems.
 Acoustech
 Aerosonic USA
 Antenna Technology
Asaca/Shibasoku
Audio Precision
 Audio Services
 AudioControl Industrial
 BARCO-EMT, Audio

BOLAND COMMUNICATIONS

Boland Communications
 Boonton Electronics
 • Brüel & Kjær Instruments
 Circuit Research Labs
 Dwight Cavendish Co.
 • Gotham Technology Group
 Group One Ltd.
 • Hamlet Video Int'l Ltd.
 Hewlett-Packard Co.
 Telecommunications Techniques
 Trilithic

Analyzers, Video System

includes automated test systems.
AAVS
AAVS/Sencore
 Aerosonic USA
 Antenna Technology
Asaca/Shibasoku
 Boland Communications
 Colorado Video
 Dwight Cavendish Co.
 GEE Broadcast Systems Ltd.
 • Hamlet Video Int'l Ltd.
 Hewlett-Packard Co.
 Richard Hirschmann GmbH
 • Plateau Digital Technology
 Print Products Int'l

Pro-Bel
 Rohde & Schwarz
RTI-Research Technology Int'l
 • Sencore
 Techni-Tool
Tektronix
 Videotek

Antenna Impedance Bridges

• Delta Electronics
 Eagle Wichita
 MFJ Enterprises
 Print Products Int'l
 Rohde & Schwarz
 Trilithic
 • Wide Band Engineering Co.

Audio Generators

Stand-alone systems.
AAVS
Asaca/Shibasoku
Audio Precision
 AudioControl Industrial
 BARCO-EMT, Audio
 Boonton Electronics
 Circuit Research Labs
Conex Electro Systems
 Danbridge A/S
HEDCO
 Hewlett-Packard Co.
Horita
 Ivie Technologies
 JNS Electronics
Leader Instruments
 Multidyne
 Neutrik Instrumentation
 NTP Elektronik A/S
 Potomac Instruments
 Print Products Int'l
Pro-Bel
 Rohde & Schwarz
 • Schmid Telecom AG

• Sencore
 Sescorm
 • Sound Technology
 Stanford Research Systems
Tektronix

Demodulators, TV Precision

Barco
 Richard Hirschmann GmbH
 • Philips TV Test Equipment
 Print Products Int'l
 Rohde & Schwarz
Tektronix
 TFT
 Videotek

Detectors, Non-ionizing Radiation

Holiday Industries
 • JFW Industries
 Loral Microwave-Narda
 Print Products Int'l
 Rohde & Schwarz

Digital Diagnostic Systems

AAVS
 GEE Broadcast Systems Ltd.
 Hewlett-Packard Co.
 Print Products Int'l
 Rohde & Schwarz
 Tally Display
Tektronix
 Telecommunications Techniques
 Wiltronix

Frequency Counters

• Beckman Industrial
 • B&K Precision Maxtec Int'l
 J.E. Cuesta Co.
 EIP Microwave
 Fluke

Hewlett-Packard Co.
Jensen Tools
Leader Instruments
 MFJ Enterprises
 Newark Electronics
 Print Products Int'l
 Rohde & Schwarz
 • Schmid Telecom AG
 • Sencore
 Simpson Electric
 Stanford Research Systems
 Techni-Tool
 Tremetrics

Meters, AC/Power Phase

• Beckman Industrial
 J.E. Cuesta Co.
 Danish Pro Audio/Brüel & Kjær
 Dranetz Technologies
 Fieldpiece Instruments
 Newark Electronics
 Print Products Int'l
 Rohde & Schwarz
 Sachtler AG-Kommunikationstechnik
 A.W. Sperry Instruments
 Techni-Tool
Tektronix

Meters, Audio Level Indicators

AAVS
ATI-Audio Technologies
 • B&B Systems
 Boland Communications
 BPI/Porta-Pattern
 J.E. Cuesta Co.
 Dorrough Electronics
 Dwight Cavendish Co.
 ESE
 FM Systems
 • Gotham Technology Group

Test & Maintenance Products

Group One Ltd.

• Hamlet Video Int'l Ltd.

Inovonics

JNS Electronics

Leader Instruments

Logitek Electronic Systems

Neutrik Instrumentation

NTP Elektronik A/S

Philip Drake Electronics

Print Products Int'l

Rohde & Schwarz

Scantex Labs

Selco Products Co.

• Sencore

Simpson Electric

• H.A. Solutec Ltd.

Studer Int'l Div. of Studer Revox

Tally Display

Techni-Tool

Tektronix

Tel-Test

Titus Technological Labs

Videoquip Research Ltd.

Vortex Communications

Ward-Beck Systems, Ltd.

Wohler Technologies

XTA Electronics Ltd.

Meters, DVMs, DMMs, VOM

• Beckman Industrial

J.E. Cuesta Co.

Fieldpiece Instruments

Fluke

FM Systems

• Hand Tool Industries

Hewlett-Packard Co.

JNS Electronics

Leader Instruments

Newark Electronics

• Outland Technology

Print Products Int'l

Rohde & Schwarz

• Sencore

Simpson Electric

Techni-Tool

Triplet

Meters, Field Strength, RF Level

R.B. Annis Co.

Bird Electronic

• Kathrein-Werke KG

Meters, Photographic Light

Includes monitor color balance measurement, adjustment systems.

Asaca/Shibasoku

JNS Electronics

Minolta Instrument Systems Div.

• Philips TV Test Equipment

Print Products Int'l

Sachtler AG-Kommunikationstechnik

A.W. Sperry Instruments

Techni-Tool

Tektronix

Meters, RF Power

Bird Electronic

Boonton Electronics

• Coaxial Dynamics

J.E. Cuesta Co.

Dranetz Technologies

EIP Microwave

Electro Impulse Lab

Fieldpiece Instruments

Hewlett-Packard Co.

Loral Microwave-Narda

MFJ Enterprises

Print Products Int'l

Rohde & Schwarz

Techni-Tool

Triplet

Modulation Monitors

AM, FM radio, TV aural

Belar Electronics Lab

Bird Electronic

Boland Communications

Boonton Electronics

• Delta Electronics

FM Systems

Harris Allied Broadcast

Hewlett-Packard Co.

Inovonics

Leader Instruments

Modulation Sciences

Print Products Int'l

QEI

Rohde & Schwarz

Studer Int'l/Div. of Studer Revox

Tektronix

TFT

Titus Technological Labs

Oscilloscopes, Accessories

• B&K Precision Maxtec Int'l

Dranetz Technologies

Fluke

• Hamlet Video Int'l Ltd.

Hewlett-Packard/VID Div.

Hitachi Denshi America, Ltd.

Jensen Tools

Leader Instruments

Neutrik USA

Newark Electronics

Print Products Int'l

• Sencore

A.W. Sperry Instruments

Techni-Tool

Tektronix

Test Probes

VRI (Video Rentals)

Recorder Tension, Alignment Equipment

Aerosonic USA

Print Products Int'l

Tentel

RF Generators

Stand-alone; excludes products designed used as part of a transmitter.

Boonton Electronics

Fluke

Hewlett-Packard / VID Div.

JNS Electronics

Kay Elemetrics

Leader Instruments

Potomac Instruments

Print Products Int'l

Rohde & Schwarz

• Sencore

Techni-Tool

Trillithic

RF Load Resistors, Dummy Loads

Altronic Research

Bird Electronic

• Coaxial Dynamics

Continental Electronics Corp.

Dielectric Communications/ General Signal

Electro Impulse Lab

Harris Allied Broadcast

Hewlett-Packard Co.

• JFW Industries

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Asaca/Shibasoku of America

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Dragnet Technologies
DT Electronics Ltd.

• Hamlet
Hewlett-Packard Co. VID Div.
JNS Electronics

Leader Instruments

Leitch

Link Electronics
• Plateau Digital Technology
Print Products Int'l
Rohde & Schwarz

Tektronix

Videotek
Vortex Communications

Audio Services
• Hamlet
Print Products Int'l
Sprague Magnetics
Standard Tape Laboratory
Taber Mfg. & Engineering Co.

VITS, VIRS Generators, Inserters

Computer Assisted Technologies
Display Systems Int'l
Multidyne

• Philips TV Test Equipment
Print Products Int'l

Pro-Bel

• Sencore
Shintron Co.

Tektronix

Titus Technological Labs
Vortex Communications
Wiltronix

Time Domain Reflectometers

• Delta Electronics
Print Products Int'l

Pro-Bel

Riser-Bond Instruments
Siecor

Tektronix

Technical Monitors

V Vectorscope; W Waveform

Asaca/Shibasoku

Audio Intervisual Design

Digital Processing Systems

DT Electronics
Electronic Visuals
Hamlet/James Grunder
Hitachi Denshi America, Ltd.

Leader Instruments

Magni Systems
• Philips TV Test Equipment

• Plateau Digital Technology VW
Pro-Bel VW
Rohde & Schwarz V
Snell & Wilcox VW
Tektronix VW
Videotek VW

Video Generators

Pattern, blackburst, color bar; includes programmable systems.

AAVS

American Lightwave Systems/ADC
Telecomm.

Asaca/Shibasoku

Bio-Electronics
• B&K Precision Maxtec Int'l
BPI/Porta-Pattern
EEG Enterprises
• Electronic Communication Systems

Ensemble Designs
Fluke

Grass Valley Group

• Hamlet

HEDCO

Hewlett-Packard

Horita

Leader Instruments

Leitch

Link Electronics

Magni Systems

Multidyne

Network Technologies

• Philips TV Test Equipment

Print Products Int'l

Pro-Bel

Rohde & Schwarz

• Sencore

Snell & Wilcox

Stanford Research Systems

Tektronix

Videotek

Vortex Communications

Wiltronix

VSWR Indicators, Detectors

Eagle Wichita
Hewlett-Packard Co. VID Div.
Loral Microwave-Narda
MFJ Enterprises
Print Products Int'l
Rohde & Schwarz
Shively Labs
Solder Absorbing Technology
Trilithic
• Wide Band Engineering Co.

EBS Equipment

encoders, decoders

Belar

Cadco

Continental Electronics

EMCEE Broadcast Products

• Gorman-Redlich Mfg. Co.
Pacific Recorders & Engineering
TFT
Video Data Systems

Faders, Attenuators

Console replacement and automated faders; audio attenuator pads.

API-Audio Products

ESE

JLCooper Electronics

JNS Electronics

• Georg Neumann GmbH

NTP Elektronik A/S

Penny & Giles

Rohde & Schwarz

• Shalco

• Siemens Audio Co.

Studer Editech

Tayo Industries

• Tech Labs

Test, Alignment Records, Tapes, CDs

Aerosonic USA
Audio Intervisual Design
CEDAR Audio
• Gotham Technology Group
• Hamlet
Print Products Int'l
Sprague Magnetics
Studer Int'l/Div. of Studer Revox

Test Charts, Slides

Includes illuminators.
BPI/Porta-Pattern
Century Precision Optics
Nalpak Video Sales
Print Products Int'l

Test, Alignment Tapes

Audio Intervisual Design

Ancillary & Support Products

Acoustic Materials

Acoustic Sciences
• Acoustic Systems
Adcour
• ilbruck, Sonex Acoustical Products
Industrial Acoustics Co.
Netwell Noise Control
Professional Audio Supply
RPG Diffuser Systems
Silent-Source
Solidyne
Systems Development Group

Attenuators, Fixed, Impedance Matching

Allen Avionics
Atlas/Soundolier
• Coaxial Dynamics
Comark Communications, A
Thomson-CSF Co.
Comband/Microwave Filter Co.
Dielectric Communications
• Har-Ken Specialties
Hewlett-Packard/VID Div.
• JFW Industries
Kings Electronics Co.
Loral Microwave-Narda
Marshall Electronics
Microwave Filter Co.
T.R. Pitts Co.

Color highlighting indicates an advertiser - See the ad index for additional information. A bullet indicates the company was unable to provide update information for this directory.

RF Industries
RIZ-Transmitters
Rohde & Schwarz
• Tech Labs
3M Telecom Markets
Trilithic
Trompeter Electronics

Batteries, Chargers, Analyzers, Reconditioners

Adcour
Alexander Batteries



Anton/Bauer
Christie Electric
Cine 60
Comprehensive Video Supply
Cool-Lux Lighting Industries
Energy Systems
Energy Plus
Frezzolini Electronics
• G&M Power Products
Ikon Video
Newark Electronics
ORA Electronics
Paco Electronics USA
PAG Ltd.

PEP
• PERROTT 'The Battery People'
Pro Battery
Professional Sound



Rathbone Energy Systems
Sachtler AG-Kommunikationstechnik
Synergistic Batteries
Techni-Tool
VRI (Video Rentals)

Blowers, Fans

Ventilation products; includes facilities air-conditioning systems.

Amco Engineering Co.

• Ametek, Lamb Electric Div.
Atlas/Soundolier
BGW Systems
Bud Industries
J.E. Cuesta Co.
• DB Elettronica Telecomunicazioni
Emcor Products Crenlo
Mole-Richardson Co.
Newark Electronics
Tel-Test

Capacitors, HV

Audio Intervisual Design
Continental Electronics Corp.
• DB Elettronica Telecomunicazioni
Kings Electronics Co.

Newark Electronics
• NWL Capacitors
Plastic Capacitors
Surcom Associates
• Voltronics

Carts, AV Equipment Utility

Advance Products Co.
Anthro
Arcor Broadcast Products
• Bretford Mfg.
Clipper Products
Comprehensive Video Supply
Electrorack Products Co.
Ferno Salesmaker
Fidelipac
Future Editing Eqt. Design/FED
Henry Engineering
Nalpak Video Sales
Neumade Products
• Parsons Mfg.
Peerless Industries
Professional Sound Corp.
RTI-Research Technology Int'l
Smith System
Sonifex Ltd.
• Star Case Mfg. Co.
Winsted
Zero Stantron

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Aarmor Case Co.
Advance Products Co.
Anvil Cases ASA Productions

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Belden is on the air with the industry's largest portfolio of new broadcast cables.

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 Calzone Case Co.
 CDR Systems
 Comprehensive Video Supply
 CSI Camera Support Int'l
 Electr rack Products Co.
 • Hand Tool Industries
Hardigg Cases/Hardigg Industries
 Howe Industries
 Island Cases
 K&H Products-Porta Brace
 Kangaroo Video Products
 Nalpak Video Sales
 Neumade Products
 Newark Electronics
 • Parsons Mfg.
 Plastic Reel Corp of America
 Power Mark Case
 Print Products Int'l
 Reliance Plastics & Packaging
RTI-Research Technology Int'l
 • Seam-Tech
 • Star Case Mfg. Co.
 Tape Storage Systems-TCS
 Techni-Tool
 • Tek Media Supply Co.
 • Telepak San Diego
 Thermodyne Int'l Ltd.
 Viking Cases

Chemicals

Cleaners, E conditioning treatments & contact enhancement products; abrasives, A abrasive tapes; chemical coatings.

Black Audio Devices
 CAIG Laboratories
 Comprehensive Video Supply
 DW Electrochemicals Ltd.
 E.C. Mitchell Co.
 Print Products Int'l
 Professional Audio Supply
RTI-Research Technology Int'l
 Sprague Magnetics
 Techni-Tool
 TECH-SA-PORT
 • Tek Media Supply Co.
 3M Telecom Markets

Clocks

Master, synchronized studio time displays.

AEV
 BAI Systems
 Beaveronics
 BPI/Porta-Pattern
 • Channelmatic
 ChronTrol
 ESE
 Evertz Microsystems Ltd.
Horita
 Image Logic
Leitch
 maney-logic
 Ram Broadcast Systems
 Sonifex Ltd.
 Tally Display
 Techni-Tool
 Torpey Controls
 Vortex Communications
 Wiltronix

Cable, Audio, MI

1-/multiple-pair, shielded.
AAVS
 Alpha Wire
 Apogee Electronics
 APS Professional Video Products
 Arcor Broadcast Products
 BARCO-EMT, Audio
 • Bi-Tronics
 Black Audio Devices
 Canare Cable

Carmen Abato Enterprises/CAE
Clark Wire & Cable
Cole Wire & Cable
 Comprehensive Video Supply
 Connectronics
Continental Electronics Corp.
 DGS Pro Audio
 FM Acoustics Ltd.
 Full Compass Systems, Ltd.
 • Gotham Technology Group
 Lee Dan Communications
 Lenbar Electronics
 Marshall Electronics
 Media Concepts
 MilesTek
 Mohawk/CDT
 Nema Electronics Int'l
 • Georg Neumann GmbH
 Newark Electronics
 Pacific Radio Electronics
 Professional Sound Corp.
 Tayo Industries
 Techflex
 • Teledyne Thermatics
 Toleto Fastners Int'l/Cord-Lox
 VEAM, Div. of Litton Systems
 Whirlwind Music Dist
 Wireworks
 Yale Electronics

Cable, Coaxial, Triaxial

AAVS
 Alpha Wire
 AMP
 Apogee Electronics
 Arcor Broadcast Products
 Avtech Systems
Belden Wire & Cable/Cooper Industries
 Berk-Tek
Cablewave Systems
 Canare Cable
 Carmen Abato Enterprises/CAE
Clark Wire & Cable
Cole Wire & Cable
 Comark Communications A
 Thomson-CSF Co.
 Comprehensive Video Supply
 Connectronics
Continental Electronics Corp.
 DH Satellite
 Full Compass Systems, Ltd.
 Gabriel Electronics
Gepco Int'l
 Inline
 Lee Dan Communications
 Lenbar Electronics
 LPB
 Marshall Electronics
 MilesTek
 Mohawk/CDT
 Nema Electronics Int'l
 Newark Electronics
 OMB Sistemas Electronicos, SA
 Pacific Radio Electronics
 T.R. Pitts Co.
 Professional Sound
 RF Industries
 SIRA Sistemi Radio
 Techni-Tool
 Telemetrics
 Toleto Fastners Int'l/Cord-Lox
 Trompeter Electronics
 Utility Tower Co.
 VRI (Video Rentals)
 Whirlwind Music Dist
 Wireworks
 Yale Electronics

Cable, Component Video

AAVS
 Alpha Wire

APS Professional Video Products
 Arcor Broadcast Products
 Berk-Tek
 Canare Cable
 Carmen Abato Enterprises/CAE
Clark Wire & Cable
Cole Wire & Cable
 Comprehensive Video Supply
 Connectronics
Gepco Int'l
 Lenbar Electronics
 Marshall Electronics
 Media Concepts
 MilesTek
 Mohawk/CDT
 Nema Electronics Int'l
 Newark Electronics
 ORA Electronics
 Pacific Radio Electronics
 Professional Sound
 VRI (Video Rentals)
 Wireworks

Components, Active

Transistors, ICs.
 DT Electronics Ltd.
 Gennum

Connectors, All Typ

AAVS
ADC Telecommunications
 AMP
 Arcor Broadcast Products
 Audio Accessories
 Avtech Systems
 • Bi-Tronics
 • Blonder-Tongue Labs
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 DGS Pro Audio
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 Graham-Patten Systems
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 Imagine Products
 • ITT Cannon, Canada
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 MilesTek
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 • OFTI
 OMB Sistemas Electronicos, SA
 ORA Electronics
 Panduit
 T.R. Pitts Co.
 Professional Sound Corp.
 RF Industries
 Siecor
 SIRA Sistemi Radio
 Superior Electric
Switchcraft
 Techni-Tool
 Technosystem SPA
 3M Telecom Markets
 Trompeter Electronics
 Union Connector
 Utility Tower Co.
 VEAM, Div. of Litton Systems
 Whirlwind Music Dist
 Wireworks

Yale Electronics

Components, Passive

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 Accour
 Allen Avionics
 Comark Communications A
 Thomson-CSF Co.
 DT Electronics Ltd.
 Lamp Technology
 Ledtronics
 Newark Electronics
 Phasetek
 Plastic Capacitors
 SIRA Sistemi Radio
 Sprague Magnetics
 Technosystem SPA
 TTE
 Vantage Lighting
 Veetronix

Fiber-Optic Components

FO terminal equipment
ADC Telecommunications
 American Lightwave Systems/ADC
 Telecomm.
 AMP
 Arcor Broadcast Products
 Artel Communications
 BEC Technologies
 Bi-Directional Microwave
 • Bi-Tronics
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 Toshiba
 T-Tech
 United Technologies Photonics
 VEAM, Div. of Litton Systems
 VVYX
 Whirlwind Music Dist

Fiber Optic Cable Material

FO cable, connectors
 Arcor Broadcast Products
 Auteri Technical Services
Belden Wire & Cable
 Berk-Tek
Clark Wire & Cable
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 DT Electronics Ltd.
 FM Systems
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 Sabine Musical Mfg. Co.
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 Pivottelli/USA
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Tektronix
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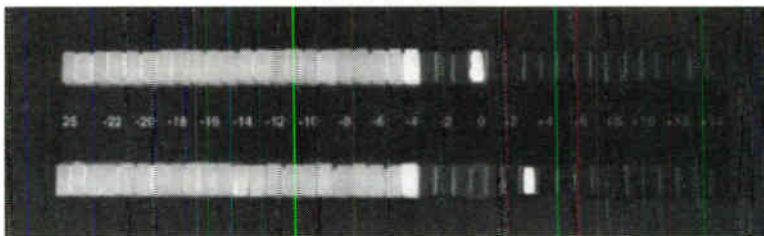
Labels, Adhesive-backed

Cart, cassette, ID, cabling, panel.
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 Techni-Tool
 3M Telecom Markets
 United Ad Label Co.
 US Tape & Label

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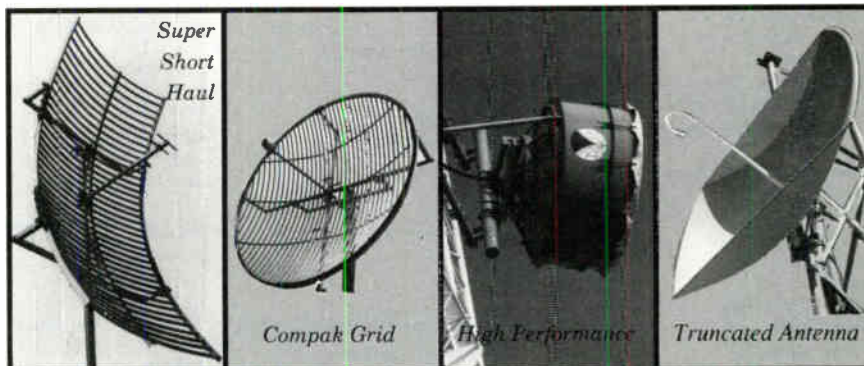
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Hardigg Cases/Hardigg Industries
Harris Allied Broadcast
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• Tek Media Supply Co.
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 • Mobile-Cam Products
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 Roll-A-Reel Co.
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 Electrarak Products Co.
Gepeco Int'l
 Newark Electronics
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Static Suppressors, Environmental Controls

T *Thermal sensing devices.*
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 TECH-SA-PORT
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Asaca/Shibasoku
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 Data Security
 MSE Video Tape Services
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 Sprague Magnetics
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 • Tek Media Supply Co.

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Gauss
 RTI-Research Technology Int'l
 • Tek Media Supply Co.

Tape & Head Degaussers; Tape erasers

Conveyor, non-moving types.
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 R.B. Annis Co.
 Audiolab Electronics
 Comprehensive Video Supply
 Data Security

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 ORA Electronics
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 LDL Communications
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 • Stainless
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 Technosystem SPA
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 Aerosonic USA
AF Associates
 Alpha Video & Electronics Co.
 APS Professional Video Products
 Arden Technologies
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 Farrtronics Ltd.
 Forecast Installations
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 Frontier Communications
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 GEE Broadcast Systems Ltd.
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 PESA Micro Communications
 Philip Drake Electronics
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 Radiotechniques Engineering
 Richardson & Associates
 RIZ-Transmitters
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- Gendra Broadcasting



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Tayo Industries
Tel-Test
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Astre Systems
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JRF Magnetic Sciences
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Mohawk/CDT
Newman-Kees Freq. Measurements
Engineering & Installations
• NTSC Productions
O'Connor Engineering
• Pauza & Co., Ltd
• PERROTT 'The Battery People'
Pro Battery
Sprague Magnetics
Tel-Test

Equipment Rental, Leasing, Brokers

American Laser Systems
APS Professional Video Products
Audio Interviewal Design
Balboa Capital
• Beckett Electronic Engineering & Research

- BERC-Broadcast Equipment Rental Co.

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National Transcommunications Ltd.
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Auteri Technical Services
GEE Broadcast Systems Ltd.
Hall Electronics
JRF Magnetic Sciences
Newman-Kees Freq. Measurements
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Including film-to-tape, tape-to-film, duplication, standards conversion
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Devlin Video Service



HERO
PRODUCTIONS

Hero Productions

Media Concepts
• Video Dub
Visual Methods

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- Capitol/OGM Production Music
- De Wolfe Music Library
- Dimension Music and Sound Effects
- Firstcom/MusicHouse/Chappell
- Fresh/The Music Library
- Manhattan Production Music
- Music Director Programming Service
- Network Music
- Omnimusic
- Optimum Productions
- Production Garden Music Library
- ProMusic
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- TM Century
- TRF Production Music Libraries
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Ron Krob Technical Consultant
Marcom
Lawrence L. Morton Associates
National Transcommunications Ltd.
Newman-Kees Freq. Measurements
Engineering & Installations
PESA Micro Communications
RCA Broadcast/GE Support
Services
RIZ-Transmitters
Rohde & Schwarz
SG Communications
SWR
Technosystem SPA
Teletech
T-Tech

Varian Associates Microwave
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Antenna Technology
COMSAT Mobile Communication
COMSAT World Systems
• GE American Communications
• GTE Spacenet



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IDB Communications Group
Int'l Datacasting
Keystone Communications
Micro Net
National Transcommunications Ltd.
Norsat Int'l
NSE Radio Network
Taurus Communications

Satellite Time Brokers

Program distribution.
COMSAT Mobile Communication
COMSAT World Systems
• Cycle-Sat
• GE American Communications



HERO
PRODUCTIONS

Hero Productions

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IDB Communications Group
Keystone Communications
Micro Net
Norsat Int'l
NPR Satellite Services
NSE Radio Network
Spac eCom Systems
Taurus Communications

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Full Sail Center for Recording Arts
Int'l Film & Television Workshops
LDL Communications
Mark Long Enterprises
Loral Microwave-Narda
Rohde & Schwarz
SIRA Sistemi Radio
Technosystem SPA
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Equipment Products

Weather Data Services

Accu-Weather
Dynatech Video Group
Kavouras
NSE Radio Network
• Texas Electronics
WSI

Introducing a value-packed platform for waveform/vector monitoring.



Products shown with optional white phosphor display.

See it. Believe it.

You can expect more from your next waveform/vector monitor — more performance, more convenience, more value — now that the 1740A, 1750A and 1760 Series from Tektronix have arrived.

An intuitive user interface, streamlined front panel and outstanding display capabilities — all in a half-rack package — make up a new platform for future products to follow. The platform is built on actual input from TV engineers — people whose time is too valuable to be spent learning and re-learning equipment.

Eight video input channels, 12 user presets, waveform and vector cursors, time code display, stereo audio phase monitoring, full field line select and a host of other features are easy to put to work, without slow, hierarchical menus or ambiguous results. You can even view actual pictures at the push of a button.

The 1740A Series offers all this and much more. The 1750A Series adds SCH phase

monitoring, and the 1760 Series provides capability for component TV.

Each series includes NTSC, PAL and dual standard monitors — all with an unsurpassed 3-year warranty.

Seeing is believing.

Just call your Tek representative to arrange a demonstration — get a closer look at the quality Tek delivers in a new platform



for waveform/vector monitoring.

Tektronix
Television Systems

Designed especially for small studios



The new 1YDM series is available in 4x4, 4x8, 8x4, 8x8, 12x4 and 12x2 models for audio, video and data signal paths. Each 2 RU enclosure can hold up to four different matrices that can be controlled together or separately. A/V/D signals and matrix sizes can be mixed providing a wide variety of configurations.

Providing impressive specifications

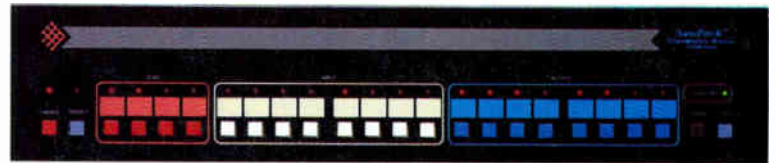
AUDIO: Frequency response from DC to 150 KHz (± 3 dB); gain adjust -3 dB to +10 dB; throughout THD < 0.01% over the full range; and crosstalk < 100 dB at DC to 20 KHz.



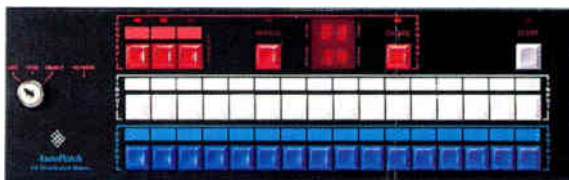
VIDEO: Two bandwidths - *narrow* at 40 MHz and *wide* at 100 MHz with adjacent input crosstalk < 75 dB; both provide extremely low differential phase and gain.

At extraordinarily low prices

Less than \$1000 (suggested list) for many configurations. And prices include a serial port and free PC control software.



For low budget installations!



4XDM control panel



4YDM control panel

The 1YDM series is perfect for small studio systems that require few crosspoints, high specifications, and low price.

The 1YDM complements the other *AutoPatch* series by providing 4YDM specifications at prices lower than many 4XDM models. The 4XDM and 4YDM series are still the right choice for systems that require significant expansion parameters (up to 128x128 and four control levels).

And like all *AutoPatch* matrices, the 1 YDM is *very* simple to install and operate.

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Circle (54) on Reply Card

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Video Cameras

Output video format key: A composite video, B RGB, C S-VHS & Y-C, D Y/R-Y/B-Y, E any digital format. **Output interface key:** MC multicore, CO coaxial, TR triaxial, VC VCR cable, FO fiber optic, DR docking recorder, None = Camcorder. All cameras not designated as Camcorders are assumed to include tally facilities, an engineering audio channel and a program audio channel.

Manufacturer	BTS Broadcast Television Systems				Canon♦	Hitachi♦
Model	LDK-491	LDK-91 (LDK-93)	LDK-910	LDK-9 ¹	UCS3	SK-F2(F3)
Applications	ENG/EFP	SVENG/OB/Sports	Studio/OB/Sports	Studio/OB/Sports	Camcorder Hi8	Camcorder
Output format	A	A/B/D/E	A/B/D/E	A/B/D/E	A/C	A/C
Output interface	None	CO/TR/VC/MC/DR	CO/TR/VC	CO/TR/VC	None	None
Lens correction memory	No	No	No	Yes	...	...
Color balance memory	4	0 (4) scenes	0	4 scenes	...	32 files
ND filters/Color comp. filters	2/2	1 (2EFX/2ND)/None	4 w/effects; None	8 w/effects; None	...	2/2
Pickup size	½"	½"	½"	½"	½"	½"
Pickup type	FT-5SR CCD	FT CCD (FT-5SR)	FT CCD	FT CCD	CCD 768x494	IT (FIT)
Standard sensitivity	2000; f/5.6; 89%	2000; f/5.8(5.2); 89%	2000; f/5.6; 89%	2000; f/5.6; 89%	3-100klx	2000; f/5.6
Minimum sensitivity	9; f/1.4; 24dB	9; f/1.4; 24dB	9; f/1.4; 24dB	9; f/1.4; 24dB	3 lux	15; +21dB
S/N ratio	62dB	62dB	62dB	62dB	43dB	60dB NTSC
Limiting resolution	>700; 55% @ 5MHz	>700; 55% @ 5MHz	>700; 55% @ 5MHz	>700; 55% @ 5MHz	430/380 off-tape	650 (700)
Electronic shutter	4-speed	4-speed (61-151)	Yes	61.4-151	12-speed	6-speed
Power consumption	18W	11W	170W inc/prompter	170W inc/prompter	...	14W
Power input	11-17Vdc	120Vac; 12Vdc	120Vac	120Vac	6Vdc	10.5-17Vdc
Camera head weight	12 lbs	9 lbs (20 lbs)	56 lbs inc/V.F.	61 lbs inc/V.F.	1.54 lbs	7.5lbs
Reader Service No	201	202	203	204	205	206

¹LDK-9P companion camera suited for ENG/EFP; permits docking recorder; uses FT-5SR CCDs; 11-17Vdc operation; 80W power consumption with triax configuration; weight 20 pounds with triax.

Manufacturer	Hitachi♦	Ikegami				
Model	SK-F700/710	HC-340 ²	HK-343(HL-43) ³	HK-355A(355PA) ⁴	HK-377 (-377P) ⁵	HL-55 ⁶
Applications	...	Studio/ENG	SVENG/OB	SVENG/OB	Any	SV/ENG
Output format	A/B/C/D	A/B/C/D	A/B/D	A/B/D	A/B/D/E option	A/B/D
Output interface	MC/TR	MC/VC/DR	TR/(CO/VC/DR)	MC/CO/TR/(VC/DR)	CO/TR/(VC/DR opt)	MC/CO/TR/VC/DR
Lens correction memory	...	No	No	Yes	Yes	No
Color balance memory	32 files	4 scenes	4 scenes	4 scenes	8 scenes	2 scenes
ND filters/Color comp filters	4/3	1/3	1/3	4 (3)/4 (3)	4 (3)/4 (3)	2/4
Pickup size	⅔"	⅔"	⅔"	⅔"	⅔"	⅔"
Pickup type	FIT CCD	IT microlens	IT microlens	FIT microlens	FIT microlens	FIT microlens
Standard sensitivity	2000; f/5.6	2000; f/8; 90%	2000; f/8; 90%	2000; f/8; 90%	2000; f/8; 90%	2000; f/8; 90%
Minimum sensitivity	15; +21dB	4; f/1.4; 24dB	16(8); f/1.4; 12(18)	16; f/1.4; 12dB	16; f/1.4; 12dB	8; f/1.4; 18dB
S/N ratio	60dB NTSC	60dB	62dB	62dB	62dB	62dB
Limiting resolution	700	750H/400V	850H/400V	800H/400V	900H/400V	700H/400V
Electronic shutter	No	Yes; cont. var.	Yes; cont. variable	Yes; cont. variable	Yes; cont. variable	Yes; 6-speed
Power consumption	300VA	15W	130W (16W)	130W (26W)	130W (26W)	14.5W
Power input	120Vac	11-16Vdc	115Vac (11-16Vdc)	115Vac (11-16Vdc)	115Vac (11-16Vdc)	11-16Vdc
Camera head weight	66 lbs	7.1 lbs	50 lbs (7.7)	55 lbs (7.8)	59 lbs (7.8)	6.8 lbs
Reader Service No	207	208	209	210	211	212

²Accepts all on-board VTR formats; RS-232C remote control port. ³Computer-controlled CCU; super high-band aperture; super color auto knee circuit. ⁴Fully automatic operation; skin detail feature; 6-vector color corrector; 3-channel detail system with Dynamic Detail. ⁵Ultra-wideband 3-channel triax; fully automatic operation; skin detail feature; 6-vector color corrector; optional digital interface. ⁶Color control unit with color correction matrix; highlight compensation; dynamic detail feature.

Manufacturer	Ikegami		JVC Professional Products		Panasonic Broadcast & Television Systems Co.	
Model	HL-57 ⁷	HL-V55 ⁸	GY-X2V	KY-27V	WV-500 ¹⁰	WV-700 series ¹⁰
Applications	SV/ENG	ENG/EFP	Any	Any	Any	Any
Output format	A/B/D/E	A/D	C	...	A/B/C/D	A/B/C/D
Output interface	MC/CO/TR/VC/DR	CO/TR/VC/NO	CO/VC	...	MC/CO/VC/DR	MC/CO/VC/DR
Lens correction memory	Yes	No	...	...	Yes	Yes
Color balance memory	8 scenes	2 scenes	...	...	3 scenes	3 scenes
ND filters	2/4	2/4	...	...	3	3

Note: A diamond [♦] following a company name indicates the company was unable to provide update information. The specifications listed for products in such cases may have changed. It is also possible that the products are no longer available.

Video Cameras, Cont'd

Manufacturer	Ikegami		JVC Professional Products		Panasonic	
Model	HL-57 ⁷	HL-V55 ⁸	GY-X2V	KY-27V	WV-500 ¹⁰	WV-700 series ¹⁰
Pickup size	3/8"	3/8"	1/2"	3/8"	1/2"	3/8"
Pickup type	FIT microlens	FIT microlens	IT CCD	IT CCD	IT CCD	IT CCD
Standard sensitivity	2000; f/8; 90%	2000; f/8; 90%	2000 f/7	2000 f/8	2000; f/8; 75%	2000; f/8; 75%
Minimum sensitivity	2; f/1.4; 30dB	2; f/1.4; 30dB	3; f/1.4	2; f/1.4; 30dB	4; f/1.8; 24dB	7; f/1.8; 24dB
S/N ratio	62dB	62dB	60dB	62dB	62dB	62dB
Limiting resolution	750H/400V	700H/400V	650 TVL	750 TVL	700 TVL	750 TVL
Electronic shutter	Yes; cont. variable	Yes; cont. var.	Yes; various ⁹	Yes	Yes 6-speed	Yes 6-speed
Power consumption	16.5W	23W	25.2W	12.4W	11.8W	14.4W
Power input	11-16Vdc	11-16Vdc	12Vdc	12Vdc	12Vdc	12Vdc
Camera head weight	7.5 lbs	10.6 lbs	13 lbs	4.4 lbs	...	6.1 lbs
Reader Service No	213	214	215	216	217	218

⁷Skin detail feature; diagonal detail feature; electronic color temperature control; 10-bit digital processing. ⁸Hyper gain sensitivity; Beta SP VTR format in camcorder configuration; electronic color temperature facility; dynamic detail feature. ⁹Shutter speeds 1/100 to 1/2000. ¹⁰Digital signal processing technology for greater flexibility, reliability, stability; more than 25 engineering adjustments accessible by the operator.

Manufacturer	Panasonic		Sony			
Model	WV-F250BH	BVP-270 ¹¹	BVP-375 ¹²	BVP-7A ¹³	BVP-90 ¹⁴	DXC-327A ¹⁵
Applications	Any	Studio/OB/Sports	Studio/OB	Portable	Portable	Any
Output format	A/B/C/D	A/B/D/E	A/B/D/E	A/B/D/E	A/B/D/E	A/B/C/D
Output interface	MC/VC/DR	TR	TR	MC/CO/TR/VC/DR	MC/CO/TR/VC/DR	MC/DR
Lens correction memory	Yes	Yes	Yes	No	No	No
Color balance memory	3 scenes	64scenes	64scenes	5 scenes	5 scenes	2 scenes
ND filters/Color comp filters	3	4/4	4/4	2/2	4/4	3/2
Pickup size	1/2"	2/3"	3/8"	3/8"	3/8"	1/2"
Pickup type	FIT CCD	FIT CCD HyperHAD	FIT CCD HyperHAD	IT CCD HyperHAD	FIT CCD HyperHAD	IT CCD
Standard sensitivity	2000; f/5; 75%	2000lx; f/8; 89.9%	2000lx; f/8; 89.9%	2000lx; f/8; 89.9%	2000lx; f/8; 89.9%	2000lx; f/8.0; 89.9%
Minimum sensitivity	2.5; f/1.4; 18dB	7.5lx; f/1.4; +18dB	7.5lx; f/1.4; +18dB	7.5lx; f/1.4; +18dB	1.9lx; f/1.4; +30dB	4.5lx; f/1.4; +18dB
S/N ratio	62dB	62dB	62dB	62dB	62dB	62dB
Limiting resolution	700 TVL	700 TVL	800 TVL	700 TVL	800 TVL	700 TVL
Electronic shutter	Yes 6-speed	6-speed	6-speed	6-speed	6-speed	5-speed
Power consumption	15.6W	350VA	350VA	13W	13W	8.0W
Power input	12Vdc	120Vac	120Vac	12Vdc	12Vdc	12Vdc
Camera head weight	...	44lb	44lb	7.5lb	7lb	6.5lb
Reader Service No	219	220	221	222	223	224

¹¹CCD array of 768x493; BVPS-270 includes CCU, RCU, remote control cable, 7" B/W viewfinder. ¹²CCD array of 1038x504 with 980x494 effective pixels. BVP-370A/-370 similar with CCD array of 768x494 and resolution of 700 lines. 7" color or B/W viewfinder. ¹³CCD array of 768x494; may be used with CCUs with CA-50 series adaptor; dynamic contrast control. ¹⁴CCD array of 138x504; effective 980x494; Clearscan feature; companion to BVP-375 or operates as camcorder, stand-alone or with CCU. ¹⁵Features SMPTE color bars, safety zone, center marker generator.

Manufacturer	Sony			Thomson Broadcast		Toshiba ♦
Model	DXC-537A ¹⁶	EVW-300	HDC-500 ¹⁷	TTV 1544	TTV 1657 Wide FX ¹⁸	TSC-100
Applications	Any	Any	Studio/ENG/EFP	Studio; OB; Sports	Various	Camcorder
Output format	A/B/C/D	A/C/D	B	A/B	A/B	A/C
Output interface	MC	None	CO	TR/VC	MC/CO/TR/VC/DR	CO
Lens correction memory	No	No	...	Yes	Yes	...
Color balance memory	2 scenes	2 scenes	...	4 scenes	8 scenes	Yes
ND filters/Color comp filters	4/2	3/2	4/4	6/5	4/4	1/3
Pickup size	3/8"	1/2"	1"	3/8"	3/8"	1/2"
Pickup type	IT CCD	IT CCD	FIT CCD MicroLens	IT/FIT CCD Microlens	FIT CCD Microlens	IT
Standard sensitivity	2000lx; f/8.0; 89.9%	2000lx; f/8.0; 89.9%	2000 f/8 89.9%	2000lux f/8 90%R	2000lux f/8 90%R	2000; f/5.6
Minimum sensitivity	1.9lx; f/1.4; +30dB	4.5lx; f/1.4; +18dB	6 f/1.2 +18dB	7.5lux f/1.4 +18dB	5.5lux f/1.4 +18dB	16
S/N ratio	62dB	60dB	54dB	61dB	62dB NTSC	62dB
Limiting resolution	750 TVL	700 TVL	1000TVL	700 TVL	550 TVL	700
Electronic shutter	5-speed	5-speed	7-speed ¹⁷	Variable speed	Variable speed	5-speed
Power consumption	10.5W	17W	30W for head	150W	15W	14W
Power input	12Vdc	12Vdc	750W studio	110/280Vac; 12Vdc	12Vdc	12Vdc
Camera head weight	5lb	7lb	15 lbs.	56 lbs	7.7 lbs	12.54 lbs
Reader Service No	225	226	227	228	229	230.

¹⁶Features DCC dynamic contrast control; EVS enhanced vertical definition system; ATW auto tracing white balance; Three mode matrix. ¹⁷High definition camera system conforms to SMPTE-240M; electronic shutter also covers 1/60 to 1/350 continuously. ¹⁸16:9 sensor capability.

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Zoom Lens Systems

Zoom Lens Systems 1/2" format

Manufacturer	Angenieux						Canon♦		
Model	14x5.6 Anamorphic ¹	14x6.6 ²	14x6 ³	15x5 ⁴	20x7 ⁵	40x7.6 ⁶	PH14ax6.6B IRS	PH33ax8.5B IAS	PH55x Super
Application	Studio, ENG, EFP, OB	ENG, EFP	Studio, ENG, EFP	Studio, EFP, OB	Studio, EFP, OB	Studio, EFP, OB	ENG, EFP	ENG, EFP	EFP
Zoom range (mm)	5.6-78.4mm	6.6-92.5mm	6-84mm	5-75mm	7-140mm	7.8-312mm	6.6-92.4	8.5-260	7-385
Zoom range w/extender (mm)	11.2-156.8 /2x	13.2-185 /2x	12-168 /2x	2x	8.4-168 /1.2x	16.3-655/21-840	13.2-184.8	17-560	14-780
Aperture (Wide/Telephoto)	f/1.4; f/1.7	f/1.4; f/1.6	f/1.4; f/1.6	f/1.4; f/1.7	f/1.2; f/1.2	f/1.2; f/1.7	1.4-1.55	1.5-2.5	1.4-2.2
M.O.D. distance	31"	31"	31"	19.5"	0"	0"	31.5"	7.2'	7.2'
M.O.D. area (mm)	41V x 73H	41V x 55H	46V x 61H	35V x 47H	41V x 55H	18V x 24H	712x534	153x114	178.8x134.1
Horizontal angle (W/T)	66.5°; 5.25°	55°; 4°	58°; 4.5°	68.5°; 5°	51.5°; 2.75°	46.75°; 1.25°	51.7°-4°	41.2°-1.31°	49.1°-0.95°
Extenders or adaptors	...	.45WA; .8WC; 1.86TC	...	...	...	2.1x; 2.7x	2x	2x	2x; 2.6x
Integral extender	Yes	Yes	Yes	Yes	Yes	Yes	...	...	...
Internal focus feature	Yes	No	Yes	No	No	Yes	Yes	Yes	...
Diascope feature	No	No	No	Option	Option	Option	No	No	No
CCD optimization	Yes	Yes	Yes	Yes	Yes	Yes	...	...	...
Reader Service No	231	232	233	234	235	236	237	238	239

¹Lens allows camera to produce 16:9 aspect ratio with standard 3:4 aspect ratio CCD ENG/EFP cameras. ²Includes protective UV filter; integral speed control in addition to rocker switch; fluo phosphate glass for color correction. ³High quality production type lens; matte box fixed directly on front of lens. ⁴Widest angle lens available. ⁵0" MOD focus; 5 range extenders 1.2x, 1.4x, 1.6x, 1.8x, 2x; electronic self diagnostic; Tele shot for quick focusing; no ramping of transmission characteristics. ⁶0" MOD focus; electronic self diagnostic; Tele Shot feature for quick focusing.

Zoom Lens Systems 2/3" format

Manufacturer	Angenieux					
Model	14x6.7 Anamorphic ¹	14x8.5 ²	14x8 ³	15x6.5 ⁴	20x8.5 ⁵	40x9.5 ⁶
Application	Studio/ENG/EFP/OB	ENG/EFP	Studio/ENG/EFP	Studio/EFP/OB	Studio/EFP/OB	Studio/EFP/OB
Zoom range (mm)	6.7-99mm	8.5-119mm	8-112mm	6.5-97.5mm	8.5-170mm	9.5-380mm
Zoom range w/extender (mm)	13.4-188 w/2x	17-238mm w/2x	16-224mm w/2x	2x	8.5-170mm w/1.2x	20-800/26-1025
Aperture (Wide/Telephoto)	f/1.6; f/2	f/1.6; f/2	f/1.6; f/2	f/1.6; f/2.3	f/1.2; f/1.2	f/1.3; f/2.1
M.O.D. distance	31"	31"	31"	19.5"	0"	0"
M.O.D. area (mm)	41V x 73H	41V x 55H	46V x 61H	35V x 47H	41V x 55H	18V x 24H
Horizontal angle (W/T)	66.5°; 5.25°	55°; 4°	58°; 4.5°	68.5°; 5°	51.5°; 2.75°	46.75°; 1.25°
Extenders or adaptors	...	.45WA; .8WC; 1.66TC	...	...	...	2.1x; 2.7x
Integral extender	Yes	Yes	Yes	Yes	Yes	Yes
Internal focus feature	Yes	No	Yes	No	No	Yes
Diascope feature	No	No	No	Option	Option	Option
CCD optimization	Yes	Yes	Yes	Yes	Yes	Yes
Reader Service No	241	242	243	244	245	246

¹Lens allows camera to produce 16:9 aspect ratio with standard 3:4 aspect ratio CCD ENG/EFP cameras. ²Includes protective UV filter; integral speed control in addition to rocker switch; fluo phosphate glass for color correction. ³High quality production type lens; matte box fixed directly on front of lens. ⁴Widest angle lens available. ⁵0" MOD focus; 5 range extenders 1.2x, 1.4x, 1.6x, 1.8x, 2x; electronic self diagnostic; Tele shot for quick focusing; no ramping of transmission characteristics. ⁶0" MOD focus; electronic self diagnostic; Tele Shot feature for quick focusing.

Manufacturer	Canon♦			Fujinon		
Model	J13x9BIRS-IIA	J15x9.5BIRS	J50xSuper	A15x8EVM ⁷	A16x9ERM ⁸	A36x10.5ERD ⁹
Application	ENG/EFP	ENG/EFP	EFP	ENG/EFP	ENG/EFP	ENG/EFP
Zoom range (mm)	9-117	9.5-143	9.5-475	8-120mm	9-144mm	10.5-378mm
Zoom range w/extender (mm)	18-234	19-286	19-950	16-240 w/x2	18-268 w/x2	21-756 w/x2
Aperture (Wide/Telephoto)	1.6-1.9	1.8-2.1	1.4-2.7	W f/1.7; T f/2.1	W f/1.8; T f/2.8	W f/2; T f/3.4
M.O.D. distance	29.1"	34.6"	24"	30"	36"	84"
M.O.D. area (mm)	i	86.2x64.7	180x135

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Zoom Lens Systems, Cont'd

Manufacturer	Canon ♦			Fujinon		
Model	J13x9BIRS-IIA	J15x9.5BIRS	J50xSuper	A15x8EVM ⁷	A16x9ERM ⁸	A36x10.5ERD ⁹
Horizontal angle (W/T)	52.1°-4.3°	49.7°-3.5°	49.7°-1.1°	52°37'-4°12'	52°7'-3°30'	45°28'-1°20'
Extenders or adaptors	2x	2x	2x	...	...	...
Integral extender	...	...	...	Yes	Yes	Yes
Internal focus feature	...	...	...	Yes	No	Yes
Diascope feature	Option	No	Option	No	No	No
CCD optimization	...	...	...	Yes	Yes	Yes
Reader Service No	247	248	249	220	251	252

⁷Uses Aspheric Technology; V grip design. ⁸Uses Aspheric Technology; widest angle economically price ENG lens. ⁹Uses Aspheric Technology; light weight unit.

Manufacturer	Fujinon		Nikon Corporation		
Model	Ah24x7ESM ¹⁰	Ah66x9ESD ¹¹	S15x8.5II TV-Nikkor	S19x8 TV-Nikkor	S9x5.5 TV-Nikkor
Application	Studio	OB	ENG/EFP	ENG/EFP	ENG/EFP
Zoom range (mm)	7-168mm	9.5-625mm	8.5-127.5mm	8-152mm	5.5-49.5mm
Zoom range w/extender (mm)	14-336 w/x2	19-1250 w/x2	17-255 w/2x	16-304 w/2x	9.4-84.2 w/1.7x
Aperture (Wide/Telephoto)	W f/1.5; T f/2	W f/1.6; T f/3.2	f/1.7; f/2.2	f/1.7; f/2.2	f/1.7; f/1.9
M.O.D. distance	24-in	110-in	0.8m	0.9m	0.3m
M.O.D. area (mm)	H 41; V 31	H 35; V 26	57.5V x 76.4H	67.4V x 89.3H	39.2V x 52.2H
Horizontal angle (W/T)	64°18'-3°00'	49°42'-0°48'	54.7°; 4.0°	57.6°; 3.3°	77.3°; 10.2°
Extenders or adaptors	...	...	2x	2x	1.7x
Integral extender	Yes	Yes	Yes	Yes	Yes
Internal focus feature	No	Yes	No	No	Yes
Diascope feature	Option	Option	...	...	...
CCD optimization	Yes	Yes	Yes	Yes	Yes
Reader Service No	253	254	255	256	257

¹⁰Computer controlled floating lens group reduces coma and field curvature. ¹¹Close focus of 0.7m with exclusive rotary macro feature.

Routing Switchers (Large Matrix)

Manufacturer	AAVS	Alpha Image			Auditronics	BTS
Model	ONYX ¹	A2000 series ²	A232S ²	A264S ²	1900 series IFB ⁴	Venus
Application	Ana.A/V/D (Dig.V)	Digital video	Digital video	Digital video	Analog audio	All applications
Basic crosspoint matrix	16x8	32x16	16x16	16x16	16x8	16x32
Typical system matrix size	48x48	128x128 ³	32x32	64x64	32x16	160x128 ⁵
Component video capability	Yes	D1/D2 PAL/D2 NTSC	D1/D2 PAL/D2 NTSC	D1/D2 PAL/D2 NTSC	...	Yes
HDTV capability	Yes	No	No	No	...	Yes
Multilevel audio control	Yes	No	No	No	No	Yes
Control protocol	RS-232/422/ESBus	RS-232; also can be interfaced with numerous switcher and editing control systems.			Manual	...
Audio response	±0.25dB to 20kHz				±0.5dB to 20kHz	±0.01dB 20-20k
Audio S/N ratio	<-96dB Br unwt +12				91dB	-85dB (113dB range)
Audio distortion	0.05% 20-20k +12dBm	...	...	...	0.01%	0.01%
Video response	±0.8dB to 20MHz	...	...	...	...	±0.1dB to 10MHz
Video S/N ratio	...	...	...	...	...	>70dB at 10MHz
Differential phase/gain	<0.5°/0.5%	...	...	...	...	0.1°; 0.1%
Chroma/luma delay	10ns	...	...	...	...	...
Video crosstalk	56dB 4.43MHz	...	...	...	...	-60dB 4.43MHz
Reader Service No	261	262	263	264	265	266

¹Modular design provides wide flexibility to accommodate specific needs of an installation, to signals to be processed and provides required security; comprehensive range of control panels and devices available. ²Permits mix of D-1, D-2 PAL, D-2 NTSC in one chassis; full user configuration of crosspoints, SRC/DST mapping & video standards; integrates into systems from GVG, Pro-Bej, Utah Scientific; fully synchronous crosspoint switching permits use with switchers such as Alpha 500, GVG Kadenza. ³Expandable to 256x256 and greater. ⁴Contains IFB as standard feature; expandable input, output capabilities; typically used for IFB and mix-minus to remote announcers or in teleconferencing. ⁵Systems to 160x256 or 352x128 possible.

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The Odetics TCS90 - The Only Cart Machine Designed with Your Future in Mind

With the TCS90, Odetics Broadcast gives new meaning to the word versatility. Featuring a unique ability to handle multiple cassette sizes and virtually all available broadcast formats, the TCS90 provides incomparable flexibility plus an open window to the future.

Field Changes Made Simple

Don't waste time second-guessing future tape deck format changes. The TCS90's simple straight-forward design makes field upgrades easy and affordable. You can take advantage of technology upgrades as they become available.

Mix cassette sizes to match your needs

Odetics put its award-winning electromechanical expertise to work and developed a system that makes handling dual-sized cassettes simple and foolproof. With a capacity of 150 carts, there is enough on-line access for a full day of programming plus twelve to twenty-four hours of spots and

promos, depending upon your format. And, with Odetics Multicut Software, the TCS90 can store several hundred spots on-line.

The Decision is Yours

Full compatibility with any news or station automation system lets you make choices that make sense for your station's needs. Built-in redundant hardware and software features make choosing Odetics a decision you can be sure of.

Buy for the Long-Term

Because Odetics products are fully compatible with each other, system obsolescence is never a concern. The TCS90 includes the same advanced features as the Odetics TCS2000 large library Cart Machine and all TCS2000 software and hardware options and accessories. It's no wonder Odetics Broadcast is the world-leader in large library automation systems.

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Broadcast**



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Circle (55) on Reply Card
World Radio History

Routing switchers, Cont'd

Manufacturer	Datatek					Di-Tech Inc.
Model	D-2400	D-2500 series	D-2530/D-2540 ⁶	D-2535 ⁷	D-2700DVS/DAS ⁸	5880 ⁹
Application	Analog A/V/D	Analog A/V/D	Digital A/V	Analog video	Digital A/V/D	Analog A/V
Basic crosspoint matrix	20x10	20x10	20x10	20x10	16x16	...
Typical system matrix size	160x160	20x20	20x20	20x10	256x256	128x160
Component video capability	Yes	Yes	...	Yes	...	Yes
HDTV capability	Yes	Yes	...	Yes	...	Yes
Multilevel audio control	Yes	Yes	...	Yes	...	Yes
Control protocol	RS-232/-422/serial	RS-232/-422/serial	RS-232/-422/serial	RS-232/-422/serial	RS-232/-422/serial	RS-232/-422
Audio response	0.05dB to 20kHz	0.05dB to 20kHz	...	...	...	+0.1dB 20kHz
Audio S/N ratio	111dB	114dB	AES/EBU sampling	...	AES/EBU sampling	85dB
Audio distortion	0.005%	0.005%	from 25kHz to	...	from 25kHz to	0.08%
Video response	-3dB to 40MHz	-3dB to 40MHz	55kHz; digital	-3dB to 130MHz	55kHz; digital	-3dB 50MHz
Video S/N ratio	75dB	70dB	video to 400Mbps/s	70dB @ 50MHz	video to 400Mbps/s	>70dBV
Differential phase/gain	0.1°; 0.1%	0.1°; 0.1%	for D1	D2	HDTV/	0.05°; 0.05%
Chroma/luma delay	±0.75ns	±0.75ns	...	±0.75ns	...	21ns
Video crosstalk	60dB	60dB	...	40dB 40MHz	...	60dB
Reader Service No	267	268	269	270	271	272

⁶Digital video provides reclocking & equalization; digital audio provides automatic source re-blocking and phase alignment; member of D-2500 series analog systems. ⁷Very wide bandwidth for computer graphic applications. ⁸Digital video provides reclocking & equalization; digital audio provides automatic source re-blocking and phase alignment. ⁹Compact design; 128x160 stereo audio follow video matrix requires only 40 rack units of space.

Manufacturer	DYNAIR Electronics					
Model	Digital X ¹⁰	DYNA MITE HI-Res/RGB	DYNA MITE ¹²	DYNASTY 100 ¹³	DYNASTY 70 ¹⁴	DYNASTY 70 ¹⁵
Application	Digital A/V/D	Analog A/V ¹¹	Analog A/V	Analog video	Analog V/A	Analog video
Basic crosspoint matrix	16x8	10x10	10x10	10x10	10x10	36x36
Typical system matrix size	16x8	30x10	30x10	50x100	100x30	36x36
Component video capability	[Serial D1	Yes	Yes	Yes	Yes	Yes
HDTV capability	[Bit-compressed	Yes	Yes	Yes	Yes	Yes
Multilevel audio control	[Serial HDTV video	Yes	Yes	No	Yes	No
Control protocol	Local control	RS-232	RS-232	RS-232/-422	RS-232/-422	RS-232/-422/Ethernet
Audio response	[405Mbit/s data	±0.2dB 20kHz	±0.2dB 20kHz	...	±0.1dB 20kHz	...
Audio S/N ratio	[rate.	75dB	75dB	...	-75dB	...
Audio distortion	[Serial D2	0.1%	0.1%	...	0.1%	...
Video response	[Serial EDTV	±1.5dB 70MHz	±3dB 40MHz	±1.5dB 100MHz	-3dB 70MHz	-3dB 120MHz
Video S/N ratio	[with 16:9 aspect	55dB	80dB	65dB	55dB	80dB
Differential phase/gain	[Auto EQ to 300M	0.2°; 0.15%	0.05°; 0.05%	0.15°; 0.15%	0.2°; 0.15%	0.15°; 0.15%
Chroma/luma delay	[8281 coax	5ns	5ns	5ns	5ns	...
Video crosstalk	[Data regeneration	55dB	60dB	55dB	55dB	62dB
Reader Service No	273	274	275	276	277	278

¹⁰Fiber I/O option; 2RU frame size; D1, D2, AES digital audio. ¹¹Local and computer controlled; alphanumeric or numeric control; compact 2RU frame. ¹²Audio and video in one 2RU frame; standard local control facility; upgrades to 70MHz with simple module change. ¹³Ability to handle 1280x1024 RGB signals; plug-in modules for coax or fiber input and output; signal tip reference, dc restoration or dc-coupled. ¹⁴Ability to handle 1280x1024 RGB signals; 8-level control; signal tip reference clamp or dc-coupled; VDT or PC master control. ¹⁵Requires 3RU; high density with 432 video crosspoints per RU; wide bandwidth; control has actual switch closure and switch status verification from the crosspoint.

Manufacturer	DYNAIR Electronics	Grass Valley Group		IRIS Technologies	J.N.S. Electronics	Leitch Inc.
Model	DYNASTY ¹⁶	Horizon series ¹⁷	Series 7000 ¹⁹	Video Commander ²⁰	Series 9000	HEDCO 16x ^{plus22}
Application	Analog A/V/D	Analog A/V/D	Any application	Analog A/V	Analog audio	Analog A/V
Basic crosspoint matrix	10x10	8x16	16x32	16x16	15x1	16x1
Typical system matrix size	100x100	64x64	128x128	16x16 to 64x64 ²¹	15x8	to 64x1
Component video capability	Yes	Yes	Yes	Yes	No	Yes
HDTV capability	Yes	No	Yes	No	No	Yes
Multilevel audio control	Yes	Yes	Yes	Yes	Yes	Yes

If a diamond follows a company name or product, the company was not able to provide current information. In such cases, we cannot assure that the specifications are still correct or that the product is still available. For other products, the information in these specification comparison tables was provided by the manufacturers at our request. The models presented here do not necessarily represent all of the products available from that manufacturer. To learn more about these products, use the Reader Service number below each model. For possible models not shown here, check the manufacturer address directory or "yellow pages" for the phone or fax number.

Routing switchers, Cont'd

Manufacturer	DYNAIR Electronics	Grass Valley Group		IRIS Technologies	J.N.S. Electronics	Leitch Inc.
Model	DYNASTY¹⁶	Horizon series¹⁷	Series 7000¹⁹	Video Commander²⁰	Series 9000	HEDCO 16X^{plus22}
Control protocol	RS-232/-422	RS-232/-422 ¹⁸	RS-232/-422 ¹⁸	RS-232, 422, ESBUS, Ethernet	RS-232, -422, Ethernet	RS-232(-422 option)
Audio response	±0.1dB 20kHz	±0.1dB 20kHz	±0.1dB 20kHz	-0.1dB to 20kHz	0.2dB to 20kHz	-3dB to 100kHz
Audio S/N ratio	99dB	>100dB	109dB	80dB	>95dB	88dB
Audio distortion	0.1%	<0.5%	0.02%	...	0.002%	<0.025%
Video response	±3dB 40MHz	-0.5dB 8MHz	±0.5dB 30MHz	-0.2dB to 5MHz	...	-3dB to 100MHz
Video S/N ratio	80dB	>75dB	>75dB	75dB	...	>75dB
Differential phase/gain	0.05'; 0.05%	0.1'; 0.1%	0.1'; 0.1%	1.2' / ...	...	0.1' / 0.1%
Chroma/luma delay	5ns	...	...	...	...	<10ns
Video crosstalk	60dB	-60dB	-60dB	-53dB	...	75dB
Reader Service No	279	280	281	282	283	284

¹⁶8-level control; signal tip reference clamp or dc-coupled; VDT or PC master control; X-Y and salvo switching; source and destination status; system configuration; source restriction and destination locks. ¹⁷Expandable to 128x128. ¹⁸Proprietary coax bus. ¹⁹Expandable to 1024x1024; accommodates serial digital video and audio. ²⁰PC-based system, including machine control; TouchScreen, light pen or mouse interface; controls third party routers, including BTS, GVG, Utah Scientific, Datatek, Dynair and companion control panels; Windows-based software. ²¹PX1600 configurations include matrices of 32x32, 64x64, 32x64 and 64x32. ²²All modules can be paralleled to provide multi-level or multi-channel operations; expansion modules allow 16x1 to combine for 32x1 in 1RU or 64x1 in 2RU; secondary switching allows further expansion to 254x1.

Manufacturer	Leitch Inc.			NVISION	Panasonic	PESA Switching Systems
Model	HEDCO 8X^{plus 23}	HEDCO AES/EBU²⁴	HEDCO X^{plus 25}	NV3512/3128/3064²⁶	AS-D590²⁷	RM 4000A (RM 4000V)
Application	Analog A/V/pulse	Analog audio	Analog video	Digital audio/data	Ser. Dig. A/V/D	Analog A/V
Basic crosspoint matrix	8x8 or dual 4x4	16x1 and 8x8	16x16 or 15x8 2-out	8x32	32x32	48x48 st (48x40)
Typical system matrix size	8x8	16x1 and 8x8	16x16	512x512	32x32	48x48 (48x40)
Component video capability	Yes	Nos	Yes	...	No	No (Yes)
HDTV capability	Yes	Nos	Yes	Yes	No	No (Yes)
Multilevel audio control	Yes	Yes3	...	Yes	4-channel	Yes (No)
Control protocol	RS-232(-422 option)	RS-232(-422 option)	RS-232(-422 option)	RS-23/-422/ESB/custm	RS-232; -422	RS-232/-422
Audio response	±0.25dB to 20kHz	...	...	±0.2dB 20-20k	...	<±0.1dB to 20kHz
Audio S/N ratio	88dB	...	...	100dB	...	>90dB A wtd
Audio distortion	<0.025%	...	...	0.05%	...	<0.1%
Video response	-3dB to 100MHz	...	...	...	...	1.5/-3dB to 100MHz
Video S/N ratio	>6dB	...	...	...	...	81dB
Differential phase/gain	0.1' / 0.1%	...	...	...	...	0.1' / 0.12%
Chroma/luma delay	<10ns	...	...	...	...	<10ns
Video crosstalk	70dB	...	...	...	...	-62dB
Reader Service No	285	286	287	288	289	290

²³All modules can be paralleled to provide multi-level or multi-channel operations; 8 inputs and outputs can be configured as a single 8x8 matrix or two 4x4 sets; audio module is dual 8x8 or quad 4x4. ²⁴Serial routers; modules operate in parallel for multi-level or multi-channel; used as direct replacements for, or additional levels, to analog audio routers. ²⁵Video serial routers; modules may be paralleled for multi-level or multi-channel operation; may be used as direct replacements for, or additional levels, to analog video routers. ²⁶Very low power consumption; synchronous AES/EBU routing; processed time code routing; dynamic data port configurations. ²⁷Low operating power requirements; compatible communications protocol; X-Y and dedicated controllers available.

Manufacturer	PESA Switching Systems				PKE Int'l	Pro-Bel
Model	RM 5000A/RM 5000V	RM2416A/RM2416V	SDA 5000 (SD 5000)	SDA 5000 (SD 5000)	Smart Switchers	HD series²⁸
Application	Analog audio/video	Analog A/V	Digital A/V	Digital A/V	Analog audio	Ana AV/Dig AV/D
Basic crosspoint matrix	48x96 w/st. audio	24x16 w/st. audio	64x64	64x64	10x10	16x16
Typical system matrix size	48x96	24x16	64x64	64x64	per system needs	256x256
Component video capability	Yes	Yes	Yes	Yes	No	Yes
HDTV capability	Yes	Yes	Yes	Yes	No	Yes
Multilevel audio control	Yes	Yes	Yes	Yes	Yes	Yes
Control protocol	RS-232, -422	RS-232, -422	RS-232, -422	RS-232, -422	Ethernet, ESBUS	RS-232/-422, ESBUS, ethernet, FO

The models presented here do not necessarily represent all of the products available from that manufacturer. To learn more about these products, use the Reader Service number below each model. Color highlighting of a company name indicates an advertiser in this issue. Check the ad index for additional information for that company. For other models not shown here, check the manufacturer address directory or "yellow pages" for the phone or fax number.

Routing switchers, Cont'd

Manufacturer	PESA Switching Systems				PKE Int'l	Pro-Bel
	RM 5000A/RM 5000V	RM2416A/RM2416V	SDA 5000 (SD 5000)	SDA 5000 (SD 5000)		
Model					Smart Switchers	HD series ²⁸
Audio response	<±0.1dB to 20kHz	<±0.1dB to 20kHz	to 20Mb/s	to 20Mb/s	...	±0.25dB 20kHz
Audio S/N ratio	>90dB A-wtd	>90dB A wtd	<0.25ns jitter	<0.25ns jitter	...	88dB
Audio distortion	<0.1% @28dBm	<0.05%	...	...	...	0.1%
Video response	1.5/-3dB 100MHz	-3dB to 100MHz	to 400Mb/s	to 400Mb/s	...	±1dB 30MHz
Video S/N ratio	81dB	73dB	...	...	...	80dB
Differential phase/gain	0.1°/0.12%	0.1°/0.1%	...	...	...	0.15°/-15%
Chroma/luma delay	<10ns	<10ns	...	...	...	<5ns
Video crosstalk	-62dB	-62dB	±100ps jitter	±100ps jitter	...	-66dB
Reader Service No	291	292	293	294	295	296

²⁸Compatible series of matrices for analog audio/video, AES/EBU audio, serial digital video to 360Mbps, RS-422, 4-wire comm; OS-2 based control supports 20 switchers of 16 levels to 512x512; supports 1024 control panels or under-monitor displays.

Manufacturer	Pro-Bel Limited		Ramko	Sierra Video Systems		
	HD series ²⁹	HD series ³⁰		RS-1616 ³¹	1616D ³²	1616VAA ³³	2010VAA^{34}
Model						
Application	Digital A/V	Analog A/V/D	Analog audio/data	Digital video	Analog A/V	Analog A/V
Basic crosspoint matrix	32x16	16x16 to 32x16	16x2	16x16	16x16	20x10
Typical system matrix size	512x512	512x512	16x16 to 128x64	16x16	16x16	20x20
Component video capability	...	Yes ³	No	Serial D1/D2/D3/D5	No	Option
HDTV capability	...	Yes ³	No	To 300Mbit/s	No	No
Multilevel audio control	...	Yes ³	...	Option	Yes	Yes
Control protocol	RS-232/422	RS-232/422	RS-232; party-line	RS-232/422; SVS prop	RS-232/422; SVS prop	RS-232/422; SVS prop
Audio response	...	<±0.25dB to 20kHz	03dB to 300kHz	...	±0.1dB 20kHz	±0.1dB 20kHz
Audio S/N ratio	...	>88dB	90dB	...	110dB ref +24dBm	110dB ref +24dBm
Audio distortion	...	<0.1%	0.008%	...	<0.05%	<0.05%
Video response	...	1/-2dB to 30MHz	...	300Mbit/s	0/-3dB 5-40MHz	0/-3dB 5-40MHz
Video S/N ratio	...	>80dB	...	...	80dB to 50MHz	80dB to 50MHz
Differential phase/gain	...	0.1°/0.15%	...	...	0.1°/0.1%	0.1°/0.1%
Chroma/luma delay	...	<5ns	...	...	1ns	1ns
Video crosstalk	...	<-60dB	...	<500ps jitter	60dB	60dB
Reader Service No	297	298	299	300	301	302

²⁹Serial digital video rates 140-270Mbps; cable EQ adaptive to 300m; clock regeneration on inputs standard, on outputs optional; AES/EBU digital audio rates 32-54kHz; cable EQ optimized for 200m; clock regeneration on inputs; bal/unbal AES I/O; high-density architecture; a range of frame sizes. ³⁰Options for video include input and output cable EQ; back porch clamp; output monitor bus; range of frame sizes; options for audio include transformer or electronic balanced inputs and outputs; output monitor bus. ³¹+28dBm input/output standard and mixing or summing versions available; ICS-1 intelligent control system. ³²Auto input EQ; 3-port integral serial control for host, terminal, 64 control panels. ³³Integral 3-port serial control system for host, terminal, control panels with RS-485; 8-levels of switching for TC, audio, video, data; 3232V offers similar characteristics for 32x8 basic matrix and 32x16 or 32x32 system. ³⁴Model 2020VAA 20x20.

Manufacturer	Sierra Video Systems		Studer Digitec		360 Systems	Utah Scientific
	88CP ³⁵	88VS ³⁶	AS-M 6000 ³⁷	DS-M 6000 ³⁸		
Model					AM-16/B ³⁹	AVS-2 ⁴⁰
Application	Analog video	Analog A/V	Analog Audio	Digital Audio	Analog audio	Analog A/V
Basic crosspoint matrix	8x8	8x8	32x16	32x16	16x16	10x10
Typical system matrix size	8x8	8x8	512x512 4-level	512x512 4-level	16x16	60x60-320x320
Component video capability	Yes	No	...	...	...	Yes
HDTV capability	Yes	No	...	...	...	Yes
Multilevel audio control	Yes	Stereo AFV	Yes	Yes	No	Yes
Control protocol	RS-232/422	RS-232/422	RS-232;ESbus;LAN	RS-232;ESbus;LAN	RS-485	RS-232/422
Audio response	...	±0.1dB 20kHz	0.2dB 22kHz	NA	±0dB to 50kHz	±0.05dB 20kHz
Audio S/N ratio	...	110dB ref +24dBm	107dB	NA	105dB	85dB
Audio distortion	...	<0.05%	0.03%	NA	0.008%	0.05%
Video response	-1dB 100MHz	0/-3dB 5-40MHz	...	...	...	0.5dB 30MHz
Video S/N ratio	...	80dB to 50MHz	...	...	...	75dB
Differential phase/gain	...	0.1°/0.1%	...	...	...	0.05°/0.05%
Chroma/luma delay	...	1ns	...	...	...	±5ns
Video crosstalk	...	60dB	...	...	...	60dB
Reader Service No	303	304	305	306	307	308

³⁵High performance wideband router for HR RGB workstation image routing; 1280x1024x80Hz RGBS video shows no degradation at 10 passes through router. ³⁶Composite video and stereo audio with serial interface; single RU package. ³⁷Transformer balanced I/O; high capacity, 64x64 matrix in 6RU frame; CS control system with traditional and innovative functions; intuitive interface. ³⁸asynchronous crosspoint architecture; intrinsic transparency to all AES-EBU data; wide switching range; sampling freq 28-54kHz; high density; 64x64 in 6U frame; Input EQ, clock regeneration, click-free switching; output monitor; CS control system with traditional and innovative functions; intuitive interface. ³⁹Memory for 100 programmable settings; AM16/E expander module enables 16x16x4 matrix. ⁴⁰Protocol includes Utah Party Line; video response 0.05dB 5MHz; -3dB at 45MHz; matrix can be expanded beyond 320x320 if needed.

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- 6243 Ten Output High Level Audio Distribution Amplifier
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- 5241 Ten Output AES/EBU Digital Distribution Amplifier for 48 kHz
- 5242 Ten Output AES/EBU Digital Distribution Amplifier for 44.1 kHz

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- 5122 Stereo Analog Audio to AES/EBU Digital Converter
- 5132 AES/EBU Digital to Stereo Analog Audio Converter
- 5023 AES/EBU 44.1/48kHz Digital Sample Rate Converter

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- 5138 8 x 1 Serial Digital Video Switcher
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ANALOG AMPLIFIERS

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- 6252 Two Output Video Delay Amplifier
- 6254 Two Output Remote Gain Video Distribution Amplifier

DIGITAL AMPLIFIERS

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- 5258 Six Output Telecom 140Mbit Digital Distribution Amplifier

SERIALIZERS

DIGITAL SERIALIZERS

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- 3629 Orange Box Self Contained Component Digital Video Serializer

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Circle (60) on Reply Card

Routing switchers, Cont'd

Manufacturer	Utah Scientific	Vistek Electronics Ltd.		XN Technologies		
Model	DVS-2 ⁴¹	V2100 ⁴²	V2200 (V2300)	AutoPatch 1YDM ⁴³	AutoPatch 4XDM ⁴⁵	AutoPatch 4YDM ⁴⁵
Application	Ser.Dig.Video	Digital video	Analog V/(A)	Analog A/V/D	Analog A/V/D	Analog A/V/D
Basic crosspoint matrix	32x32	32x16	16x16 (32x16)	4x4	4x4	4x4
Typical system matrix size	32x32	128x128	64x64 (96x64)	8x8	16x16	32x32
Component video capability	Serial D1	...	Yes	Yes	Yes	Yes
HDTV capability	Yes	Yes	Yes	Yes	No	Yes
Multilevel audio control	Embedded audio	...	(Yes)	Yes	Yes	Yes
Control protocol	RS-232/422	RS-232/-422/Ethernet	RS-232/-422/Ethernet	RS-232/-422	RS-232/-422	RS-232/-422
Audio response	NA	...	±0.25dB to 20kHz	±1dB to 100kHz	5Hz-50kHz	±1dB to 150kHz
Audio S/N ratio	NA	...	>90dB	120dB	>100dB	>120dB
Audio distortion	NA	...	<0.1%	<0.006%	<0.03%	<0.006%
Video response	NA	...	+0.3dB to 30MHz	±3dB to 40MHz ⁴⁴	to 12MHz	±3dB to 40MHz ⁴⁷
Video S/N ratio	NA	...	73dB	>78dB equiv.	...	>78dB (>96dB)
Differential phase/gain	NA	...	<0.1'<0.1%	<0.1'<0.05%	<0.1'<0.1%	<0.1'<0.05%
Chroma/luma delay	NA	...	<±5ns	<2ns	±10ns	<2ns
Video crosstalk	NA	...	-60dB	<-75dB	<-62dB	<-75dB (<-70)
Reader Service No	309	310	311	312	313	314

⁴¹Protocol includes Utah Party Line; operation to 400Mbps/s; auto cable EQ to 1000 feet; permits mixture of NTSC, PAL, component serial digital formats. ⁴²Unique looping inputs and expansion outputs allow use of multiple matrix frames to build routers much larger than 64x64 limit of single frame. ⁴³Flexible architecture; each 2RU enclosure can contain any combination of four of 16 matrix boards (4x4, 4x8, 8x4, 8,8) for audio and video from 40MHz to 130MHz; boards can be assigned to four matrix levels; multiple enclosures link for control. ⁴⁴Super Hi-Res version offers video response to 130MHz with >75dB S/N and -90dB crosstalk at 10MHz. ⁴⁵Economical expansion increments of four in, four out with three levels; simple controls. ⁴⁶Increments of four in or out, instead of common 8, 10, 16, means fewer unused crosspoints and lower cost; matrix configurations may vary for different levels (4x20 mono, 24x8 composite video; 16x4 stereo; 12x16 2-component video) all controlled as single 3-enclosure matrix. ⁴⁷Super Hi-Res model passes video to 120MHz in x16 config. and 100MHz in x32 system.

Video Monitors

Manufacturer	ASACA/ShibaSoku						Barco♦	
Model	CM201/141 ¹	CM202/142 ²	CM205/206	CM22/CM65	CM321/CM361	CP1207	AVM series	CVS series
Application/Grade	Grade I	Grade I	Grade I	Grade I, HDTV	Grade I, HDTV	Grade I, HDTV	Grade 1	Grade 1
CRT diagonal (in)	20" (14")	20" (14")	20"	20"; 26"	32"; 36"	12"	10-28"	14-20
CRT type	In-line dot	In-line dot	In-line dot	In-line dot ^{asa4}	...	In-line dot	In-line slot	In-line dot
Dot or strip pitch (mm)	0.4 (0.31)	0.4 (0.31)	0.28	0.31; 0.37	0.34; 0.5	0.28	0.31	0.31
Resolution (TVL)	700 lines	700 lines	900 lines	1125 lines	1000 lines	700 lines	>500 on 15-in.	900 TVL
Luminance bandwidth (MHz)	7MHz	8MHz	8MHz	30MHz	30MHz	50MHz	6MHz	6MHz
Microprocessor/auto-setup	Option	Option	Option	No	No	No	Option	Yes; setup opt.
Multi-scan unit	No	Yes	Yes	Yes	Yes	No	No	No
Transmission standards	NTSC; PAL or SECAM	Multistandard NPS	NPS CM205 ³	1125/60 16:9 ⁴	...	1125/60 16:9	NTSC	N/P/S
Standards auto sensing	No	...	No	Yes	Yes	No	No	Per input cards
Over/Underscan	Underscan	Underscan	Underscan	Underscan	Underscan	Underscan	Over/Under	Over/Under
Demodulation axes	I/O; R-Y/B-Y	I/O; R-Y/B-Y	I/O; R-Y/B-Y	...	...	...	R-Y/B-Y	R-Y/B-Y
X-Y display output	No	No	No	No	No	No	...	No
Composite inputs	3 inputs	3 inputs	3 inputs	...	...	...	3	2
RGB inputs	1 set	1 set	1 set	2 set	2 set; RGB out	1 set	Yes	Yes
Y/CB inputs	1 set	1 set	1 set	2 set	2 set	1 set	Yes	Option
Y/C or S-VHS inputs	1 set	1 set	1 set	...	...	...	No	No
Decoding filters	Notch and comb	Comb	Notch, CM205 ³	...	...	...	Comb	Comb & notch
Reader Service No	315	316	317	318	319	320	321	322

¹Auto-set color monitor series. ²Auto-set color monitor series. ³CM206 is a multistandard unit; CM205 & CM206 have comb filters. ⁴CM65 uses delta-dot CRT; also operates on 1050 interlaced 16:9 or 525 non-interlaced 4:3.

Manufacturer	Barco♦	Dotronix♦	Electronic Visuals			Ikegami	
Model	HDM2051/-81IH	DSV series	EV 1629	EV 6351B	EV 6537	17 series	18 series
Application/Grade	HDTV	Videowall	Grade 2	Grade 1	...	Grade 2	Grade 1
CRT diagonal (in)	20-32	20-27	28"	20"	14"	14"; 20"	14"; 20"
CRT type	In-line dot	In-line	In-line strip ⁵	In-line dot	In-line stripe	In-line stripe	In-line dot
Dot or strip pitch (mm)	0.26-0.65	0.68-0.76	0.69	0.43	0.42	0.41; 0.55	0.31; 0.43

If a diamond follows a company name or product, the company was not able to provide current information. In such cases, we cannot assure that the specifications are still correct or that the product is still available. For other products, the information in these specification comparison tables was provided by the manufacturers at our request. The models presented here do not necessarily represent all of the products available from that manufacturer. To learn more about these products, use the Reader Service number below each model. For other models not shown here, check the manufacturer address directory or "yellow pages" for the phone or fax number.

Video monitors, Cont'd

Manufacturer	Barco♦	Dotronix♦	Electronic Visuals			Ikegami	
Model	HDM2051-81H	DSV series	EV 1629	EV 6351B	EV 6537	17 series	18 series
Resolution (TVL)	...	>500	to 8MHz	to 7MHz	to 5MHz	500 lines	600 lines
Luminance bandwidth (MHz)	30MHz/channel	10MHz	8MHz	7MHz	5MHz	to 7MHz	to 8MHz
Microprocessor/auto-setup	Yes	No	No	No	No	No	Yes
Multi-scan unit	16:9 only	No	Option	No	No	No	No
Transmission standards	All HDTV formats	NTSC	PAL ⁵	PAL ⁶	PAL ⁷	NTSC and PAL	NTSC
Standards auto sensing	No	No	No	No	No	Yes	No
Over/Underscan	Over/Under	...	Also 4:3/16:9	Under/over	Under/overs	Under/over	Under/over
Demodulation axes	...	R-Y/B-Y	R-Y/B-Y; U/V	R-Y/B-Y	R-Y/B-Y	R-Y/B-Y	R-Y/B-Y
X-Y display output	No	No	...	No	...	No	No
Composite inputs	2 HDTV	1	2	2	2	2	2
RGB inputs	Yes	Yes	1	1	1	1 set	1 set
YCrCb inputs	Yes	No	2	2	1	1 set	1 set
Y/C or S-VHS inputs	No	No	...	...	1	1 set	1 set
Decoding filters	...	...	Notch	Notch	Notch	Notch and comb	Notch and comb
Reader Service No	323	324	325	326	327	328	329

⁵Wide-screen 16:9 CRT switchable to 4:3; multistandard operation with component inputs; optional dual serial digital D1 inputs. ⁶Multistandard operation with component inputs. ⁷Low-cost general purpose monitor; includes multistandard operation with component inputs.

Manufacturer	Ikegami Electronics			JVC Professional			Mitsubishi♦	Panasonic
Model	20 series	TM20-30RH	19 series	TM-1400SV	TM-270SV	TM-550V	SMR02601R	AT-H1905D ⁹
Application/Grade	Grade 1	Grade 1	Grade 1	Grade 1	...	Grade 1	Data; Mon/Rcvr	Utility
CRT diagonal (in)	14"; 20"	20"	10"; 14"; 20"	14"	27"	5"	26	19" (19"; 13")
CRT type	In-line dot	In-line dot	In-line dot	In-line stripe	In-line strip; FS	...	In-line dot	In-line dot
Dot or strip pitch (mm)	0.31; 0.43	0.28	0.28; 0.31; 0.43	0.499	...	0.42	0.28-0.43	0.28 (0.43; 0.31)
Resolution (TVL)	700 lines	900 lines	700 lines	450 lines	>700 lines	>250 lines	700	900+(600; 600)
Luminance bandwidth (MHz)	to 10MHz	to 13MHz	to 10MHz	...	...	...	to 10MHz	to -8MHz(7MHz)
Microprocessor/auto-setup	Yes	Yes	No	No	No	No	No	Option
Multi-scan unit	No	No	No	No	No	No	No	No
Transmission standards	NTSC ⁸	Multistandard	NTSC	NTSC	NTSC	NTSC; PAL	NTSC	NTSC
Standards auto sensing	Yes	Yes	No	...	...	Yes	No	No
Over/Underscan	Under/over	Under/over	Under/over	Underscan	...	Underscan	Over/Under	Underscan
Demodulation axes	R-Y/B-Y	R-Y/B-Y	R-Y/B-Y	...	...	...	R-Y/B-Y	I/Q
X-Y display output	Option	Option	Yes	...	...	...	No	...
Composite inputs	3	3	3	Yes	1	2	3	3
RGB inputs	1 set	1 set	1 set	No	4	No	Yes	1
YCrCb inputs	1 set	1 set	1 set	No	No	No	No	1
Y/C or S-VHS inputs	Optwith D1; D2	Opt with D1; D2	...	Yes	Yes	No	Yes	0 (1; 1)
Decoding filters	Notch and comb	Notch and comb	Notch and comb	...	...	...	Comb & notch	Dig.comb (comb)
Reader Service No	330	331	332	333	334	335	336	337

⁸NTSC standard; optional PAL and SECAM decoders with automatic sensing. ⁹Parenthetic entries for AT-H1900, AT-H1300 respectively. H1905D features digital signal processing for composite analog and digital signals; 5-line digital comb filter reduces dot crawl; serial composite, component, parallel composite, component digital interfaces. Optional PAL decoder; auto set-up kit.

Manufacturer	Panasonic Broadcast & TV Systems					PESA♦	Sony	
Model	BT-D1920Y ¹⁰	BT-H1350Y ¹¹	BT-S900Y ¹²	CT-2010Y ser. ¹³	FT-2700 (DT-2700MS)	BM-4400 ser.	BVM-1311 (-1316) ¹⁴	BVM-1912
Application/Grade	Utility	...	Utility	Utility	Utility	Video	Video/data	Grade 1
CRT diagonal (in)	19"	13"	9"(10"; 13")	20" (13"; 10")	27"	14"; 19"	13" [19"]	19"
CRT type	In-line stripe	...	In-line stripe	In-line stripe	...; In-line strip	Dot mask	Trinitron	Trinitron
Dot or strip pitch (mm)	0.55mm	0.31mm	0.47mm (.49)	...	...	0.31	0.25 (0.3/0.4)	0.30
Resolution (TVL)	550 TVL (350)	750 TVL (420)	300 (300;560+)	450 (420;300)TVL	700 (600) TVL	>800	700(600); 900	900
Luminance bandwidth (MHz)	to 8MHz (4MHz)	100Hz-8MHz	... (100Hz-8MHz)	...	...	6MHz	8MHz (6MHz)	10MHz
Microprocessor/auto-setup	No	No	No	No	No	Option	Option	Standard
Multi-scan unit	No	No	No	No	No (Yes)	...	No	No
Transmission standards	NTSC	N/P/S	NTSC	NTSC	Multi (NTSC)	NTSC; PAL	N/P/S w/ decoder	N/P/S w/ decoder
Standards auto sensing	...	Yes	...	No	No	No	No	No
Over/Underscan	Underscan	Underscan	Underscan	...	...	Over/Under	Over/Under	Over/Under
Demodulation axes	I/Q	I/Q	I/Q	I/Q	I/Q	U-Y	R-Y/B-Y	R-Y/B-Y
X-Y display output	Yes	...	...	No	...	No	Yes	Yes
Composite inputs	2 (2)	2 (2)	2 (1; 2)	2 (2;1)	2 (1)(1)	2	2	2
RGB inputs	1 (0)	1	0 (0; 1)	...	1 (3)	Yes	Yes	Yes

Video monitors, Cont'd

Manufacturer	Panasonic Broadcast & TV Systems					PESA♦	Sony	
Model	BT-D1920Y ¹⁰	BT-H1350Y ¹¹	BT-S900Y ¹²	CT-2010Y ser. ¹³	FT-2700 (DT-2700MS)	BM-4400 ser.	BVM-1311 (-1316) ¹⁴	BVM-1912
Y/C/B inputs		1	0	...	...	Yes	Yes	Yes
Y/C or S-VHS inputs	1 (0)	1 (1)	1 (0; 1)	1 (1;0)	1	Yes	No	4:2:2 option
Decoding filters	Comb	Comb	Comb filter	Comb filter	Comb (...)	Notch & comb	Notch & comb	Comb filter
Reader Service No	338	339	340	341	342	343	344	345

¹⁰ Parenthetic entries for BT-S1900N. ¹¹ Parenthetic entries include BT-S13 60Y with in-line strip CRT, with autosensing of NTSC-3.58 or NTSC-4.43; BT-S1370Y is multi-standard. ¹² Parenthetic entries for BT-S1000N and BT-M1310Y respectively. ¹³ CT-1331Y 13", CT-1030M 10". ¹⁴ Values in [square brackets] for BVM, -1911/-1916 19" unit; BKM-2056 adapter, BKM-2053 needed for auto setup.

Manufacturer	Sony			Videotek Inc.	Vistek Electronics	
Model	BVM-2811	HDM-1730 ¹⁵	HDM-2830 ¹⁶	RM-13/VM-13 ¹⁷	GM7251 (GM7237)	GM7551 (GM7537)
Application/Grade	Video/data	Grade I	Grade I	Grade II	Grade 2	Grade 1
CRT diagonal (in)	28"	28"	28"	13"	20" (14")	20" (14")
Dot or strip pitch (mm)	0.35	0.35	0.35	...	0.4mm (0.39)	0.4mm (0.31)
Resolution (TVL)	750(16:9)/1000(4:3)	1000 TVL	1000 TVL	See footnote(vtek1)	>700 lines	>700 lines(>680)
Luminance bandwidth (MHz)	10MHz	30MHz	30MHz	2dB to 3.2MHz	5.5MHz	6MHz
Microprocessor/auto-setup	Option	No	No	No	Yes	Yes
Multi-scan unit	No	No	No	No	No	No
Transmission standards	N/P/S Per decoder	SMPTE 240M	SMPTE 240M	NTSC	Multistandard	Multistandard
Standards auto sensing	No	No	No	No	Yes	Yes
Over/Underscan	Over/Underscan	Under/Overscan	Under/Overscan	Under/Overscan	Under/overscan	Under/overscan
Demodulation axes	R-Y/B-Y	...	...	R-Y/B-Y	R-Y/B-Y	R-Y/B-Y
X-Y display output	Yes	...	...	No	No	No
Composite inputs	2	...	...	2/3(vtek1)	2	4
RGB inputs	Yes	2	2	No	1 set	1 set
Y/C/B inputs	Yes	...	...	No	1 set	1 set
Y/C or S-VHS inputs	No	...	...	No	1 set	1 set
Decoding filters	Comb & notch	...	...	Notch/Comb	Notch filter	Notch filter
Reader Service No	346	347	348	349	350	351

¹⁵ RGB or YPbPr studio reference monitor. ¹⁶ RGB or YPbPr studio reference monitor. Model HDM-1730 17" diagonal with pitch 0.31; Model HDM-1230 12" diagonal with pitch 0.26. ¹⁷ RM-13/TR 280-line resolution; level 1 & level 2 closed captioning; TVL inputs. VM-130 Pro 260-line resolution; 2 composite inputs. Studio-13 380-line resolution; 2 inputs; comb filter only.

Time Base Correctors & Frame Synchronizers

Manufacturer	Digital Processing Systems					Feral Industries(J. Grunder)	
Model	DPS-235	DPS-265	DPS-295	VS-2400 Microsync	VT-2600 ¹	C-100 ²	Dual 4:2:2 ³
Functions	TBC & Sync	TBC & Sync	TBC & Sync	Sync	TBC & Sync	TBC & Sync	TBC & Sync
Standards support	NTSC/PAL	NTSC/PAL	NTSC/PAL	NTSC/PAL	NTSC/PAL	NTSC/PAL -M/N	NTSC, PAL
Composite video support	In/Out	In/Out	In/Out	In/Out	In/Out	In/Out	In/Out
Component video support	Y/C/B; Betacam, MII, S-VHS, Y-C	...	Y/C/B; Betacam, M-II, Y-688, S-VHS, Y-C	...	Betacam/M-II; S-VHS/Y-C	S-VHS/Y-C	S-VHS/Y-C
Format conversion function	Yes	No	Yes	No	No	Yes	Yes
Sampling scheme	14.3MHz; 8-bit	14.3MHz; 8-bit	14.3MHz; 8-bit	14.3MHz; 8-bit	14.3MHz; 8-bit	13.5MHz; 8-bit	13.5MHz; 8-bit
Correction window	3 fields	4 fields	3 fields	4 fields	3 fields	525+ lines	525+ lines
Differential phase/gain	<2'; <2%	<2'; <2%	<2'; <2%	<2'; <2%	<2'; <2%	<2'; <2%	<2'; <2%
Dynamic tracking	No	No	No	No	No	Yes	Yes
Noise reduction	Yes	No	Yes	No	Option	No	Yes
Image enhancement	No	No	Yes	No	No	No	Yes
Video freeze functions	Fld; Frm; strobe	Fld; Frm; strobe	Fld; Frm; strobe	Field/frame	Fld; frm; strobe	Field; frame	Field; frame
PC plug-in card	No	No	No	Yes	Yes	No	No
Reader Service No	352	353	354	355	358	357	358

¹ Personal TBC II; offers wideband heterodyne option. ² Multiple input and output selection; NTSC, PAL standards; transcode between composite and Y-C; Fade-to-Black with 3 fade rates; RS-422 serial port; field freeze select; genlock; reset recall mode; memory for proc amp level controls; 4:2:2 processing. ³ Field1, field2 freeze select; variable rate, ratio strobe; RS-232 serial port remote control; digital display window; Dual 4:2:2 Plus with bypass, freeze on video loss, equalizer for 1100' cable; Dual 4:2:2 PAN interfaces to Panasonic Laser Disc player.

Manufacturer	Feral Ind.	For-A Corp.	Hotronic Inc.		JVC	Microtime	NOVA
Model	Micro 4:2:2 ⁴	FA-310 ⁵	AP41-PAL ⁶	AP41 ⁷	KMF 250V	FS-10	900S/920SP ⁸
Functions	TBC & Sync	TBC/Sync	TBC & Sync	TBC & Sync	TBC & Sync	TBC/synchronizer	TBC & Sync
Standards support	NTSC/PAL	NTSC, PAL	PAL/NTSC	PAL, NTSC	NTSC/PAL	NTSC, PAL -M	NTSC, PAL -M

Time base corrector & frame synchronizers, Cont'd

Manufacturer	Feral Ind.	For-A Corp.	Hotronic Inc.		JVC	Microtime	NOVA
Model	Micro 4:2:2 ⁴	FA-310 ⁵	AP41-PAL ⁶	AP41 ⁷	KMF 250V	FS-10	900S/920SP ⁸
Composite video support	I/O	I/O	Yes	Yes	Yes	Yes	Yes
Component video support	RGB	RGB, YCRCB, YIQ, S-VHS, Y-C	RGB; S-VHS, Y-C	RGB, S-VHS, Y-C	RGB, S-VHS, Y-C	RGB	RGB, YCRCB; YUV
Format conversion function	Yes	Yes	Yes	Yes	No	Yes	Yes
Sampling scheme	13.5MHz; 8-bit	13.5MHz/8-bit	6MHz; 8-bit	6MHz; 8-bit	...	4Fsc; 10-bit	13.5Hz; 8-bit
Correction window	525-/625-line	525-line	525+ lines	525+ lines	525-line	2-/4-field	1 field
Differential phase/gain	<2°; <2%	2°/2%	<1.5°; <1.5%	<1.5°; <1.5%	...	1°; 1%	<2°; <2%
Dynamic tracking	Yes	...	No	No	...	Yes	No
Noise reduction	Yes	Yes	Yes	Yes	Yes	Yes	5dB chroma NR
Image enhancement	Yes	No	Yes	Yes	...	No	No
Video freeze functions	Field; frame	Fld/Frame	Field; frame	Field; frame	Field; frame	Frame; 4-field	Field
PC plug-in card	Yes	No	No	No	No	No	No
Reader Service No	359	360	361	362	363	364	365

⁴ 5.5MHz bandwidth in NTSC, S-VHS; CCIR 601 4:2:2 processing; variable rate and ratio strobe; field select on freeze; RS-232 serial port remote control; optional desktop video remote panel. ⁵ PC add-in card will be available as FA-30 after December 93. ⁶ 6MHz bandwidth; 4x subcarrier; 8-bit resolution; genlock and full proc-amp control; wideband digital comb filter; Y/C delay adjustment; optional DOC; variable rate strobe. ⁷ Also AP-41SF and AP-41SP. ⁸ Also provides mosaic, strobe, posterization effects; 4x1 input selection; color bars.

Manufacturer	NOVA			Prime Image			
Model	Nova 950 ⁹	NovaMate ¹⁰	NovaSync ¹¹	EXCEL 6.5 ¹²	HR 600 II ¹³	Model 50 II ¹⁴	Multi/TBC.Sync ¹⁵
Functions	TBC & Sync	TBC & Sync	TBC & Sync	TBC & Sync	TBC & Sync	TBC & Sync	TBC & Sync
Standards support	NTSC, PAL/-M	NTSC, PAL, -M	NTSC	NTSC, PAL	NTSC	NTSC, PAL/-M	NTSC, PAL/-M
Other:	PAL-M	PAL-M In/Out	...	...	...	PAL-M In/Out	PAL-M In/Out
Composite video support	In/Out	In/Out	In/Out	In/Out	In/Out	In/Out	In/Out
Component video support	RGB, YCRCB, YUV, S-VHS, Y-C	RGB, YCRCB, YUV, S-VHS, Y-C	S-VHS, Y-C In	YCRCB, Y-688 In, YUV, S-VHS, Y-C	RGB, YCRCB, Y-688, YUV, S-VHS	Y-C, S-VHS, CCIR-601	Y-C, S-VHS, CCIR-601
Format conversion function	Yes	Yes	Y/C to NTSC	Yes	Yes	Yes	Yes
Sampling scheme	13.5Hz; 8-bit	14.3Hz; 8-bit	14.3Hz; 8-bit	18MHz; 8-bit	20MHz; 8-bit	14.3MHz; 8-bit	14.3MHz; 8-bit
Correction window	1 field	525+ lines	1 or 2 frame	1 frame	1 frame	1 frame	1 frame
Differential phase/gain	<2°; <2%	<2°; <2%	<2°; <2%	1.5°; 1.5%	0.5°; 0.5%	<1°; <1%	1°; 1%
Dynamic tracking	No	...	No	Yes	Yes	No	No
Noise reduction	12dB chroma NR	Yes	No	Yes	Yes	Yes	Yes
Image enhancement	H & V	...	No	Yes	Yes	Yes	Yes
Video freeze functions	Field	Field; frame	Field	Field; frame	Field; frame	Field; frame	Field; frame
PC plug-in card	No	Yes	No	No	No	No	No
Reader Service No	366	367	368	369	370	371	372

⁹ Full transcoding; black stretch. ¹⁰ 6MHz bandwidth; 3-line adaptive digital comb filter; single and multichannel versions. ¹¹ Frame synchronizer with TBC option; AGC; auto defaults; color bars and black modes. ¹² 6.5MHz bandwidth; multi-format transcoding. ¹³ with 7.5MHz bandwidth permits >600 lines resolution; includes 8MHz digital adaptive comb filter. ¹⁴ 3-way adaptive comb filter; AGC on/off; B&W on/off; H-position; horizontal & vertical Y-to-C adjustment; variable strobe feature. ¹⁵ 10-channel system in 5/4" rack; under 100W with full 10-channels.

Manufacturer	Prime Image		Snell & Wilcox		Tektronix	Videotek	Vistek
Model	TBC/PCB ¹⁶	TWO (2x) ¹⁷	TBC11	TBS24	VS210 NTSC ¹⁸	VDP-8000/8400 ¹⁹	V4301/P/S1 ²⁰
Functions	TBC & Sync	TBC & Sync	TBC & sync.	TBC & sync.	Synchronizer	Synchronizer	TBC & Sync
Standards support	NTSC, PAL	NTSC, PAL/-M	PAL, SECAM In	NTSC, PAL, SECAM	NTSC (PAL)	NTSC	NTSC, PAL, SECAM
Composite video support	In/Out	In/Out	In/Out	In/Out	In/Out	I/O	In/Out
Component video support	S-VHS, Y-C, CCIR-601	S-VHS, Y-C, CCIR-601	RGB out, S-VHS, Y-C	RGB out, YCRCB, S-VHS, Y-C	...	...	RGB, YCRCB, Y-C YIQ, YUVS-VHS, CCIR-601
Format conversion function	Yes	Yes	...	Yes	No	No	Yes
Sampling scheme	14.3MHz; 8-bit	14.3MHz; 8-bit	13.5MHz; 8-bit	13.5MHz; 8-bit	28.6MHz/10-bit	14.4MHz/8-bit	13.5MHz; 8/10-bit
Correction window	1 frame	1 frame	1 frame	1 frame	4 fields	4Fld/2Frm	1 frame
Differential phase/gain	<1°; <1%	1°; 1%	...	...	<1°; <1%	<2°/ <2%	<0.5°; <2%
Dynamic tracking	No	No	No	No	No	No	Per VTR
Noise reduction	Yes	Yes	Yes	Yes	No	No	No
Image enhancement	Yes	Yes	No	Yes	No	No	No
Video freeze functions	Field; frame	Field; frame	Field/frame	Field/frame	Field; frame	2-fld/2-frame	Frame
PC plug-in card	Yes	No	No	No	No	No	No
Reader Service No	373	374	375	376	377	378	379

¹⁶ 7W consumption; all digital design with no drift; 3-year warranty. ¹⁷ Dual channel in 1 3/4" rack mount; high-performance with many features; 20W power consumption. ¹⁸ VS211 PAL unit uses 17.7MHz sampling to 10 bits per sample; both provide serial composite digital I/O option. ¹⁹ Unit includes proc amp controls and permits remote control. -8000 include 1-frame correction window. ²⁰ Serial digital input option.

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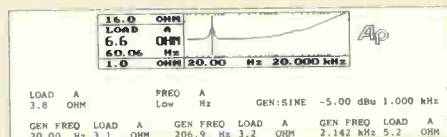
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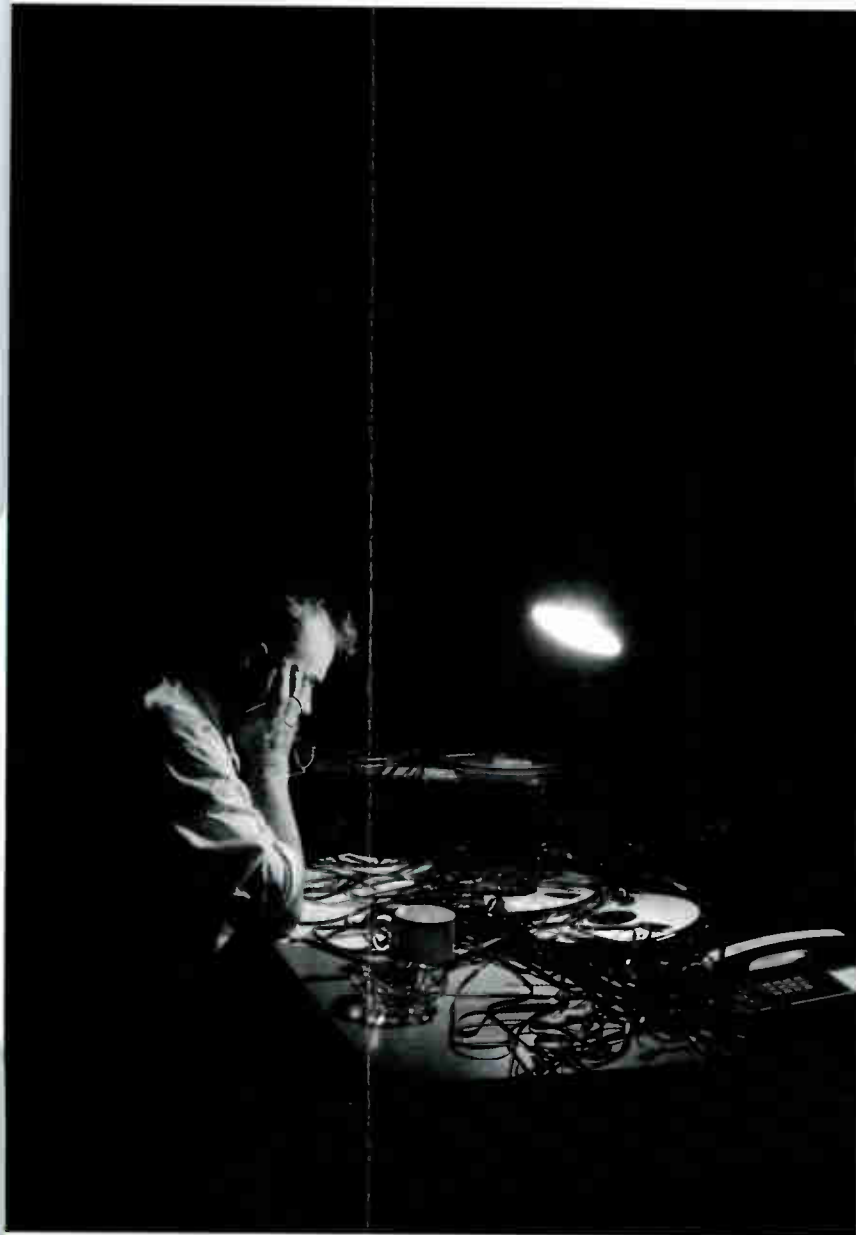
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World Radio History

AUDIO SPECS

"YOU WANT WHAT!?!?"

AUDIO SPECS



So, there he was, this *client*, for want of a better word, telling me, in no uncertain terms we needed a piece long ago consigned to the bin. I could see myself burning the midnight oil again, desperately trying to find this 3 second out-take from the 2000 feet on the cutting room floor.

And what about the night before! I'd mixed down a couple of nifty, if a little time-consuming crossfades, then realised I had a problem - all the edits from earlier that evening also needed crossfades to cover the gaps. Oh well, Sleep's overrated anyway! It's just something else to do in bed!

I should've listened to Jim! I'd just replaced my ageing tape deck with a gleaming new machine when he said, "You could get a complete *SADiE™* system for less than that - real-time crossfades, non-destructive editing and so fast to use, it's incredible!"

What next! I need more tape, more time, less grey hair.....

- Windows 3.1* on 486 host computer
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World Radio History

Audio Mixers, On-Air

In Solo features: IP in-place, PRF pre-fader, POF post-fader.

Manufacturer	AEQ SA			AEV snc	AMS Neve		ATI	
Model	BC-2000 ¹	BC-2500	BC-500 ²	PMC 8000	55 series ³	66 Series ⁴	BC 6DSL ⁵	BC 6DSR ⁶
Automation port	No	Yes	No	No	Yes	No	No	No
Digital control	No	No	No	No	No	No	Yes	Yes
Solid-state switching	No	No	No	Yes	Yes	Yes	Yes	Yes
VCA gain control	No	Yes	Yes	Yes	Yes	No	Yes	Yes
Assignable features	Yes	Yes	Yes	Yes	No	No	Yes	Yes
Metering types	VU/PPM	VU/PPM/LED	VU/LED	VU	VU/PPM/LED	VU/PPM/Custom	VU standard	VU standard
Equalization & filters	Param.; H/LP	Param., H/LP	Param. H/LP	3-band	4-bd Swept, H/LP	4-bd Swept, H/LP	...	...
Compressor/limiter	Yes	No	No	No	Overall process	Overall operation	No	No
Telephone dial integral	No	No	No	Yes	No	No	No	No
Telephone hybrid integral	Yes	No	No	Yes	No	No	Mix-minus out	Mix-minus out
Pan pots	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Transport start/stop feature	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes
Talkback feature	Yes	Yes	Yes	Yes	Yes	Yes	No	No
Patch points	...	...	No	No	Yes	Yes	Yes	Yes
Fader type	Slider; Rotary	Slider; Rotary	Slider & Rotary	Slider	Slider	Slider	Slider	Rotary
Tape Aux monitor inputs	3-input	6-input	2-input	Yes	1 stereo input	Yes	3-input	3-input
Solo feature	Pre-fader	Pre-fader	In-place	PRF; POF	IP/PRF/POF	IP/PRF/POS	In-place/POF	In-place/POF
# of Mic/line inputs	...	...	4 Mic/10 Line	...	56 Mic/56 Line	48 Mic/48 Line	2M/8L (10L/12L)	2M/8L (2M/10L)
# of Mixing buses	6	6	3	...	Var. Config.	Various plans	2 stereo	2 stereo
# of sends/returns	...	...	2	...	56	24 Trk	...	...
# of direct outputs	4	4	2	...	56	4 stereo/1 stereo	2 ST/2 mono sum	
# of groups/subgroups	...	...	...	...	Var. Config.	8 or 4 stereo	2 groups	2 groups
# of aux monitor inputs	3	6	2	...	20 stereo	10 stereo	2	2
THD distortion (% @ +dBm)	...	...	...	...	0.15, 20	<0.2, 20	0.15, +18	0.15, +18
S/N Line & EIN Mic (dB/dBm)	...	...	...	...	81dB/-125EIN	80dB/-125dB EIN	95dB/-124dBm	95dB/-124dBm
Crosstalk (worst case)	...	...	...	...	62dB	-70dB typical	-74dB	-74dB
Reader Service No	381	382	383	384	385	386	387	388

¹ Modular system with up to 35 module capacity. ² Complete modular design, proportioning absolute flexibility at a desirable price/performance level. ³ 10 stereo main or group (combination) outputs; 10 aux buses; 2 mix-minus buses; "MATS" user definable monitoring system-a choice of specification is given to the user. ⁴ Available in two styles (8GP/4-OUT 66_8 and 4GP/1-OUT 66_4); sophisticated memory, reset of must switch functions; 24 trk in-line multitrack facility on 4Grp 1 O/P desk). ⁵ BC 8DSL, 10 line inputs; BC 12DSL, 12 line inputs; VU & PPM LED displays optional; program I/O electronically balanced; 3 electronically muted line-level monitor outputs. ⁶ BC 8DSR with 10 line inputs; VU & PPM LED displays optional; program I/O balanced; 3 electronically muted line-level monitor outputs.

Manufacturer	Audioarts Engineering		Audironics Inc.		Broadcast Electronics	Harrison by GLW		
Model	A-50	R-30	210 series	AirMaster 90 ser.	Air Trak AT90 ⁷	AIR-790	AP-100	PRO-790
Automation port	No	No	No	No	No	No	No	No
Digital control	No	No	No	No	No	...	Yes	No
Solid-state switching	Yes	Yes	No	Yes	Yes	No	Yes	No
VCA gain control	No	No	Yes	Yes	Yes	...	No	Yes
Assignable features	...	...	No	No	Yes	...	No	No
Metering types	VU	VU	VU	VU/PPM	VU/PPM/LED	VU/PPM/LED	VU	VU/PPM/LED
Equalization & filters	...	...	3-band swept	...	(Air Trak AT-100)	...	...	3-band; HP/LP
Compressor/limiter	No	No	Sep. channels	...	No	No	No	No
Pan pots	No	No	Yes	Yes	Yes (No)	Yes	No	Yes
Transport start/stop feature	Yes	Yes	Yes	Yes	Yes	Yes	Yes	...
Talkback feature	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Patch points	Yes	Yes	Yes	Yes	Yes	Yes	No	...
Fader type	Slider	Slider	Slider	Slider	Slider	Slider	Slider	Slider
Tape Aux monitor inputs	All inputs	All inputs	No	No	Yes	8-input	4-input	8-input
Solo feature	Pre-fader	Pre-fader	...	...	...	Pr-F; Po-F	...	Pr-F; Po-F
# of Mic/line inputs	2M/16L	2M/16L	Per mainframe	Per mainframe	to 72	2M/1L	2M/2L	2M/2L
# of Mixing buses	3	3	2	3	3	4	1	4
# of sends/returns	...	...	0	0	0	2	2	2
# of direct outputs	...	...	Per channel	Per channel	3	...	...	...
# of groups/subgroups	...	...	...	...	0 groups	4/4	1 subgroup	4 subgroup
# of aux monitor inputs	2	...	...	...	10	8	4	8

Audio Mixers, On-Air

Manufacturer	Audioarts Engineering		Audiotronics Inc.		Broadcast Electronics	Harrison by GLW		
Model	A-50	R-30	210 series	AirMaster 90 ser.	Air Trak AT90 ⁷	AIR-790	AP-100	PRO-790
THD distortion (% @ +dBm)	0.002, +4	0.003, +18	0.03, +24	0.03, +18	0.015, +4	...	...	...
S/N Line & EIN Mic (dB/dBm)	90dB	96dB	>84/-128.5	>100/-128.5	88/-127	...	...	...
Crosstalk (worst case)	-80dB	-85dB	-65dB	-70dB	-80dB	...	...	...
Reader Service No	389	390	391	392	393	394	395	396

⁷All "A" inputs mic or line selectable; clock timer standard feature; Fader start selectable; paranthetic items for Air Trak-100 with 3-band param HP/LP; stereo H&L shelving; center bnd boost/cut.

Manufacturer	Logitek		LPB Inc.		Otari	Pacific Recorders & Engineering		
Model	Mariner ⁸	TR2	7012 (7018) ⁹	Signature III ¹⁰	B-10/14(10/24) ¹¹	BMX-III	Newsmixer	Radiomixer
Automation port	Yes	No	No	No	Yes	No	No	No
Digital control	Yes	Yes	Yes	No	...	No	No	No
Solid-state switching	Yes	Yes	Yes	Yes	Yes	No	No	No
VCA gain control	No	No	No	No	Option	No	No	Yes
Assignable features	No	No	Yes	Yes	...	...	Yes	Yes
Metering types	VU	VU	VU	VU	VU	VU/PPM	VU	VU/PPM
Equalization & filters	...	...	...	...	3-bd Swpt; Mid	...	3-bd mid-swpt, H/LP	...
Compressor/limiter	No	No	...	...	No	None	Ovral & sep. ch.	...
Telephone hybrid integral	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Pan pots	Yes	Yes	No	No	Yes	Yes	Yes	Yes
Transport start/stop feature	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
Talkback feature	Yes	No	No	No	Yes	Yes	Yes	Yes
Patch points	Yes	Yes	No	No	...	Yes	Yes	Yes
Fader type	Slider	Slider	Slider	Rotary	Slider	Slider	Rotary	Slider
Tape Aux monitor inputs	12-input	No	...	...	10-inputs	Yes	6-input	...
Solo feature	Pre-fader	Pre-fader	...	...	Pre/Post-fader	I-P/Po-F	...	...
# of Mic/line inputs	22M/44L	12M/35L	24M/24L (36/36)	36M/36L max	24 mic/24 line	to 34	8M/8L	to 28 M or L
# of Mixing buses	4	4	3	2	1 stereo	3 stereo	2 mono	2 stereo
# of sends/returns	0	0	...	...	4	...	0	...
# of direct outputs	4	4	6	2	None	to 34	0	0
# of groups/subgroups	0/0	0/0	...	...	4	...	None	None
# of aux monitor inputs	1	1	...	...	10	9	1	6
THD distortion (% @ +dBm)	0.003, +4	0.006 +4	0.05 +8	0.05 +8	0.03, 20	>0.02, +8	>0.01, +24	>0.01, +24
S/N Line & EIN Mic (dB/dBm)	90; -130	85dB	75/-125	75/-125	89/-130	82/-127	88/-126	82/-128
Crosstalk (worst case)	-75dB	-75dB	-65dB	-65dB	>70dB	<-75dB	<-70dB	<-75dB
Reader Service No	397	398	399	400	401	402	403	404

⁸DCA digitally controlled analog faders; option for automation system to write segment titles and timing information above each mixer; water resistant frame design.

⁹Front panel switches rated for 5 million operations; four mute monitor outputs user-configured for any (each) input. ¹⁰available in 6, 8, 10-channel mono models and 6, 8, 10, 12-channel stereo models. ¹¹Designed to accommodate international broadcast standards.

Manufacturer	PKE Int'l	RAMKO	SEEM Audio		Sony	Trident	Wheatstone
Model	MC 200	XL series ¹²	Seelect	Seesam 2	MXP-2900	Vector 432 ¹³	SP-6
Automation port	No	No	Yes	No	Option	...	No
Digital control	No	No	Yes	No	No	...	No
Solid-state switching	Yes	No	Yes	No	Yes	Yes	No
VCA gain control	Yes	Yes	Yes	No	...	...	No
Assignable features	Yes	Yes	Yes	No	...	Yes	Yes
Metering types	VU/PPM/LED	LED/VU baistics	PPM	PPM	LED	VU	Bargraph opt
Equalization & filters	...	No	3-bd swept, H/LP	4-bd param, H/LP	3-bd EQ/HPF	4-bd param, H/LP	3-band swept
Compressor/limiter	No	No	No	Overall processing	Comp/limit	Overall processing	No
Telephone dial integral	No	No	No	No	No	...	No
Telephone hybrid integral	No	Mix-minus bus	Yes	Yes	No	No	No
Pan pots	Yes	No	Yes	Yes	Yes	Yes	Yes
Transport start/stop feature	Yes	Option	Yes	Yes	Yes	Yes	Yes
Talkback feature	Yes	No	Yes	Yes	Yes	Yes	Yes
Patch points	No	No	Yes	No	Yes	Yes	Yes
Fader type	Slider	Slider or rotary	Slider	Slider	Slider	Slider	Slider
Tape Aux monitor inputs	2-input	Yes	1-input	4-input	Yes	Yes	8-48 input
Solo feature	...	No	...	Pr-F; Po-F	...	...	Pre-fader
# of Mic/line inputs	3M/9L configurable	Per model	8M/48L	8-48 M or L	8-72	40-72	2M/2L
# of Mixing buses	2	...	8	8	5	32/4-stereo	8 mono/4 stereo
# of sends/returns	2/2	4	...	8 aux sends	4



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- + D2, D3 Composite Digital Option
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- + PAL Decoder Option
- + Dynamic Double Focus system
- + Wideband CCD Comb filter
- + 3 Line Comb filter
- + High Voltage Protection
- + HV Stand-by function (Saves CRT life)
- + Power supply monitoring & protection
- + Sync. Burst circuit monitoring
- + Automatic Degauss operation
- + Chroma Gain compensation circuit
- + Variable Aperture compensation
- + Color Mono Split Screen function
- + Independent Preset UNCAL switches
- + Residual Subcarrier indication
- + H V Pulse Cross modes

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World Radio History

Audio Mixers

Manufacturer	PKE Int'l	RAMKO	SEEM Audio		Sony	Trident	Wheatstone
Model	MC 200	XL series ¹²	Seelect	Seesam 2	MXP-2900	Vector 432 ¹³	SP-6
# of direct outputs	...	...	4	3	...	Inserts per input	Per input channel
# of groups/subgroups	...	...	...	4	4 groups	...	8 groups
# of aux monitor inputs	...	...	1	4	...	...	4
THD distortion (% @ +dBm)	...	0.008%	...	...	<0.1%	<0.02%	<0.004, +18
S/N Line & EIN Mic (dB/dBm)	...	75dB (-68dB)	...	...	-124dBs EIN	85; -127	95/-129
Crosstalk (worst case)	...	-70dB	...	...	-69dB 16kHz	-70dB	-80dB @ 1kHz
Reader Service No	405	406	407	408	409	410	411

¹²Models with 4, 6, 8, 12 mixers; single or dual channel available; 20W external amp included. ¹³Options include dynamics modules, moving fader or VCA automation; 4 stereo buses with matrix; automation of 12 switches per module.

Audio Mixers, Studio Production, Recording

In Solo features: IP in-place, PRF pre-fader, POF post-fader. All systems include Panpot controls.

Manufacturer	ADM Systems	AMEK			AMS Neve	
Model	STV-16/24/32 ¹	9048 ²	Mozart-RN ³	TAC SR6000 ⁴	Capricorn ⁵	VR Legend series ⁵
Automation port	Yes	Yes	Yes	No	Yes	Yes
Digital control	Yes	Yes	Yes	No	Yes	No
Solid-state switching	No	Yes	No	No	Yes	Yes
VCA gain control	Yes	No	Yes	Yes	Yes	No
Digital signal processing	...	No	No	No	Yes	No
Assignable features	...	Yes	Yes	No	Yes	No
Metering types	VU/PPM	VU	LED	LED	VU/PPM/Plasma	VU/PPM/Plasma
Equalization & filters	3-bd Swep, /H/LP	4-bd param, H/LP	4-bd param, H/LP	4-bd swept, HP	4-bd Swpt, H/LP	4-bd swpt H/LP
Compressor/limiter	Separate channels	Separate channels	Separate channels	No	Separate Channels	Separate channels
Transport start/stop feature	Yes	Yes	Yes	No	Yes	Yes
Talkback feature	Yes	Yes	Yes	Yes	Yes	Yes
Patch points	Yes	Yes	Yes	Yes	No	Yes
Fader type	Slider	Motorized	Slider; motorized	Slider	Motorized slider	Motorized slider
Tape Aux monitor inputs	Yes	96-input max	56-input	No	48-input	72-input
Solo feature	...	I-P/PRF/POF	I-P/PRF/POF	I-P/PRF/POF	IP/PRF/POF	IP/PRF/POF
# of Mic/line inputs	32M/32L	72M/112L max	56M/112L max	40M/40L max	Per customer	72 Mic/72 Line
# of Mixing buses	4	48	32	8	requirements	48Trk; 4 Out; 8 Aux
# of sends/returns	2	16Sends/8stereo	16 sends/12 returns	8 sends/4 returns	...	72
# of direct outputs	32	72	56	...	...	72 Ch/Trk; 4 Out
# of groups/subgroups	4 group	...	VCA groups	8 VCA groups	...	48 groups
# of aux monitor inputs	2	...	...	8	...	16
THD distortion (% @ +dBm)	<0.007, +24; 1kHz	...	...	...	0.003, -3	<0.04, +4
S/N Line & EIN Mic	80dB/-126dB EIN	...	...	...	105dB/-124dB EIN	79dB/-125dB EIN
Crosstalk (worst case)	-72dB	...	...	...	80dB	-75dB typical.
Reader Service No	412	413	414	415	416	417

¹Also suitable on-air applications. ²Designed by Rupert Neve; fully automated console for production and post-production work. ³Completely automated system; includes inputs designed by Rupert Neve. ⁴High specification sound-reinforcement console for sound stages, concert systems. ⁵I/O requirements based on customer requests; to 72 Mic/Line inputs; fully automated; can be used for on-air applications. ⁶Multitrack recording and mixing console; post production, TV/Film optional facilities available in VRL-Post version; Fader automation, recall options with "Flying Faders".

Manufacturer	Audioarts Engineering	Auditronics Inc.			Broadcast Electronics	Fostex
Model	MR-40	310 series	800/850 series	900 series	Mix Trak MT90 ⁷	DCM 100
Automation port	No	No	No	Yes	Yes	Yes
Digital control	No	No	No	No	No	Yes
Solid-state switching	Yes	No	Yes	And mechanical	No	No
VCA gain control	No	Yes	Yes	Yes	Yes	Yes
Assignable features	...	Yes	Yes	Yes	Yes	No
Metering types	VU	VU or PPM	VU or PPM	VU or PPM or LED	VU/PPM/LED	LED
Equalization & filters	3-band/swept	3-bd swept/HP/LP	3-bd swept	3-b d swept/HP/LP	3-bd param/HP/LP	2-bd/HP/LP
Compressor/limiter	No	Sep. e channels	Sep. channels	Separate channels	No	No
Transport start/stop feature	Yes	Yes	Yes	Yes	Yes	No
Talkback feature	Yes	Yes	Yes	Yes	Yes	No
Patch points	Yes	Yes	Yes	Yes	Yes	No
Fader type	Slider	Slider	Slider	Slider	Slider	Slider

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World Radio History

Audio Mixers, Studio Production & Recording

Manufacturer	Audioarts Engineering	Audioltronic Inc.			Broadcast Electronics	Fostex
Model	MR-40	310 series	800/850 series	900 series	Mix Trak MT90 ⁷	DCM 100
Tape Aux monitor inputs	4-inputs	Yes	...	No	Yes	No
Solo feature	Pre-fader	In-place	...	In-place	...	Post-fader
# of Mic/line inputs	4M/8L	Per mainframe	Per mainframe	Per mainframe	to 42	16L
# of Mixing buses	6	8	5	8	6	2
# of sends/returns	1	4	1	4	2	2/4
# of direct outputs	All	8	Per channel	Per channel	3	No
# of groups/subgroups	...	4/8	...	4/8	2 groups	No
# of aux monitor inputs	1	3	2	3	10	No
THD distortion (% @ +dBm)	0.002, +4	0.03, +24	0.03, +24	0.03, +24	0.015, +8	0.03, 0
S/N Line & EIN Mic	93dB	>84dB/-128dBm	>100dB/-128.5dBm	>84dB/-128dBm	85dB/-128dB	78dB
Crosstalk (worst case)	-90dB	-65dB	-70dB	-65dB	-70dB	-70dB
Reader Service No	418	418	419	420	421	422

⁷Hot pluggable modules; clock timer standard; fader start/cue selectable; stereo mic module.

Manufacturer	Fostex		Harrison by GLW		Henry Engineering	JLCooper Electronics
Model	Model 2016	Model 812	SERIESTENB ⁸	TV-4 (TV-3)	Fast Trac II ⁹	AVSIX ¹⁰
Automation port	No	No	No	No	Yes	Yes
Digital control	No	No	No	No	No	Yes
Solid-state switching	No	No	No	No	No	Yes
VCA gain control	No	No	Yes	Yes	No	Yes
Assignable features	No	No	No	No	Yes	No
Metering types	LED	LED	VU/PPM/LED	VU/PPM/LED	None	PPM
Equalization & filters	...	3-band swept	3-bd/Param/Swpt/H-L	3-bd/Param/Swpt/H-L	...	...
Compressor/limiter	No	No	Overall/sep. ch.	No	No	No
Transport start/stop feature	No	No	Yes	Yes	Yes	No
Talkback feature	No	No	Yes	Yes	Yes	No
Patch points	Yes	No	Yes	Yes	Yes	Yes
Fader type	Rotary	Slider	Motorized	Slider	Rotary	Slider
Tape Aux monitor inputs	No	12-input	16-input	8-input	Yes	Yes
Solo feature	No	In-place	I-P; Pr-F	Pr-F; Po-F	Pre-fader	In-place
# of Mic/line inputs	16L	12M/12L	2M/4L (3M/3L)	2M/1L	1M/5L	6L
# of Mixing buses	2	8	32 (48)	4 (24)	1 stereo	2
# of sends/returns	4/4	3/3	8 (16)	4	1 stereo	1
# of direct outputs	No	12	1/input (48)	1/input (...)	2	2
# of groups/subgroups	No	8 subgroups	8/8 (8/4)	8/4	...	2 groups
# of aux monitor inputs	No	8	16	8	2	2
THD distortion (% @ +dBm)	0.01, 0	0.05, 0	0.01, +18	...	0.02% any level	<0.02%
S/N Line & EIN Mic	80dB	65dB	86dB/-129dBm	...	90dB/-137dBm	85dB
Crosstalk (worst case)	-65dB	-65dB	...	...	-60dB	...
Reader Service No	423	424	425	426	427	428

⁸SERIESTWELVE system also offers post-fader solo and is represented by parenthetic values. ⁹Voice-over management system; use as "headend" of digital editing system, voice-over mixer, production center, auto dubbing system, auto ducking. ¹⁰Works with all editing systems, supports GVG, ESAM protocol; GPI, RS-422 controllable; internal setup oscillator; Audio for Video mixer; video sync, GPI sync, Wild sync.

Manufacturer	Neotek	Pacific Recorders & Engineering				PKE Int'l
Model	Esprit ¹¹	ABX	AMX	Productionmixer MT	STX Stereo TV	Maestro ¹²
Automation port	Yes	No	...	No	No	Yes
Digital control	No	No	No	No	No	Yes
Solid-state switching	No	No	...	No	Yes	Yes
VCA gain control	Yes	No	No	Yes	No	Yes
Assignable features	No	No	...	No	Yes	Yes
Metering types	LED	VU/PPM	VU/PPM	VU/PPM	VU/PPM	VU/PPM/LED
Equalization & filters	4-bd Param/Swept	3-bd param/HP/LP	3-bd swept/HP/LP	3-band	3-band	3-band
Compressor/limiter	No	Sep. channels	...	No	Sep. channels	Sep. channels
Telephone hybrid integral	No	Yes	Yes	Yes	Yes	Yes
Transport start/stop feature	Yes	Yes	Yes	Yes	Yes	Yes
Talkback feature	Yes	Yes	Yes	Yes	Yes	Yes
Patch points	Yes	Yes	Yes	Yes	Yes	Yes
Fader type	Slider/motorized opt	Slider	Slider	Slider	Slider	Slider
Tape Aux monitor inputs	12-input	No	No	No	...	4-input
Solo feature	I-P/PRF/POF	I-P/POF	I-P/POF	I-P/POF	I-P/POF	...

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World Radio History

Audio Mixers, Studio Production & Recording

Manufacturer	Neotek	Pacific Recorders & Engineering				PKE Int'l
Model	Esprit ¹¹	ABX	AMX	Productionmixer MT	STX Stereo TV	Maestro ¹²
# of Mic/line inputs	24M/24L	to 34	to 34	to 28	to 42	3M/21L configurable
# of Mixing buses	2	3 st/8 multitrack	3 stereo	2 st/8 multitrack	3 st/8 mix-	5
# of sends/returns	8	4/2	2/1	4/2	4/2	1/channel
# of direct outputs	24	to 34	to 34	0	to 42	...
# of groups/subgroups	16/16	...	...	...	4 subgroups	...
# of aux monitor inputs	12	4	9	6	5	...
THD distortion (% @ +dBm)	0.035, +10	>0.02, +8	>0.02, +8	>0.01, +24	>0.009, +26	...
S/N Line & EIN Mic	>90dB/-129dBm	82dB/-127dBm	82dB/-127dBm	82dB/-128dBm	82dB/-127dBm	...
Crosstalk (worst case)	-80dB	<-75dB	<-75dB	<-75dB	<-70dB 20kHz	...
Reader Service No	429	430	431	432	433	434

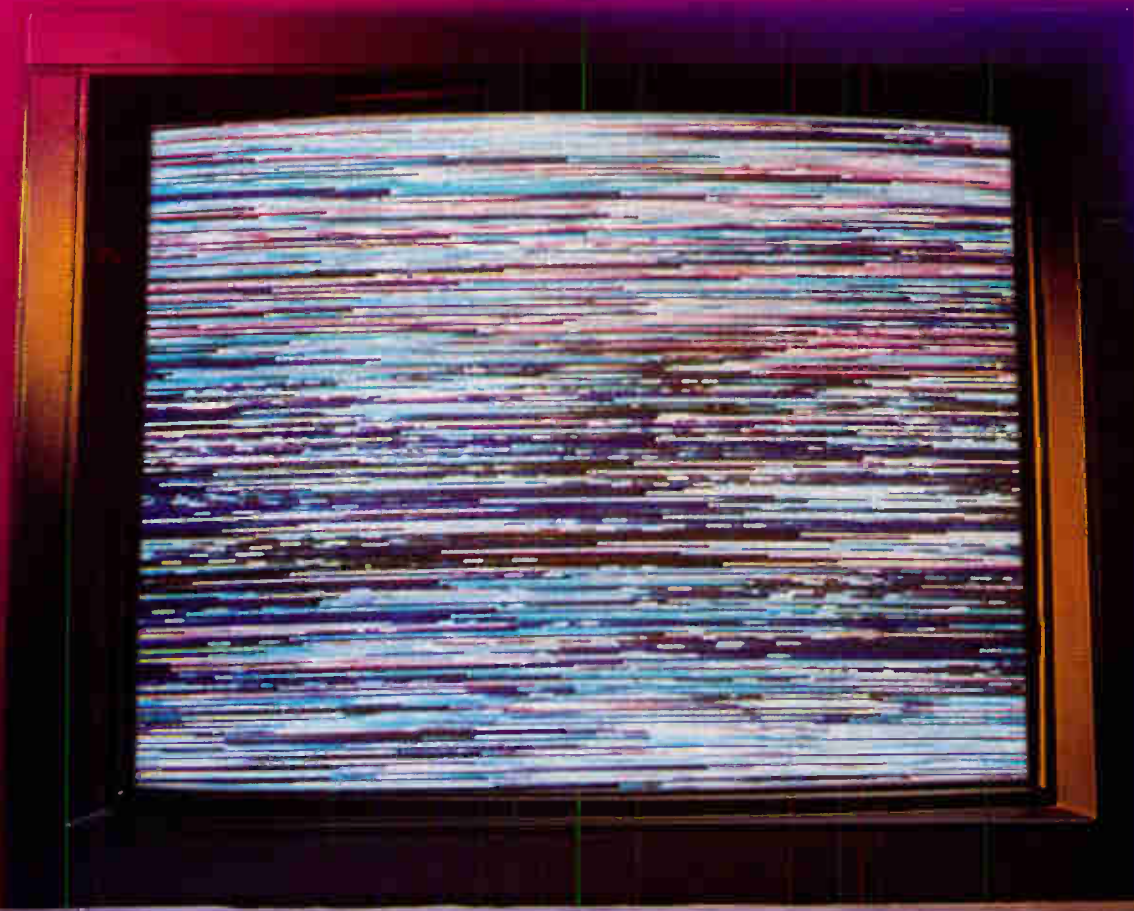
¹²Models built to order; custom sizes and non-standard options tailored to facilities requirements. ¹²2 inputs per channel; stereo cue speakers; modular design; customizable modules.

Manufacturer	SEEM Audio	Shure Brothers	Solid State Logic	Sony		Soundcraft
Model	SeeCon 2	FP410 ¹³	G Plus Consoles ¹⁴	DMX-E3000 ¹⁵	MXP-2900 Series	Jade ¹⁶
Automation port	Yes	No	Yes	Editor control	Editor control	Yes
Digital control	Yes	No	Yes	Yes	Yes	Yes
Solid-state switching	Yes	No	Yes	Yes	No	Yes
VCA gain control	Yes	No	Yes	Yes	Yes	Yes
Digital signal processing	No	No	...	Yes	No	No
Assignable features	Yes	No	Yes	Option	Yes	Yes
Metering types	PPM	LED	VU/PPM/plasma	LED bargraph	VU or PPM	LED
Equalization & filters	4-bd param, H/LP	HP	Yes	3-bd shelving, HPF	3-bd & HPF	4-bd par, swpt, HP
Compressor/limiter	Separate channels	Overall limiting	Yes	No	Comp & limit	No
Transport start/stop feature	Yes	No	Yes	No	Yes	No
Talkback feature	Yes	Monitor in	Wireless system	No	Yes	Yes
Patch points	Yes	No	Yes	Yes	Yes	Yes
Fader type	Slider	Rotary	Slider	Slider	Slider	Slider
Tape Aux monitor inputs	8-input	1-input	Yes	16 inputs	Yes	48-input
Solo feature	I-P/Pr-F/Po-F	No	Yes	...	Pr-F; PoF	I-P/Pr-F/Po-F
# of Mic/line inputs	48M/48L	4M/L	Per request	16/32+2	8-72	48M/48L
# of Mixing buses	15	1	Multiple	8+4	4+2	24
# of sends/returns	6/8	...	Yes	...	4 Aux send	48
# of direct outputs	...	No	Yes	...	...	48
# of groups/subgroups	6/6	...	Yes	...	4 groups	48 groups
# of aux monitor inputs	8	...	Yes	Yes	...	...
THD distortion	...	0.5, +18	...	...	<0.1%	<0.02, 0
S/N Line & EIN Mic	...	-128.5dBV	...	...	-124dBs EIN mic	80dB; -127.5dBm
Crosstalk (worst case)	...	...	...	...	-69dB 16kHz	...
Reader Service No	435	436	437	438	439	440

¹³Portable, automatic mixer; activates only mic being addressed; last mic locks on; 1kHz tone; Xfmr bal in/out; 48V phantom power; up to 25 mixers link for 100 inputs. ¹⁴This information derived from product brochure; contact SSL for complete details. ¹⁵Integral 32x16 AES/EBU router; 32 inputs & 16-channel mixing; stereo digital insertion; 99-snapshot memory. ¹⁶24-input (32u) uncreated weight of 160kg; 48PB (64u) uncreated weight 275kg.

Manufacturer	Soundtracs PLC		Studer	Trident Audio		Wheatstone Corp.
Model	Solo LIVE ¹⁷	Solo Logic	D940 ¹⁸	16+24 ¹⁹	Ninety ²⁰	TV-600
Automation port	No	Yes	Yes	No	Yes	No
Digital control	No	Yes	Yes	No	No	Yes
Solid-state switching	No	Yes	Yes	Yes	Yes	No
VCA gain control	No	Yes	No	No	Yes	Yes
Digital signal processing	No	No	Yes	No	No	No
Assignable features	No	No	Yes	1 auto mute bus	Yes	Yes
Metering types	LED	LED	VU/PPM	VU	VU/PPM/LED bargraph	VU/PPM
Equalization & filters	4-band swept	4-band swept	4-bd Param/HP/LP	4-bd swept/HP	4-bd param HP/LP	3-bd swept/HP/LP
Compressor/limiter	No	No	Separate channels	No	No	No
Pan pots	Yes	Yes	Yes	Yes	Yes	Yes
Transport start/stop feature	No	Yes	Yes	No	Yes	Yes
Talkback feature	Yes	Yes	Yes	Yes	Yes	Yes
Patch points	Yes	Yes	Yes	Yes	Yes	Yes
Fader type	Slider	Slider	Motorized slider	Slider	Slider	Slider
Tape Aux monitor inputs	1-input	24 or 32-input	...	16 or 24 input	2/input	8-input
Solo feature	I-P/Pr-F/Po-F	I-P/Pr-F/Po-F	IP/PrF/POF	In-place	IP/Pr-F/Po-F	Pr-F; Po-F

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World Radio History

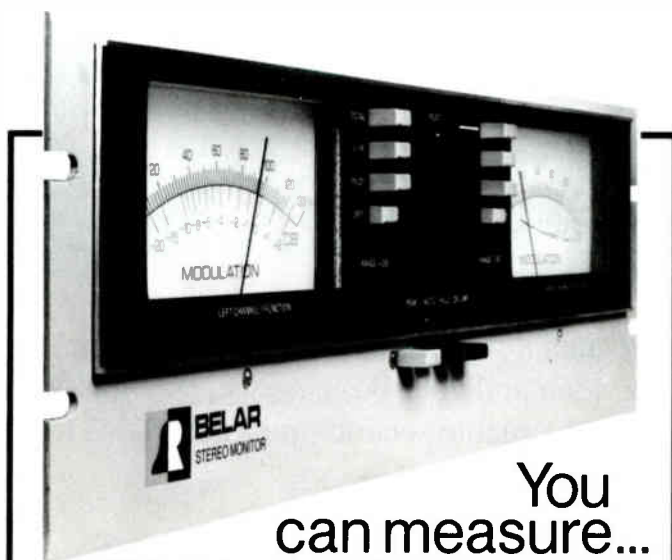
Audio Mixers, Studio Production & Recording

Manufacturer	Soundtracs PLC		Studer	Trident Audio		Wheatstone Corp.
Model	Solo LIVE ¹⁷	Solo Logic	D940 ¹⁸	16+24 ¹⁹	Ninety ²⁰	TV-600
# of Mic/line inputs	32M or 32L	24/32 M or L	...	56M/84 max.	56M/176L max.	48M/48L
# of Mixing buses	4 (8; 10)	8	...	16 or 24	24	15+
# of sends/returns	...	24/32	...	8 aux sends	10 aux sends	4+
# of direct outputs	32 (0; 32)	24/32	...	Inserts per input	Inserts per input	Per input channel
# of groups/subgroups	4 (10; 8) groups	8 groups	...	16 or 24	...	8 groups
# of aux monitor inputs	...	24/32	...	16 or 24	...	8
THD distortion (% @ +dBm)	<0.006, 0	<0.02 0	...	<0.05 20	<0.01 20	<0.005 +4
S/N Line & EIN Mic	80dB; -127dBm	80dB; -127dBm	...	84dB; -125dBm	85dB; -128dBm	>89dB
Crosstalk (worst case)	...	...	...	-69dB	-73dB	-95dB @ 1kHz
Reader Service No	441	442	443	444	445	446

¹⁷PA mixers; Solo Monitor and Solo 8 Live respectively noted parenthetically. ¹⁸Integral electronic patching; graphic console shows status, dynamic audio, bookkeeping control; integral status, dynamic automation; diagnostics; Madi interconnection; remote control preamp. ¹⁹Optional automation VCA and PPM or LED metering; patchbay. ²⁰2 band fixed EQ monitors; 12 automated switches per channel; machine control; 16 automated switch master groups; 3 signal paths per module; all with EQ and Aux Sends.

Wireless Microphone Systems

Manufacturer	Audio Limited	Audio-Technica US	beyerdynamic				
Model	MX-2000/DX-2000	ATW 1235/1236	RR7000/S700	S150 (S250)	S190P/S190H	S350	U700
RF spectrum used	VHF or UHF	169-216MHz VHF	UHF	165-215MHz VHF	176-216MHz VHF	165-215MHz VHF	470-900MHz UHF
Audio frequency response	±1.5dB 40-15k	100Hz-20kHz	±1dB 20-20k	-2dB (-3dB) 40-18k	±1dB 40-20k	-3dB 40-18k	-2dB 40-20k
Audio S/N ratio	>100dB	>90dB	92dB	102dB	85dB	102dB	93dB
Harmonic distortion	0.2%	<1%	...	<0.5%	Negligible	<0.5%	<0.5% ±50kHz
Modulation control	Compressor/limiter	Compression	Compress & limit	...	Compress & limit	...	Compression



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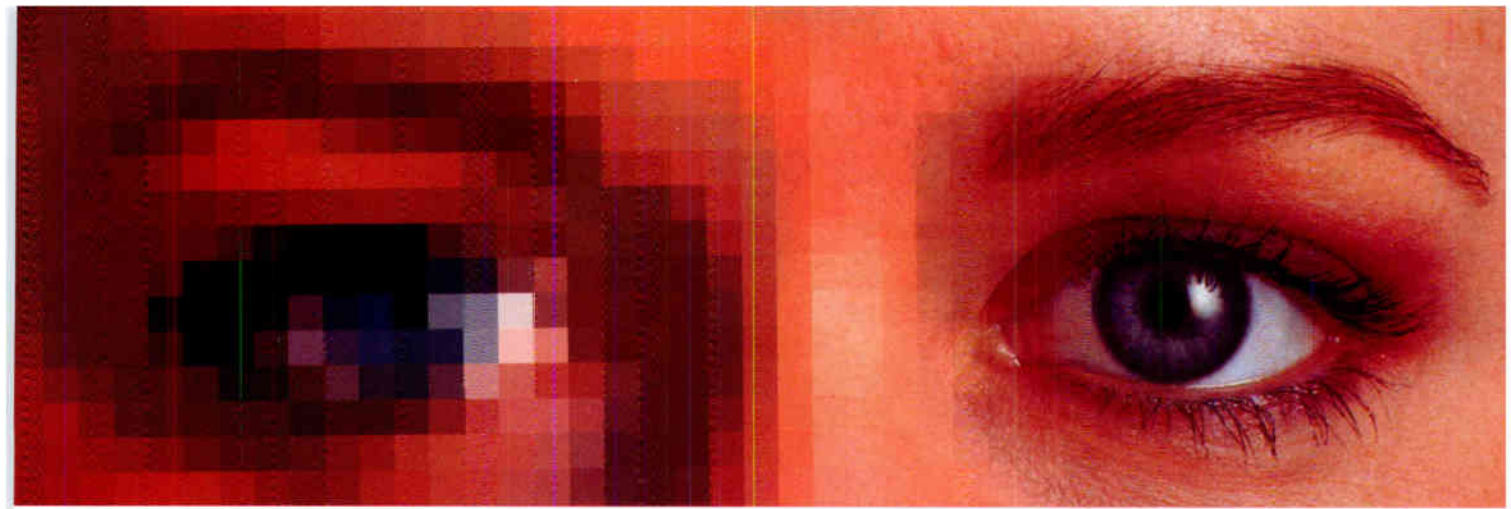
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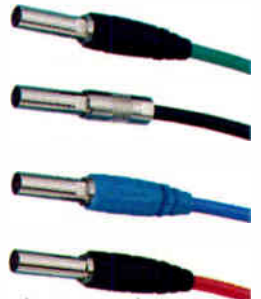
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Wireless microphone systems

Manufacturer	Audio Limited	Audio-Technica US	beyerdynamic				
Model	MX-2000/DX-2000	ATW 1235/1236	RR7000/S700	S150 (S250)	S190P/S190H	S350	U700
Transmitter Model No.	TX2000/HP/H	T35(T36HE)	S 700	SM250 TSP	TS190 (SEM 185)	SDM350 (TS350P)	SEM 700 (TS 900)
Type of package	HH/pocket/camera	Body(Handheld)	Handheld	Handheld or pocket	Body (handheld)	Handheld (pocket)	Handheld (pocket)
Microphone types	Dynamic or electret	Electret(Dynamic)	Dynamic & electret	Dynamic or electret	Dyn& (electret)	Dynamic or electret	Dynamic & electret
Multiple channel operation	Yes	No	No	Yes	No	Yes	Yes
Operating weight	9 oz	2.8oz (8.3oz)	...	12 oz	160 gt (360 gr)	12 oz	12 oz
Receiver Model No.	MX2000/DX-2000¹	R12	RR 7000²	NE 150 (NE 250)	NE 185	NE 350 (TE350)	RR 7000 TG12
Type of package	Pocket, Rk, Cam-nt	Rack-mount	Rack-mount	Tabletop	Table-top or rack	Rack-mnt (camera)	Rack-mount
RF sensitivity, dB quieting	0.5µV to squelch	.65µV 12dB SINAD	1µV 57dB	1µV 20dB	1µV 85dB	1 (.5µV) 20dB	1µV 46dB
Multiple channel capability	Yes	No	Yes	Yes	No	Yes (No)	Yes
Diversity receiving feature	Yes	Yes	Yes	No (Yes)	Yes	Yes	Yes
Reader Service No	447	448	449	450	451	452	453

¹RS 232 Rack available to hold eight DX2000 diversity receivers; includes two distributing amplifiers from two diversity antennas; LCD display of all eight receiver parameters. ²RR7000 12-channel mainfram can be loaded with one or two EED 700 receiver cards, creating up to 12 operating channels.

Manufacturer	Electro-Voice			Lectrosonics			
Model	MS-2000AB³	MS-2000AH⁴	PRO-DIV-T⁵	PRO-Mini-H⁶	PRO-Mini-L⁷	UHF DIV-T⁸	UHF Mini-L⁹
RF spectrum used	169-216MHz	169-216MHz	150-216MHz VHF	150-216MHz VHF	150-216MHz VHF	470-608MHz UHF	470-608MHz UHF
Audio frequency response	±1.5dB 60-14k	±1.5dB 60-14k	±1dB 100-18k	±1dB 100-18k	±1dB 50-18k	±1dB 30-21k	±1dB 30-21k
Audio S/N ratio	105dB	105dB	96dB	91dB	96dB	109dB	109dB
Harmonic distortion	0.25%	0.25%	<1%	<1%	<1%	<1%	<1%
Modulation control	Compression	Compression	Compression	Compression	Compression	Compression	Compression
Transmitter Model No.	MB-2000A	MT-2000A	T187 (50mW)	H185 (50mW)	M185 (50mW)	UT 195 (100mW)	UM 195 (100mW)
Type of package	Body	Handheld	Handheld	Plug-on	Body pack	Handheld	Body
Microphone types	Dyn. & Electret	Dyn. N/D757B	Dyn. or electret	Dyn. or electret	Dyn. or electret	Electret	Dyn. or electret
Aux line input	No	No	No	Yes	Yes	No	Yes
Operating weight	5.5 oz	10.5 oz	11oz	7 oz	5.3oz	13.2oz	6.3oz
Receiver Model No.	MR-2000A	MR-2000A	DR 185	CR 185	CR 185	DR195	UCR195
Type of package	Rack-mount	Rack-mount	Table-top or rack	Camera-mount	Camera-mount	Table-top	Camera-mount
RF sensitivity, dB quieting	1.6µV 50dB S/N	1.6µV 50dB S/N	0.5µV 20dB	0.6µV 20dB	0.6µV 20dB	1µV 60dB	1µV 60dB
Multiple channel capability	No	No	No	No	No	No	No
Diversity receiving feature	Yes	Yes	Yes	No	No	Yes	No
Reader Service No	454	455	456	457	458	459	460

³DNX companding; internal power supply in receiver; TA4F mini XLR connector on mic; CO100EX, LM20EX omni, C5200EX uni lavalier mics; 30dB gain controls for transmitter, receiver; XLR bal., phone unbal. outputs; mic/line switch. ⁴Proprietary DNX companding; internal power supply in receiver; N/DYM N/D757B mic head; transmitter, receiver gain controls; XLR balanced and ¼-inch unbalanced outputs; mic/line switch. ⁵Ratio combining diversity design receiver; transmitter has "talent-proof" internal switches; Receiver selectivity +5DBM 3rd order intercept. ⁶Plug-on unit converts virtually any audio source to wireless; receiver uses 6-pole helical resonator front end; +6DBM third order intercept selectivity. ⁷Transmitter is machined aluminum; antenna uses mic shield not separate, external structure. ⁸Dual band companding for noted response; pilot tone squelch control; 6-pole helical resonator front end on receiver. ⁹Dual band companding for noted response; pilot tone squelch control; 6-pole helical resonator front end on receiver.

Manufacturer	Micron Audio Products			Nady Systems			
Model	CTR-520¹⁰	CTRD-550H¹¹	CTRD-550¹¹	Nady 2000 VHF¹²	Nady 551 VR¹³	Nady 750 VHF¹⁴	Nady 950 GS¹⁵
RF spectrum used	VHF and UHF	VHF and UHF	VHF and UHF	171-216MHz	171-216MHz	171-216MHz	950/800/450MHz
Audio frequency response	±2dB 100-16k	±2dB 50-16k	±2dB 50-16k	±3dB 25-20k	±3dB 25-20k	±3dB 25-20k	±3dB 25-20k
Audio S/N ratio	>110dB	>110dB	>110dB	110dB	110dB	110dB	110dB
Harmonic distortion	<0.2%	<0.2%	<0.2%	<0.3%	<0.3%	<0.3%	<0.3%
Modulation control	Compress/limit	Compress/limit	Compress/limit	±15kHz crystal ctl	±15kHz crystal ctl	±15kHz crystal ctl	±50kHz crystal ctl
Transmitter Model No.	TX-501	TX-503	TX-501	Nady 2000 ser.	Nady 551 VR	HT-10/LT-20/GT-20	Nady 950 GS ser.
Type of package	Pocket	Handheld	Pocket	HH/Pocket/Body	HH, Pocket, Body, Cam-nt	HH/Pocket/Body	HH/Pocket/Body
Microphone types	Dynamic or electret	Electret	Dynamic & Electret	Dynamic or electret	Dynamic or electret	Dynamic or electret	Dynamic or electret
Aux line input	Yes	No	Yes	No	No	No	No
Multiple channel operation	No	No	No	No	No	No	No
Operating weight	8.5 oz	11 oz	8.5 oz	4-12oz	4-12oz	4-12oz	4-12oz
Receiver Model No.	SR-520	MDR-550	MDR-550	Nady 2000 VHF	Nady 551VR	Nady 750 VHF	Nady 950 GS UHF
Type of package	Pocket/camera-nt	Pocket	Pocket	Rack-mount	Pocket; cam- mnt	Rack-mount	Rack-mount
RF sensitivity, dB quieting	...	...	...	.35µV 20dB	.35µV 20dB	.35µV 20dB	.35µV 20dB
Multiple channel capability	No	No	No	No	2	2	40 (4 grps of 10)
Diversity receiving feature	No	Yes	Yes	Yes	No	Yes	Yes
Reader Service No	461	462	463	464	465	466	467

¹⁰LED display to monitor frequency, signal strength, transmitter and receiver battery status; multi-function input. ¹¹LED display to monitor frequency, signal strength, transmitter and receiver battery status, diversity switching. ¹²IF filtering allows 20 systems to be used in same location simultaneously; hiss mute maintains audio quality even outside limits of the operating range. ¹³Surface mount technology; ultra compact size; all-metal case for maximum reliability in ENG. ¹⁴Two independent true diversity VHF receivers in one rack space component and two handheld, lavalier or line-level transmitters. ¹⁵Permits 40 user switchable channels on the receiver and transmitters; quietest RF link in UHF wireless; includes features of Nady 2000VHF.

Wireless Microphone Systems

Manufacturer	Nady Systems		Sennheiser Electronic Corp.				Shure Brothers
Model	Nady 950 UHF ¹⁶	BF1051 ¹⁷	EM1046/SKM5000 ¹⁸	UHF 1B ¹⁹	UHF 2B-HDP ²⁰	UHF 2H-HDP ²¹	LS24/Beta 58 (58)
RF spectrum used	950/800/450MHz	169.4-171.8MHz	450-960MHz	450-960MHz	450-960MHz	450-960MHz	169-216MHz
Audio frequency response	±3dB 25-20k	40Hz-18kHz	1, -2dB 40-20k	-3dB 50-20k	±2dB 70-20k	±2dB 70-20k	50-15k
Audio S/N ratio	110dB	108dBA	108dBA	111dBA	108dBA	108dBA	102dB dyn. range
Harmonic distortion	<0.3%	<1%	<0.5%	<1%	<1%	<1%	0.3%
Modulation control	±50kHz xtal cfl	Compress & limit	Compress & limit	Compress & limit	Compress & limit	Compress & limit	Compression
Transmitter Model No.	HT-60/LT-60/GT-60	BF1051	SKM5000	SK2012-TVH	SK50-UHF	SKM 4031TV-HDP	L2 Beta 58 (or 58)
Type of package	HH/Pocket/Body	Handheld	Handheld	Body	Body	Handheld	Handheld
Microphone types	Dynamic or electret	Dynamic	Electret	Electret & dynamic	Electret & dynamic	Electret	Dynamic
Aux line input	No	No	No	No	No	No	No
Multiple channel operation	to 10	Yes	Yes	No	No	No	No
Operating weight	4-12oz	8.7 oz	...	6.3 oz	8.0 oz	9.0 oz	13.1 oz
Receiver Model No.	Nady 950 UHF	BF1051	EM1046	EM 2014-TV	EM 2003TV-HDP	EM 2003TV-HDP	L4
Type of package	Rack-mount	Table-top	Rack-mount	Body-pack	Table-top	Table-top	Rack-mount
RF sensitivity, dB quieting	.35µV 20dB	5µV 100dB	1µV 52dB	15µV 97dB	10µV 94dB	10µV 94dB	0.45µV 12dB
Multiple channel capability	10	Yes	Yes	Yes	Yes	Yes	No
Diversity receiving feature	Yes	Yes	Yes	No	Yes	Yes	Yes
Reader Service No	468	469	470	471	472	473	474

¹⁶Quietest RF link in UHF wireless. ¹⁷Advanced RF technology in cost-effective package; 9V battery for 6 hours operation; voltage stabilizer maintains performance over battery life; receiver includes true diversity technique; hard case, stand adapter, receiver antennas included. ¹⁸Combination is a multi-channel UHF receiver system with modular design; up to 8 receiver channels per EM1046 chassis; several EM1046 chassis combine to make a large multichannel wireless system. ¹⁹System includes body-pack transmitter, body-pack receiver and MKE2 electret, omnidirectional lavalier mic. ²⁰Extremely lightweight, compact transmitter; system includes MKE2-4 omnidirectional, electret, lavalier microphone and antennas for transmitter and antenna. ²¹Diversity receiver with adjustable balanced output; integral antenna splitter; optional rack mount for receiver; rugged transmitter is handheld design for vocals, MCs, interviews; voltage stabilizer keeps transmitter performance constant over life of batteries.

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Manufacturer	Shure Bros.	Sony	Swintek	Telex			
Model	LS24/Beta 87 (87)	WRT-830A/WRR-860A ²²	Mark 1L-50A-SM58 ²³	ENG-1 label ²⁴	ENG-4 label ²⁵	FMR-100 ²⁶	FMR-200/Lapel ²⁷
RF spectrum used	169-216MHz	795-806MHz	72-480MHz	165-186MHz	165-216MHz	165-216MHz	165-216MHz
Audio frequency response	50-15k	70Hz-15kHz	±1dB 40-12k	±1dB 50Hz-15kHz	±1dB 50Hz-15kHz	±1dB 50Hz-15kHz	±1dB 50Hz-15kHz
Audio S/N ratio	102dB dyn. range	60dB A-wtd	70dB	90dB	104dB	104dB	104dB
Harmonic distortion	0.3%	...	<1%	...	...	...	...
Modulation control	Compression	Companding	Compress & limit	Compression	Compression	Compression	Compression
Transmitter Model No.	L2 Beta 87 (or 87)	WRT-830A	Mark 50A -SM58	WT-60	WT-400	HT-200/10	WT-80
Type of package	Handheld	Handheld	Any	Pocket; body	Pocket; body	Handheld	Pocket; body
Microphone types	Electret	Electret	Dynamic & electret	Electret	Electret	Electret	Electret
Aux line input	No	No	Yes	No	No	No	No
Multiple channel operation	No	Yes	Yes	No	Yes	No	No
Operating weight	17.3 oz (13.1)	11 oz.	8 oz	3 oz	4 oz	8 oz	4 oz
Receiver Model No.	L4	WRR-860A	Mark 1L	ENG-1	ENG-4	FMR-100	FMR-200
Type of package	Rack-mount	Camera-mt	Picket/TT/Rack/Cam	Camera-mt	Camera-mt	Table-top; rack	Table-top; rack
RF sensitivity, dB quieting	0.45µV 12dB	...	0.25µV 12dB	0.65µV 12dB	0.5µV 12dB	0.65µV 12dB	0.4µV 12dB
Multiple channel capability	No	Yes	Yes	No	Yes	No	No
Diversity receiving feature	Yes	Yes	Yes	No	No	Yes	Yes
Reader Service No	475	476	477	478	479	480	481

²²Units phase lock to 94 channels. ²³Transmitters with all metal cases for durability, RF shielding. ²⁴Balanced mini output connector; headphone monitor with adjustable volume. ²⁵4-position meter; select between mic or line level balanced output; uses AA cells. ²⁶Pos-i-Squelch II noise relay on FMR-100 receiver; recessed power switch, raised on/off switch on bottom of HT-200. ²⁷To 30 systems can operate in one location for multi-channel requirements.

Digital Audio Workstations

Key to *User Interface* types: **FK** function key, **HK** hard key, **SF** soft key, **TB** trackball, **TS** Touchscreen, **JW** jog wheel, **MA** Macintosh application, **MO** mouse, **CO** console transport controls, **Win** MS Windows application. Key to *Digital Signal Interface*: **A** AES/EBU, **P** SPDIF, **D** SDFIF-2, **PD** ProDigi, **DS** DASH, **M** MIDI. Key to *Synchronization* types: **T** VITC, **L** LTC, **V** video, **M** MIDI, **W** word clock.

Manufacturer	AEQ SA	Akai Digital		AKG Acoustics	AMS Neve	Avid Technology	BASYS	DigiDesign
Model	MAR System ¹	DD1000 ²	DR4d ³	DSE 7000 ⁴	AudioFije Spectra ⁵	Avid AudioVision ⁶	D-Cart ⁷	Pro Tools 2.0 ⁸
Recording storage	HD	Optical disk	HD	RAM/HD	HD/ OD	RAM; HD; OD	HD; OP	...
# of record channels/edit tracks	2/2	2/2	4/4	2/8	8/to 24	8/24	25/64	to 16 ch
# simultaneous replay channels	2	4	4	8	to 24	8	50	4-16 channels
Archiving with	HD; OD	DAT	DAT; OD	DAT	DAT/OD/tape	HD, DAT, OD, tape	OD or tape	HD, DAT, OD
Platform	80386/486	Proprietary	Proprietary	80386/486	Proprietary	Macintosh	Proprietary	Macintosh
User interface	SK, TS, MO	JW, HK, MA	JW, HK	CO, faders, HK	JW, CO, SK, HK	MO, HK, WIN	KB; MO, JW, CO, FK, Win, fader	Co, JW, Faders; SK, HK, MO
Peripherals	DAT, CD, SCSI, ATR, VTR, MXR	...	...	DAT, SCSI	...	DAT, CD, SCSI, VTR, MXR, ATR	...	...
Analog input/output	...	2 in/4 out	4 I/O	2 in/4 out	to 8 in, 24 out	8 I/O	2-140 I/O	4-16 I/O
Sample rates	...	32, 44.1, 48	32, 44.1, 48	32, 44.1	44.045, 44.1, 47.952, 48	44.1, 48	32; 44.1; 48	44.1; 48
Synchronization via	...	T; D; W, L, V	MIDI; LTC	None	T, L, W, V	L, W, V	...	T, M, L, W, V
Digital signal interface	...	A, P, M	A, DAT, P, M	...	A, P, D	A, P	A, P, D	A, P, M, ATR
Reader Service No	482	483	484	485	486	487	488	489

¹Automatic news recording; modular, expandable via transparent network/server. ²Self-contained rack-mountable; computer not required for operation; Macintosh software option; DL600 remote unit for broadcast apps adding fader-start triggers, GPI triggers, dual cart machine-style operation. ³Random-access recording, editing with tape machine-style user interface in an affordable system; 16-track operation with 4 DR4d units. ⁴Intuitive interface; no mouse, typewriter keyboard; features back timing, copying, moving, time slipping, undo edit; "tape transport" functions; scrub wheel; software upgrades to owners for life. ⁵An edit system with flat-screen display; edit point location with full-bandwidth reel-rocking; EDL conform, VTR emulation software; link to digital mixing consoles which feature full dynamic automation; AudioFile, Logic systems expandable, software updates. ⁶28Mbyte RAM, 230Mbyte HD, >2Gbyte OD; record time per 48kHz sampling; sync-lock to digital pictures; dynamic waveform editing; non-linear ADR, Loop; multi-channel scrub; track bouncing, mix-down mode; pitch shifting; open media framework interchange support. ⁷D-Cart is a product of the Australian Broadcast Corporation. ⁸Fader interface available with DigiDesign Miles to be available 2nd Qtr '94.

Manufacturer	DigiDesign	Digigram	Digital Audio Labs	Digital Audio Research			ENCO Systems
Model	Sessions ⁸	X-Track	CardD System ⁹	Sabre ¹⁰	Sound Station Delta ¹¹	Sound Station Sigma ¹²	DAD 486x ¹³
Recording storage	HD	HD, OD	HD	OD	HD; OD opt	HD; OD	RAM; HD; OD
# of record channels/edit tracks	8/8	2 to 8/16	2/2 real	4/8	4/8/16	8/16	2
# simultaneous replay channels	8	16	2	8	4/8/16	8/16 (to 32 max)	3 st/6 mono
Archiving with	DAT; ADAT	HD/DAT/OD/Server	HD	DAT; OD/Exabyte Opt			HD/DAT/OD/Exabyte
Platform	Macintosh or PC	80386/486	80386/486	80386/486			80486
User interface	Faders; MO, Win	CO, MO	MO, Win	CO, J, W, faders, HK, TS, MO			CO, SK, TS, MO, faders

Manufacturer	DigiDesign	Digigram	Digital Audio Labs	Digital Audio Research			ENCO Systems
Model	Sessions ⁸	X-Track	CardD System ⁹	Sabre ¹⁰			DAD 486x ¹³
Peripherals	DAT, VTR, MXR, SCSI; MIDI	DAT, CD, ATR, VTR, MXR, SCSI	...	DAT, VTR, Laser disc			CD; SCSI
Analog input/output	22 in; 8 out	8 I/O	2 I/O	2 in; 8 out	4 in; 4/8/16 out	4 in; 8/16 out	+4dBm in/out
Sample rates	44.1; 48	32; 44.1; 48	32; 44.1; 48	44.1/48/external			32; 44.1; 48; user defined
Synchronization via	MIDI, LTC	LTC, video	MIDI, LTC	LTC, WC, Video, AES/EBU			...
Digital signal interface	SPDIF	A, DAT, P, ATR, CD	SPDIF	A, P	AES/EBU		A, P
Reader Service No	490	491	492	493	494	495	496

⁹Number of editing tracks unlimited in virtual mode operation. ¹⁰Dedicated user interface; servo, varispeed; Time Warp; waveform editing. ¹¹Dedicated user interface; servo, varispeed; Time Warp; WordFit; waveform editor; upgradable; MO disc option. ¹²Dedicated user interface; servo, varispeed; Time Warp; WordFit; waveform editor; upgradable; MO disc. Features segment-based EQ, pan & gain; record, play 8 channels from MO drive. ¹³DOS-based, operates on standard 486DX/50 PC; complete broadcast on-air production cart replacement system, stand-alone workstation or multi workstations on Ethernet.

Manufacturer	FED GmbH	Korg Inc.	Lexicon	Otari	PR&E	Roland	Solid State Logic	
Model	Audio Solution II/IV	Soundlink ¹⁴	OPUS ¹⁵	ProDisk-464 ¹⁶	ADX ¹⁷	DM-80 ¹⁸	Scenaria ¹⁹ ♦	ScreenSoundé
Recording storage	HD; OD	Hard drive	Hard disk	HD; OD	RAM/HD/OD	HD; OD	M-O discs	1.2Gbyte HD
# of record channels/edit tracks	2-4/4	6/8	16/99	to 64/64	8/16/24/32	8 expand to 32	...	8/8
# simultaneous replay channels	4	8	16	64	8/16/24/32	8	24	8
Archiving with	HD; OD	Tape	HD; tape	HD, OD, tape	HD, DAT, OD, ET, SCSI	DAT, tape	...	Video 8 tape; OD
Platform	68030	Proprietary	Proprietary	Macintosh	MAC+prop. DSP	Prop, Mac ctl	Proprietary	Proprietary
User interface	CO, HK	JW, faders; SK, HK; CO	JW, SK, HK, Faders; CO, TS	JW, HK, Mac GUI	CO, JW, HK, faders, TB	CO; Faders; HK	KB, JW, CO, CRT; drawing pad; network	Tablet/pen; keyboard
Peripherals	DAT/CD/ATR/VTR/SCSI; MIDI; LaserDisk	...	DAT, CD, ATR, VTR, MXR, MIDI, LD	VTR; SCSI	DAT, CD, ATR, VTR, MXR, SCSI, MIDI, LD	SCSI; MIDI	VTR; ATR; Lsrdisc; router.	VTR/ATR/DAT/A F mixer
Analog input/output	2 in/4 out	8 in/10 out	...	64 I/O	8-32 in/8-32 out	8 in/10 out	...	2I/8O
Sample rates	32; 44.1; 48	44.1/48	44.05/44.1/48	...	32/44.1/48	32; 44.056; 4401; 48	...	32; 44.1; 48

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SPECIFICATIONS

Pick Up Device	Interline Transfer Hyper HAD CCD
Picture Elements	768 (H) x 493 (V)
Signal System	NTSC
Lens Mount	Special, 170M (C mount w/adaptor)
Flange Back	12mm
Sync System	Internal/External
External Sync System	HD/VD, VBS (w/adaptor)
Horizontal Resolution	470 TV line
Sensitivity	2000 Lux, F5.6
Minimum Sensitivity	4.5 Lux, F1.2
S/N Ratio	Better than 48dB
Shutter Speed	1/1000 sec, flickerless
Gamma	0.45/1
AGC	ON/OFF
White Balance	ATN, 3200° K, 5600° manual
Power Requirements	DC12 ± 10%
Power Consumption	3.5W
Operating Temperature	0-40°C
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Manufacturer	FED GmbH	Korg Inc.	Lexicon	Otari	PR&E	Roland	Solid State Logic	
Model	Audio Solution II/IV	Soundlink ¹⁴	OPUS ¹⁵	ProDisk-464 ¹⁶	ADX ¹⁷	DM-80 ¹⁸	Scenaria ¹⁹ ♦	ScreenSoundé
Synchronization via	T, L, W, V, Bi-Phase, Pilot, Line	T, M, L, W, V	L, W, V	T, L, W, V	M, L, W, V	M, L, V	Time code	T, L, V
Digital signal interface	AES/EBU	A, DAT, P, M, ATR, CD	A, DAT, P, D, M	A, DAT, P, CD, PD, DS, MADI	A, M	A, P	AES/EBU	AES/EBU
Reader Service No	497	498	499	500	501	502	503	504

¹⁴FED Video Solution available as user interface. Complete system with digital recording, editing, mixing, signal processing, MIDI and full synchronization; console type user interface. ¹⁵Full digital automated console. 56-bit, 4-band multimode EQ, peak dig, notch, shelving, HP/LP filters; 4 aux sends; analog or digital patch points; time compression, pitch shift, varispeed, sampling rate conversion; EDL functions. ¹⁶With GUIDE user interface; 4 to 64 channels; hardware controller, MO disk; 8mm backup; CMX Auto-Conform, Time Compression/Expansion software. ¹⁷Pacific Recorders and Engineering Disk-based, expandable in # of tracks, recording time; tape machine-style control; MAC interface, file management; proprietary DSP; moving fader console automation package for PRE mixers. ¹⁸Max time of 24 hours includes additional storage; remote controller or multi-track manager software for Macintosh; sound quality, ease of use, speed of editing, value for price are selling features. ¹⁹Full random access video editing. Data taken from brochures. Call SSL for information.

Manufacturer	Sonic Solutions	Studer Digi- tec Numisys	Studio Audio & Video Ltd.	Sunrize Industries		Synclavier Company	
Model	Sonic System ²¹	Numisys II ²²	SADiE	AD516 ²⁴	AD524 ²⁵	Postpro SD ²⁶	Synclavier 9600 ²⁷
Recording storage	HD; OD	HD; OD	HD; MO	HD	HD	RAM; HD; MO; SF	RAM; HD; MO; SF
# of record channels/edit tracks	2-24/1-64	to 3 stereo/station	2/8	2 Exp to 8/8 to 12	2 Exp to 8/8-12	2-16/2-16	4-16/4-16
# simultaneous replay channels	12-72	3/station	4 ²³	8 Exp to 12	8 Exp to 12	2-16	4-16
Archiving with	DAT, tape	HD, DAT, OD, tape	HD, DAT, OD, tape	HD; DAT	HD; DAT	HD, MOD, DAT, F	HD; MOD
Platform	Macintosh; SGI	80386/486	80486	Amiga PC		Macintosh II/Quadra	
User interface	JW, Faders, MO, HK, CO	CO; JW, HK, SK, TS Win, Fader, MO	MO, HK, Win	Faders; MO		Keyboard; Ctl panel	
Peripherals	DAT, CD, ATR, VTR, SCSI, MIDI	DAT, CD, ATR, MXR, SCSI	DAT, CD, SCSI, MIDI	DAT, CD, ATR, VTR, MXR, SCSI, MIDI		MIDI	MIDI
Analog input/output	2-24 I/O	2 in/2 out	2 in/4 out	...	Digital only	2-16/4-16	1 ST in/1 ST out
Sample rates	44.1; 44.056; 48; 47.952	32; 44.1; 48	32/44.056/44.1/47.952/48kHz	5.5-48kHz	44.1; 48	44.1; 50	44.1; 48; 50; user programmable
Synchronization via	T, M, L, W, V	LTC	M, L, W, V	M, L, V	L, V	T, M	T, M
Digital signal interface	A, DAT, P, D, ATR/CD	A, CD	A, DAT, P, CD	ATR; RCA cnxs	A, DAT, P, M, ATR, CD	A, D, ProDigi, Studio UDI/O	...
Reader Service No	505	506	507	508	509	510	511



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Circle (76) on Reply Card

²¹Offers CDDI/FDDI real-time network; digital video playback.

²²Set of hardware, software modules for radio automation; edit, record, schedule, archive, management and broadcasting of central library based on hard disk or juke-box; manages texts and data in addition to audio; 1 stereo channel per board; each station can contain three boards.

²³Plays back upto 8 mixed tracks; record time noted for turnkey system; 45 hours possible with fully SCSI drive systems.

²⁴Highly cost effective system.

²⁵Digital I/O card for Sunrize HD recording systems.

²⁶Information taken from brochure; 8-32 panning voices; SAC-70 time compression; sample rate conversion.

²⁷Information based on brochure; 32 to 96 panning voices; SAC-70 time compression, sample rate conversion; SF denotes "super floppy" device.

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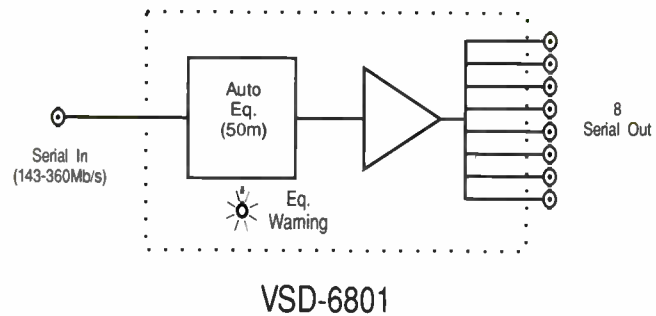


Serial Distribution and Monitoring

VSD-6801 Serial Video Distribution Amplifiers

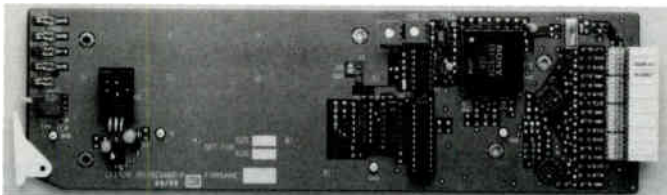


- Low cost 8 output serial video DA
- Ideal for fan-out and short distance (<50m) distribution applications
- Unique Eq. (equalization) warning light indicates when Auto Eq. exceeds 50m
- Data rate transparent: supports all serial video rates including proposed EDTV 16:9 at 360Mb/s

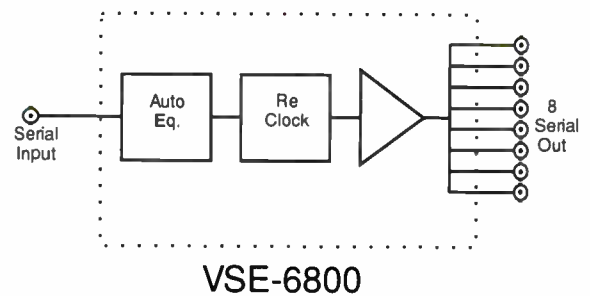


- Compact design: 4 cards in 1RU, 10 in 2RU

VSE-6800/6801 Equalizing, Reclocking Serial Video DAs

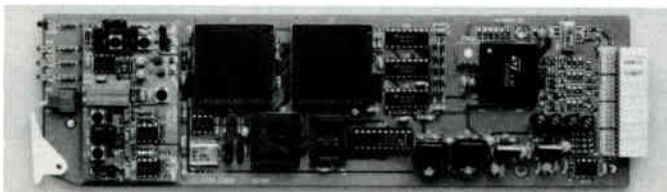


- Automatic cable equalization and reclocking
- Automatic data rate selection
VSE-6800: 143, 177, and 270Mb/s
VSE-6801: 143, 177, 270, and 360Mb/s
- VSE-6801 provides equalization warning light which indicates when cable length exceeds user-specified maximum

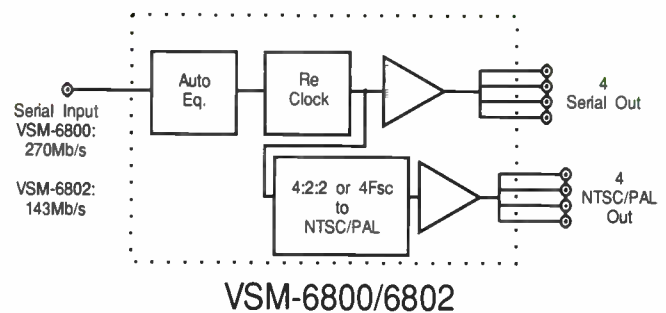


- Compact design: 4 cards in 1RU, 10 in 2RU

VSM-6800/6802 Serial Video Monitoring DAs

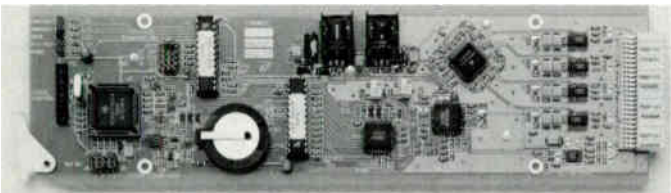


- Doubles as equalizing, reclocking DA and inexpensive monitoring encoder
- 4 reclocked serial outputs
- 4 composite analog color outputs (automatically selects PAL or NTSC)
- Ideal for monitoring serial signals with analog composite monitors

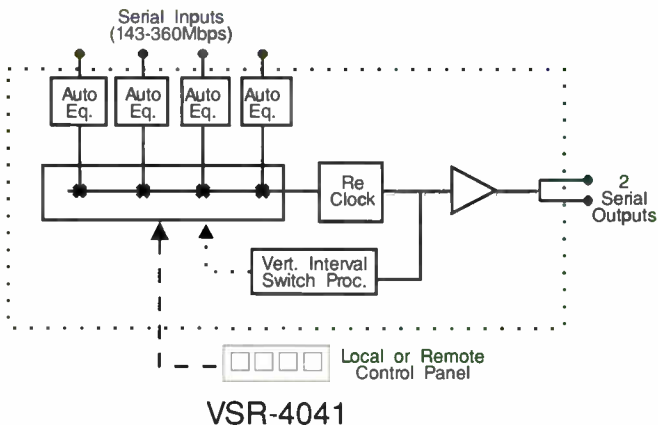


- Compact design: fits in same frames as regular serial DAs

VSR-4041 4x1 Serial Video Router Modules



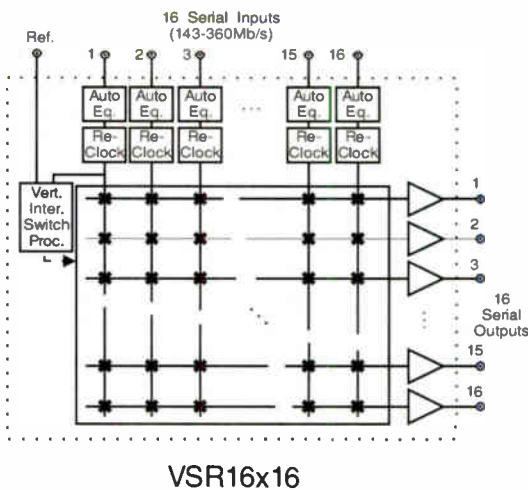
- 4x1 serial router on a compact DA-sized card
- Accepts composite (143/177Mb/s), component (270Mb/s) and EDTV 16:9 (360Mb/s) standards
- Reclocked serial outputs
- Local or remote control
- Performs vertical interval switch
- Practical design: fits in same frames as serial DAs



VSR-16x Series 16x16 and 16x1 Serial Video Router Modules



- 16x16 and 16x1 serial video modules for X^{plus} router frames
- Accepts composite (143/177Mb/s), component (270Mb/s) and EDTV 16:9 (360Mb/s) standards
- Performs vertical interval switch
- Can be combined with other video and audio (analog & digital) modules
- Performs input equalization and relocking



ASR Series 8x8 and 16x1 AES/EBU Serial Audio Router Modules



- 8x8 and 16x1 AES serial router modules for X^{plus} router frames
- Works with sample rates of 32, 44.1, and 48 KHz
- 16x1 model includes analog stereo monitoring output
- 16x1 model performs clean, 'glitch-free' switches

- Mounts in 1 and 2RU X^{plus} router mounting frames

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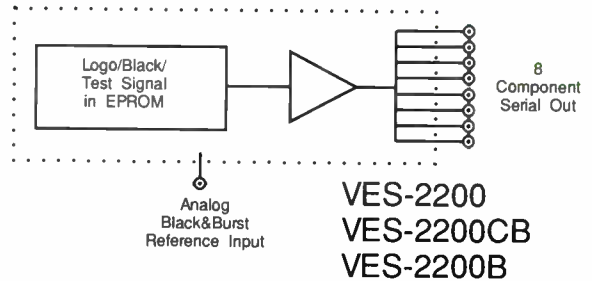
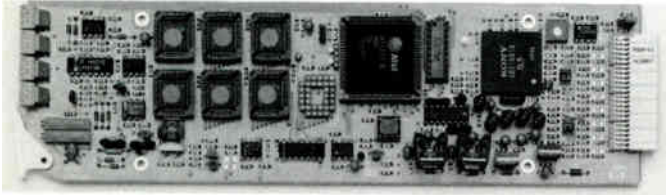


Serial Signal Generators

VES-2200 4:2:2 Serial Logo/Trouble Slide Generators (PROM-Slide™)

VES-2200-CB 4:2:2 Serial Color Bar Generators

VES-2200-B 4:2:2 Serial Black Generators (Sync Generator)



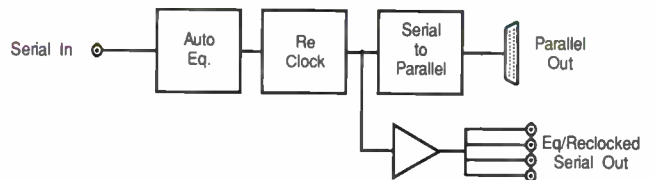
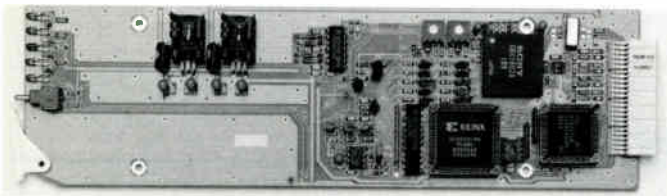
- Modules store full frame of 4:2:2 video in non-volatile EPROM memory
- Cost effective, practical means of displaying station logo, trouble still, color bar or custom test signal
- Image contents can be user-programmed using Leitch 4:2:2 STILL FILE® or from TARGA image file
- Module provides 8 serial outputs

- Analog reference input and wide timing adjustment allows use as an inexpensive 4:2:2 sync generator
- Practical, compact design: fits in same frames as serial DAs (4 in 1RU, 10 in 2RU)

Serial ↔ Parallel Converters

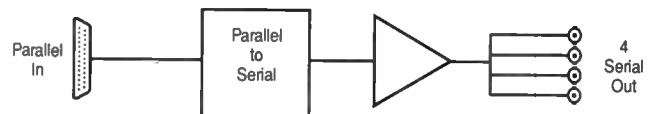
VSP-7000/7001 Serial to Parallel Converters

VPS-7000/7001 Parallel to Serial Converters



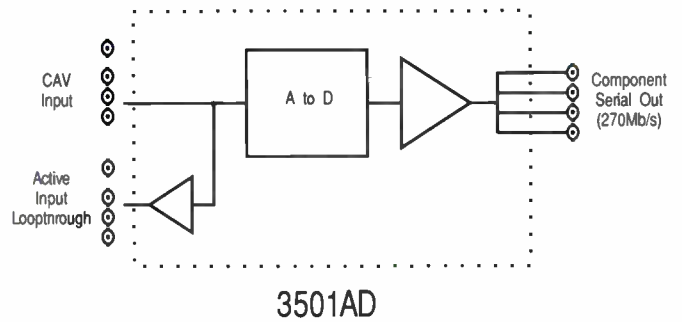
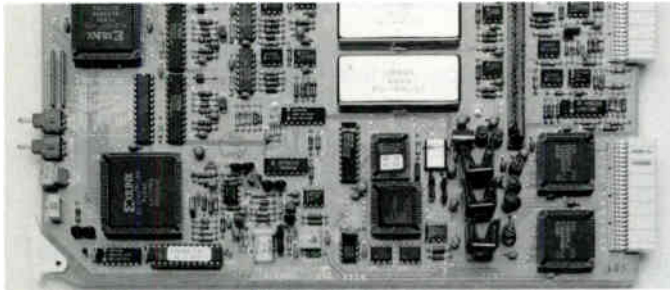
VSP-7000/7001

- 7000 Series functions both as composite (143 or 177Mb/s) and component (270Mb/s) serializer/deserializer
- Selection of data rate can be automatic or fixed by jumper configuration
- 7001 Series are more economical, component only (270Mb/s) versions
- Serial to parallel (VSP) converter includes 4 equalized reclocked serial outputs eliminating need for DA
- Practical, compact design: 4 modules in 1RU



VPS-7000/7001

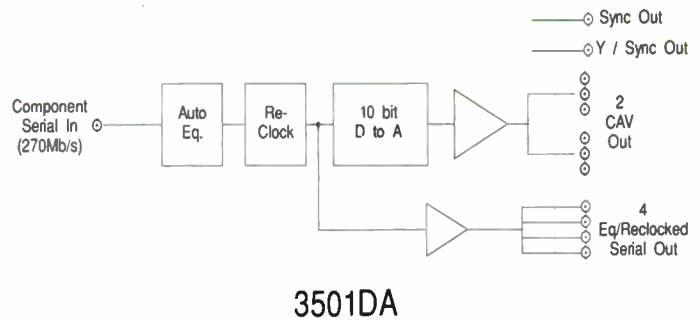
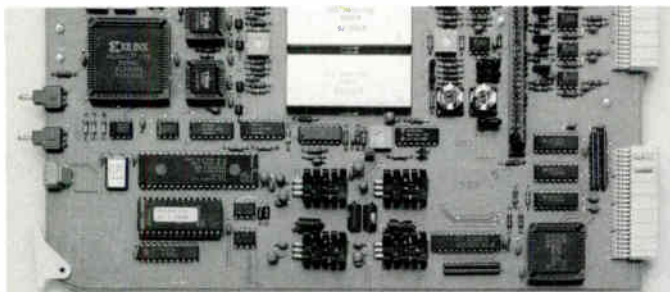
3500/3501AD Component Analog Video to Component Digital Converters



- Full broadcast quality A to D processing
- 3500AD provides 2 parallel 4:2:2 outputs
- 3501AD provides 4 serial 4:2:2 outputs
- Luminance only versions available for key signal processing

- Configurable for SMPTE/EBU, Betacam, MII, or RGB analog inputs
- Compact design: 2 modules in 1RU
- Can be combined in same frame with other 3500 Series modules

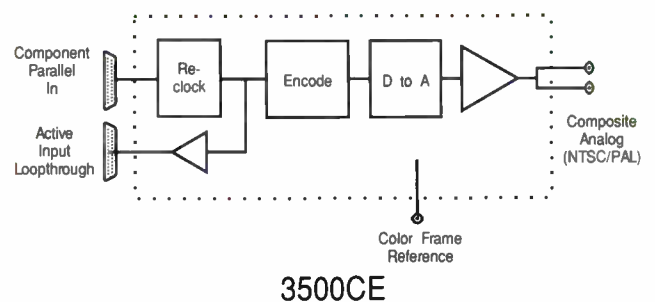
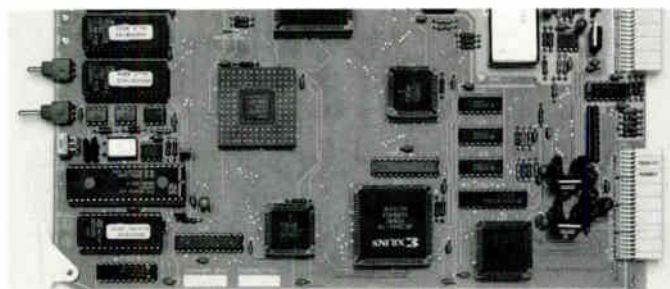
3500/3501DA Component Digital to Component Analog Video Converters



- Full broadcast quality, 10-bit D to A processing
- 3500DA accepts parallel 4:2:2 input
- 3501DA accepts serial 4:2:2 input
- Automatic 525/625 line rate selection

- Configurable for SMPTE/EBU, Betacam, MII, or RGB analog outputs
- Compact design: 2 modules in 1RU

3500CE Component Digital to Composite Analog (NTSC/PAL) Converter

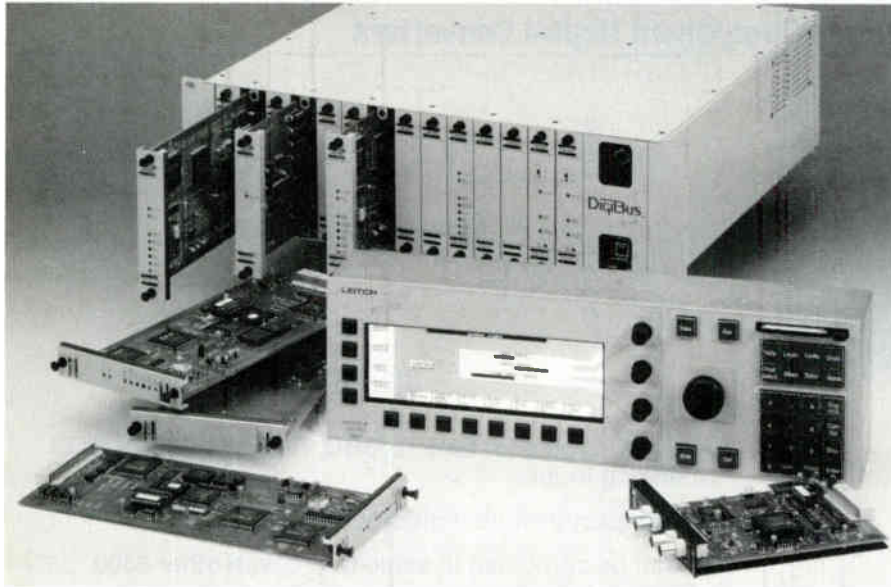


- Converts parallel 4:2:2 to composite analog (NTSC, PAL or PAL-M)
- Automatic 525/625 line rate selection
- High quality 10-bit D to A processing

- Compact design: 2 modules in 1RU



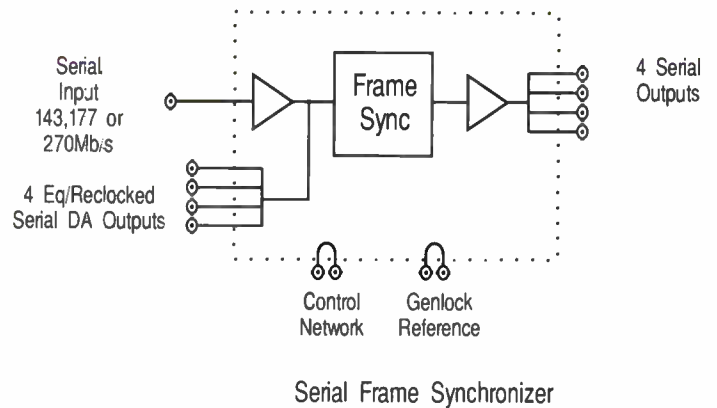
DigiBus™ Modular Systems Interface Frames



- Modular architecture permits construction of virtually any conversion or processing function
- Functions are built by combining appropriate input, processing and outputs modules
- 3RU frame contains total of 14 front and 14 rear module slots
- Universal control panel allows control of any function in any frame
- Control panels can communicate with multiple frames via standard 75 ohm coaxial network
- Control panel features easy-to-use graphical user interface

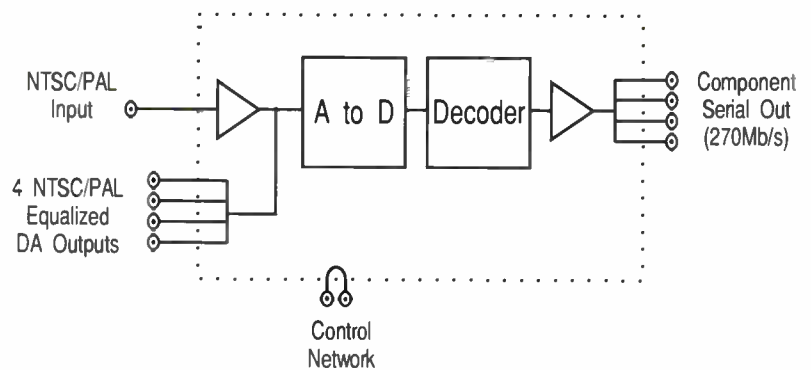
DigiBus™ Serial Frame Synchronizers

- Available for composite (4Fsc) or component (4:2:2) processing
- 525/60 or 625/50 operation
- High stability composite genlock reference
- Ideal for system synchronization and timing applications
- Built-in input equalization and reclocking with 4 reclocked outputs
- Freeze frame or field capability
- Frame usage: 2 rear slots, 1 front slot
- Combine up to 6 instances in 3RU frame



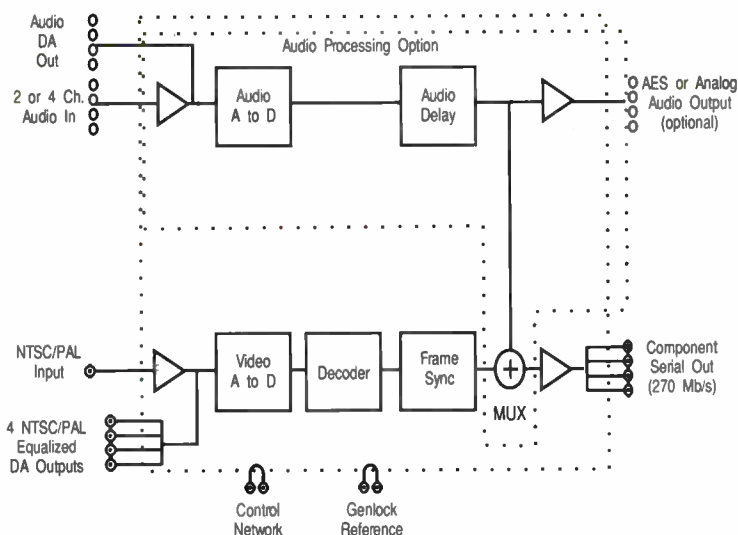
DigiBus™ PAL/NTSC to 4:2:2 Decoder and A to D Converters

- Converts NTSC or PAL to 4:2:2 component digital
- Serial or parallel outputs
- High quality comb filter decoding and 10-bit A to D processing
- Ideal for interfacing composite analog signals into component digital suite
- Frame sync option available (see next page)
- Frame usage: 3 front and rear slots
- Combine up to 4 instances in 3RU frame



DigiBus™ PAL/NTSC to 4:2:2 Decoder/Synchronizer and Audio Interface

- Ideal for remote NTSC/PAL required for component digital (4:2:2) facilities
- High quality comb filter decoding and 10-bit A to D processing
- Excellent input performance: will decode extremely noisy incoming satellite feeds without freezing or losing sync
- Audio Interface Option allows synchronized processing and conversion of audio signals
- Synchronized audio may be embedded into serial video or outputs in either or both analog or AES/EBU formats
- Frame usage:
Video only: 4 front and rear slots
With audio: 5 front and rear slots
- Combine up to 4 instances in 3RU frame



PAL/NTSC to 4:2:2 Decoder/Synchronizer
with Optional Audio Processing



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RF/Test & Measurement Products

AM Radio Transmitters

Note: Most models designed for standard AM broadcast, some models also available for short wave broadcast.

Manufacturer	CCA Electronics	Continental Electronics Corp.			Harris		
Model	AM 5000 ¹	314T-1, 315T-1, 314T	319G; 320H ³	418E/419G/420C ⁴	DX10/DX25U/DX50 ⁵	Gates series ¹⁰	SW-50B/SW-100B
Service band	AM/SW	AM broadcast	AM broadcast	Shortwave	AM broadcast	AM broadcast	Shortwave
RF output rating	5k, 10k, 15kW	2.5k, 5k, 1kW	300-600kW	100-500kW	11k, 27.5k, 60kW	1.1k-5.6kW	50kW/100kW
Carrier stability	...	±8Hz	±1Hz	±1Hz	±2Hz typical	±4Hz typical	±1x10 ⁻⁶
Carrier shift	2% max	<2%	<3%	<3%	<1.0%	<1.0% ¹¹	<2.0% 95% mod
Modulation (maximum)	125%	125%	100%	100%	+145%	+130% peak	100% ¹⁵
Audio response	±1.5dB 10kHz	0.05/-1.5 to 10kHz	0.05/-1 to 8kHz	0.05/-1 to 8kHz	±0.5dB 20-10kHz	±0.5dB 20-10k ¹²	±1.5dB 50-10kHz
Audio distortion	3% max	<2%	5% max.	5% max.	0.3%/0.5%/0.5% ⁶	<1.0% 95% mod.	<3% 50-10kHz
AM noise figure	-55dB	...	56dB	56dB	-65dB unwt ⁷	>60dB ⁷	55dB ¹⁶
Final amplifier device	Tetrode	Solid-state	Tetrode	Tetrode	Solid-state	Solid-state	Tube
Modulator final device	Tube	Solid-state	Solid-state	Solid-state	Solid-state	Solid-state	Tube
Input power requirement	240/380Vac 3φ	200-250Vac 1φ ²	4160/11kV 3φ 50-60Hz		197-281V 3φ ⁸	197-251Vac 1φ ¹³	380-480Vac 3φ
Power consumption (@ 100% mod)	...	Varies per model	...	...	17.9/44.1/88 ⁹	1.9kW-9.6kW ⁴	130kW/250kW
System efficiency	...	...	78% typical	75% typical	86%/85%/85% typical	>65%	56%/55% ave. mod.
Power factor	0.9	...	0.95	0.95	0.98 typical	0.95 @ 5kW 3φ	>0.95
Stereo capable	Yes	Optional	Yes	No	Yes	Yes	No
Operating logic	Relay	Solid-state	μP system	μP system	Solid-state	Solid-state	Solid-state
Floor space required	6.3'Wx2.8'D	23'Wx29'D	Custom layouts	Custom layouts	6'Wx2'9"D/10'x2'9"	28'Wx30'D	12'wx4.5'D
Reader Service No	512	513	514	515	516	517	518

¹AM 5000 5kW; AM10000 10kW; AM15000 15kW. ²5kW unit designed for 3φ power. ³CCM standard feature. ⁴CCM standard feature; SSB option; operational capability on any frequency from 3.9MHz to 26.1MHz; automatic tuning requires 30s maximum. ⁵DX10 1kW-11kW; DX 25 10kW-27.5kW; DX 50 10kW-60kW. Digital amplitude modulation; DX25U upgrades to 50kW; DX systems available to 2.1MW, frequency agile 100kW and 300kW; -40dB IQM under stereo. ⁶At typical modulation levels; <0.9% 95% modulation. ⁷Below 100% modulation. ⁸DX 10 option for 1φ; DX25U & DX 50 363-502Vac 3φ + 190-240Vac 1kVA. ⁹At 10kW/25kW/50kW output with 100% modulation. ¹⁰Gates One 100W-1.1kW; Gates Two 250W-2.75kW; Gates Five 500W-5.6kW. AMS-G1 AM stereo exciter option; 6, power levels; auto VSWR power cutback; front panel diagnostics; polyphase PDM modulation; frequency agile option for 5kW; main, alternate, combined configurations. ¹¹At 100% modulation with 1kHz tone. ¹²Bessel filter out. ¹³Five also for 3φ 197-251Vac or 341-434Vac. ¹⁴For typical program audio. ¹⁵Sinusoidal; 10minutes, 500-5kHz. ¹⁶Below 400Hz, 100%modulation.

Manufacturer	LPB Inc.	Nauteil			Telefunken Sendertechnik GmbH		
Model	AM-30P/60P/100P	AMPFET ND1 ¹⁸	AMPFET ND10 ¹⁹	AMPFET ND50 ²⁰	S4001	S4002	S4004
Service band	AM (PSSA/PSRA) ¹⁷	AM	AM	AM	AM/SW	AM/MW	AM/MW
RF output rating	30W/60W/100W	1kW	10kW	50kW	100kW	100kW	300kW
Carrier stability	±0.001%	5Hz	5Hz	5Hz	<10 ⁻⁹ /K ²¹	<10 ⁻⁹ /K ²¹	<10 ⁻⁹ /K ²¹
Carrier shift	<2%	1%	1%	1%	<3%	<3%	<3%
Modulation (maximum)	110%	145%	145%	145%	100%	100%	100%
Audio response	±1dB 15kHz	±0.5dB 10kHz	±0.5dB 10kHz	±0.5dB 10kHz	+1;-2dB 4.5kHz ²²	+1;-2dB 4.5kHz ²³	+1;-2dB 4.5kHz ²²
Audio distortion	<2%	0.8%	0.8%	0.8%	<3%; m=0.8	<2%; m=0.8	<2%; m=0.8
AM noise figure	<52dB	-65dB	-65dB	-65dB	>66dB	>66dB	>66dB
Final amplifier device	Solid-state	Solid-state	Solid-state	Solid-state	Tetrode	Tetrode	Tetrode
Modulator final device	Solid-state	Solid-state	Solid-state	Solid-state	Solid-state	Solid-state	Tube
Input power requirement	117Vac 60Hz	180-250Vac 1φ	180-600Vac 3φ	180-600Vac 3φ	400Vac 3φ	400Vac 3φ	36kVac 3φ
Power consumption (100% mod)	150W/250W/430W	2.24kW 1kW	20kW 10kW	97kW 50kW	350kW	300kW	800kW
System efficiency	...	70%	77%	80%	65%	69%	70%
Power factor	...	0.82	0.95	0.95	>0.9	>0.9	>0.9
Stereo capable	Yes	Yes	Yes	Yes	Option	Option	Option
Operating logic	Solid-state	Solid-state	Solid-state	Solid-state	Solid-state	Solid-state	Solid-state
Floor space required	1'2"/2'Wx6'D	2'Wx2'D	4'Wx2'D	13.5'Wx2.5'D	21.7'Wx6.6'D	21.7'Wx6.6'D	18.4'Wx18.1'D
Reader Service No	519	520	521	522	523	524	525

¹⁷Part 73 type-accepted PSSA/PSRA systems. ¹⁸3 PA modules with soft failure; optional power programmer for multiple daily power level changes; built-in AM stereo. ¹⁹24 PA modules with soft failure; broadband PA; built-in standby exciter duplicates oscillator, RF drive, modulator drive, LV supplies; built-in stereo generator; PA modules removable without going off air. ²⁰120 PA modules with soft failure; broadband PA; built-in standby exciter duplicates oscillator, RF drive, modulator drive, LV supplies; built-in stereo generator, models from 1kW to 100kW; PA modules removable without going off air. ²¹Or<5x10⁻⁷/yr with respect to carrier frequency and depending on type of exciter. ²²with respect to 7.5kHz. ²³with respect to 7.5kHz.

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AM Radio Transmitters, cont'd

Manufacturer	Telefunken Sendertechnik GmbH				
Model	S4005 ²⁴	S4006	S4008	S4103	S4105
Service band	AM/SW	AM/MW	AM/LW	AM/SW	AM/SW
RF output rating	500kW	600kW	300kW	300kW	500kW
Carrier stability	<10 ⁻⁹ /K or <5x10 ⁻⁷ /yr with respect to carrier frequency and depending upon type of exciter				
Carrier shift	<3%	<3%	<3%	<3%	<3%
Modulation (maximum)	100%	100%	100%	100%	100%
Audio response	+1;-2dB 4.5kHz ²⁵	+1;-2dB 4.5kHz ²⁵	+1;-2dB 4.5kHz	+1;-2dB 7.5kHz	+1;-2dB 7.5kHz
Audio distortion	<3%; m=0.8 ²⁶			<3%; m=0.8 7.5kHz	<3%; m=0.8 7.5kHz
AM noise figure	>66dB	>66dB	>66dB	>70dB	>70dB
Final amplifier device	Tetrode				
Modulator final device	Tube	Tube	Tube	Solid-state ²⁷	Solid-state ²⁷
Input power requirement	36kVac 3φ			20kVac 3φ	20kVac 3φ
Power consumption (@ 100% mod)	1.5MW	1.4MW	800kW	750kW	1.2MW
System efficiency	68%	73%	71%	72%	75%
Power factor	>0.9	>0.9	>0.9	>0.9	>0.9
Stereo capable	Option	Option	Option	Yes	Yes
Operating logic	Solid-state	Solid-state	Solid-state	μP-based	μP-based
Floor space required	18.4"Wx18.1"D	18.4"Wx18.1"D	21.7"Wx18.1"D	20.3"Wx18.1"D	20.3"Wx18.1"D
Reader Service No	526	527	528	529	530

²⁴7.5kHz bandwidth. ²⁵High field-proven reliability. ²⁶With AF bandwidth/2. ²⁷Air-cooled s.s. modulator with Multi Phase PDM techniques, fast switching MOSFETs; mains supply with two resin-cast transformers; high spectral purity RF; wide layout flexibility; compact cooling system; IMP suppression approx 40dB.

FM Radio Transmitters

Manufacturer	Broadcast Electronics			CCA Electronics			
Model	FM-1C	FM-500C/100C	FM 2500/4000/5000G	FM 8000/10000G	FM20000/25000G	FM27500/35000G ²	FM45000 ³
Applicable for LPFM	Yes	Yes	No	No	No	No	No
Suggested exciter	FX-50	FX-50	FM20G/FM60G	FM20G/FM60G	CCA FM60G	CCA FM60G	CCA FM60G
Output power rating	0.25-1kW	500W; 100W	2.5kW-5kW	8kW-10kW	20/25kW	27.5kW-35kW	45kW
Typical VSWR	1.3:1	1.3:1; 1.5:1	1.1:1	1.1:1	1.1:1	1.1:1	1.1:1
High VSWR protection	Yes	Yes	Yes	Yes	Yes	Yes	Yes
PA device	Solid-state	Solid-state	Tube	Tube	Tube	Tube	Tube
PA circuit type	MOSFET	MOSFET	Grounded grid	Grounded grid	Grounded grid	Grounded grid	Grounded grid
IPA device	Solid-state	Solid-state	Tube	Tube	Tube	Tube	Tube
Integrated remote control	Option	Option	No	No	No	No	No
Microprocessor/diagnostics	No	No	No	No	No	No	No
Input power	196-252Vac 1φ ¹		240Vac 1φ or 3φ		240Vac 3φ		440Vac 3φ
Power consumption	2.2kW	1.3kW; 350W	4kW-8kW	13kW-16kW	32kW-40kW	44kW-56kW	71kW
Reader Service No	531	532	533	534	535	536	537

¹97-133Vac or 194-266Vac 1φ for FM-100C. ²Single-cabinet including HV power supply; same footprint as all other CCA FM systems. ³Air-cooled; single grounded-grid tube capable of 110kW output.

Manufacturer	Continental Electronics Corp.			Energy-Onix			
Model	802B/814H/814J	815B	816B/816R/817R	Legend series ⁴	MK1.5; MK12 ⁵	MK15; MK22 ⁵	MK25; MK30; MK35 ⁷
Applicable for LPFM	Yes	Yes	No	No	No	No	No
Suggested exciter	802a	802a	802a	SST30	SST30	SST30	SST30
Output power rating	50W/1kW/3.8kW	5kW	11kW-70kW	1kW-5kW	1.5kW-12kW	15kW-23.5kW	25kW-35kW
Typical VSWR	2:1	2:1	2:1	1.5:1	1.5:1	1.5:1	1.5:1
High VSWR protection	Yes	Yes	Yes	Yes	Yes	Yes	Yes
PA device	Solid-state	Tube	Tube	Solid-state	Tube	Tube	Tube
PA circuit type	...	...	...	Solid-state	Grounded Grid 0-bias		
IPA device	Solid-state	Solid-state	Solid-state	Solid-state	Solid-state	Solid-state	Solid-state
Integrated remote control	No	No	No	No	No	No	No
Microprocessor/diagnostics	No	No	No	No	No	No	No
Input power	110/230Vac 1φ	220Vac 1φ	220Vac 3φ	220/240Vac 1φ or 3φ			
Power consumption	...	...	...	2.1kW-10.5kW	3.1kW-17.5kW	23.2kW; 32kW	37kW-53kW
Reader Service No	538	539	540	541	542	543	544

⁴Fully redundant packaging in 500W format; individual module and overall metering; thermal protection; Motorola MRP151G MOSFETs; VSWR foldback & protection; inline surge protection. ⁵Series includes systems rated 1.5kW, 3.7kW, 5.7kW, 8.5kW and 12kW; 80% PA efficiency; solid-state IPA usable as emergency back-up; controller override panel feature; integral surge protection; 15000 to 20000 hour average tube life. ⁶Same features as LP MK systems; triode design requires no neutralization; high overall efficiency; exceptional tube life. ⁷3.5kW driver usable as independent emergency transmitter; solid-state IPA is self-contained and serves as 3rd layer of emergency transmitter; same features as other MK series.

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FM Radio Transmitters, cont'd

Manufacturer	Energy-Onix			Harris			
	SST 100/300/500	SST30	Digit FM exciter ⁹	HT 20FM; HT 25FM	HT 30FM; HT 35FM	HT series ¹²	Platinum series
Applicable for LPFM	Yes	Yes	Yes	No	No	No	Yes
Suggested exciter	SST30	...	...	THE-1 or DIGIT	THE-1 or DIGIT	THE-1 or DIGIT	THE-1 or DIGIT
Output power rating	100W/300W/500W	2-30W	3-55W	8kW-25kW ¹⁰	10kW-35kW ¹¹	800W-10kW	1kW-11kW ¹³
Typical VSWR	...	...	Infinite	1.7:1	1.7:1	2:1	1.35:1
High VSWR protection	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Auto modulation control	No	...	Yes	Yes	Yes	Yes	Yes
PA device	Solid-state ⁸	Solid-state	Solid-state	Tube	Tube	Tube	Solid-state
PA circuit type	N.A.	N.A.	...	¼-wave	¼-wave	¼-wave	...
IPA device	...	Solid-state	Solid-state	Solid-state	Solid-state	Solid-state	Solid-state
Integrated remote control	No	No	Option	Option	Option	Option	Option
Microprocessor/diagnostics	No	No	Yes	Yes	Yes	Yes	Yes
Input power	115-220Vac 1φ		90-264Vac 1φ	197-250Vac 3φ	198-250Vac 3φ	197-250Vac 3φ or 1φ	197-250Vac 3φ ¹⁴
Power consumption	250W/550W/1.1kW	130W	275W 55W output	30.8kW-37.5kW	46kW-52kW	7.5kW-15.7kW	4kW-9kW
Reader Service No	545	546	547	548	549	550	551

⁸PA uses Motorola MRF151G FET in output stage. ⁹Permits AES-EBU inputs; for upgrade for almost any FM transmitter; performance level maintained over time. ¹⁰Stand-alone power supply; configurations to 50kW output. ¹¹Stand-alone power supply; configurations to 70kW output. ¹²Models include HT 3.5FM; HT 5FM; HT 7FM; HT 10FM; compact design for minimum floor space requirement. ¹³Models include PT 2FM; PT 4FM; PT 5FM; PT 8FM; PT 10FM; can be configured to 20kW; MTF 225,000 hours on PA device. ¹⁴380-415Vac 3φ or 1φ for some models.

Manufacturer	Harris		ITAME			Nautel	
	Quest series ¹⁵	THE-1 exciter	GALAXY ¹⁶	MiniPack 1kW ¹⁷	SuperGALAXY ¹⁸	AMPFET FM10 ¹⁹	AMPFET FM4 ²⁰
Applicable for LPFM	Yes	Yes	No	No	No	No	No
Suggested exciter	Integral	...	Itame suggested, many others appropriate			Nautel model	
Output power rating	60W-1kW ¹⁵	3-55W	100W-2kW	400-1000kW	2kW-10kW	5-11kW	2-4.25kW
Typical VSWR	1.5:1	Infinite	>1.4:1	>1.4:1	>1.36:1	1.5:1	1.5:1
High VSWR protection	Yes	Yes	No	No	No	Yes	Yes
Auto modulation control	Yes	Yes	Yes	Yes	Yes	Yes	Yes
PA device	Solid-state	Solid-state	Tube	Tube	Tube	Solid-state	Solid-state
PA circuit type	...	...	MOSFET	MOSFET	MOSFET	Class C	Class C
IPA device	Solid-state	Solid-state	Tube	Tube	Tube	Solid-state	Solid-state
Integrated remote control	Option	Option	Optional	Optional	Optional	Yes	Yes
Microprocessor/diagnostics	Yes	Yes	Optional	Optional	Optional	No	No
Input power	120-240Vac 1φ	90-264Vac 1φ	220Vac 2φ	220Vac 2φ	220/380Vac 3φ	180-600Vac 3φ	180-250Vac 1φ
Power consumption	2.6kW @ 1kW out	275W 55W output	200W-4kW	1800kW	4kVA-20kVA	16.9kW for 11kW	6.5kW for 4.25kW
Reader Service No	552	553	554	555	556	557	558

¹⁵Models rated 60W; 100W; 250W; 500W; 1kW; broadband PA covers 87.5-108MHz; compact 24.5" rack space. ¹⁶600W-2kW units includes extensive redundancy; full bandwidth 87.5-108MHz with tuning adjustment; reduced size; telemeasuring equipment standard; full autonomous 100W/300W/600W stages. The six modules constituting this system permit any configuration requirement up to 2kW in a single rack. Series includes 100W, 300W, 600W, 1kW and 2kW systems. ¹⁷Easily changeable 1kW modules (3-5 minutes required); high redundancy; general control via microprocessor; VSWR foldback circuit; telemeasuring equipment standard. ¹⁸Consists of 1kW modules, all fully interchangeable; automatic power control; high redundancy; general control through a microprocessor; 87.5-108MHz without retuning; reduced physical size; includes telemeasuring equipment. ¹⁹65% overall efficiency for reduced operating cost; output of 42 modules combined with soft failure features; on-air servicability of power modules. ²⁰65% overall efficiency for reduced operating cost; output of 16 modules combined with soft failure features; on-air servicability of power modules.

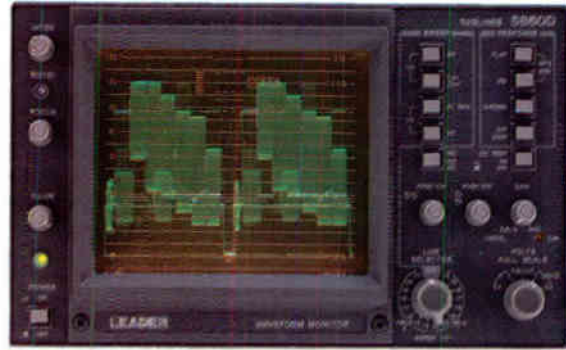
Manufacturer	Nautel	OMB Sistemas Electronicos SA				QEI Corp.	
	AMPFET FM7 ²¹	EM 20/30	EM 2000	EM 250; EM 500	EM 5000 VR	#675T ²³	#695 (#675)
Applicable for LPFM	No	Yes	No	No	No	Yes	Yes
Suggested exciter	Nautel model	...	Integral	Integral	Integral	#695; #675	...
Output power rating	3.5-7.5kW	1-30W	0-2kW	5-250W;0-500W	5kW	0.15/0.3/0.5/0.6kW	20W
Typical VSWR	1.5:1	1.25:1	1.25:1	1.25:1	1.25:1	1.7:1	1.7:1
High VSWR protection	Yes	No	Yes	Yes	Yes	Yes	Yes
Auto modulation control	Yes	No	No	No	No	Yes w/695	Yes (No)
PA device	Solid-state	Solid-state	Solid-state	Solid-state	Tube	Solid-state	Solid-state
PA circuit type	Class C	LC & stripline	LC & stripline	LC & stripline	Cavity	FET/BiPolar dep.	BiPolar dep.
IPA device	Solid-state	Solid-state	Solid-state	Solid-state	Solid-state	Solid-state	Solid-state
Integrated remote control	Yes	No	No	No	No	No	No
Microprocessor/diagnostics	No	No	No	No	No	No	No
Input power	220-250Vac 1φ ²²	110/220Vac 1φ	110/220Vac 1φ	110/220Vac 1φ	220-380Vac 3φ	120-240 1φ	120-240 1φ
Power consumption	11.5kW for 7.5kW	...	3.6kW	900W for 500W unit	10kW	0.3-1.5kW	50W
Reader Service No	559	560	561	562	563	564	565

²¹65% overall efficiency for reduced operating cost; output of 28 modules combined with soft failure features; on-air servicability of power modules. ²²May use 180-600Vac 3φ power mains. ²³#675T600 FET PA; #675T150/300/500 BiPolar PA.

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DIGITAL

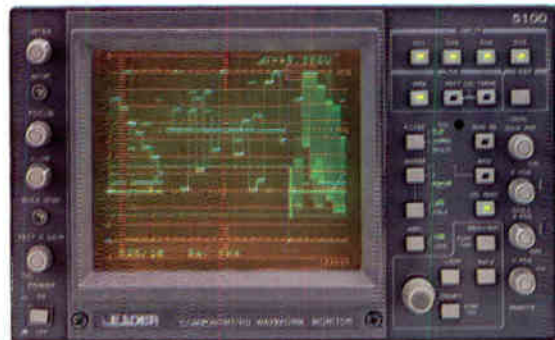
Model 5860D Waveform Monitor and Model 411D Sync/Test Generator handle both serial and parallel digital signals in the D2/D3 format. The generator supplies AES/EBU digital audio as well as a combination color bar/ramp for testing digital systems.



COMPONENT

HDTV

Model 5100 four-channel component/composite Waveform Monitor operates in Betacam, MII, HDTV, and SMPTE formats, as well as analog. Model 425 Generator supplies RGB, Betacam or MII in 3 and 2-wire (Y/CTDM) form, and analog.



COMPOSITE

Model 5870 Waveform/Vector/SCH Monitor shown sharing a half-rack adapter with the

Model 5130 Picture Monitor. The Model 411 Sync/Test Generator synthesizes precision analog from a 10 bit D/A.



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FM Radio Transmitters, cont'd


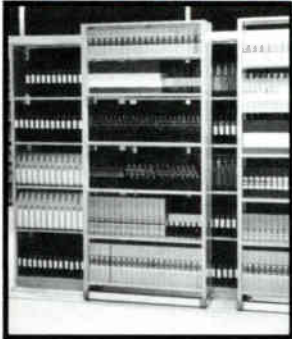
Manufacturer	QEI Corp.		Rohde & Schwarz			Telefunken Sendertechnik		
Model	FMQ-20000 ²⁴	FMQ-3500 ²⁵	NR 410T ²⁵	NR 420R1 ²⁸	NU 002 ²⁹	S3206; 3254 ³⁰	S3217 ³²	S3233; 3231 ³³
Applicable for LPFM	Yes	Yes	LPFM XLTR	LPFM XLTR	LPFM XLTR	Yes	Yes	Yes
Suggested exciter	#695; #675	#695; #675	SU115	SU115	CM	S3233	S3231	Integral
Output power rating	20kW/30kW	3.75kW (5.5/10.5)	10kW	20kW	20W to 400W	5kW; 10kW	10kW	20W; 100W
Typical VSWR	1.7:1	1.7:1	1.5:1	1.5:1	1.5:1	1.5:1	1.5:1	1.5:1
High VSWR protection	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Auto modulation control	Yes	Yes	No	No	No	Yes	Yes	Yes
PA device	Tube	Tube	Solid-state	Tube	Solid-state	Solid-state	Tube	Solid-state
PA circuit type	Grnd Grd/Triode	Gmd Grd/Triode	Double MOSFET	Grounded grid	MOSFETs	MOSFET ³¹	Grounded cathode	Push-pull
IPA device	Solid-state	Solid-state	...	Solid-state	...	...	...	...
Integrated remote control	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Microprocessor/diagnostics	No	No	Yes	No	No	Yes	Yes	Yes
Input power	198-250/208-240 1-3φ		208Vac 3-wire ²⁷	208Vac 3-wire ²⁷	207-253Vac 2-wire	230; 400Vac 3φ	400Vac; 0.9pf 3φ	110-240Vac 0.9pf
Power consumption	35/50kW	6.4/9.5/17kW	18kW	34kW	<1kW	9kW; 16kW	17kW	60W; 200W
Reader Service No	586	587	588	589	590	591	592	593

²⁴Values include model FMQ-30000B. ²⁵Values include models FMQ-5000 & FMQ-10000. ²⁶Synthesized exciter with stereo & SCA generators; broadband amplifier uses 6 MOSFET modules; each amp plug-in contains harmonic filter, monitoring and protection circuit; modules exchange without alignment; immediate fault localization; stable power supply, integral redundancy. ²⁷Or 230/400Vac 4-wire. ²⁸Synthesized exciter with stereo & SCA generators; 800W PIA based on four MOSFET modules; tunes entire FM range; long life expectancy for power tube 25 to 40 thousand hours; integrated filament power regulation; high reliability through minimized number of components; convenient tube change with easily accessible cavity; integrated air filter; immediate fault localization. ²⁹Compact, modular VHF FM transmitters and transposers; MOSFET amplifiers, integrated harmonic filter, power supply, fans; modulator module with integrated stereo coder or selective receiver; relay receiver with integrated stereo decoder; various modules for AM microwave links; monitoring demodulators, digital satellite radio reception. ³⁰RS-232C interface; high suppression of IMP; low junction temperature of power transistors; protective circuits; high reliability. ³¹Push-pull design with 90° combiner. ³²μP-aided control unit; alpha-numeric display; filament power regulation; high guaranteed life-time of tube >20000 hours; low cost system. ³³Synthesizer frequency control; μP control with RS-232C interface; 9 preset frequencies; operation software available.




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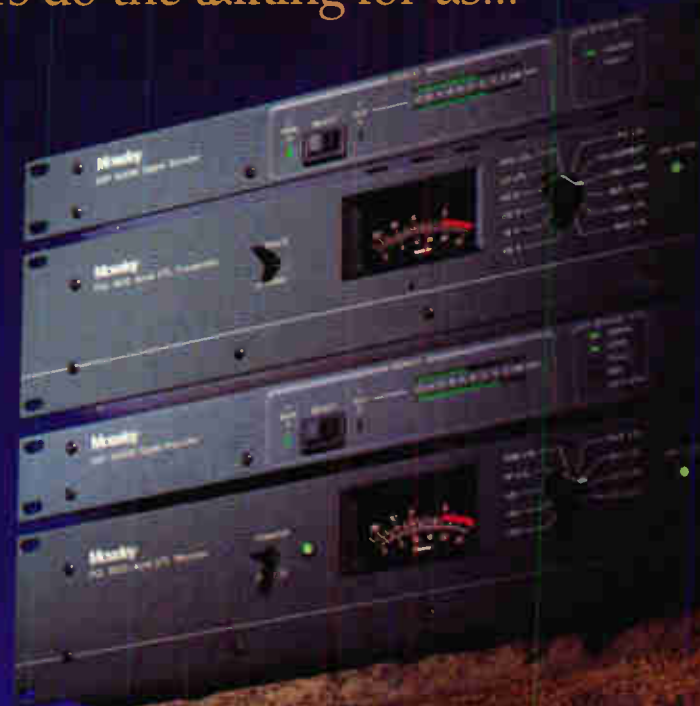
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Television Transmitters, VHF

Manufacturer	Acrodyne Industries		EMCEE		Harris Allied Broadcast		ITS Corp.	Rohde & Schwarz
	Model	TL series ¹	TR series ²	TTV 1000ES ³	TTV 100EE ⁴	Low-power Platinum			Platinum HT xLS/HS
Application	VHF LP/translator	VHF	VHF	VHF XLTR	VHF ⁵	VHF ⁶	VHF	VHF Hi-band
Visual peak power	0.2kW	5-30kW	1kW	0.1kW	0.5kW/1kW/2kW	5kW-60kW	1kW	10kW
Response vs. brightness	0.75dB	±0.5dB	±0.75dB	...	±0.75dB	±0.75dB	±0.5dB	±0.5dB
Low frequency linearity	1.0dB	0.5dB	4%	...	<1.0dB	<1.0dB	0.45dB	0.5dB
Differential phase/gain	±3'/5%	±1.5'/5%	±3'; 4%	3'; 3%	1'/3%	1'/3%	±3'; ±5%	±3'; ±5%
K factor 2T; 12.5T	3%; 5%	2%; 5%	2T 3%	2T 2%	2T 1.5%; 12.5T 3%	2T 1.5%; 12.5T 3%	2T 2%	2T 1.5; 12.5T 1.5
PA devices	Solid-state	Tetrode	Solid-state	Solid-state	Solid-state	Solid-state	Solid-state	Solid-state
Aural output (% of visual)	10% of visual	10% of visual	100W	10W	10% of visual	10% of vis. 20% opt	100W (10% of visual)	1kW (10% of vis.)
Carrier deviation	±120kHz	±120kHz	50kHz stereo	...	±200kHz	±200kHz	±75kHz	±100kHz
Stereo type	BTSC; IRT; Nicam		...	...	BTSC/IRT/NICAM	BTSC/IRT/NICAM	BTSC; IRT; NICAM	IRT; NICAM
Audio distortion	1.0%	0.5%	1%	...	0.25%	0.2%	0.5%	<0.3%
AM/FM noise (dB)	-55, -60	-52; -60	AM -55; FM -60	...	AM -55; FM -70	AM -55; FM -70	AM -50; FM -60	AM -40; FM -60
Cooling system	Forced air	Forced air	Forced air	Ambient	Forced air	Forced air	Forced air	Forced air
Input AC power	120Vac 1φ	208Vac 3φ	208/220Vac	115Vac	208/240Vac 1φ	208/240Vac 1φ ⁷	230Vac 1φ	230/400Vac 3φ
Power consumption	1.9kW Class A	...	4.3kVA	...	2.7kW/3.5kW/7kW	11.2kW-98kW	4kW	27kW 50% APL
System efficiency	10%	36%	...	...	29%	60%	25%	24.7% FOM=37%
Reader Service No	594	595	596	597	598	599	600	601

¹100W, 400W available; Class A operation; Overall AGC; single PA device type; low noise switching power supply; Over-voltage protection; current fold-back circuitry; individually fused circuits; LED indicators for each RF board; broadband amplifiers; front of rack accessibility.

²Korean dual channel sound available; compact, self-contained; proven parallel redundant solid-state drivers; broadband solid-state amplifiers; IF diplexing; solid-state & opto-coupler control logic; extensive diagnostics; plug-in exciter; overall AGC; optimized, stable output notch filters.

³Fully solid-state; soft failure feature; modular configuration; enhanced AB circuitry; separate visual and aural amplification.

⁴Modular design; broadband amplifiers; microstrip circuitry; compact construction.

⁵Regulated supplies for ±10% ac line variation; compact design; self-protecting RF modules with visual diagnostics; VSWR foldback permits continuous operation during antenna icing conditions; HT EL500; HT EL1000; HT EL2000.

⁶HT 5LS/HS; HT 10LS/HS; HT 15LS/HS; HT 20LS/HS; HT 30LS/HS; HT 45LS/HS; HT 60LS/HS; high efficiency regulated linear power supplies; high degree of redundancy permits routine maintenance while on-air; linearity maintained even with VSWR foldback engaged; individual subsystem fault detection and protection; comprehensive monitoring system with simple discrete logic control; optional PC control.

⁷380/415Vac 3φ.

⁸External diplexing; no single IPA stage; redundant power supplies and cooling; remote control ready; ±1kHz frequency stability. Models rated 500W, 1.5kW, 2kW.

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Television Transmitters, UHF

Manufacturer	Acrodyne Industries			Advanced Broadcast Systems			
	TLU/100SE ¹	TLU/1KS ²	TRU/30kV ³	TC40IXM series ^{4/5}	TC60IXM series ⁵	TC60KX series ⁵	TC60MX series ⁵
Application	UHF LP/translator	UHF LP/translator	UHF	UHF	UHF	UHF	UHF
Visual peak power	0.1kW	1kW	30kW	30-60kW	42-168kW	60-280kW	60-280kW
Response vs. brightness	0.75dB	±0.5dB	±0.5dB	±1dB	±1dB	±1dB	±1dB
Low frequency linearity	0.5dB	0.5dB	0.5dB	1dB	1dB	1dB	1dB
K factor 2T; 12.5T	3%; 5%	2%; 5%	2%; 5%	2T 2%; 12.5T 5%	2T 2%; 12.5T 5%	2T 2%; 12.5T 5%	2T 2%; 12.5T 5%
PA devices	Solid-state	Solid-state	Tetrode	IOT	IOT	Klystron	MSDC klystron
Aural output (% of visual)	10% of vis	0.1kW/10% of vis	10% of vis	10% of vis	10% of vis	10% of vis	10% of vis
Stereo type		BTSC; IRT; Nicam		BTSC	BTSC	BTSC	BTSC
Audio distortion	1.0%	1.0%	0.5%	0.5%	0.5%	0.5%	0.5%
Cooling system	Convection cooling	Forced air	Forced air; water	Water	Water	Water	Water
Input AC power	120Vac 1φ	240Vac 1φ	208Vac 3φ	480Vac 3φ	480Vac 3φ	480Vac 3φ	480Vac 3φ
Power consumption/Efficiency	0.4kW/16%	2.6kW/22%	Call factory	.../80-85% typical		.../40-45% typical	.../75-80% typical
Reader Service No	602	603	604	605	606	607	608

¹ Auto ID feature; PAL G versions available; super-linear Class AB; Overall AGC; output amp on hinged front panel; input range 95-135Vac; low-noise switching power supply; over-voltage protection; current fold-back circuitry; Individually fused circuits; LED indicators per RF board; Overtemperature shutdown; Collector current metering on front panel. ² 300W, 500W available; Korean dual sound stereo also available; combined amplification; proven PA design; 32 low-cost output devices; captured air cooling; individual chassis mounted PA blowers; front panel logic tree diagnostics; super-linear ClassAB operation; phase & gain matched PAs; plug-in exciter. ³ Korean dual channel sound available; models rated 10kW, 15kW, 25kW; proven TH-563 tetrode; high efficiency, low cost tube replacement; proven 1kW solid-state driver; tetrode linearity; Hypervapotron cooling; CMOS control logic; extensive diagnostics; plug-in exciter; overall AGC. ⁴ TC40IXMA series uses forced air cooling. ⁵ CST series computer supervision with integral full-function remote; computer diagnostics; auto data logging; EEV approved thyatron protection circuits.

Manufacturer	Comark		EMCEE		Harris Allied Broadcast		
	CCT-U-P60IC ⁶	TTU 1000 ES ⁷	TTU 100EE ⁸	Navigator series	Sceptre series ¹⁰	Sigma series ¹²	TV-60UM/120UM ¹³
Application	UHF band IV/V	UHF	UHF LPTV XLTR	UHF ⁹	UHF	UHF	UHF
Visual peak power	30kW	1kW	100W	5kW; 10kW	2kW to 40kW	0.2kW to 160kW	60kW; 120kW
Response vs. brightness	0.5dB	±.75dB	...	±0.5dB	0.5dB	±0.5dB	±0.75dB
Low frequency linearity	1dB	4%	...	0.45dB (5%)	<1.0dB	1.0dB (10%)	<1.0dB
K factor 2T; 12.5T	2T 2%; 12.5T 3%	2T 3%	2T 2%	2T 2%; 12.5T 5%	2T 2%; 12.5T 3%	2T 2%; 12.5T 3%	2T 2%; 12.5T 3%
PA devices	IOT	Solid-state	Solid-state	Tetrode	Solid-state	IOT	MSDC klystron
Aural output (% of visual)	3kW to 10%	100W	10W	10% of vis	10% of vis	10% of vis	to 20% of vis
Stereo type	BTSC; NICAM	...	...	BTSC/IRT/NICAM		BTSC/IRT/NICAM	
Audio distortion	0.5%	1%	...	0.5%	0.5%	0.5%	0.5%
Cooling system	Water	Forced air	Ambient air	Forced air	Forced air	Forced air, water	Water
Input AC power	480Vac 3φ	208/220Vac	115Vac	208/240Vac 3φ	208/240Vac 3φ ¹¹	380/480Vac 3φ	480Vac 3φ
Power consumption/Efficiency	154kW /86%	4.3kW	...	17kW; 22kW/45%	9kW-122kW/33%	44-213kW/70%	90kW; 165kW/70%
Reader Service No	609	610	611	612	613	614	615

⁶ Transmitters use patented aural carrier corrector technology, advanced linearity corrector; Class A drivers, Dual Use system permits operation with NTSC today and future conversion to D-HDTV. ⁷ Separate aural, visual transmitters; 100% solid-state, modular configuration; soft failure features; enhanced AB design. ⁸ Class A operation; modular design; 100% solid-state; maximum linearity. ⁹ UTV 5000; UTV 10,000; additional models for 100W through 1000W; field repairable solid-state driver; internal duplexed design; for all CCIR systems, color systems; extensive front panel metering; lower power models use parallel solid-state amplifiers for high reliability; independent regulated power supplies for each amplifier. ¹⁰ Low cost of ownership; high on-air reliability; UHF broadband operation; circulator protection of amplifiers; unity power factor. ¹¹ Also 460-480Vac 3φ. ¹² ATV/HDTV ready; thyatron crowbar for high speed IOT protection; common amplification, external duplexed versions available; Magic Tee RF systems for multi tube versions; AGC around entire amplifier for stability; independent RF linearity corrector for each IOT. ¹³ High MTBF using field-proven MSDC technology; multiple beam supplies; redundant pumps and fans; peak of sync efficiency over 130%.

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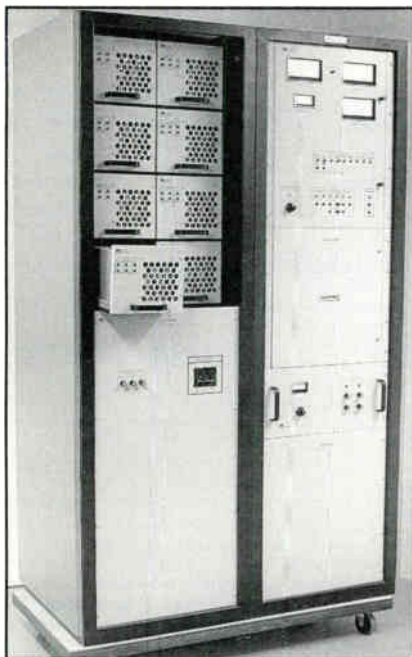


Circle (94) on Reply Card

Manufacturer	itelco		ITS Corporation				OMB
Model	T674K ¹⁴	T674K ¹⁵	ITS-1230A	ITS-1240 ¹⁶	ITS-230A ¹⁷	ITS-235A ¹⁸	MOT-/PRO-100 ¹⁹
Application	Band IV-V	Band IV/V	UHF LPTV; XLTR	UHF	UHF LPTV; XLTR	UHF	UHF LP/XLTR
Visual peak power	40kW	40kW	1kW ¹⁵	10kW	1kW; (2kW)	5kW	100W
Response vs. brightness	0.5dB	0.5dB	±0.5dB	±0.5dB	±0.5dB	±0.5dB	...
Low frequency linearity	<5% distortion	5%	0.45dB	0.45dB	0.45dB	0.45dB	...
K factor 2T; 12.5T	...	...	2T 2%	2T 2%	2T 2%	2T 2%	...
PA devices	IOT 7360	IOT 7360	Solid-state	Tetrode	Tetrode	Tetrode	Solid-state
Aural output (% of visual)	10/1 or 20/1/0.2	10/1 or 20/1/0.2	50W (5% of visual)	500W (5% of visual)	100W (10% of visual)	500W (10% of visual)	10% of visual
Stereo type	G-Std./M/Nicam	Std G/M/Nicam	BTSC; IRT; NICAM	BTSC; IRT; NICAM	BTSC; IRT; NICAM	BTSC; IRT; NICAM	...
Audio distortion	<0.3%	0.3%	0.5%	0.5%	0.5%	0.5%	0.5%
AM/FM noise	<-50., <-60	50, 60	AM -50; FM -60	AM -50; FM -60	AM -50; FM -60	AM -50; FM -60	AM -50; FM -65
Cooling system	Water	Water	Forced air	Forced air	Forced air	Forced air	Forced air
Input AC power	208-415Vac 3φ	208-413Vac 3φ	230Vac 1φ	208/240Vac 1-3φ	230Vac 1φ	208/240Vac 1-3φ	110/220Vac 1φ
Power consumption	69.6kVA @ black	69.6kVA @ black	5kW/20%	22kW/45%	5kW/20%	17kW/29%	...
Reader Service No	616	617	618	619	620	621	622

¹⁴Full compliance with IEC 215 safety rules; driver contains 4 solid-state units provide 420W drive to final amp; graphic display of voltages, currents. Common amplification of visual and aural carriers; full compliance with IEC 215 rules. ¹⁵Models rated 400W; 750W; 2kW. External diplexed for intermodulation spec 60dB; no single IPA stage; redundant power supplies and cooling; remote control ready; ±1kHz frequency stability. ¹⁶External diplexing; solid-state aural chain; 500W and 1kW backup options; remote control ready; ±1kHz frequency stability. ¹⁷Class A driver; remote control ready; ±1kHz frequency stability. ¹⁸Solid-state driver; remote control ready; ±1kHz frequency stability. ¹⁹MOT50/PRO50 rated 50W visual; MOT5/PRO5 rated 5W visual.

Manufacturer	OMB Sistemas		Richard Hirschmann GmbH		Rohde & Schwarz		
Model	TR TV 1000	TR TV200/PRO 200	TVM 640/100 ²⁰	TVM 640/5000	NT 414S	NT 425 ²¹	NT 446
Application	UHF LPTV XLTR	UHF LPTV XLTR	Band IV/V	Band IV/V	UHF IV/V	UHF IV/V	UHF IV/V
Visual peak power	1kW	200W	100W	5kW	10kW	20kW	40kW
Response vs. brightness	...	...	0.5dB	0.5dB	±0.5dB	±0.5dB	±0.5dB
Low frequency linearity	...	...	...	...	0.5dB	0.3dB	0.5dB
K factor 2T; 12.5T	...	...	<1%	<1%	2T 1.5; 12.5T 1.5	2T 1.5; 12.5T 1.5	2T 1.5; 12.5T 1.5
PA devices	Tetrode	Tetrode	Solid-state	Tetrode	Solid-state	Tetrode	IOT
Aural output (% of visual)	10% of visual	10% of visual	10% of visual	10% of visual	1kW (10% of vis.)	2kW (10% of vis.)	4kW (10% of vis.)
Stereo type	IRT	IRT	IRT; NICAM	IRT; NICAM	IRT; NICAM



Totally solid state AMPFET ND 10 10kW AM

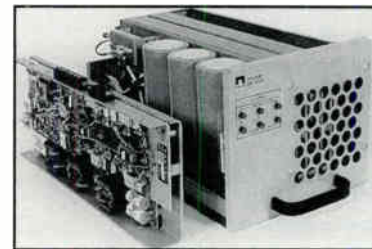
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Manufacturer	OMB Sistemas		Richard Hirschmann GmbH		Rohde & Schwarz		
Model	TR TV 1000	TR TV200/PRO 200	TVM 640/100 ²⁰	TVM 640/5000	NT 414S	NT 425 ²¹	NT 446
Audio distortion	0.5%	0.5%	<0.5%	<0.5%	<0.3%	<0.3%	<0.3%
AM/FM noise	AM -50; FM -65	AM -50; FM -65	<-60 FM	<-60dB FM	AM -40; FM -60	AM -48; FM -60	AM -48; FM -60
Cooling system	Forced air	Forced air	Forced air	Forced air	Forced air	Vapor phase	Water
Input AC power	220Vac 1φ	220Vac 1φ	...	...	230/400Vac 3φ	230/400Vac 3φ	230/400Vac 3φ
Power consumption/Efficiency	4.8kW	...	1.9kW	24kW	30kW/FOM=33%	30kW /FOM=66%	58kW /FOM=76%
Reader Service No	623	624	625	626	627	628	629

²⁰Unit permits easy conversion to translator through exchange of down-converter and IF unit. ²¹Computer-controlled exciter; computer-aided and driven alignment; exchange of alignment data to unaligned reserve modules.

Waveform Monitors

Manufacturer	ASACA/Shiba Soku	Electronic Visuals			Hamlet Video/Grunder		
Model	VM2207 ¹	EV4131	EV4151 ³	EV4161 Combo	301 Videoscope ⁴	Micro Scope 302 ⁵	303 Videoscope ⁶
Instrument type	Dedicated	Dedicated	Dedicated	Dedicated	Displays on monitor	Displays on monitor	Displays on monitor
Display size	8Vx10Hcm	8Vx10Hcm	8Vx10Hcm	8Vx10Hcm	...	...	40μs H x 512 lines
Graticule type	Internal	Internal	...	Internal	Electronic	Electronic	Electronic
Video transmission standard	NTSC; PAL	N; P; S	N;P; S	NTSC; PAL	NTSC & PAL	NTSC; PAL	N; P; S
Vertical response	LP;DP;DG;FL;BO	LP; CH; DG; FL	LP; CH; DG; FL; BO	LP; CH; DG; DP; FL	LP; CH; FL	LP; CH; FL	LP; CH; DP; DG; FL
RGB/YRGB (parade) mode	Yes	...	Yes	Yes	Yes parade	No	Yes
VITS line selection	Single line select	...	...	...	...	...	Any line
Control type	Manual; remote	Manual	Manual	Manual	Manual; remote	Manual	Local; remote
# of composite inputs	1 switchable	2	6	2	3	1	2
# of component inputs	3	...	2 (x3) sets	...	1	No	1
Vector function	Yes	No ²	Yes	Yes	Yes	Yes	Yes
AF stereo phase display	No	No	No	No	Option	No	No
Waveform comparison feature	Yes	No	Yes	No	Yes	Yes	Yes
Reader Service No	631	632	633	634	635	636	637

¹Combo instrument. ²Low cost instrument; companion to EV4121 vectorscope. ³Dual component waveform monitor; horizontal magnifier allows timing resolution to <10μs. ⁴Multi input/output including composite and Y/C; super waveform and vector displays over video; freeze/store; SC-H indicator; 1%, 1° accuracy; RS-232 serial port; 9-15Vdc battery operation; H/V, 2H/2V, H/V Mag. ⁵Combo instrument; super signal displays over video on any monitor; for ENG/EFP; battery operated with ac adaptor available; 1%, 1° accuracy; portable 5 1/4x1 3/4x5 1/4"; 24 oz. ⁶Full function unit capable of broadcast measurement and monitoring; SC-H absolute readouts and display; 5-function memory setup, recall; on-screen cursors with line select readouts; RS-232 remote control via hardware or software with IBM and windows; display freeze, store feature; accepts, displays no-video signals; 3H display mode.

Manufacturer	Hamlet Video/James Grunder			Magni Systems		Philips TV Test Eqpt. A/S	
Model	304 videoscope ⁷	PC Scope ⁸	Pico Scope ⁹	WFM 560	WFM 560S	PM 5661/62 ¹⁰	PM 5664 ¹¹
Instrument type	Displays on monitor	PC card	Display on monitor	Dedicated	Dedicated	Dedicated	Dedicated
Display size	40μs Hx 512 V lines	...	42μs x 512 lines	8Vx10Hcm	8Vx10Hcm	10cm Hx 8cm V	10cm Hx 8cm V
Graticule type	Electronic	Electronic	Electronic	Internal	Internal	Internal	Internal electronic
Video transmission standard	N; P; S	NTSC; PAL	NTSC; PAL	N; P; S	N; P; S	NTSC; PAL	NTSC; PAL
Vertical response	LP;CH;DG;DP;FL;BO	LP; CH; FL	LP; CH; FL	LP; CH; FL; BO	LP; CH; FL; BO	LP; Chroma; φ;G;	LP filter; Flat;
RGB/YRGB (parade) mode	...	No	...	No	Yes	Yes	No
VITS line selection	...	...	...	1-625	1-625	1-625	1-625
Control type	Local & remote	Remote	Manual	Manual	Manual	Manual & remote	Manual & remote
# of composite inputs	1	1	1	6	6	2	1
# of component inputs	1	...	...	2	2	0	1
Vector function	Yes	Yes	No	Yes component mode	Nos	Yes	Yes
AF stereo phase display	Yes	Option	No	No	Notion	No	No
Waveform comparison feature	Yes	Yes	No	Yes	Yes	Yes	Yes
Reader Service No	638	639	640	641	642	643	644

⁷Stereo level bargraph plus stereo phase option showing PPM or VU; Multi-color display; provides variety of component YUV signals; 5-function setup memory; full line select capability. ⁸Card plugs into any Amiga or PC/compatible; external reference; combo waveform, vector displays; audio bar graphs; composite and Y/C operation; freeze, store functions; H/V, 2H/2V, H/V Mag displays; stereo audio phase option; 1%, 1° accuracy. ⁹Pocket-sized waveform monitor; 4-hour operation on 2x AA cells or 12Vdc input; full-screen display with mix control; scale adjust; on-screen cursors for calibration, comparison settings; looping input and one output. ¹⁰Model PM 5661/20 includes line time non-linearity display; PM 5662 includes SC/H display. ¹¹Philips STARdisplay of standard component colour bar gives amplitude and timing control with markers.

Manufacturer	Tektronix						
Model	1730 series ¹²	174A series ¹³	1750A ¹⁴	1760 ¹⁵	1780R series ¹⁶	WFM 300A ¹⁷	WFM 601 ¹⁸
Instrument type	Dedicated	Dedicated	Dedicated	Dedicated	Dedicated	Dedicated	Dedicated
Display size	8Vx10Hcm	8Vx10Hcm	8Vx10Hcm	8Vx10Hcm	2-8Vx10Hcm	10Hx8Vcm	10Hx8Vcm
Graticule type	Int.	Int. electronic	Int. electronic	Int. electronic	Int. electronic	Int. electronic	Int. electronic
Video transmission standard	NTSC; PAL	NTSC; PAL	NTSC; PAL	NTSC; PAL	NTSC; PAL	NTSC; PAL	525 and 625
Integral calibrator	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Manufacturer

Tektronix

Model	1730 series ¹²	174A series ¹³	1750A ¹⁴	1760 ¹⁵	1780R series ¹⁶	WFM 300A ¹⁷	WFM 601 ¹⁸
Vertical response	LP;CH;FL	LP;CH;DP;DG;FL	LP;CH;DP;DG;FL	LP;CH;DP;DG;FL;BOLP; CH; ;LI	DP;DG;FL; BO	LP; FL; LI; BO	FL; LI; BO; DI
RGB/YRGB (parade) mode	Yes	Yes	Yes	Yes	Yes	Includes parade	Yes
VITS line selection	1-525 (625)	1-525 (625)	1-525 (625)	1-525 (625)	1-525 (625)	1-525 (625)	1-525 (625)
Control type	Manual or remote	Manual or remote	Manual or remote	Manual or remote	Manual or remote	Manual or remote	...
# of composite inputs	2	8	8	2	5	1	...
# of component inputs	...	...	...	2	...	1	2 digital
Vector function	No	Yes	Yes	Yes	Yes	No	Yes
AF stereo phase display	No	Yes	Yes	Yes	Yes	No	Yes
Waveform comparison feature	A/B parade; overlay	parade; overlay	Yes	Yes	Yes	Yes	Yes
Reader Service No	645	646	647	648	649	650	651

¹²Dual filter and dual input display modes; user presets. ¹³Cursors for waveform time/voltage and vector phase/amplitude; user presets; timecode waveform display; picture display. ¹⁴Cursors for waveform time/voltage and vector phase/amplitude; user presets; timecode waveform display; SCH-phase & color framing; picture display. ¹⁵Component/composite monitor; component lighting for recorder setup; Diamond gamut space display; RGB or color difference pix monitor outputs; picture display; time code waveform display. ¹⁶Dual CRT displays; measurement routings; front panel probe input; waveform time and voltage cursors; user presets. ¹⁷Component vector mode. ¹⁸Serial component monitors; Waveform cursors; digital & analog monitor outputs; SMPTE AP165 error detection; picture display; RGB display mode.

Vectorscopes

Manufacturer	ASACA	Electronic Visuals	Magni Systems			Philips TV Test Eqpt.
Model	VM22C7	EV4121 ¹	MM-400	MM-W/V	WV560 (WV561) ²	PM 5667/68 ³
Instrument type	Dedicated	Dedicated unit	Display on monitor	Display on monitor	Dedicated units	Dedicated unit
Display size (cm)	8Vx10Hcm	8Vx10H cm	Per monitor	Per monitor	80Vx100Hmm	10cm Hx8cm V
Graticule type	Internal	Internal	Electronic	Electronic	Internal	Internal electronic
Video transmission standard	NTSC or PAL	NTSC or PAL	NTSC or PAL	NTSC or PAL	NTSC (& PAL)	NTSC; PAL
Function control	Manual or remote	Manual	Remote	Remote	Manual	Manual & remote
Integral calibrator	Yes	No	No	No	Yes	No
Waveform mode feature	Yes	No	Yes	Yes	Yes	No
# of composite inputs	1	2	3	3	6	2
# of component inputs	3		1; 2 S-video in	1	2	0
Subcarrier referred to	A/V/Black	A/B/Black	Blackburst	Blackburst	Blackburst	A/B/Blackburst

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Manufacturer	ASACA	Electronic Visuals	Magni Systems			Philips TV Test Eqpt.
Model	VM2207	EV4121 ¹	MM-400	MM-W/V	WV560 (WV561) ²	PM 5667/68 ³
Sync referred to	A/B/Black/CompSync	A/B/Black/CompSync	Blackburst	Blackburst	Blackburst	A/B/Black/Comp Sync
Differential phase/gain mode	Yes	Yes	No	No	Yes	Yes
Line select range	Single line select	...	None	None	1-262 (1-625)	...
Luminance measurement feature	Yes	No	Yes	Yes	Yes (No)	No
Reader Service No	652	653	654	655	656	657

¹Low-cost unit is companion product to EV4131 waveform monitor. ²VS561 has similar characteristics to WV561. ³Line selection available through remote control from PM 5664 or PM 5665; Model PM 5668 includes SC/H display.

Manufacturer	Tektronix	Videotek Inc.		
Model	1720 series ⁴	TVM-675 ⁵	TVM-720/720P ⁶	VSM-61 ⁷
Instrument type	Dedicated unit	Dedicated	Dedicated	Dedicated
Display size (cm)	8Vx10Hcm	10cmx8cm	10cmx8cm	10cmx8cm
Graticule type	Internal	Internal	Fixed internal	Internal
Video transmission standard	NTSC or PAL	NTSC; PAL	NTSC; PAL	NTSC; PAL
Function control	Manual or remote	Manual	Manual & remote	Manual
Integral calibrator	Yes	No	Yes	No
Waveform mode feature	No	Yes; Combo unit	Yes; Combo unit	No
# of composite inputs	2	3	2-8	2
# of component inputs	...	1	2	0
Subcarrier referred to	A/B/Black	A/B/Blackburst	A/B/C/D/Blackburst	A/B/Subcarrier
Sync referred to	A/B/Black	A/B/Blackburst	A/B/C/D/Black/C-Sync	...
Differential phase/gain mode	Yes	Yes	Yes	Yes
Line select range	1-525 (1-625)	No	Any line any field	No
Luminance measurement feature	No	No	Yes	No
Reader Service No	658	659	660	661

⁴Line select operates with 1730 series instruments; SC/H model available. ⁵Waveform mode includes overlay or parade of three composite inputs; component display of Betacam, MII, Y/C, EBU, Y/R-Y/B-Y; external reference input. ⁶Amplitudes, phase angle and time cursor measurements with screen readouts; 20 memory setup storage locations; 4 SC/H phase measurements displayed simultaneously; fixed graticule with cursor measurement; electronic readout; upload and download of 20 memories. ⁷Basic low-cost vectorscope.

The products contained in these comparison tables represent only a portion of those available. You should discuss your needs with the manufacturer and may find that another product will fit your project exactly.

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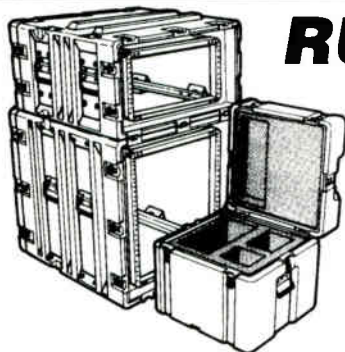
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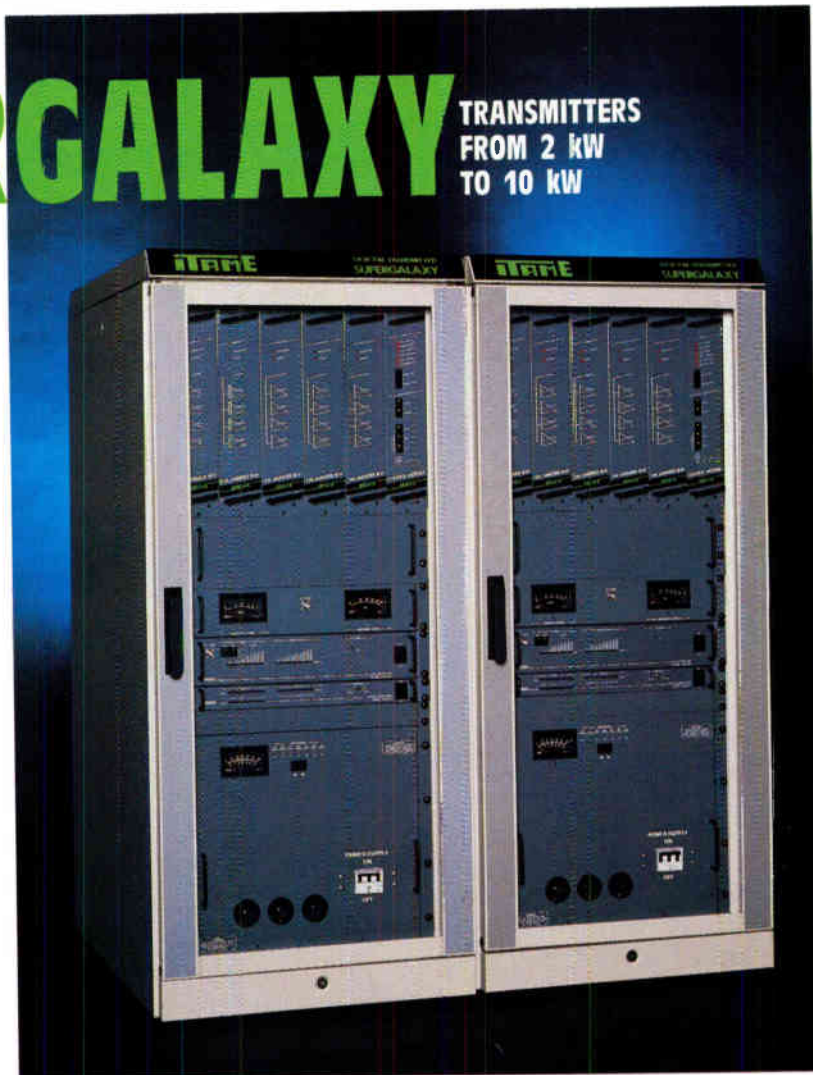
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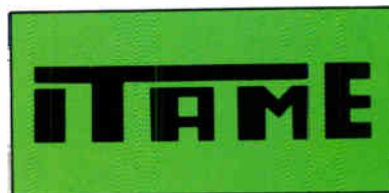
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