

# BROADCAST<sup>®</sup> ENGINEERING

November 30, 1981/\$15

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dozens of companies

***Spec  
Book***

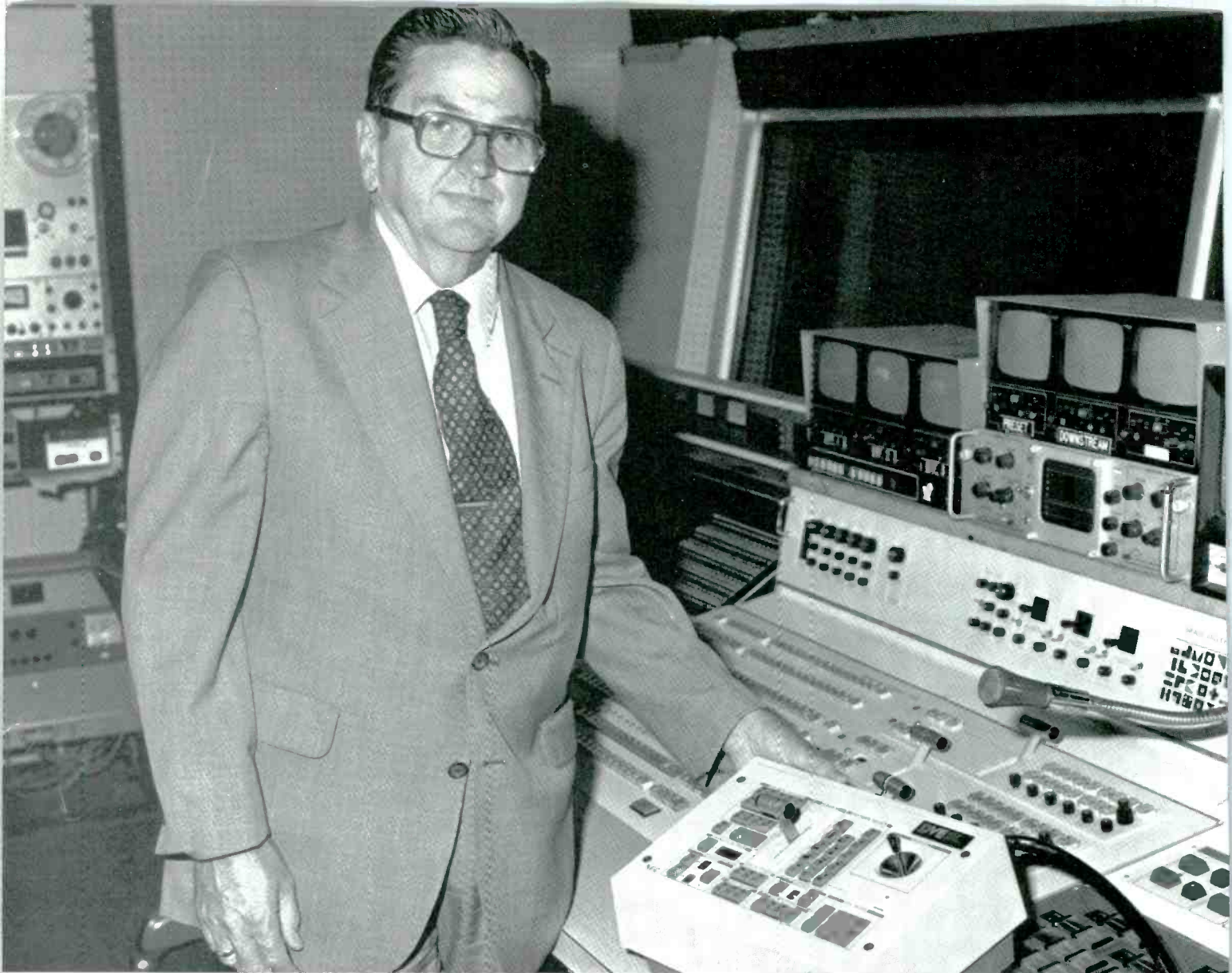
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WMAR-TV, Baltimore, Vice President and Director of Engineering, Bob Donahue.

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# Welcome to the first issue of ***Spec Book***

When we first sat down to plan groundwork for **Spec Book**, we envisioned a manual that would provide an easy reference for comparison of radio and TV equipment specifications for people in the market for a certain piece of equipment. To be truly effective, the manual would have to list information in an easy-to-read format with side-by-side comparisons for as many companies as possible, both large and small. The information would cover many different equipment types to accommodate the widespread needs of broadcast and production facilities alike.

The next step was to gather information from manufacturers. As data sheets came in, the equipment was categorized. Spec items were selected for the listings based upon recommendations and expertise of qualified engineers, broadcast consultants and recognized industry experts. These professionals are acquainted with and currently working in radio and TV stations and production houses across the United States.) To eliminate any potential for bias or favoritism, no manufacturer input was solicited or accepted. From there, the project has been an enormous reading, interpreting, standardizing and organizing effort. Material used to develop **Spec Book** quickly filled three file cabinets to the overflow point.

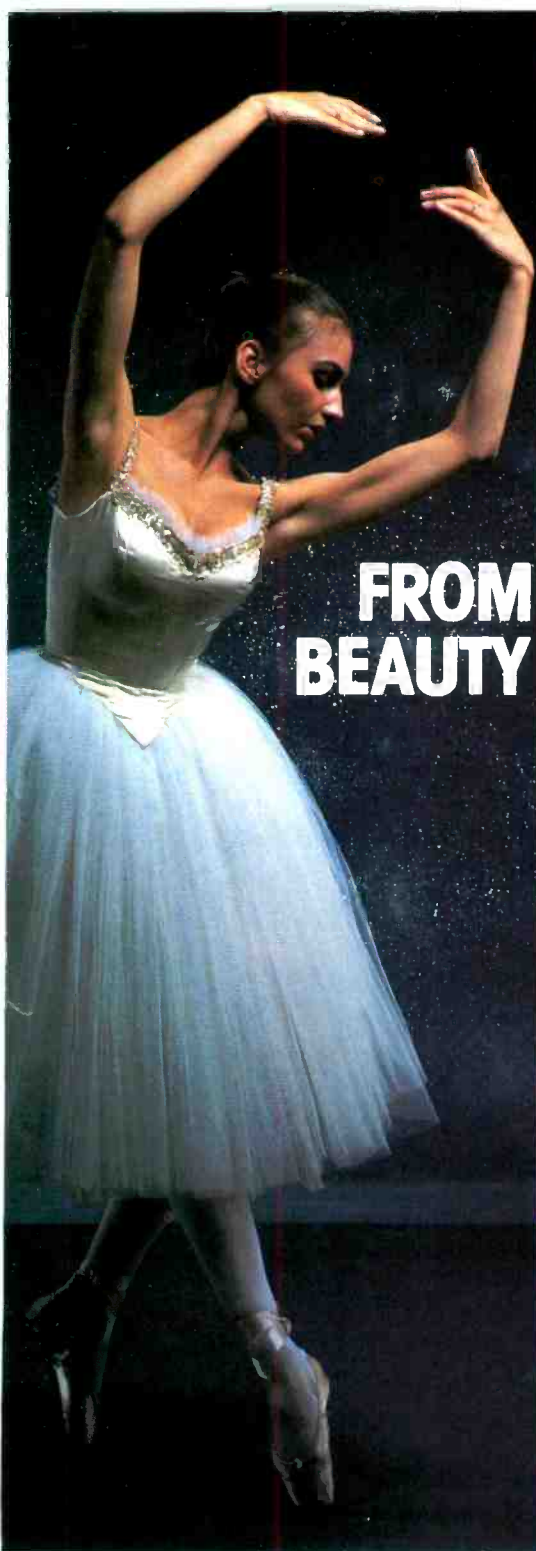
Information in each category has been made as concise and consistent as possible to fit into the allotted space. Because the information that is presented is not intended to be a final

guide to purchasing, but rather as a place to start, no manufacturer's entire product line has necessarily been included in any particular category. All of the information has been organized by alphabetizing the manufacturers' names within each category. Comparable equipment from several manufacturers should be easy to locate for buying and specifying consideration. After seeing how these numbers stack up, the buyer may then choose to go to the manufacturer for a demonstration, further information or answers to applicable questions.

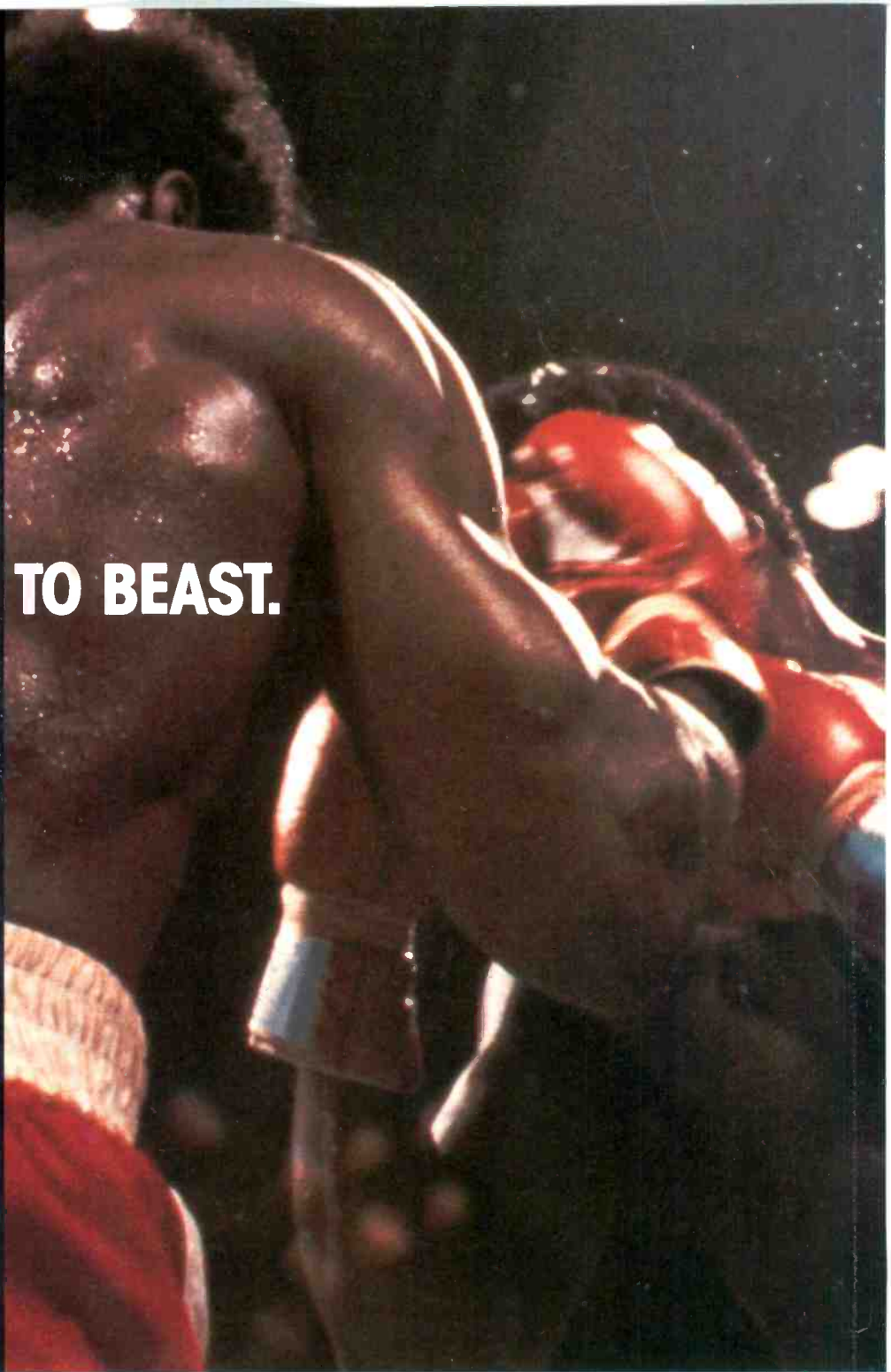
The specifications in this first issue of **Spec Book** are intended for NTSC, EIA, SMPTE and FCC standards use. The availability of PAL and SECAM models of TV equipment has been noted when made available to us. The other general specifications of that equipment beyond the major differences involved in color standards have been found to vary only slightly.

In the process of developing this issue, we encountered a few technical glitches. Adjustments were made from the original blueprint plan because of the newness of such an undertaking, in addition to some time and space limitations. However, we feel that we have achieved our initial goal of providing you, the industry, with a unique source of information to aid in equipment purchasing.

—Carl Bentz  
*Technical Editor*



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# BROADCAST ENGINEERING

first annual issue

# Broadcast Engineering's

Welcome to the Spec Book ..... 2

## AUDIO

### Audio Consoles

|                       |    |
|-----------------------|----|
| Remote/Portable ..... | 8  |
| Studio .....          | 14 |

|                                    |    |
|------------------------------------|----|
| Audio Distribution Analyzers ..... | 20 |
|------------------------------------|----|

|                              |    |
|------------------------------|----|
| Audio Processors .....       | 21 |
| Manufacturers' Listing ..... | 26 |

### Audio Recorders

|                    |    |
|--------------------|----|
| Cartridge .....    | 27 |
| Reel-to-Reel ..... | 32 |

|                        |    |
|------------------------|----|
| Phono Turntables ..... | 35 |
|------------------------|----|

## Wireless Microphones

|                |    |
|----------------|----|
| Multiple ..... | 36 |
| Remote .....   | 36 |
| Single .....   | 37 |

## VIDEO

### Cameras

|                                  |    |
|----------------------------------|----|
| ENG/EFP/Portable/Hand-held ..... | 42 |
| Studio/Field .....               | 48 |

### Camera Lenses

|                  |    |
|------------------|----|
| 2/3-inch .....   | 50 |
| 1-inch .....     | 53 |
| 1 1/4-inch ..... | 54 |

|                           |    |
|---------------------------|----|
| Camera Pickup Tubes ..... | 55 |
|---------------------------|----|

|                                |    |
|--------------------------------|----|
| Camera Support Equipment ..... | 60 |
|--------------------------------|----|

|                            |    |
|----------------------------|----|
| Character Generators ..... | 62 |
|----------------------------|----|

# BROADCAST ENGINEERING

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|                                  |    |
|----------------------------------|----|
| Color Video Monitors .....       | 65 |
| Edit Controllers .....           | 71 |
| Routing Switchers .....          | 76 |
| SMPTE Time Code Generator .....  | 81 |
| Special Effects Generator .....  | 84 |
| Time Base Correction .....       | 86 |
| Videodisc Systems .....          | 88 |
| Video Processors .....           | 90 |
| Video Production Switchers ..... | 91 |

|                     |     |
|---------------------|-----|
| Videotape Recorders |     |
| 3/4-inch .....      | 97  |
| 1-inch .....        | 101 |

## TRANSMITTING EQUIPMENT

|              |     |
|--------------|-----|
| Transmitters |     |
| AM .....     | 107 |
| FM .....     | 110 |
| UHF .....    | 114 |
| VHF .....    | 119 |

|                              |     |
|------------------------------|-----|
| Transmitting Antenna Systems |     |
| Manufacturers' Listing ..... | 123 |

|                              |     |
|------------------------------|-----|
| STL Aural Link Equipment     |     |
| Manufacturers' Listing ..... | 123 |

|                                   |     |
|-----------------------------------|-----|
| ADVERTISERS                       |     |
| Service and Parts Locations ..... | 124 |
| Index .....                       | 128 |

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**BROADCAST ENGINEERING'S** *Spec Book* is compiled 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 also include consulting engineers and dealer/distributors of broadcast equipment.

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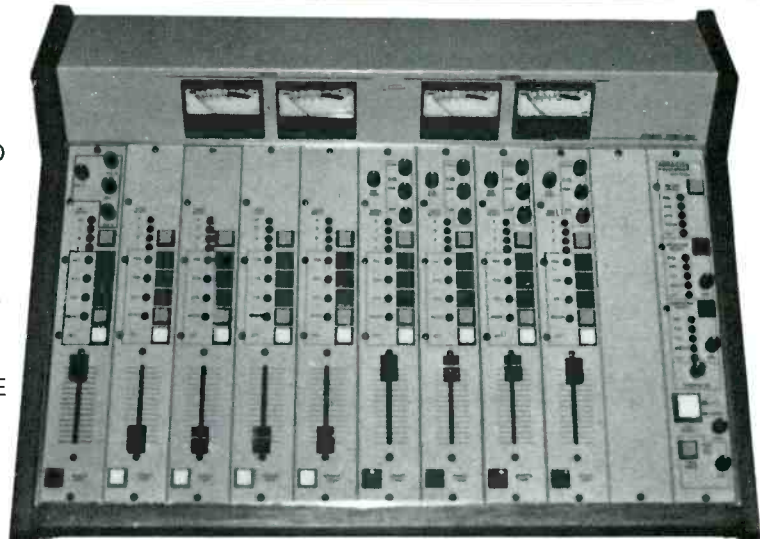
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# AUDIO

---

Audio mixing consoles  
(Studio and Remote)

Audio processors

Audio recorders  
(Reel-to-reel and Cartridge)

Phono turntables

Wireless mics

---

# AUDIO MIXING CONSOLE

Remote/Portable. Smaller units, battery- or ac-powered, easily transportable or may be incorporated into a remote production vehicle. Also operable for small newsroom production center and/or on-air consoles. Headphone output available.

| Manufacturer            | Ampro             | Applied Technology | Arrakis Systems        | AudioArts Engineering | AVAB America          |
|-------------------------|-------------------|--------------------|------------------------|-----------------------|-----------------------|
| Model Number            | Microtouch        | ROAM               | 250SC                  | 5200 Mixer            | FM 800 Mixer          |
| Stereo Capable          | Yes               | .....              | Yes                    | Yes                   | Yes                   |
| Mixing Channels         | 5                 | 5                  | 5                      | 5                     | 8                     |
| Modular System          | .....             | .....              | .....                  | .....                 | .....                 |
| Inputs (Mic/Line)       | 10 Total          | 5 Total            | 10 Total               | 1/4                   | 8 Total               |
| Inputs per Mixer        | 2                 | 1                  | 2                      | 1                     | 1                     |
| Mixing Buses            | 2 Pgm, 1 Cue      | Pgm                | Pgm, Mon               | Pgm, Mon              | Mono, Mon, Pgm        |
| Outputs (Mono/Stereo)   | Pgm 1, Pgm 2, Cue | Pgm                | Pgm, Mon               | Pgm, Mon, Tape        | Mono, Mon, Pgm        |
| Fader Type              | Rotary or Slider  | Rotary             | Rotary Controlling VCA | Rotary                | Slider and Panpots    |
| Equalizing System       | .....             | .....              | .....                  | .....                 | .....                 |
| Filtering Circuits      | .....             | Low, High Pass     | .....                  | Low, High             | Yes                   |
| Compression/Limiting    | .....             | .....              | .....                  | .....                 | Low, High Pass        |
| Telephone Interface     | .....             | .....              | .....                  | .....                 | .....                 |
| Tone Oscillator         | .....             | .....              | .....                  | .....                 | Yes                   |
| Cueing System           | Yes               | .....              | Yes                    | Yes                   | Yes                   |
| Talkback System         | .....             | .....              | .....                  | PA                    | Yes                   |
| Echo/Foldback Circuits  | .....             | .....              | .....                  | .....                 | .....                 |
| Metering Types          | Meter             | LED Bargraph       | LED Display            | .....                 | Meter                 |
| Powering, ac            | 110V              | 110V               | 110V                   | 110V                  | 110V                  |
| External Battery        | .....             | .....              | .....                  | .....                 | 10-30Vdc              |
| Internal Battery        | .....             | .....              | .....                  | .....                 | Yes                   |
| Battery Useful Life     | .....             | .....              | .....                  | .....                 | .....                 |
| Phantom Mic Supply      | .....             | .....              | .....                  | .....                 | Yes                   |
| Weight                  | .....             | 2 lb               | .....                  | .....                 | 18 lb                 |
| Input (Ohms) (Mic/Line) | 2K/600 Bal        | 150/600 Bal        | 1K/10K Bal             | 10K/10K, 47K          | 10K Bal               |
| Input Levels (Mic/Line) | .....             | -55dBm/ +4dBm      | -50dBm/ -30, +20dBm    | .....                 | .....                 |
| Output Load (Ohms)      | 600 Bal           | 600 Bal            | 600 Bal                | 600                   | 600 Bal               |
| Output Level (0 VU)     | +8dBm             | +8dBm              | +8dBm                  | +20dBm                | .....                 |
| Output Level Max.       | +22dBm            | +22dBm             | +22dBm                 | .....                 | +18dBm                |
| AF Response (± dB/Hz)   | 1.5/20-15K        | .5/20-20K          | 1/20-20K               | .5/20-50K             | 1/30-20K              |
| Harmonic Distortion     | 0.5%, +18dBm      | .01%               | 1%, +18dBm             | .007%, +10dBm         | .1% below +18dBm      |
| Noise (Mic to Program)  | 74dB below +18dBm | -85dB              | 70dB below +8dBm       | -108dB                | Output                |
| Output                  | .....             | .....              | Output                 | .....                 | -129dBa, Equiv. Input |
| Crosstalk Rating        | -68dB, +18dBm     | .....              | .....                  | .....                 | .....                 |
| Related Models          | .....             | .....              | 250M Mono 5            | .....                 | .....                 |

| Manufacturer            | Broadcast Electronics    | Central Dynamics         | Cetec Broadcast Group  | EELA Audio                              |
|-------------------------|--------------------------|--------------------------|------------------------|---|
| Model Number            | 5M150 Mono Dual Channel  | AFM-10 Audio Mixer       | Model 2007             | S-41 Minimixer                          |
| Stereo Capable          | .....                    | .....                    | Yes                    | .....                                   |
| Mixing Channels         | 5                        | 7                        | 8                      | 4                                       |
| Modular System          | .....                    | .....                    | .....                  | .....                                   |
| Inputs (Mic/Line)       | 5/5                      | 7 Total                  | 4/12                   | 4 Total                                 |
| Inputs per Mixer        | 2                        | 1                        | 2                      | 1                                       |
| Mixing Buses            | 2 Pgm                    | Pgm, Aux                 | Pgm, Aud               | Pgm, Mon, PFL                           |
| Outputs (Mono/Stereo)   | .....                    | Pgm, Aux                 | 2 Pgm, 2 Aud           | Pgm                                     |
| Fader Type              | Rotary                   | Rotary                   | Rotary                 | Slider                                  |
| Equalizing System       | .....                    | .....                    | .....                  | .....                                   |
| Filtering Circuits      | .....                    | 3:1 Compression          | .....                  | High Pass                               |
| Compression/Limiting    | .....                    | .....                    | .....                  | Yes                                     |
| Telephone Interface     | .....                    | .....                    | .....                  | .....                                   |
| Tone Oscillator         | .....                    | Yes                      | .....                  | Yes                                     |
| Cueing System           | Yes                      | .....                    | Yes                    | Yes                                     |
| Talkback System         | .....                    | .....                    | Yes                    | .....                                   |
| Echo/Foldback Circuits  | .....                    | .....                    | .....                  | .....                                   |
| Metering Types          | Meter                    | Meter                    | Meter                  | Meter and LED                           |
| Powering, ac            | 110V, 50W                | 110V                     | 110V                   | 110V                                    |
| External Battery        | .....                    | .....                    | .....                  | Power Pack                              |
| Internal Battery        | .....                    | .....                    | .....                  | AA NiCad                                |
| Battery Useful Life     | .....                    | .....                    | .....                  | 8-10 hours                              |
| Phantom Mic Supply      | .....                    | .....                    | .....                  | Yes                                     |
| Weight                  | 49 lb                    | 10 lb                    | 27 lb                  | 5.5 lb with Power Pack                  |
| Input (Ohms) (Mic/Line) | 150/54K Bal              | 2K/620 Bal               | 150/10K Bal            | 1.2K/10K Bal                            |
| Input Levels (Mic/Line) | -65, -38dBm/ -20, +20dBm | 100mV/ +18dBm maximum    | -35dBV/ +20dBm maximum | .....                                   |
| Output Load (Ohms)      | 600 Bal                  | 600 Bal                  | 600 Bal                | 600                                     |
| Output Level (0 VU)     | +8dBm                    | +8dBm                    | +8dBm                  | +4dBm                                   |
| Output Level Max.       | +18dBm                   | +18dBm                   | +20dBm                 | +18dBm                                  |
| AF Response (± dB/Hz)   | 0.75/50-20K              | .5/30-20K, +8dBm         | 1/30-20K               | 0, -1/37-12K                            |
| Harmonic Distortion     | 0.05%, +18dBm            | .5%, +8dBm, Limiting Off | .5%, +8dBm             | 0.5%, +4dBm                             |
| Noise (Mic to Program)  | 70dB Below +18dBm        | -116dBm Equiv. Input     | 70dB Below +8dBm       | Output                                  |
| Output                  | .....                    | -55dB, 10kHz             | -65dB, 1kHz            | -123dBm Equiv.                          |
| Crosstalk Rating        | .....                    | .....                    | .....                  | Input                                   |
| Related Models          | .....                    | .....                    | 2000/2001 Mono 5       | -56dB, 10kHz                            |
| .....                   | .....                    | .....                    | 2002/2003 Stereo 5     | ENG-4-1 is battery powered, Mono output |
| .....                   | .....                    | .....                    | 2004 Mono 8 Mixer      | .....                                   |

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Model 5422R Rack Mount  
Model 5432  
Table Drop Through  
Model 5452  
12 or 16 Inputs

Model 5442  
Table Top  
Mixer

#### Partial Listing of Recent 542 Range Customers:

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Telemation • Teletronics • IPC • WEAM • Wickreworks • Windsor  
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Rupert Neve Incorporated P.O. Box 120907, Nashville, Tennessee 37212 Tel: (615)385-2390

Rupert Neve of Canada, Ltd. 2721 Rena Road, Malton, Ontario L4T 3K1, Canada Tel: (416)577-6611 Telex: 983502

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Rupert Neve GmbH 6100 Darmstadt, Bismarckstrasse 114, West Germany Tel: (06151)81764

Circle 16 on Reply Card

# AUDIO MIXING CONSOLE

| Manufacturer               | EV TAPCO                               | Hallikainen & Friends | Harris         | Integrated Sound Systems | Industrial Sciences Inc. |
|----------------------------|--|-----------------------|----------------|--------------------------|--------------------------|
| Model Number               | 6001RB                                 | TVA Series 142/132    | Stereo 5       | GLI-PMX 9000 Mixer       | Model 1002               |
| Stereo Capable             | .....                                  | .....                 | Yes            | .....                    | .....                    |
| Mixing Channels            | 6                                      | 6                     | 5              | 4                        | 10                       |
| Modular System             | Expandable                             | Expandable            | .....          | .....                    | .....                    |
| Inputs (Mic/Line)          | 6 Total                                | 6 Total               | 4/9            | 1/3                      | 10 Total                 |
| Inputs per Mixer           | 1                                      | 1                     | 2 on 2, 3 on 3 | 1                        | 1                        |
| Mixing Buses               | Pgm, Efx, Mon                          | Pgm, Aud, Cue         | Pgm, Aud       | Pgm, Mon                 | Pgm, Aud, Mon            |
| Outputs (Mono/Stereo)      | Pgm, Efx, Mon                          | Pgm, Aud, Cue         | Pgm, Aud       | Pgm                      | Pgm, Aud                 |
| Fader Type                 | Rotary                                 | Rotary                | Rotary         | Slider                   | Slider                   |
| Equalizing System          | Yes                                    | .....                 | .....          | Yes                      | Yes                      |
| Filtering Circuits         | Low Cut                                | .....                 | .....          | .....                    | Low, High Cut            |
| Compression/Limiting       | .....                                  | .....                 | .....          | .....                    | .....                    |
| Telephone Interface        | .....                                  | .....                 | .....          | .....                    | .....                    |
| Tone Oscillator            | .....                                  | .....                 | Yes            | .....                    | Yes                      |
| Cueing System              | Yes                                    | Yes                   | Yes            | Yes                      | Yes                      |
| Talkback System            | .....                                  | .....                 | .....          | .....                    | .....                    |
| Echo/Foldback Circuits     | Effects Send                           | .....                 | .....          | .....                    | Possible                 |
| Metering Types             | .....                                  | Meter                 | Meter          | Meter                    | Meter                    |
| Powering, ac               | .....                                  | 110V                  | 110V, 55W      | .....                    | Yes                      |
| External Battery           | .....                                  | .....                 | .....          | .....                    | .....                    |
| Internal Battery           | .....                                  | .....                 | .....          | .....                    | .....                    |
| Battery Useful Life        | .....                                  | .....                 | .....          | .....                    | .....                    |
| Phantom Mic Supply         | .....                                  | .....                 | .....          | .....                    | .....                    |
| Weight                     | 20 lb                                  | .....                 | 44 lb          | .....                    | .....                    |
| Input (Ohms) (Mic/Line)    | Low Z/High Z                           | 150/15K               | 150, 600 Bal   | 600/47K                  | 4K/20K Bal               |
| Input Levels (Mic/Line)    | .....                                  | -58dB/-10dB           | .....          | 200mV/5V; 220mV          | -65dBm/ +4dBm            |
|                            | .....                                  | Nominal               | .....          | Phono                    | .....                    |
| Output Load (Ohms)         | .....                                  | 600 Bal               | 600 Bal        | 10K                      | 600                      |
| Output Level (0 VU)        | .....                                  | +8dBm                 | +8dBm          | 10V, 10kOhm              | +4dBm                    |
| Output Level Max.          | +18dBm                                 | +22dBm                | +18dBm         | .....                    | +20dBm                   |
| AF Response ( $\pm$ dB/Hz) | 1/20-20K                               | 1/20-20K              | 1/30-15K       | .....                    | .5/20-20K                |
| Harmonic Distortion        | 0.05%                                  | .25%                  | .5%, +8dBm     | .05%                     | .25%                     |
| Noise (Mic to Program)     | -128dBv Equiv.                         | 60dB Mic Input        | 70dB Below     | 75dB Below               | -123dBm Equiv.           |
|                            | Input                                  | .....                 | +18dBm         | Mic Clipping             | Input                    |
| Crosstalk Rating           | .....                                  | -82dB, 1kHz           | .....          | .....                    | -70dB                    |
| Related Models             | 6100 Series Mono<br>6200 Series Stereo | .....                 | .....          | .....                    | .....                    |

| Manufacturer               | Logitek Electronic Systems  | LPB Inc.                        | McMartin Industries         | MicroTrak                  |                       |
|----------------------------|-----------------------------|---------------------------------|-----------------------------|----------------------------|-----------------------|
| Model Number               | CAS-5S Custom Audio Series  | S-14A Signature II              | C-6S Citation               | ACCU-FIVE                  | Sport III             |
| Stereo Capable             | Yes                         | .....                           | Yes                         | .....                      | .....                 |
| Mixing Channels            | 5                           | 5                               | 6                           | 5                          | 2                     |
| Modular System             | Yes                         | .....                           | .....                       | .....                      | .....                 |
| Inputs (Mic/Line)          | 5/5 or 10 Line              | 2/12                            | 3/15                        | 6/7                        | 2/2                   |
| Inputs per Mixer           | 2                           | 2 on 3, 4 on 2                  | 3                           | 2 on 4, 5 on 1             | 1 on 1, 2 on 1        |
| Mixing Buses               | Pgm, Aud, 2 Sub<br>Optional | Pgm, Aud                        | Pgm, Aud, Aux, Mono         | Pgm, Cue                   | Pgm, Mon              |
| Outputs (Mono/Stereo)      | Pgm, Aud, 2 Mono            | Pgm, Aud                        | Pgm, Aud, Aux, Mono         | Pgm                        | Pgm                   |
| Fader Type                 | Slider (Duncan)             | Rotary, Step<br>Attenuator      | Rotary                      | Rotary                     | Rotary                |
| Equalizing System          | Integral Option             | .....                           | .....                       | .....                      | .....                 |
| Filtering Circuits         | .....                       | .....                           | .....                       | .....                      | .....                 |
| Compression/Limiting       | .....                       | .....                           | .....                       | .....                      | .....                 |
| Telephone Interface        | .....                       | .....                           | .....                       | .....                      | Yes, Touch Pad        |
| Tone Oscillator            | Option                      | .....                           | Option                      | .....                      | .....                 |
| Cueing System              | Yes                         | Yes                             | Yes                         | Yes                        | Yes                   |
| Talkback System            | Yes                         | .....                           | .....                       | Yes                        | Yes, Studio via Phone |
| Echo/Foldback Circuits     | Via Submaster or<br>Option  | .....                           | .....                       | .....                      | .....                 |
| Metering Types             | Meter                       | Meter                           | Meter                       | Meter                      | Meter                 |
| Powering, ac               | 110V                        | 110V, 60W                       | 110V, 100W                  | 110V, 30W                  | 110V                  |
| External Battery           | .....                       | .....                           | .....                       | .....                      | .....                 |
| Internal Battery           | .....                       | .....                           | .....                       | .....                      | 4 9V Alkaline         |
| Battery Useful Life        | .....                       | .....                           | .....                       | .....                      | 5 hours               |
| Phantom Mic Supply         | Possible                    | .....                           | .....                       | .....                      | .....                 |
| Weight                     | 30 lb                       | 29 lb                           | 60 lb                       | 12 lb                      | 6.5 lb                |
| Input (Ohms) (Mic/Line)    | 150/150, 600, 150K Bal      | 150/600 Bal                     | 150/600 Bal                 | 150/600 Bal                | Low Z/600             |
| Input Levels (Mic/Line)    | -30/+10(+20)dBm<br>max      | -65, -45/-10dBm                 | -65, -45/-10dBm             | -60, -35/-20,<br>+5dBm     | -58, -40/-20dBm       |
| Output Load (Ohms)         | 600 Bal                     | 600 Bal                         | 600 Bal                     | 600 Bal                    | 600 Bal               |
| Output Level (0 VU)        | +4dBm                       | +8dBm                           | +8dBm                       | +8dBm                      | +8dBm                 |
| Output Level Max.          | +27dBm                      | +22dBm                          | +22dBm                      | +18dBm                     | +15dBm                |
| AF Response ( $\pm$ dB/Hz) | 0.3/50-15K                  | 1/20-20K                        | 1/20-20K                    | 1/30-15K                   | .....                 |
| Harmonic Distortion        | 0.1%, +22dBm                | .2%, +18dBm                     | .1%, +18dBm                 | 0.5%, +18dBm               | .....                 |
| Noise (Mic to Program)     | 72dB                        | 60dB Below<br>+18dBm Output     | 74dB Below<br>+18dBm Output | 60dB Below<br>+8dBm Output | .....                 |
| Crosstalk Rating           | Below Noise                 | .....                           | Below Noise                 | Below Noise                | .....                 |
| Related Models             | CAS-5M Mono                 | S-12, Stereo<br>Model Available | C-8S, C-10S                 | .....                      | .....                 |

# AUDIO MIXING CONSOLE

| Manufacturer            | MicroTrak                      | Rupert Neve              | Panasonic Professional | ProTech Audio                        | Quad-Eight                           |
|-------------------------|--------------------------------|--------------------------|------------------------|--------------------------------------|--------------------------------------|
| Model Number            | Sport IV                       | 5422 Portable            | WR-500                 | Integra 3 (30000)                    | 248 Series 8x2 + 2                   |
| Stereo Capable          | .....                          | Yes                      | Yes                    | .....                                | Yes                                  |
| Mixing Channels         | ..... 4                        | 8                        | 8                      | 5                                    | 8                                    |
| Modular System          | .....                          | Yes                      | Expandable             | .....                                | Yes                                  |
| Inputs (Mic/Line)       | ..... 5/2                      | 8/8                      | 8 Total                | 12 Total                             | 6 Either + 2 Line                    |
| Inputs per Mixer        | ..... 1 on 3, 2 on 1           | 2                        | 1                      | .....                                | .....                                |
| Mixing Buses            | ..... Pgm, Mon                 | Pgm, Aud, PFL            | Pgm, Mono              | Pgm, Aux, Mon                        | Pgm, Aud                             |
| Outputs (Mono/Stereo)   | ..... Pgm                      | Pgm or 2 Mono            | Pgm                    | 2 Pgm, Mono                          | Pgm, Aud                             |
| Fader Type              | ..... Rotary                   | Slider (P&G)             | Slider and Panpots     | Slider                               | Slider                               |
| Equalizing System       | .....                          | Yes                      | Yes                    | .....                                | Yes                                  |
| Filtering Circuits      | .....                          | High Pass                | Low, High Pass         | .....                                | High Pass                            |
| Compression/Limiting    | .....                          | .....                    | .....                  | Option                               | Option                               |
| Telephone Interface     | ..... Yes, Touch Pad<br>Option | .....                    | .....                  | .....                                | .....                                |
| Tone Oscillator         | .....                          | Yes                      | .....                  | .....                                | Yes                                  |
| Cueing System           | ..... Yes                      | Yes, PFL                 | Yes                    | Yes                                  | Yes                                  |
| Talkback System         | ..... Yes, Studio via Phone    | Yes                      | .....                  | .....                                | Yes                                  |
| Echo/Foldback Circuits  | .....                          | Possible                 | Echo Send              | .....                                | Yes                                  |
| Metering Types          | ..... Meter                    | Meter                    | Meter                  | Meter                                | Meter                                |
| Powering, ac            | ..... 110V                     | 110V, PS12100 Supply     | .....                  | .....                                | 110V, 150W                           |
| External Battery        | .....                          | .....                    | .....                  | ± 18Vdc                              | .....                                |
| Internal Battery        | ..... 4 9V Alkaline            | 34613 Battery Pack       | .....                  | .....                                | .....                                |
| Battery Useful Life     | ..... 5 hours                  | 4 hours                  | .....                  | .....                                | .....                                |
| Phantom Mic Supply      | .....                          | Yes                      | .....                  | .....                                | .....                                |
| Weight                  | ..... 7 lb                     | 42 lb                    | .....                  | .....                                | .....                                |
| Input (Ohms) (Mic/Line) | ..... Low Z/600                | 1.2K/10K Bal             | .....                  | 150, 200/600 Bal                     | .....                                |
| Input Levels (Mic/Line) | ..... -58, -40/ -20dBm         | -90, -15/ -30,<br>+15dB  | .....                  | -55dBm/ +4dBm                        | +4dBm                                |
| Output Load (Ohms)      | ..... 600 Bal                  | 600                      | 600 Bal                | 600 Bal                              | 600                                  |
| Output Level (0 VU)     | ..... +8dBm                    | .....                    | +4dBm                  | +8dBm                                | +4dBm                                |
| Output Level Max.       | ..... +15dBm                   | +20dBu                   | .....                  | +27dBm                               | +26dBm                               |
| AF Response (± dB/Hz)   | .....                          | .5/30-15K                | .5, -2/20-20K          | .5/30-20K                            | 1/20-20K                             |
| Harmonic Distortion     | .....                          | .05%, +20dBu,<br>600 Ohm | .3%                    | .25%, +8dBm Output<br>-128dBm Equiv. | .1%, +26dBm Output<br>-129dBm Equiv. |
| Noise (Mic to Program)  | .....                          | -125dBu Equiv.           | -130dB Equiv.          | Input                                | Input                                |
| Crosstalk Rating        | .....                          | Input                    | Input                  | Below Noise                          | -85dB                                |
| Related Models          | .....                          | -60dB                    | .....                  | .....                                | .....                                |
|                         | .....                          | 5422-R, 5432, 5442       | .....                  | .....                                | .....                                |

| Manufacturer            | Ramko Research                         | RAMSA (Panasonic)          | RTS Systems                 | Russco Electronics  |                        |
|-------------------------|--|----------------------------|-----------------------------|---------------------|------------------------|
| Model Number            | DC-38-10S                              | DC-5M                      | WR-130                      | HPM-41 Mixer        | 505S Studio/Master     |
| Stereo Capable          | ..... Yes                              | .....                      | Yes                         | .....               | Yes                    |
| Mixing Channels         | ..... 10                               | 5                          | 8                           | 4                   | 5                      |
| Modular System          | .....                                  | Expand to 9 with<br>DC-4CE | .....                       | .....               | .....                  |
| Inputs (Mic/Line)       | ..... 8/32                             | 4/8                        | 8 Either/2 Line             | 4 Either, 1 Line    | 4 Either, 5 Line       |
| Inputs per Mixer        | ..... 4                                | 2 on 4, 4 on 1             | 1                           | 1                   | 1 on 4, 5 on 1         |
| Mixing Buses            | ..... Pgm, Aud, Cue, Mono              | Pgm, Aud, Mon              | Pgm A, Pgm B,<br>Premix     | Pgm                 | Pgm, Cue               |
| Outputs (Mono/Stereo)   | ..... Pgm, Aud, Mono                   | Pgm, Aud                   | Pgm, Tape                   | Pgm                 | Pgm                    |
| Fader Type              | ..... Rotary Controlling<br>VCA        | Rotary Controlling<br>VCA  | Slider and Panpots          | Rotary              | Rotary                 |
| Equalizing System       | .....                                  | Option                     | Yes                         | .....               | .....                  |
| Filtering Circuits      | .....                                  | .....                      | .....                       | High Pass           | .....                  |
| Compression/Limiting    | .....                                  | .....                      | .....                       | Yes                 | .....                  |
| Telephone Interface     | .....                                  | .....                      | .....                       | .....               | .....                  |
| Tone Oscillator         | .....                                  | .....                      | .....                       | Yes                 | .....                  |
| Cueing System           | ..... Yes                              | Yes                        | Yes                         | .....               | Yes                    |
| Talkback System         | ..... Yes                              | .....                      | .....                       | .....               | .....                  |
| Echo/Foldback Circuits  | .....                                  | .....                      | Echo Send                   | .....               | .....                  |
| Metering Types          | ..... LED Display                      | LED Display                | Meter and LED               | Meter               | Meter                  |
| Powering, ac            | ..... 110V                             | 110V, 30W                  | 110V, 12W                   | 110V, 13W           | 110V, 100W             |
| External Battery        | .....                                  | .....                      | .....                       | 10-14Vdc, 500mA     | .....                  |
| Internal Battery        | .....                                  | .....                      | .....                       | .....               | .....                  |
| Battery Useful Life     | .....                                  | .....                      | .....                       | .....               | .....                  |
| Phantom Mic Supply      | .....                                  | .....                      | .....                       | Yes                 | .....                  |
| Weight                  | .....                                  | .....                      | 18.9 lb                     | 7 lb                | 14 lb                  |
| Input (Ohms) (Mic/Line) | ..... 150, 250/ - Bal                  | 150, 250/100K Bal          | 600 Bal, 50K Unbal<br>Phono | To 4.7K/47K Bal     | 47K Unbal/600 Bal      |
| Input Levels (Mic/Line) | ..... -55dBm/ -10dBm                   | -55dBm/ -10dBm             | -70, -20dBs                 | -35dB/ -5dBv        | 13mV/ +18dBm           |
| Output Load (Ohms)      | ..... 600 Bal                          | 600 Bal                    | 600 Bal                     | 600                 | 600                    |
| Output Level (0 VU)     | ..... +8dBm                            | +8dBm                      | +4dBm                       | +4dBv               | +4, +8dBm              |
| Output Level Max.       | ..... +20dBm                           | +20dBm                     | +18dBm                      | +28dBm              | +17dBm                 |
| AF Response (± dB/Hz)   | ..... 0, -2/20-20K                     | 0, -2/20 20K               | .5, -2/20-20K               | 0, -1/30-20K        | 1/20-15K               |
| Harmonic Distortion     | ..... 0.3%                             | 0.3%                       | .3%, +18dBm Output          | .1%, +8dBm Output   | .5%, +8dBm Output      |
| Noise (Mic to Program)  | ..... -113dBm Equiv.                   | -113dBm Equiv.             | -128dB Equiv. Input         | -127dB Equiv. Input | -110dBm Equiv. Input   |
| Crosstalk Rating        | .....                                  | Input                      | .....                       | .....               | .....                  |
| Related Models          | ..... DC-38-5S, 10S,<br>DC-38-5, 8, 10 | .....                      | -60dB                       | -80dB, 1kHz         | 505 Studio Master Mono |

# AUDIO MIXING CONSOLE

| Manufacturer            | Schweizer AG                      | Shure Brothers           |                                 | Sony Professional Audio           |                                  |
|-------------------------|-----------------------------------|--------------------------|---------------------------------|-----------------------------------|----------------------------------|
|                         | SQN-3M                            | M67(2E)                  | SR109                           | MX-510 Mixer                      | MX-670 Mixer                     |
| Model Number            | Miniature Mixer                   | Professional             | Professional                    |                                   |                                  |
| Stereo Capable          | .....                             | .....                    | .....                           | Yes                               | Yes                              |
| Mixing Channels         | ..... 3                           | ..... 4                  | ..... 8                         | ..... 5                           | ..... 6                          |
| Modular System          | .....                             | .....                    | .....                           | .....                             | Expands to 12                    |
| Inputs (Mic/Line)       | ..... 3/1                         | ..... 3/1 Either         | ..... 6 Mic, 2 Either           | ..... 5 Mic or 3 Line,<br>2 Phono | ..... 6 Either                   |
| Inputs per Mixer        | ..... 1                           | ..... 1                  | ..... 1                         | ..... 1                           | ..... 1                          |
| Mixing Buses            | ..... Pgm                         | ..... Pgm                | ..... Pgm                       | ..... Pgm                         | ..... Pgm                        |
| Outputs (Mono/Stereo)   | ..... Pgm                         | ..... Pgm                | ..... Pgm                       | ..... Pgm                         | ..... Pgm                        |
| Fader Type              | ..... Rotary                      | ..... Rotary             | ..... Rotary                    | ..... Slider and Panpots          | ..... Slider                     |
| Equalizing System       | .....                             | .....                    | ..... Yes                       | .....                             | .....                            |
| Filtering Circuits      | ..... High Pass                   | ..... Low Cut            | .....                           | .....                             | .....                            |
| Compression/Limiting    | ..... 20:1 Compression            | .....                    | ..... 30dB Range                | .....                             | .....                            |
| Telephone Interface     | .....                             | .....                    | .....                           | .....                             | .....                            |
| Tone Oscillator         | ..... Yes                         | ..... Yes                | ..... Yes                       | .....                             | ..... Yes                        |
| Cueing System           | .....                             | .....                    | .....                           | .....                             | .....                            |
| Talkback System         | .....                             | .....                    | .....                           | .....                             | .....                            |
| Echo/Foldback Circuits  | .....                             | .....                    | .....                           | .....                             | .....                            |
| Metering Types          | ..... Meter                       | ..... Meter              | ..... Meter                     | ..... Meter                       | ..... Meter                      |
| Powering, ac            | .....                             | ..... 110V(220V)         | ..... 110V, 20W                 | ..... 110V and AC12<br>Adapter    | .....                            |
| External Battery        | ..... 5.5-18Vdc                   | ..... 30Vdc, 7mA         | .....                           | ..... 12Vdc                       | ..... 12Vdc                      |
| Internal Battery        | ..... 6 AA Cells                  | .....                    | .....                           | ..... 8 C Cells                   | ..... 8 C Cells                  |
| Battery Useful Life     | ..... 12 hours without<br>Phantom | .....                    | .....                           | .....                             | .....                            |
| Phantom Mic Supply      | ..... Yes                         | .....                    | .....                           | .....                             | .....                            |
| Weight                  | ..... 2.75 lb                     | ..... 4.5 lb             | ..... 17 lb                     | ..... 6.75 lb                     | ..... 11 lb                      |
| Input (Ohms) (Mic/Line) | ..... Adjustable                  | ..... 1.1K/600 Bal       | ..... 2.1K/66K Bal              | ..... Low Z/100K,<br>10K Phono    | ..... Low Z/82K,<br>50K Phono    |
| Input Levels (Mic/Line) | ..... 0.18mV for 0dB Peak         | ..... -30dBV/ +24dBm max | ..... .1mV max for<br>+4dBm Out | ..... -72dB/ -22dB<br>Minimum     | ..... .31mV/98mV,<br>2.2mV Phono |
| Output Load (Ohms)      | ..... 600                         | ..... 600                | ..... 600 Bal                   | ..... 10K                         | ..... 10K                        |
| Output Level (0 VU)     | ..... +8dBm                       | ..... +4dBm              | ..... +19dBm                    | ..... -5dBV                       | ..... -5dBV (435mV)              |
| Output Level Max.       | ..... +18dBm                      | ..... +18dBm             | .....                           | .....                             | .....                            |
| AF Response (± dB/Hz)   | ..... Flat/20-20K                 | ..... 2/30-10K           | ..... 3/20-20K                  | ..... Flat/30-25K                 | ..... 1/30-35K                   |
| Harmonic Distortion     | ..... 0.1%, +15dBm                | ..... .1%, +10dBm        | ..... 1%, +12dBm                | .....                             | .....                            |
| Noise (Mic to Program)  | .....                             | ..... -129dBV Equiv.     | ..... -125dBV Equiv. Input      | ..... 60dB Below Output           | ..... 60dB Below Output          |
| Crosstalk Rating        | .....                             | ..... Input              | .....                           | .....                             | .....                            |
| Related Models          | .....                             | .....                    | .....                           | .....                             | .....                            |

| Manufacturer            | SoundCraft                 | Stellavox                     | 069 Outside Broadcast             | 189 Pro Portable                  | 269 Portable                      |
|-------------------------|----------------------------|-------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|
|                         | 1S Series                  | AM148                         |                                   |                                   |                                   |
| Stereo Capable          | ..... Yes                  | ..... Yes                     | .....                             | ..... Yes or 4-Channel<br>Option  | ..... Yes or 4-Channel<br>Option  |
| Mixing Channels         | ..... To 20                | ..... 5                       | ..... 3                           | ..... 12-n, n = outputs           | ..... 18-n, n = outputs           |
| Modular System          | ..... Yes                  | ..... Expandable              | .....                             | ..... Yes                         | ..... Yes                         |
| Inputs (Mic/Line)       | ..... 20 Either            | ..... 5                       | ..... 2 Mic/3 Line, 1 Tape        | ..... 10 Mic/12 Line              | ..... 16 Mic/17 Line              |
| Inputs per Mixer        | ..... 1                    | ..... 1                       | ..... 2                           | ..... 2 on 10, 1 on 2<br>Masters  | ..... 2 on 16, 1 on 2<br>Masters  |
| Mixing Buses            | ..... Pgm, 3 Efx           | ..... Pgm, Cue                | ..... 2                           | ..... 5 with Efx                  | ..... 6 with Efx                  |
| Outputs (Mono/Stereo)   | ..... Pgm, 3 Efx           | ..... Pgm                     | ..... Pgm, Telephone              | ..... 4-Channel (2 Stereo)        | ..... 4-Channel (2 Stereo)        |
| Fader Type              | ..... Slider               | ..... Slider and Panpots      | ..... Slider                      | ..... Slider and Panpots          | ..... Slider and Panpots          |
| Equalizing System       | ..... Yes                  | ..... Yes                     | ..... Yes                         | ..... Yes                         | ..... Yes                         |
| Filtering Circuits      | ..... High Pass            | .....                         | ..... Low, High Cut,<br>Presence  | ..... Low, High Pass              | ..... Low, High Pass              |
| Compression/Limiting    | ..... Peak Clipper         | ..... 20dB Range              | ..... Limiting on Mics            | ..... On Output Masters           | ..... On Output Masters           |
| Telephone Interface     | .....                      | .....                         | ..... Yes, Dial Optional          | .....                             | .....                             |
| Tone Oscillator         | .....                      | ..... Yes                     | ..... Yes                         | ..... Yes                         | ..... Yes                         |
| Cueing System           | ..... Yes                  | ..... Yes                     | ..... Yes                         | ..... Yes                         | ..... Yes                         |
| Talkback System         | ..... Yes                  | .....                         | ..... Yes                         | ..... Yes                         | ..... Yes                         |
| Echo/Foldback Circuits  | ..... 3 Effects Outputs    | .....                         | .....                             | ..... Yes                         | ..... Yes                         |
| Metering Types          | ..... Meter                | ..... Meter                   | ..... Meter                       | ..... Meter                       | ..... Meter                       |
| Powering, ac            | ..... 110V                 | .....                         | ..... 110V                        | ..... 110V                        | ..... 110V                        |
| External Battery        | .....                      | ..... 12-20Vdc                | ..... 8.5-24Vdc                   | ..... 12-15Vdc to Converter       | ..... 8.5-24Vdc to Converter      |
| Internal Battery        | .....                      | ..... 15 AA Cells             | ..... Battery Pack                | ..... 8 NiCad Batteries           | ..... NiCad Batteries             |
| Battery Useful Life     | .....                      | .....                         | ..... 4-5 hours                   | ..... 4-5 hours                   | ..... 3-4 hours                   |
| Phantom Mic Supply      | ..... Available            | ..... Yes                     | .....                             | ..... Yes                         | ..... Yes                         |
| Weight                  | .....                      | ..... 10 lb                   | ..... 53 lb                       | ..... 55 lb                       | ..... 78 lb                       |
| Input (Ohms) (Mic/Line) | ..... 1K/1.6K              | ..... 200 Bal                 | ..... 1.2K/5K, 470K Tape          | ..... 1.2K/5K Bal                 | ..... 1.2K/5K Bal                 |
| Input Levels (Mic/Line) | .....                      | ..... 40mV/12mV               | ..... -71, -28dBu/ -30,<br>+16dBu | ..... -61, -22dBu/ -23,<br>+16dBu | ..... -61, -22dBu/ -23,<br>+16dBu |
| Output Load (Ohms)      | ..... 600 Bal              | ..... 600                     | ..... 600 Bal                     | ..... 600 Bal                     | ..... 600 Bal                     |
| Output Level (0 VU)     | ..... +4dBV                | .....                         | ..... +6 to +15dBu,               | ..... +6 to +15dBu,               | ..... +6 to +15dBu,               |
| Output Level Max.       | ..... +21dBV               | ..... 8V                      | ..... +23dBu                      | ..... Specified<br>+23dBu         | ..... Specified<br>+21dBu         |
| AF Response (± dB/Hz)   | ..... -1.5/20-20K          | ..... 1/30-20K                | ..... .5, -1/40-15K               | ..... .5, -1/40-15K               | ..... .5, -1/40-15K               |
| Harmonic Distortion     | ..... 0.05%, +4dBV         | ..... 0.2%                    | ..... .2%, +15dBu Output          | ..... .5%, Any Level              | ..... .5%, Any Level              |
| Noise (Mic to Program)  | ..... -126dBV Equiv. Input | ..... -126dBm Equiv.<br>Input | ..... 90dB                        | ..... 86dB                        | ..... 86dB                        |
| Crosstalk Rating        | .....                      | .....                         | ..... -78dB                       | ..... -75dB                       | ..... -75dB                       |
| Related Models          | .....                      | .....                         | .....                             | .....                             | .....                             |

# AUDIO MIXING CONSOLE

| Manufacturer               | TASCAM (Teac)        | TASCAM (Teac)           | TASCAM (Teac)           | U.R.E.I.                |
|----------------------------|----------------------|-------------------------|-------------------------|-------------------------|
| Model Number               | M-35 Modular Mixer   | System 20 Modular       | 144 PortaStudio         | Model 2A/MB2            |
| Stereo Capable             | Yes                  | Yes                     | Yes                     | Yes or 4-Channel        |
| Mixing Channels            | 8                    | 6                       | 4                       | 6                       |
| Modular System             | Yes                  | Expanso to 10           | .....                   | .....                   |
| Inputs (Mic/Line)          | 8 Either and 8 Tape  | 2/4                     | 4 Either, 2 Aux Mono    | 6 Either, 4 Mono Bus    |
| Inputs per Mixer           | 3                    | 1                       | 1                       | 2                       |
| Mixing Buses               | 4 Mono               | Mic Mix, Pgm, Line Mix  | Pgm, Aux Send, Tape Cue | 5 Mono                  |
| Outputs (Mono/Stereo)      | 4-Channel (2 Stereo) | Mic Mix, Pgm, Line Mix  | Pgm, Aux Send           | 4-Channel (2 Stereo)    |
| Fader Type                 | Slider               | Slider                  | Slider                  | Slider                  |
| Equalizing System          | Yes                  | Option                  | Yes                     | Yes                     |
| Filtering Circuits         | .....                | .....                   | .....                   | .....                   |
| Compression/Limiting       | .....                | .....                   | .....                   | .....                   |
| Telephone Interface        | .....                | .....                   | .....                   | .....                   |
| Tone Oscillator            | .....                | .....                   | .....                   | .....                   |
| Cueing System              | Yes                  | Yes                     | Yes                     | Option                  |
| Talkback System            | Yes                  | .....                   | .....                   | .....                   |
| Echo/Foldback Circuits     | Yes                  | Possible                | Possible                | .....                   |
| Metering Types             | Meter                | Optional Meter MU20     | Meter                   | Optional Meter MB2      |
| Powering, ac               | 110V, 30W            | 110V, 15W               | 110V                    | 110V, 5W                |
| External Battery           | .....                | .....                   | .....                   | .....                   |
| Internal Battery           | .....                | .....                   | .....                   | .....                   |
| Battery Useful Life        | .....                | .....                   | .....                   | .....                   |
| Phantom Mic Supply         | .....                | .....                   | .....                   | .....                   |
| Weight                     | .....                | 9.2 lb, No Metering     | 20 lb                   | 13.2 lb                 |
| Input (Ohms) (Mic/Line)    | 200/30K Bal          | 600 Bal/50K             | 60K, 65K Aux Input      | 50K/20K, 15K Bus In     |
| Input Levels (Mic/Line)    | -74, +23/-25, +30dBV | -70, -30dBV/-28, +25dBV | -60dBV/-10dBV           | -60dB<br>(.775mV) -10dB |
| Output Load (Ohms)         | 10K                  | 3K                      | 200                     | 10K Unbal               |
| Output Level (0 VU)        | -10dBV               | -10dBV                  | -10dBV                  | -10dB                   |
| Output Level Max.          | +18dBV               | +17dBV                  | +15dBV                  | +15dBV                  |
| AF Response ( $\pm$ dB/Hz) | 1/20-30K             | 2/30-20K                | Flat/20-20K             | 2/30-20K                |
| Harmonic Distortion        | 0.05%, 1kHz          | .1%                     | .3%, -10dBV             | .1%, -10dB              |
| Noise (Mic to Program)     | -116dB Equiv. Input  | 54dB                    | 68dB                    | 62dB                    |
| Crosstalk Rating           | -60dB, 1kHz          | -60dB                   | -65dB                   | -50dB                   |
| Related Models             | .....                | .....                   | .....                   | .....                   |



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# AUDIO MIXING CONSOLES

Studio installation. For microphone levels (-70 to -30dBm) and line levels (-20 to +8dBm) typically. Headphone monitoring facilities are available. Ac powering is required. Modular system refers to single or multiple mixing channel blocks rather than equipment with amplifier cards which are plug-in, exchangeable from one location to another.

| Manufacturer               | ADM Technology             | AMEK  | Ampro                               | Arrakis Systems              |
|----------------------------|----------------------------|---|-------------------------------------|------------------------------|
|                            | <b>1600 Series II</b>      |   |                                     |                              |
| <b>Model/Series</b>        | <b>ST Series II Stereo</b> | <b>M1000</b>                                  | <b>AC-12</b>                        | <b>500R Series (500R-8S)</b> |
| Modular System             | Yes                        | Yes   | .....                               | .....                        |
| Mixing Channels            | 10, 16, 20                 | 40  | 12                                  | 8                            |
| Inputs Maximum             | 20, 32, 40                 | 80  | 48                                  | 32                           |
| Output Channels            | 4                          | 2   | Pgm, Aud                            | 2                            |
| Monaural Mix               | Yes                        | Yes   | Yes                                 | Option                       |
| Stereo Mix                 | Pgm/Aud/Aux                | Pgm   | Pgm, Aud                            | Pgm, Aud                     |
| 4-Channel Mix              | .....                      | .....   | .....                               | .....                        |
| Equalization               | 4-Band                     | 4-Band  | .....                               | .....                        |
| Filtering                  | Hi, Lo-Pass                | Hi, Lo-Pass                                   | .....                               | .....                        |
| Pan Pots                   | Yes                        | Yes   | .....                               | .....                        |
| Submastering               | .....                      | 4 Groups                                      | .....                               | .....                        |
| Echo/Send-Return           | .....                      | 6   | .....                               | .....                        |
| Foldback Outputs           | .....                      | 2   | .....                               | .....                        |
| Solo Bus                   | .....                      | Yes   | .....                               | .....                        |
| Cue System                 | Yes                        | Yes   | Yes                                 | Yes                          |
| Talkback System            | Yes                        | Yes   | Yes                                 | .....                        |
| Speaker Muting             | CMOS, Programmable         | Yes   | Yes                                 | Yes                          |
| Tone                       | .....                      | Yes   | .....                               | .....                        |
| Metering Types             | Analog Meter               | Analog Meter                                  | Analog Meter                        | LED Display                  |
| Fader Type                 | Slider                     | Slider  | Rotary (Slider on LCs)              | Rotary Control for VCA       |
| VCA Level Control          | .....                      | .....   | .....                               | Yes                          |
| Machine Controls           | Yes                        | Yes   | Yes                                 | Option                       |
| Editor Interface           | .....                      | .....   | .....                               | .....                        |
| Phantom Mic Supply         | .....                      | .....   | Yes                                 | .....                        |
| Clock/Timer                | Option                     | .....   | .....                               | .....                        |
| Input Ohms (Mic/Line)      | .....                      | .....   | 1K/10K Bal                          | 1K/10K Bal                   |
| Output Load (Ohms)         | 600                        | 600   | Unbal                               | 600 Bal                      |
| Output Level (0 VU)        | +8dBm                      | +8dBm   | .....                               | +8dBm                        |
| Output Level Maximum       | +24dBm                     | +27dBm  | .....                               | +22dBm                       |
| AF Response ( $\pm$ dB/Hz) | 1/20-20K                   | 1/20-20K                                      | 1/20-20K                            | 1/20-20K                     |
| Harmonic Distortion        | 0.15%, +24dBm, 600 Ohm     | .15%, +27dBm, 600 Ohm                         | .02%, +10dBV                        | .1%, +18dBm                  |
| Signal-to-Noise Ratio      | -125.5dBu equiv. in        | -125.5dBu equiv. in                           | -126dBv equiv. in                   | 74dB below +18dBm            |
| Crosstalk (Worst Case)     | -72dB, +8dBm, 100-10kHz    | -72dB, +3dBm                                  | -60dB, 20kHz                        | 70dB below +8dBm             |
| Related Models             | .....                      | 600 Series II, 2400 Series II, 3200 Series II | AC-6, AC-8/LC-8, AC-10/LC-10, LC-12 | 500R-8M, 500R-12S, 500R-12M  |

| Manufacturer               | Arrakis Systems                | Audiotronics Inc.    |
|----------------------------|--------------------------------|----------------------|
|                            | <b>500SC Series</b>            | <b>110A</b>          |
|                            | <b>1000R Series</b>            | <b>110-8</b>         |
| <b>Model/Series</b>        | <b>(500SC-8S)</b>              | <b>"Grandson"</b>    |
| Modular System             | .....                          | Yes                  |
| Mixing Channels            | 8                              | 24                   |
| Inputs Maximum             | 16                             | 48                   |
| Output Channels            | 2                              | 4                    |
| Monaural Mix               | Option                         | 1 and L + R          |
| Stereo Mix                 | Pgm, Aud                       | 1                    |
| 4-Channel Mix              | .....                          | Yes                  |
| Equalization               | .....                          | 3-Band ( $\pm$ 12dB) |
| Filtering                  | .....                          | .....                |
| Pan Pots                   | .....                          | Yes                  |
| Submastering               | .....                          | 4 (or aux. outputs)  |
| Echo/Send-Return           | .....                          | 2                    |
| Foldback Outputs           | .....                          | 2                    |
| Solo Bus                   | .....                          | Yes                  |
| Cue System                 | Yes                            | Yes                  |
| Talkback System            | .....                          | Yes                  |
| Speaker Muting             | Yes                            | Yes                  |
| Tone                       | .....                          | Yes                  |
| Metering Types             | LED Display                    | Analog Meter         |
| Fader Type                 | Rotary Control for VCA         | Slider               |
| VCA Level Control          | Yes                            | .....                |
| Machine Controls           | Option                         | .....                |
| Editor Interface           | .....                          | .....                |
| Phantom Mic Supply         | .....                          | Yes                  |
| Clock/Timer                | .....                          | Option               |
| Input Ohms (Mic/Line)      | 1K/10K Bal                     | Option               |
| Output Load (Ohms)         | 600                            | 20K/15K Actual Bal   |
| Output Level (0 VU)        | +8dBm                          | 600 Bal              |
| Output Level Maximum       | +22dBm                         | +4dBm                |
| AF Response ( $\pm$ dB/Hz) | 1/20-20K                       | +24dBm               |
| Harmonic Distortion        | 0.1%, +18dBm                   | 1/20-20K             |
| Signal-to-Noise Ratio      | 70dB below +8dBm               | .1%, +18dBm          |
| Crosstalk (Worst Case)     | -75dB, 1kHz                    | 600 Ohm              |
| Related Models             | 500SC-8M, 500SC-12S, 500SC-12M | 70dB below +8dBm     |
|                            |                                | 75dB below +4dBm     |



# AUDIO MIXING CONSOLES

| Manufacturer               | Auditronics Inc.                                      | AudioArts Engineering          | Broadcast Audio Corp.                            |
|----------------------------|---|--------------------------------|--|
| Model/Series               | 700 Series (710-16)                                   | 532-24 Memphis Machine         | 44 Series (16x4x2) 8000 Series (16x8x2) System 8 |
| Modular System             | Yes   | Yes                            | Yes  |
| Mixing Channels            | 24  | 24                             | 16   |
| Inputs Maximum             | 48  | 48                             | 32   |
| Output Channels            | 16  | 24                             | 2  |
| Monaural Mix               | Yes   | Yes                            | Yes  |
| Stereo Mix                 | Yes   | Yes                            | Yes  |
| 4-Channel Mix              | Yes   | Yes                            | Yes  |
| Equalization               | 3-Band ( $\pm 15$ dB)                                 | 4-Band ( $\pm 15$ dB)          | 4-Band   |
| Filtering                  | Hi, Lo Pass   | Hi, Lo Pass                    | Hi-Pass  |
| Pan Pots                   | Yes   | Yes                            | Yes  |
| Submastering               | to 9 Groups   | to 9 Groups                    | 4 Groups   |
| Echo/Send-Return           | 4   | 4                              | 8 Groups   |
| Foldback Outputs           | 2   | 2 Stereo                       | 4  |
| Solo Bus                   | Yes   | Yes                            | Yes  |
| Cue System                 | Yes   | Yes                            | Yes  |
| Talkback System            | Yes   | Yes                            | Yes  |
| Speaker Muting             | Yes   | Yes                            | Yes  |
| Tone                       | Yes   | Yes                            | Yes  |
| Metering Types             | Analog Meter  | Analog Meter                   | LED Display                                      |
| Fader Type                 | Slider  | Slider                         | Analog Meter                                     |
| VCA Level Control          | Yes   | Yes                            | Slider   |
| Machine Controls           | .....   | .....                          | .....  |
| Editor Interface           | Option (Allison 65K)                                  | Model 1200                     | .....  |
| Phantom Mic Supply         | Yes   | Automation                     | .....  |
| Clock/Timer                | Option  | Yes                            | Yes  |
| Input Ohms (Mic/Line)      | 20K/15K Actual Bal                                    | Option                         | Yes  |
| Output Load (Ohms)         | 600 Bal   | 20K/15K Actual Bal             | 2K/10K   |
| Output Level (0 VU)        | + 4dBV  | 600 Bal                        | 600  |
| Output Level Maximum       | + 4dBV  | + 4dBV                         | .....  |
| AF Response ( $\pm$ dB/Hz) | - 3/6-43K   | + 24dBm                        | + 20dBm  |
| Harmonic Distortion        | 0.06%, 0dB gain                                       | - 3/12-22K                     | .5/30-20K  |
| Signal-to-Noise Ratio      | 78dB  | .06%, 0dB gain                 | .05%, + 18dBm                                    |
| Crosstalk (Worst Case)     | - 60dB, 10kHz   | 78dB                           | 100dB  |
| Related Models             | 710 Group, 720 Group, 730 Group, 740 Group, 750 Group | - 60dBm, 10kHz                 | 100dB  |
|                            |   | 532-26, 532-28, 532-30, 532-32 | 24x4x2, 32x4x2                                   |
|                            |   | .....                          | 24x8x2, 32x8x2                                   |
|                            |   | .....                          | .....  |
|                            |   | .....                          | System 12, System 16                             |

| Manufacturer               | Broadcast Audio Corp. | Broadcast Electronics                         |
|----------------------------|-----------------------|---|
| Model/Series               | System 20             | 8S150 Stereo 8S250 Dual Channel 10S250 10M350 |
| Modular System             | Yes                   | .....   |
| Mixing Channels            | 20                    | 8   |
| Inputs Maximum             | 66 Stereo             | 20  |
| Output Channels            | Pgm, Aud, Utility     | Pgm, Aud                                      |
| Monaural Mix               | Yes, Sum              | Option  |
| Stereo Mix                 | Pgm, Aud, Utility     | Yes   |
| 4-Channel Mix              | .....                 | .....   |
| Equalization               | 7-Band                | .....   |
| Filtering                  | .....                 | .....   |
| Pan Pots                   | Yes                   | .....   |
| Submastering               | Possible              | .....   |
| Echo/Send-Return           | .....                 | .....   |
| Foldback Outputs           | .....                 | .....   |
| Solo Bus                   | .....                 | .....   |
| Cue System                 | Yes                   | Yes   |
| Talkback System            | .....                 | Yes   |
| Speaker Muting             | Yes                   | Yes   |
| Tone                       | .....                 | .....   |
| Metering Types             | Analog Meter          | Analog Meter                                  |
| Fader Type                 | Slider P&G            | Rotary Step                                   |
| VCA Level Control          | .....                 | Attenuator                                    |
| Machine Controls           | Yes                   | .....   |
| Editor Interface           | Possible              | .....   |
| Phantom Mic Supply         | .....                 | .....   |
| Clock/Timer                | .....                 | .....   |
| Input Ohms (Mic/Line)      | 250/600 Bal           | 150/54K Bal                                   |
| Output Load (Ohms)         | 600 Bal               | 600 Bal                                       |
| Output Level (0 VU)        | + 8dBm                | + 8dBm  |
| Output Level Maximum       | + 28dBm               | + 18dBm                                       |
| AF Response ( $\pm$ dB/Hz) | 0.3/20-20K            | .5/30-20K                                     |
| Harmonic Distortion        | 0.09%, + 8dBm         | .05%, + 18dBm                                 |
| Signal-to-Noise Ratio      | - 125dBV equiv. input | 70dB below + 18dBm                            |
| Crosstalk (Worst Case)     | - 70dB                | .....   |
| Related Models             | .....                 | 5S150, 5M150, 8M150                           |
|                            |                       | 5S250, 5M250, 8M250                           |
|                            |                       | 10M250  |
|                            |                       | 10M350  |
|                            |                       | .....   |

# AUDIO MIXING CONSOLES

| Manufacturer               | Broadcast Electronics | Cetec Broadcast       | Continental Electronics | EELA Audio                  | EV TAPCO                   |
|----------------------------|-----------------------|-----------------------|-------------------------|-----------------------------|----------------------------|
| Model/Series               | ML-4000               | 8000 Console          | Rock 10                 | System 200, ES216           | Series 72                  |
| Modular System             | Yes                   | Yes                   | .....                   | Yes                         | Yes                        |
| Mixing Channels            | to 12                 | 16                    | 10                      | 12                          | 4 (expands in 4s)          |
| Inputs Maximum             | 24                    | 48                    | 30                      | 24                          | to 64 maximum              |
| Output Channels            | Mix 1, Mix 2          | Pgm, Aud, Utility     | Pgm 1, Pgm 2            | 4                           | Pgm L/R, Mono, Efx(2), Aux |
| Monaural Mix               | .....                 | Yes                   | Option                  | .....                       | Yes                        |
| Stereo Mix                 | .....                 | Pgm, Aud, Utility     | Pgm 1, Pgm 2            | Possible                    | Yes                        |
| 4-Channel Mix              | .....                 | .....                 | .....                   | Possible                    | Yes                        |
| Equalization               | .....                 | .....                 | Option                  | 3-Band, $\pm 10$ , $\pm 16$ | 3-Band                     |
| Filtering                  | .....                 | .....                 | .....                   | Hi-Pass                     | .....                      |
| Pan Pots                   | .....                 | .....                 | .....                   | Yes                         | Yes                        |
| Submastering               | .....                 | .....                 | .....                   | Yes                         | .....                      |
| Echo/Send-Return           | .....                 | .....                 | .....                   | Yes                         | Yes (Option ADR Reverb)    |
| Foldback Outputs           | .....                 | .....                 | .....                   | .....                       | Possible                   |
| Solo Bus                   | .....                 | .....                 | .....                   | Yes                         | Yes                        |
| Cue System                 | Yes                   | Yes                   | Yes                     | Yes                         | Yes                        |
| Talkback System            | Yes                   | Yes                   | .....                   | Yes                         | .....                      |
| Speaker Muting             | Yes                   | Yes                   | Yes                     | Yes                         | .....                      |
| Tone                       | .....                 | .....                 | .....                   | Yes                         | .....                      |
| Metering Types             | Analog Meter          | Analog Meter          | Analog Meter            | Analog Meter                | Analog Meter               |
| Fader Type                 | Slider                | Slider P&G            | Rotary                  | Slider                      | Slider                     |
| VCA Level Control          | .....                 | .....                 | .....                   | .....                       | .....                      |
| Machine Controls           | .....                 | Yes                   | Yes                     | .....                       | .....                      |
| Editor Interface           | .....                 | Yes                   | .....                   | .....                       | .....                      |
| Phantom Mic Supply         | .....                 | .....                 | .....                   | Yes                         | Yes                        |
| Clock/Timer                | .....                 | Yes                   | Option                  | .....                       | .....                      |
| Input Ohms (Mic/Line)      | 150/36K Bal           | 150/10K Bal           | 150/150, 600 Bal        | 1K Bal/10K Unbal            | Lo Z Bal/33K               |
| Output Load (Ohms)         | 600 Bal               | 600                   | 600 Bal                 | 600                         | Lo Z Unbal                 |
| Output Level (0 VU)        | + 8dBm                | + 8dBm                | .....                   | + 4dBm                      | + 4dBu                     |
| Output Level Maximum       | + 18dBm               | + 28dBm               | + 18dBm                 | + 22dBm                     | + 18dBu                    |
| AF Response ( $\pm$ dB/Hz) | 0, 1/50-15K           | 0, 1/20-20K           | 5/50-15K                | 0, 1/20-20K                 | .5/20-20K                  |
| Harmonic Distortion        | 0.5%, + 8dBm          | .3%                   | .25%                    | .1%, + 18dBm                | .04%, + 18dBu              |
| Signal-to-Noise Ratio      | 65dB below + 8dBm     | - 125dBV equiv. input | - 125dB equiv. input    | - 126dBm equiv. input       | - 130.5dBV equiv. input    |
| Crosstalk (Worst Case)     | .....                 | .....                 | .....                   | .....                       | .....                      |
| Related Models             | SL-4100               | .....                 | Mark 8                  | ES212, ES220, ES224, ES228  | .....                      |

| Manufacturer               | EV TAPCO                  | Farrtronics Ltd. | Gregg Laboratories    | Harris Corporation               |
|----------------------------|---------------------------|------------------|-----------------------|----------------------------------|
| Model/Series               | Series 74                 | M70 Series       | CR-14                 | MicroMac M90 Modular Console     |
| Modular System             | Yes                       | Yes              | .....                 | Yes                              |
| Mixing Channels            | 4 (expands in 4s)         | 8                | 14                    | to 16                            |
| Inputs Maximum             | to 64 maximum             | .....            | 24                    | 32                               |
| Output Channels            | Pgm L/R, Mono Efx(2), Aux | 2                | Pgm, Aud, Send        | Pgm, Aud, Aux                    |
| Monaural Mix               | Yes                       | .....            | Pgm, Aud, Send        | Sum                              |
| Stereo Mix                 | Yes                       | Yes (2)          | Pgm, Aud, Send        | Pgm, Aud, Aux                    |
| 4-Channel Mix              | Yes                       | .....            | .....                 | .....                            |
| Equalization               | 3-Band                    | 2-Band           | .....                 | .....                            |
| Filtering                  | .....                     | .....            | .....                 | .....                            |
| Pan Pots                   | Yes                       | Yes              | Yes                   | .....                            |
| Submastering               | to 4                      | Possible         | .....                 | 3 Groups                         |
| Echo/Send-Return           | Yes (Option ADR Reverb)   | .....            | .....                 | .....                            |
| Foldback Outputs           | Possible                  | .....            | .....                 | .....                            |
| Solo Bus                   | Yes                       | .....            | .....                 | 2                                |
| Cue System                 | Yes                       | .....            | Yes                   | Yes                              |
| Talkback System            | Yes                       | .....            | Yes                   | Yes                              |
| Speaker Muting             | .....                     | .....            | Yes                   | Yes                              |
| Tone                       | .....                     | .....            | .....                 | Yes                              |
| Metering Types             | Fluorescent Display       | Analog Meter     | Analog Meter          | Analog Meter                     |
| Fader Types                | Slider                    | Slider           | Slider P&G            | Slider                           |
| VCA Level Control          | .....                     | Yes              | .....                 | Yes                              |
| Machine Controls           | .....                     | .....            | .....                 | Yes                              |
| Editor Interface           | .....                     | Yes              | Possible              | .....                            |
| Phantom Mic Supply         | Yes                       | .....            | .....                 | Possible                         |
| Clock/Timer                | .....                     | .....            | Yes                   | .....                            |
| Input Ohms (Mic/Line)      | Lo Z Bal/33K              | 20K Bal          | 150/600 Bal           | Available                        |
| Output Load (Ohms)         | Lo Z Unbal                | 600 Bal          | 600                   | 150, 250/150, 250, 600 Bal       |
| Output Level (0 VU)        | + 4dBu                    | .....            | + 4dBm                | 600                              |
| Output Level Maximum       | + 18dBu                   | + 24dBm          | + 28dBm               | + 0, + 4, + 8dBm                 |
| AF Response ( $\pm$ dB/Hz) | 0.5/20-20K                | .25/20-20K       | 0, 1/20-20K           | + 30dBm                          |
| Harmonic Distortion        | 0.04%, + 18dBu            | .5%, + 18dBm     | .03%, + 28dBm         | 0.25/20-20K                      |
| Signal-to-Noise Ratio      | - 130.5dBV equiv. input   | 73dB             | 65dB below + 4dBm     | 0.1%, below 30dBm                |
| Crosstalk (Worst Case)     | .....                     | - 67dB max       | - 75dB, + 4dBm, 10kHz | - 125dBV equiv. input            |
| Related Models             | .....                     | .....            | .....                 | 74dB below + 4dBm - 65dBm, 10kHz |

# AUDIO MIXING CONSOLES

| Manufacturer               | Harris Corporation         | Harrison                   | Howe Audio                |                            |
|----------------------------|----------------------------|----------------------------|---------------------------|----------------------------|
| Model/Series               | Executive 10               | Stereo 80                  | Alive 24M                 |                            |
|                            |                            |                            | 7000 Series (7012)        |                            |
|                            |                            |                            | 80000                     |                            |
| Modular System             | .....                      | .....                      | .....                     | .....                      |
| Mixing Channels            | ..... 10                   | ..... 8                    | ..... 24                  | ..... 12                   |
| Inputs Maximum             | ..... 29                   | ..... 18                   | ..... 48                  | ..... 22                   |
| Output Channels            | ..... Pgm, Aud             | ..... Pgm, Aud             | ..... 8                   | ..... Pgm, Aud             |
| Monaural Mix               | ..... Possible             | ..... Yes                  | ..... Possible            | ..... Yes                  |
| Stereo Mix                 | ..... Pgm, Aud             | ..... Pgm, Aud             | ..... 4 Pgm, Aux          | ..... Pgm, Aud.            |
| 4-Channel Mix              | .....                      | .....                      | ..... Possible            | .....                      |
| Equalization               | .....                      | .....                      | ..... 3-Band              | .....                      |
| Filtering                  | .....                      | .....                      | ..... Hi, Lo Pass         | .....                      |
| Pan Pots                   | .....                      | .....                      | ..... Yes                 | .....                      |
| Submastering               | .....                      | .....                      | ..... 8 Groups            | .....                      |
| Echo/Send-Return           | .....                      | .....                      | ..... 8                   | .....                      |
| Foldback Outputs           | .....                      | .....                      | .....                     | .....                      |
| Solo Bus                   | .....                      | .....                      | .....                     | .....                      |
| Cue System                 | ..... Yes                  | ..... Yes                  | ..... Yes                 | ..... Yes                  |
| Talkback System            | ..... Yes                  | ..... Yes                  | ..... Yes                 | .....                      |
| Speaker Muting             | ..... Yes                  | ..... Yes                  | ..... Yes                 | ..... Yes                  |
| Tone                       | .....                      | .....                      | ..... Yes                 | .....                      |
| Metering Types             | ..... Analog Meter         | ..... Analog Meter         | ..... Analog, LED Display | ..... Analog, LED Bargraph |
| Fader Type                 | ..... Rotary               | ..... Rotary               | ..... Slider P&G          | ..... Rotary               |
| VCA Level Control          | .....                      | .....                      | ..... Yes                 | ..... Yes                  |
| Machine Controls           | ..... Possible             | ..... Possible             | .....                     | ..... Yes                  |
| Editor Interface           | .....                      | .....                      | ..... Ready               | .....                      |
| Phantom Mic Supply         | .....                      | .....                      | ..... Yes                 | .....                      |
| Clock/Timer                | .....                      | .....                      | .....                     | .....                      |
| Input Ohms (Mic/Line)      | ..... 50, 250/600 Bal      | ..... 150, 250/600 Bal     | ..... 1.2K/10K Actual     | ..... 10K Actual Bal       |
| Output Load (Ohms)         | ..... 600 Bal              | ..... 600 Bal              | ..... 600                 | ..... 600 Bal              |
| Output Level (0 VU)        | ..... +8dBm                | .....                      | ..... +4dBm               | ..... +4dBm                |
| Output Level Maximum       | ..... +18dBm               | ..... +18dBm               | ..... +25dBm              | ..... +20dBm               |
| AF Response ( $\pm$ dB/Hz) | ..... 1.5/20-20K           | ..... 1/20-20K             | ..... 0.-3/30-15K         | ..... .25/20-20K           |
| Harmonic Distortion        | ..... 0.5%, +8dBm          | ..... .5%, +18dBm          | ..... .6%, +24dBm         | ..... .05%                 |
| Signal-to-Noise Ratio      | ..... -122dBm equiv. input | ..... -125dBm equiv. input | ..... 54dB                | ..... 70dB, A weighted     |
| Crosstalk (Worst Case)     | ..... Below noise          | .....                      | ..... -44dB, 10kHz        | ..... 70dB, A weighted     |
| Related Models             | .....                      | ..... Gatesway 80          | ..... Alive 32M           | ..... 7012A                |

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# AUDIO MIXING CONSOLES

| Manufacturer               | Logitek Systems                                | LPB, Inc.          |                   | McCurdy              | MCI                  |
|----------------------------|--|--------------------|-------------------|----------------------|----------------------|
|                            | CAS-8S   | Signature II S-20  | Monogram II M8SL  | SS8650               | JH600 Series         |
| Model/Series               | Custom Series                                  |                    |                   |                      |                      |
| Modular System             | Yes  | .....              | .....             | .....                | Yes                  |
| Mixing Channels            | 8, Expands to 12                               | 10                 | 8                 | 16                   | to 36                |
| Inputs Maximum             | 16, Expands to 24                              | 30                 | 20                | 32                   | to 72                |
| Output Channels            | Pgm, Aud                                       | Pgm, Aud           | Pgm, Aux.         | Pgm, Aud             | to 24                |
| Monaural Mix               | Pgm, Aud                                       | Yes, Sum           | Yes               | Yes                  | Yes                  |
| Stereo Mix                 | Yes  | Pgm, Aud           | Pgm, Aux          | Pgm, Aud             | Yes                  |
| 4-Channel Mix              | .....  | .....              | .....             | .....                | Possible             |
| Equalization               | 2- or 3-Band Optional                          | .....              | .....             | 2-Band -15, +10dB    | 3-Band               |
| Filtering                  | .....  | .....              | .....             | Hi-Pass              | Hi, Lo Pass          |
| Pan Pots                   | Yes  | .....              | .....             | .....                | Yes                  |
| Submastering               | 2 Optional Groups                              | .....              | .....             | .....                | Yes                  |
| Echo/Send-Return           | Possible                                       | .....              | .....             | Stereo               | 6                    |
| Foldback Outputs           | Possible                                       | .....              | .....             | Stereo               | 6                    |
| Solo Bus                   | .....  | .....              | .....             | .....                | Yes                  |
| Cue System                 | Yes  | Yes                | Yes               | Yes                  | Yes                  |
| Talkback System            | Yes  | Yes                | .....             | Yes                  | Yes                  |
| Speaker Muting             | 3 Systems                                      | Yes                | Yes               | Yes                  | Yes                  |
| Tone                       | Option   | .....              | .....             | Yes                  | Yes                  |
| Metering Types             | Analog Meter                                   | Analog Meter       | Analog Meter      | Analog Meter         | Analog Meter         |
| Fader Type                 | Slider Duncan                                  | Rotary Step        | Slider            | Slider               | Slider               |
| VCA Level Control          | .....  | Attenuator         | .....             | .....                | .....                |
| Machine Controls           | Yes  | .....              | .....             | .....                | Yes                  |
| Editor Interface           | Possible                                       | Possible           | Possible          | Yes                  | Possible             |
| Phantom Mic Supply         | Possible                                       | .....              | .....             | Yes                  | Possible             |
| Clock/Timer                | Option   | .....              | .....             | Option               | Yes                  |
| Input Ohms (Mic/Line)      | 150/150, 600 15K Bal                           | 150/600 Bal        | 150/600 Bal       | 150/600 Bal          | 1.5K/7K Bal          |
| Output Load (Ohms)         | 600 Bal  | 600 Bal            | 600 Bal           | 600 Bal              | 600 Bal              |
| Output Level (0 VU)        | +4dBm  | +8dBm              | +8dBm             | +8dBm                | +4dBV                |
| Output Level Maximum       | +27dBm   | +22dBm             | +22dBm            | +24dBm               | +27dBV               |
| AF Response ( $\pm$ dB/Hz) | 0.3/50-15K                                     | 1/20-20K           | 0.5/20-20K        | 1/20-20K             | 0.5/15-20K           |
| Harmonic Distortion        | 0.1% + 22dBm                                   | .5%, +18dBm        | .5%, +18dBm       | 0.25%, +18dBm        | .....                |
| Signal-to-Noise Ratio      | 72dB   | 74dB below +18dBm  | 74dB below +18dBm | -125dBm equiv. input | -129dBv equiv. input |
| Crosstalk (Worst Case)     | Below noise                                    | Below noise        | -70dB             | -60dB                | .....                |
| Related Models             | CAS-8M, CAS-6S,<br>CAS-6M, CAS-12S,<br>CAS-12M | S-13C, S-15A, S-21 | M-8S              | .....                | .....                |

| Manufacturer               | McMartin Industries |                      |                   | Rupert Neve       |                   |
|----------------------------|---------------------|----------------------|-------------------|-------------------|-------------------|
|                            | 500 Series (B-502)  | 1000 Series (1082V)  | 5315              | 5316              | 542 Range (5452)  |
| Model/Series               |                     |                      |                   |                   |                   |
| Modular System             | .....               | .....                | Yes               | Yes               | Yes               |
| Mixing Channels            | 5                   | 8                    | to 24             | to 36             | 12                |
| Inputs Maximum             | 10                  | 18                   | to 48             | to 72             | 24                |
| Output Channels            | Pgm (2), Aud        | Pgm, Aud             | Pgm, Aud          | 8                 | Pgm, Aud          |
| Monaural Mix               | Yes                 | Possible             | Yes               | Yes               | Yes               |
| Stereo Mix                 | Pgm, Aud            | Pgm, Aud             | Pgm, Aud          | Yes               | Pgm, Aud          |
| 4-Channel Mix              | .....               | .....                | Possible          | Possible          | .....             |
| Equalization               | .....               | .....                | 3-Band $\pm$ 15dB | 3-Band $\pm$ 15dB | 3-Band $\pm$ 15dB |
| Filtering                  | .....               | .....                | Hi-Pass, Lo-Pass  | Hi-Pass, Lo-Pass  | Hi-Pass           |
| Pan Pots                   | .....               | .....                | Option            | Option            | .....             |
| Submastering               | .....               | .....                | Yes               | Yes               | Yes               |
| Echo/Send-Return           | .....               | .....                | 4 Groups          | 8 Groups          | 2 Possible Groups |
| Foldback Outputs           | .....               | .....                | Possible          | Possible          | Possible          |
| Solo Bus                   | .....               | .....                | Possible          | Possible          | .....             |
| Cue System                 | Yes                 | Yes                  | Yes               | Yes               | Yes               |
| Talkback System            | .....               | Yes                  | Yes               | Yes               | Yes               |
| Speaker Muting             | Yes                 | Yes                  | .....             | Yes               | .....             |
| Tone                       | .....               | .....                | Yes               | Yes               | Yes               |
| Metering Types             | Analog Meter        | Analog Meter         | Analog Meter      | Analog Meter      | Analog Meter      |
| Fader Type                 | Rotary              | Slider               | Slider P&G        | Slider P&G        | Slider P&G        |
| VCA Level Control          | .....               | .....                | .....             | .....             | .....             |
| Machine Controls           | .....               | Possible             | Yes               | Yes               | .....             |
| Editor Interface           | .....               | .....                | .....             | .....             | .....             |
| Phantom Mic Supply         | .....               | .....                | Yes               | .....             | Yes               |
| Clock/Timer                | .....               | .....                | .....             | .....             | .....             |
| Input Ohms (Mic/Line)      | 150, 250/600 Bal    | 150/600 Bal          | 1.2K/10K Bal      | 1.2K/10K Bal      | 1.2K/10K Bal      |
| Output Load (Ohms)         | 600 Bal             | 600 Bal              | 600 Bal           | 600 Bal           | 600 Bal           |
| Output Level (0 VU)        | +8dBm               | +8dBm                | +4dBu             | +4dBu             | +4dBu             |
| Output Level Maximum       | +18dBm              | +28dBm               | +22dBu            | +26dBu            | +22dBu            |
| AF Response ( $\pm$ dB/Hz) | 0.5/30-15K          | .5/30-15K            | +5, -1/20-20K     | 1/20-20K          | +5, -1/20-20K     |
| Harmonic Distortion        | 0.5%, +18dBm        | .5%, +18dBm          | .08%, +20dBm      | .08%, +20dBm      | .08%, +20dBm      |
| Signal-to-Noise Ratio      | 72dB below +18dBm   | 74dB below +18dBm    | 60dB, 0VU         | 60dB, 0VU         | 60dB, 0VU         |
| Crosstalk (Worst Case)     | Below noise         | Below noise          | .....             | .....             | .....             |
| Related Models             | B-501               | 1052V, 1081(V), 1082 | .....             | .....             | .....             |

# AUDIO MIXING CONSOLES

| Manufacturer<br>Model/Series | Pacific Recording    | ProTech Audio | Quad Eight            | Quantum Audio Labs    |                       |
|------------------------------|----------------------|---------------|-----------------------|-----------------------|-----------------------|
|                              | BMX-14               | 1632          | Coronado              | QM-12B                | QM-12P                |
| Modular System               | Yes                  | Yes           | Yes                   | Yes                   | Yes                   |
| Mixing Channels              | 14                   | 16            | 36                    | 12                    | 12                    |
| Inputs Maximum               | 28                   | 64            | 72                    | 24                    | 24                    |
| Output Channels              | Pgm, Aud             | Pgm 1, Pgm 2  | 24                    | 4                     | Pgm, Aud              |
| Monaural Mix                 | Yes                  | .....         | Yes                   | Possible              | Possible              |
| Stereo Mix                   | Pgm, Aud             | .....         | Yes                   | Yes                   | Pgm, Aud              |
| 4-Channel Mix                | .....                | .....         | Yes                   | Yes                   | .....                 |
| Equalization                 | .....                | Yes           | 3-Band ± 12dB         | 3-Band ± 12dB         | 3-Band ± 12dB         |
| Filtering                    | .....                | .....         | Hi, Lo Pass           | .....                 | .....                 |
| Pan Pots                     | .....                | .....         | Yes                   | Yes                   | Yes                   |
| Submastering                 | .....                | 3             | 6 Groups              | .....                 | 4 Groups              |
| Echo/Send-Return             | .....                | Yes           | (4)                   | 2                     | Yes                   |
| Foldback Outputs             | .....                | Possible      | 4                     | .....                 | .....                 |
| Solo Bus                     | .....                | .....         | Yes                   | Yes                   | .....                 |
| Cue System                   | Yes                  | Yes           | Dual                  | Yes                   | Yes                   |
| Talkback System              | Yes                  | Yes           | Yes                   | Yes                   | Yes                   |
| Speaker Muting               | Yes                  | Yes           | Yes                   | Yes                   | Yes                   |
| Tone                         | .....                | .....         | Yes                   | .....                 | .....                 |
| Metering Types               | Analog Meter         | Analog Meter  | Analog Meter          | Analog Meter          | Analog Meter          |
| Fader Type                   | Slider P&G           | Slider        | Slider                | Slider                | Slider                |
| VCA Level Control            | .....                | .....         | Yes                   | .....                 | .....                 |
| Machine Controls             | Yes                  | .....         | .....                 | .....                 | Yes                   |
| Editor Interface             | Possible             | .....         | Compumix III          | .....                 | .....                 |
| Phantom Mic Supply           | Yes                  | .....         | Yes                   | Yes                   | Yes                   |
| Clock/Timer                  | Yes                  | .....         | .....                 | .....                 | .....                 |
| Input Ohms (Mic/Line)        | 150/600 Bal          | 150/600 Bal   | 150/600 Bal           | 1.2K/15K Actual Bal   | 1.2K/15K Bal          |
| Output Load (Ohms)           | 600 Bal              | 600 Bal       | 600 Bal               | 600 Unbal             | 600 Bal               |
| Output Level (0 VU)          | + 8dBm               | + 4, + 8dBm   | + 4dBm                | + 4dBm                | + 8dBm                |
| Output Level Maximum         | + 28dBm              | + 27dBm       | + 28dBm               | + 18dBm               | + 22dBm               |
| AF Response (± dB/Hz)        | 0, 1/20-15K          | .5/30-20K     | 1/20-20K              | 1/20-20K              | 1/20-20K              |
| Harmonic Distortion          | 0.3%, + 28dBm        | .5%, + 27dBm  | .15%, + 24dBm         | 0.1% to ± 18dBm       | .25% to + 22dBm       |
| Signal-to-Noise Ratio        | -127dBV equiv. input | 93dB          | - 129dBm equiv. input | - 127dBm equiv. input | - 127dBm equiv. input |
| Crosstalk (Worst Case)       | - 75dB, 20kHz        | below noise   | - 75dB to 10kHz       | .....                 | .....                 |
| Related Models               | BMX22, BMX26         | 1642          | Pacifica              | QM-8B                 | QM-8P                 |

| Manufacturer<br>Model/Series | Raindirk Audio       | Ramko             | Ramsa (Panasonic)    |                       |                       |
|------------------------------|----------------------|-------------------|----------------------|-----------------------|-----------------------|
|                              | Britannia            | DC-12SR           | WR8210               | WR8716                | WR8816                |
| Modular System               | Yes                  | Yes               | Yes                  | Yes                   | Yes                   |
| Mixing Channels              | 40                   | 12                | 10                   | 16                    | 16                    |
| Inputs Maximum               | 120                  | 24                | 30                   | 32                    | 32                    |
| Output Channels              | 24                   | Aud, Pgm          | 4                    | 4                     | 4                     |
| Monaural Mix                 | Yes                  | Possible          | Possible             | Possible              | Possible              |
| Stereo Mix                   | Yes                  | Pgm, Aud          | Yes                  | Yes                   | Yes                   |
| 4-Channel Mix                | Yes                  | .....             | Yes                  | Yes                   | Yes                   |
| Equalization                 | 4-Band               | .....             | 3-Band ± 12dB        | 3-Band ± 12dB         | 3-Band ± 12dB         |
| Filtering                    | Hi, Lo Pass          | .....             | .....                | .....                 | .....                 |
| Pan Pots                     | .....                | .....             | .....                | Hi-Pass               | Hi-Pass               |
| Submastering                 | Yes                  | .....             | Yes                  | Yes                   | Yes                   |
| Echo/Send-Return             | 3                    | .....             | 2 Groups             | 4 Groups              | 4 Groups              |
| Foldback Outputs             | Yes                  | .....             | Possible             | Possible              | Yes, Stereo           |
| Solo Bus                     | Yes                  | .....             | Possible             | Possible              | Yes, Stereo           |
| Cue System                   | 4 Systems            | Yes               | Yes                  | Yes                   | Yes                   |
| Talkback System              | Yes                  | Yes               | .....                | Yes                   | Yes                   |
| Speaker Muting               | Yes                  | Yes               | .....                | Yes                   | Yes                   |
| Tone                         | Yes                  | Yes               | .....                | Yes                   | Yes                   |
| Metering Types               | Analog Meter         | METER Display     | LED Display          | Analog Meter          | LED Display           |
| Fader Type                   | Slider               | Slider            | Slider               | Slider                | Slider                |
| VCA Level Control            | .....                | Yes               | .....                | .....                 | .....                 |
| Machine Controls             | .....                | Yes, Option       | .....                | .....                 | .....                 |
| Editor Interface             | .....                | .....             | .....                | .....                 | .....                 |
| Phantom Mic Supply           | Yes                  | .....             | Yes                  | Yes                   | Yes                   |
| Clock/Timer                  | .....                | .....             | .....                | .....                 | .....                 |
| Input Ohms (Mic/Line)        | 1.2K/10K Bal         | 150/600 Bal       | 12K/20K Actual       | 5K/10K Actual         | 5K/10K Actual         |
| Output Load (Ohms)           | 600 Bal              | 600 Bal           | 10K                  | 600                   | 600                   |
| Output Level (0 VU)          | .....                | + 8dBm            | + 4dB                | + 4dB                 | + 4dB                 |
| Output Level Maximum         | + 20dBm              | + 20dBm           | + 20dB               | + 22dB                | + 22dB                |
| AF Response (± dB/Hz)        | 1/20-20K             | 0, 2/20-20K       | 1/20-20K             | 1/20-20K              | 1/20-20K              |
| Harmonic Distortion          | 0.06%, + 24dBm       | .3%               | 0.04%, + 18dBm       | .05%, 20dB            | .05%, + 20dB          |
| Signal-to-Noise Ratio        | - 126dB equiv. input | 63dB below + 8dBm | - 128dB equiv. input | - 128dB, equiv. input | - 128dB, equiv. input |
| Crosstalk (Worst Case)       | - 78dB, 20kHz        | - 70dB, 1kHz      | - 60dB, 1kHz         | - 60dB, 1kHz          | - 60dB, 1kHz          |
| Related Models               | Series III           | DC12MR            | .....                | .....                 | .....                 |

# AUDIO MIXING CONSOLES

| Manufacturer               | SoundCraft           | Sphere Audio                | Studer       | Tascam (Teac)        | Total Audio Concepts |
|----------------------------|----------------------|-----------------------------|--------------|----------------------|----------------------|
| Model/Series               | Series 400           | Eclipse C                   | 369          | M16                  | 1682                 |
| Modular System             | Yes                  | Yes                         | Yes          | Yes                  | Yes                  |
| Mixing Channels            | to 26                | to 56                       | 24           | to 24                | 16                   |
| Inputs Maximum             | 52                   | to 112                      | 48           | 64                   | 32                   |
| Output Channels            | to 4                 | 24                          | 8            | 8                    | 8                    |
| Monaural Mix               | Possible             | Yes                         | Yes          | Yes                  | Possible             |
| Stereo Mix                 | Yes                  | Yes                         | Yes          | 2                    | Yes                  |
| 4-Channel Mix              | Yes                  | Yes                         | Yes          | Possible             | Possible             |
| Equalization               | 4-Band $\pm 15$ dB   | Graphic #910,<br>+12, -15dB | Yes          | 4-Band               | 4-Band $\pm 14$ dB   |
| Filtering                  | Hi-Pass              | Hi-Pass                     | Hi-Pass      | Hi, Lo Pass          | Hi, Lo Pass          |
| Pan Pots                   | Yes                  | Yes                         | Yes          | Yes                  | Yes                  |
| Submastering               | to 4 Groups          | 9 Groups                    | 8 Groups     | 8 Groups             | 8 Groups             |
| Echo/Send-Return           | 2                    | Yes                         | to 4         | Yes                  | 4                    |
| Foldback Outputs           | (2)                  | Possible                    | Yes          | Possible             | Possible             |
| Solo Bus                   | Yes                  | Yes                         | Yes          | Yes                  | Yes                  |
| Cue System                 | Yes                  | Yes                         | Yes          | Yes                  | Yes                  |
| Talkback System            | Yes                  | Yes                         | Yes          | Yes                  | Yes                  |
| Speaker Muting             | Yes                  | Yes                         | Yes          | Yes                  | Yes                  |
| Tone                       | Yes                  | Yes                         | Yes          | Yes                  | Yes                  |
| Metering Types             | LED Display          | LED Ladder Display          | Analog Meter | Analog Meter         | LED Ladder Display   |
| Fader Type                 | Slider               | Slider                      | Slider       | Slider               | Slider               |
| VCA Level Control          | Yes                  | Yes                         | Yes          | Yes                  | Yes                  |
| Machine Controls           | .....                | .....                       | .....        | .....                | .....                |
| Editor Interface           | .....                | Yes, Allison 65K            | .....        | .....                | .....                |
| Phantom Mic Supply         | Yes                  | Yes                         | Yes          | Yes                  | Yes                  |
| Clock/Timer                | .....                | Available                   | .....        | .....                | .....                |
| Input Ohms (Mic/Line)      | 2.5K/10K             | 1.5K/20K Bal                | 1.2K/5K Bal  | 600/20K              | 600 Bal/10K Unbal    |
| Output Load (Ohms)         | 600                  | 600 Bal                     | 600 Bal      | 10K                  | 600 Unbal            |
| Output Level (0 VU)        | .....                | +4dBm                       | +8dBu        | -10, -2.2dBV         | +4dBm                |
| Output Level Maximum       | +21dBV               | +24dBm                      | +15dBu       | +18dBV               | +27dBm               |
| AF Response ( $\pm$ dB/Hz) | -1.6/20-20K          | 0,-7/20-20K                 | +5,-1/40-15K | 1/20-30K             | .....                |
| Harmonic Distortion        | 0.02%, +21dBV        | .08%, +23.5dBm              | 0.2%, +6dBu  | .03%, 1kHz           | .02%, +10dBV         |
| Signal-to-Noise Ratio      | -127dBV equiv. input | 80dB below +4dBm            | 86dB         | -123dB, equiv. input | -123dBV equiv. input |
| Crosstalk (Worst Case)     | -51dB, 18kHz         | -90dB, 1kHz                 | -70dB        | -65dB, 1kHz          | .....                |
| Related Models             | .....                | Eclipse A, Eclipse B        | .....        | .....                | .....                |

# AUDIO DISTORTION ANALYZER

Test equipment for measurement of audio distortion as a primary function. Other functions may be included. Portable dc-powered, as well as ac units.

| Manufacturer               | Amber Electro Design                    | Hewlett Packard          | Potomac Instruments    | Sound Technology    | Tektronix               |
|----------------------------|---|--------------------------|------------------------|---------------------|-------------------------|
| Model Number               | 3500 Distortion & Noise Measurement Set | 339A Distortion Analyzer | AT51 Audio Test System | 1700 Series         | AA501/SQ505             |
| Useful Frequency Range     | 10Hz-100kHz                             | 10Hz-110kHz              | 20Hz-20kHz             | 10Hz-110kHz         | 10Hz-100kHz             |
| Input Signal Level Range   | 30mV-100V                               | 30mV-300V                | .1V-80Vrms             | .1V-300V            | 250mV-200V              |
| Input Impedance            | 100kOhms                                | 100kOhm                  | 500kOhm                | 100kOhm             | 100kOhm                 |
| Input dc Isolation         | .....                                   | 30V                      | .....                  | 30V                 | 200V                    |
| Fundamental Rejection      | .....                                   | 100dB, 20kHz             | .....                  | 100dB               | THD-10dB                |
| Auto Set Level             | Yes                                     | Yes                      | Yes                    | Option 003          | Yes                     |
| Auto Nulling               | Yes                                     | .....                    | Yes                    | Yes                 | Yes                     |
| Harmonic Distortion        | .....                                   | SINAD                    | .....                  | .....               | .....                   |
| Minimum Reading            | 0.001%                                  | .0018%                   | .1% Full Scale         | .01% Full Scale     | .2% (also in dB)        |
| Reading Accuracy           | $\pm 1$ dB, 20Hz-20kHz                  | 1dB                      | $\pm 5\%$              | $\pm 2$ dB to 50kHz | +1, -3dB overall        |
| Instrument Distortion      | .....                                   | .032%                    | .04%                   | 1% max, 100kHz      | .0071% (-83dB)          |
| Intermodulation Distortion | Option SMPTE, DIN, CCIR                 | .....                    | SMPTE                  | Option 004          | SMPTE, DIN Opt. or CCIR |
| Minimum Reading            | .....                                   | .....                    | .1% Full Scale         | .001%               | .....                   |
| Reading Accuracy           | .....                                   | .....                    | $\pm 5\%$              | $\pm 2\%$           | 1dB                     |
| Low Pass Filter            | 50kHz, 60dB/decade                      | 30kHz, 80kHz             | .....                  | Yes                 | 30kHz, 80kHz            |
| High Pass Filter           | 400Hz, 60dB/decade                      | 400Hz                    | .....                  | Yes                 | 400Hz                   |
| Power Requirements:        | .....                                   | .....                    | .....                  | .....               | .....                   |
| ac                         | 115/220Vac                              | 115/220Vac               | 115/220Vac             | 115/220Vac          | 110/220Vac              |
| Internal Battery           | Rechargeable, Option                    | .....                    | .....                  | .....               | .....                   |
| External Battery           | 14-20Vdc, 1A                            | .....                    | .....                  | .....               | .....                   |
| Weight                     | 8.5 lb, Battery & IMD.                  | 18 lb                    | 12 lb                  | 16 lb               | 23 lb                   |
| Other Functions:           | .....                                   | .....                    | .....                  | .....               | .....                   |
| ac Voltmeter               | 1mV to 100V                             | 1mV-300V                 | Wow & Flutter          | Power Meter         | .....                   |
| Noise Measurement          | .....                                   | .....                    | 1mV-100Vrms            | 30 $\mu$ V-300V     | 200 V-200V              |
| Signal Generator           | 10Hz-100kHz, -60, +22dBV                | 10Hz-110kHz              | S+N/N, to 1mV          | 30 $\mu$ V-300V     | .....                   |
| AM Detector                | .....                                   | 550kHz-1.6MHz            | .....                  | Yes                 | SG505 Module            |
| Metering Scales:           | .....                                   | .....                    | .....                  | .....               | .....                   |
| VU Volume Units            | .....                                   | Yes                      | .....                  | .....               | Digital                 |
| dB DeciBels                | dBm, dBV                                | Yes                      | dBm                    | Option 005          | .....                   |
| Peak                       | .....                                   | .....                    | .....                  | Yes                 | .....                   |
| RMS                        | True                                    | True                     | True                   | Yes                 | .....                   |
| Other                      | .....                                   | %THD                     | Ratio, Phase           | Average             | .....                   |

# AUDIO PROCESSOR

Equipment for audio signal level control for prevention of overload or overmodulation to other audio equipment and/or transmitter equipment. GR indicates Gain Reduction.

| Manufacturer               | Applied Technology Corporation |                              | Aphex Systems Ltd.       | Audio & Design Recording, Inc. |                                 |
|----------------------------|--------------------------------|------------------------------|--------------------------|--------------------------------|---------------------------------|
|                            | Discriminate Audio Processor   | MaxiMod Digital Peak Limiter | CX-1 Compressor Expander | FM Stereo Ex-Press Limiter     | TransDynamic 3 Band Processor   |
| Model Number               |                                |                              |                          |                                |                                 |
| Specific Use In            | Any                            | Any                          | Any                      | FM Stereo                      | Any, Side Chain Units Required. |
| Function Provided:         |                                |                              |                          |                                |                                 |
| Auto Gain Control          | Yes                            | .....                        | Yes                      | .....                          | .....                           |
| Compression                | Yes                            | .....                        | Yes                      | 10dB Range                     | Yes                             |
| Expansion                  | Yes                            | .....                        | Yes                      | 10dB Range                     | Yes                             |
| Wideband Limiting          | .....                          | .....                        | .....                    | .....                          | .....                           |
| Peak Limiting              | .....                          | Yes                          | .....                    | .....                          | Yes                             |
| Assymmetric Limit          | .....                          | Yes                          | .....                    | .....                          | Yes                             |
| Stereo Tracking            | .....                          | .....                        | .....                    | .....                          | .....                           |
| Multiband Processing       | .....                          | .....                        | .....                    | .....                          | Yes                             |
| Metering Types             | LED                            | LED                          | LED                      | Meter and LED                  | Meter and LED                   |
| Attack Time                | Adjustable                     | .....                        | .....                    | .....                          | .....                           |
| Release Time               | Adjustable                     | .....                        | .....                    | .....                          | .....                           |
| Compression Ratio          | 2:1 to 20:1                    | .....                        | Adjustable               | 1.5:1 to 5:1                   | .....                           |
| Compression Threshold      | Adjustable                     | .....                        | Adjustable               | Adjustable                     | .....                           |
| Expansion Ratio            | .....                          | .....                        | Adjustable               | 1:2                            | .....                           |
| Limiting Ratio             | .....                          | .....                        | .....                    | .....                          | .....                           |
| Limiting Threshold         | Adjustable                     | .....                        | .....                    | -16dBm                         | .....                           |
| Input Impedance            | 600 Bal                        | 600 Bal                      | .....                    | 47K Bal                        | 600 Bal                         |
| Output Load/Source         | 600 Bal                        | 600 Bal                      | .....                    | 2 Bal                          | 600 Bal                         |
| Output Level Maximum       | +8dBm Nominal                  | +22dBm                       | +30dBm                   | +24dBm                         | +15dBm                          |
| AF Response ( $\pm$ dB/Hz) | 0.5/20K                        | .25/20-20K                   | - /20-20K                | 0, - .5/20-25K                 | .5/20-20K                       |
| Harmonic Distortion        | 0.03%                          | .001%, 600 Ohm               | .1%, 20-20K              | .15%, +12dBm                   | .25%, 6dB G.R.                  |
| Signal-to-Noise Ratio      | .82dB                          | 87dB                         | 85dB                     | 82dB, +12dBm                   | 90dB, +15dBm                    |
|                            | .....                          | .....                        | .....                    | Output                         | Output                          |

| Manufacturer               | Audio & Design Recording, Inc.  | Audio Processing     | Audio Tech.         | Broadcast Controls               | Broadcast Electronics             |
|----------------------------|---------------------------------|----------------------|---------------------|----------------------------------|-----------------------------------|
|                            | Scamp Modular Processing System | IMP3 Audio Processor | Emph-a-Sizer        | 1000A Audio Mate Audio Processor | AM500 Compressor Limiter/Expander |
| Model Number               |                                 |                      |                     |                                  |                                   |
| Specific Use In            | Any                             | AM                   | Any                 | AM                               | AM                                |
| Function Provided:         |                                 |                      |                     |                                  |                                   |
| Auto Gain Control          | .....                           | .....                | .....               | .....                            | .....                             |
| Compression                | SO1                             | 23dB/Band            | Gated               | 40dB                             | 30dB                              |
| Expansion                  | F300 Gate Module                | Selected Band        | .....               | .....                            | 20dB                              |
| Wideband Limiting          | .....                           | .....                | Yes                 | .....                            | .....                             |
| Peak Limiting              | Yes                             | 10dB, Safety Clip    | .....               | .....                            | Yes, Peak Clip                    |
| Assymmetric Limit          | .....                           | Yes                  | .....               | .....                            | Yes                               |
| Stereo Tracking            | Yes                             | Yes                  | .....               | .....                            | .....                             |
| Multiband Processing       | .....                           | 3 Band               | .....               | .....                            | .....                             |
| Metering Types             | LED                             | Meter and LED        | LED                 | Meter                            | Meter                             |
| Attack Time                | Adjustable                      | Factory Set          | .....               | Adjustable                       | Fixed                             |
| Release Time               | Adjustable                      | Adjustable           | .....               | Adjustable                       | Adjustable                        |
| Compression Ratio          | 10:1                            | Program Dependent    | 1:1 to 20:1         | Adjustable                       | To 30:1                           |
| Compression Threshold      | Limiter Related                 | Program Dependent    | .....               | .....                            | .....                             |
| Expansion Ratio            | 1.5:1 to 20:1                   | 6dB                  | .....               | .....                            | Gated                             |
| Limiting Ratio             | .....                           | .....                | .....               | .....                            | .....                             |
| Limiting Threshold         | Selectable                      | Adjustable           | .....               | .....                            | .....                             |
| Input Impedance            | 10K Bal                         | 600 Bal              | 10K Bal             | 600 Bal                          | 600 Bal                           |
| Output Load/Source         | 1 Bal                           | 600 Bal              | 600 Bal             | .....                            | 600 Bal                           |
| Output Level Maximum       | +30dBm                          | +20dB                | +24dBm              | +21dB                            | +20dBm                            |
| AF Response ( $\pm$ dB/Hz) | 0.5/20-20K                      | 0.5/50-15K           | .25/30-20K          | .5/10-20K                        | 1/30-15K                          |
| Harmonic Distortion        | 0.3% 10dB Expansion             | 0.4% 6dB GR          | .2% +22dBm Output   | .25%                             | .5%, +20dBm Output                |
| Signal-to-Noise Ratio      | 103 Below +8dBm                 | 68dB In Operate      | 110dBm Equiv. Input | 75dB Below Output                | 00dB, +20dBm                      |
|                            | .....                           | .....                | .....               | .....                            | Output                            |

# AUDIO PROCESSOR

| Manufacturer               | Broadcast Electronics | Circuit Research Labs   |                         | Comex                | dbx Professional                   |
|----------------------------|-----------------------|-------------------------|-------------------------|----------------------|------------------------------------|
|                            | FM600 FM AGC Limiter  | SMP800 Stereo Processor | AAP400A Audio Processor | Auto Gain Adjuster   | Products<br>160 Compressor Limiter |
| Specific Use In            | FM, TV                | FM                      | AM                      | Phone Line Feed      | FM TV                              |
| Function Provided:         |                       |                         |                         |                      |                                    |
| Auto Gain Control          | .50dB Range           | Multiband               | Yes                     | Yes                  | .....                              |
| Compression                | 30dB                  | 30dB Gain Reduction     | 30dB Gain Reduction     | .....                | Yes                                |
| Expansion                  | 30dB                  | .....                   | .....                   | .....                | .....                              |
| Wideband Limiting          | .....                 | Multiband               | .....                   | To 30dB              | Yes                                |
| Peak Limiting              | Yes                   | 4dB max, Self Limit     | .....                   | Yes                  | .....                              |
| Assymmetric Limit          | .....                 | .....                   | .....                   | .....                | .....                              |
| Stereo Tracking            | Yes                   | Yes                     | .....                   | .....                | .....                              |
| Multiband Processing       | .....                 | Yes                     | Yes                     | .....                | .....                              |
| Metering Types             | Meter                 | LED                     | LED                     | Meter                | Meter and LED                      |
| Attack Time                | .....                 | Program Dependent       | Program Dependent       | Fixed                | Fixed                              |
| Release Time               | Adjustable            | Program Dependent       | Program Dependent       | Program Dependent    | Fixed                              |
| Compression Ratio          | 30:1                  | .....                   | Adjustable              | .....                | Infinite                           |
| Compression Threshold      | .....                 | .....                   | .....                   | .....                | Adjustable                         |
| Expansion Ratio            | 30:1                  | .....                   | .....                   | .....                | .....                              |
| Limiting Ratio             | .....                 | Variable                | .....                   | .....                | .....                              |
| Limiting Threshold         | .....                 | .....                   | .....                   | .....                | .....                              |
| Input Impedance            | 600 Bal               | 600, 10K Bal/Unbal      | 600, 10K Bal/Unbal      | 600 Bal              | 50K Bal                            |
| Output Load/Source         | 600 Bal               | 200 Bal                 | 200 Bal                 | 150 Unbal            | 25                                 |
| Output Level Maximum       | + 20dBm               | .....                   | + 10dBm                 | - 10dBu              | + 24dBm, 600 Ohm                   |
| AF Response ( $\pm$ dB/Hz) | 1/30-15K              | .5/50-15K               | .5/30-18K               | 1/20-15K             | 1/30-20K                           |
| Harmonic Distortion        | 0.5%, + 20dBm, Output | .8% At Threshold        | .3% 30dB GR             | .5% Below 200kHz     | 0.075% + 4dBm                      |
| Signal-to-Noise Ratio      | 70dB, + 20dBm Output  | 75dB + 10dBm Output     | 75dB 0dBm Output        | - 86dBu, + 10dB Gain | - 78dB with GR                     |

| Manufacturer               | dbx Professional                             | Delta Electronics                  | Dorrough Electronics             | Elcom-Bauer         |                    |
|----------------------------|--|------------------------------------|----------------------------------|---------------------|--------------------|
|                            | Products<br>165 Over Easy Compressor/Limiter | AMC-1 Amplitude Modulation Control | 310 Discriminate Audio Processor | AGC Level Guard     | AP50 InstaPeak II  |
| Specific Use In            | Any  | AM                                 | Any                              | Any                 | Any                |
| Function Provided:         |  |                                    |                                  |                     |                    |
| Auto Gain Control          | .....  | 16dB Range                         | Yes                              | 30dB Range          | Yes                |
| Compression                | Yes  | .....                              | Yes                              | Yes                 | Yes                |
| Expansion                  | .....  | .....                              | Yes                              | Yes                 | .....              |
| Wideband Limiting          | Yes  | .....                              | Yes                              | Yes                 | Yes                |
| Peak Limiting              | .....  | .....                              | Yes                              | .....               | Yes                |
| Assymmetric Limit          | .....  | .....                              | Yes                              | .....               | .....              |
| Stereo Tracking            | Yes  | .....                              | .....                            | .....               | .....              |
| Multiband Processing       | .....  | .....                              | 3-Band                           | .....               | 2-Band             |
| Metering Types             | Meter and LED                                | Meter and LED                      | Meter                            | Meter               | Meter              |
| Attack Time                | Adjustable                                   | Adjustable                         | .....                            | Fixed               | Fixed              |
| Release Time               | Adjustable                                   | Adjustable                         | .....                            | Adjustable          | Program Dependent  |
| Compression Ratio          | 1:1 to Infinity                              | Adjustable                         | .....                            | Adjustable          | Adjustable         |
| Compression Threshold      | Adjustable                                   | Adjustable                         | .....                            | Adjustable          | Adjustable         |
| Expansion Ratio            | .....  | .....                              | .....                            | .....               | .....              |
| Limiting Ratio             | .....  | .....                              | .....                            | .....               | .....              |
| Limiting Threshold         | .....  | .....                              | .....                            | .....               | .....              |
| Input Impedance            | 22K Bal                                      | 600 Bal                            | 600 Bal                          | 10K Bal             | 600 Bal/Unbal      |
| Output Load/Source         | 47   | 600 Bal                            | 600 Bal                          | 600 Bal             | 600 Bal/Unbal      |
| Output Level Maximum       | + 23dBm, 600 Ohm                             | + 20dBm                            | + 24dBm                          | + 20dB max          | + 20dB max         |
| AF Response ( $\pm$ dB/Hz) | 0, - 1/20-20K                                | .5/20-30K                          | 1/30-15K                         | 0.5/50-15K          | 1/50-15K           |
| Harmonic Distortion        | 0.2%   | 1% + 20dBm Output                  | 1%                               | 0.5%, 10dB GR       | 1%, + 20dBm Output |
| Signal-to-Noise Ratio      | - 90dBm                                      | .....                              | 65dB                             | 70dB + 10dBm Output | 65dB               |



# AUDIO PROCESSOR

| Manufacturer          | Eventide Clockworks   | Gregg Laboratories     |                         | Harris Communications               |                         |
|-----------------------|-----------------------|------------------------|-------------------------|-------------------------------------|-------------------------|
|                       | Model Number          | 2530 TriBand Processor | 2560 AM Audio Processor | MSP-90 Tri-Band AGC Audio Processor | MSP-100 Audio Processor |
| Specific Use In       | OmniPresser           | FM, TV                 | AM                      | Any                                 | Any                     |
| Function Provided:    | Any                   | .....                  | .....                   | ± 10dB Range                        | Yes                     |
| Auto Gain Control     | Adjustable            | Infinite               | 30dB Range/Band         | 24dB Range                          | 24dB Range              |
| Compression           | Adjustable            | .....                  | .....                   | To 12dB Range                       | 12dB Range              |
| Expansion             | Adjustable            | .....                  | .....                   | .....                               | .....                   |
| Wideband Limiting     | 30 dB Range           | .....                  | Yes                     | Yes                                 | Yes                     |
| Peak Limiting         | .....                 | .....                  | Option                  | .....                               | Yes                     |
| Assymmetric Limit     | .....                 | Yes                    | .....                   | Yes                                 | Yes                     |
| Stereo Tracking       | .....                 | 3-Band                 | 5-Band                  | 3-Band                              | 3-Band                  |
| Multiband Processing  | .....                 | Meter                  | LED Bargraph            | LED                                 | Meter                   |
| Metering Types        | Meter                 | Adjustable             | Program Dependent       | Adjustable                          | Adjustable              |
| Attack Time           | Adjustable            | Program Dependent      | Program Dependent       | Adjustable                          | Adjustable              |
| Release Time          | Adjustable            | 30:1 to Infinite       | 30:1                    | 24:1 to 3:1                         | 12:4 to 12:0.5          |
| Compression Ratio     | Adjustable            | Adjustable             | Adjustable              | Adjustable                          | Adjustable              |
| Compression Threshold | 1:1 to 10:1           | .....                  | .....                   | 2:1                                 | 12:24                   |
| Expansion Ratio       | 1:1 to 10:1           | .....                  | .....                   | .....                               | 12:0.5                  |
| Limiting Ratio        | .....                 | .....                  | .....                   | .....                               | Adjustable              |
| Limiting Threshold    | .....                 | 600 Bal                | 200K Bal                | 600                                 | 600 Bal                 |
| Input Impedance       | 10K Bal               | 600 Bal                | 50 Unbal                | 600                                 | 600 Bal                 |
| Output Load/Source    | 600 Unbal             | 4dBm Nominal           | + 24dBm, 600 Ohm        | + 18dBm                             | + 18dBm                 |
| Output Level Maximum  | + 18dBm               | .5/30-20K              | 0.5/40-12K              | 1/20-20K                            | 1/30-15K                |
| AF Response (± dB/Hz) | 1, - .5/20-16K        | .25%, 10dB GR          | 0.1% Below GR           | .5% Slow Attack                     | .25% Disabled           |
| Harmonic Distortion   | 1% Over 100Hz/ + 20dB | 80dB Below + 4dBm      | 75dB 100%               | 70dB Below                          | 65dB Below              |
| Signal-to-Noise Ratio | - 90dBm               | .....                  | Modulation              | Compression                         | + 10dBm Output          |

| Manufacturer          | Inovonics, inc.             |                                  | Kahn Communications                                      | LPB, Inc.                    | Martl Electronics                    |
|-----------------------|-----------------------------|----------------------------------|--|------------------------------|--------------------------------------|
|                       | 215 MultiFunction Processor | MAP II Multiband Audio Processor | Non-Symmetra-Mod NSM-125                                 | S-2 Audio Compressor Limiter | CLA-40A Compressor Limiter Amplifier |
| Specific Use In       | Any                         | AM                               | AM   | Any                          | Any                                  |
| Function Provided:    | .....                       | .....                            | .....  | .....                        | To 40dB                              |
| Auto Gain Control     | ± 10dB Opt - 01             | Gated                            | Processing method proprietary pending patent acceptance. | Yes                          | Yes                                  |
| Compression           | 10dB Opt - 02               | 24dB Range                       | .....  | Yes                          | .....                                |
| Expansion             | .....                       | .....                            | .....  | Yes                          | .....                                |
| Wideband Limiting     | .....                       | Yes                              | .....  | Yes                          | Yes                                  |
| Peak Limiting         | Opt -03 AM/-04 FM           | Yes                              | .....  | Yes                          | Yes                                  |
| Assymmetric Limit     | Opt -03                     | Yes                              | .....  | Possible                     | Yes                                  |
| Stereo Tracking       | Yes                         | .....                            | .....  | .....                        | .....                                |
| Multiband Processing  | .....                       | 8-Band                           | LED  | .....                        | .....                                |
| Metering Types        | Meter and LED               | Meter and LED                    | LED  | Meter                        | Meter                                |
| Attack Time           | Fixed                       | Fixed                            | .....  | Fixed                        | Fixed                                |
| Release Time          | Fixed                       | Fixed                            | .....  | Fixed                        | Adjustable                           |
| Compression Ratio     | 2:1                         | Adjustable                       | .....  | 2:1                          | 10:1                                 |
| Compression Threshold | Adjustable                  | Adjustable                       | .....  | Adjustable                   | Adjustable                           |
| Expansion Ratio       | .....                       | .....                            | .....  | .....                        | .....                                |
| Limiting Ratio        | .....                       | .....                            | .....  | .....                        | .....                                |
| Limiting Threshold    | Adjustable                  | Adjustable                       | .....  | + 11dB Absolute Peak         | .....                                |
| Input Impedance       | Balanced                    | 600 Bal                          | 600 Bal  | 600 Bal                      | 600 Bal                              |
| Output Load/Source    | Balanced                    | 600 Bal                          | 600 Bal  | 600 Bal                      | 600 Bal                              |
| Output Level Maximum  | + 24dBm                     | + 24dBm                          | + 10dBm  | + 19dBm                      | + 20dBm                              |
| AF Response (± dB/Hz) | 1/50-15K                    | 1/50-15K, Flat                   | 1/50-15K   | 0, - /720-20K                | .5/50-15K                            |
| Harmonic Distortion   | 0.3% Over 200Hz             | .3% Over 200Hz                   | 1% Disabled  | .25% max                     | 1% With Compression                  |
| Signal-to-Noise Ratio | 60dB 100% Modulation        | 65dB 100% Modulation             | 50dB   | 84dB Below + 18dBm           | 66dB, + 10dBm Output                 |

# AUDIO PROCESSOR

| Manufacturer               | McMartin Industries                |                                       | Modular   | Moseley Associates      |                       |
|----------------------------|------------------------------------|---------------------------------------|---|-------------------------|-----------------------|
|                            | BFM-1515R Monaural Audio Processor | LR-1004C Compressor Limiter Amplifier | Audio Products 7833 Controlled Dynamic Range DA | TAL-320AM Audio Limiter | TFL-280 Audio Limiter |
| Specific Use In            | Any                                | Any                                   | Any   | AM                      | FM, TV                |
| Function Provided:         |                                    |                                       |   |                         |                       |
| Auto Gain Control          | Yes                                | .....                                 | .....   | Yes                     | Yes                   |
| Compression                | Yes                                | Yes                                   | 30dB Reduction                                  | Yes                     | .....                 |
| Expansion                  | .....                              | .....                                 | .....   | .....                   | .....                 |
| Wideband Limiting          | To 26dB Reduction                  | .....                                 | Yes   | Yes                     | 35dB                  |
| Peak Limiting              | Yes                                | .....                                 | Yes   | Yes                     | .....                 |
| Assymmetric Limit          | .....                              | .....                                 | .....   | Yes                     | .....                 |
| Stereo Tracking            | .....                              | .....                                 | .....   | Possible                | Yes                   |
| Multiband Processing       | 2-Band                             | .....                                 | .....   | .....                   | .....                 |
| Metering Types             | Meter                              | Meter                                 | Meter   | Meter                   | Meter                 |
| Attack Time                | Fixed                              | Adjustable                            | Fixed   | Adjustable              | Adjustable            |
| Release Time               | Adjustable                         | Adjustable                            | Program Dependent                               | Adjustable              | Program Dependent     |
| Compression Ratio          | .....                              | .....                                 | Adjustable                                      | 60:1                    | 50:1                  |
| Compression Threshold      | Adjustable                         | Adjustable                            | Adjustable                                      | Adjustable              | Adjustable            |
| Expansion Ratio            | .....                              | .....                                 | .....   | .....                   | .....                 |
| Limiting Ratio             | .....                              | .....                                 | Adjustable                                      | .....                   | .....                 |
| Limiting Threshold         | Adjustable                         | Adjustable                            | Adjustable                                      | Adjustable              | Adjustable            |
| Input Impedance            | 600                                | 600 Bal/15K Unbal                     | 6K Bal  | 600 Bal                 | 600 Bal               |
| Output Load/Source         | 1000                               | 600 Bal                               | 600 Bal   | 600 Bal                 | 600Bal/Unbal          |
| Output Level Maximum       | .....                              | + 10dBm                               | + 20dBm 600 Ohm                                 | + 18dBm                 | + 17dBm               |
| AF Response ( $\pm$ dB/Hz) | 1/30-15K                           | 1/50-20K                              | .5/20-20K                                       | 1/30-15K                | 1/50-15K              |
| Harmonic Distortion        | 0.5% with GR                       | 1%                                    | 1% for 30dB GR                                  | .7% With Limiting       | 0.7% at max Limiting  |
| Signal-to-Noise Ratio      | 70dB                               | 60dB Below + 10dBm                    | - 91dBm max                                     | 70dB                    | 70dB                  |

| Manufacturer               | MXR Innovations, Inc. | Orban Associates      |                      | ProTech Audio            | RCA Broadcast Systems |
|----------------------------|-----------------------|-----------------------|----------------------|--------------------------|-----------------------|
|                            | 138 Dual Limiter      | 8100A Optimod-FM      | 9000 Optimod-AM      | 663CL Compressor Limiter | BA-146 Limiter        |
| Specific Use In            | FM Stereo             | FM Stereo             | AM                   | Any                      | Any                   |
| Function Provided:         |                       |                       |                      |                          |                       |
| Auto Gain Control          | .....                 | .....                 | .....                | Yes                      | .....                 |
| Compression                | .....                 | 25dB                  | 20dB                 | 20dB                     | 26dB Range            |
| Expansion                  | .....                 | .....                 | .....                | .....                    | .....                 |
| Wideband Limiting          | 24dB                  | Frequency Selected    | Frequency Selected   | .....                    | 46dB                  |
| Peak Limiting              | .....                 | "Smart" Clipping      | "Smart" Clipping     | .....                    | .....                 |
| Assymmetric Limit          | .....                 | .....                 | Yes                  | .....                    | Yes                   |
| Stereo Tracking            | Yes                   | Yes                   | Possible             | .....                    | .....                 |
| Multiband Processing       | .....                 | Yes                   | 7-Band               | .....                    | .....                 |
| Metering Types             | LED                   | Meter and LED         | Meter and LED        | .....                    | LED                   |
| Attack Time                | Adjustable            | Fixed & Pgm Dependent | Fixed                | Adjustable               | Fixed                 |
| Release Time               | Adjustable            | Adjustable & Fixed    | Adjustable           | Adjustable               | Adjustable            |
| Compression Ratio          | .....                 | .....                 | 200:1                | 2.5:1                    | 50:1                  |
| Compression Threshold      | .....                 | Adjustable            | Adjustable           | .....                    | .....                 |
| Expansion Ratio            | .....                 | .....                 | .....                | .....                    | .....                 |
| Limiting Ratio             | Adjustable            | Fixed                 | Fixed                | .....                    | .....                 |
| Limiting Threshold         | Adjustable            | Fixed                 | Fixed                | .....                    | .....                 |
| Input Impedance            | 20K Bal               | 600 Bal               | 600 Bal              | 600 Bal                  | 600 Bal/Unbal         |
| Output Load/Source         | 200                   | 470 Unbal             | 200 Bal              | 600 Bal                  | 150, 600 Bal/Unbal    |
| Output Level Maximum       | + 19dBV               | 4V P-P                | + 20dBm              | + 27dBm                  | + 24dBm               |
| AF Response ( $\pm$ dB/Hz) | 0, - 1/20-20K         | .75/50-15K            | 1/50-7.5K            | 0.5/30-20K               | 1/20-15K              |
| Harmonic Distortion        | 0.1% 10dB Limiting    | .05%                  | 1%                   | 1%                       | 1% Overall            |
| Signal-to-Noise Ratio      | - 100dBV Equip. Input | 75dB                  | 60dB 100% Modulation | 65dB                     | 70dB                  |

# AUDIO PROCESSOR

| Manufacturer          | RCA Broadcast Systems              | Spectra Sonics            | Thomson-CSF Broadcast, Inc. |                     | UREI                  |
|-----------------------|------------------------------------|---------------------------|-----------------------------|---------------------|-----------------------|
|                       | BA-150 Overshoot Control Processor |                           | 4111 Stereo FM Volumax      | 4450A Audimax       | BL-40 Modulimiter     |
| Model Number          | Control Processor                  | 610 Complimixer           | FM                          | Any                 | AM, TV                |
| Specific Use In       | FM Stereo                          | Any                       | FM                          | Any                 | AM, TV                |
| Function Provided:    |                                    |                           |                             |                     |                       |
| Auto Gain Control     | .....                              | .....                     | .....                       | ± 10dB              | .....                 |
| Compression           | .....                              | 30dB                      | .....                       | Yes                 | .....                 |
| Expansion             | .....                              | .....                     | .....                       | Yes                 | .....                 |
| Wideband Limiting     | .....                              | Yes                       | To 23dB                     | Yes                 | Yes                   |
| Peak Limiting         | .....                              | Yes                       | Dual Band                   | .....               | Yes                   |
| Assymmetric Limit     | .....                              | .....                     | .....                       | .....               | Yes                   |
| Stereo Tracking       | Yes                                | Yes                       | Yes                         | Yes                 | .....                 |
| Multiband Processing  | .....                              | .....                     | Yes                         | .....               | .....                 |
| Metering Types        | LED                                | Meter and LED             | Meter                       | Meter               | Meter                 |
| Attack Time           | Fixed                              | Adjustable                | Program Dependent           | .....               | Program Dependent     |
| Release Time          | .....                              | Adjustable                | Frequency Dependent         | .....               | Program Dependent     |
| Compression Ratio     | .....                              | 1.1:1 to 100:1            | .....                       | Program Dependent   | .....                 |
| Compression Threshold | .....                              | Adjustable                | .....                       | .....               | .....                 |
| Expansion Ratio       | .....                              | .....                     | .....                       | Program Dependent   | .....                 |
| Limiting Ratio        | .....                              | 1.1:1 to 100:1            | .....                       | .....               | .....                 |
| Limiting Threshold    | .....                              | Adjustable                | Adjustable                  | .....               | Adjustable            |
| Input Impedance       | 600 Bal/Unbal                      | 600                       | 600 Bal/Unbal               | 150, 600 Bal/Unbal  | 600 Bal               |
| Output Load/Source    | 150, 600 Bal/Unbal                 | 600 Bal/Unbal             | 600 Bal/Unbal               | 150, 600 Bal/Unbal  | 600 Bal               |
| Output Level Maximum  | + 18dBm                            | + 16dBm                   | + 27dBm                     | + 26dBm             | + 27dBm               |
| AF Response (± dB/Hz) | 1/20-15K                           | 0.5/20-20K                | 1/50-15K                    | .5/50-15K           | 0, - .8/30-15K        |
| Harmonic Distortion   | 1%                                 | 0.1% 30dB                 | 1% normal GR                | .5%, + 16dBm        | 0.5%, + 14dBm Output  |
| Signal-to-Noise Ratio | 75dB                               | .80dB Below + 4dBm Output | 70dB Below + 27dBm          | 70dB at Normal Gain | - 110dBm Equiv. Input |

| Manufacturer          | UREI                    | Valley People                |                                  | Wilkinson Electronics, Inc. |                       |
|-----------------------|-------------------------|------------------------------|----------------------------------|-----------------------------|-----------------------|
|                       | 1176N Mono Peak Limiter | 410-1 Mono Dynamic Processor | Gain Brain II Limiter Compressor | LA2-C Limiting Amplifier    | GCA-1/S AGC Amplifier |
| Model Number          | Peak Limiter            | 410-1 Mono Dynamic Processor | Gain Brain II Limiter Compressor | LA2-C Limiting Amplifier    | GCA-1/S AGC Amplifier |
| Specific Use In       | Any                     | FM                           | Production                       | Any                         | Any                   |
| Function Provided:    |                         |                              |                                  |                             |                       |
| Auto Gain Control     | .....                   | To 60dB Range                | 50dB Range                       | .....                       | 30dB Range            |
| Compression           | Yes                     | Yes                          | Yes                              | 15dB Range                  | Yes                   |
| Expansion             | .....                   | Yes                          | .....                            | .....                       | Yes                   |
| Wideband Limiting     | Yes                     | During Voice Over            | Yes                              | Yes                         | .....                 |
| Peak Limiting         | Yes                     | Yes                          | .....                            | Yes                         | .....                 |
| Assymmetric Limit     | .....                   | .....                        | .....                            | .....                       | .....                 |
| Stereo Tracking       | .....                   | Yes                          | .....                            | Use LA2-CS                  | Yes                   |
| Multiband Processing  | .....                   | .....                        | .....                            | .....                       | .....                 |
| Metering Types        | Meter                   | LED                          | LED                              | Meter                       | Meter                 |
| Attack Time           | Adjustable              | Adjustable                   | Adjustable                       | Fixed                       | .....                 |
| Release Time          | Adjustable              | Adjustable                   | Adjustable                       | Level Dependent             | Level Dependent       |
| Compression Ratio     | 4:1 to 20:1             | 20:1 Ducking                 | 1.3:1 to infinite                | 35:1                        | 5:1                   |
| Compression Threshold | Adjustable              | Adjustable                   | Adjustable                       | Adjustable                  | Adjustable            |
| Expansion Ratio       | .....                   | 1:2                          | .....                            | .....                       | .....                 |
| Limiting Ratio        | .....                   | Infinite                     | .....                            | .....                       | .....                 |
| Limiting Threshold    | Adjustable              | Adjustable                   | .....                            | .....                       | .....                 |
| Input Impedance       | 20K Bal/10K Unbal       | .....                        | 50K Bal                          | 50, 600 Bal/Unbal           | 50, 600 Bal/Unbal     |
| Output Load/Source    | 600 Bal                 | 600                          | 2K                               | 500, 500 Bal/Unbal          | 500, 600 Bal/Unbal    |
| Output Level Maximum  | + 24dBm, 600 Ohm        | + 21dBV, 600 Ohm             | + 21dBV                          | + 18dBm                     | + 10dBm Nominal       |
| AF Response (± dB/Hz) | 1/20-15K                | 1/10-50K                     | 2/5-100K                         | 1/50-20K                    | .5/50-20K             |
| Harmonic Distortion   | 0.5% With Limiting      | .04% max, 1kHz               | .01%, + 10dBV Input              | 2% 15dB Limiting            | .5% Any Limiting      |
| Signal-to-Noise Ratio | 80dB Limit Threshold    | 90dB, + 4dBV Input or        | 112dB Below + 21dBV              | .....                       | 70dB Below + 10dBm    |

# AUDIO PROCESSOR

In addition to audio signal level controlling equipment, there are many products that fall into an audio effects category. These items alter the signal through equalization, delay, echo, reverb and time compensation. The following manufacturers and their equipments are offered for your convenience.

AKAI America, Ltd.  
P.O. Box 6010  
2139 East Del Amo Blvd.  
Compton, CA 90224  
\*Graphic Equalizers

AKG Acoustics, Inc.  
77 Selleck Street  
Stamford, CT 06902  
\*TTL Reverberation Systems

Audicon Products Group  
1200 Beechwood Ave.  
Nashville, TN 37212  
\*Reverberation System

AudioArts Engineering  
286 Downs Road  
Bethany, CT 06525  
\*Parametric Equalizer-Preamplifier

R. Barth KG Elektronik und Akustik  
(Audicon Marketing Group)  
1200 Beechwood Ave.  
Nashville, TN 37212  
\*Sound Storage Memory, Transposer, Time Delay  
\*Musicoder Special Effects

Bode Sound Company  
1344 Abington Place  
North Tonawanda, NY 14120  
\*Feedback Stabilizer

COMEX Systems  
2 Columbia Drive  
Amherst, NH 03031  
\*Digital Audio Delay System

Composite Video  
1218 North Blackwelder  
Oklahoma City, OK 73106  
\*Audio Enhancer

Crown  
1718 West Mishawaka Road  
Elkhart, IN 46514  
\*Synergistic Equalizer

dbx Inc.  
71 Chapel St.  
Newton, MA 02195  
\*Broadcast Noise Reduction Systems  
\*Range Expander/Subharmonic Synthesizer

DeltaLab Research, Inc.  
27 Industrial Ave.  
Chelmsford, MA 01824  
\*Digital Delay Line Reverb Systems

Dolby Laboratories Inc.  
731 Sansome St.  
San Francisco, CA 94111  
\*Noise Reduction Systems

Eventide Clockworks, Inc.  
265 West 54th St.  
New York, NY 10019  
\*Harmonizer Effects System  
\*Digital Delay System  
\*Programmable Effects Processor

EV TAPCO  
3810 - 148 Ave., N.E.  
Redmond, WA 98052  
\*Parametric Equalizer-Reverb System  
\*Graphic Equalizers  
\*Instrument Voicing Preamp

EXR Corporation  
Ann Arbor, MI  
\*Psychoacoustic Audio Processor

Lexicon Inc.  
60 Turner St.  
Waltham, MA 02154  
\*Digital Audio Delay Processor Mixer  
\*Digital Reverb System  
\*Audio Time Compressor

McMartin Industries Inc.  
4500 South 76 St.  
Omaha, NE 68127  
\*Octave Equalizers

MICMIX Audio Products Inc.  
2995 Ladybird Lane  
Dallas, TX 75220  
\*Reverb Systems  
\*Flanger Effects Unit

ProTech Audio Corporation  
Flowerfield, Bldg. #1  
St. James, NY 11760  
\*Reverberation System

Modular Audio Products  
50 Orville Drive, Airport International Plaza  
Bohemia, NY 11716  
\*Equalizers

MXR Innovations Inc.  
Rochester, NY  
\*Dual 15-Band and 31-Band Equalizers  
\*Delay System II  
\*Flanger  
\*Pitch Transposers

Redwood Research Incorporated  
1200 Beechwood Ave.  
Nashville, TN  
\*Computer Assisted Parametric Equalizer System

Shure Brothers, Inc.  
222 Hartley Ave.  
Evanston, IL 60204  
\*Equalizer

Spectra Sound (Spectra Sonics)  
3750 Airport Road  
Ogden, UT 84403  
\*Octave Graphic Equalizer  
\*Audio Delay Line  
\*Audio Phase Shifter & Flanger

Teac Production Products  
7733 Telegraph Road  
Montebello, CA 90640  
\*Graphic Equalizer

United Recording Electronics Industries  
8460 San Fernando Road  
Sun Valley, CA 91352  
\*Parametric Equalizer  
\*Graphic Equalizer  
\*Digital Delay Line

URSA MAJOR Inc.  
Box 18  
Belmont, MA 02178  
\*Effects System

VSC Professional Division  
Integrated Sound Systems Inc.  
29-50 Northern Blvd.  
Long Island City, NY 11101  
\*Time Compression System

The original definition of Audio Processor equipment included items designed for signal level control. In general broadcasting needs, the limiter, compressor and expander systems would seem the most required. There are, however, a large group of devices that fall into a category for production purposes, including equalization, delay, echo/reverberation, phase shifting and time compensation. As no concrete comparison parameters could be arrived at, and as "effects" devices are important when production is required, for your reference this list of manufacturers provide these other processing devices. They are keyed as to the type of equipment they produce.

# AUDIOTAPE RECORDER

Continuous Loop Cartridge Systems.

NAB "A" cartridge typically. Line level inputs (-20 to +8dBm), 7.5ips, remote-controlled all standard. 1kHz cue tone standard.

| Manufacturer               | Ampro/Scully                    |                           |                           | Audi-Cord Corporation     |                           |
|----------------------------|---------------------------------|---------------------------|---------------------------|---------------------------|---------------------------|
| Model Number               | 2505B                           | 3555B                     | 4595B                     | Modu-Cart 126             | A56 Twin Transport        |
| Stereo System              | .....                           | Yes                       | Yes                       | Yes                       | Yes                       |
| Record/Play                | ..... Play                      | Record/Play               | Record/Play               | Record/Play               | Record/Play               |
| Other Cart Sizes           | .....                           | B                         | B, C                      | Any                       | .....                     |
| Relay Inhibiting           | ..... Available                 | Available                 | Available                 | Yes                       | Yes                       |
| Microprocessor             | ..... No                        | No                        | No                        | No                        | No                        |
| Secondary Cue              | ..... 150Hz Standard            | 150Hz Standard            | 150Hz Standard            | 150Hz                     | 150Hz                     |
| Tertiary Cue               | ..... 8kHz Standard             | 8kHz Standard             | 8kHz Standard             | 8kHz                      | 8kHz                      |
| Starting Time              | ..... 0.1sec                    | .1sec                     | .1sec                     | .....                     | .....                     |
| Metering                   | .....                           | On Recorders              | On Recorders              | Yes                       | Yes                       |
| Recording Timer            | ..... Option                    | Option                    | Option                    | Option                    | .....                     |
| Motor Type/Drive           | ..... ac Synchronous/<br>Direct | ac Synchronous/<br>Direct | ac Synchronous/<br>Direct | ac Synchronous/<br>Direct | ac Synchronous/<br>Direct |
| Line Input (Ohms)          | .....                           | .....                     | .....                     | 5.1K Bal                  | 5.1K Bal                  |
| Output Load (Ohms)         | ..... 600 Bal                   | 600 Bal                   | 600 Bal                   | 600 Bal                   | 600 Load Bal              |
| Line Input Maximum         | .....                           | .....                     | .....                     | 2.5V                      | 2.5V                      |
| Output Level Maximum       | ..... +20dBm                    | +20dBm                    | +20dBm                    | +20dBm                    | +20dBm                    |
| Cue Output Form            | ..... Closure to Ground         | Closure to Ground         | Closure to Ground         | Closure, 100mA            | Closure, 100mA            |
| AF Response ( $\pm$ dB/Hz) | ..... 2, -4/30-18K              | 2, -4/30-18K              | 2, -4/30-18K              | 2/50-15K                  | 2/50-15K                  |
| Signal-to-Noise Ratio      | ..... 58dB                      | 58dB                      | 58dB                      | 46dB, 1kHz                | 46dB, 1kHz                |
| Crosstalk Cue-Pgm          | ..... -50dB                     | -50dB                     | -50dB                     | .....                     | .....                     |
| Harmonic Distortion        | ..... 0.3%, +18dBm              | .3%, +18dBm               | .3%, +18dBm               | .5%, +18dBm               | .5%, +18dBm               |
| Wow/Flutter                | ..... 0.15%                     | .15%                      | .15%                      | .15%                      | .15%                      |
| Dimensions (inches)        | ..... 5.25x6x17                 | 5.25x8.75x17              | 5.25x11.9x17              | 5.25x16x15                | 5.25x17.25x15             |
| Standard Package           | ..... Table-top                 | Table-top                 | Table-top                 | Table-top                 | Table-top                 |
| Related Models             | ..... CT2517B Stereo Play       | CT3535B Stereo Play       | CT4575B Stereo Play       | 100 Mono Play, 1-tone     | A51 Mono Record/Play      |
|                            | .....                           | CT3525B Mono Play         | CT4565B Mono Play         | 101 Mono Play, 3-tone     | A56-1, Mono on Left       |
|                            | .....                           | CT3545B Mono Rec/Play     | CT4585B Mono Rec/Play     | .....                     | .....                     |

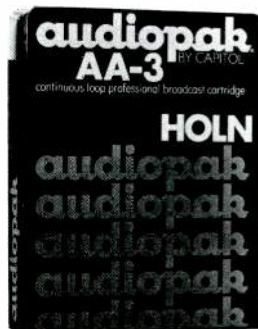
## "The Missing Link to Reliable Cart Music Reproduction Has Been the Cart...Not the Cart Machine."

I've been using the Audiopak AA-3 at various stations for over two years, with gratifying results.

The AA-3 is capable of studio master music reproduction with excellent stereo phase stability.

It is durable and reliable in performance throughout its long life.

In my opinion, the AA-3 is the best cart we've tested."



**Elliott Klein**

Corporate Director of Engineering,  
Buck Owens Broadcasting Group  
Chief Engineer, KNIX AM & FM,  
Phoenix, AZ  
Consultant to:  
Scripps-Howard Broadcasting Co.  
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Sunbelt Communications Ltd.  
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**AA-3-- THE MISSING LINK**  
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Circle (9) on Reply Card

# AUDIOTAPE RECORDER

| Manufacturer               | Broadcast Electronics Inc.                                       |   |  |  | D-B Electronics Inc.                                    |
|----------------------------|--|---|--|--|---|
| Model Number               | A36 3 Transport  | 2100RPS   | 5304B 3-Deck   | 5501 5-Deck  | DB-2131 2-Deck  |
| Stereo System              | Yes  | Yes   | Yes  | No   | Yes   |
| Record/Play                | Play   | Record/Play   | Play   | Play   | 1 Record/Play, 1 Play                                   |
| Other Cart Sizes           | .....  | B, C  | B  | .....  | B   |
| Relay Inhibiting           | Yes  | No  | No   | No   | No  |
| Microprocessor             | No   | No  | No   | No   | No  |
| Secondary Cue              | 150Hz  | 150Hz   | 150Hz  | .....  | 150Hz   |
| Tertiary Cue               | .8kHz  | 9kHz  | 8kHz   | .....  | 8kHz  |
| Starting Time              | .....  | .1sec   | .1sec  | .1sec  | .1sec   |
| Metering                   | Yes  | Yes   | No   | .....  | Yes   |
| Recording Timer            | .....  | No  | No   | No   | No  |
| Motor Type/Drive           | ac Synchronous/<br>Direct  | ac Synchronous/<br>Direct   | ac Synchronous/<br>Direct  | ac Synchronous/<br>Direct  | dc Hall<br>Servo/Direct                                 |
| Line Input (Ohms)          | .....  | 78K Bal   | .....  | .....  | 30K Bal   |
| Output Load (Ohms)         | 600 Load Bal   | 600 Load Bal  | 600 Bal  | 600  | 600 Unbal   |
| Line Input Maximum         | .....  | +20dBm  | .....  | .....  | +20dBm  |
| Output Level Maximum       | +20dBm   | +20dBm  | +20dBm   | +8dBm  | +18dBm  |
| Cue Output Form            | Closure, 100mA   | Closure   | Closure  | Closure  | Closure   |
| AF Response ( $\pm$ dB/Hz) | 2/50-15K   | 2/50-15K  | 2/50-15K   | 2/50-15K   | 2/50-15K  |
| Signal-to-Noise Ratio      | 46dB, 1kHz   | 60dB  | 60dB   | 62dB   | 52dB  |
| Crosstalk Cue-Pgm          | .....  | -55dB, 1kHz   | -50dB, 8kHz  | -50dB  | -50dB, 1kHz   |
| Harmonic Distortion        | .5%, +18dBm  | 2%  | 2%   | 2%   | 2%  |
| Wow/Flutter                | .0.15%   | .2%   | .2%  | .15%   | .15%  |
| Dimensions (inches)        | 5.25x5.75x16   | 5.25x5.9x15.5   | 10.7x8.7x13.5  | 14.75x5.75x17  | 9x8.2x17.2  |
| Standard Package           | Table-top  | Table-top   | Table-top  | Table-top  | Table-top   |
| Related Models             | A31 Mono Play, 3-tone<br>A30 Mono Play, 1-tone<br>.....<br>..... | 2100PS Stereo Play<br>2100 RP Mono<br>Record/Play<br>2100P Mono Play<br>..... | 5302 Mono with tones<br>5303 Stereo without<br>tones<br>5301 Mono without<br>tones | 5502 Mono Play with<br>tones<br>5503 Stereo Play<br>5504 Stereo Play with<br>tones | DB2000 Series Mono<br>2 Play<br>.....<br>.....<br>..... |

| Manufacturer               | D-B Electronics                       |                              | Harris Communications           |                                    |                                    |
|----------------------------|---------------------------------------|------------------------------|---------------------------------|------------------------------------|------------------------------------|
| Model Number               | DB-3101 3-Deck                        | DB-1000 Series               | Criterion 90-1                  | Criterion 90-2                     | Criterion 90-3 3-Deck              |
| Stereo System              | Yes                                   | No                           | Yes                             | Yes                                | Yes                                |
| Record/Play                | 1 Record/Play, 2 Play                 | Play                         | Play Only                       | Record/Play                        | Play Only                          |
| Other Cart Sizes           | B                                     | B                            | B, BB                           | B, BB, C, CC                       | B, BB                              |
| Relay Inhibiting           | No                                    | No                           | No                              | No                                 | No                                 |
| Microprocessor             | No                                    | No                           | No                              | No                                 | No                                 |
| Secondary Cue              | .....                                 | .....                        | 150Hz                           | 150Hz                              | 150Hz Option                       |
| Tertiary Cue               | .....                                 | .....                        | 8kHz                            | 8kHz Option                        | 8kHz Option                        |
| Starting Time              | .0.1sec                               | 0.1sec                       | Adjustable                      | Adjustable                         | Adjustable                         |
| Metering                   | Yes                                   | .....                        | .....                           | Yes                                | .....                              |
| Recording Timer            | No                                    | .....                        | No                              | No                                 | No                                 |
| Motor Type/Drive           | dc Hall<br>Servo/Direct               | dc Hall<br>Servo/Direct      | ac Synchronous/<br>Direct       | ac Synchronous/<br>Direct          | ac Synchronous/<br>Direct          |
| Line Input (Ohms)          | 30K Bal                               | .....                        | .....                           | 600 Bal                            | .....                              |
| Output Load (Ohms)         | 600 Unbal                             | 600 Unbal                    | 600 Bal                         | 600 Bal                            | 600 Bal                            |
| Line Input Maximum         | +20dBm                                | .....                        | .....                           | +18dBm                             | .....                              |
| Output Level Maximum       | +18dBm                                | +18dBm                       | +18dBm                          | +18dBm                             | +18dBm                             |
| Cue Output Form            | Closure                               | Closure                      | Closure                         | Closure                            | .....                              |
| AF Response ( $\pm$ dB/Hz) | 2/50-15K                              | 2/50-15K                     | 1, -4/50-16K Overall            | 1, -4/50-16K                       | 3, -2/50-15K                       |
| Signal-to-Noise Ratio      | 52dB                                  | 54dB                         | 50dB                            | 50dB                               | 50dB                               |
| Crosstalk Cue-Pgm          | -50dB, 1kHz                           | -50dB, 1kHz                  | -50dB, 1kHz                     | -50dB, 1kHz                        | -50dB, 1kHz                        |
| Harmonic Distortion        | 2%                                    | 2%                           | 1.5%, 1kHz                      | 1.5%, 1kHz                         | 1.5%, 1kHz                         |
| Wow/Flutter                | 0.15%                                 | .15%                         | .15%                            | .15%                               | .15%                               |
| Dimensions (inches)        | .....                                 | .....                        | 5.3x8.6x14.1                    | 5.3x17.3x14.1                      | 11.2x8.8x13.5                      |
| Standard Package           | Table-top                             | Table-top                    | Table-top                       | Table-top                          | Table-top                          |
| Related Models             | DB3000 Series Mono<br>3 Play<br>..... | DB-1100 Stereo Play<br>..... | Available also in Mono<br>..... | Available also in<br>Mono<br>..... | Available also in<br>Mono<br>..... |

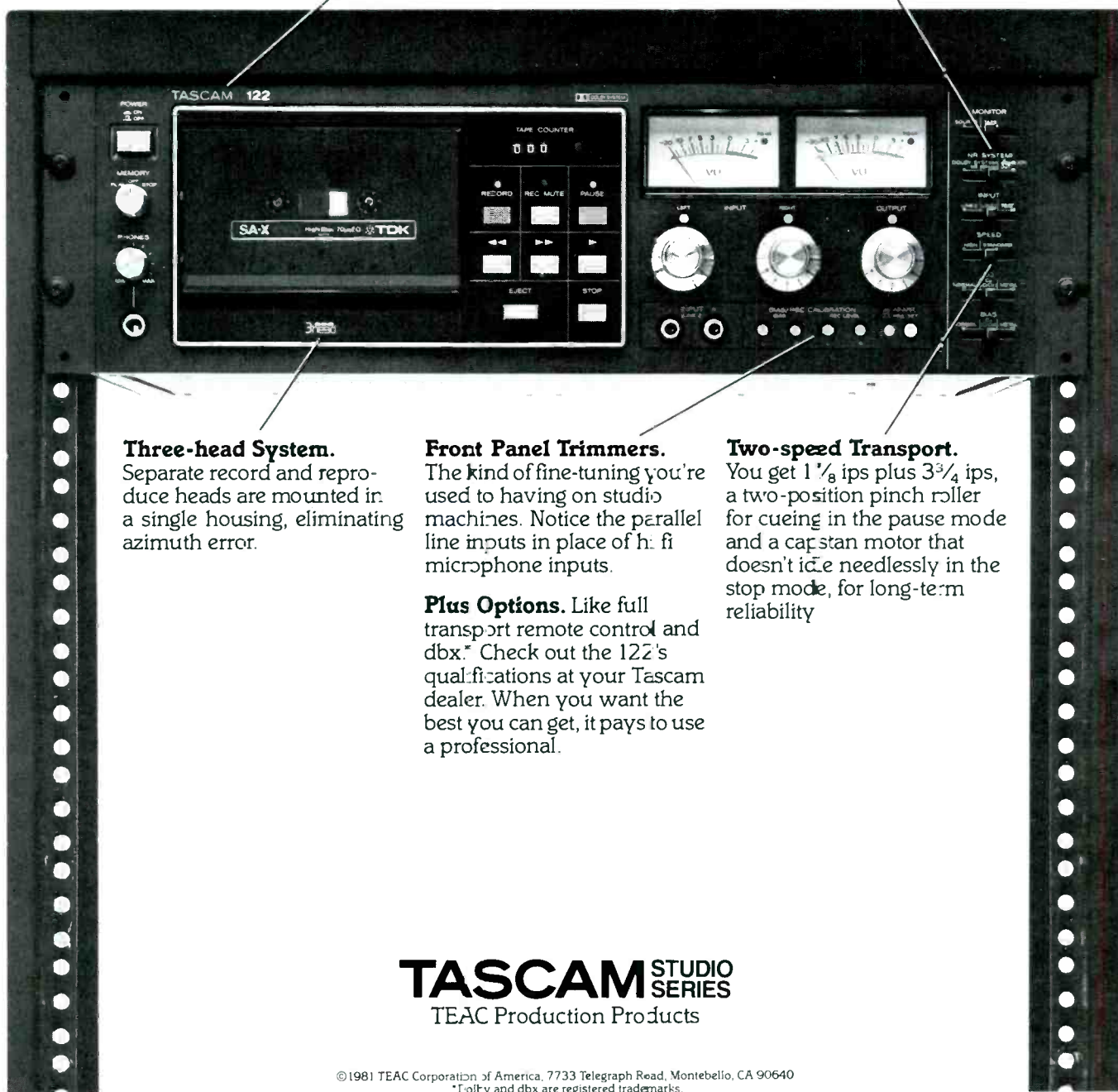
# FOR PROFESSIONAL USE ONLY.

## THE TASCAM 122 STUDIO CASSETTE RECORDER.

**Tascam.** Now we've designed a cassette recorder for the studio. One that has everything you need to reproduce your studio sound faithfully.

Performance plus a combination of features makes the 122 a tool of the trade, not a plaything.

**Dolby Headroom Extension.** Gives you up to 10dB more headroom over 10 kHz. Cassette dubs end up hotter, fuller, cleaner when played back on any standard Dolby\* B deck.



### Three-head System.

Separate record and reproduce heads are mounted in a single housing, eliminating azimuth error.

### Front Panel Trimmers.

The kind of fine-tuning you're used to having on studio machines. Notice the parallel line inputs in place of hi fi microphone inputs.

**Plus Options.** Like full transport remote control and dbx.\* Check out the 122's qualifications at your Tascam dealer. When you want the best you can get, it pays to use a professional.

### Two-speed Transport.

You get 1 1/8 ips plus 3 3/4 ips, a two-position pinch roller for cueing in the pause mode and a capstan motor that doesn't idle needlessly in the stop mode, for long-term reliability.

**TASCAM** STUDIO SERIES  
TEAC Production Products

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# AUDIOTAPE RECORDER

| Manufacturer               | International Tapetronics                              | Pacific Recorders & Eng.  | Scully   |  |                         |
|----------------------------|--|---------------------------|--|--|-------------------------|
| <b>Model Number</b>        | <b>Series 99</b>                                       | <b>PD-II</b>              | <b>3D-0004 3-Deck</b>                                  | <b>Tom Cat</b>   | <b>8300-0322 3-Deck</b> |
| Stereo System              | Yes  | No                        | Yes  | Yes*   | Yes                     |
| Record/Play                | Record/Play  | Play Only                 | Record/Play  | Record/Play  | Play Only               |
| Other Cart Sizes           | B  | .....                     | B  | No   | B, AA, BB               |
| Relay Inhibiting           | Yes  | No                        | No   | Yes  | Yes                     |
| Microprocessor             | Yes  | No                        | No   | Yes  | No                      |
| Secondary Cue              | 150Hz  | 150Hz Option              | 150Hz  | 150Hz  | 150Hz                   |
| Tertiary Cue               | 8kHz   | 8kHz Option               | 8kHz   | 8kHz   | 8kHz Option             |
| Starting Time              | .1sec  | .1sec                     | .1sec  | 0.1sec   | .....                   |
| Metering                   | Yes  | .....                     | On WRA Section   | Yes  | .....                   |
| Recording Timer            | No   | No                        | No   | No   | .....                   |
| Motor Type/Drive           | dc Servo/Direct  | ac Synchronous/<br>Direct | ac Synchronous/<br>Direct                              | dc Servo/Direct  | dc Servo/Direct         |
| Line Input (Ohms)          | 18K Bal  | 600 Bal<br>(600 Bal)*     | 600 Bal  | 200 Bal  | .....                   |
| Output Load (Ohms)         | 600 Bal  | 600 Bal                   | 600 Bal  | 600 Load Bal   | 600                     |
| Line Input Maximum         | + 10dBm  | 0dBm                      | 0dBm   | + 9dBm   | .....                   |
| Output Level Maximum       | + 25dBm  | + 15dBm                   | + 18dBm  | + 25dBm, 600 Ohm   | + 22dBm                 |
| Cue Output Form            | Closure  | .....                     | .....  | Closure, dc Level  | .....                   |
| AF Response ( $\pm$ dB/Hz) | 1/31.5-16K   | 2/50-15K                  | 2/50-15K   | 0.1, - 1/40-16K  | 2/50-15K                |
| Signal-to-Noise Ratio      | 52dB   | 52dB                      | 50dB   | 59dB   | 50dB                    |
| Crosstalk Cue-Pgm          | 50dB, 1kHz   | 50dB, 1kHz                | 50dB, 1kHz   | - 60dB   | - 55dB, 1kHz            |
| Harmonic Distortion        | 1.5%, 0VU  | 2%, 0VU                   | 2%   | 0.9%   | .5%                     |
| Wow/Flutter                | 0.12%  | .2%                       | .2%  | 0.1%   | .15%                    |
| Dimensions (inches)        | 5.25x8.5x15.5  | 5.25x5.75x15              | 1.05x8.5x12.9  | 5.25x19x15   | 10.4x8.6x13.5           |
| Standard Package           | Table-top  | Table-top                 | Table-top  | Table-top  | Table-top               |
| Related Models             | Play Only Stereo<br>Record/Play Mono<br>Play Only Mono | Record/Play Unit          | Play Only Stereo<br>Record/Play Mono<br>Play Only Mono | *Not compatible with<br>other machines. The<br>format may be L + R<br>or L-R Stereo Matrixed | -0321 Mono              |

| Manufacturer               | Telex/Magnacord            | UMC Electronics Corporation |  |  |  |
|----------------------------|----------------------------|-----------------------------|--|--|--|
| <b>Model Number</b>        | <b>MC-PR3</b>              | <b>MC-PRS3</b>              | <b>Beaucart II</b>                         | <b>Beaucart 300 3-Deck</b>                 | <b>Beaucart 200</b>                        |
| Stereo System              | No                         | Yes                         | Stereo                                     | Stereo                                     | Stereo                                     |
| Record/Play                | Play Only                  | Record/Play                 | Record/Play                                | 1 Record/Play, 2 Play                      | Record/Play                                |
| Other Cart Sizes           | B                          | B                           | No   | No   | B, C                                       |
| Relay Inhibiting           | Yes                        | Yes                         | No   | No   | No   |
| Microprocessor             | No                         | No                          | No   | No   | No   |
| Secondary Cue              | 150Hz                      | 150Hz                       | .....                                      | 150Hz Option                               | 150Hz Option                               |
| Tertiary Cue               | 8kHz                       | 8kHz                        | .....                                      | 8kHz Option                                | 8kHz Option                                |
| Starting Time              | 0.1 sec                    | .1sec                       | .12sec                                     | .12sec                                     | .12sec                                     |
| Metering                   | .....                      | Yes                         | Yes  | Yes  | Yes  |
| Recording Timer            | .....                      | No                          | No   | No   | No   |
| Motor Type/Drive           | dc Hall Servo/Belt         | dc Hall Servo/Belt          | ac Synchronous/Direct                      | ac Synchronous/Direct                      | ac Synchronous/Direct                      |
| Line Input (Ohms)          | .....                      | 100K                        | 600 Bal                                    | 600 Bal                                    | 600 Bal                                    |
| Output Load (Ohms)         | 150, 600                   | 150, 600                    | 600  | 600  | 600  |
| Line Input Maximum         | .....                      | + 18dBm                     | 0dBm                                       | 0dBm                                       | 0dBm                                       |
| Output Level Maximum       | + 20dBm                    | + 20dBm                     | + 18dBm                                    | + 18dBm                                    | + 18dBm                                    |
| Cue Output Form            | Closure                    | Closure                     | Closure                                    | Closure                                    | Closure                                    |
| AF Response ( $\pm$ dB/Hz) | 1/50-15K                   | 1/50-15K                    | 2/50-15K Overall                           | 2/50-15K Overall                           | 2/50-15K Overall                           |
| Signal-to-Noise Ratio      | 48dB                       | 50dB                        | 55dB                                       | 55dB                                       | 55dB                                       |
| Crosstalk Cue-Pgm          | - 50dB                     | - 50dB, 1kHz                | - 50dB                                     | - 50dB                                     | - 50dB                                     |
| Harmonic Distortion        | 0.5%                       | .5%                         | .5%  | .5%  | .5%  |
| Wow/Flutter                | 0.12%                      | .12%                        | .15%                                       | .15%                                       | .15%                                       |
| Dimensions (inches)        | 5x8.5x14.7                 | 5x8.5x14.7                  | 5.25x5.75x15                               | 10.5x8.5x13                                | 3.6x10.2x13.2                              |
| Standard Package           | Table-top                  | Table-top                   | Table-top                                  | Table-top                                  | Table-top                                  |
| Related Models             | MC-PR3 Mono<br>Record/Play | MC-PS3 Stereo Play          | Models available for<br>Mono and Play Only | Models available for<br>Mono and Play Only | Models available for<br>Mono and Play Only |



# Familiarity breeds respect.

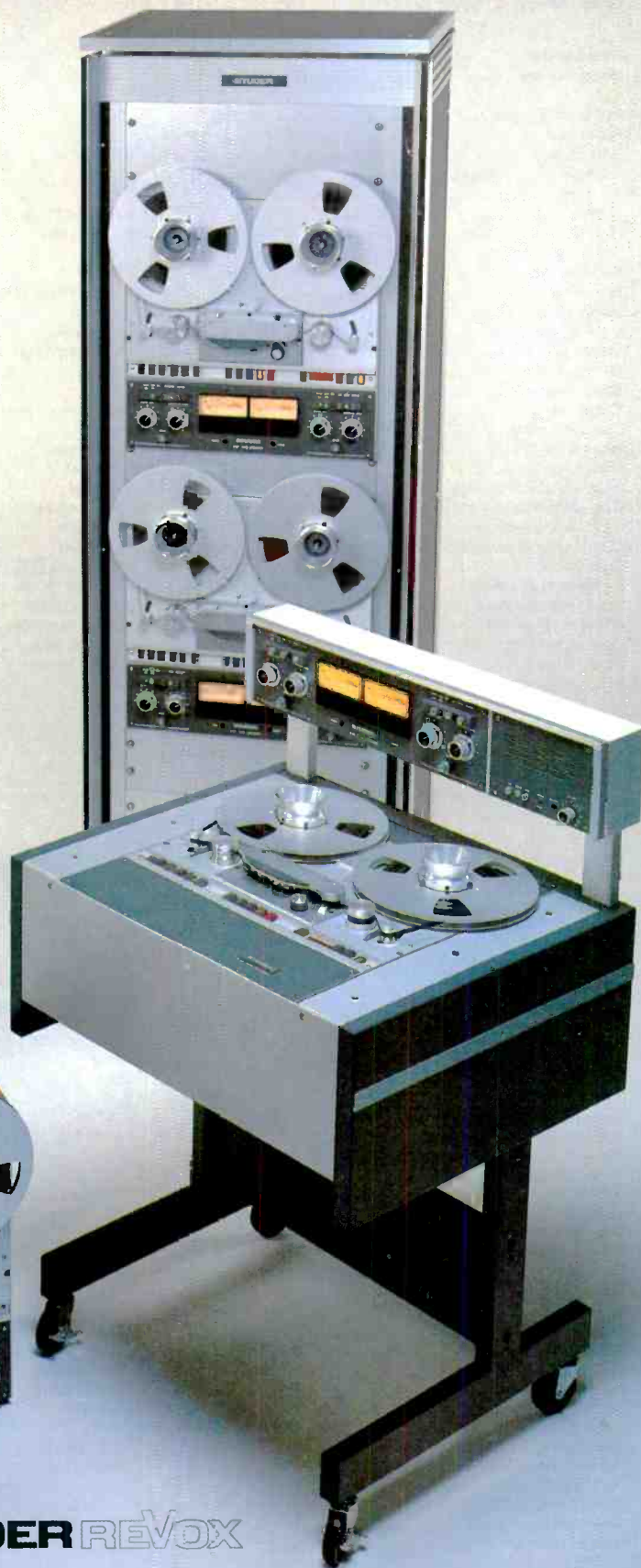
You'll appreciate the Studer B67 MKII from the day it arrives at the station. After several years of hard use, your appreciation will turn to deep respect.

From the beginning, you'll appreciate Studer performance. You'll notice the solidity of the transport, the smoothness of the tape-handling, and the positive feel of the control mechanisms. And you'll hear the sonic clarity you expect from a Studer.

Soon you'll grow accustomed to the features: three speed (15/7.5/3.75 or 30/15/7.5 ips) operation, quartz PLL capstan drive, servo controlled spooling motors, real time counter with plus or minus readout, fader start, dump edit, and auto repeat. Improvements on the B67 MKII include locking tension sensor arms and better head access for easier edits. Full remote and vari-speed available as options.

Finally, as the months turn to years, you'll gain great respect for the B67 MKII's thoughtful design and meticulous Swiss craftsmanship.

Studer professional recorders. Respected worldwide for exceptional reliability and unmatched quality.



**STUDER** REVOX

Studer Revox America, Inc. / 1425 Elm Hill Pike, Nashville, TN 37210 (615) 254-5651  
Offices: Los Angeles (213) 780-4234 / New York (212) 255-4462 • Canada: Studer Revox Canada, Ltd.

# AUDIOTAPE RECORDER

Reel-to-Reel.

Studio installation. For use with line level signals (-20 to +8dBm range) as inputs and +8dBm output typical. Analog technology, 115Vac powered, for recording and reproducing.

| Manufacturer               | Model Number              | Ampex Corporation       |                        |                    |                        |
|----------------------------|---------------------------|-------------------------|------------------------|--------------------|------------------------|
|                            |                           | ATR-124                 | ATR-100                | ATR-700            | AG-440C                |
|                            | <b>AKAI America, Ltd.</b> |                         |                        |                    |                        |
|                            | <b>GX-625 Deck</b>        |                         |                        |                    |                        |
| Number of Tracks           | 4 (2-channel)             | 8: 16, 24               | 1, 2: 4                | 2                  | 1, 2, 4: 4             |
| Tape Width                 | 1/4-inch                  | 1-inch, 2-inch          | 1/4-inch, 1/2-inch     | 1/4-inch           | 1/4-inch, 1/2-inch     |
| Tape Speeds                | 2                         | 3                       | 2 of 4 Possible        | 2 (or High Pass)   | 2                      |
| 3 1/2 ips                  | Yes                       | .....                   | .....                  | Yes                | .....                  |
| 7 1/2 ips                  | Yes                       | Yes                     | .....                  | Yes                | Yes                    |
| 15 ips                     | .....                     | Yes and 30ips           | Also 30ips Possible    | .....              | Yes                    |
| Pitch Control              | 12% Range                 | -50, +200%              | Option -50, +250%      | .....              | .....                  |
| Reel Size Maximum          | 10.5 in                   | 16 in                   | To 14 in               | 10.5 in            | 10.5 (11.5) in         |
| Reel Hub Type              | NAB                       | NAB                     | NAB, EIA               | NAD, ANSI          | NAB, EIA (IEC, CCIR)   |
| Start Time                 | .....                     | .5sec, 30ips, 10.5 reel | 0.5sec, 30ips          | .....              | .3sec, 15ips           |
| Heads/Type                 | 3/GX                      | 3/metal                 | 3 Composite Ferrite    | 3                  | 3                      |
| Motors/Type                | ac Servo, 2 Eddy          | 3 dc Servo              | 3 Servo                | dc Servo Capstan   | 3 with Servo Capstan   |
| Metering                   | Yes                       | Yes, Each Channel       | Yes, Each Channel      | Yes, Each Channel  | Yes, Each Channel      |
| Remote Control             | RC18 or RC70 Infrared     | Yes                     | Yes                    | Yes                | Yes                    |
| Editor Interface           | No                        | No                      | ECCO Synchronizer      | No                 | No                     |
| Tape Timer                 | Electronic Digital        | Electronic, Tape Drive  | Electronic, Tape Drive | Mechanical, Memory | No                     |
| Cueing Possible            | Yes                       | Yes                     | Yes                    | Yes                | Yes                    |
| Braking Method             | Electronic, Mechanical    | Electronic              | Electronic             | Electronic         | Electronic             |
| Packaging                  | Table-top                 | Console                 | Cabinet or Pedestal    | Table or Rack      | Cabinet                |
| Input Impedance (Ohms)     | 2.4K                      | 20K Bal                 | 10K Unbal              | 100K Unbal         | 20K Bal                |
| Output Impedance (Ohms)    | 20K Load                  | 600 Load Bal            | 5K Load Unbal          | 600 Bal            | 600 Load Bal           |
| Input Level Maximum        | 70mV Nominal              | +16dBm                  | +40dBm                 | .....              | +17dBm                 |
| Output Level Maximum       | 0.775V, 0VU Nominal       | +28dBm                  | +28dB                  | +24dBm             | +28dBm                 |
| Equalization               | .....                     | AES, NAB, IEC, CCIR     | AES, IEC, CCIR, NAB    | NAB                | NAB, IEC, CCIR         |
| AF Response ( $\pm$ dB/Hz) | 3/30-26K, 7.5 in          | 2/40-30K, 30ips         | 2/35-28K, 30ips        | 3/40-18K, 15ips    | 2/30-20K, 15ips        |
| Signal-to-Noise Ratio      | 62dB                      | 69dB, 24-track          | 72dB, 30ips            | 55dB               | 60dB, 15ips, 1/4 Track |
| Harmonic Distortion        | 0.5%                      | 3%, +9Vu, 1kHz          | 0.03%, +28dB           | .3%, 15ips, 400Hz  | .4%, 500Hz             |
| Crosstalk (Worst Case)     | .....                     | -50dB, 15ips            | 45dB, 100Hz            | .....              | .....                  |
| Wow/Flutter                | 0.03%                     | .04%, 30ips             | 0.03%, 30ips, NAB      | .08%, 15ips, NAB   | .1%, ANSI, 15ips       |
| Related Models             | .....                     | .....                   | .....                  | .....              | .....                  |

| Manufacturer               | Model Number           | MCI                |                       |                       |
|----------------------------|------------------------|--------------------|-----------------------|-----------------------|
|                            |                        | JH-24-18           | JH-110C-8             | JH-110BX              |
|                            | <b>Neal Ferrograph</b> |                    |                       |                       |
|                            | <b>USA Inc.</b>        |                    |                       |                       |
|                            | <b>SP7S</b>            |                    |                       |                       |
| Number of Tracks           | 4 (2-channel)          | 4 (2-channel)      | 8                     | 2                     |
| Tape Width                 | 1/4-inch               | 1/4-inch           | 1-inch                | 1/4-inch              |
| Tape Speeds                | 3                      | 2 (or High Pass)   | 3                     | 2                     |
| 3 1/2 ips                  | Yes                    | Yes                | .....                 | .....                 |
| 7 1/2 ips                  | Yes                    | Yes                | Yes                   | Yes                   |
| 15 ips                     | Yes                    | Yes                | And 30ips             | Yes                   |
| Pitch Control              | From 2 to 16ips        | .....              | 40% Range             | 40% Range             |
| Reel Size Maximum          | 10.5 in                | 10.5 in            | 14 in                 | 10.5 (11.5) in        |
| Reel Hub Type              | NAB, EIA               | NAB, EIA           | NAB                   | NAB B (DIN)           |
| Start Time                 | 0.1sec                 | .....              | .1% DIN 44507         | .1% DIN 44507         |
| Heads/Type                 | 3                      | 3                  | 3                     | 3                     |
| Motors/Type                | 3, Servo Capstan       | 3 Servo Capstan    | dc Servo Capstan      | dc Servo Capstan      |
| Metering                   | Yes, Each Channel      | Yes, Each Channel  | Yes, Each Channel     | Yes, Each Channel     |
| Remote Control             | Yes                    | Yes                | Yes, Autolocator III  | Yes, Autolocator III  |
| Editor Interface           | No                     | No                 | Yes, Synchronizer     | Yes, Synchronizer     |
| Tape Timer                 | Mechanical             | .....              | .....                 | .....                 |
| Cueing Possible            | Yes                    | Yes                | Yes                   | Yes                   |
| Braking Method             | Electronic             | Disc               | Electronic            | Electronic            |
| Packaging                  | Cabinet or Rack        | Cabinet or Rack    | Console               | Console               |
| Input Impedance (Ohms)     | 20K Bal                | 5K Bal             | 10K Bal               | 10K Bal               |
| Output Impedance (Ohms)    | 50 Bal                 | 600 Load Bal       | 120 Source Bal        | 120 Source Bal        |
| Input Level Maximum        | 5V                     | 1.96V (+8dBm)      | .....                 | .....                 |
| Output Level Maximum       | 2V                     | +24dBm             | +24dBm                | +24dBm                |
| Equalization               | DIN-H, IEC, CCIR, NAB  | NAB                | NAB, IEC              | NAB, IEC              |
| AF Response ( $\pm$ dB/Hz) | 2/30-20K, 15ips        | 2/35-18K, 15ips    | 1.5, -3/36-26K, 30ips | .75, -2/40-28K, 30ips |
| Signal-to-Noise Ratio      | 60dB                   | 52dB, 700Hz, +8dBm | 67dB, 30ips           | 66dB, 30ips           |
| Harmonic Distortion        | 2%                     | .5%, +18dBm, 1kHz  | 0.35%                 | .35%                  |
| Crosstalk (Worst Case)     | -75dB, 1kHz            | -55dB, 1kHz        | .....                 | .....                 |
| Wow/Flutter                | 0.07%, 15ips, DIN      | .05%, 15ips, NAB   | 0.03%, 30ips          | .015%, 30ips          |
| Related Models             | .....                  | .....              | JH-24-8, JH-24-24     | JH-110-8/4UM          |
|                            |                        |                    |                       | JH-110BX-1UM          |

# AUDIOTAPE RECORDER

| Manufacturer               | Otari Corporation           |                             |                    |                   | ReVox                     |
|----------------------------|-----------------------------|-----------------------------|--------------------|-------------------|---------------------------|
| Model Number               | 5050BQ-Series II            | Mark II                     | MTR-10-2           | MX7800            | A80VU MKIII,<br>A80VU-8-1 |
| Number of Tracks           | 4                           | 4                           | 2-channel          | 8-channel         | 8                         |
| Tape Width                 | 1/4-inch                    | 1/2-inch                    | 1/4-inch           | 1-inch            | 1-inch                    |
| Tape Speeds                | 2 (or High Pair)            | 2                           | 3 (or High Option) | 2                 | 2 (or High Option)        |
| 3 3/4ips                   | Yes                         | .....                       | Yes                | .....             | .....                     |
| 7 1/2ips                   | Yes                         | Yes                         | Yes                | .....             | Yes                       |
| 15ips                      | .....                       | Yes                         | Yes                | And 30ips         | Yes                       |
| Pitch Control              | 14% Range                   | 14% Range                   | 40% Range          | 24% Range         | 14 Semitone Range         |
| Reel Size Maximum          | 10.5 in                     | 10.5 in                     | 10.5 in            | 10.5 in           | 10.5 in                   |
| Reel Hub Type              | NAB, EIA                    | NAB                         | NAB                | NAB               | NAB                       |
| Start Time                 | .....                       | .....                       | .....              | .5sec, 15ips      | .5sec                     |
| Heads/Type                 | 2E, 1R, 1P                  | 3                           | 3                  | 3                 | 3                         |
| Motors/Type                | dc Servo,<br>2 Induction    | dc Servo,<br>2 Induction    | Servo PLL Capstan  | dc Servo Capstan  | 3, Servo Capstan          |
| Metering                   | Yes, Each Channel           | Yes, Each Channel           | Yes, Each Channel  | Yes, Each Channel | Yes, Each Channel         |
| Remote Control             | Yes, Option                 | Yes, Option                 | Yes                | Yes               | Yes                       |
| Editor Interface           | .....                       | .....                       | Possible           | Possible          | Yes                       |
| Tape Timer                 | Electronic                  | .....                       | Electronic         | Option            | Electronic                |
| Cueing Possible            | Yes                         | Yes                         | Yes                | Yes               | Yes                       |
| Braking Method             | Electronic                  | Electronic                  | Electronic         | Electronic        | Electronic                |
| Packaging                  | Console, Rack,<br>Table-top | Table-top, Floor<br>Console | Console, Casters   | Console           | Console                   |
| Input Impedance (Ohms)     | 600 Bal                     | 600 Bal                     | 20K Bal            | 10K Unbal         | 8K Bal                    |
| Output Impedance (Ohms)    | 20 Source Unbal             | 600 Bal                     | 600 Load           | 600 Load Bal      | 600 Load Bal              |
| Input Level Maximum        | .....                       | .....                       | .....              | .....             | + 22dBm                   |
| Output Level Maximum       | + 22dBm                     | + 19dBm                     | + 28dBm            | + 20dBm           | + 24dBm                   |
| Equalization               | NAB                         | NAB                         | NAB, IEC, AES      | NAB               | NAB, CCIR                 |
| AF Response ( $\pm$ dB/Hz) | 2/30-20K, 15ips             | 2/50-22K, 15ips             | 2/30-20K, 15ips    | 2/50-25K, 30ips   | 2/60-20K, 30ips           |
| Signal-to-Noise Ratio      | 60dB, 15ips                 | 65dB, 15ips                 | 65dB, NAB, 15ips   | 66dB, 30ips       | 72dB, 30ips               |
| Harmonic Distortion        | 0.7%, 1kHz                  | 1%, 1kHz                    | .3%, 1kHz          | .7%, 1kHz         | 1% max                    |
| Crosstalk (Worst Case)     | 60dB, 1kHz                  | 60dB, 1kHz                  | 65dB, 1/4 in, 1kHz | .....             | - 40dB                    |
| Wow/Flutter                | 0.05%, 15ips                | .05%, 15ips                 | .06%, 15ips        | .04%, 30ips       | .04%                      |
| Related Models             | .....                       | Mark II, 2-channel          | MTR-10-4           | .....             | A80VU-24-2<br>A80VU-16-2  |

| Manufacturer               | Revox                 |                           |                        | Scully                     |  |
|----------------------------|-----------------------|---------------------------|------------------------|----------------------------|--|
| Model Number               | B77 Std MK II         | PR99-2/2 STD              | A800-8-1               | A80RC-1                    | 255 Reproducer   |
| Number of Tracks           | 2                     | 2                         | 8                      | 1                          | 4 (2-channel)  |
| Tape Width                 | 1/4-inch              | 1/4-inch                  | 1-inch                 | 1/4-inch                   | 1/4-inch   |
| Tape Speeds                | 2                     | 2 (or High Option)        | 2 (or High Pair)       | 2                          | 1  |
| 3 3/4ips                   | Yes                   | Yes                       | .....                  | .....                      | Option   |
| 7 1/2ips                   | Yes                   | Yes                       | Yes                    | Yes                        | Standard   |
| 15ips                      | .....                 | .....                     | Yes                    | Yes                        | .....  |
| Pitch Control              | 2.5-11ips Option      | 2.5-11ips Option          | - 34, + 50%            | 14 Semitone Range          | Option   |
| Reel Size Maximum          | 10.5ips               | 10.5 in                   | 14 in                  | 14 in                      | 10.5 in  |
| Reel Hub Type              | NAB, EIA              | NAB, EIA                  | NAB                    | NAB, EIA, DIN              | NAB  |
| Start Time                 | .....                 | .5sec                     | .....                  | .5sec                      | .....  |
| Heads/Type                 | 3                     | 3                         | 3                      | 3                          | .....  |
| Motors/Type                | 3, Servo Capstan      | 3, Servo Capstan          | 3, Servo Capstan       | 3, Servo Capstan           | 3, Hysteresis<br>and Torque                                  |
| Metering                   | Yes, Each Channel     | Yes, Each Channel         | Yes, Each Channel      | Yes, Each Channel          | .....  |
| Remote Control             | Available             | Yes                       | Yes                    | Yes                        | Option   |
| Editor Interface           | .....                 | .....                     | Yes                    | Yes                        | .....  |
| Tape Timer                 | Mechanical            | Mechanical                | Electronic             | Electronic                 | .....  |
| Cueing Possible            | Yes                   | Yes                       | Yes                    | Yes                        | Yes, Also 25Hz Tone  |
| Braking Method             | Electronic            | Electronic                | Electronic             | Electronic                 | Differential Spot  |
| Packaging                  | Table-top, Rack       | Table-top, Rack           | Console                | Console                    | Rack   |
| Input Impedance (Ohms)     | 220K                  | 5K Bal                    | 8K Bal                 | 8K Bal                     | .....  |
| Output Impedance (Ohms)    | 390 Source            | 50 Source Bal             | 600 Load Bal           | 600 Load Bal               | 600 Bal  |
| Input Level Maximum        | 40mV Nominal          | + 22dBu                   | + 24dBm                | + 22dBm                    | .....  |
| Output Level Maximum       | 1.55V                 | + 22dBu, 600 Ohm          | + 24dBm                | + 24dBm                    | + 17dBm  |
| Equalization               | NAB                   | NAB                       | NAB, CCIR              | NAB, CCIR                  | NAB, IEC   |
| AF Response ( $\pm$ dB/Hz) | 2, - 3/30-20K, 7.5ips | 2, - 3/30-20K, 7.5ips     | 2/30-20K, 15ips        | 2/50-20K, 30ips            | 2/50-15K, 7.5ips   |
| Signal-to-Noise Ratio      | 67dB, 7.5ips          | 66dB, 7.5ips              | 70dB, 15ips            | 67dB, 30ips                | - 74dB, ANSI   |
| Harmonic Distortion        | 0.6% 0VU              | 1.5% 0VU + 6dB,<br>7.5ips | 1% max                 | 1% max                     | .2%, + 4dBm  |
| Crosstalk (Worst Case)     | - 45dB                | - 45dB, 1kHz              | - 40dB                 | .....                      | .....  |
| Wow/Flutter                | 0.08%, 7.5ips         | .08%, 7.5ips              | .04%                   | .04%                       | .05%, 7.5ips   |
| Related Models             | B77 Series offers     | PR99 Series offers        | A800-16-2<br>A800-24-2 | A80RC-2/2<br>A80RC-.75-SVU | 255 Automation<br>player also available<br>in 1- or 2-track. |

See Studer Revox advertisement on page 31.

# AUDIOTAPE RECORDER

| Manufacturer               | Scully                                      | Soundcraft                  | Stellavox            | Studer                  |   |
|----------------------------|---|-----------------------------|----------------------|-------------------------|---|
| Model Number               | 284B  | 270 Reproducer              | SCM 381-8            | TD 88                   | B76-2/2                                 |
| Number of Tracks           | 8   | 4 (2-channel)               | 8                    | 8                       | 2                                       |
| Tape Width                 | 1-inch                                      | 1/4-inch                    | 1-inch               | 1/4-inch                | 1/4-inch                                |
| Tape Speeds                | 2 (or 2x, 4x Pairs)                         | 2 (or High Pair)            | 1 (Others Available) | 4                       | 3 (or High Option)                      |
| 3 1/4 ips                  | Yes   | Yes                         | .....                | Yes                     | Yes                                     |
| 7 1/2 ips                  | Yes   | Yes                         | .....                | Yes                     | Yes                                     |
| 15ips                      | .....                                       | .....                       | Yes                  | Yes and 30ips           | Yes                                     |
| Pitch Control              | Yes   | .....                       | + 15, -50%           | .....                   | Available Option                        |
| Reel Size Maximum          | 14 in                                       | 14 in                       | .....                | 12 in                   | 11.1 in                                 |
| Reel Hub Type              | NAB   | NAB                         | .....                | NAB, DIN, EIA           | NAB, DIN                                |
| Start Time                 | .....                                       | .1sec                       | .....                | .5sec                   | 0.5sec                                  |
| Heads/Type                 | 3   | .....                       | 3                    | 3                       | 3                                       |
| Motors/Type                | dc Servo Capstan, 2 ac                      | ac                          | 3, dc Servo Capstan  | 3 dc, Capstan Servo     | 3, Servo Capstan                        |
| Metering                   | Yes, Each Channel                           | .....                       | Yes, Each Channel    | .....                   | Yes, Each Channel                       |
| Remote Control             | Available                                   | Option                      | Available            | .....                   | Yes                                     |
| Editor Interface           | .....                                       | .....                       | .....                | .....                   | .....                                   |
| Tape Timer                 | Electronic                                  | .....                       | Electronic           | Electronic              | Mechanical                              |
| Cueing Possible            | Yes   | .....                       | Yes                  | Yes                     | Yes                                     |
| Braking Method             | Dynamic and Disc                            | Disc                        | Electronic           | Integrated              | Electronic                              |
| Packaging                  | Console                                     | Rack                        | Table-top or Console | Portable Case           | Console, Table-top, Rack                |
| Input Impedance (Ohms)     | 10K   | .....                       | 10K                  | 10K Bal                 | 5K Bal                                  |
| Output Impedance (Ohms)    | 60 Source                                   | 600 Bal                     | 600 Load             | 50 Source Bal           | 50 Source Bal                           |
| Input Level Maximum        | 200mV min                                   | .....                       | + 20dBm              | 7-10V                   | + 22dBm                                 |
| Output Level Maximum       | + 24dBm, 600 Ohm                            | + 18dBm                     | + 22dBm              | 1.5-4.4V                | + 22dBm, 600 Ohm                        |
| Equalization               | NAB, AES                                    | NAB                         | .....                | NAB, IEC                | NAB, CCIR                               |
| AF Response ( $\pm$ dB/Hz) | 2/30-18K                                    | 2/50-15K, 7.5ips            | 1, -2/30-20K         | 2/30-20K, 15ips         | 2/40-20K, 30ips                         |
| Signal-to-Noise Ratio      | - 68dB, 7.5ips                              | 58dB                        | 63dB                 | 65dB                    | 61dB, NAB, 30ips                        |
| Harmonic Distortion        | 0.5%, + 18dBm                               | .5%, + 18dBm                | .....                | 1%, 15ips, 510nWb/m     | 0.1%, 30ips, NAB                        |
| Crosstalk (Worst Case)     | .....                                       | .....                       | - 55dB, 1kHz         | .....                   | - 40dB                                  |
| Wow/Flutter                | 0.1%  | .08%                        | .03%                 | .04%, 15ips             | 0.04%, 30ips                            |
| Related Models             | 280B series available in 1-, 2- and 4-track | Available in 1- and 2-track | SCM 381-16           | 1/4-in format available | B76 Series offers 1- and 2-track models |

| Manufacturer               | Tascam (Teac)      | Technics                   | Telex/Magnacord     |                         |  |  |             |      |
|----------------------------|--------------------|----------------------------|---------------------|-------------------------|--|--|-------------|------|
| Model Number               | 80-8               | 35-2B                      | RS-10A02            |                         |  |  | 3000 Series | 1400 |
|                            |                    |                            | 3000 Series         | 1400                    |  |  |             |      |
| Number of Tracks           | 8                  | 2                          | 2                   | 4                       |  |  |             |      |
| Tape Width                 | 1/4-inch           | 1/4-inch                   | 1/4-inch            | 1/4-inch                |  |  |             |      |
| Tape Speeds                | 2                  | 3                          | 2 (or High Option)  | 3 (or Slow Option)      |  |  |             |      |
| 3 1/4 ips                  | .....              | .....                      | Yes                 | Yes                     |  |  |             |      |
| 7 1/2 ips                  | .....              | Yes                        | Yes                 | Yes                     |  |  |             |      |
| 15ips                      | Yes                | Yes                        | .....               | Yes                     |  |  |             |      |
| Pitch Control              | .....              | 12% Range                  | .....               | .....                   |  |  |             |      |
| Reel Size Maximum          | 10.5 in            | 10.5 in                    | 10.5 in             | 8.25 in                 |  |  |             |      |
| Reel Hub Type              | NAB                | NAB                        | NAB, EIA            | EIA                     |  |  |             |      |
| Start Time                 | 1.5sec             | .75sec, 15ips              | .....               | .....                   |  |  |             |      |
| Heads/Type                 | 3                  | 3, 1/2-track; 1, 1/4-track | 3, Sendust Extra    | 3                       |  |  |             |      |
| Motors/Type                | 3 ac, Synchronous  | dc Capstan, 2 ac Eddy      | 3, dc Servo Capstan | 3 ac                    |  |  |             |      |
| Metering                   | Yes, Each Channel  | Yes, Each Channel          | Yes, Each Channel   | Yes, on Record Package  |  |  |             |      |
| Remote Control             | .....              | .....                      | Yes                 | Yes                     |  |  |             |      |
| Editor Interface           | .....              | .....                      | .....               | .....                   |  |  |             |      |
| Tape Timer                 | Mechanical         | Mechanical                 | Mechanical          | Mechanical              |  |  |             |      |
| Cueing Possible            | Yes                | Yes                        | Yes                 | Yes                     |  |  |             |      |
| Braking Method             | Dynamic Mechanical | Dynamic                    | Electronic          | Electronic & Mechanical |  |  |             |      |
| Packaging                  | Portable Case      | Table-top Rack             | Table-top or Rack   | Table-top or Rack       |  |  |             |      |
| Input Impedance (Ohms)     | 20K Unbal          | 50K Unbal                  | 10K Bal             | 140K Bal                |  |  |             |      |
| Output Impedance (Ohms)    | 1K Source Unbal    | 1K Source Unbal            | 600 Load            | 600 Load                |  |  |             |      |
| Input Level Maximum        | 0.3V Nominal       | .3V Nominal                | + 5dBm              | 15V                     |  |  |             |      |
| Output Level Maximum       | + 2dBv (1.26V)     | 1.26V                      | + 8dBm              | + 20dBm                 |  |  |             |      |
| Equalization               | IEC                | NAB                        | NAB, CCIR, IEC      | NAB                     |  |  |             |      |
| AF Response ( $\pm$ dB/Hz) | 3/40-20K           | 3/40-22K, 15ips            | 3/30-30K, 15ips     | 3/60-20K, 15ips         |  |  |             |      |
| Signal-to-Noise Ratio      | 60dB               | 60dB Unweighted, 15ips     | 62dB, 15ips         | 55dB, NAB Unweighted    |  |  |             |      |
| Harmonic Distortion        | 1%, 0VU            | .8%, 0VU                   | 0.8%                | 1% 0VU                  |  |  |             |      |
| Crosstalk (Worst Case)     | .....              | .....                      | .....               | - 50dB, 1kHz            |  |  |             |      |
| Wow/Flutter                | 0.04%, NAB         | .06% NAB Unweighted        | 0.045%, 15ips       | .15%, 7.5ips            |  |  |             |      |
| Related Models             | 40-4 4-channel     | .....                      | .....               | .....                   |  |  |             |      |

# PHONOGRAPH TURNTABLE

Non-automatic equipment, typically not including tone arm or cartridge, mounting method depending upon installation.

| Manufacturer      | Broadcast Electronics |                      |                      |                      | Harris Corporation   |
|-------------------|-----------------------|----------------------|----------------------|----------------------|----------------------|
| Model Number      | QRK Galaxy            | QRK 12C              | QRK 16SA             | QRK Custom 2         | CB1201               |
| Drive System      | Rim Idler             | Rim Idler            | Rim Idler            | Rim Idler            | Rim Idler            |
| Motor Type        | dc Hall Effect        | ac Synchronous       | ac Synchronous       | ac Hall Effect       | ac Synchronous       |
| Speeds:           | 15-85 rpm             | 3                    | 2                    | 2                    | 3                    |
| 78 rpm            | Yes                   | Yes                  | No                   | No                   | Yes                  |
| 45 rpm            | Yes                   | Yes                  | Yes                  | Yes                  | Yes                  |
| 33½ rpm           | Yes                   | Yes                  | Yes                  | Yes                  | Yes                  |
| Speed Display     | LED display of rpm    | Position of Lever    | Lights               | Lamp                 | Position of Lever    |
| Speed Drift       | .....                 | 99.5% Accuracy       | 99.5% Accuracy       | 99.5% Accuracy       | .3%                  |
| Pitch Control     | ± 10% of speed        | No                   | No                   | No                   | No                   |
| Start Time        | 1/16 revolution       | 1/16 revolution      | 1/16 revolution      | 1/16 revolution      | 1/16 revolution      |
| Platter:          | Aluminum              | Aluminum             | Aluminum             | Aluminum             | Aluminum             |
| Diameter          | 12 ± .001"            | 12 ± .001"           | 16 ± .001"           | 12 ± .001"           | 12"                  |
| Weight            | 5 lb                  | 5.5 lb               | 8.5 lb               | 5.5 lb               | 6.9 lb               |
| Operator Control  |                       |                      |                      |                      |                      |
| Speed Change      | Electronic            | Mechanical           | Mechanical           | Mechanical           | Mechanical           |
| Start/Stop        | Push-button           | Switch or Lever      | Switch or Lever      | Switch or Lever      | Switch or Lever      |
| Base Size         | 16" Wx17-1/16"D       | 15" Wx15.5"D         | 20" Wx18.75"D        | 15" Wx15.75"D        | 16" Wx16"D           |
| Clearance         | 2.5" below table-top  | 5" below frame       | 6.25" below frame    | 5" below frame       | 5.5" below chassis   |
| Rumble            | - 55dB per NAB stds.  | - 48dB per NAB stds. | - 48dB per NAB stds. | - 45dB per NAB stds. | - 45dB per NAB stds. |
| Wow/Flutter       | 0.06%/0.08%           | .1%                  | .1%                  | .1%                  | .1%                  |
| Tone Arm Included | No                    | No                   | No                   | No                   | No                   |
| Recommended       | Any                   | Any                  | Any                  | Any                  | Any                  |
| Cover             | No                    | No                   | No                   | No                   | No                   |

| Manufacturer      | LPB Inc.             | McMartin Industries  | MicroTrak            | Ramko Research        |
|-------------------|----------------------|----------------------|----------------------|-----------------------|
| Model Number      | S-7A                 | TT-12C               | 720<br>740           | SL-1500MK2 (Technics) |
| Drive System      | Rim Idler            | Rim Idler            | Rim Idler            | Direct                |
| Motor Type        | ac Synchronous       | ac Synchronous       | ac Synchronous       | dc Servo              |
| Speeds:           | 3                    | 3                    | 3                    | 2                     |
| 78 rpm            | Yes                  | Yes                  | Yes                  | No                    |
| 45 rpm            | Yes                  | Yes                  | Yes                  | Yes                   |
| 33½ rpm           | Yes                  | Yes                  | Yes                  | Yes                   |
| Speed Display     | Position of Lever    | Position of Lever    | Position of Lever    | Position of lever     |
| Speed Drift       | .....                | 99.5% Accuracy       | .....                | .002% Quartz Control  |
| Pitch Control     | No                   | No                   | No                   | ± 9.9%, .1% steps     |
| Start Time        | 1/16 revolution      | 1/16 revolution      | 1/16 revolution      | .7 seconds            |
| Platter:          | Aluminum             | Aluminum             | Aluminum             | .....                 |
| Diameter          | 12"                  | 12 ± .001"           | 12"                  | .....                 |
| Weight            | 5.5 lb               | 5.5 lb               | 5.5 lb               | 6.5 lb                |
| Operator Control  |                      |                      |                      |                       |
| Speed Change      | Mechanical           | Mechanical           | Mechanical           | Mechanical            |
| Start/Stop        | Switch or Lever      | Switch or Lever      | Switch or Lever      | Switch or Lever       |
| Base Size         | 15.5" Wx15.5"D       | 15" Wx15.5"D         | 15.5" Wx15.5"D       | 15.5" Wx15.5"D        |
| Clearance         | 5" below chassis     | .....                | 6.5" below chassis   | 7.5" below chassis    |
| Rumble            | - 48dB per NAB stds. | - 48dB per NAB stds. | - 36dB per NAB stds. | - 36dB per NAB stds.  |
| Wow/Flutter       | 0.1%                 | .1%                  | .3%                  | .3%                   |
| Tone Arm Included | No                   | No                   | No                   | No                    |
| Recommended       | Any                  | Any                  | MicroTrak 303        | MicroTrak 303         |
| Cover             | No                   | No                   | No                   | No                    |

| Manufacturer      | Ramko Research       | Russco             | Technics                         |
|-------------------|----------------------|--------------------|----------------------------------|
| Model Number      | SP-10MKII (Technics) | Mark V Broadcast   | Studio-Pro<br>SL-1015<br>SL-1025 |
| Drive System      | Direct               | Belt-Isolated Rim  | Rim Idler                        |
| Motor Type        | dc Servo             | dc Hall Effect     | ac Synchronous                   |
| Speeds:           | 3                    | 2                  | 2                                |
| 78 rpm            | Yes                  | No                 | No                               |
| 45 rpm            | Yes                  | Yes                | Yes                              |
| 33½ rpm           | Yes                  | Yes                | Yes                              |
| Speed Display     | .....                | LED Display        | Lamps                            |
| Speed Drift       | .002% Quartz Control | .....              | .....                            |
| Pitch Control     | .....                | ± 10%              | No                               |
| Start Time        | 1/12 revolution      | 1/36 revolution    | 1/16 revolution                  |
| Platter:          | .....                | Aluminum           | .....                            |
| Diameter          | .....                | 12"                | 12"                              |
| Weight            | .....                | 6.5 lb             | 6.5 lb                           |
| Operator Control  |                      |                    |                                  |
| Speed Change      | Electronic           | Electronic         | Mechanical                       |
| Start/Stop        | Push-button          | Push-button        | Switch or Lever                  |
| Base Size         | .....                | 15.5" Wx15.5"D     | 15.5" Wx15.5"D                   |
| Clearance         | .....                | 4" below table-top | 7.5" below chassis               |
| Rumble            | - 70dB DIN B         | - 68dB DIN B       | - 38dB per NAB stds.             |
| Wow/Flutter       | 0.025%               | .075%              | .2%                              |
| Tone Arm Included | No                   | No                 | No                               |
| Recommended       | Any                  | Any                | Any                              |
| Cover             | Option               | No                 | No                               |

"The low frequency noise voltage generated by the turntable, pickup and equalizer/preamplifier when playing an essentially rumble-free silent groove, shall be at least 40dB below a reference level of 1.4 centimeters per second peak velocity at 100Hz." (Monaural) For stereo "the signal shall be 35dB below a reference level of 1 centimeter per second peak velocity at 100Hz in the plane of modulation." NAB Engineering Handbook 3.20 and 3.30, 6th Edition.

Start time is based upon operation at 33½ rpm.

# WIRELESS MICROPHONE SYSTEM

FM Modulated Carrier, Multiple-Channel Operation.

| Manufacturer                 | RF Technology                    |                                  | Sennheiser   |
|------------------------------|----------------------------------|----------------------------------|--|
| <b>System Number</b>         | <b>RM-100 (5 Channel)</b>        | <b>RM-104 (2 Channel)</b>        | <b>SK1010-9/EM1010-4 (5 Channel)</b><br><b>SK1007/EM1026 (6 Channel)</b> |
| RF Frequency Range           | 947-952MHz                       | 947-952MHz                       | 181MHz/205MHz (TV 8, 12)<br>30-45MHz                                     |
| Diversity Receiving          | Yes                              | Yes                              | With 2 EM1010-4<br>Possible  |
| AF Response ( $\pm$ dB/Hz)   | 1/50-10K                         | 1/50-10K                         | 3/40-20K<br>3/40-20K   |
| Signal-to-Noise Ratio        | 60dB minimum                     | 60dB minimum                     | 74dB<br>80dB   |
| Harmonic Distortion          | 1% below AGC control             | 1% below AGC control             | 3%<br>1.5%   |
| Modulation Control           | Soft Limiting                    | Soft Limiting                    | Compression<br>Limiting  |
| Pre/De-emphasis ( $\mu$ sec) | .25                              | .25                              | 50<br>50   |
| Typical Useful Range         | 500 ft                           | 500 ft                           | .....  |
| Transmitter Model No.        | Standard Unit                    | See RM-100 for Mic               | SK1010-9<br>SK1007   |
| RF Power Output              | 50mW                             | .....                            | 50mW<br>100mW  |
| FM Deviation ( $\pm$ )       | 50kHz                            | .....                            | 16kHz<br>40kHz   |
| Mic or Capsule Type          | Lo-Z                             | .....                            | MKE2010, MKE4010<br>MK12   |
| Audio Input Level            | -60 to -40dBm                    | .....                            | 1 to 20mV<br>.5 to 15mV  |
| Audio Input Impedance        | 3KOhm                            | .....                            | Lo-Z<br>.....  |
| Manual Level Control         | Yes                              | .....                            | Yes<br>Yes   |
| Auto Control Range           | 30dB                             | .....                            | 36dB<br>30dB   |
| Power Requirement            | .....                            | .....                            | 9Vdc Alkaline<br>3 9V Battery Alkaline                                   |
| Typical Battery Life         | 5 hr                             | .....                            | 8-48 hr<br>4 to 20 hr  |
| Unit Packaging               | Pocket                           | .....                            | Pocket<br>Pocket   |
| Dimensions (Inches)          | 5.4x3x0.8                        | .....                            | 6x1.8x1<br>6x3.5x1   |
| Operating Weight             | 12.5 oz                          | .....                            | 8 oz w/battery<br>14 oz  |
| Receiver Model No.           | RM-100                           | RM-104                           | EM1010-4 (140-210MHz)<br>EM1026  |
| Selectivity                  | 3dB $\pm$ 100kHz; 60dB $\pm$ 500 | 3dB $\pm$ 100kHz; 60dB $\pm$ 500 | .....  |
| Sensitivity ( $\mu$ V)       | .....                            | .....                            | 2.5V, 26dB Quieting<br>.....   |
| Spurious Rejection           | -70dB                            | -70dB                            | .....  |
| AF Output Level, Line        | +8dBm, 150/600 Ohm Bal.          | +8dBm, 150/600 Ohm Bal.          | 1.55V, 20 Ohm Bal.<br>1.55V, 20 Ohm Bal.                                 |
| AF Output Level, Mic         | -50dBm, 150/600 Ohm Bal.         | -50dBm, 150/600 Ohm Bal.         | .....  |
| Metering                     | .....                            | .....                            | VU, RF, Battery<br>LEDs for VU, RF Off Tune                              |
| RF Carrier Indicator         | .....                            | .....                            | LED<br>LED   |
| Power Requirement            | 115Vac                           | 12Vdc, .5A, Internal             | 110Vac, 2 9V Int, 12V Ext.<br>110Vac, 55W                                |
| Battery Type                 | .....                            | 9 D Cells                        | Neda 1603 or 12V Auto<br>.....   |
| Antenna                      | 50 Ohm, Options                  | 50 Ohm, 2 Diversity Stubs        | 60 Ohm, TA203<br>50 Ohm, GZA1000   |
| Unit Packaging               | Rack-mount                       | Portable Case                    | Recommended<br>Recommended   |
| Dimensions (Inches)          | 19x5.25x18                       | 9x12x5                           | Table-top<br>Table-top   |
| Weight                       | .....                            | 12 lb                            | 1.6x7.7x4<br>7.3 lb<br>21.3x13x6.5<br>24.5 lb                            |

## FM Modulated Carrier, Remote Pickup Equipment

Portable and carriage transmitter equipment, battery-operated or ac-powered, for transmission of program audio from a remote location to the station.

| Manufacturer               | Martini                    | McMartini                 | Moseley                | Sennheiser            |
|----------------------------|----------------------------|---------------------------|------------------------|-----------------------|
| <b>System Number</b>       | <b>RPT2-150L/R-30/150</b>  | <b>RP1-1103/RPU-1150R</b> | <b>RPL-3</b>           | <b>SER1-4/ER-3</b>    |
| RF Frequency Range         | 152-172MHz                 | 150-175MHz                | 148-174MHz             | 25-145MHz             |
| Diversity Receiving        | No                         | No                        | No                     | No                    |
| AF Response ( $\pm$ dB/Hz) | 1.5/50-7.5K                | 0.75/50-7.5K              | 1.5/30-10K             | 3/30-12K              |
| Signal-to-Noise Ratio      | 50dB                       | 60dB                      | 55dB                   | 60dB                  |
| Harmonic Distortion        | 2%                         | 1%                        | 1.3%                   | 3%                    |
| Modulation Control         | Compressor/Limiter         | Compression               | Peak Limiting          | Limiter               |
| Transmitter Model No.      | RPT2-150L                  | RP1-1103                  | RPL-3 Transmitter      | SER1-4                |
| RF Power Output            | 2.5W                       | 3W                        | 10W                    | 10W                   |
| FM Deviation ( $\pm$ )     | 5kHz                       | 5kHz                      | 5kHz                   | 15kHz, 75kHz Possible |
| Mic or Capsule Type        | 150-500 Ohm                | 50/150/600 Ohm            | to 600 Ohm (2)         | Lo-Z                  |
| Audio Input Level          | -68, -35/0.2, 2V           | -65, -30/-20, +18         | -60, -40/-15, +10      | 6-15mV/to 1.55V       |
| Audio Input Impedance      | to 500 Ohm/8-600 Ohm       | 50-600 Ohm/8-600 Ohm      | to 600 Ohm/to 600 Ohm  | to 600 Ohm/to 600 Ohm |
| Manual Level Control       | (1) Mic/(1) Line           | (1) Mic/(1) Line          | (2) Mic/(1) Line       | Switched Line or Mic  |
| Auto Control Range         | .....                      | .....                     | to 25dB                | 36dB                  |
| Power Requirement          | 112Vac/12.6Vdc, 750mA Ext. | 12Vdc, Rechargeable       | 120Vac 50W, 12-15Vdc   | 15V 4Ah, GZB 4-2      |
| Typical Battery Life       | .....                      | .....                     | .....                  | 2-3 hr                |
| Unit Packaging             | Hand-carried               | Hand-carried              | Hand-carried           | Hand-carried          |
| Dimensions (Inches)        | 8.75x3.75x11               | 9.75x7x3                  | 4x14.5x11              | 13x5.3x2.6            |
| Operating Weight           | 5.25 lb                    | 6 lb                      | 16 lb                  | 9.7 lb                |
| Receiver Model No.         | R-30/150                   | RP1-1150R                 | RPL-3 Receiver         | ER-3                  |
| Selectivity                | 23kHz, 3dB/44kHz, 50dB     | 15kHz, 6dB/40kHz, 60dB    | 22kHz, 6dB/42kHz, 60dB | 35kHz                 |
| Sensitivity ( $\mu$ V)     | 0.5, 20dB Quieting         | 0.5, 20dB Quieting        | 1, 20dB Quieting       | 2.5, 26dB Quieting    |
| Spurious Rejection         | 90dB                       | 65dB                      | 65dB                   | 80dB                  |
| AF Output Level, Line      | +10dBm, 600 Ohm Bal.       | +10dBm, 600 Ohm Bal.      | +10dBm, 600 Ohm Bal.   | 1.5V, 300 Ohm Bal.    |
| AF Output Level, Mic       | .....                      | .....                     | .....                  | .....                 |
| Metering                   | VU, RF, Power, Discrim.    | VU, RF                    | RF                     | VU, RF, dc, Squelch   |
| RF Carrier Indicator       | Meter                      | Meter                     | Meter                  | Meter                 |
| Power Requirement          | 115Vac, 3W                 | 120Vac, 25W               | 120Vac, 10W            | 12-16Vdc, 50mA        |
| Battery Type               | .....                      | .....                     | .....                  | Rechargeable 15V, 1Ah |
| Antenna                    | 50 Ohm                     | 50 Ohm                    | 50 Ohm                 | 50 Ohm                |
| Unit Packaging             | Rack-mount                 | Rack-mount                | Rack-mount             | Hand-carried          |
| Dimensions (Inches)        | 19x8.75x8.25               | 19x3.5x11                 | 19x1.75x10             | 6.7x5.4x2.6           |
| Weight                     | 16 lb                      | 10 lb                     | 10 lb                  | 26 lb                 |

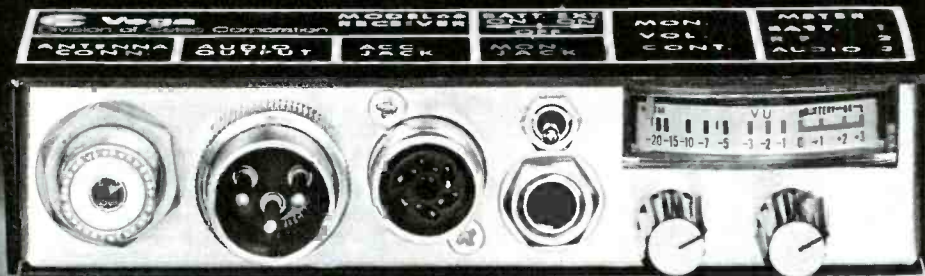
# WIRELESS MICROPHONE SYSTEM

FM Modulated Carrier, Single-Channel Operation

Hand-held, body-pack or pocket-size transmitter units with rack or table-top receiving equipment, intended for program audio sources.

| Manufacturer                 | Cetec Vega             |                        |                      | Comrex                | Edcor                   |
|------------------------------|------------------------|------------------------|----------------------|-----------------------|-------------------------|
|                              | Professional I & I/D   | Professional II & II/D | 450RA/TA             | HHT-1kA/RRB           | E-COM 1/E-COM 5         |
| RF Frequency Range           | 150-215MHz             | 150-216MHz             | 450-451/455-456MHz   | 450-451/455-456MHz    | 150-216MHz              |
| Diversity Receiving          | No                     | Yes                    | No                   | No                    | Yes                     |
| AF Response ( $\pm$ dB/Hz)   | 1/100-12K              | 1/100-12K              | to 6kHz              | to 6kHz               | 2/200-16K               |
| Signal-to-Noise Ratio        | 70dB                   | 70dB                   | .....                | .....                 | 70dB                    |
| Harmonic Distortion          | 1%                     | 1%                     | .....                | .....                 | 1% to 40dB              |
|                              | (30% Compression)      | (30% Compression)      | .....                | .....                 | Compression             |
| Modulation Control           | Compression            | Compression            | Automatic Modulation | Automatic Modulation  | Soft Compression        |
| Pre/De-emphasis ( $\mu$ sec) | 100                    | 100                    | .....                | .....                 | .....                   |
| Typical Usable Range         | 50 ft                  | 50 ft                  | 50 ft                | 50 ft                 | 1500 feet line-of-sight |
| Transmitter Model No.        | 77B                    | See Professional I     | 450TA                | HHT-1kA               | E-COM 1                 |
| RF Power Output              | 50mW                   | .....                  | 150mW                | 1W                    | 100mW                   |
| FM Deviation ( $\pm$ )       | 12kHz                  | .....                  | .....                | .....                 | 7.5kHz                  |
| Mic or Capsule Type          | Lo-Z                   | .....                  | ElectroVoice C090E   | Integral Electret     | ElectroVoice 671        |
| Audio Input Level            | 0.22 to 39mV           | .....                  | .....                | .5V External Source   | .....                   |
| Audio Input Impedance        | 150 Ohm                | .....                  | Lo-Z                 | Bridging for External | .....                   |
| Manual Level Control         | Yes                    | .....                  | .....                | .....                 | 40dB                    |
| Auto Control Range           | 45dB with "Dynex"      | .....                  | .....                | .....                 | 12V E-289               |
| Power Requirement            | 9V Alkaline            | .....                  | 2 9V Alkaline        | 6 AA Alkaline, NiCad  | 12 hrs                  |
| Typical Battery Life         | 7-9 hrs                | .....                  | .....                | .....                 | Hand-held               |
| Unit Packaging               | Pocket                 | .....                  | Pocket               | Hand-held             | 9 Long x 1.2 Dia.       |
| Dimensions (Inches)          | 3.8x2.8x1              | .....                  | 3x5x1                | 10x1.75x1.75          | 8.7 oz w/o battery      |
| Operating Weight             | 5 oz 2/w battery       | .....                  | 11 oz                | 14 oz                 | E-COM 5                 |
| Receiver Model No.           | 58                     | 63                     | 450 RA               | RRB                   | .....                   |
| Sensitivity ( $\mu$ V)       | 0.7, 20dB Quieting     | .7, 20dB Quieting      | .5, 12dB SINAD       | .5, 12dB SINAD        | .5, for 20dB Quieting   |
| Spurious Rejection           | - 70dB                 | - 70dB                 | .....                | .....                 | 80dB                    |
| AF Output Level, Line        | 0dBm, 600 Ohm Bal or   | 0dBm, 600 Ohm Bal or   | .....                | - 10 to 0dBm          | to 5V                   |
| AF Output Level, Mic         | - 52dBm, 150 Ohm Bal   | - 52dBm, 150 Ohm Bal   | - 50dBm, 150 Ohm     | Bal.                  | to .1V, 100-600 Ohm     |
| Metering                     | VU, RF, Power          | VU, RF, Power          | .....                | .....                 | RF Battery              |
| RF Carrier Indicator         | LED                    | LED                    | .....                | LED                   | LED                     |
| Power Requirement            | 115Vac; 12Vdc Int/Ext. | 115Vac; 12Vdc Ext.     | 2 9V                 | 115Vac                | 110Vac; 12Vdc Ext.      |
| Battery Type                 | .....                  | .....                  | Alkaline, NiCad      | .....                 | .....                   |
| Antenna                      | 50 Ohm, #120 Whip      | 50 Ohm, 2-#123 Dipole  | 1/4 Whip             | Not Supplied          | 50 Ohm,                 |
| Unit Packaging               | Table-top              | Table-top              | Pocket               | 19" Rack-mount        | Table-top               |
| Dimensions (Inches)          | 3.7x6.8x9              | 3.7x6.8x9              | 3x5x1                | 19x1.75x5             | 3x10x7.25               |
| Weight                       | 3.25 lb                | 4 lb, 15 oz            | 11 oz                | .....                 | 3 lb, 10 oz             |

## The Ultimate PORTABLE RECEIVER for wireless microphones



Vega offers the most advanced portable receiver in the industry. The Model 66 provides operation superior to the highly successful Vega Model 58 or 57, but in a rugged single unit that is much smaller. (Dimensions: W 5.4" x H 1.3" x D 6.25") Designed for the professional sound user, the 66's compact size makes it suitable for mounting to leading portable recorders, both audio and VTR's. The unit operates from either internal 9V batteries or an existing D.C. voltage source. Contact Vega for complete specifications on this exciting unit.

 **Cetec Vega** Division of Cetec Corporation

P. O. Box 5348 • El Monte, California 91731 • Telephone: (213) 442-0782 • TWX: 910-887-3629

Circle (12) on Reply Card

November 30, 1981 Broadcast Engineering's Spec Book 37

# WIRELESS MICROPHONE SYSTEM

| Manufacturer                 | HM Electronics              | Nady Systems          | Panasonic                 |                           |                      |
|------------------------------|-----------------------------|-----------------------|---------------------------|---------------------------|----------------------|
| System Number                | 22, 22E                     | 25, 25E               | VHF 600                   | VHF 700                   | WX-9000/WX-9200      |
| RF Frequency Range           | 150-216MHz                  | 150-216MHz            | 150-216MHz                | 150-216MHz                | 450.4, 455.2MHz      |
| Diversity Receiving          | Optional HME AD-5           | Optional HME AD-5     | No                        | Yes                       | No                   |
| AF Response ( $\pm$ dB/Hz)   | 2/100-12K                   | 2/100-12K             | 3/25-20K                  | 3/25-20K                  | 3/50-10K             |
| Signal-to-Noise Ratio        | 95dB on "E" Systems         | 95dB on "E" Systems   | 102dB                     | 120dB                     | 50dB                 |
| Harmonic Distortion          | 1%                          | 1%                    | .6%                       | .6%                       | .....                |
| Modulation Control           | Dynamic Expander            | Dynamic Expander      | Compansion                | Compansion                | Limiting             |
| Pre/De-emphasis ( $\mu$ sec) | .....                       | .....                 | .....                     | .....                     | 75                   |
| Typical Useful Range         | 1000 ft line-of-sight       | 1000 ft line-of-sight | 1500 ft. line-of-sight    | 1500 ft. line-of-sight    | .....                |
| Transmitter Model No.        | WM222 (WM222TV)             | WM252 (WM252TV)       | VHF 900                   | VHF 900                   | WX-9000              |
| RF Power Output              | 50mW                        | 50mW                  | 50/125mW                  | 50/125mW                  | 30mW                 |
| FM Deviation ( $\pm$ )       | 10kHz                       | 10kHz                 | 15kHz                     | 15kHz                     | 7kHz                 |
| Mic or Capsule Type          | Lo-Z                        | Shure SM58            | Any                       | Any                       | Electret Condenser   |
| Audio Input Level            | -65 to -40dBm               | .....                 | .....                     | .....                     | -84 to -96 dBspl     |
| Audio Input Impedance        | 150 Ohm                     | .....                 | 1MOhm                     | 1MOhm                     | .....                |
| Manual Level Control         | .....                       | .....                 | .....                     | .....                     | Switched Lo, Med, Hi |
| Auto Control Range           | .....                       | .....                 | 100dB                     | 100dB                     | .....                |
| Power Requirement            | 9V Alkaline                 | 9V Alkaline           | 9Vdc Alkaline MN1604      | 9Vdc Alkaline MN1604      | 2 AA                 |
| Typical Battery Life         | 6-8 hrs                     | 6-8 hrs               | 20 hrs                    | 20 hrs                    | 4 hrs                |
| Unit Packaging               | Pocket                      | Hand-held             | Pocket or Hand-held       | Pocket or Hand-held       | Pocket               |
| Dimensions (Inches)          | 4x2.5x0.8                   | 10.5 Long x 1.2 Dia.  | 4.2x2.7x0.9               | 4.2x2.7x0.9               | 3.5x2.6x0.7          |
| Operating Weight             | 5 oz w/o battery            | 16 oz w/battery       | 4 oz                      | 4 oz                      | 7 oz                 |
| Receiver Model No.           | WM122                       | WM122 (see 22, 22E)   | VHF 600 (Upgradable)      | VHF700                    | WX-9200              |
| Sensitivity ( $\mu$ V)       | 1, 30dB Quieting            | .....                 | .....                     | .....                     | 10, 20dB Quieting    |
| Spurious Rejection           | 50dB                        | .....                 | 100dB                     | 100dB                     | .....                |
| AF Output Level, Line        | Mic + 20dB,<br>600 Ohm Bal. | .....                 | 0dBm, 600 Ohm Bal.        | 0dBm, 600 Ohm Bal.        | .....                |
| AF Output Level, Mic         | Mic, 200 Ohm Bal.           | .....                 | .....                     | .....                     | -60dBm               |
| Metering                     | VU, RF, Battery             | .....                 | 150 Ohm Bal.              | 150 Ohm Bal.              | 600 Ohm Bal.         |
| RF Carrier Indicator         | LED                         | .....                 | LED                       | LED                       | .....                |
| Power Requirement            | 115Vac; 10-30Vdc<br>Ext. or | .....                 | 120Vac, 12-18Vdc          | 120Vac, 12-18Vdc          | 9V, 90mA             |
| Battery Type                 | Internal NiCad              | .....                 | .....                     | .....                     | External dc          |
| Antenna                      | 50 Ohm, Not Included        | .....                 | 50 Ohm,<br>1 Antenna Whip | 50 Ohm,<br>2 Antenna Whip | .....                |
| Unit Packaging               | Table-top                   | .....                 | Table-top                 | Table-top                 | Portable Case        |
| Dimensions (Inches)          | 7x5.75x3                    | .....                 | 2.25x8.4x9                | 2.25x8.4x9                | 1.5x4x3.9            |
| Weight                       | 2 lb, 8 oz w/o battery      | .....                 | .....                     | .....                     | 1 lb                 |

| Manufacturer                 | RF Technology               | Schaffer-Vega               | Swintek                                      | Telex                       |
|------------------------------|-----------------------------|-----------------------------|--|-----------------------------|
| System Number                | RM-101                      | RM-102                      | dB-S 5000 Series                             | WT-100/FMR-1                |
| RF Frequency Range           | 947-952MHz                  | 947-952MHz                  | 150-216MHz                                   | 150-174MHz                  |
| Diversity Receiving          | Yes                         | Yes                         | Yes, Dual                                    | Yes                         |
| AF Response ( $\pm$ dB/Hz)   | 1/50-10K                    | 1/50-10K                    | 3/40-15K                                     | 2/50-15K                    |
| Signal-to-Noise Ratio        | 60dB Minimum                | 60dB Minimum                | 80dB   | 80dB at 100 feet            |
| Harmonic Distortion          | 1% below AGC<br>control     | 1% below AGC<br>control     | 1%   | 1%                          |
| Modulation Control           | Soft Limiting               | Soft Limiting               | .....  | .....                       |
| Pre/De-emphasis ( $\mu$ sec) | 25                          | 25                          | Compression                                  | Compressor/Expander         |
| Typical Useful Range         | 500 ft                      | 500 ft                      | .....  | 50                          |
| Transmitter No.              | Standard Unit               | See RM-101 for Mic          | 2000 ft                                      | 0.25 mile line-of-sight     |
| RF Power Output              | 50mW                        | .....                       | Mark 50A/dBs                                 | WT-100                      |
| FM Deviation ( $\pm$ )       | 50kHz                       | .....                       | 50mW   | 50mW                        |
| Mic or Capsule Type          | Lo-Z                        | .....                       | 10kHz  | 12kHz                       |
| Audio Input Level            | -60 to -40dBm               | .....                       | Various                                      | Lo-Z                        |
| Audio Input Impedance        | 3KOhm                       | .....                       | -54dBV mic                                   | .....                       |
| Manual Level Control         | Yes                         | .....                       | 5K and 100K                                  | 100-1000 Ohm                |
| Auto Control Range           | 30dB                        | .....                       | Yes  | Yes                         |
| Power Requirement            | .....                       | .....                       | 80dB   | Yes, 30dB                   |
| Typical Battery Life         | 5 hrs                       | .....                       | 9V   | 9V Alkaline                 |
| Unit Packaging               | Pocket                      | .....                       | 6-10 hr                                      | 5 hr                        |
| Dimensions (Inches)          | 5.4x3x0.8                   | .....                       | Pocket                                       | Belt Pack                   |
| Operating Weight             | 12.5 oz w/batteries         | .....                       | 3.8x2.8x1                                    | 2.75x4x1                    |
| Receiver Model No.           | RM-101                      | RM-102                      | 5 oz w/battery                               | 5.4 oz                      |
| Sensitivity ( $\mu$ V)       | .....                       | .....                       | 63EX   | FMR-1                       |
| Spurious Rejection           | -70dB                       | -70dB                       | 1, 20dB Quieting<br>-70dB                    | 1, for 12dB SINAD<br>70dB   |
| AF Output Level, Line        | .....                       | .....                       | 0dBm, 600 Ohm Bal or                         | 0dBm, 600 Ohm Bal.          |
| AF Output Level, Mic         | -50dBm, 150 Ohm             | -50dBm, 150 Ohm             | .....  | .....                       |
| Metering                     | .....                       | .....                       | -46dBV,<br>150 Ohm Bal.                      | -50dBm, 200 Ohm Bal.        |
| RF Carrier Indicator         | .....                       | .....                       | VU, RF, Power<br>LEDs or Meter               | VU                          |
| Power Requirement            | 12Vdc, Int/Ext.             | 12Vdc Int/Ext.; 115Vdc      | 120Vac,<br>12Vdc Ext. Bat.                   | LED                         |
| Battery Type                 | NiCad, AA Alkaline          | NiCad                       | .....  | Yes, LED                    |
| Typical Battery Life         | 5 hr NiCad, 10 hr Alk       | 8 hr NiCad                  | 115Vac, 12-24Vdc Ext.<br>Internal NiCad 7.2V | 115Vac, 1.5W;<br>12Vdc Ext. |
| Antenna                      | 50 Ohm,<br>2 Diversity Stub | 50 Ohm,<br>2 Diversity Stub | .....  | .....                       |
| Unit Packaging               | Portable Case               | Portable Case               | .....  | 50 Ohm, 1-5/8 Whip          |
| Dimensions (Inches)          | 4x1.3x5.5                   | 9x12x5                      | Table-top                                    | Table-top                   |
| Weight                       | 1 lb, 7 oz                  | 13 lb                       | 3.7x6.8x12                                   | 8.25x9x3.5                  |
|                              |                             |                             | 5 lb   | 5.5 lb                      |



# VIDEO

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Cameras

Camera lenses

Camera pickup tubes

Camera support equipment

Character generators

Color video monitors

Edit controllers

Routing switchers

SMPTE time code generator

Special effects generator

Time base corrector

Videodisc systems

Video processors

Video production switchers

Videotape recorders

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# THE SIGHTS

## Chroma Insert Keyer, Model 7011.

A unique comb filter minimizes noise and color-edge crawl from the key signal. It has "zero-H" delay with no installation and retiming problems because the delay is less than 25 nanoseconds. No separate insert keyer or separate RGB switcher is required. Each unit is equipped with remote control and 50 feet of cable.

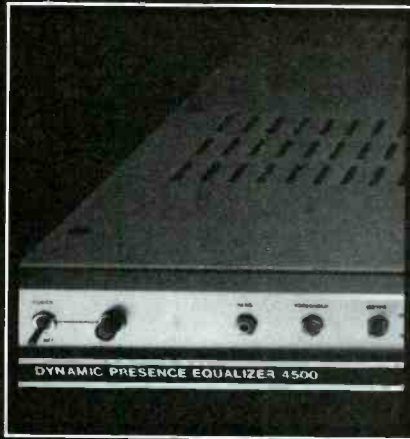


## Color Corrector, Model 5500A.

It is the ENG production tool for adjusting color variations after encoding, and enables a broadcaster to balance varying color values from a variety of program sources. Program materials from cameras, tapes, films or network feeds can be color-balanced to each other after tape playback or microwave receiver during live coverage. Available with an optional automatic sensor for telecine use. Also available in PAL.

## Dynamic Presence Equalizer, Model 4500.

Enhances broadcast signal presence automatically. Gives program material more punch and improves sound quality. Compensates for lack of presence caused by poor microphone placement, incorrect equalization, misaligned tape heads and unequalized telephone circuits.



## FM VOLUMAX®

Automatic Peak Controller. Designed especially for the FM broadcaster. Allows maximum signal strength and prevents overmodulation caused by pre-emphasized signals. Full brilliance and dynamic range are maintained without distortion through multi-band processing. Available in monaural or stereo.



# THE SOUNDS

Sights and sounds. Thomson-CSF gives them substance. With proven broadcast products that enhance the image, correct the color, ride gain, equalize and distribute the signal. To put these quality products to work for you, contact your nearest Thomson-CSF distributor.

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Philadelphia, PA 19132  
Electromedia, Inc.  
Pittsburgh, PA 15213  
Tele-Measurements Inc.  
Clifton, NJ 07014  
Landy Associates, Inc.  
Cherry Hill, NJ 08003  
Slye Electronics, Inc.  
Arlington, VA 22201

# THE SUBSTANCE



### Image Enhancer, Mark IV Series.

Improved signal-to-noise ratio means better enhancement. Both horizontal and vertical elements are enhanced to eliminate color softness. In-line, three-tube models are available for NTSC, PAL and PAL-M standards. The Model 8010, with automatic control, maintains picture sharpness and resolution of encoded video, without double enhancement when processing a previously enhanced signal.



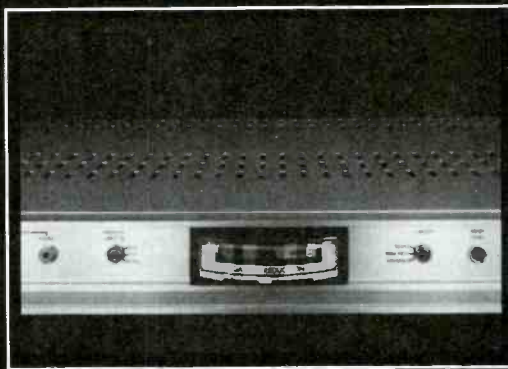
### Audio Distribution Amplifier, Model 1602.

Designed for either stereo or monaural use, this model contains two distribution amplifiers, each with eight balanced outputs from one input, strappable to a 1 x 16 unit. Ideal for distributing program and monitor circuits to studios and control rooms. Features differential, balanced inputs, 40 dB gain, and high output isolation.



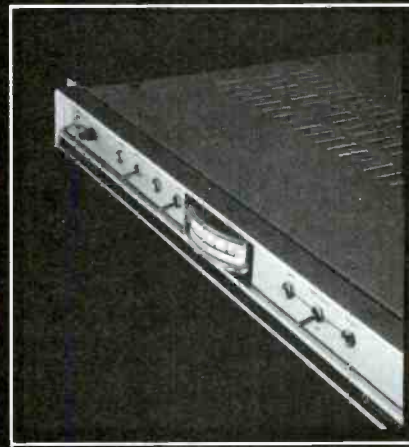
### VOLUMAX® Automatic Peak Controller, Model 4300.

With patented control action, this AM limiter assures maximum utilization of each watt of carrier power without overmodulating the transmitter, and with minimal signal distortion. Automatic peak phasing insures negative asymmetry and is silently inverted for positive modulation to the maximum allowable limit of 125%.



### AUDIMAX® Automatic Level Controller.

Rides gain automatically. Eliminates objectionable swish-up of compressor-type limiters. Features adjustable recovery time. And patented return-to-zero function with low distortion and superb frequency response. Ideal ahead-of-the-limiter for maximum program coverage. Available in mono or stereo.



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Doraville, GA 30340

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Albany, GA 31705

Gray Communications Consultants, Inc.  
Tampa, FL 33614

Suministros Gonzalez  
Miami Beach, FL 33139

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Harahan, LA 70123

Broadcast Systems, Inc.  
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Electrotex  
Houston, TX 77006

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Swiderski Electronics Inc.  
Elk Grove Village, IL 60007

Television Engineering Corp.  
Chesterfield, MO 63017

Bennett Engineering Associates, Inc.  
Mercer Island, WA 98040

BCD, Inc.  
Anaheim, CA 92806

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# COLOR TV CAMERA

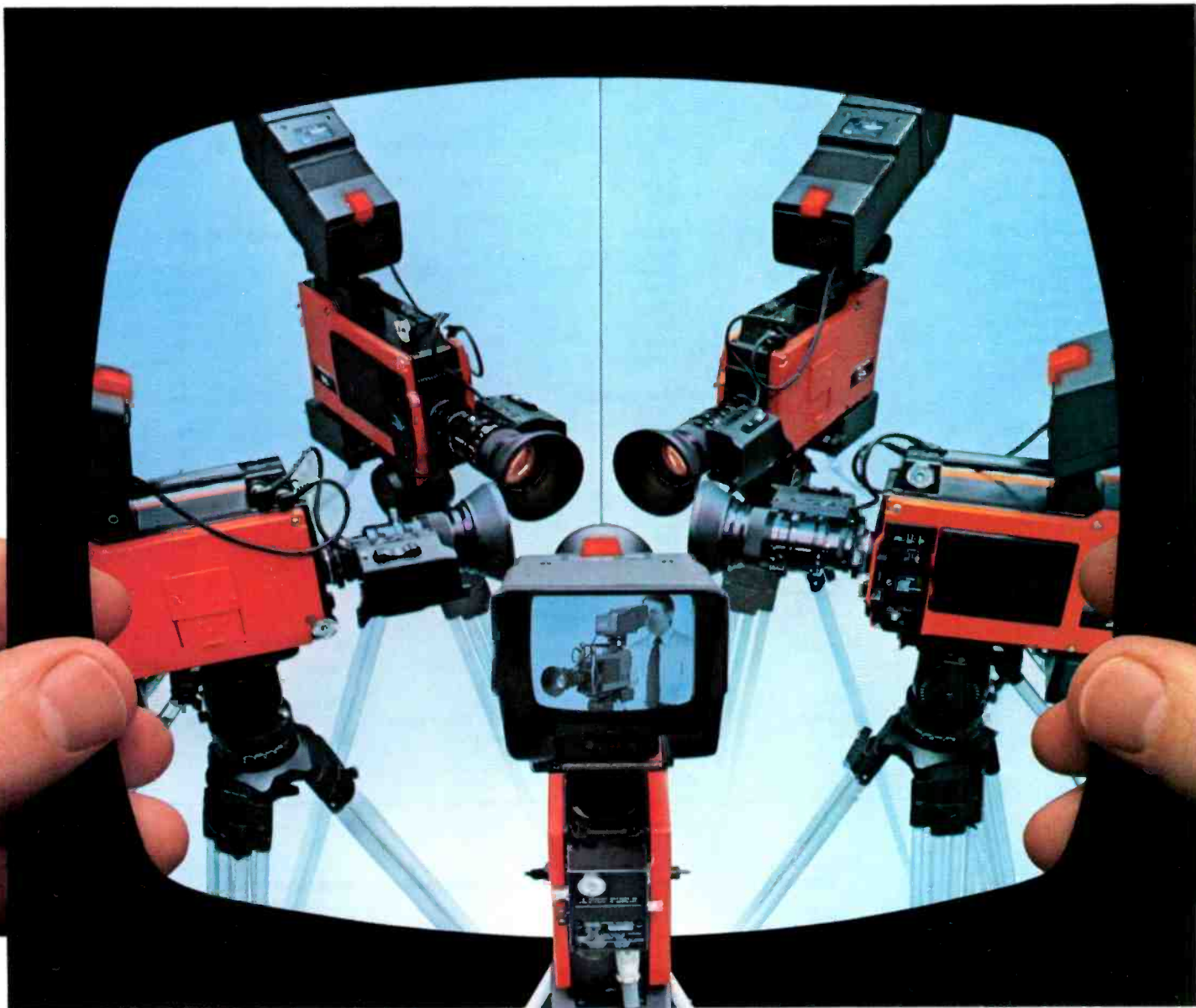
3-tube design TV camera, typically not requiring the use of a camera control unit. Operation is possible directly to a VTR or microwave link. Weights are less than 30 pounds.

| Manufacturer              | Ampex                   | Bosch                   | Commercial Electronics      | Hitachi Denshi America  |
|---------------------------|-------------------------|-------------------------|-----------------------------|-------------------------|
| Model Number              | BCC-20 Digicam          | KCA 100                 | CEI 340                     | FP-40SS SK-91           |
| Pickup Tube Type          | DGP, S, LO              | P                       | DGP, S, P                   | S, P                    |
| Pickup Tube Size          | 3/4-inch                | 3/4-inch                | 3/4-inch                    | 3/4-inch                |
| Pickup Tube Number        | .....                   | XQ-2427                 | .....                       | H8393                   |
| Optics                    | Prism                   | Prism                   | Prism                       | Prism                   |
| Sensitivity               | 2150 Lux, f/4, 60%      | 1250 Lux, f/2.8, 66%    | 680 Lux, f/1.7, 60%         | 2000 Lux, f/4           |
| Maximum Sensitivity       | 65 Lux, +12dB           | 75 Lux, f/1.4, +12dB    | 65 Lux, f/1.4, +12dB        | 100 Lux, f/1.6, +12dB   |
| Video Gain Boost          | 0, 6, 12dB              | 0, 6, 12dB              | x1, x2, x4                  | 0, 6, 12dB              |
| Signal-to-Noise Ratio     | 53dB NTSC<br>(51dB PAL) | 53dB NTSC<br>(51dB PAL) | 52dB                        | 52dB                    |
| Horizontal Resolution     | 400TVL, 50% DGP         | 40%, 5MHz               | to 500TVL at 100%           | 550TVL                  |
| Registration (Z1, 2, 3)   | 0.05% Digital           | 40, 80nsec              | .1, .2, .3%                 | .1, .2, .4%             |
| Enhancement               | H/V 2-line Coring       | H/V Comb and Coring     | H/V Coring                  | H/V 2-line Comb, Coring |
| Contours Taken From       | Green                   | Green                   | Green                       | Green                   |
| Internal ND Filters       | Yes                     | Yes                     | Yes                         | Yes                     |
| Color Temperature Filters | Yes                     | Yes                     | Yes                         | Yes                     |
| Viewfinder Sizes          | 1.5, 3 in               | 1.5, 6 in               | 3, 5 in                     | 1.5, 5 in               |
| Intercom System           | 2-channel               | 2-channel               | 1-channel                   | 1-channel               |
| Program Audio System      | Yes                     | Yes                     | .....                       | Yes                     |
| Optional CCU              | Yes                     | Yes                     | Yes (310, 330)              | Yes                     |
| Auto White Balance        | Yes                     | Yes                     | Yes                         | Yes                     |
| Auto Black Balance        | Yes                     | Yes                     | Yes                         | Yes                     |
| Auto Iris Control         | Yes                     | Yes                     | Yes                         | Yes                     |
| Auto Centering            | Yes                     | Option                  | Yes                         | .....                   |
| Beam Optimizing           | Yes                     | Yes                     | Yes                         | Yes                     |
| Sync Drives Required      | .....                   | .....                   | .....                       | Yes                     |
| Gen-lock Video Input      | Yes                     | Yes                     | Yes                         | Yes                     |
| VTR Remote Controls       | Yes                     | Yes                     | .....                       | Yes                     |
| Multicore Cable           | .....                   | 1500 ft                 | 2400 ft                     | 1000 ft                 |
| Triaxial Cable            | .....                   | 6000 ft                 | .....                       | .....                   |
| Optical Fiber Cable       | 6000 ft                 | 12,000 ft               | .....                       | .....                   |
| Battery Operation         | Yes                     | Yes                     | Yes                         | Yes                     |
| Voltage, External         | .....                   | 11-15Vdc                | 12Vdc                       | 12Vdc                   |
| Battery Use Life          | .....                   | .....                   | .....                       | 1 hr with BP-91         |
| Weight Without Lens       | 18 lb                   | 13 lb                   | 21 lb                       | 13.2 lb                 |
| Color Standards           | NTSC, PAL, PAL-M, SECAM | NTSC, PAL, PAL-M, SECAM | NTSC, PAL-M, PAL I/B, SECAM | NTSC                    |

\*Pickup tube type designations: ACT P—Anti Comet Tail Plumbicon, C—Chainicon, DGP—Diode Gun Plumbicon, HOP—Highlight Overload Protected, L—Leddicon, LO—Lead Oxide Vidicon, LOC—Low Output Capacitance Plumbicon, P—Plumbicon, S—Saticon.

| Manufacturer              | HL-78A                 | Ikegami Electronics (USA) Inc. | NEC America Inc.     | Panasonic Video Systems  |
|---------------------------|------------------------|--------------------------------|----------------------|--------------------------|
| Model Number              | ENG Portable           | HL-79D(HL-790A)                | ITC-350              | MNC-80A Series AK760     |
| Pickup Tube Type          | P, S                   | P, S, DGP, LOC DGP             | P, S                 | P, S, DGP                |
| Pickup Tube Size          | 3/4-inch               | 3/4-inch                       | 3/4-inch             | 3/4-inch                 |
| Pickup Tube Number        | .....                  | XQ1427/2427, H8393             | XQ1428, H9311A       | XQ-1427/2427, H8397A     |
| Optics                    | Prism                  | Prism                          | Prism                | Prism                    |
| Sensitivity               | 2000 Lux, f/4.5, 89.9% | 2000 Lux, f/5                  | 2000 Lux, f/4, 90%   | 2000 Lux, f/4, 60%(P)    |
| Maximum Sensitivity       | 27 Lux, f/1.4, +18dB   | 20 Lux, f/1.4, +18dB           | 60 Lux, f/1.4, +12dB | .....                    |
| Video Gain Boost          | 0, 9, 18dB             | 0, 9, 18dB                     | 0, 6, 12dB           | 0, 6, 12, 18dB           |
| Signal-to-Noise Ratio     | 54dB                   | 57dB (LOC DGP)                 | 52dB                 | 54dB NTSC,<br>(52dB PAL) |
| Horizontal Resolution     | 500TVL                 | 600TVL, RETMA                  | 500TVL               | 500TVL                   |
| Registration (Z1, 2, 3)   | 0.1, .2, .6%           | .1, .2, .5%                    | 0.2, .4, .8%         | .1, .2, .4%              |
| Enhancement               | H and 1-line V         | Coring, Comb, Slicer           | H/V                  | 2-line                   |
| Contours Taken From       | Green                  | Green                          | Green                | Green                    |
| Internal ND Filters       | Yes                    | Yes                            | Yes                  | Yes                      |
| Color Temperature Filters | Yes                    | Yes                            | Yes                  | Yes                      |
| Viewfinder Sizes          | 1.5, 4.5 in            | 1.5, 4.5 in                    | 1.5, 5 in            | 1.5, 4.5 in              |
| Intercom System           | 1-channel              | 1-channel                      | 1-channel            | 1-channel                |
| Program Audio System      | Yes                    | Yes                            | Yes                  | Yes                      |
| Optional CCU              | Remote Control         | Yes                            | Yes                  | Yes                      |
| Auto White Balance        | Yes                    | Yes                            | Yes                  | Yes                      |
| Auto Black Balance        | Yes                    | Yes                            | .....                | Yes                      |
| Auto Iris Control         | Yes                    | Yes                            | Yes                  | Yes                      |
| Auto Centering            | .....                  | .....                          | .....                | Yes                      |
| Beam Optimizing           | Yes                    | Yes                            | Yes                  | Yes                      |
| Sync Drives Required      | .....                  | .....                          | .....                | Yes                      |
| Gen-lock Video Input      | Yes                    | Yes                            | Yes                  | Yes                      |
| VTR Remote Controls       | Yes                    | Yes                            | Yes                  | .....                    |
| Multicore Cable           | .....                  | 1000 ft MA-79 base             | 300 ft               | 900 ft                   |
| Triaxial Cable            | .....                  | 7500 ft TA-79 base             | .....                | 3000 ft COAX             |
| Optical Fiber Cable       | .....                  | .....                          | .....                | 9000 ft                  |
| Battery Operation         | Yes                    | Yes                            | Yes                  | Yes                      |
| Voltage, External         | 12Vdc                  | 12Vdc, Attaches                | 12Vdc, Attaches      | 12Vdc, H2791             |
| Battery Use Life          | .....                  | .....                          | .....                | Attaches                 |
| Weight Without Lens       | 13 lb                  | 15 lb                          | 7.7 lb               | 1.7 hr                   |
| Color Standards           | NTSC                   | NTSC                           | NTSC                 | NTSC, PAL, PAL-M, SECAM  |

# Compare



JVC's Professional Video Dealers want you to compare the newest member of the KY family of 3-tube color cameras to *any* other camera you may be thinking of...and to others you may have eliminated because of their high prices.

#### COMPARE PERFORMANCE:

The KY-2700 holds registration specs to a tight 0.1, 0.2, and 0.4%, for crisp clean pictures. That's stability!

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A fast, 14:1 Servo zoom lens, Automatic Beam Control (ABC), Automatic White Balance with memory, Automatic Black Stabilizer circuit (ABS), a low 18 watt power consumption for extended battery operation, "Instant On"

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## The new KY-2700



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# COLOR TV CAMERA

| Manufacturer<br>Model Number | Panasonic Video<br>Systems Division<br>AK750B | Phillips<br>(PYE TVT)<br>LDK 14S | RCA Broadcast Systems      |                                      | Sharp<br>Electronics<br>SX-700 |
|------------------------------|---|----------------------------------|----------------------------|--------------------------------------|--------------------------------|
|                              |   |                                  | LK-86                      | Hawkeye System                       |                                |
| Pickup Tube Type             | P   | P                                | S, P                       | S, P                                 | S                              |
| Pickup Tube Size             | 2/3-inch                                      | 2/3-inch                         | 2/3-inch                   | 2/3-inch                             | 2/3-inch                       |
| Pickup Tube Number           | XQ-1428                                       | XQ-1427                          | .....                      | 80XQ                                 | .....                          |
| Optics                       | Prism   | Prism                            | Prism                      | Prism                                | Prism                          |
| Sensitivity                  | 2150 Lux, f/4                                 | 750 Lux, f/2.8, 89.9%            | 1250 Lux, f/2.8, 60%       | 700 Lux, (S)/460 Lux(P)              | 2150 Lux, f/4                  |
| Maximum Sensitivity          | 215 Lux, f/1.8, +6dB                          | 48 Lux, f/1.4, +12dB             | .....                      | f/1.4, 60%                           | 85 Lux, f/1.6, +12dB           |
| Video Gain Boost             | 0, 6dB  | 0, 12, 18dB                      | 0, 9, 18dB                 | 0, 9, 18dB                           | 0, 6, 12dB                     |
| Signal-to-Noise Ratio        | 50dB  | 54dB                             | 54dB NTSC<br>(52dB PAL)    | 52dB NTSC<br>(50dB PAL)              | 52dB                           |
| Horizontal Resolution        | 500TVL  | 600TVL                           | .....                      | 400TVL 35% S(30% P)                  | 550TVL                         |
| Registration (Z1, 2, 3)      | 0.1, .3, .6%                                  | 40, 80, 160nsec                  | .1, .2, .5%                | .1, .2, .3%                          | .1, .4, .8%                    |
| Enhancement                  | 2-line V                                      | 2-line Coring, Comb              | H/V Coring, Comb           | .....                                | H/V 2-line                     |
| Contours Taken From          | Green   | Green                            | Green                      | .....                                | Green                          |
| Internal ND Filters          | Yes   | Yes                              | .....                      | Yes                                  | Yes                            |
| Color Temperature Filters    | Yes   | Yes                              | .....                      | Yes                                  | Yes                            |
| Viewfinder Sizes             | 1.5, 4.5 in                                   | 1.5, 5 in                        | 1.5 in                     | 1.5 in                               | 1.5, 7 in                      |
| Intercom System              | 1-channel                                     | 1-channel                        | .....                      | .....                                | 1-channel                      |
| Program Audio System         | Yes   | .....                            | .....                      | .....                                | Yes                            |
| Optional CCU                 | Yes   | Uses LDK5 CCU                    | Available                  | Uses HR-1 In-Camera<br>VTR           | Yes                            |
| Auto White Balance           | Yes   | Yes                              | Yes                        | Yes                                  | Yes                            |
| Auto Black Balance           | .....   | Yes                              | Yes                        | Yes                                  | Yes                            |
| Auto Iris Control            | Yes   | Yes                              | Yes                        | Yes                                  | Yes                            |
| Auto Centering               | .....   | Yes                              | .....                      | .....                                | .....                          |
| Beam Optimizing              | .....   | Yes                              | Yes                        | Yes                                  | Yes                            |
| Sync Drives Required         | Yes   | .....                            | .....                      | .....                                | .....                          |
| Gen-lock Video Input         | .....   | Yes                              | Yes                        | Option                               | Option                         |
| VTR Remote Controls          | Yes   | Yes                              | .....                      | Yes                                  | .....                          |
| Multicore Cable              | 500 ft to AK7250                              | .....                            | .....                      | .....                                | 65 ft                          |
| Triaxial Cable               | 1000 ft to AK7250<br>COAX                     | 8400 ft                          | Option                     | .....                                | .....                          |
| Optical Fiber Cable          | .....   | .....                            | Option                     | .....                                | .....                          |
| Battery Operation            | Yes   | Yes                              | Yes                        | Yes                                  | Yes                            |
| Voltage, External            | .....   | 12Vdc, Attaches                  | 12Vdc, Clip-on             | Snap-on                              | SC-70BAT, 12Vdc                |
| Battery Use Life             | .....   | .....                            | .....                      | .....                                | 2 hr                           |
| Weight Without Lens          | 16 lb   | 13 lb                            | 14.2 lb                    | 20 lb includes VTR                   | 17 lb                          |
| Color Standards              | NTSC  | NTSC, PAL, PAL-M,<br>SECAM       | NTSC, PAL, PAL-M,<br>SECAM | NTSC, PAL, PAL-M<br>SECAM-III, PAL-B | NTSC                           |

| Manufacturer<br>Model Number | Sony Broadcast Products |                      |                      | Thomson-CSF           |                    |
|------------------------------|-------------------------|----------------------|----------------------|-----------------------|--------------------|
|                              | BVP300A                 | BVP-330              | BVP-250 Camera       | MC301 ENG Portable    | MicroCam 501       |
| Pickup Tube Type             | P, S                    | DGP                  | S                    | S                     | S                  |
| Pickup Tube Size             | 2/3-inch                | 2/3-inch             | 2/3-inch             | 2/3-inch              | 2/3-inch           |
| Pickup Tube Number           | .....                   | .....                | .....                | .....                 | .....              |
| Optics                       | Prism                   | Prism                | Prism                | Dichroic Mirrors      | Prism              |
| Sensitivity                  | 2000 Lux, f/4, 69%      | 2000 Lux, f/4, 69%   | 2200 Lux, f/4, 69%   | 2500 Lux, f/4         | 2150 Lux, f/4, 60% |
| Maximum Sensitivity          | 20 Lux, f/1.4, +18dB    | 25 Lux, f/1.4, +18dB | 30 Lux, f/1.4, +18dB | 100 Lux, f/1.6, +12dB | .....              |
| Video Gain Boost             | 0, 9, 18dB              | 0, 9, 18dB           | 0, 9, 18dB           | 0, 6, 12dB            | .....              |
| Signal-to-Noise Ratio        | 56dB                    | 57dB                 | 54dB                 | 54dB                  | 54dB               |
| Horizontal Resolution        | 500TVL                  | 600TVL               | 500TVL               | 500TVL                | 600TVL             |
| Registration (Z1, 2, 3)      | 0.1, 0.2, 0.5%          | 0.1, .2, .5%         | .1, .4, .8%          | .1, .2, .4%           | .1, .4, .8%        |
| Enhancement                  | Level Dependent, Comb   | H/V                  | 2H, Level Dependent  | H/V Dual-Edged        | 2-line H/V Comb    |
| Contours Taken From          | Green                   | Green                | Green                | Green                 | Green              |
| Internal ND Filters          | Yes                     | Yes                  | Yes                  | Yes                   | Yes                |
| Color Temperature Filters    | Yes                     | Yes                  | Yes                  | Yes                   | Yes                |
| Viewfinder Sizes             | 1.5 in                  | 1.5, 5 in            | 1.5, 5 in            | 1.5 in                | 1.5, 5 in          |
| Intercom System              | Yes                     | Yes                  | 1-channel            | 1-channel             | Yes                |
| Program Audio System         | Yes                     | Yes                  | .....                | Yes                   | Yes                |
| Optional CCU                 | .....                   | Uses CCU-330         | CCU-300              | Yes                   | Uses RCS CCU       |
| Auto White Balance           | Yes                     | Yes                  | Yes                  | Yes                   | Yes                |
| Auto Black Balance           | Yes                     | Yes                  | Yes                  | Yes                   | Yes                |
| Auto Iris Control            | Yes                     | Yes                  | Yes                  | Yes                   | .....              |
| Auto Centering               | .....                   | Yes                  | .....                | .....                 | .....              |
| Beam Optimizing              | Yes                     | Yes                  | Yes                  | Yes                   | .....              |
| Sync Drives Required         | .....                   | .....                | Yes                  | .....                 | .....              |
| Gen-lock Video Input         | Yes                     | Yes                  | .....                | Yes                   | Yes                |
| VTR Remote Controls          | Yes                     | Yes                  | Yes                  | Yes                   | .....              |
| Multicore Cable              | .....                   | 2000 ft to CCU-330   | 2000 ft              | 984 ft                | .....              |
| Triaxial Cable               | .....                   | .....                | .....                | .....                 | .....              |
| Optical Fiber Cable          | .....                   | .....                | .....                | .....                 | .....              |
| Battery Operation            | Yes                     | Yes                  | Yes                  | Yes                   | Yes                |
| Voltage, External            | BP-90, 12Vdc            | BP-90, 12Vdc         | 12Vdc Yuasa 3/50     | 12Vdc                 | Clip-on            |
| Battery Use Life             | 2 hr                    | 2 hr                 | BP-90 2 hr           | .....                 | .....              |
| Weight Without Lens          | 12.4 lb                 | 11.8 lb              | 12.4 lb              | 13.3 lb               | 12.3 lb            |
| Color Standards              | NTSC                    | NTSC                 | NTSC                 | NTSC                  | NTSC               |

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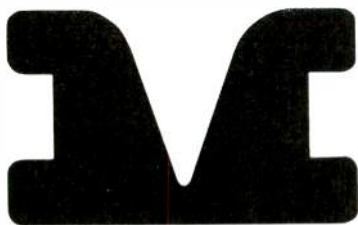
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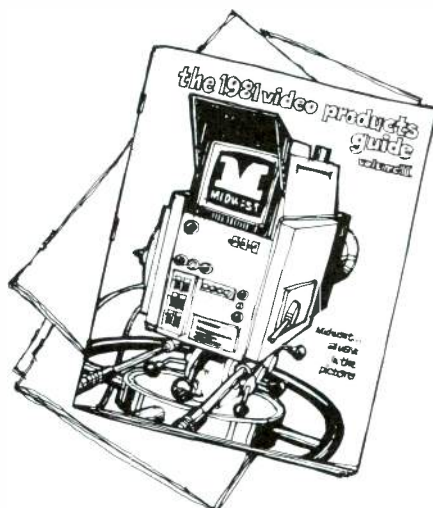
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November 30, 1981 *Broadcast Engineering's Spec Book* 45

# COLOR TV CAMERA

| Manufacturer              | Thomson-CSF           | Toshiba Corporation |                          | US JVC Corporation    |                        |
|---------------------------|-----------------------|---------------------|--------------------------|-----------------------|------------------------|
| Model Number              | MC-701                | PK-39               | PK-60                    | KY1900U               | KY2700U                |
| Pickup Tube Type          | DGP                   | P                   | S, P, DGP                | S                     | S                      |
| Pickup Tube Size          | 3/4-inch              | 3/4-inch            | 3/4-inch                 | 3/4-inch              | 3/4-inch               |
| Pickup Tube Number        | .....                 | .....               | .....                    | H4101                 | H4101                  |
| Optics                    | Prism                 | Prism               | Prism                    | Dichroic Mirrors      | Dichroic Mirrors       |
| Sensitivity               | 2150 Lux, f/4.5, 60%  | 2000 Lux, f/5.6     | 2000 Lux, f/4, 60%       | 2500 Lux, f/4         | 2500 Lux, f/4          |
| Maximum Sensitivity       | 26 Lux, f/1.4, + 18dB | .....               | .....                    | 150 Lux, f/1.6, + 9dB | 100 Lux, f/1.6, + 12dB |
| Video Gain Boost          | 0, 9, 18dB            | 0, 6, 12dB          | 0, 9, 18dB               | 0, 9dB                | 0, 6, 12dB             |
| Signal-to-Noise Ratio     | 57dB                  | 51dB                | 54dB                     | 52dB                  | 54dB                   |
| Horizontal Resolution     | 600TVL                | 500TVL              | 500TVL                   | 500TVL                | 500TVL                 |
| Registration (Z1, 2, 3)   | 0.1, .2, .5%          | .....               | .1, .2, .5%              | 0.1, .4, .8%          | .1, .2, .4%            |
| Enhancement               | .....                 | Comb and Core       | H/V 2-line Coring,       | .....                 | .....                  |
| Contours Taken From       | Green                 | Green               | Green                    | H and V               | H/V Dual-Edged         |
| Internal ND Filters       | Yes                   | Yes                 | Yes                      | Yes                   | Yes                    |
| Color Temperature Filters | Yes                   | Yes                 | Yes                      | Yes                   | Yes                    |
| Viewfinder Sizes          | 1.5, 5 in             | 1.5 in              | 1.5 in                   | 1.5, 5 in             | 1.5, 5 in              |
| Intercom System           | Yes                   | Yes                 | Yes                      | 1-channel             | 1-channel              |
| Program Audio System      | .....                 | Yes                 | Yes                      | Yes                   | Yes                    |
| Optional CCU              | Yes                   | CCU is separable    | Yes                      | Yes                   | Yes                    |
| Auto White Balance        | Yes                   | Yes                 | Yes                      | Yes                   | Yes                    |
| Auto Black Balance        | Yes                   | Yes                 | .....                    | .....                 | Yes                    |
| Auto Iris Control         | Yes                   | Yes                 | Yes                      | Yes                   | Yes                    |
| Auto Centering            | Yes                   | .....               | .....                    | .....                 | .....                  |
| Beam Optimizing           | Yes                   | Yes                 | Yes                      | Yes                   | Yes                    |
| Sync Drives Required      | .....                 | .....               | .....                    | .....                 | Yes                    |
| Gen-lock Video Input      | Yes                   | Yes                 | Yes                      | Yes                   | Yes                    |
| VTR Remote Controls       | .....                 | Yes                 | Yes                      | Yes                   | Yes                    |
| Multicore Cable           | 1800 ft               | .....               | 300 ft (1000 ft digital) | 200 ft                | 980 ft                 |
| Triaxial Cable            | 4000 ft               | .....               | 5000 ft                  | .....                 | .....                  |
| Optical Fiber Cable       | .....                 | .....               | .....                    | .....                 | .....                  |
| Battery Operation         | Yes                   | Yes                 | Yes                      | Yes                   | Yes                    |
| Voltage, External         | 12Vdc                 | 12Vdc               | 12Vdc                    | 12Vdc, Attaches       | 12Vdc, Attaches        |
| Battery Use Life          | .....                 | .....               | .....                    | 1 hr, DC-C19U         | .....                  |
| Weight Without Lens       | 12.7 lb               | 22.8 lb with lens   | 9.3 lb                   | 8.9 lb                | 13.3 lb                |
| Color Standards           | NTSC, PAL, SECAM      | NTSC, PAL, SECAM    | NTSC                     | .....                 | .....                  |

# COLOR TV CAMERA

Studio/Field Production

3-tube design TV camera, typically requiring the use of a camera control unit (CCU), with an included intercommunications system between camera operator and director. The camera accepts a variety of zoom lens assemblies.

| Manufacturer              | Ampex Corporation                   |                            | Booth Television System Division |                           | Commercial Electronics                |
|---------------------------|-------------------------------------|----------------------------|----------------------------------|---------------------------|---------------------------------------|
| Model Number              | BCC-10                              | BCC-21                     | KCK Color Camera                 | KCP60 Color Camera        | AmeriCam                              |
| Pickup Tube Type          | DGP                                 | P, LO, S, DGP              | P, L                             | P                         | DGP, P, LO, S                         |
| Pickup Tube Size          | 1-inch                              | 3/4-inch                   | 1.2-inch                         | 3/4-inch                  | 3/4-inch                              |
| Pickup Tube Number        | .....                               | .....                      | XQ-1410, P8130                   | XQ-1427/2427              | .....                                 |
| Optics                    | .....                               | Prism                      | Prism                            | Prism                     | Prism                                 |
| Sensitivity               | 800 Lux, f/2.8, 60%                 | 2150 Lux, f/4, 60%         | 1600 Lux, f/5.6, 60%             | 1250 Lux, f/2.8, 60%      | 860 Lux, f/1.7, 60%                   |
| Resolution                | 40%, 5MHz                           | 400TVL, 50% DGP            | 40%, 5MHz                        | 40%, 5MHz                 | 500TVL                                |
| Registration (Z1, 2, 3)   | 0.05, .1, .2%                       | .05% overall               | .9 Zone 1                        | .1, .2, .-%               | .1, .2, .3%                           |
| Signal-to-Noise Ratio     | 54dB NTSC<br>(52dB PAL)             | 53dB NTSC<br>(51dB PAL)    | 45dB                             | 52dB NTSC<br>(50dB PAL-M) | 53dB                                  |
| Contours Taken From       | Green                               | Green                      | Green                            | Green                     | Green                                 |
| Enhancement               | Automatic                           | .....                      | 2 Delay Line, Comb               | Delay Line, Comb,         | H/V 2-line, Coring                    |
| ND Filters Available      | .....                               | Yes                        | .....                            | Coring                    | .....                                 |
| Color Temperature Filters | .....                               | Yes                        | .....                            | Yes                       | Yes                                   |
| Beam Optimizing Circuitry | Yes                                 | .....                      | Yes                              | Yes                       | Yes                                   |
| Viewfinder Size           | .....                               | .....                      | 7 in                             | With Proper Tubes         | Yes                                   |
| Return Video Circuits     | .....                               | .....                      | Yes                              | 6 in                      | 5 in                                  |
| Sync Drives Needed        | Yes                                 | .....                      | Yes                              | Yes                       | Yes                                   |
| Gen-lock Video Input      | Yes                                 | Yes                        | Yes                              | Yes                       | .....                                 |
| Setup Manually            | Yes                                 | Yes                        | Yes                              | Yes                       | Yes                                   |
| Setup by Computer         | Yes                                 | Yes                        | Yes                              | Yes                       | .....                                 |
| Digital Operation         | Yes                                 | Yes                        | Yes                              | Yes                       | .....                                 |
| Multicore Cable           | .....                               | Yes                        | 2400 ft                          | KA64, 1650 ft             | .....                                 |
| Triax Cable               | 2400 ft                             | Yes and Optical Fiber      | 4800 ft                          | .....                     | 200 ft                                |
| Camera Head Weight        | 79 lb                               | 38 lb                      | 79 lb                            | 50 lb                     | 5000 ft                               |
| Color Standards           | NTSC, PAL-B, PAL-I,<br>PAL-M, SECAM | NTSC, PAL, PAL-M,<br>SECAM | NTSC, PAL, PAL-M,<br>SECAM       | NTSC, PAL-M,<br>SECAM     | 75 lb<br>NTSC, PAL-B, PAL-I,<br>PAL-M |

\*Pickup tube type designations: ACT P—Anti Comet Tail Plumbicon, C—Chalnicon, DGP—Diode Gun Plumbicon, HOP—Highlight Overload Protected, L—Leddicon, LO—Lead Oxide Vidicon, LOC—Low Output Capacitance Plumbicon, P—Plumbicon, S—Saticon.



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# RCA

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November 30, 1981 *Broadcast Engineering's Spec Book* 47

# COLOR TV CAMERA

| Manufacturer              | Harris Communications  |                         |                        | Hitachi Denshi America, Ltd. |                       |
|---------------------------|------------------------|-------------------------|------------------------|------------------------------|-----------------------|
|                           | Model Number           | TC-50                   | TC-85                  | FP-50S                       | SK-96                 |
| Pickup Tube Type          | P                      | P, ACT P, S             | S, P, C                | S                            | P, S                  |
| Pickup Tube Size          | 1-inch                 | 1-inch                  | 3/4-inch               | 3/4-inch                     | 1- or 1.2-inch        |
| Pickup Tube Number        | XQ-1070/1073           | XQ-1070(73)/2070(73)    | H9311A, XQ1428, E5061D | H8397A                       | XQ1430, XQ2070, H9369 |
| Optics                    | Prism                  | Prism                   | Prism                  | Prism                        | Prism                 |
| Sensitivity               | 130 Lux, f/2, 60%      | 860 Lux, f/2.8          | 2000 Lux, f/4, 90%     | 1350 Lux, f/2.8, 60%         | 2000 Lux, f/5.6(P)    |
| Resolution                | 40%, 5MHz              | 600TVL                  | 550TVL                 | 500TVL                       | 600TVL                |
| Registration (Z1, 2, 3)   | .005, .1, .2%          | .05, .1, .2%            | .2, .4, .8%            | .05, .2, .3%                 | .05, .15, .3%         |
| Signal-to-Noise Ratio     | 50dB                   | 52dB NTSC (49dB PAL)    | 53dB                   | 51dB NTSC (49dB PAL)         | 54dB NTSC (52dB PAL)  |
| Contours Taken From       | Green                  | Green                   | Green                  | Green                        | Green, Red            |
| Enhancement               | H/V Comb, Coring       | H/V Comb, Coring        | H/V Optional           | 2H Comb Filtering            | .....                 |
| ND Filters Available      | Yes                    | Yes                     | Yes                    | Yes                          | Yes                   |
| Color Temperature Filters | Yes                    | Yes                     | Yes                    | Yes                          | Yes                   |
| Beam Optimizing Circuit   | .....                  | Yes                     | .....                  | Yes                          | Yes                   |
| Viewfinder Size           | 6 in                   | 6 in                    | 5 in                   | 7, 1.5 in                    | 7 in                  |
| Return Video Circuits     | Yes                    | Yes                     | .....                  | Yes                          | Yes                   |
| Sync Drives Needed        | Yes                    | Yes                     | Yes                    | .....                        | Yes                   |
| Gen-lock Video Input      | .....                  | Option                  | Option                 | Yes                          | Option                |
| Setup Manually            | Yes                    | Yes                     | Yes                    | Yes                          | Yes                   |
| Setup by Computer         | .....                  | Yes                     | .....                  | .....                        | Yes                   |
| Digital Operation         | .....                  | .....                   | .....                  | .....                        | Yes                   |
| Multicore Cable           | 300 ft, 1500 ft option | 2000 ft, 3000 ft option | 1000 ft                | 300 ft                       | 5000 ft digital       |
| Triax Cable               | .....                  | 5000 ft                 | .....                  | .....                        | .....                 |
| Camera Head Weight        | 75 lb                  | 85 lb                   | 25 lb                  | 53 lb                        | 85 lb                 |
| Color Standards           | NTSC, PAL              | NTSC, PAL               | NTSC, PAL-B            | NTSC, PAL-B                  | NTSC, PAL-B           |

| Manufacturer              | Ikegami Electronics (USA) Inc. |                  |                  | Marconi Broadcasting |   |
|---------------------------|--------------------------------|------------------|------------------|----------------------|---|
|                           | Model Number                   | HK-312           | HK-322           | HK-357               | Mark IX (B3265) Camera Mark IX Portable (B3270) |
| Pickup Tube Type          | P                              | DGP, ACT P, P    | DGP, ACT P       | LO, L                | LO, L   |
| Pickup Tube Size          | 1.2-inch                       | 1-inch           | 1-inch           | 1.2-inch             | 1-inch  |
| Pickup Tube Number        | XQ1430/1410/1530               | .....            | XQ1070/1073/1500 | .....                | .....   |
| Optics                    | Prism                          | Prism            | Prism            | Prism                | Prism   |
| Sensitivity               | 1500 Lux, f/4                  | 1000 Lux, f/2.8  | 1000 Lux, f/2.8  | 800 Lux, f/4, 60%    | 1100 Lux, f/2.8, 60%                            |
| Resolution                | 400TVL                         | 400TVL           | 400TVL           | 100%, 5MHz           | 100%, 5MHz                                      |
| Registration (Z1, 2, 3)   | .05, .2, .3%                   | .05% overall     | .05, .3, .4%     | 40, 80, 120nsec      | 40, 80, 120nsec                                 |
| Signal-to-Noise Ratio     | 53dB                           | 56dB             | 53dB             | 51dB NTSC (49dB PAL) | 49dB NTSC (47dB PAL)                            |
| Contours Taken From       | Green                          | Red, Blue, Green | Green            | Green                | Green   |
| Enhancement               | .....                          | Automatic        | Automatic        | 2-line, Comb, Coring | 2-line, Comb, Coring                            |
| ND Filters Available      | Yes                            | Yes              | Yes              | Yes                  | Yes   |
| Color Temperature Filters | Yes                            | Yes              | Yes              | Yes                  | Yes   |
| Beam Optimizing Circuitry | Yes                            | Yes              | Yes              | Yes                  | .....   |
| Viewfinder Size           | 7 in                           | 7 in             | 7 in             | 7 in                 | 1, 3, 7 in                                      |
| Return Video Circuits     | Yes                            | Yes              | Yes              | Yes                  | Yes   |
| Sync Drives Needed        | .....                          | Yes              | Yes              | Yes                  | Yes   |
| Gen-lock Video Input      | Yes                            | Yes              | Yes              | .....                | .....   |
| Setup Manually            | Yes                            | Yes              | Yes              | Yes                  | Yes   |
| Setup by Computer         | Option                         | Yes              | Yes              | Yes                  | .....   |
| Digital Operation         | .....                          | Yes              | Yes              | .....                | .....   |
| Multicore Cable           | 1800 ft                        | 1800 ft          | 1800 ft          | 3000 ft              | 2400 ft   |
| Triax Cable               | 4500 ft                        | 4500 ft          | 4500 ft          | 4500 ft              | 4500 ft   |
| Camera Head Weight        | 94 lb                          | 83 lb            | 88 lb            | 75 lb                | 16.6 lb   |
| Color Standards           | NTSC                           | NTSC             | NTSC             | NTSC, PAL, SECAM     | NTSC, PAL, SECAM                                |

# COLOR TV CAMERA

| Manufacturer              | Marconi Broadcasting    | Phillips (PYE TVT)       |                          |                          |                                 | RCA Broadcast Systems |
|---------------------------|-------------------------|--------------------------|--------------------------|--------------------------|---------------------------------|-----------------------|
| Model Number              | Mark IX B Camera        | LDK5B                    | LDK25B                   | LDK44                    | TK-47                           |                       |
| Pickup Tube Type          | L, P                    | DGP, P                   | ACT P, DGP, P            | P, LOC P                 | V                               |                       |
| Pickup Tube Size          | 1.2-inch                | 1-inch                   | 1-inch                   | 3/4-inch                 | 1.2-inch                        |                       |
| Pickup Tube Number        | P8130, XQ1410           | .....                    | 73XQ, XQ1080/1070        | XQ1427/1428              | .....                           |                       |
| Optics                    | Prism                   | Prism                    | Prism                    | Prism                    | Prism                           |                       |
| Sensitivity               | 800 Lux, f/4, 60%       | 1000 Lux, f/2.8, 60%     | 1000 Lux, f/2.8, 60%     | 800 Lux, f/2.8, 89.9%    | 1250 Lux, f/4, 14%              |                       |
| Resolution                | 100%, 5MHz              | 65%, 5MHz                | 65%, 5MHz                | 65%, 5MHz                | 400TVL                          |                       |
| Registration (Z1, 2, 3)   | 40, 80, 120nsec         | 25, 65, 125nsec          | 25, 65, 125nsec          | 25, 65, 125nsec          | 0.05, .1, .2%                   |                       |
| Signal-to-Noise Ratio     | 51dB NTSC<br>(49dB PAL) | 54dB                     | 56dB                     | 56dB, LOC P              | 52dB NTSC<br>(49dB PAL)         |                       |
| Contours Taken From       | Green                   | Green                    | Green                    | Green                    | Green, Red                      |                       |
| Enhancement               | 2-line, Comb, Coring    | Level Dependent,<br>Comb | Level Dependent,<br>Comb | Level Dependent,<br>Comb | Comb, Coring                    |                       |
| ND Filters Available      | Yes                     | .....                    | Yes                      | .....                    | Yes                             |                       |
| Color Temperature Filters | Yes                     | Yes                      | Yes                      | .....                    | Yes                             |                       |
| Beam Optimizing Circuitry | Yes                     | Yes                      | Yes                      | Yes                      | Yes                             |                       |
| Viewfinder Size           | 7 in                    | 7 in                     | 7 in                     | .....                    | 7 in                            |                       |
| Return Video Circuits     | Yes                     | Yes                      | Yes                      | Yes                      | Yes                             |                       |
| Sync Drives Needed        | Yes                     | Yes                      | Yes                      | Yes                      | .....                           |                       |
| Gen-lock Video Input      | .....                   | Yes                      | .....                    | Yes                      | Yes                             |                       |
| Setup Manually            | Yes                     | Yes (CLUE)               | Yes (CLUE)               | Yes                      | Yes                             |                       |
| Setup by Computer         | Yes                     | Yes                      | .....                    | .....                    | Yes                             |                       |
| Digital Operation         | Yes                     | Digital                  | .....                    | .....                    | Yes                             |                       |
| Multicore Cable           | 3000 ft                 | 1800 ft                  | 150 ft                   | .....                    | 2000 ft                         |                       |
| Triax Cable               | 4500 ft                 | 4800 ft                  | .....                    | .....                    | 10,000 ft                       |                       |
|                           | .....                   | (15kft wirepeater)       | .....                    | .....                    | .....                           |                       |
| Camera Head Weight        | 75 lb                   | 82 lb                    | 90 lb                    | .....                    | 88 lb                           |                       |
| Color Standards           | NTSC, PAL, SECAM        | NTSC, PAL-B              | NTSC, PAL-M/B/G/H/I      | NTSC, PAL                | NTSC, PAL, PAL-M,<br>SECAM IIIB |                       |

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# HANNAY REELS

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# COLOR TV CAMERA

| Manufacturer              | RCA Broadcast Systems             | Thomson CSF                       | Toshiba Corporation               |
|---------------------------|-----------------------------------|-----------------------------------|-----------------------------------|
| Model Number              | TK761                             | TK-781                            | TTV 1525 Camera<br>PK31A<br>PK40A |
| Pickup Tube Type          | V, S                              | V, S                              | DGP                               |
| Pickup Tube Size          | 2/3-inch                          | 2/3-inch                          | 1, 2/3-inch                       |
| Pickup Tube Number        | .....                             | .....                             | XQ2070, XQ2427                    |
| Optics                    | Prism                             | Prism                             | Prism                             |
| Sensitivity               | 1250 Lux, f/2.8, 60%              | 1250 Lux, f/2.8, 60%              | 800 Lux, f/2.8, 60%               |
| Resolution                | .....                             | .....                             | 50%, 5MHz                         |
| Registration (Z1, 2, 3)   | 0.1, .2, .5%                      | .1, .2, .5%                       | 30, 70, 120nsec                   |
| Signal-to-Noise Ratio     | 54dB NTSC<br>(52dB PAL)           | 54dB NTSC<br>(52dB PAL)           | 49dB                              |
| Contours Taken From       | Green                             | Green                             | Green                             |
| Enhancement               | H/V Comb, Coring                  | H/V Comb, Coring                  | Adjustable                        |
| ND Filters Available      | .....                             | .....                             | Yes                               |
| Color Temperature Filters | .....                             | .....                             | Electronic                        |
| Beam Optimizing Circuitry | Yes                               | Yes                               | Yes                               |
| Viewfinder Size           | .5 in                             | 5 in                              | 1.5, 5, 7 in                      |
| Return Video Circuits     | Yes                               | Yes                               | Yes                               |
| Sync Drives Needed        | .....                             | .....                             | Yes                               |
| Gen-lock Video Input      | Yes                               | Yes                               | Yes                               |
| Setup Manually            | Yes                               | Yes                               | Yes                               |
| Setup by Computer         | .....                             | .....                             | Yes                               |
| Digital Operation         | .....                             | .....                             | Yes                               |
| Multicore Cable           | 3000 ft                           | .....                             | 1800 ft                           |
| Triax Cable               | .....                             | 5000 ft                           | 4500 ft                           |
| Camera Head Weight        | .38 lb                            | 50 lb                             | 18 lb                             |
| Color Standards           | NTSC, PAL-B, PAL-M,<br>SECAM IIIB | NTSC, PAL-B, PAL-M,<br>SECAM IIIB | NTSC, PAL, SECAM                  |

# TV CAMERA LENS

Image Format 2/3-inch (8.8x6.6mm)

Optical lens systems for use, and adaptable, with various models of TV cameras. This listing is in order of increasing zoom ratio.

| Manufacturer              | Angenieux    |              |                 | Canon   |   |
|---------------------------|--------------|--------------|-----------------|---|---|
| Model Number              | 15x9         | 15x9.5       | 25x10           | J13x9B*IE II  | J20x8.5B*IE   |
| Type                      | ENG/EFP Lens | ENG/EFP Lens | Studio/EFP Lens | TV Zoom Lens  | TV Zoom Lens  |
| Zoom Range (mm)           | 9 to 135     | 9.5 to 142   | 10 to 250       | 9 to 117  | 8.5 to 170  |
| Relative Aperture (F)     | 1.5 to 1.9   | 1.8 to 2.7   | 1.4 to 2.8      | 1.6, past 99mm 1.9  | 1.6, past 129mm 2.1   |
| Transmission Stop (T)     | 1.65 to 2.1  | .....        | .....           | .....   | .....   |
| Photometric Factor        | 1.1          | 1.2          | .....           | .....   | .....   |
| Minimum Object Distance   | .08m/31 in   | .6m/24 in    | .9m/36 in       | .8m/31 in   | .6m/24 in   |
| M.O.D. Area (mm)          | 48x36        | 35x27        | 27x20           | 56x42   | 39x30   |
| Horizontal Field Angle    | 51° to 3.75° | 54° to 4°    | 46° to 2°       | 52.1° to 4.3°   | 54.7° to 3°   |
| Back Focal Distance (mm)  | Adjustable   | Adjustable   | Adjustable      | 1, 3, 4, 6, 7, 8*   | 1, 2, 3, 4, 6, 7*   |
| Clear Aperture Front (mm) | .....        | .....        | .....           | 72.6  | 132.9   |
| Clear Aperture Rear (mm)  | .....        | .....        | .....           | .....   | .....   |
| Integral Range Extenders  | x2           | .....        | Attachments     | x2  | x2  |
| Closeup Diopters          | .....        | .....        | .....           | .....   | .....   |
| Servo Iris                | Yes          | Yes          | Yes             | Yes   | Available   |
| Servo Zoom                | Yes          | Yes          | Yes             | Yes   | Available   |
| Lens Assembly Weight      | 2.1Kg/4.7 lb | 2.5Kg/5.5 lb | 6.2Kg/13.7 lb   | 1.45Kg/3.2 lb   | 8Kg/17.6 lb   |
| Applicable cameras*       | .....        | .....        | .....           | *1-FP40S, 3-HL79,<br>BCC20, ITC350,<br>4-SK90/91, MNC81A,<br>AK710/760, DXC6000,<br>BVP300/330, 6-TK86,<br>7-PK60, 8-KCA100,<br>KCP60 | *1-HL77, SK96, PK39,<br>FP40S, 2-TK76, TK760,<br>3-HL79/790, HL78,<br>BCC20, 4-BVP300/330,<br>SK91, MNC81, AK760,<br>6-TK86, KCP60, 7-PK60,<br>LDK14, BCC14 |

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Wide angle A3.5 x 6.5 zoom



Lightweight A 10 x 11 zoom



A12 x 9 zoom,  
2.2X extender



A14 x 9.5 zoom, 2X extender,  
diascope optional



A17 x 9 zoom, 2X extender



A22 x 12.5 zoom, 2X extender



A30 x 11 field zoom, 2X extender



R14 x 14 studio zoom, 2X extender



16X studio zoom,  
2X extender



30X field zoom,  
2X extender



1-X high resolution zoom,  
2X extender, diascope —  
constant F 2.1



14 x 7 zoom for 1/2" format  
VTR/cameras — 2X extender F/1.4  
(not shown. 12 x 7 zoom — F/1.4)

Fujinon offers you more ways to improve your image — regardless of format, camera or application.

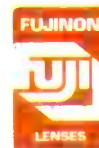
For the new VTR/Cameras, Fujinon is first again, including two new full-featured, light-weight lenses for 1/2-inch format.

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Telex: 171164

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# TV CAMERA LENS

Image Format 2/3-inch (8.8x6.6mm)

| Manufacturer              | Canon   | Fujinon   |   |  | Schneider           |
|---------------------------|---|---|---|--|---------------------|
|                           | Model Number  | A12x9°RM  | A17x9°ERM   | A30x11°ESM   | Varlogon 1.8/10-100 |
| Type                      | TV Zoom Lens  | ENG/EFP Zoom Lens   | ENG/EFP Lens  | EFP Lens   | TV41 ENG Lens       |
| Zoom Range (mm)           | 11.5 to 288   | 9 to 109  | 9 - 153   | 11 - 330   | 10 to 100           |
| Relative Aperture (F)     | 1.6, past 219mm 2.1   | 1.7, past 90mm 1.9  | 1.7, past 114mm 2.3   | 1.6, past 220mm 2.4  | 1.8                 |
| Transmission Stop (T)     | .....   | .....   | .....   | .....  | 2.2                 |
| Photometric Factor        | .....   | .....   | .....   | .....  | .....               |
| Minimum Object Distance   | 1.5m/59 in  | .8m/31 in   | .9m/35.4 in   | 1.7m/67 in   | 1m/39.3 in          |
| M.O.D. Area (mm)          | 41x31   | 59.7x44.8   | 48x36   | 41x31  | 85x64               |
| Horizontal Field Angle    | 41.9° to 1.8°   | 52°06' to 4°40'   | 52°06' to 3°17'   | 43°36' to 1°32'  | 46° to 5.2°         |
| Back Focal Distance (mm)  | 1, 2, 3, 4, 6, 7*   | —, B, C, F, G, H, K*  | A, B, C, F, G, H, K*  | —, B, C, F*  | 40.8                |
| Clear Aperture Front (mm) | 137   | 71  | .....   | 136  | 66                  |
| Clear Aperture Rear (mm)  | .....   | .....   | 80  | .....  | 23.7                |
| Integral Range Extenders  | x2  | .....   | x2  | x2   | x2                  |
| Closeup Diopters          | .....   | .....   | .....   | .....  | .....               |
| Servo Iris                | Available   | Yes   | Yes   | Yes  | Yes                 |
| Servo Zoom                | Available   | Yes   | Yes   | Yes  | Yes                 |
| Lens Assembly Weight      | 10Kg/22 lb  | 1.8Kg/4 lb  | 2.3Kg/5 lb  | 9.2Kg/20.3 lb  | 2.3Kg/5.1 lb        |
| Applicable Cameras*       | 1-HL77, SK70/96, PK39, FP40S, 2-TK76, TK760, 3-HL79/790, HL78, BCC20, 4-BVP300/330, SK91, MNC81, AK760, 6-TK86, AK760, 7-PK60, LDK14, BCC14 | — HL37/77, ITC240, FP40S, SK70/96, B-BVP300, CEI300, MNC71/81, SK90/91, C-TK76/760, F-HL79, G-PK39, H-LDK14, BCC14, K-KCP60, KCA100 | A-SK70/96, HL37/77, FP40S, ITC240, B-SK90/91, BVP300, MNC71/81, CEI300, C-TK76/760, F-HL79, G-PK39, H-LDK14, BCC14, K-KCP60, KCA100 | — SK96, B-SK91, PK60, TK86, BVP300/330, MNC81A, CEI300, C-TK76/760, F-HL79/790 | .....               |

Image Format 2/3-inch (8.8x6.6mm)

| Manufacturer              | Schneider   |                     | Taylor Hobson  |                |                   |
|---------------------------|---|---------------------|----------------|----------------|-------------------|
|                           | Model Number  | Varlogon 1.4/11-330 | Varotal MRL    | Varotal MRL    | Varotal MRL       |
| Type                      | TV43 ENG/EFP Lens   | TV45 EFP Standard   | Wide Angle     | Standard       | Narrow Angle Tele |
| Zoom Range (mm)           | 8.5 to 125  | 11 to 330           | 9 to 90        | 11 to 110      | 18 to 180         |
| Relative Aperture (F)     | 1.7, past 95mm 2.1  | 1.4, past 132mm 3.5 | 1.8 maximum    | 1.8 maximum    | 1.8 maximum       |
| Transmission Stop (T)     | .....   | .....               | 2.0 maximum    | 2.0 maximum    | 2.0 maximum       |
| Photometric Factor        | .....   | .....               | .....          | .....          | .....             |
| Minimum Object Distance   | 0.8m/31 in  | .85m/33.5 in        | .6m/2 ft       | 1.2m/4 ft      | 2.1m/7 ft         |
| M.O.D. Area (mm)          | 55.7x41.7   | 30x22               | .....          | .....          | .....             |
| Horizontal Field Angle    | 53° to 4.1°   | 42.5° to 1.6°       | 52° to 5.6°    | 44° to 4.8°    | 28° to 2.8°       |
| Back Focal Distance (mm)  | 41.6  | 41.1                | Adjustable     | Adjustable     | Adjustable        |
| Clear Aperture Front (mm) | 71  | 132                 | .....          | .....          | .....             |
| Clear Aperture Rear (mm)  | 25.2  | 38.4                | .....          | .....          | .....             |
| Integral Range Extenders  | x2  | .....               | x1.4, x2, x2.8 | x1.4, x2, x2.8 | x1.4, x2, x2.8    |
| Closeup Diopters          | .....   | 1.17                | .....          | .....          | .....             |
| Servo Iris                | Yes   | Yes                 | Yes            | Yes            | Yes               |
| Servo Zoom                | Yes   | Yes                 | Yes            | Yes            | Yes               |
| Lens Assembly Weight      | 3.1Kg/6.9 lb  | 16Kg/35.2 lb        | 7.5Kg/16.5 lb  | 5Kg/11 lb      | 9Kg/19.8 lb       |
| *Applicable Cameras       | KCA100, KCP60, TK86, TK76/760, HL79A, BVP300/330, LDK14, TTV1601, BCC14 | .....               | .....          | .....          | .....             |

# TV CAMERA LENS

Image Format 1-inch (12.8x9.6mm)

Optical lens systems for use, and adaptable, with various models of TV cameras. This listing is in order of increasing zoom ratio.

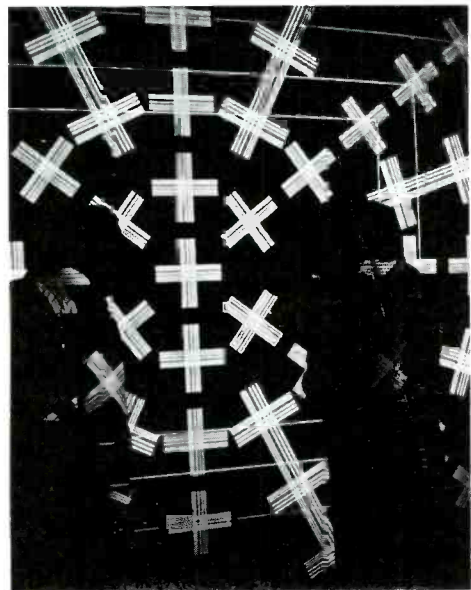
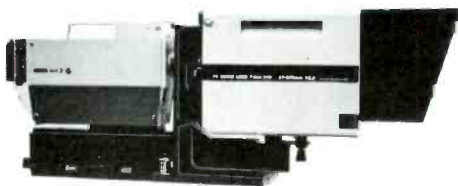
| Manufacturer              | Angenieux    |             | Canon   | Fujinon  |
|---------------------------|--------------|-------------|---|--|
| Model Number              | 12x12.5      | 42x12.5     | PV10x12B2   | K12x14ERM  |
| Type                      | Studio/OB    | Studio/OB   | Hand-held Use   | BCTV Zoom Lens                                     |
| Zoom Range (mm)           | 12.5 to 150  | 12.5 to 525 | 12 - 120  | 14 to 168  |
| Relative Aperture (F)     | 1.5          | 1.5 to 5.3  | 2, past 68mm 2.8  | 1.9  |
| Transmission Stop (T)     | .....        | .....       | 2.3, past 68mm 3.2                                      | .....  |
| Photometric Factor        | 1.1          | 1.26        | .....   | .....  |
| Minimum Object Distance   | 0.95m/3 ft   | .64m/25 in  | .45m/17.7 in  | .95m/37.4 in                                       |
| M.O.D. Area (mm)          | 109x82       | 22x17       | .....   | 66x49  |
| Horizontal Field Angle    | 56° to 5°    | 56° to 1.5° | 55.4° to 6°   | 46°08' to 4°22'                                    |
| Back Focal Distance (mm)  | Adjustable   | Adjustable  | 59.28   | 59.47  |
| Clear Aperture Front (mm) | .....        | .....       | .....   | 86.5   |
| Clear Aperture Rear (mm)  | .....        | .....       | .....   | .....  |
| Integral Range Extenders  | .....        | .....       | .....   | x2   |
| Closeup Diopters          | .....        | Available   | .....   | .....  |
| Servo Iris                | Yes          | Yes         | Yes   | Yes  |
| Servo Zoom                | .....        | .....       | Yes   | Yes  |
| Lens Assembly Weight      | 26.5Kg/59 lb | 26Kg/58 lb  | 2.7Kg/6 lb  | 2.9Kg/6.4 lb                                       |
| Applicable Cameras        | .....        | .....       | TKP-45, LDK-15,<br>KCR/KCN, IVC-7000P,<br>Mark-9P, HL51 | HL51, PK36,TK45,<br>IVC7005P, Mark 9P,<br>Link 120 |

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# TV CAMERA LENS

Image Format 1-inch (12.8x9.6mm)

| Manufacturer              | Schneider           |                                       | Taylor Hobson                                 |                           |                         |
|---------------------------|---------------------|---------------------------------------|---|---------------------------|-------------------------|
|                           | Fujinon             | Varlogon 2/17-170<br>TV24 Studio Lens | Varlogon 1.7/12.5-190<br>TV36 Wide Angle Lens | Varotal MRL<br>Wide Angle | Varotal MRL<br>Standard |
| Model Number              | R14x12.5ESM         |                                       |   |                           |                         |
| Type                      | High Resolution     |                                       |   |                           |                         |
| Zoom Range (mm)           | 12.5 to 175         | 17 to 170                             | 12.5 to 190                                   | 13 to 130                 | 16 to 160               |
| Relative Aperture (F)     | 1.6, past 165mm 1.7 | 2                                     | 1.7, past 125mm 2.5                           | 2                         | 2                       |
| Transmission Stop (T)     | .....               | .....                                 | .....   | .....                     | .....                   |
| Photometric Factor        | .....               | .....                                 | .....   | .....                     | .....                   |
| Minimum Object Distance   | .075m/29.5 in       | 1.5m/59 in                            | .4m/15.7 in                                   | .6m/2 ft                  | 1.2m/4 ft               |
| M.O.D. Area (mm)          | 69x52               | 108x81                                | 38x29   | 75x56                     | 80x60                   |
| Horizontal Field Angle    | .54°13' to 4°11'    | 41° to 4.4°                           | 53° to 3.9°                                   | 52° to 5.6°               | 44° to 4.6°             |
| Back Focal Distance (mm)  | 60.61               | 60                                    | 59.7  | Adjustable                | Adjustable              |
| Clear Aperture Front (mm) | 173                 | 98                                    | 130.5   | .....                     | .....                   |
| Clear Aperture Rear (mm)  | .....               | 33.1                                  | 40  | .....                     | .....                   |
| Integral Range Extenders  | x2                  | x1.5, x2, x2.5                        | x1.7  | x1.4, x2, x2.8            | x1.4, x2, x2.8          |
| Closeup Diopters          | .....               | .....                                 | .....   | .....                     | .....                   |
| Servo Iris                | Yes                 | Yes                                   | Yes   | Yes                       | Yes                     |
| Servo Zoom                | Yes                 | .....                                 | .....   | Yes                       | Yes                     |
| Lens Assembly Weight      | 25Kg/55.1 lb        | 6.5Kg/14.3 lb                         | 17Kg/37.5 lb                                  | 17.5Kg/38.6 lb            | 15Kg/33 lb              |
| Applicable Cameras        | .....               | .....                                 | .....   | .....                     | .....                   |

# TV CAMERA LENS

Image Format 1 1/4-inch (17.1x12.8mm)

Optical lens systems for use, and adaptable, with various models of TV cameras. This listing is in order of increasing zoom ratio.

| Manufacturer              | Angenieux    |                         | Canon  |  | Fujinon                       |
|---------------------------|--------------|-------------------------|--|--|-------------------------------|
|                           | 12x16        | 42x16<br>Studio/OB Lens | P12x18BIE<br>Studio Lens                             | P18x16B<br>Studio/Field Lens                         | P14x16.5ESM<br>BCTV Zoom Lens |
| Model Number              | .....        | .....                   | .....  | .....  | .....                         |
| Type                      | .....        | .....                   | .....  | .....  | .....                         |
| Zoom Range (mm)           | 16 to 192    | 16 to 675               | 18 - 216   | 16 - 288   | 16.5 to 230                   |
| Relative Aperture (F)     | 2            | 2 to 6.8                | 2.1  | 2.1, past 230mm 2.7                                  | 2.1, past 221mm 2.2           |
| Transmission Stop (T)     | .....        | .....                   | 2.3  | 2.3, past 230mm 3                                    | .....                         |
| Photometric Factor        | 1.1          | 1.24                    | .....  | .....  | .....                         |
| Minimum Object Distance   | .095m/3 ft   | .64m/25 in              | .9m/35 in  | .6m/23.6 in  | .75m/29.5 in                  |
| M.O.D. Area (mm)          | 109x82       | 22x17                   | .....  | .....  | 72x54                         |
| Horizontal Field Angle    | 56° to 5°    | 56° to 1.5°             | 50.8° to 1.5°  | 55.3° to 3.4°  | 54°50' to 4°16'               |
| Back Focal Distance (mm)  | Adjustable   | Adjustable              | 78.27  | 78.08  | 66.36                         |
| Clear Aperture Front (mm) | .....        | .....                   | .....  | .....  | 173                           |
| Clear Aperture Rear (mm)  | .....        | .....                   | .....  | .....  | .....                         |
| Integral Range Extenders  | Available    | .....                   | x1.5, x2   | x1.5, x2   | x2                            |
| Closeup Diopters          | .....        | .....                   | .....  | .....  | .....                         |
| Servo Iris                | Yes          | Yes                     | Yes  | Yes  | Yes                           |
| Servo Zoom                | .....        | Yes                     | Yes  | Yes  | Yes                           |
| Lens Assembly Weight      | 26.5Kg/59 lb | 26Kg/58 lb              | 20Kg/44 lb   | 27Kg/60 lb   | 25Kg/55 lb                    |
| Applicable Cameras        | .....        | .....                   | HK312, PC70, SK100,<br>TK45/46/47,<br>PK31A, KCU/KCK | HK312, PC70, SK100,<br>TK45/46/47,<br>PK31A, KCU/KCK | .....                         |



# TV CAMERA LENS

Image Format 1¼-inch (17.1x12.8mm)

| Manufacturer              | Fujinon         |      | Schnelder                                |  | Taylor Hobson             |                                  |
|---------------------------|-----------------|------|--|--|---------------------------|----------------------------------|
|                           | Model Number    | Type | Varilogon 2.1/18-200<br>TV10 Studio Lens | Varilogon 2.1/16-240<br>TV33 Wide Angle Lens | Varotal MRL<br>Wide Angle | Varotal MRL<br>Narrow Angle Tele |
| Zoom Range (mm)           | 17 to 270       |      | 18 to 200                                | 16 to 24G                                    | 17.5 to 175               | 35 to 350                        |
| Relative Aperture (F)     | 2.1             |      | 2.1                                      | 2.1, past 160mm 3.1                          | 2.7                       | 2.7                              |
| Transmission Stop (T)     | .....           |      | .....                                    | .....  | .....                     | .....                            |
| Photometric Factor        | .....           |      | .....                                    | .....  | .....                     | .....                            |
| Minimum Object Distance   | 0.75m/29.5 in.  |      | .7m/27.5 in                              | .4m/15.7 in                                  | .6m/2 ft                  | 2.1m/7 ft                        |
| M.O.D. Area (mm)          | 60.3x30.1       |      | 82x61                                    | 41x31  | 75x56                     | 104x78                           |
| Horizontal Field Angle    | 53°27' to 3°38' |      | 51° to 4.9°                              | 56° to 4.2°                                  | 52° to 5.6°               | 28° to 2.8°                      |
| Back Focal Distance (mm)  | 81.72           |      | 58.7                                     | 61.7   | Adjustable                | Adjustable                       |
| Clear Aperture Front (mm) | 140             |      | 140                                      | 130.5  | .....                     | .....                            |
| Clear Aperture Rear (mm)  | .....           |      | 28.2                                     | 38.6   | .....                     | .....                            |
| Integral Range Extenders  | x1.2, x2, x2.5  |      | x1.5, x2, x2.5                           | x1.7   | x1.4, x2, x2.8            | x1.4, x2, x2.8                   |
| Closeup Diopters          | .....           |      | .....                                    | .....  | .....                     | .....                            |
| Servo Iris                | Yes             |      | Yes                                      | Yes  | Yes                       | Yes                              |
| Servo Zoom                | Yes             |      | .....                                    | .....  | Yes                       | Yes                              |
| Lens Assembly Weight      | 24Kg/53 lb      |      | 17.6Kg/38.7 lb                           | 17Kg/37.5 lb                                 | 17.5Kg/39 lb              | 20.5Kg/45.2 lb                   |
| Applicable Cameras        | .....           |      | .....                                    | .....  | .....                     | .....                            |

# CAMERA PICKUP TUBE

Vacuum tube pickup devices of separate mesh construction unless otherwise noted. Deflection is magnetic. Individual device data for Hitachi Denshi Corporation Saticons and for Toshiba Corporation Chalnicos were not available.

| Manufacturer                  | Amperex Electronics Corporation |                   |                      |           |                  |                           |
|-------------------------------|---------------------------------|-------------------|----------------------|-----------|------------------|---------------------------|
|                               | Series/Number                   | 80XQ <sup>2</sup> | 74XQLOC <sup>2</sup> | XQ1427    | XQ1070           | XQ2070(73xQ) <sup>6</sup> |
| Suffix Letters                | .....                           | B/G/R             | B/G/R                | B/G/R     | B/G/R            | B/G/R                     |
| Type                          | Plumbicon DG*                   | Plumbicon DG      | Plumbicon            | Plumbicon | Plumbicon        | Plumbicon DG              |
| Image Format                  | ½-inch                          | ½-inch            | ½-inch               | 1-inch    | 1-inch           | 1-inch                    |
| Heater Voltage                | 6.3V                            | 6.3V              | 6.3V                 | 6.3V      | 6.3V             | 6.3V                      |
| Heater Current                | 95mA                            | 95mA              | 95mA                 | 95mA      | 95mA             | 95mA                      |
| Bias Lighting                 | .....                           | .....             | .....                | .....     | .....            | Suggested                 |
| Dark Current                  | 1nA                             | 1nA               | 1.5nA                | 3nA       | 2nA <sup>7</sup> | 2nA <sup>7</sup>          |
| Target Voltage                | 45V                             | 45V               | 45V                  | 45V       | 45V              | 45V                       |
| Modulation Depth <sup>3</sup> | 45%/700                         | 50%/750           | 60%/700              | 40%/750   | 65%/1000         | 65%/1000                  |
| Infrared Filter               | .....                           | .....             | .....                | .....     | .....            | (XQ2075)                  |
| Antihalation Disk             | Yes                             | Yes               | Yes                  | Yes       | Yes              | Yes                       |
| Extended Red Use              | .....                           | .....             | .....                | .....     | .....            | (XQ2073, 2075)            |
| Low Capacitance               | Yes                             | Yes               | .....                | .....     | .....            | .....                     |
| Magnetic Focus                | .....                           | Yes               | Yes                  | Yes       | Yes              | Yes                       |
| Front Loading                 | Integral Yoke                   | Yes               | Yes                  | Yes       | Yes              | Yes                       |
| Beam Optimizing <sup>4</sup>  | Yes                             | Yes               | .....                | .....     | .....            | Yes                       |

\*Plumbicon is a trademark of Amperex. "DG" stands for diode gun.

<sup>1</sup>Developmental type. XQ-series number not yet assigned.

<sup>2</sup>Developmental type. XQ-2427 has been assigned to the series.

<sup>3</sup>Modulation Depth in percentage (%) indicates amplitude response at the center of the green tube using a square wave test pattern of 400TVL. The second value is the limiting resolution of the tube.

<sup>4</sup>Second percent value is for extended-red tube modulation.

<sup>5</sup>Beam Optimizing requires circuitry in the camera. Tubes marked "Yes" will provide proper highlight overload action only in a camera with that added circuitry.

<sup>6</sup>Formerly a developmental type 73XQ, now a series XQ-2070/03B, XQ2073/03R, XQ-2075/03R and XQ-2077/03G.

<sup>7</sup>Dark current value without the bias lamp operating.

# CAMERA PICKUP TUBE

| Manufacturer                  | Ampere Electronic Corporation |              |                   | English Electric Valve Company Limited |                          |                          |
|-------------------------------|-------------------------------|--------------|-------------------|--|--------------------------|--------------------------|
|                               | Series/Number                 | XQ1080       | 45XQ <sup>1</sup> | XQ1410                                 | P8021                    | P8022                    |
| Suffix Letters                | L/B/G/R                       | .....        | .....             | L/B/G/R                                | L/B/G/R                  | L/B/G/R                  |
| Type                          | Plumbicon                     | Plumbicon DG | .....             | Plumbicon                              | Leddicon*                | Leddicon                 |
| Image Format                  | 1-inch                        | 1.2-inch     | .....             | 1.2-inch                               | 1-inch                   | 1-inch                   |
| Heater Voltage                | 6.3V                          | 6.3V         | .....             | 6.3V                                   | 6.3V                     | 6.3V                     |
| Heater Current                | 95mA                          | 90mA         | .....             | .3A                                    | 95mA                     | 95mA                     |
| Bias Lighting                 | Yes                           | .....        | .....             | Yes                                    | .....                    | Yes                      |
| Dark Current                  | 3nA                           | 5nA          | .....             | 2nA                                    | 3nA                      | 1nA <sup>7</sup>         |
| Target Voltage                | 45V                           | 45V          | .....             | 45V                                    | 45V                      | 45V                      |
| Modulation Depth <sup>3</sup> | 40%/750                       | 90%/1600     | .....             | 55%/750                                | 40%/750                  | 40%/750                  |
| Infrared Filter               | .....                         | .....        | .....             | .....                                  | .....                    | .....                    |
| Antihalation Disk             | Yes                           | Yes          | .....             | Yes                                    | Available                | Yes                      |
| Extended Red Use              | .....                         | .....        | .....             | (XQ1413)                               | .....                    | .....                    |
| Low Capacitance               | .....                         | .....        | .....             | .....                                  | .....                    | .....                    |
| Magnetic Focus                | Yes                           | Yes          | .....             | Yes                                    | Yes                      | Yes                      |
| Front Loading                 | .....                         | Yes          | .....             | Yes                                    | Yes (P8141) <sup>9</sup> | Yes (P8142) <sup>9</sup> |
| Beam Optimizing <sup>5</sup>  | Yes                           | Yes          | .....             | Yes                                    | .....                    | .....                    |

| Manufacturer                  | English Electric Valve Company Limited |                          |       |                            |                            |                      |
|-------------------------------|--|--------------------------|-------|----------------------------|----------------------------|----------------------|
|                               | Series/Number                          | P8023                    | P8024 | P8130 <sup>10</sup>        | P8131 <sup>10</sup>        | P8132 <sup>10</sup>  |
| Suffix Letters                | RF/AR                                  | RF/AR                    | ..... | L/B/G/R(H-) <sup>11</sup>  | L/B/G/R(H-) <sup>11</sup>  | RF/AR                |
| Type                          | Leddicon                               | Leddicon                 | ..... | Leddicon                   | Leddicon                   | Leddicon             |
| Image Format                  | 1-inch                                 | 1-inch                   | ..... | 1.2-inch                   | 1.2-inch                   | 1.2-inch             |
| Heater Voltage                | 6.3V                                   | 6.3V                     | ..... | 6.3V                       | 6.3V                       | 6.3V                 |
| Heater Current                | 95mA                                   | 95mA                     | ..... | 300mA <sup>12</sup>        | 95mA                       | 300mA <sup>12</sup>  |
| Bias Lighting                 | .....                                  | Yes                      | ..... | Int. Fixed                 | Int. Variable              | Int. Fixed           |
| Dark Current                  | 3nA                                    | 1nA <sup>7</sup>         | ..... | .....                      | 1nA <sup>7</sup>           | .....                |
| Target Voltage                | 45V                                    | 45V                      | ..... | 45V                        | 45V                        | 45V                  |
| Modulation Depth <sup>3</sup> | 45%/750                                | 45%/750                  | ..... | 40%/750(60%) <sup>13</sup> | 40%/750(60%) <sup>13</sup> | 50%/750 <sup>4</sup> |
| Infrared Filter               | RF only <sup>8</sup>                   | RF only <sup>8</sup>     | ..... | .....                      | .....                      | RF only <sup>8</sup> |
| Antihalation Disk             | Yes                                    | Yes                      | ..... | Yes                        | Yes                        | Yes                  |
| Extended Red Use              | Yes                                    | Yes                      | ..... | Yes                        | Yes                        | Yes                  |
| Low Capacitance               | .....                                  | .....                    | ..... | .....                      | .....                      | .....                |
| Magnetic Focus                | Yes                                    | Yes                      | ..... | Yes                        | Yes                        | Yes                  |
| Front Loading                 | Yes (P8143) <sup>9</sup>               | Yes (P8144) <sup>9</sup> | ..... | .....                      | .....                      | .....                |
| Beam Optimizing <sup>5</sup>  | .....                                  | .....                    | ..... | .....                      | .....                      | .....                |

| Manufacturer                  | English Electric Valve Company Limited |                     |       |                      |                    |                     |
|-------------------------------|--|---------------------|-------|----------------------|--------------------|---------------------|
|                               | Series/Number                          | P8133 <sup>10</sup> | P8136 | P8138                | 7038 <sup>14</sup> | 7735B <sup>14</sup> |
| Suffix Letters                | RF/AR                                  | L/B/G/R             | ..... | RF/AR                | .....              | .....               |
| Type                          | Leddicon                               | Leddicon            | ..... | Leddicon             | Vidicon            | Vidicon             |
| Image Format                  | 1.2-inch                               | 1.2-inch            | ..... | 1.2-inch             | 1-inch             | 1-inch              |
| Heater Voltage                | 6.3V                                   | 6.3V                | ..... | 6.3V                 | 6.3V               | 6.3V                |
| Heater Current                | 95mA                                   | 300mA <sup>12</sup> | ..... | 300mA <sup>12</sup>  | .6A                | .6A                 |
| Bias Lighting                 | Int. Variable                          | Int. Fixed          | ..... | Int. Fixed           | .....              | .....               |
| Dark Current                  | 1nA <sup>7</sup>                       | In Biasing          | ..... | In Biasing           | 4-20nA             | 5-100nA             |
| Target Voltage                | 45V                                    | 45V                 | ..... | 45V                  | 100V max           | 100Vmax             |
| Modulation Depth <sup>3</sup> | 50%/750 <sup>4</sup>                   | 40%/600             | ..... | 50%/600 <sup>4</sup> | 50%/900 max        | 50%/900 max         |
| Infrared Filter               | RF only <sup>8</sup>                   | .....               | ..... | RF only <sup>8</sup> | .....              | .....               |
| Antihalation Disk             | Yes                                    | Yes                 | ..... | Yes                  | .....              | .....               |
| Extended Red Use              | Yes                                    | .....               | ..... | Yes                  | .....              | .....               |
| Low Capacitance               | .....                                  | .....               | ..... | .....                | .....              | .....               |
| Magnetic Focus                | Yes                                    | Yes                 | ..... | Yes                  | Yes                | Yes                 |
| Front Loading                 | .....                                  | .....               | ..... | .....                | Yes                | Yes                 |
| Beam Optimizing <sup>5</sup>  | .....                                  | Yes                 | ..... | Yes                  | .....              | .....               |

\*Leddicon is the trademark of English Electric Valve Company Limited.

<sup>7</sup>The infrared filter exists as a hard coating on the antihalation disk.

<sup>8</sup>P8141, et. al., are electrical equivalents but are designed for rear-loading cameras.

<sup>9</sup>A link provided with the tube allows operation either as separate or integral mesh.

<sup>10</sup>Suffix Letter "H-" designates a high-resolution tube.

<sup>12</sup>Heater Current includes bias lamp current because heater and bias lamp are parallel connected internally.

<sup>13</sup>Third value is the 400TVL test chart response for the high-resolution device.

<sup>14</sup>Integral mesh.

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In Europe: English Electric Valve Co. Ltd., Chelmsford, Essex CM1 2QU, England, Tel. 0245 61777, Telex 851-99103

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# CAMERA PICKUP TUBE

| Manufacturer                  | English Electric Valve Company Limited |              |             |               |           |
|-------------------------------|--|--------------|-------------|---------------|-----------|
| Series/Number                 | P8030                                  | 8507A        | P893/4/5    | 8480          | 8051      |
| Suffix Letters                | .....                                  | .....        | 4493R/4G/5B | (8480V1)      | .....     |
| Type                          | Vidicon                                | Vidicon      | Vidicon     | Vidicon       | Vidicon   |
| Image Format                  | 1-inch                                 | 1-inch       | 1-inch      | 1.5-inch      | 1.5-inch  |
| Heater Voltage                | 6.3V                                   | 6.3V         | 6.3V        | 6.3V          | 6.3V      |
| Heater Current                | 0.3A                                   | .6A          | 95mA        | 95mA          | .6A       |
| Bias Lighting                 | .....                                  | .....        | .....       | .....         | .....     |
| Dark Current                  | 250nA                                  | 5-100nA      | 50nA        | 250nA max     | 250nA max |
| Target Voltage                | 100V max                               | 100V max     | 100V max    | 125V max      | 125V max  |
| Modulation Depth <sup>3</sup> | 70%/1100 max                           | 70%/1100 max | 60%/500     | 60%/1400(600) | 90%/2000  |
| Infrared Filter               | .....                                  | .....        | .....       | .....         | .....     |
| Antihalation Disk             | .....                                  | .....        | .....       | .....         | .....     |
| Extended Red Use              | .....                                  | .....        | .....       | .....         | .....     |
| Low Capacitance               | .....                                  | .....        | .....       | .....         | .....     |
| Magnetic Focus                | Yes                                    | Yes          | .....       | .....         | Yes       |
| Front Loading                 | Yes                                    | Yes          | Yes         | Yes           | Yes       |
| Beam Optimizing <sup>4</sup>  | .....                                  | .....        | .....       | .....         | .....     |

| Manufacturer                  | RCA Electro Optics and Devices |             |             |             |             |
|-------------------------------|--------------------------------|-------------|-------------|-------------|-------------|
| Series/Number                 | BC4398                         | BC4390      | BC4391      | BC4396      | BC4909      |
| Suffix Letters                | .....                          | B/G/R       | B/G/R       | B/G/R       | .....       |
| Type                          | Saticon*                       | Saticon     | Saticon     | Saticon     | Saticon     |
| Image Format                  | 1/2-inch                       | 2/3-inch    | 2/3-inch    | 1-inch      | 1-inch      |
| Heater Voltage                | 6.3V                           | 6.3V        | 6.3V        | 6.3V        | 6.3V        |
| Heater Current                | 95mA                           | 95mA        | 95mA        | 95mA        | 95mA        |
| Bias Lighting                 | Recommended                    | Recommended | Recommended | Recommended | Recommended |
| Dark Current                  | 0.2nA                          | .3nA        | .3nA        | .3nA        | 0.3nA       |
| Target Voltage                | 50V                            | 50V         | 65V         | 65V         | 50V         |
| Modulation Depth <sup>3</sup> | 40%                            | 35%         | 35%         | 55%         | 45%         |
| Infrared Filter               | .....                          | .....       | .....       | .....       | .....       |
| Antihalation Disk             | .....                          | .....       | .....       | .....       | .....       |
| Extended Red Use              | .....                          | .....       | .....       | .....       | .....       |
| Low Capacitance               | .....                          | .....       | Yes         | Yes         | .....       |
| Magnetic Focus                | Yes                            | Yes         | Yes         | Yes         | Yes         |
| Front Loading                 | Yes                            | Yes         | Yes         | Yes         | Yes         |
| Beam Optimizing <sup>4</sup>  | Recommended                    | Recommended | Recommended | Recommended | .....       |

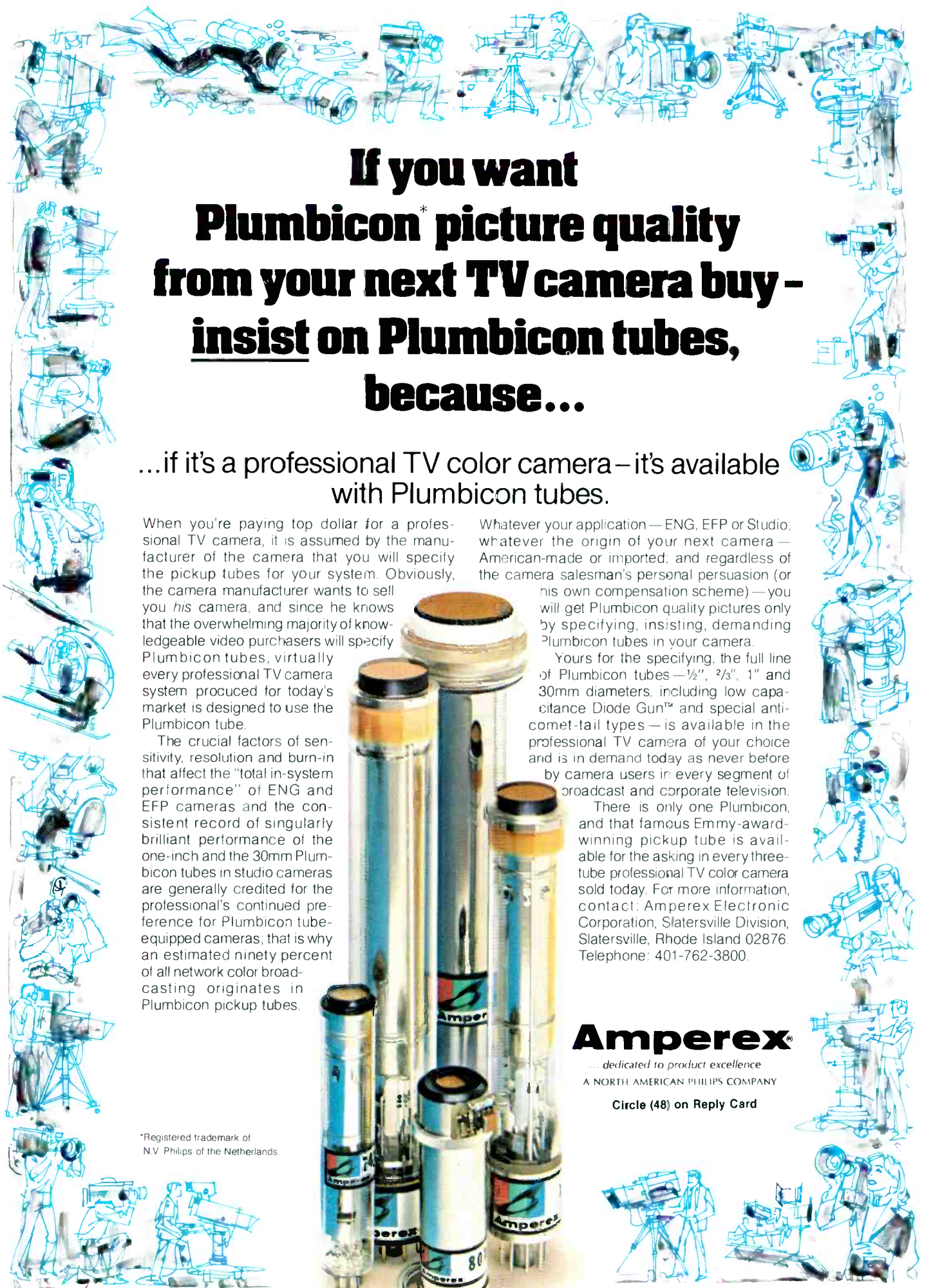
| Manufacturer                  | RCA Electro Optics and Devices |                   |                   |                    |                   |
|-------------------------------|--------------------------------|-------------------|-------------------|--------------------|-------------------|
| Series/Number                 | BC4397                         | BC4392            | BC4393/R          | BC4992             | BC4993/R          |
| Suffix Letters                | .....                          | L/B/G/R           | R                 | L/B/G/R            | R                 |
| Type                          | Saticon                        | Vistalite*        | Vistalite         | Vistacon*          | Vistacon          |
| Image Format                  | 1.2-inch                       | 1.2-inch          | 1.2-inch          | 1.2-inch           | 1.2-inch          |
| Heater Voltage                | 6.3V                           | 6.3V              | 6.3V              | 6.3V               | 6.3V              |
| Heater Current                | 0.4A <sup>12</sup>             | .4A <sup>12</sup> | .4A <sup>12</sup> | 0.3A <sup>12</sup> | .3A <sup>12</sup> |
| Bias Lighting                 | Recommended                    | Int. Fixed        | Int. Fixed        | Int. Fixed         | Int. Fixed        |
| Dark Current                  | .....                          | .....             | .....             | 3nA                | 7nA               |
| Target Voltage                | 65V                            | 50V               | 50V               | 50V                | 50V               |
| Modulation Depth <sup>3</sup> | 55%                            | .....             | .....             | 30%/700            | 40%/700           |
| Infrared Filter               | .....                          | .....             | .....             | .....              | Yes               |
| Antihalation Disk             | .....                          | Yes               | Yes               | Yes                | Yes               |
| Extended Red Use              | .....                          | .....             | Yes               | .....              | Yes               |
| Low Capacitance               | Yes                            | .....             | .....             | .....              | .....             |
| Magnetic Focus                | Yes                            | Yes               | Yes               | Yes                | Yes               |
| Front Loading                 | Yes                            | Yes               | Yes               | Yes                | Yes               |
| Beam Optimizing <sup>4</sup>  | Recommended                    | .....             | .....             | .....              | .....             |

<sup>12</sup>Heater Current includes bias lamp current because heater & bias lamp are parallel connected internally

\*Saticon is the trademark of Hitachi Denshi Corporation.

\*Vistalite is the trademark of RCA Electro Optics and Devices.

\*Vistacon is the trademark of RCA Electro Optics and Devices.



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# CAMERA PICKUP TUBE

| Manufacturer                  | RCA Electro Optics and Devices |             |           | Thomson-CSF Components Division |           |                |
|-------------------------------|--------------------------------|-------------|-----------|---------------------------------|-----------|----------------|
|                               | Series/Number                  | BC4994      | BC4809    | TH9806                          | TH9830    | TH9828         |
| Suffix Letters                | L/G/R                          | .....       | .....     | .....                           | .....     | .....          |
| Type                          | Vistacon                       | Vidicon     | Vidicon   | Vidicon                         | Vidicon   | Silicon Target |
| Image Format                  | 1.2-inch                       | 1-inch      | 1-inch    | 1.5-inch                        | 1.5-inch  | 1-inch         |
| Heater Voltage                | 6.3V                           | 6.3V        | 6.3V      | 6.3V                            | 6.3V      | 6.3V           |
| Heater Current                | 0.3A <sup>12</sup>             | .1A         | 0.2A      | .2A                             | .2A       | 90mA           |
| Bias Lighting                 | Int. Fixed                     | Recommended | .....     | .....                           | .....     | .....          |
| Dark Current                  | 7nA                            | 10nA        | 100nA max | 100nA max                       | 100nA max | 4nA max        |
| Target Voltage                | 50V                            | 35V max     | 60V       | 60V                             | 60V       | 10V max        |
| Modulation Depth <sup>3</sup> | 45%/700                        | 45%         | 50%/1000  | 90%/1500                        | 90%/1500  | 40%/700        |
| Infrared Filter               | .....                          | .....       | .....     | .....                           | .....     | .....          |
| Antihalation Disk             | Yes                            | .....       | .....     | .....                           | .....     | .....          |
| Extended Red Use              | Yes                            | .....       | .....     | .....                           | .....     | .....          |
| Low Capacitance               | .....                          | .....       | .....     | .....                           | .....     | .....          |
| Magnetic Focus                | Yes                            | Yes         | Yes       | Yes                             | Yes       | Yes            |
| Front Loading                 | Yes                            | Yes         | Yes       | Yes                             | Yes       | Yes            |
| Beam Optimizing <sup>5</sup>  | .....                          | .....       | .....     | .....                           | .....     | .....          |

<sup>12</sup>Heater Current includes bias lamp current because heater & bias lamp are parallel connected internally

# CAMERA SUPPORT EQUIPMENT

Pan/Tilt head equipment for use on tripods or pedestals.

| Manufacturer  | Innovative Television Equipment |            | Listec    |            | O'Connor   |       |
|---------------|---------------------------------|------------|-----------|------------|------------|-------|
|               | Model Number                    | H-6        | H-15      | Petrel 745 | #3199      | #30   |
| Type          | Hydrocam                        | Fluid Head | .....     | ENG        | Fluid Head | ..... |
| Load Capacity | 120 lb                          | 40 lb      | 100 lb    | 25 lb      | 30 lb      | ..... |
| Tilt Angle    | ± 50°                           | ± 75°      | ± 40°     | ± 90°      | ± 60°      | ..... |
| Head Height   | 9 in                            | 6.75 in    | 7 in      | .....      | 4.75 in    | ..... |
| Head Weight   | 23 lb                           | 8 lb       | 15 lb     | 7.5 lb     | 5 lb       | ..... |
| Panbar/Handle | Included                        | Available  | Available | Available  | Yes        | ..... |

| Manufacturer  | O'Connor     | Quick-Set  |                  | Sachtler       |            |
|---------------|--------------|------------|------------------|----------------|------------|
|               | Model Number | Hercules   | 4.52304.9        | Panorama 7 + 7 | Video 25   |
| Type          | #50-D        | Hydro Head | Hercules         | Fluid Head     | Fluid Head |
| Load Capacity | 50 lb        | 40 lb      | 80 lb            | 22 lb          | 55 lb      |
| Tilt Angle    | ± 45°        | ± 80°      | 35° up, 45° down | ± 90°          | ± 60°      |
| Head Height   | 7 in         | 6 in       | 5 in             | 7.3 in         | 7.9 in     |
| Head Weight   | 7 lb         | 8.5 lb     | 21 lb            | 6.2 lb         | 14.3 lb    |
| Panbar/Handle | Yes          | .....      | .....            | Included       | Included   |

# CAMERA SUPPORT EQUIPMENT

Tripod equipment for ENG, EFP or studio operation.

| Manufacturer   | Innovative Television Equipment | Listec  | Matthews        |
|----------------|---------------------------------|---------|-----------------|
| Model Number   | T-4                             | #897    | 5003 Heavy Duty |
| Type           | Wood Tripod                     | Vinten  | ....            |
| Load Capacity  | 50 lb                           | 200 lb  | 400 lb          |
| Maximum Height | 65 in                           | 53.5 in | 42.5 in         |
| Minimum Height | .....                           | 27 in   | 25.7 in         |
| Elevator Lift  | .....                           | ....    | .....           |
| Tripod Weight  | 12 lb                           | 26 lb   | 24 lb           |

| Manufacturer   | O'Connor  | Quick-Set      | Sachtler      |
|----------------|-----------|----------------|---------------|
| Model Number   | 102-B     | 4.73010.7      | Medium Tripod |
| Type           | Hydro Ped | Simpson Tripod | 150mm Bowl    |
| Load Capacity  | 100 lb    | 40 lb          | .....         |
| Maximum Height | 60 in     | 76 in          | 33.5 in       |
| Minimum Height | 30 in     | 34 in          | 20.5 in       |
| Elevator Lift  | .....     | 18 in          | .....         |
| Tripod Weight  | 29 lb     | 10 lb          | 7.4 lb        |

## SPECIALS OF THE MONTH

### TRANSMITTER TUBES

|            |       |              |
|------------|-------|--------------|
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| 4CX5000A   | ..... | \$750.00 Ea. |
| 4CX15,000A | ..... | \$990.00 Ea. |

|            |       |                |
|------------|-------|----------------|
| 833A       | ..... | \$78.50 Ea.    |
| 892R       | ..... | \$1,150.00 Ea. |
| 5762       | ..... | \$350.00 Ea.   |
| 6166A/7007 | ..... | \$1,775.00 Ea. |
| 8807       | ..... | \$1,795.00 Ea. |

### VIDICONS

|        |       |              |
|--------|-------|--------------|
| 4809   | ..... | \$550.00 Ea. |
| BC4532 | ..... | \$750.00 Ea. |
| 7038V4 | ..... | \$265.00 Ea. |
| 8572V4 | ..... | \$290.00 Ea. |

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|----------------------------|-------|----------------|
| SP1-020 R-G-B              | ..... | \$1,250.00 Ea. |
| SP1-025R                   | ..... | \$1,400.00 Ea. |
| SP1-010 R-G-B (Light Bias) | ..... | \$1,250.00 Ea. |

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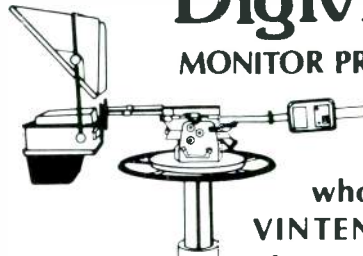
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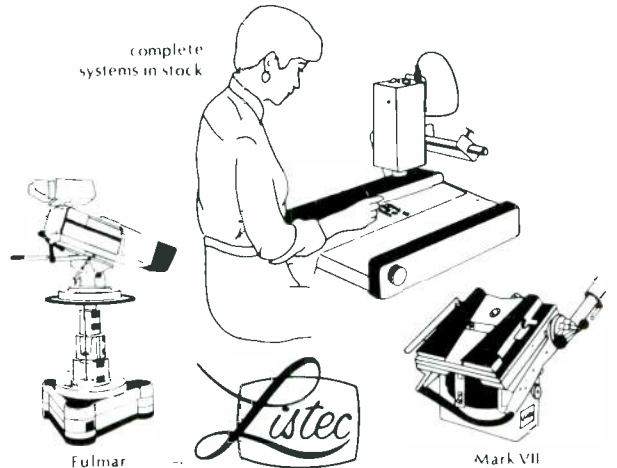
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**LISTEC TELEVISION EQUIPMENT CORP.**  
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4529 San Fernando Road, Unit "A", Glendale, California 91204 / (213) 247-9247

Circle (22) on Reply Card

# CAMERA SUPPORT EQUIPMENT

Pedestal equipment with and without steering (tricycle or crab).

| Manufacturer    | Innovative Television Equipment |            |            | Listec  | Quick-Set | Television Products Company |
|-----------------|---------------------------------|------------|------------|---------|-----------|-----------------------------|
|                 | Model Number                    | Termin 741 | Fulmar 702 |         |           |                             |
| Type            | P-5                             | .....      | .....      | .....   | Gibraltar | .....                       |
| Load Capacity   | 256 lb                          | 250 lb     | 350 lb     | 260 lb  | 275 lb    |                             |
| Maximum Height  | 52 in                           | 53 in      | 59 in      | 57 in   | 50.7 in   |                             |
| Minimum Height  | 34 in                           | 32 in      | 21 in      | 36 in   | 30.7 in   |                             |
| Steering Wheel  | 25 in                           | .....      | .....      | 30 in   | 24 in     |                             |
| Doorway Width   | 32 in                           | 29.5 in    | 34 in      | 38.5 in | 30 in     |                             |
| Wheels/Size     | 3pr/7 in                        | 3pr/—      | 3pr/—      | .....   | 3pr/8 in  |                             |
| Cable Guards    | Yes                             | Yes        | Yes        | Yes     | Yes       |                             |
| Pedestal Weight | 180 lb                          | 250 lb     | 330 lb     | 576 lb  | 175 lb    |                             |

# CHARACTER GENERATOR

Digital-based equipment for formation and placement of alphanumeric data on a raster with internally or externally supplied background material. For program use, not data terminals. Titrer.

| Manufacturer           | BEI (Beston Electronics Inc.) |                                   | Chyron Telesystems      |                        | Computer Video Systems   |
|------------------------|-------------------------------|-----------------------------------|-------------------------|------------------------|--------------------------|
|                        | CG-800 Message System         | Marquee 2000 Production Generator | Chyron IV               | RQU-1                  |                          |
| Page Format            | 32 Characters/16 Lines        | Variable                          | Variable                | Variable               | Variable                 |
| Character Format       | 18TVL High/1µsec Wide         | Variable                          | Variable                | Variable               | 16x16 Matrix             |
| Inter-row Spacing      | 4TVL                          | Variable by Row                   | Variable by Row         | Variable by Row        | .....                    |
| Character Resolution   | .....                         | 31.25nsec Horizontal              | 27nsec Horizontal       | 27nsec Horizontal      | .....                    |
| Proportional Spacing   | .....                         | Yes                               | Yes                     | Yes                    | .....                    |
| Character Overlap      | .....                         | Yes                               | Yes                     | .....                  | .....                    |
| Character Manipulation | .....                         | Individually H and V              | Individually H and V    | Individually H and V   | By Line                  |
| Italicizing            | .....                         | By Lines, 11° Slope               | By Word or Graphic, 14° | .....                  | .....                    |
| Surround Edging        | .....                         | Yes                               | Yes                     | Yes                    | Horizontal Only          |
| Drop-Shadow Edging     | .....                         | Yes                               | Yes                     | Yes                    | Yes                      |
| Edge Luminance-Color   | .....                         | Variable                          | Variable                | Variable               | .....                    |
| Color Palette          | 5 Colors                      | 8 Colors                          | 64 Colors               | Standard Bar Colors    | 8 Colors                 |
| Background Coloring    | 4, Horizontal Zones           | 8, Horizontal Zones               | Any, 4TVL Bands High    | Any, 8TVL Bands High   | 8, Horizontal Bands      |
| Character Coloring     | White                         | Individually Selected             | Individually Selected   | Individually Selected  | Black, White             |
| Display Flashing       | .....                         | By Words                          | By Character            | By Character           | By Character             |
| Tabulate Positions     | .....                         | 16 Lines                          | 8 of 256 Possible       | 8 of 256 Possible      | Yes                      |
| Auto Centering         | .....                         | 4 and Pause                       | Line or Page            | Line or Page           | Lines                    |
| Roll Speeds            | .....                         | .....                             | Adjustable              | .....                  | .....                    |
| Roll Window            | .....                         | 4 and Stop                        | 5 and Pause             | 5 and Pause            | 4                        |
| Crawl Speeds           | 3 and Stop                    | 4 and Stop                        | 5 and Pause             | 5 and Pause            | 4                        |
| Subtitling             | .....                         | 1050 3-Line per Disc              | Auto Lower Third        | Auto Lower Third       | Possible                 |
| Resident Fonts         | 1                             | 4, 92 Character                   | 6, 92 Character         | 4, 92 Character        | 16                       |
| Internal Page Memory   | To 16 Pages                   | 1 Page                            | 1 Page                  | 1 Page                 | 27                       |
| Disc Memory Storage    | .....                         | 150 Pages per Disc                | 2000 Rows per VidiDisc  | 2000 Rows per VidiDisc | Optional, or RAM, Bubble |
| Disc Drives            | .....                         | 2nd Drive Optional                | 4 Drives Possible       | 4 Drives Possible      | 1 Optional               |
| Worst Case Access      | .....                         | .....                             | .....                   | .....                  | .....                    |
| Edit Channel           | .....                         | Yes                               | Yes                     | Yes                    | Yes                      |
| Output Channels        | 1                             | 2nd Channel Optional              | 2nd Channel Optional    | 2nd Channel Optional   | 1                        |
| Colorizer/Keyer        | Yes                           | Yes                               | Yes                     | Yes                    | Yes                      |
| RS232 Interface        | Yes                           | Yes                               | Yes                     | Yes                    | For News, Weather Wire   |
| Separate Keyboard      | .....                         | Yes                               | Multiple                | Multiple               | Yes                      |
| Font Compose Input     | .....                         | Optional                          | Optional                | Optional               | .....                    |



# CHARACTER GENERATOR

| Manufacturer           | Dubner Computer Systems<br>Model CBG-2<br>Generator | Femseh Inc.<br>Compositor I | For-A Company Limited    |                          | Knox Video Products<br>K128 Character Generator |
|------------------------|---|-----------------------------|--------------------------|--------------------------|---|
| Model Number           |   |                             | VTW-200 Video Typewriter | VTW-600 Video Typewriter |   |
| Page Format            | Variable per Font                                   | 32 Character/12 Line        | 32 Character/8 Line      | 32 Character/8 Line      | 24 Character/8 Line                             |
| Character Format       | Variable per Font                                   | Variable per Font           | 7x9 Dot Matrix           | 24x24 Dot Matrix         | 32x48 Matrix                                    |
| Inter-row Spacing      | Variable  | Variable, 4TVL              | .....                    | .....                    | .....   |
|                        | .....   | Increment                   | .....                    | .....                    | .....   |
| Character Resolution   | High Resolution                                     | 30nsec Horizontal           | .....                    | .....                    | .....   |
| Proportional Spacing   | Yes   | Yes                         | .....                    | Yes                      | .....   |
| Character Overlap      | Yes   | .....                       | .....                    | .....                    | .....   |
| Character Manipulation | Individually H and V                                | Individually H and V        | By Line                  | By Line                  | By Line   |
| Italicizing            | Yes   | .....                       | .....                    | .....                    | By Page   |
| Surround Edging        | Yes   | Yes                         | .....                    | Optional                 | Yes   |
| Drop-Shadow Edging     | Yes   | Yes                         | .....                    | Optional                 | .....   |
| Edge Luminance-Color   | Variable  | Variable                    | .....                    | Optional                 | .....   |
| Color Palette          | 512 Colors  | 28 Colors, Black, White     | White                    | 6, Black, White          | White   |
|                        | .....   | .....                       | .....                    | .....                    | .....   |
| Background Coloring    | 64 by Display Line                                  | Any, 4TVL High Bands        | .....                    | .....                    | Input Video                                     |
| Character Coloring     | Individually Selected                               | Individually Selected       | White                    | Individually Selected    | White   |
| Display Flashing       | By Character  | By Character                | By Line                  | By Character             | .....   |
| Tabulate Positions     | Yes   | 4 per Page                  | .....                    | .....                    | .....   |
| Auto Centering         | Line or Page  | Line or Page                | .....                    | Line or Page             | Yes   |
| Roll Speeds            | 5   | 5                           | .....                    | Variable                 | 3   |
| Roll Window            | Yes   | Adjustable                  | .....                    | .....                    | .....   |
| Crawl Speeds           | 5   | 5                           | .....                    | Variable                 | 3   |
| Subtitling             | Yes   | Optional, 2000 per Disc     | Possible                 | Possible                 | Possible  |
|                        | .....   | .....                       | .....                    | .....                    | .....   |
| Resident Fonts         | 6, 96 Character                                     | 8                           | 1                        | 1                        | 3   |
| Internal Page Memory   | Multiple  | 999 Pages per Disc          | 4                        | 8                        | 4 with 16 Page Optional                         |
| Disc Memory Storage    | Rigid, Floppy Optional                              | Rigid Disc                  | External Tape Memory     | 2 Pages per Mag Card     | Optional, 400 Pages                             |
| Disc Drives            | 2 Each Maximum                                      | 2nd Disc Optional           | .....                    | .....                    | 1   |
| Worst Case Access      | Within Vertical Interval                            | .25sec Typical              | .....                    | .....                    | 1sec  |
|                        | .....   | .....                       | .....                    | .....                    | .....   |
| Edit Channel           | Yes   | Yes                         | .....                    | .....                    | Yes   |
| Output Channels        | 2   | 2nd Channel Optional        | .....                    | 1                        | 2   |
| Colorizer/Keyer        | Yes   | Yes                         | .....                    | Required                 | Yes   |
| RS232 Interface        | Possible  | Yes                         | .....                    | .....                    | .....   |
| Separate Keyboard      | Yes   | 7 Maximum                   | .....                    | .....                    | .....   |
| Font Compose Input     | Yes   | Optima                      | .....                    | Yes                      | .....   |

## TURN ON

Compuvid introduces the greatest turn on since the invention of television. With the Nite Scan information system, late night viewers will be "turning on" your station for news shorts, weather, sports, advertising, etc. □

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□ Circle (23) on Reply Card

# NITE SCAN

# CHARACTER GENERATOR

| Manufacturer           | Knox Video              | Laird Telemedia Inc. | System Concepts, Inc. |                   |                     |
|------------------------|-------------------------|----------------------|-----------------------|-------------------|---------------------|
| Model Number           | K60 Character Generator | Model 1200           | Model 3600A           | Quantafont Q-7A   | Quantafont Q-6B     |
| Page Format            | 32 Character/16 Line    | 32 Character/10 Line | 25 Character/10 Line  | Selectable        | Selectable per Font |
| Character Format       | 7x9 Matrix              | 9x14 Dot Matrix      | 9x14 Dot Matrix       | Variable per Font | Variable per Font   |
| Inter-row Spacing      | .....                   | .....                | .....                 | Variable          | .....               |
| Character Resolution   | .....                   | .....                | .....                 | 20nsec            | 32 H Pixels         |
| Proportional Spacing   | .....                   | .....                | .....                 | Possible          | .....               |
| Character Overlap      | .....                   | .....                | .....                 | Possible          | .....               |
| Character Manipulation | By Line                 | By Line              | By Line               | By Line           | By Line             |
| Italicizing            | .....                   | .....                | .....                 | .....             | .....               |
| Surround Edging        | Yes                     | Horizontal Only      | Optional              | Yes               | .....               |
| Drop-Shadow Edging     | .....                   | .....                | Optional              | Yes               | .....               |
| Edge Luminance-Color   | .....                   | .....                | Optional              | Variable          | .....               |
| Color Palette          | White                   | White, Black         | 3, White, Black       | 8 Colors          | 8 Colors            |
| Background Coloring    | Input Video             | Input Video          | Input Video           | Horizontal Bands  | 8, Horizontal Band  |
| Character Coloring     | White                   | White, Black         | White, Black          | Selected by Row   | White, Black        |
| Display Flashing       | By Individual Character | By Word              | By Word               | By Word           | By Word             |
| Tabulate Positions     | .....                   | .....                | .....                 | 32 Positions      | 32 Positions        |
| Auto Centering         | .....                   | .....                | Horizontal            | Line or Page      | Line or Page        |
| Roll Speeds            | .....                   | Yes                  | Yes                   | 2 and Stop        | 2 and Stop          |
| Roll Window            | .....                   | Variable             | Variable              | .....             | Variable            |
| Crawl Speeds           | .....                   | Yes                  | Yes                   | 2 and Stop        | 2 Speeds and Stop   |
| Subtitling             | Possible                | Possible             | Possible              | Possible          | Possible            |
| Resident Fonts         | 1, 63 Characters        | 1                    | 1                     | 16                | 24                  |
| Internal Page Memory   | 4                       | 8 Page, Expandable   | 4 Page, Expandable    | 10 Pages,         | 12 Pages,           |
|                        | .....                   | .....                | .....                 | 16 Rows/Page      | 16 Rows/Page        |
| Disc Memory Storage    | .....                   | .....                | Optional, 1000 Pages  | Optional Disc     | Optional Disc       |
| Disc Drives            | .....                   | .....                | 2 Optional            | Single or Dual    | Single or Dual      |
|                        | .....                   | .....                | .....                 | Optional          | Optional            |
| Worst Case Access      | .....                   | .....                | .....                 | .5sec             | .5sec               |
| Edit Channel           | Yes                     | .....                | Yes                   | Yes               | Yes                 |
| Output Channels        | 2                       | 1                    | Dual Output           | 1                 | 1                   |
| Colorizer/Keyer        | Yes                     | .....                | Optional              | Yes               | Yes                 |
| RS232 Interface        | .....                   | .....                | Optional              | Yes               | Yes                 |
| Separate Keyboard      | .....                   | .....                | Yes                   | Multiple Possible | .....               |
| Font Compose Input     | .....                   | .....                | .....                 | .....             | .....               |

| Manufacturer           | Unitel             | Video Data Systems     | Videomedia Systems          |
|------------------------|--------------------|------------------------|-----------------------------|
| Model Number           | Scriptel V         | T-1000A Studio Titler  | KR-6000 Character Generator |
| Page Format            | Variable per Font  | Variable per Font      | Variable per Font           |
| Character Format       | 32x32 Matrix       | Variable per Font      | Variable per Font           |
| Inter-row Spacing      | .....              | .....                  | .....                       |
| Character Resolution   | .....              | .....                  | 35nsec                      |
| Proportional Spacing   | .....              | .....                  | Yes                         |
| Character Overlap      | .....              | .....                  | .....                       |
| Character Manipulation | By Line            | .....                  | By Line                     |
| Italicizing            | .....              | .....                  | .....                       |
| Surround Edging        | .....              | Yes                    | Yes                         |
| Drop-Shadow Edging     | .....              | Yes                    | Yes                         |
| Edge Luminance-Color   | .....              | Variable               | Variable                    |
| Color Palette          | Black, White       | Black, White           | 16 Colors                   |
| Background Coloring    | .....              | Input Video            | Possible                    |
| Character Coloring     | Black, White       | Black, White           | Individually Selected       |
| Display Flashing       | By Word            | By Character           | Yes                         |
| Tabulate Positions     | Yes                | .....                  | .....                       |
| Auto Centering         | Yes                | .....                  | Yes                         |
| Roll Speeds            | Yes                | 1                      | Yes                         |
| Roll Window            | Yes                | Yes                    | .....                       |
| Crawl Speeds           | Yes                | 1                      | Yes                         |
| Subtitling             | Yes                | Possible               | Possible                    |
| Resident Fonts         | 4                  | 2, 64 ASCII Characters | 4                           |
| Internal Page Memory   | 16 Pages, 12 Lines | 16 Pages               | 2000 Characters             |
| Disc Memory Storage    | Optional           | .....                  | Optional                    |
| Disc Drives            | .....              | .....                  | .....                       |
| Worst Case Access      | .....              | .....                  | .....                       |
| Edit Channel           | Yes                | .....                  | .....                       |
| Output Channels        | Dual Channel       | 1                      | .....                       |
| Colorizer/Keyer        | .....              | .....                  | .....                       |
| RS232 Interface        | Yes                | .....                  | Yes                         |
| Separate Keyboard      | .....              | .....                  | To Z-6000 Edit Control      |
| Font Compose Input     | .....              | .....                  | Yes                         |

# COLOR VIDEO MONITORS

Monitors using P22 phosphor materials, for video signals of 1V P-P, 75 Ohm. May accept .714V non-composite signals if external sync is available. The display format has 3V:4H aspect ratio. Color temperature factory set 6500°K. Not including TV receiver/monitors.

| Manufacturer          | Amtron Corporation          |              |                              |                      | Asaca Shibasoku                  |
|-----------------------|-----------------------------|--------------|------------------------------|----------------------|----------------------------------|
|                       | AM-8                        | AM-17        | AM-26                        | 7819 High            | Company                          |
| Model Number          | NTSC Monitor                | NTSC Monitor | NTSC Monitor                 | Resolution           | CMM14-11/1                       |
| CRT Diagonal          | 8 in                        | 17 in        | 26 in                        | 19 in                | 14 in                            |
| CRT Type              | Trinitron*                  | Trinitron    | Trinitron                    | .....                | Delta Gun,<br>Shadow Mask        |
| Resolution/Brightness | .....                       | .....        | .....                        | 500TVL, 20fL         | 600TVL High Res. Opt.            |
| Convergence Accuracy  | .....                       | .....        | .....                        | .02 in               | .02 in                           |
| Raster Regulation     | 1/6"H, 1/8"V                | 1/6"H, 1/8"V | 1/6"H, 1/8"V                 | 1%, 0-100% APL, 20fL | .....                            |
| Luminance Bandwidth   | .....                       | .....        | .....                        | ± 3dB/0-10MHz        | ± .5dB/60Hz-7MHz                 |
| Chroma Bandwidth      | .....                       | .....        | .....                        | .....                | ± .5dB/to .6MHz I,<br>to .3MHz Q |
| Hum Rating            | .....                       | .....        | .....                        | .....                | - 55dB                           |
| Blue Gun Only         | .....                       | .....        | .....                        | Yes                  | .....                            |
| NTSC Matrix Test      | .....                       | .....        | .....                        | .....                | .....                            |
| AFC Time Constants    | .....                       | .....        | .....                        | .5msec, 7msec        | .5msec, 7msec                    |
| Aperture Correction   | .....                       | .....        | .....                        | Yes                  | 10dB at 2.8MHz                   |
| Demodulation Axis     | .....                       | .....        | .....                        | .....                | I and Q                          |
| X-Y Outputs           | .....                       | .....        | .....                        | Yes                  | Option                           |
| Underscan             | .....                       | Yes          | Yes                          | Yes                  | Yes, 95% of Full Size            |
| Delay/Pulse Cross     | Option                      | Option       | Yes                          | Yes                  | Yes                              |
| Video Inputs          | 2                           | 2            | 2                            | 2                    | 2                                |
| RBG Video Inputs      | .....                       | .....        | .....                        | .....                | Option                           |
| External Sync Inputs  | Yes                         | Yes          | Yes                          | Yes                  | Yes                              |
| Weight                | 24 lb                       | 85 lb        | 180 lb                       | .....                | 100 lb                           |
| 19-inch Rack/Cabinet  | Either                      | Either       | Cabinet, Yoke Mount          | Either               | Either                           |
| Color Standards       | NTSC                        | NTSC         | NTSC                         | NTSC                 | NTSC, PAL, PAL-M, -N,<br>SECAM   |
|                       | 5- and 12-inch<br>Available | .....        | R, G, B Version<br>Available | 13-inch Available    | .....                            |

| Manufacturer          | Asaca Shibasoku Company          |              | Barco Electronics N.V.     |                            |                           |
|-----------------------|----------------------------------|--------------|----------------------------|----------------------------|---------------------------|
|                       | CMM20-11/1                       | CMM10-1      | CTVM 3/37                  | CTVM 3/51                  | CTVM 3/66                 |
| CRT Diagonal          | 20 in                            | 10 in        | 14 in                      | 20 in                      | 26 in                     |
| CRT Type              | Delta Gun,<br>Shadow Mask        | 270UB22      | D Delta Gun/P Slot<br>Mask | D Delta Gun/P Slot<br>Mask | Delta Gun,<br>Shadow Mask |
| Resolution/Brightness | 600TVL High Res. Opt.            | .....        | D 58fL, F 108fL Max        | D 58fL, P 108fL Max        | D 58fL, P 108fL Max       |
| Convergence Accuracy  | .002 in                          | .03 in       | .01 in                     | .02 in                     | .03 in                    |
| Raster Regulation     | .....                            | .....        | .....                      | .....                      | .....                     |
| Luminance Bandwidth   | ± .5dB/60Hz-7MHz                 | ± 1dB/4MHz   | ± .5dB/tc 7MHz             | ± .5dB/to 7MHz             | ± .5dB/to 7MHz            |
| Chroma Bandwidth      | ± .5dB to .6MHz I,<br>to .3MHz Q | - 3dB/500kHz | .6MHz                      | .6MHz                      | .6MHz                     |
| Hum Rating            | - 55dB                           | - 40dB       | - 45dB                     | - 45dB                     | - 45dB                    |
| Blue Gun Only         | .....                            | .....        | Yes                        | Yes                        | Yes                       |
| NTSC Matrix Test      | .....                            | .....        | .....                      | .....                      | .....                     |
| AFC Time Constants    | 0.5msec, 7msec                   | .....        | .67msec, 2.5msec           | .67msec, 2.5msec           | .67msec, 2.5msec          |
| Aperture Correction   | 0.0dB at 2.8MHz                  | .....        | Jumper Selected            | Jumper Selected            | Jumper Selected           |
| Demodulation Axis     | I and Q                          | .....        | R-Y, B-Y                   | R-Y, B-Y                   | R-Y, B-Y                  |
| X-Y Outputs           | Option                           | .....        | Yes                        | Yes                        | Yes                       |
| Underscan             | Yes, 95% of Full Size            | Yes          | Yes                        | Yes                        | Yes                       |
| Delay/Pulse Cross     | Yes                              | .....        | Yes                        | Yes                        | Yes                       |
| Video Inputs          | 2                                | 1            | 2                          | 2                          | 2                         |
| RBG Video Inputs      | Option                           | .....        | Yes                        | Yes                        | Yes                       |
| External Sync Inputs  | Yes                              | 1            | Yes                        | Yes                        | Yes                       |
| Weight                | 66 lb                            | 28 lb        | 68 lb                      | 90 lb                      | 120 lb                    |
| 19-inch Rack/Cabinet  | Either                           | Either       | Either                     | Either                     | Cabinet, Yoke Mount       |
| Color Standards       | NTSC, PAL, PAL-M, -N,<br>SECAM   | NTSC         | NTSC, PAL, SECAM           | NTSC, PAL, SECAM           | NTSC, PAL, SECAM          |

\*Trinitron is a registered trademark of the Sony Corporation.

# COLOR VIDEO MONITORS

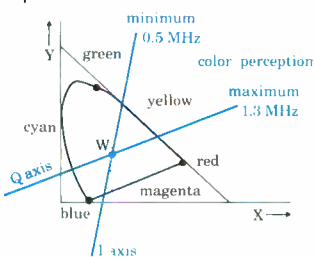
| Manufacturer          | Barco                   | Conrac Division, Conrac Corporation |                      |                                |                           |
|-----------------------|-------------------------|-------------------------------------|----------------------|--------------------------------|---------------------------|
|                       | Model Number            | HQCM 3                              | 5700C13              | 6100C19                        | 5200C19                   |
| CRT Diagonal          | 20 in                   | 13 in                               | 19 in                | 19 in                          | 19 in                     |
| CRT Type              | D Delta Gun/P Slot Mask | Shadow Mask                         | Shadow Mask          | Shadow Mask                    | Shadow Mask               |
| Resolution/Brightness | High Resolution         | 500TVL, 20fL                        | 600TVL, 20fL         | 450TVL, 20fL                   | 450TVL, 20fL              |
| Convergence Accuracy  | 0.02 in                 | .02 in                              | .02 in               | .04 in                         | .03 in                    |
| Raster Regulation     | .....                   | 1%, 0-100%APL, 20fL                 | .4%, 0-100%APL, 20fL | 1%, 0-100%APL, 20fL            | 1%, 0-100%APL, 20fL       |
| Luminance Bandwidth   | ± .5dB/to 7MHz          | 1dB/to 5.5MHz                       | 1dB/to 6.5MHz        | 1dB/to 5.5MHz                  | 1dB/to 5.5MHz             |
| Chroma Bandwidth      | 0.6MHz                  | .....                               | .....                | .....                          | .....                     |
| Hum Rating            | - 45dB                  | .....                               | .....                | To - 14dB Jumper Select        | To - 14dB Jumper Select   |
| Blue Gun Only         | Yes                     | .....                               | .....                | .....                          | .....                     |
| NTSC Matrix Test      | .....                   | Yes                                 | Option               | Option                         | Option                    |
| AFC Time Constants    | .067msec, 2.5msec       | .5msec, 7msec                       | .5msec, 2msec        | .5msec, 7msec                  | .5msec, 7msec             |
| Aperture Correction   | Jumper Selected         | To 6dB at 3.2MHz                    | Yes                  | To 6dB at 3.2MHz               | To 6dB at 3.2MHz          |
| Demodulation Axis     | R-Y, B-Y                | .....                               | .....                | .....                          | .....                     |
| X-Y Outputs           | Yes                     | Option                              | .....                | .....                          | .....                     |
| Underscan             | Yes                     | Yes                                 | Yes                  | Yes                            | Yes                       |
| Delay/Pulse Cross     | Yes                     | Yes                                 | Yes                  | Available                      | Available                 |
| Video Inputs          | 2                       | 2                                   | 3                    | 2                              | 2                         |
| RBG Video Inputs      | Yes                     | .....                               | .....                | .....                          | .....                     |
| External Sync Inputs  | Yes                     | Yes                                 | Yes                  | Yes                            | Yes                       |
| Weight                | 100 lb                  | 50 lb                               | 88 lb                | 99 lb                          | 99 lb                     |
| 19-inch Rack/Cabinet  | Either                  | Either                              | Either               | Either                         | Either                    |
| Color Standards       | NTSC, PAL, SECAM        | NTSC, PAL                           | NTSC, PAL            | NTSC, PAL-B, PAL-M, SECAM, RGB | NTSC, PAL-B, PAL-M, SECAM |

| Manufacturer          | Conrac Division, Conrac Corporation |                     |                       | Electrohome                          | Femseh Inc.                  |
|-----------------------|-------------------------------------|---------------------|-----------------------|--------------------------------------|------------------------------|
|                       | 5211C19                             | 5711C13             | 7111C13               | Electronics<br>2190<br>(2000 Series) | MC-37BA                      |
| Model Number          | RGB Display                         | RGB Display         | RGB Display           |                                      |                              |
| CRT Diagonal          | 19 in                               | 13 in               | 13 in                 | 19 in                                | 15 in                        |
| CRT Type              | Shadow Mask                         | Shadow Mask         | Precision-In-Line Gun | Negative Guardband                   | Toshiba In-Line              |
| Resolution/Brightness | 485 Pixtel/20fL                     | 750 Pixtel/20fL     | 503 Pixtel            | 450TVL, 60fL                         | 625TVL, 20fL                 |
| Convergence Accuracy  | 0.08 in                             | .04 in              | .02 in                | 100nsec                              | .25%                         |
| Raster Regulation     | 1%, 0-100%APL, 20fL                 | 1%, 0-100%APL, 20fL | 1%, 0-100%APL, 20fL   | 3%, 10-90%APL, 40fL                  | .5%, 0-100%APL, 20fL         |
| Luminance Bandwidth   | 1dB/to 10MHz                        | 1dB/to 10MHz        | 3dB/to 40MHz          | 3dB/to 6MHz                          | .5dB/to 5MHz                 |
| Chroma Bandwidth      | .....                               | .....               | .....                 | .....                                | .....                        |
| Hum Rating            | 14dB Rejection                      | 14dB Rejection      | .....                 | 3V P-P Rejection                     | .....                        |
| Blue Gun Only         | .....                               | .....               | .....                 | .....                                | Yes                          |
| NTSC Matrix Test      | .....                               | .....               | .....                 | .....                                | .....                        |
| AFC Time Constants    | .....                               | .....               | .....                 | .....                                | 1msec, 3msec                 |
| Aperture Correction   | .....                               | .....               | .....                 | 6dB at 2MHz                          | .....                        |
| Demodulation Axis     | .....                               | .....               | .....                 | .....                                | R-Y, B-Y                     |
| X-Y Outputs           | .....                               | .....               | .....                 | .....                                | Yes                          |
| Underscan             | .....                               | .....               | .....                 | Yes                                  | Yes                          |
| Delay/Pulse Cross     | .....                               | .....               | .....                 | .....                                | Yes                          |
| Video Inputs          | .....                               | .....               | .....                 | 2                                    | 3                            |
| RBG Video Inputs      | Yes                                 | Yes                 | Yes                   | Yes                                  | Yes                          |
| External Sync Inputs  | Yes                                 | Yes                 | Yes                   | Yes                                  | Yes                          |
| Weight                | 98 lb                               | 50 lb               | 62 lb                 | .....                                | 50 lb                        |
| 19-inch Rack/Cabinet  | Either                              | Either              | Either                | Either                               | Either                       |
| Color Standards       | RGB Only                            | RGB Only            | RGB Only              | NTSC, PAL, SECAM, RGB Modules        | NTSC, PAL, PAL-M, SECAM, RGB |

# HIGH I/Q

## **ASACA/ Shibasoku's CMM Series monitors decode color on the I/Q axis.**

Asaca/Shibasoku's new high resolution monitors have the I-Q to deliver color performance other monitors simply

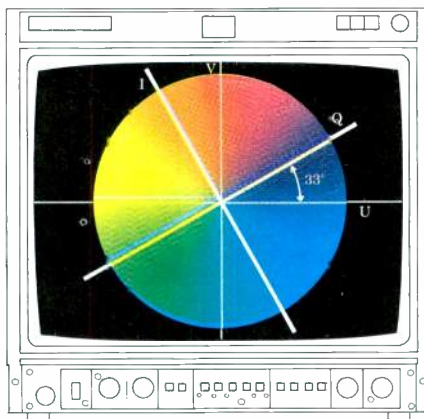


*I-Q axes in color triangle.*

cannot produce. Using R-Y, B-Y decoding no longer meets the demands of today's professional standards.

The Asaca/Shibasoku monitor like the human eye resolves certain colors best; reds, oranges, yellows, and flesh tones. The I-Q decoding system enables the monitor to display these colors at a higher resolution using wide band demodulation of 1.3 MHz rather than 0.5 MHz as in R-Y, B-Y systems.

We cared enough to give you a monitor with the I-Q to reproduce the best possible pictures. We know you're smart enough to buy it.



### **FEATURES**

- 20" and 14" models available—high resolution delta CRTs
- I-Q wide band demodulation system.
- Complete board interchangeability between models.
- Switchable high performance comb filter and aperture correction.
- Multi-standard capabilities (NTSC, PAL, SECAM) on all models. Switchable from the front panel (20" model). No adjustments necessary because of digital sync circuitry.
- Dynamic focus insures perfect focus on all areas of CRT. Adjustable from the front panel.
- Special feedback circuits guard against color changes due to variations in temperature.
- Active convergence—40 controls allow precise adjustment on all areas of CRT.
- Pulse cross with expanded vertical blanking interval.
- OPTIONS... Built-in color bar or cross hatch patterns. Built-in safe title marker generator. Multi-standards. RGB inputs.
- TWO YEAR WARRANTY ON ALL PARTS AND LABOR INCLUDING THE CRT.

**ASACA**  
**ASACA/SHIBASOKU**  
**CORP. OF AMERICA**

1277 Rand Road, Des Plaines, Illinois, 60016

Telephone (312) 298-4380

New York Office (212) 772-2863

Sales/Service (800) 323-2498

Telex: 72-6351

Circle (24) on Reply Card

# COLOR VIDEO MONITORS

| Manufacturer          | Femseh Inc.                     | Hitachi                         | Ikegami                              |
|-----------------------|---------------------------------|---------------------------------|--------------------------------------|
| Model Number          | MC-51BB                         | MC63-BA                         | Denshi Ltd.<br>CM-182                |
|                       |                                 |                                 | Electronics, Inc.<br>TM20-8R         |
| CRT Diagonal          | 15 in                           | 20 in                           | 25 in                                |
| CRT Type              | Toshiba In-Line                 | RCA Precision-In-Line           | Shadow Mask                          |
| Resolution/Brightness | 625TVL, 25fL                    | 625TVL, 25fL                    | To 47 cd/m <sup>2</sup>              |
| Convergence Accuracy  | .025%                           | .25%                            | .25%                                 |
| Raster Regulation     | .04%, 10-90%APL                 | .4%, 10-90%APL                  | .....                                |
| Luminance Bandwidth   | .05dB/to 5MHz                   | 1dB/to 5MHz                     | .5dB/to 5MHz                         |
| Chroma Bandwidth      | .....                           | .....                           | .....                                |
| Hum Rating            | .....                           | .....                           | .....                                |
| Blue Gun Only         | .....                           | .....                           | .....                                |
| NTSC Matrix Test      | .....                           | .....                           | .....                                |
| AFC Time Constants    | 1msec, 3msec                    | .....                           | .....                                |
| Aperture Correction   | .....                           | .....                           | Yes                                  |
| Demodulation Axis     | .....                           | .....                           | .....                                |
| X-Y Outputs           | .....                           | .....                           | .....                                |
| Underscan             | Yes                             | Yes                             | .....                                |
| Delay/Pulse Cross     | .....                           | .....                           | .....                                |
| Video Inputs          | 2                               | 2                               | 3                                    |
| RBG Video Inputs      | Yes                             | Option                          | .....                                |
| External Sync Inputs  | Yes                             | Yes                             | Yes                                  |
| Weight                | .49 lb                          | 65 lb                           | 106 lb                               |
| 19-inch Rack/Cabinet  | Either                          | Either                          | 66 lb                                |
| Color Standards       | NTSC, PAL, PAL-M,<br>SECAM, RGB | NTSC, PAL, PAL-M,<br>SECAM, RGB | Cabinet, Yoke<br>Either<br>NTSC, RGB |
|                       |                                 |                                 | .....                                |

## RCA - AMPEX - SONY - HARRIS HITACHI - NEC - TOWNSEND

THEY make the "big boxes", transmitters, cameras, VTR's etc....

WE supply the system with products from Conrac, Tektronix, Videotek, Lenco, Belar Microtime, Moseley, Andrew, Myat, Leader Dielectric Communications, Grass Valley, Vinten, Electrohome, Ikegami, Dynatech O'Connor, Philips, Cohu, Spindler & Sauppe, Thomson-CSF, RTS Systems, HME, Telemet, Stantron, ESE, Panasonic, AMP, Amphenol, 3-M, CETEC and more than 75 other name-brand manufacturers.

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- High resolution
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Exclusive North American distributor for Barco A/V products

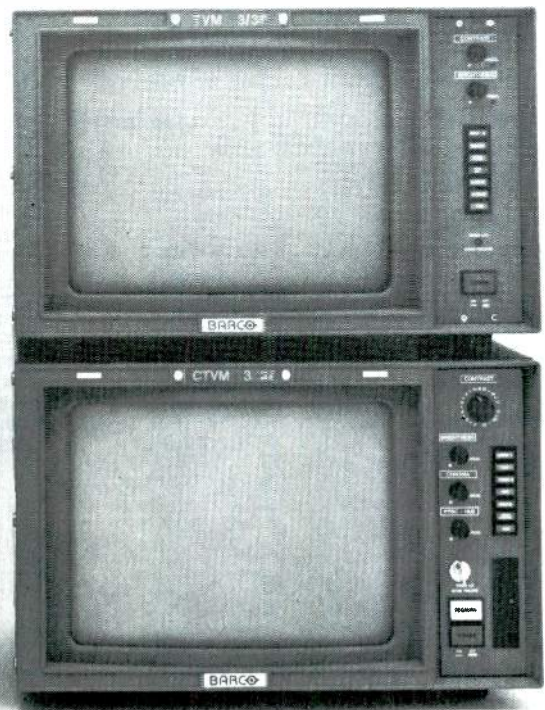
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Circle (26) on Reply Card



CTVM 3/51 "A" version.



TVM 3/37  
CTVM 3/37 B version.

## BARCO's new series Master Control Monitors: tailored to your needs

### CTVM 3 Colour monitors.

In order to satisfy the variety of monitor applications the CTVM 3 series allows you to choose your colour monitor corresponding exactly to your specific wishes regarding screen size, CRT type, resolution, special facilities, decoders and mechanical construction.

- Screen sizes: 37 cm (15"), 51 cm (20") or 66 cm (26") screen
- Cathode ray tubes: delta gun shadow mask CRT or slot mask CRT.
- Resolution (for delta gun): Standard, semi high or high resolution.
- Versions:

The A version incorporates special facilities such as pulse cross mode, notch filter, split screen, RGB switches, RGBS output, R-Y and B-Y output.

B version: without special facilities.

- Decoders: with an optional set of decoder printed circuit boards plugged in, the CTVM 3 accepts composite NTSC; PAL or SECAM signals (Comb-filter or aperture correction optional on NTSC version).

- Mechanical construction: conversion from cabinet to rack, VTR bridge, in-wall or ceiling mounting is easily accomplished without dismantling the monitor through the optional special mounting kit.

### TVM 3 monochrome monitors.

The BARCO professional monochrome monitors are measuring instruments for use in broadcasting, industrial and educational applications where quality and reliability are most required.

Facilities to be essential including colour subcarrier filter, pulse cross,

Circle (27) on Reply Card

size switch, remote control, internal/external sync. offer broadcast-oriented operating features and controls.

As regards to the CRT a choice is offered between WA (6500°K illuminant D) and W (9.300°K) phosphors. Screen size and mechanical construction can be chosen as with the colour monitors.

BARCO Video Systems n.v.  
Th. Sevenslaan 106  
B-8500 Kortrijk Belgium

# BARCO

# COLOR VIDEO MONITORS

| Manufacturer          | Ikegami Electronics, Inc. |                       | Lenco, Inc. Electronics           | Panasonic Company    |
|-----------------------|---------------------------|-----------------------|-----------------------------------|----------------------|
| Model Number          | TM14-2RHA                 | TM14-9RH              | PCM-514<br>PCM-520<br>RGB Monitor | CT-110M              |
| CRT Diagonal          | 14 in                     | 14 in                 | 14 in                             | 10 in                |
| CRT Type              | Shadow Mask               | In-Line Gun           | Precision In-Line                 | Quintrix II In-Line  |
| Resolution/Brightness | .....                     | .....                 | 625TVL, 35fc                      | 800TVL               |
| Convergence Accuracy  | 0.02 in                   | .02 in                | .2%                               | .2%                  |
| Raster Regulation     | .....                     | .....                 | 1%, 0-100%APL, 35fc               | .5%, 0-100%APL, 35fL |
| Luminance Bandwidth   | 1, -2dB/to 8MHz           | 1, -3dB/to 8MHz       | 1dB/to 6MHz,<br>Comb Filter       | To 10MHz             |
| Chroma Bandwidth      | 1, -3dB/3MHz-4MHz         | 1, -3dB/2.3MHz-4.1MHz | .....                             | .....                |
| Hum Rating            | .....                     | .....                 | .....                             | .....                |
| Blue Gun Only         | .....                     | .....                 | Yes                               | .....                |
| NTSC Matrix Test      | .....                     | Yes                   | .....                             | .....                |
| AFC Time Constants    | .....                     | 3 AFC Time Constants  | .....                             | .....                |
| Aperture Correction   | .....                     | Yes                   | .....                             | .....                |
| Demodulation Axis     | R-Y, B-Y                  | I and Q               | .....                             | .....                |
| X-Y Outputs           | Option                    | .....                 | .....                             | .....                |
| Underscan             | Yes                       | Yes                   | Yes                               | .....                |
| Delay/Pulse Cross     | Yes                       | .....                 | Yes                               | .....                |
| Video Inputs          | 2                         | 3                     | 2                                 | .....                |
| RBG Video Inputs      | Option                    | Option                | Yes                               | 1- and 8-pin VTR     |
| External Sync Inputs  | Yes                       | Yes                   | Yes                               | .....                |
| Weight                | 62 lb                     | 55 lb                 | 45 lb                             | 22 lb                |
| 19-inch Rack/Cabinet  | Either                    | Either                | Either                            | Cabinet              |
| Color Standards       | NTSC, RGB                 | NTSC, RGB             | NTSC, RGB                         | NTSC                 |

| Manufacturer          | Sony Broadcast      | Tektronix, Inc.    |                    | Videotek, Inc.         |
|-----------------------|---------------------|--------------------|--------------------|------------------------|
| Model Number          | BVM-1201            | 650HR              | 670A               | TEK 690SR-01<br>VM-5PT |
| CRT Diagonal          | 12 in               | 12 in              | 17 in              | 19 in                  |
| CRT Type              | Trinitron           | Trinitron          | Trinitron          | Delta Gun              |
| Resolution/Brightness | .....               | .....              | .....              | Shadow Mask            |
| Convergence Accuracy  | 0.04 in             | High Resolution    | High Resolution    | .....                  |
| Raster Regulation     | 1%, 0-100%APL, 20fL | .04 in             | .04 in             | .02 in                 |
| Luminance Bandwidth   | 1dB/to 6.5MHz       | To 6MHz            | To 6MHz            | To 6MHz                |
| Chroma Bandwidth      | .....               | 1.2MHz             | .6MHz              | To 8MHz                |
| Hum Rating            | -50dB               | -50dB              | -50dB              | 1.3MHz                 |
| Blue Gun Only         | .....               | Yes                | -50dB              | -50dB                  |
| NTSC Matrix Test      | .....               | Yes                | .....              | .....                  |
| AFC Time Constants    | Slow, Fast          | 2 Time Constants   | 2 Time Constants   | Slow, Fast             |
| Aperture Correction   | To 8dB at 4.5MHz    | Yes                | Yes                | Yes                    |
| Demodulation Axis     | R-Y, B-Y            | R-Y, B-Y           | R-Y, B-Y           | R-Y, B-Y               |
| X-Y Outputs           | Yes                 | Yes                | Yes                | .....                  |
| Underscan             | 90% of Full Screen  | 90% of Full Screen | 90% of Full Screen | 90% of Full Screen     |
| Delay/Pulse Cross     | Yes                 | Yes                | Yes                | Option                 |
| Video Inputs          | 2                   | 2                  | 2                  | 2                      |
| RBG Video Inputs      | Yes                 | Option             | Option             | Option 42              |
| External Sync Inputs  | Yes                 | Yes                | Yes                | Yes                    |
| Weight                | 58 lb               | 52 lb              | 89 lb              | 110 lb                 |
| 19-inch Rack/Cabinet  | Either              | Either             | Either             | 15 lb                  |
| Color Standards       | NTSC                | NTSC, PAL, RGB     | NTSC, PAL, RGB     | NTSC, RGB              |



# COLOR VIDEO MONITORS

| Manufacturer          | Videotek                 |           | World Video, Inc.       |                       |                      |
|-----------------------|--------------------------|-----------|-------------------------|-----------------------|----------------------|
| Model Number          | Studio 12                | VM26P     | CP8000A<br>Portable     | CR 1700<br>Rack Mount | CDM 13 RGB           |
| CRT Diagonal          | 12 in                    | 26 in     | 8 in                    | 17 in                 | 13 in                |
| CRT Type              | Trinitron                | Trinitron | Trinitron               | Trinitron             | In-Line Gun          |
| Resolution/Brightness | .....                    | .....     | .....                   | .....                 | .....                |
| Convergence Accuracy  | .....                    | .....     | .04 in                  | .04 in                | .....                |
| Raster Regulation     | .....                    | .....     | 2%, 0-100%APL           | .....                 | .....                |
| Luminance Bandwidth   | .....                    | .....     | .....                   | .....                 | .....                |
| Chroma Bandwidth      | .....                    | .....     | .....                   | .....                 | .....                |
| Hum Rating            | .....                    | .....     | .....                   | .....                 | .....                |
| Blue Gun Only         | .....                    | .....     | .....                   | .....                 | .....                |
| NTSC Matrix Test      | .....                    | .....     | .....                   | .....                 | .....                |
| AFC Time Constants    | .05msec, 3msec,<br>7msec | .....     | .....                   | .....                 | .....                |
| Aperture Correction   | Yes                      | Yes       | .....                   | Yes                   | .....                |
| Demodulation Axis     | .....                    | .....     | R-Y, B-Y                | R-Y, B-Y              | .....                |
| X-Y Outputs           | .....                    | .....     | .....                   | .....                 | .....                |
| Underscan             | Yes                      | Yes       | 80% of Full Screen      | 80% of Full Screen    | .....                |
| Delay/Pulse Cross     | Yes                      | Yes       | Yes                     | .....                 | .....                |
| Video Inputs          | 2                        | 2         | 2                       | 2                     | .....                |
| RBG Video Inputs      | .....                    | .....     | .....                   | .....                 | Yes                  |
| External Sync Inputs  | Yes                      | Yes       | Yes                     | Yes                   | Yes                  |
| Weight                | 55 lb                    | 175 lb    | 26 lb                   | 80 lb                 | .....                |
| 19-inch Rack/Cabinet  | Either                   | Cabinet   | CDR800 Version,<br>Rack | Rack Only             | Cabinet, Swivel Base |
| Color Standards       | NTSC                     | NTSC      | NTSC                    | NTSC                  | RGB Only             |

# EDITING CONTROLLER

Equipment to interconnect recording and playback or source units to control multiple machine synchronization and switching function requirements in multiple source program production editing.

| Manufacturer              | Ampex Corporation           |  |                         | Cezar International Ltd. |                                      |
|---------------------------|-----------------------------|--|-------------------------|--------------------------|--------------------------------------|
| Model Number              | ACE Computerized<br>Editing | EC-2 Editing System<br>with RES-1<br>Control Station | TRE-2 Sitdown<br>Editor | The Originators<br>EA-3X | International Ltd.<br>The Controller |
| Controller for            | Unspecified                 | Ampex AVR-2<br>and VPR                               | Ampex VPR-2/2B          | Various VTR              | ½-in and U VTRs                      |
| Number of Recorders       | Multiple                    | Multiple   | 1                       | 1                        | 1                                    |
| Number of Players         | 15 Max                      | 7 Max  | 1                       | 1                        | 1                                    |
| Edit Event Storage        | Undefined                   | 9  | Storage in VPR-2        | 1                        | 1                                    |
| Microprocessor Control    | DEC LSI-11/23               | Yes  | .....                   | Yes                      | Yes                                  |
| Disc System Storage       | Yes                         | .....  | .....                   | .....                    | .....                                |
| Paper Tape Storage        | Yes                         | .....  | .....                   | Possible                 | .....                                |
| CRT Edit Data Display     | Yes, TouchScreen            | Yes  | .....                   | Yes                      | .....                                |
| Printer Output (RS232)    | Yes                         | .....  | .....                   | Option                   | .....                                |
| Assemble Editing Mode     | Yes                         | Yes  | Yes                     | Yes                      | Yes                                  |
| Insert Editing Mode       | Yes                         | Yes  | Yes                     | Yes                      | Yes                                  |
| Animation Editing Mode    | Yes                         | Possible   | Possible                | Yes                      | .....                                |
| A/B Roll Editing          | Yes                         | Yes  | .....                   | .....                    | .....                                |
| Split A and V Editing     | Yes                         | Yes  | Yes                     | Yes                      | Yes                                  |
| Automatic Editing         | Yes                         | Yes  | Yes                     | .....                    | .....                                |
| On-Fly Editing Marking    | Yes                         | Yes  | Yes                     | Yes                      | Yes                                  |
| Frame Trimming            | Yes                         | Yes  | Yes                     | Yes                      | Yes                                  |
| Drop/Non-Drop Frame       | Yes                         | Yes  | Yes                     | Yes                      | .....                                |
| SMPTE Time Reference      | Yes                         | Yes  | Yes                     | Yes                      | .....                                |
| Control Track Reference   | Yes                         | Yes  | Yes                     | Yes                      | Yes                                  |
| Other Timing Reference    | Yes                         | Yes  | .....                   | Micro Loc                | Micro Loc                            |
| SMPTE Time Code Reader    | Yes                         | Yes  | .....                   | .....                    | .....                                |
| SMPTE Time Code Generator | Yes                         | Yes  | .....                   | .....                    | .....                                |
| Color Framing             | Yes                         | Yes  | Yes                     | Yes                      | Yes                                  |
| Editing Accuracy          | ±0 Frames                   | ±0 Frames  | ±0 Frames               | ±0 Frames                | ±0 Frames                            |
| VTR Speed Controlling     | Yes                         | Yes  | Yes                     | Yes                      | Yes                                  |
| VTR Direction Control     | Yes                         | Yes  | Yes                     | Yes                      | Yes                                  |
| Additional Signal Sources | Yes                         | Yes  | Yes                     | .....                    | .....                                |
| Video Switcher Interface  | Yes                         | .....  | .....                   | Fade to Black            | .....                                |
| Audio Mixer Interface     | Yes                         | .....  | .....                   | .....                    | .....                                |
| Color Standards           | NTSC, PAL, SECAM            | NTSC, PAL, SECAM                                     | NTSC                    | NTSC                     | NTSC                                 |

# EDITING CONTROLLER

| Manufacturer              | Convergence Corporation  |                          |                          | Datatron, Inc. Editing Systems Division |                        |
|---------------------------|--------------------------|--------------------------|--------------------------|---|------------------------|
| Model Number              | ECS-100                  | ECS-90                   | ECS-104                  | Tempo 76 Series (MIU)                   | Vanguard               |
| Controller for            | Various B, C and U       | Various U and 1/2-in     | Various U, B and C       | Various VTRs                            | Various VTRs           |
| Number of Recorders       | 1                        | 1                        | 1                        | 1                                       | 1                      |
| Number of Players         | 3                        | 1                        | 3                        | 2 of 8                                  | 4                      |
| Edit Event Storage        | .....                    | .....                    | 800                      | 300 Max                                 | 999 Max                |
| Microprocessor Control    | Motorola 6802            | Motorola 6802            | Motorola 6802            | Yes                                     | Yes                    |
| Disc System Storage       | DD-100 Option            | .....                    | Option                   | .....                                   | Option                 |
| Paper Tape Storage        | Option                   | .....                    | Option                   | Option                                  | Option                 |
| CRT Edit Data Display     | Yes                      | Yes                      | Yes                      | .....                                   | Yes                    |
| Printer Output (RS232)    | Option                   | .....                    | Option                   | Option                                  | Option                 |
| Assemble Editing Mode     | Yes                      | Yes                      | Yes                      | Yes                                     | Yes                    |
| Insert Editing Mode       | Yes                      | Yes                      | Yes                      | Yes                                     | Yes                    |
| Animation Editing Mode    | Option                   | Yes                      | Yes                      | Yes                                     | Possible               |
| A/B Roll Editing          | .....                    | .....                    | Yes                      | Yes                                     | Yes                    |
| Split A and V Editing     | Yes                      | Yes                      | Yes                      | Yes                                     | Yes                    |
| Automatic Editing         | .....                    | .....                    | Yes                      | Yes                                     | Yes                    |
| On-Fly Editing Marking    | Yes                      | Yes                      | Yes                      | Yes                                     | Yes                    |
| Frame Trimming            | Yes                      | Yes                      | Yes                      | Yes                                     | Yes                    |
| Drop/Non-Drop Frame       | Option                   | Option                   | Option                   | Yes                                     | Yes                    |
| SMPTE Time Reference      | Option                   | Option                   | Option                   | Yes                                     | Yes                    |
| Control Track Reference   | Yes                      | Yes                      | Yes                      | Yes                                     | Yes                    |
| Other Timing Reference    | .....                    | External Sync            | .....                    | Yes                                     | .....                  |
| SMPTE Time Code Reader    | Option                   | Option                   | Option                   | Option                                  | Option                 |
| SMPTE Time Code Generator | .....                    | .....                    | .....                    | .....                                   | Option                 |
| Color Framing             | Yes                      | Yes                      | Yes                      | Yes                                     | Yes                    |
| Editing Accuracy          | ± 1 Frame, Control Track | ± 1 Frame, Control Track | ± 1 Frame, Control Track | ± 0 Frames, SMPTE Code                  | ± 0 Frames, SMPTE Code |
| VTR Speed Controlling     | Yes                      | Yes                      | Yes                      | Yes                                     | Yes                    |
| VTR Direction Control     | Yes                      | Yes                      | Yes                      | Yes                                     | Yes                    |
| Additional Signal Sources | Option                   | Option                   | Option                   | Yes                                     | Yes                    |
| Video Switcher Interface  | Option                   | .....                    | Option                   | Yes                                     | Yes                    |
| Audio Mixer Interface     | Option                   | .....                    | Option                   | Yes                                     | Yes                    |
| Color Standards           | NTSC, PAL                | NTSC, PAL                | NTSC, PAL, SECAM         | NTSC                                    | NTSC, PAL              |

| Manufacturer              | Femseh, Inc.                                   | Harris Video (CVS)              | Jatex inc.   | Orryx Corporation    |
|---------------------------|--|---------------------------------|--------------|----------------------|
| Model Number              | Mach One                                       | Epic                            | VSEC 62TMX   | VSEC-42TD            |
| Controller for            | Various (Ampex, Bosch, RCA, Sony 3/4, 1 and 2) | Various 3/4, 1 and 2 inch VTRs. | Various      | Various VHS, U and C |
| Number of Recorders       | 1  | 1                               | 1            | 1                    |
| Number of Players         | 5  | 7                               | 2            | 1                    |
| Edit Event Storage        | 500 to 700                                     | 2000 per Disc                   | 999 Optional | 1                    |
| Microprocessor Control    | DEC LSI-11                                     | Yes                             | Yes          | .....                |
| Disc System Storage       | Optional DSD 440                               | Yes                             | Optional     | .....                |
| Paper Tape Storage        | Remex RAF 6075C                                | Optional                        | .....        | .....                |
| CRT Edit Data Display     | Yes  | Yes                             | Optional     | .....                |
| Printer Output (RS232)    | Centronics 703                                 | Yes                             | Optional     | .....                |
| Assemble Editing Mode     | Yes  | Yes                             | Yes          | Yes                  |
| Insert Editing Mode       | Yes  | Yes                             | Yes          | Yes                  |
| Animation Editing Mode    | Yes  | Yes                             | Yes          | Yes                  |
| A/B Roll Editing          | Yes  | Yes                             | Yes          | .....                |
| Split A and V Editing     | Yes  | Yes                             | Yes          | Yes                  |
| Automatic Editing         | Yes  | Yes                             | Optional     | .....                |
| On-Fly Editing Marking    | Yes  | Yes                             | Yes          | Yes                  |
| Frame Trimming            | Yes  | Yes                             | Yes          | Yes                  |
| Drop/Non-Drop Frame       | Yes  | Yes                             | .....        | Yes                  |
| SMPTE Time Reference      | Yes  | Yes                             | .....        | Yes                  |
| Control Track Reference   | .....  | .....                           | .....        | Yes                  |
| Other Timing Reference    | Mixed 24, 25-Frame                             | .....                           | Scene-Dex    | Scene-Dex            |
| SMPTE Time Code Reader    | In Interfaces                                  | In Interfaces                   | Optional     | .....                |
| SMPTE Time Code Generator | Yes  | Yes                             | Optional     | .....                |
| Color Framing             | Yes  | Yes                             | .....        | Yes                  |
| Editing Accuracy          | ± 0 Frames                                     | ± 0 Frames                      | .....        | ± 1 Frame            |
| VTR Speed Controlling     | Yes  | Yes                             | Yes          | .....                |
| VTR Direction Control     | Yes  | Yes                             | Yes          | Yes                  |
| Additional Signal Sources | Yes  | Yes                             | Yes          | .....                |
| Video Switcher Interface  | Yes  | Yes                             | Yes          | .....                |
| Audio Mixer Interface     | Yes  | Yes                             | .....        | Yes                  |
| Color Standards           | NTSC, PAL                                      | NTSC                            | NTSC         | NTSC, PAL, SECAM     |

# Editing starts with CMX

If you think you can't grow from absolute simplicity to total performance look at the world standard for editing.

Editing starts with the CMX 340X because it performs exactly the same simple functions competitors' limited systems do. Two machine cuts editing, for instance, requires the same number of keystrokes. But for you that's only the beginning. The expandability of the 340X will not restrict its simplicity at any point in your growth.



CMX 340X keys are grouped conveniently, color coded, dedicated and easy to reach. That's one reason it's as easy to operate as most limited capacity editors.

Editing never ends with CMX because the 340X is the most expandable and sophisticated editing system in the world. All the new techniques in post-production developed over its five-year history have been added to the earliest 340X systems. The simplicity of the 340X does not

restrict its expandability at any point in your growth.

Editing starts with CMX because every 340X system installation includes basic training in operation and maintenance. CMX has the world's largest staff of editing system specialists to keep you going. These experts are available to install and train you on new features as they become available.

Editing never ends with CMX because our staff editors provide complete 340X training that never stops. This training is supported by advanced seminars, newsletters, an editors' advisory panel, plus worldwide experience in post-production that only the editors at CMX have.

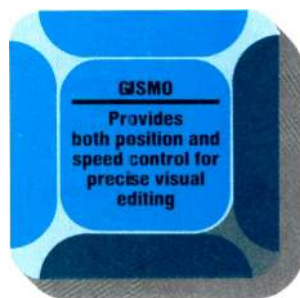
Editing starts with CMX because it did. CMX built the first simple, practical, computer-assisted editing system over ten years ago. Along with our original customers we



have continued to grow and to lead. While others have come and gone, CMX continues to be the world standard for editing. We have the ten-year track record to support you now and in the future.

Editing never ends with CMX because your initial investment is protected from absolute simplicity to total performance. Before you invest in post-production, look at the difference in total investment between competitors' limited systems and CMX.

The 340X has replaced many other systems; and every CMX user has stayed with us when he expanded his system. Editing never stops with CMX when editing starts with CMX.



Orrox Corporation 3303 Scott Blvd., Santa Clara, CA 95050 (408) 988-2000 Telex 910-338-0554/Chicago (312) 325-8488/Los Angeles (213) 980-7927/New York (212) 371-1122 International Representatives: Magna Techtronics, Australia/Totsu, Japan/Sight and Sound, Hong Kong/TeknoMerica, Mexico City/Arvid, Argentina/F.W.O. Bauch, United Kingdom/Thomson, France/GTC, W. Germany/Video Promotion, Belgium/Communications Consultants, South Africa

Circle (28) on Reply Card

**CMX**  
**ORROX**

# EDITING CONTROLLER

| Manufacturer               | Orrox Corporation | Panasonic Video Systems             |                                 | RCA Broadcast             | Sony Broadcast |
|----------------------------|-------------------|-------------------------------------|---------------------------------|---------------------------|----------------|
|                            |                   | Model Number                        | Model Number                    | Model Number              | Model Number   |
| Manufacturer               | Orrox Corporation | Panasonic Video Systems             |                                 | RCA Broadcast             | Sony Broadcast |
| Model Number               | CMX-340X          | AU-A70                              | NV-A960                         | AE-800                    | BVE500A        |
| Controller for             | Various VTRs      | U-Matic AU, NV VTRs,<br>VHS NV VTRs | U-Matic NV VTRs,<br>VHS NV VTRs | TR-800, TH-200,<br>TR-600 | BVU-200A       |
| Number of Recorders        | 1                 | 1                                   | 1                               | 1                         | 1              |
| Number of Players          | 6                 | 1, 2nd Optional                     | 1                               | 8                         | 1              |
| Edit Event Storage         | 1                 | 1                                   | 1                               | Unspecified               | 1              |
| Microprocessor Control     | PDP-11/04         | Yes                                 | Yes                             | Yes                       | .....          |
| Disc System Storage        | Floppy            | .....                               | .....                           | .....                     | .....          |
| Paper Tape Storage         | Yes               | .....                               | .....                           | .....                     | .....          |
| CRT Edit Data Display      | Yes               | .....                               | .....                           | Yes                       | .....          |
| Printer Output (RS232)     | Yes               | .....                               | .....                           | Optional                  | .....          |
| Assemble Editing Mode      | Yes               | Yes                                 | Yes                             | Yes                       | Yes            |
| Insert Editing Mode        | Yes               | Yes                                 | Yes                             | Yes                       | Yes            |
| Animation Editing Mode     | Yes               | Possible                            | Possible                        | Yes                       | Possible       |
| A/B Roll Editing           | Yes               | Optional                            | .....                           | Yes                       | .....          |
| Split A and V Editing      | Yes               | Yes                                 | Yes                             | Yes                       | Yes            |
| Automatic Editing          | Yes               | Yes                                 | .....                           | Yes                       | .....          |
| On-Fly Editing Marking     | Yes               | Yes                                 | Yes                             | Yes                       | Yes            |
| Frame Trimming             | Yes               | Yes                                 | Yes                             | Yes                       | Yes            |
| Drop/Non-Drop Frame        | Yes               | Yes                                 | .....                           | Yes                       | .....          |
| SMPTTE Time Reference      | Yes               | Yes                                 | .....                           | Yes                       | .....          |
| Control Track Reference    | .....             | Yes                                 | Yes                             | .....                     | Yes            |
| Other Timing Reference     | EBU               | .....                               | .....                           | VITC                      | .....          |
| SMPTTE Time Code Reader    | In Interfaces     | Optional                            | .....                           | Optional                  | .....          |
| SMPTTE Time Code Generator | Yes               | Optional                            | .....                           | Optional                  | .....          |
| Color Framing              | Yes               | Possible                            | Possible                        | Yes                       | Yes            |
| Editing Accuracy           | ± 0 Frames        | ± 2 Frames                          | ± 2 Frames                      | ± 0 Frames                | ± 2 Frames     |
| VTR Speed Controlling      | Yes               | Not During Edit                     | Not During Edit                 | Yes                       | Not For Edit   |
| VTR Direction Control      | Yes               | Not During Edit                     | Not During Edit                 | Yes                       | Not For Edit   |
| Additional Signal Sources  | Yes               | .....                               | .....                           | Yes                       | .....          |
| Video Switcher Interface   | Yes               | .....                               | .....                           | Yes                       | .....          |
| Audio Mixer Interface      | Yes               | .....                               | .....                           | Yes                       | .....          |
| Color Standards            | NTSC, PAL, SECAM  | NTSC                                | NTSC                            | NTSC                      | NTSC           |

| Manufacturer               | Sony Broadcast     |                    | United Media |                           | Videomedia Systems |
|----------------------------|--------------------|--------------------|--------------|---------------------------|--------------------|
|                            | Model Number       | Model Number       | Model Number | Model Number              | Model Number       |
| Manufacturer               | Sony Broadcast     |                    | United Media |                           | Videomedia Systems |
| Model Number               | BVE-1000           | BVE-5000           | Commander I  | Commander II Expanded     | Z-6000 Series      |
| Controller for             | BVH-1100, BVU-200A | BVH-1100, BVU-200A | Various VTRs | Various ¾, 1, 2-in        | Various VTRs       |
| Number of Recorders        | 1                  | 2                  | 1            | 1                         | 1                  |
| Number of Players          | 1                  | 4                  | 1            | 7                         | 8 (Model E)        |
| Edit Event Storage         | 1                  | 500                | 25           | 500                       | 250                |
| Microprocessor Control     | Yes                | Yes                | Yes          | Yes                       | Z80A               |
| Disc System Storage        | .....              | .....              | .....        | Optional, 10,000 per Disc | Optional           |
| Paper Tape Storage         | Yes                | Yes                | Optional     | Optional                  | .....              |
| CRT Edit Data Display      | .....              | Yes                | .....        | Yes                       | .....              |
| Printer Output (RS232)     | .....              | Optional           | Optional     | Optional                  | Yes                |
| Assemble Editing Mode      | Yes                | Yes                | Yes          | Yes                       | Yes                |
| Insert Editing Mode        | Yes                | Yes                | Yes          | Yes                       | Yes                |
| Animation Editing Mode     | .....              | Possible           | Possible     | Possible                  | Yes                |
| A/B Roll Editing           | .....              | Yes                | .....        | Yes                       | Yes                |
| Split A and V Editing      | Yes                | Yes                | Yes          | Yes                       | Yes                |
| Automatic Editing          | .....              | Yes                | Possible     | Yes                       | Yes                |
| On-Fly Editing Marking     | Yes                | Yes                | Yes          | Yes                       | Yes                |
| Frame Trimming             | Yes                | Yes                | Yes          | Yes                       | Yes                |
| Drop/Non-Drop Frame        | .....              | Possible           | Yes          | Yes                       | Yes                |
| SMPTTE Time Reference      | Yes                | Yes                | Yes          | Yes                       | Yes                |
| Control Track Reference    | Yes                | .....              | .....        | .....                     | Yes                |
| Other Timing Reference     | .....              | VITC               | .....        | .....                     | Micro-Loc          |
| SMPTTE Time Code Reader    | Optional           | Optional           | Yes          | To 8                      | Yes                |
| SMPTTE Time Code Generator | Optional           | Optional           | Optional     | Yes                       | Yes                |
| Color Framing              | Yes                | Yes                | Yes          | Yes                       | Yes                |
| Editing Accuracy           | ± 1 Frame          | ± 0 Frames         | .....        | ± 0 Frames                | ± 0 Frames         |
| VTR Speed Controlling      | Not For Edit       | Yes                | Yes          | Yes                       | Yes                |
| VTR Direction Control      | Not For Edit       | Yes                | Yes          | Yes                       | Yes                |
| Additional Signal Sources  | .....              | Yes                | .....        | Yes                       | Yes                |
| Video Switcher Interface   | .....              | Yes                | .....        | Yes                       | Yes                |
| Audio Mixer Interface      | .....              | Yes                | .....        | Yes                       | Yes                |
| Color Standards            | NTSC, PAL, SECAM   | NTSC               | NTSC         | NTSC                      | NTSC, PAL, SECAM   |

# Never build an editor that can become obsolete...



## And it goes for every Z editor ever built.

Considering all the advancements made in videotape editing systems in just the last three years, you might think your Mini-Z or Z-6 editing system is becoming obsolete. Well, it's not.

In fact, even though we're introducing a whole new line of Z6000 editors, the very first Z editor we ever built can be fully upgraded to Z6000 capability for less than \$4,500!

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individual microprocessor, thus eliminating timing discrepancies... all for less than \$11,000!

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Circle (29) on Reply Card



# ROUTING SWITCHERS

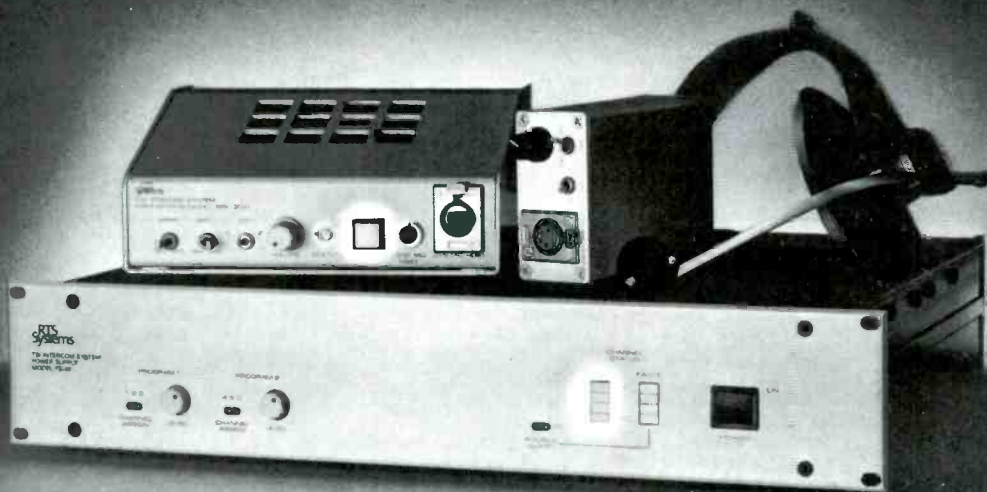
Switching systems that allow any input to be switched to any one or all outputs; for audio, video or audio-follow-video. Video switching in vertical interval, unless noted. Control from encoded push-buttons, thumbwheel switches or computer systems on party line available. Video typically 75 Ohms, 1V P-P. Solid-state switching.

| Manufacturer              | ADM Technology<br>Custom Audio<br>Designs | American Data<br>900 Series | Arrakis Systems<br>100RS | Datatek Corporation<br>D-2000 Series | DI-Tech Inc.<br>5800 Series |
|---------------------------|---|-----------------------------|--------------------------|--------------------------------------|-----------------------------|
| Crosspoint Group          | .8x1 to 50x1                              | 20x10                       | 16x12 Mono, 8x12         | 25x1, 50x1                           | 20x1                        |
| System In/Out Max.        | 200x500 Possible                          | 256x256 Possible            | 32x24 Possible           | 256x—                                | 20x15 per Frame             |
| Audio:                    | ONLY                                      | .....                       | ONLY                     | .....                                | .....                       |
| In/Out Z (Ohms)           | Bridging/150, 600 Bal                     | 150, 600 Bal                | 10K/600 Bal              | 22K/600 Bal or Unbal                 | 50K/600 Bal                 |
| In/Out Level Max.         | +24dBm                                    | +18dBm                      | +22dBm                   | +30dBm                               | +20dBm/ +18dBm              |
| AF Response (± dB/Hz)     | 1/20-20K                                  | .5/50-15K                   | 1/20-20K                 | .1/20-20K                            | .25/20-20K                  |
| THD, Level                | 1%  | .5%                         | .1%                      | .2%                                  | .5% at +18dBm               |
| Signal-to-Noise Ratio     | 75dB                                      | 75dB below Unity            | 75dB below +22dBm        | 105dB below +30dBm                   | 70dBm                       |
| Crosstalk                 | 60dB below +6dBm                          | 75dB below +18dBm           | -65dB, 16kHz             | -85dB to 20kHz                       | -70dB                       |
| Video:                    | .....                                     | .....                       | .....                    | .....                                | .....                       |
| Input Terminating         | No  | No                          | No                       | No                                   | No                          |
| Video Response (± dB/MHz) | .....                                     | .2/50-8M                    | .....                    | .1/to 5M                             | .1/to 5M                    |
| Differential Phase/Gain   | .....                                     | .5%/5%                      | .....                    | .15%/15%                             | .25%/25%                    |
| Differential Delay        | .....                                     | 1.5°                        | .....                    | 1°                                   | 1°                          |
| Electrical Length         | .....                                     | .....                       | .....                    | .....                                | 44nsec                      |
| Chroma/Luminance Delay    | .....                                     | .....                       | .....                    | .....                                | .....                       |
| K Factor                  | .....                                     | .....                       | .....                    | .....                                | .5%                         |
| Signal-to-Noise Ratio     | .....                                     | 50dB                        | .....                    | 60dB below 1V P-P                    | 65dB                        |
| Field Tilt                | .....                                     | 1%                          | .....                    | .25%                                 | .5%                         |
| In/Out Return Loss        | .....                                     | 35dB                        | .....                    | 40dB/35dB                            | .....                       |
| Crosstalk (Worst)         | .....                                     | 60dB                        | .....                    | 60dB, 4.43MHz                        | -60dB                       |

| Manufacturer              | DI-Tech Inc.<br>5840 Series | Dynalr Electronics<br>System 21 | Dynalr Electronics<br>System 10 | Grass Valley Group<br>Series 8100 | Grass Valley Group<br>Series 440 |
|---------------------------|-----------------------------|---------------------------------|---------------------------------|-----------------------------------|----------------------------------|
| Crosspoint Group          | .40x1                       | 10x10                           | 10x10                           | 10x1, 20x1                        | 64x1                             |
| System In/Out Max.        | 40x15 per Frame             | 100x50                          | SVA Video/SAA Audio             | 40x10 per FR-8141A                | 512x512                          |
| Audio:                    | .....                       | .....                           | .....                           | ONLY                              | .....                            |
| In/Out Z (Ohms)           | .50K/600 Bal                | 600 Bal                         | 600 Bal                         | 100K Bal/200 Bal                  | 600 Bal                          |
| In/Out Level Max.         | +20dBm/ +18dBm              | +24dBm                          | +24dBm                          | +8dBm/ +20dBm                     | +24dBm                           |
| AF Response (± dB/Hz)     | .0.25/20-20K                | .2/30-20K                       | .5/30-15K                       | .15/20-20K                        | .1/20-20K                        |
| THD, Level                | .0.5% at +18dBm             | .25%, +24dBm,<br>15kHz          | .5%, +24dBm,<br>15kHz           | .15%, +8dBm                       | .1%, +24dBm                      |
| Signal-to-Noise Ratio     | -80dBm                      | -75dBm                          | -75dBm                          | 85dB below +20dBm                 | 92dB, 15kHz weighted             |
| Crosstalk                 | -60dB                       | 80dB below +24dBm               | -80dB at 15kHz                  | 70dB below output                 | -80dB                            |
| Video:                    | .....                       | .....                           | .....                           | .....                             | .....                            |
| Input Terminating         | No                          | No                              | No                              | .....                             | Yes                              |
| Video Response (± dB/MHz) | .....                       | .5/to 8M                        | .1/100K-12M                     | .....                             | .1/to 5                          |
| Differential Phase/Gain   | .....                       | .15%/15%                        | .25%/25%                        | .....                             | .25%/25%                         |
| Differential Delay        | .....                       | 1°                              | 1°, 3.58MHz                     | .....                             | 1°                               |
| Electrical Length         | .....                       | .....                           | 2.1nsec                         | .....                             | .....                            |
| Chroma/Luminance Delay    | .....                       | 5nsec                           | .....                           | .....                             | .....                            |
| K Factor                  | .....                       | .5%, 2T                         | .....                           | .....                             | 1T 1%, 2T .5%                    |
| Signal-to-Noise Ratio     | .....                       | 65dB                            | 70dB                            | .....                             | 65dB                             |
| Field Tilt                | .....                       | 1%                              | 1%                              | .....                             | .5%                              |
| In/Out Return Loss        | .....                       | 35dB/40dB                       | .....                           | .....                             | 40dB/38dB                        |
| Crosstalk (Worst)         | .....                       | -60dB to 5MHz                   | -60dB at 5MHz                   | .....                             | -60dB                            |

| Manufacturer              | Grass Valley Group<br>Series 400 | Image Video Ltd.<br>6200 | I.S.I. Industrial Sciences Inc.<br>6000 | I.S.I. Industrial Sciences Inc.<br>982 | I.S.I. Industrial Sciences Inc.<br>1100 |
|---------------------------|----------------------------------|--------------------------|---|--|---|
| Crosspoint Group          | .32x1                            | 10x1                     | 5x1, 10x1                               | 10x1                                   | 20x1                                    |
| System In/Out Max.        | 32x48                            | .....                    | .....                                   | .....                                  | .....                                   |
| Audio:                    | .....                            | .....                    | .....                                   | .....                                  | .....                                   |
| In/Out Z (Ohms)           | .600 Bal                         | 30K/600 Bal              | 600 Bal                                 | 600 Bal                                | 600 Bal                                 |
| In/Out Level Max.         | +24dBm                           | +24dBm                   | +8dBm Nominal                           | +15dBm                                 | +15dBm                                  |
| AF Response (± dB/Hz)     | .0, -.5/20-20K                   | 0, -.3/20-20K            | .5/20-20K                               | .5/20-20K                              | .1/20-20K                               |
| THD, Level                | .0.25%, +24dBm                   | .2%, +24dBm              | .5%, +18dBm                             | .25%, 0dBm                             | .25%, 0dBm                              |
| Signal-to-Noise Ratio     | .85dB, 15kHz weighted            | 80dB below +8dBm         | 70dB below +8dBm                        | -65dBm                                 | -68dBm                                  |
| Crosstalk                 | -80dB, 15kHz                     | -73dB                    | -70dB                                   | -60dB                                  | -65dB                                   |
| Video:                    | .....                            | .....                    | .....                                   | .....                                  | .....                                   |
| Input Terminating         | No                               | No                       | No                                      | No                                     | Possible                                |
| Video Response (± dB/MHz) | .....                            | .1/to 5                  | .1/to 5                                 | .25/to 8                               | .25 to 8                                |
| Differential Phase/Gain   | .....                            | .25%/25%                 | .5%/5%                                  | 1°/1%                                  | .5°.5%                                  |
| Differential Delay        | .....                            | 1°                       | 1°                                      | .....                                  | 1.5°                                    |
| Electrical Length         | .....                            | .....                    | .....                                   | .....                                  | .....                                   |
| Chroma/Luminance Delay    | .....                            | .....                    | .....                                   | .....                                  | .....                                   |
| K Factor                  | .....                            | .....                    | .....                                   | .....                                  | .....                                   |
| Signal-to-Noise Ratio     | .....                            | 70dB                     | 70dB                                    | 60dB                                   | 50dB                                    |
| Field Tilt                | .....                            | 1%                       | .5%                                     | 1%                                     | 1%                                      |
| In/Out Return Loss        | .....                            | 46dB                     | 46dB                                    | 35dB                                   | 35dB                                    |
| Crosstalk (Worst)         | .....                            | -60dB                    | -60dB                                   | -52dB                                  | -60dB                                   |

# PERFORMERS CAN AFFORD TO BE TEMPERAMENTAL.



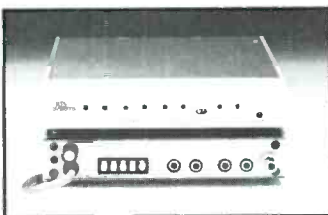
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Circle (30) on Reply Card

# ROUTING SWITCHERS

| Manufacturer                   | NEC America Inc.        | Pacific Recorders & Engineering Corporation | Telemation (Bosch)   | Telemet, Division of Geotel             |
|--------------------------------|-------------------------|---|----------------------|---|
| Model Number                   | TKA-105                 | SDA-20/XB-200                               | TVS-TAS-1000         | 7930<br>7934                            |
| Crosspoint Group               | 8x1                     | Stereo Audio                                | 10x10                | 2x4<br>20x10                            |
| System In/Out Max.             | 15x15 per Frame         | .....                                       | 100x100              | 30x4 per Frame<br>400x400 max           |
| Audio:                         | 4 Digital Audio         | ONLY  | .....                | .....                                   |
| In/Out Z (Ohms)                | 150                     | 20K/1000 Load Bal                           | 600/300 Bal          | 20K Bridging/600<br>20K/Balanced Stereo |
| In/Out Level Max.              | + 26dBm                 | + 26dBV Output                              | + 24dBm              | + 18dBm<br>+ 18dBm                      |
| AF Response ( $\pm$ dB/MHz)    | 1/30-15K                | 0, - .7/20-20K                              | 0.2/30-15K           | .1/30-15K<br>.5/20-20K                  |
| THD, Level                     | .1%                     | .2%, + 26dBm 100 Ohm                        | .1%, + 24dBm         | .5%, + 18dBm<br>.2%, + 18dBm            |
| Signal-to-Noise Ratio          | - 65dB below<br>+ 26dBm | 112dBm Equiv. Input                         | 75dBm max            | 65dB, Unity<br>- 68dBm                  |
| Crosstalk                      | .....                   | .....                                       | - 70dB, 15kHz        | - 65dB, 15kHz<br>- 60dB, 15kHz          |
| Video:                         | .....                   | .....                                       | .....                | .....                                   |
| Input Terminating              | .....                   | .....                                       | Yes                  | No<br>No                                |
| Video Response ( $\pm$ dB/MHz) | 0.2/to 8                | .....                                       | 0.12/to 5.5          | .2/to 8<br>2/to 8                       |
| Differential Phase/Gain        | 2.5%/2.5%               | .....                                       | 0.12%/1%             | .5%/1.5%<br>.25%/25%                    |
| Differential Delay             | 1nsec                   | .....                                       | 1°                   | 1°<br>1°                                |
| Electrical Length              | .....                   | .....                                       | .....                | .....                                   |
| Chroma/Luminance Delay         | .....                   | .....                                       | .....                | 10nsec<br>10nsec, 1%                    |
| K Factor                       | .....                   | .....                                       | .....                | .5% T<br>.3% max                        |
| Signal-to-Noise Ratio          | 66dB                    | .....                                       | 75dB                 | - 70dBV<br>- 65dBV                      |
| Field Tilt                     | .....                   | .....                                       | .....                | .5%<br>50dB input                       |
| In/Out Return Loss             | 40dB/32dB               | .....                                       | 40dB at Subcarrier   | 48dB<br>- 60dB at Subcarrier            |
| Crosstalk (Worst)              | - 66dB                  | .....                                       | - 60dB at Subcarrier | - 60dB, 3.58MHz<br>.....                |

| Manufacturer                   | 3M Company         | Utah Scientific Inc. | Vital Industries Inc.                        |
|--------------------------------|--------------------|----------------------|--|
| Model Number                   | Model 20X          | Model 40X            | CAV-7<br>AVS-1<br>VRS-304                    |
| Crosspoint Group               | 20x1               | 40x1                 | 10x10<br>10x10<br>4x4A, 2x4V                 |
| System In/Out Max.             | 20x20 per Frame    | 40x10 per Frame      | .....<br>150x160<br>30x200 Possible          |
| Audio:                         | .....              | .....                | .....  |
| In/Out Z (Ohms)                | Bridging/600 Bal   | Bridging/600 Bal     | 25K/300 min Bal<br>13K/300 min Bal           |
| In/Out Level Max.              | + 18dBm/ + 21dBm   | + 18dBm/ + 21dBm     | + 24dBm<br>+ 24dBm                           |
| AF Response ( $\pm$ dB/MHz)    | 0.25/20-20K        | .25/20-20K           | .2/30-15K<br>.25/40-17K                      |
| THD, Level                     | 0.3%, Rated Output | .3%, Rated Output    | 1%, + 24dBm<br>.5%, + 24dBm                  |
| Signal-to-Noise Ratio          | - 85dBm, 15kHz     | - 85dBm, 15kHz       | - 85dBm, 15kHz<br>- 85dBm, 15kHz             |
| Crosstalk                      | - 70dB, 0-21dBm    | - 70dB, 0-21dBm      | Weighted<br>- 75dB                           |
| Video:                         | .....              | .....                | .....  |
| Input Terminating              | Possible           | Possible             | Yes<br>.....                                 |
| Video Response ( $\pm$ dB/MHz) | 0.1/to 5           | 0.1/to 5             | .12/to 5.5<br>.12%/1.1%                      |
| Differential Phase/Gain        | 0.4%/4%            | .4%/4%               | .12%/1.1%<br>1°                              |
| Differential Delay             | 1.5°, 3.58MHz      | 1.5°, 3.58MHz        | 1°<br>.....                                  |
| Electrical Length              | .....              | .....                | .....  |
| Chroma/Luminance Delay         | .....              | .....                | .....  |
| K Factor                       | .....              | .....                | .....  |
| Signal-to-Noise Ratio          | 60dB below 1V P-P  | 60dB below 1V P-P    | 75dB<br>75dB                                 |
| Field Tilt                     | 1%                 | 1%                   | .5%<br>.5%                                   |
| In/Out Return Loss             | .....              | .....                | 40dB<br>40dB                                 |
| Crosstalk (Worst)              | 60dB, 3.58MHz      | 60dB, 3.58MHz        | - 60dB above 4.43MHz<br>- 60dB above 4.43MHz |

The companies and equipment tabulated in Routing Switchers include the large-scale systems. Many manufacturers provide single-bank, stackable equipment that may eventually be expanded into larger systems as demands dictate. For your reference, the following manufacturers provide such switching equipment and other special purpose switching and routing devices often found needed in intercommunications systems.

Audio Technology Inc.  
1169 Tower Road  
Schaumburg, IL 60195

Audiocom Electronics  
SW 430 Fountain  
Pullman, WA 99163

AVL Digital Ltd.  
70 Milner Ave, Unit 5  
Scarborough, Ontario, Canada  
M1S 3P8

Avitel Electronics Limited  
Unit A5, 83 Copers Cope Road  
Beckenham, Kent, England  
BR3 1NR

Beaveronics Inc.  
8 Haven Ave.  
Port Washington, NY 11050

Broadcast Technology Inc.  
1324 Motor Parkway  
Hauppauge, NY 11788

Broadcast Video Systems Ltd.  
1050 McNicoll Ave.  
Agincourt, Ontario, Canada  
M1W 2L8

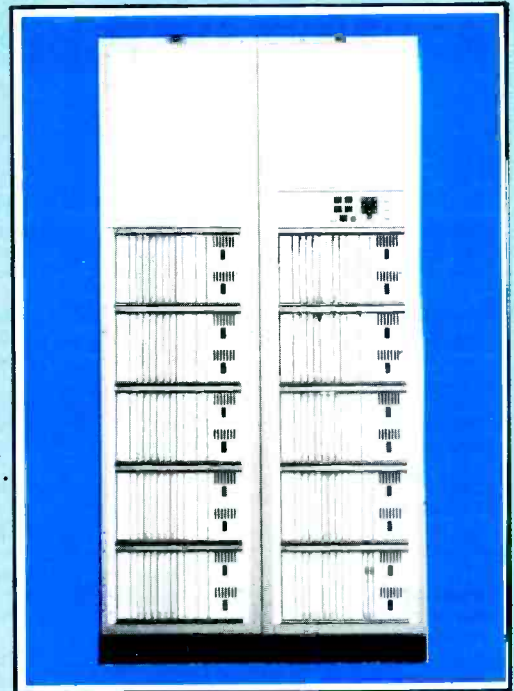
Commerce Airborne Corporation  
16425 Hart St., Suite 104  
Van Nuys, CA 91406

Datatron Inc.  
Box 11427  
Santa Ana, CA 92711



# OUR SWITCHER SPECS SPEAK FOR THEMSELVES

Following is a summary of test data compiled from the final test measurements made on a 50-input by 50-output audio/video switching matrix sold to Capital Cities' Houston outlet KTRK-TV. We invite comparison of these test results with our published specs and with the published specs of routing switchers manufactured by others.



**50 x 50 KTRK MATRIX**

## KTRK TEST DATA BREAKDOWN

|                                  | Worst | Mean  | 95th Percentile | Published Spec |
|----------------------------------|-------|-------|-----------------|----------------|
| <b>VIDEO</b>                     |       |       |                 |                |
| Crosstalk @ 3.58 MHz .....       | -63   | 71.1  | 65              | -60 dB         |
| Diff Gain .....                  | .05   | .042  | .05             | 0.1%           |
| Diff Phase .....                 | 0.1   | .056  | .08             | 0.12°          |
| Diff Delay .....                 | 1.0   | .89   | .95             | ± 1°           |
| Freq Response .....              | .05   | .02   | .05             | ± 1.2 dB       |
| Hum & Noise .....                | -79   | -84.6 | -80             | -75 dB         |
| Gain Uniformity, All Paths ..... | .017  | .006  | .017            | ± .07 dB       |
| Input Return Loss .....          | 46    | 51.2  | 46              | 40 dB          |
| Output Return Loss .....         | 45    | 48.8  | 46              | 40 dB          |
| <b>AUDIO</b>                     |       |       |                 |                |
| Crosstalk @ 20 KHz .....         | -80   | -84.7 | -81             | -75 dB         |
| Hum & Noise .....                | -88   | -91.8 | -90             | -85 dBm        |
| THD 30 Hz - 20 KHz               |       |       |                 |                |
| @ 0 dBm .....                    | .017  | .011  | .015            | 0.1%           |
| @ +24 dBm .....                  | .24   | .13   | .17             | 0.5%           |
| Gain Uniformity, All Paths ..... | 0.1   | .044  | .09             | 0.2 dB         |
| Common Mode Rejection .....      | 80    | 88.3  | 83              | 70 dB          |

**Our routing switcher specs are the best in the industry—we test each matrix for conformity and we beat our own specs by comfortable margins.**

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# ROUTING SWITCHERS

Datatronix Inc.  
2100 Reston Ave.  
Reston, VA 22091

DYMA Engineering Inc.  
Box 1697  
Taos, NM 87571

Elector  
5128 Calle del Sol  
Santa Clara, CA 95050

Glenatronix (1977) Ltd.  
160 Duncan Mill Road  
Don Mills, Ontario, Canada  
M3B 1Z5

International Nuclear Corp.  
608 Norris Ave.  
Nashville, TN 37204

Kappa Systems Inc.  
1501 Wilson Blvd.  
Arlington, Va 22209

Lenco Inc., Electronics Div.  
300 North Maryland St.  
Jackson, MO 63755

Marconi Communications Systems Ltd.  
Marconi House, New Street  
Chelmsford, England CM1 1PL

Marconi Electronics Inc.  
100 Stonehurst Court  
Northvale, NJ 07647

McMartin Industries Inc.  
4500 South 76 St.  
Omaha, NE 68127

Moseley Associates Inc.  
111 Castilian Drive  
Goleta, CA 93117

Neve Electronics International Ltd.  
Cambridge House, Melbourn  
Royston, England SG8 6AU

Rupert Neve Inc.  
Berkshire Industrial Park  
Bethel, CT 06801

OkteI Corporation  
490 Division St.  
Campbell, CA 95008

Panasonic Video Systems Division  
One Panasonic Way  
Secaucus, NJ 07094

ROH Corporation  
3603 Clearview Place, N.E.  
Atlanta, GA 30340

RTS Systems Inc.  
1100 West Chestnut St.  
Burbank, CA 91506

Scantex Labs Inc.  
1 Westmount Square  
Suite 1200, Montreal,  
Quebec, Canada H3Z 2Z7

SelfTech Equipment Limited  
Rose Industrial Estate, Cores End Road  
Mourne End, Bucks, England SL8 5AT

Telex Communications Inc.  
9600 Aldrich Ave., South  
Minneapolis, MN 55420

VideoMedia Inc.  
250 North Wolfe Road  
Sunnyvale, CA 94086

Viscount Industries Ltd.  
105 East 69th  
Vancouver, B.C., Canada V5X 2W9

Ward Beck Systems Ltd.  
841 Progress Avenue  
Scarborough, Ontario, Canada M1H 2X4

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# SMPTE TIME CODE GENERATOR

Equipment to generate the 80 bit per frame data code for use as an editing reference for audio and video recordings.

| Manufacturer             | Amтел Systems Inc.    |                       | btx Corporation |                 | Control Video Corporation |
|--------------------------|-----------------------|-----------------------|-----------------|-----------------|---------------------------|
| Model Number             | 3700 Edit Code Master | 3800 Edit Code Master | 5100 Generator  | 5400 Generator  | IC1010                    |
| <b>Operation Modes:</b>  |                       |                       |                 |                 |                           |
| Non-Drop Frame           | Yes                   | Yes                   | Yes             | Yes             | Yes                       |
| Drop Frame               | Yes                   | Yes                   | Yes             | Yes             | Yes                       |
| 25 Frame/Second          | Yes                   | Yes                   | Yes             | Yes             | .....                     |
| 24 Frame/Second          | .....                 | .....                 | Yes             | Yes             | .....                     |
| Color Frame              | Yes                   | Yes                   | Yes             | Yes             | Yes                       |
| Jamming Sync             | Yes                   | Yes                   | Yes             | Yes             | Yes                       |
| <b>Timing Reference:</b> |                       |                       |                 |                 |                           |
| External Video/Sync      | Yes                   | Yes                   | Yes             | Yes             | Yes                       |
| External 60Hz            | .....                 | .....                 | .....           | .....           | .....                     |
| Internal Crystal         | .....                 | .....                 | Yes             | Yes             | .....                     |
| <b>Entry Data:</b>       |                       |                       |                 |                 |                           |
| Time Set/Reset           | Yes                   | Yes                   | Yes             | Yes             | Yes                       |
| User Bit Data            | Yes                   | Yes                   | Yes             | Yes             | Yes                       |
| <b>Data Display:</b>     |                       |                       |                 |                 |                           |
| Time Code Data           | Yes                   | Yes                   | Yes             | Yes             | Yes                       |
| User Bit Data            | Yes                   | Yes                   | Yes             | Yes             | Yes                       |
| CRT Video Display        | Yes                   | Yes                   | With - V Option | With - V Option | Optional                  |
| Reader Function          | Yes                   | Yes                   | .....           | Yes             | With IC1100 Unit          |
| Computer Interface       | Yes, Optional         | .....                 | .....           | .....           | .....                     |
| VITC Format Output       | .....                 | .....                 | .....           | .....           | .....                     |
| Output Load Impedance    | 600 Ohm               | 600 Ohm               | 600 Ohm Bal     | 600 Ohm Bal     | 600 Ohm Unbal             |
| Output Signal Level      | 0 and 10dBm           | 0 and 10 dBm          | 2V P-P          | 2V P-P          | + 12dBm Max               |
| Packaging Form           | Rack-Mount Unit       | Rack-Mount Unit       | Rack-Mount Unit | Rack-Mount Unit | Rack-Mount Unit           |
| Power Requirement        | 110Vac                | 110Vac                | 110Vac          | 110Vac          | 110Vac                    |
| Color Standards          | NTSC, PAL             | NTSC, PAL             | NTSC, PAL       | NTSC, PAL       | NTSC                      |

| Manufacturer             | Datametrics Inc. |                 | Datatron, Inc.  |                 | EECO, Inc.       |
|--------------------------|------------------|-----------------|-----------------|-----------------|------------------|
| Model Number             | SP716            | SP722A          | 5150            | 5152            | MTG 550          |
| <b>Operation Modes:</b>  |                  |                 |                 |                 |                  |
| Non-Drop Frame           | Yes              | Yes             | Yes             | Yes             | Yes              |
| Drop Frame               | Yes              | Yes             | Yes             | Yes             | Yes              |
| 25 Frame/Second          | Yes              | .....           | .....           | .....           | Optional         |
| 24 Frame/Second          | Yes              | .....           | .....           | .....           | Optional         |
| Color Frame              | Yes              | .....           | .....           | .....           | .....            |
| Jamming Sync             | Yes              | Yes             | .....           | Yes             | .....            |
| <b>Timing Reference:</b> |                  |                 |                 |                 |                  |
| External Video/Sync      | Yes, RS170A      | Yes             | Yes             | Yes             | Yes              |
| External 60Hz            | .....            | .....           | Yes             | Yes             | Yes              |
| Internal Crystal         | Yes              | Yes             | .....           | .....           | .....            |
| <b>Entry Data:</b>       |                  |                 |                 |                 |                  |
| Time Set/Reset           | Yes              | Yes             | Yes             | Yes             | Yes              |
| User Bit Data            | .....            | Yes             | .....           | .....           | Yes              |
| <b>Data Display:</b>     |                  |                 |                 |                 |                  |
| Time Code Data           | Yes              | Yes             | Yes             | Yes             | Yes              |
| User Bit Data            | .....            | Yes             | .....           | .....           | Yes              |
| CRT Video Display        | .....            | Yes             | Optional        | .....           | .....            |
| Reader Function          | .....            | Yes             | .....           | Yes             | Yes              |
| Computer Interface       | .....            | Yes             | .....           | Yes             | .....            |
| VITC Format Output       | .....            | .....           | .....           | .....           | .....            |
| Output Load Impedance    | 600 Ohm Bal      | 600 Ohm Bal     | 600 Ohm Bal     | 75 Ohm          | 75 Ohm           |
| Output Signal Level      | + 4dBm Nominal   | + 4dBm Nominal  | 6V P-P Max      | 6V P-P Max      | 4V P-P Max       |
| Packaging Form           | Rack-Mount Unit  | Rack-Mount Unit | Rack-Mount Unit | Rack-Mount Unit | Rack-Mount Unit  |
| Power Requirement        | 110Vac           | 110Vac          | 110Vac          | 110Vac          | 110Vac           |
| Color Standards          | NTSC, PAL        | NTSC            | NTSC            | NTSC            | NTSC, PAL, SECAM |

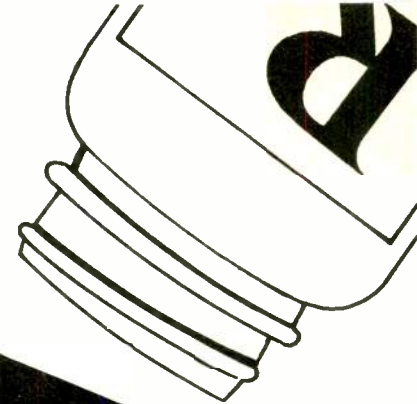
# SMPTE TIME CODE GENERATOR

| Manufacturer             | Elector (Electro & Optical Systems) |                     |                 | Gray Engineering | Skotei Corporation     |
|--------------------------|-------------------------------------|---------------------|-----------------|------------------|------------------------|
| Model Number             | TCG/D2                              | TCG Mk III          | DT-104          | DT-113           | PTC-100                |
| <b>Operation Modes:</b>  |                                     |                     |                 |                  |                        |
| Non-Drop Frame           | Yes                                 | Yes                 | Yes             | Yes              | Yes                    |
| Drop Frame               | Yes                                 | Yes                 | Yes             | Yes              | Yes                    |
| 25 Frame/Second          | Yes                                 | Yes                 | .....           | Yes              | Yes                    |
| 24 Frame/Second          | .....                               | .....               | Yes             | Yes              | Yes                    |
| Color Frame              | .....                               | Yes                 | .....           | Yes              | Yes                    |
| Jamming Sync             | .....                               | .....               | .....           | .....            | Yes                    |
| <b>Timing Reference:</b> |                                     |                     |                 |                  |                        |
| External Video/Sync      | Yes                                 | Yes                 | Yes             | Yes              | Yes                    |
| External 60Hz            | .....                               | .....               | Yes             | Yes              | .....                  |
| Internal Crystal         | .....                               | Yes                 | .....           | .....            | Yes                    |
| <b>Entry Data:</b>       |                                     |                     |                 |                  |                        |
| Time Set/Reset           | Yes                                 | Yes                 | Yes             | Yes              | Yes                    |
| User Bit Data            | Yes                                 | Yes                 | Yes             | Yes              | Yes                    |
| <b>Data Display:</b>     |                                     |                     |                 |                  |                        |
| Time Code Data           | Yes                                 | Yes                 | Yes             | Yes              | Yes                    |
| User Bit Data            | .....                               | Yes                 | Yes             | Yes              | Yes                    |
| CRT Video Display        | Yes                                 | .....               | .....           | .....            | .....                  |
| Reader Function          | Yes                                 | .....               | Slave           | .....            | .....                  |
| Computer Interface       | .....                               | .....               | Yes             | .....            | .....                  |
| VITC Format Output       | .....                               | .....               | .....           | .....            | .....                  |
| Output Load Impedance    | 600 Ohm                             | 600 Ohm Unbal       | 600 Ohm Bal     | .....            | 2kOhm Unbal            |
| Output Signal Level      | + 10dBm                             | 2V P-P              | + 8dBm          | + 8dB            | + 10dBm                |
| Packaging Form           | Rack-Mount Unit                     | Portable, Belt Clip | Rack-Mount Unit | Rack-Mount Unit  | Portable               |
| Power Requirement        | 110Vac                              | Battery             | 110Vac          | 110Vac           | Battery or External dc |
| Color Standards          | NTSC, PAL                           | NTSC, PAL           | NTSC            | NTSC, PAL        | NTSC, PAL, PAL-M       |

| Manufacturer             | Skotei Corporation | Sony Corporation | Telcom Research  | United Media     |                  |
|--------------------------|--------------------|------------------|------------------|------------------|------------------|
| Model Number             | TCG-80N            | BVG-1000         | TCG550           | Model 205        | Model 210        |
| <b>Operation Modes:</b>  |                    |                  |                  |                  |                  |
| Non-Drop Frame           | Yes                | Yes              | Yes              | Yes              | Yes              |
| Drop Frame               | Yes                | Yes              | Yes              | Yes              | Yes              |
| 25 Frame/Second          | .....              | .....            | Yes              | Yes              | Yes              |
| 24 Frame/Second          | .....              | .....            | .....            | Yes              | Yes              |
| Color Frame              | Yes                | .....            | Yes              | Yes              | Yes              |
| Jamming Sync             | Yes                | Yes              | .....            | .....            | .....            |
| <b>Timing Reference:</b> |                    |                  |                  |                  |                  |
| External Video/Sync      | Yes                | Yes              | Yes              | Yes              | Yes              |
| External 60Hz            | Yes                | .....            | .....            | .....            | .....            |
| Internal Crystal         | .....              | .....            | .....            | .....            | .....            |
| <b>Entry Data:</b>       |                    |                  |                  |                  |                  |
| Time Set/Reset           | Yes                | Yes              | Yes              | Yes              | Yes              |
| User Bit Data            | Yes                | .....            | .....            | Yes              | Yes              |
| <b>Data Display:</b>     |                    |                  |                  |                  |                  |
| Time Code Data           | Yes                | Yes              | Yes              | Yes              | Yes              |
| User Bit Data            | Yes                | Yes              | .....            | Yes              | Yes              |
| CRT Video Display        | Optional           | Yes              | .....            | Yes              | .....            |
| Reader Function          | .....              | Yes              | .....            | Yes              | .....            |
| Computer Interface       | .....              | Yes              | .....            | Yes              | Yes              |
| VITC Format Output       | .....              | Yes              | .....            | .....            | .....            |
| Output Load Impedance    | 600 Ohm Bal        | 600 Ohm Bal      | 600 Ohm Bal      | 600 Ohm Bal      | 600 Ohm Bal      |
| Output Signal Level      | - 8dBm             | + 8dB            | + 11dBm          | + 8dBm           | + 8dBm           |
| Packaging Form           | Rack-Mount Unit    | Rack-Mount Unit  | Rack-Mount Unit  | Rack-Mount Unit  | Rack-Mount Unit  |
| Power Requirement        | 110Vac             | 110Vac           | 110Vac           | 110Vac           | 110Vac           |
| Color Standards          | NTSC, TCG-80P PAL  | NTSC             | NTSC, PAL, SECAM | NTSC, PAL, SECAM | NTSC, PAL, SECAM |



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# DIGITAL VIDEO EFFECTS SYSTEMS

Equipment capable of visual image aspect alteration and/or dimensional distortions. May include simple wipe and key effects in repertoire. For video signals of 1V P-P 75 Ohm, negative polarity sync. Manipulative effects are listed, not technical specs.

| Manufacturer        | AmpeX Corporation<br>ADO (AmpeX<br>Digital Optics) | Digital Services Corp. | MCI/Quantel    | NEC America, Inc.<br>DME-2 Digital<br>Mix Effects | Vital Industries, Inc.<br>Squeezoom |
|---------------------|--|------------------------|----------------|---|-------------------------------------|
| System Name         |  | Digifex                | DPE5000 System |   |                                     |
| Video Channels      | 4  | 1                      | 5              | 2   | 4                                   |
| Image Size          |  |                        |                |   |                                     |
| Compression         | Yes, Infinite                                      | Yes                    | Yes, Infinite  | Yes   | Yes, Infinite                       |
| Expansion           | Yes, 8x  | Yes                    | Yes, 4x        | Yes   | Yes, 8x                             |
| Horizontally        | Yes  | Yes                    | Yes            | Yes   | Yes                                 |
| Vertically          | Yes  | Yes                    | Yes            | Yes   | Yes                                 |
| Rotations:          |  |                        |                |   |                                     |
| X-Axis              | Yes  | Yes                    | Yes            | Yes   | .....                               |
| Y-Axis              | Yes  | Yes                    | Yes            | Yes   | .....                               |
| Z-Axis              | Yes  | Yes                    | Yes            | Yes   | .....                               |
| Z-Axis Offset       | Yes  | Yes                    | Yes            | .....   | .....                               |
| Multiple Freeze     | Yes  | .....                  | Yes            | Yes   | Yes                                 |
| Trailing Freeze     | Yes  | .....                  | Yes            | Yes   | Yes                                 |
| Perspective Along   |  |                        |                |   |                                     |
| Horizontal Plane    | Yes  | Yes                    | Yes            | .....   | .....                               |
| Vertical Plane      | Yes  | Yes                    | Yes            | .....   | .....                               |
| Elastic Sheet       | Yes  | Yes                    | Yes            | .....   | .....                               |
| Image Positioning   | Yes  | Yes                    | Yes            | Yes   | Yes                                 |
| Picture Splits      | Yes  | Yes                    | Yes            | Yes   | Yes                                 |
| Key Tracking        | .....  | .....                  | Yes            | Yes   | Yes                                 |
| Mirror Imaging      | .....  | Yes                    | Yes            | Yes   | Yes                                 |
| Image Inversion     | Yes  | Yes                    | Yes            | Yes   | Yes                                 |
| Push-Pull Wipe      | Yes  | .....                  | Yes            | Yes   | Yes                                 |
| Posterization       | .....  | .....                  | .....          | Yes   | Yes                                 |
| Mosaic Effect       | .....  | .....                  | .....          | Yes   | Yes                                 |
| Background Tracking | .....  | .....                  | Yes            | .....   | .....                               |
| Programmable Effect | Yes  | Yes                    | Yes            | Yes   | Yes                                 |
| Programmed Sequence | Yes  | Yes                    | Yes            | Yes   | Yes                                 |
| Disc Memory Storage | Yes  | Yes                    | Yes            | .....   | Option                              |
| Auto-Transitions    | Yes  | Yes                    | Yes            | Yes   | Yes                                 |
| Manual Transitions  | Yes  | Yes                    | Yes            | Yes   | Yes                                 |

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# AURORA 100

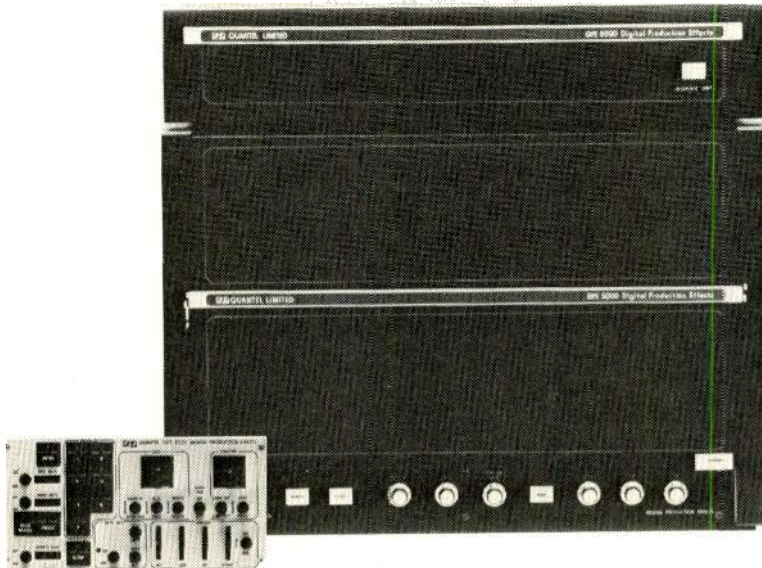
It's a digital video graphics system designed by creative people for creative people. It's an incredible magic tablet that lets your graphic artist create, combine, and manipulate multi-graphic elements including scanned inputs from a graphics camera . . . all without having to understand computers. It combines the functions of electronic painting, real time animation, character generation and titling, and colorizing of video inputs. It has made digital video graphics a

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# TIME BASE CORRECTOR/SYNCHRONIZER

Equipment for television for video signal time base correction and/or synchronizing.

| Manufacturer            | ADDA Corporation                   |                                       | Ampex Corporation             | Digital Video Systems        |                      |
|-------------------------|------------------------------------|---------------------------------------|-------------------------------|------------------------------|----------------------|
|                         | VW-1 TBC and<br>Frame Synchronizer | VW-2 TBC/Frame<br>Freeze/Synchronizer | TBC-2B Time Base<br>Corrector | DPS-1 Time Base<br>Corrector | DPS-1<br>Frame Store |
| Digital Sample Rate     | 14.3MHz                            | 14.3MHz                               | 10.7MHz                       | 14.3MHz                      | 14.3MHz              |
| Quantizing Bits         | 8 Bits                             | 8 Bits                                | 8 Bits                        | 8 Bits                       | 8 Bits               |
| Window of Correction    | 1 TV Frame                         | 1 TV Frame                            | More Than 10 Lines            | 32 TV Lines                  | 525 TV Lines         |
| Video Bandwidth         | .05dB to 5MHz                      | .5dB to 5MHz                          | .25dB to 4.2MHz               | .5dB to 4.2MHz               | .5dB to 4.2MHz       |
| Signal-to-Noise Ratio   | 56dB                               | 56dB                                  | 56dB                          | 58dB to 4.5MHz               | 58dB to 4.5MHz       |
| Differential Phase/Gain | 2°/2%                              | 2°/2%                                 | 2°/2%                         | 2°/2%                        | 2°/2%                |
| K-Factor for 2T Pulse   | 1% (4% Heterodyne)                 | 1% (4% Heterodyne)                    | 1%                            | 1%                           | 1%                   |
| Residual Error (Mono)   | 20nsec                             | 20nsec                                | 10nsec                        | 15nsec                       | 15nsec               |
| Sync Coherent 3.58MHz   | Yes                                | Yes                                   | Yes                           | Yes                          | Yes                  |
| Advanced Sync Output    | Yes                                | Yes                                   | Yes                           | Yes                          | Yes                  |
| Composite Video Output  | 2                                  | 2                                     | 3                             | 2                            | 2                    |
| Reference (Sync/Video)  | Video                              | Video                                 | Video                         | Video                        | Video                |
| Velocity Compensation   | Yes                                | Yes                                   | Option Line-by-line           | Line-by-line                 | Line-by-line         |
| Heterodyne Processing   | Yes                                | Yes                                   | Option                        | Option                       | Option               |
| Non-servoed Capstan VTR | Yes                                | Yes                                   | Option                        | Yes                          | .....                |
| Dropout Compensation    | .....                              | Yes                                   | Option                        | Option                       | Option               |
| Dynamic Tracking Head   | .....                              | .....                                 | Yes                           | .....                        | .....                |
| Freeze Frame/Field      | Either                             | Either                                | .....                         | .....                        | Either               |
| Noise Reduction         | .....                              | .....                                 | .....                         | .....                        | .....                |
| Color Correction        | .....                              | .....                                 | .....                         | .....                        | .....                |
| Image Enhancement       | .....                              | .....                                 | .....                         | .....                        | .....                |
| Hot-Switch Capable      | Yes                                | Yes                                   | .....                         | .....                        | Some Vertical        |
| 19-inch Rack Space      | 5.25 in                            | 5.25 in                               | 11 in                         | 8.75 in                      | Yes                  |
| Remote Controllable     | Yes                                | .....                                 | .....                         | .....                        | 8.75 in              |
| Front Panel Control     | .....                              | .....                                 | .....                         | .....                        | .....                |
| Video Gain              | Yes                                | Yes                                   | Yes                           | Yes                          | Yes                  |
| Chroma Gain             | Yes                                | Yes                                   | .....                         | Yes                          | Yes                  |
| Setup Level             | Yes                                | Yes                                   | Yes                           | Yes                          | Yes                  |
| Hue Phase               | Yes                                | Yes                                   | Yes                           | Yes                          | Yes                  |
| Subcarrier Phase        | .....                              | .....                                 | Yes                           | Yes                          | Yes                  |
| Horizontal Phase        | Yes                                | .....                                 | Yes                           | Yes                          | Yes                  |
| Color Standards         | NTSC                               | NTSC                                  | NTSC, PAL, SECAM              | NTSC                         | NTSC                 |

| Manufacturer            | Digital Video Systems |                     | Edutron Inc.                 | Harris<br>Communications                    |
|-------------------------|-----------------------|---------------------|------------------------------|---|
|                         | Phaser II             | Phaser IV           | CCD2H Time Base<br>Corrector | Y-688 <sup>2</sup> Total<br>Error Corrector |
| Digital Sample Rate     | 14.3MHz               | 14.3MHz             | .....                        | .....                                       |
| Quantizing Bits         | 8 Bits                | 8 Bits              | .....                        | 9 Bits                                      |
| Window of Correction    | 525 TV Lines          | 262.5 TV Lines      | 2 TV Lines                   | 32 TV Lines                                 |
| Video Bandwidth         | .05dB to 4.2MHz       | .5dB to 4.2MHz      | To 2.6MHz                    | -3dB at 4.5MHz                              |
| Signal-to-Noise Ratio   | 58dB to 4.5MHz        | 56dB to 4.5MHz      | 58dB                         | 59dB  |
| Differential Phase/Gain | 2°/2%                 | 2°/2%               | .5°/1.5%                     | 1.5°/1.5% max                               |
| K-Factor for 2T Pulse   | 1%                    | 1%                  | 4%                           | 1.5%  |
| Residual Error (Mono)   | 15nsec                | .....               | 25nsec                       | 20nsec                                      |
| Sync Coherent 3.58MHz   | Yes                   | .....               | Yes                          | Yes   |
| Advanced Sync Output    | Yes                   | .....               | Yes                          | Yes   |
| Composite Video Output  | 2                     | 3                   | 2                            | 1   |
| Reference (Sync/Video)  | Video                 | Video               | Sync                         | Either                                      |
| Velocity Compensation   | Line-by-line          | .....               | .....                        | Look Ahead                                  |
| Heterodyne Processing   | Yes                   | .....               | Yes                          | Yes   |
| Non-servoed Capstan VTR | Yes                   | .....               | Yes                          | Yes   |
| Dropout Compensation    | Yes                   | .....               | Yes                          | Yes   |
| Dynamic Tracking Head   | .....                 | Last Complete Field | Yes                          | Yes   |
| Freeze Frame/Field      | Either                | Field               | .....                        | .....                                       |
| Noise Reduction         | .....                 | .....               | To 8dB                       | To 10dB                                     |
| Color Correction        | .....                 | .....               | .....                        | Yes   |
| Image Enhancement       | Some Vertical         | .....               | Yes                          | Yes   |
| Hot-Switch Capable      | Yes                   | Yes                 | .....                        | .....                                       |
| 19-inch Rack Space      | 8.75 in               | 3.5 in              | 3.5 in                       | 3.5 in                                      |
| Remote Controllable     | .....                 | .....               | .....                        | .....                                       |
| Front Panel Control     | .....                 | .....               | .....                        | .....                                       |
| Video Gain              | Yes                   | Yes                 | Yes                          | Yes   |
| Chroma Gain             | Yes                   | Yes                 | Yes                          | Yes   |
| Setup Level             | Yes                   | Yes                 | Yes                          | Yes   |
| Hue Phase               | Yes                   | Yes                 | Yes                          | Yes   |
| Subcarrier Phase        | Yes                   | Yes                 | Yes                          | .....                                       |
| Horizontal Phase        | Yes                   | .....               | Yes                          | .....                                       |
| Color Standards         | NTSC                  | NTSC                | NTSC, PAL                    | NTSC  |
|                         |                       |                     |                              | NTSC, PAL, SECAM                            |



# TIME BASE CORRECTOR/SYNCHRONIZER

| Manufacturer            | Harris Communications (Video) |                                   | Micro Consultants Inc. (MC/Quantel) |                                     | Microtime Inc. |
|-------------------------|-------------------------------|-----------------------------------|-------------------------------------|-------------------------------------|----------------|
|                         | CVS520 Digital<br>Video TBC   | CVS Digital<br>Frame Synchronizer | DFS1550 Digital<br>TBC Synchronizer | DSF1750 Frame<br>Store Synchronizer | T-120 TBC      |
| Digital Sample Rate     | 14.3MHz                       | 14.3MHz                           | 10.7MHz                             | Per SMPTE                           | 14.3MHz        |
| Quantizing Bits         | 9 Bits                        | 8 Bits                            | .....                               | .....                               | 8 Bits         |
| Window of Correction    | 1.5 TV Lines                  | 1 TV Frame                        | 1.5 TV Field                        | 1 TV Frame                          | 15 TV Lines    |
| Video Bandwidth         | 0.5dB to 4.2MHz               | .5dB to 4.2MHz                    | .5dB to 4.2MHz                      | .3dB to 4.2MHz                      | .5dB to 4.2MHz |
| Signal-to-Noise Ratio   | 60dB                          | 57dB                              | 58dB                                | 58dB                                | 58dB           |
| Differential Phase/Gain | 2°/2%                         | 1.5°/1.5%                         | 1°/1%                               | 1°/1%                               | 2°/2%          |
| K-Factor for 2T Pulse   | 1%                            | .....                             | .....                               | .....                               | 1%             |
| Residual Error (Mono)   | 20nsec                        | 20nsec                            | 2nsec                               | 2nsec                               | 10nsec         |
| Sync Coherent 3.58MHz   | Yes                           | .....                             | Yes                                 | Yes                                 | Yes            |
| Advanced Sync Output    | Yes                           | .....                             | .....                               | Yes                                 | Yes            |
| Composite Video Output  | 2                             | 2                                 | Yes                                 | Yes                                 | 2              |
| Reference (Sync/Video)  | Video                         | Either                            | Either                              | Black burst                         | Video          |
| Velocity Compensation   | Line-by-line                  | .....                             | Look Ahead                          | .....                               | Averaging      |
| Heterodyne Processing   | Yes                           | .....                             | Yes                                 | Yes                                 | Yes            |
| Non-servoed Capstan VTR | Yes                           | .....                             | .....                               | .....                               | Yes            |
| Dropout Compensation    | Yes                           | Option                            | Yes                                 | .....                               | .....          |
| Dynamic Tracking Head   | .....                         | .....                             | .....                               | .....                               | .....          |
| Freeze Frame/Field      | .....                         | Either                            | .....                               | Yes                                 | .....          |
| Noise Reduction         | .....                         | Option to 12dB                    | .....                               | .....                               | Option         |
| Color Correction        | .....                         | .....                             | .....                               | .....                               | .....          |
| Image Enhancement       | .....                         | Option (Effects)                  | .....                               | .....                               | Option         |
| Hot-Switch Capable      | .....                         | Yes                               | .....                               | Yes                                 | .....          |
| 19-inch Rack Space      | 3.5 in                        | 10.5 in                           | 7 in                                | 1.75 in                             | 3.5 in         |
| Remote Controllable     | .....                         | Yes                               | Yes                                 | Yes                                 | .....          |
| Front Panel Control     | .....                         | .....                             | .....                               | .....                               | .....          |
| Video Gain              | Yes                           | Yes                               | Yes                                 | Yes                                 | Yes            |
| Chroma Gain             | Yes                           | Yes                               | Yes                                 | Yes                                 | Yes            |
| Setup Level             | Yes                           | Yes                               | Yes                                 | Yes                                 | Yes            |
| Hue Phase               | Yes                           | Yes                               | Yes                                 | Yes                                 | Yes            |
| Subcarrier Phase        | Yes                           | .....                             | .....                               | Yes                                 | .....          |
| Horizontal Phase        | Yes                           | .....                             | .....                               | Yes                                 | .....          |
| Color Standards         | NTSC, PAL-M                   | NTSC, PAL, SECAM                  | NTSC                                | NTSC                                | NTSC           |

| Manufacturer            | Microtime, Inc. (Andersen) |                                |                             | NEC America Inc.              |                                 |
|-------------------------|----------------------------|--------------------------------|-----------------------------|-------------------------------|---------------------------------|
|                         | 2020 Signal<br>Processor   | 2520 TBC Frame<br>Synchronizer | 2525 Signal<br>Synchronizer | NTC-10 Time Base<br>Corrector | NTC-5000 Time Base<br>Corrector |
| Digital Sample Rate     | .....                      | .....                          | .....                       | 14.3MHz                       | .....                           |
| Quantizing Bits         | .....                      | .....                          | .....                       | 10 Bits                       | .....                           |
| Window of Correction    | 24 TV Lines                | 1 TV Frame                     | 1 TV Frame                  | 16 TV Lines                   | 1/24 TV Lines                   |
| Video Bandwidth         | 0.2dB to 4.2MHz            | .2 to 4.2MHz                   | .2dB to 4.2MHz              | Flat to 5.5MHz                | Flat to 5.5MHz                  |
| Signal-to-Noise Ratio   | 58dB                       | 58dB                           | 58dB                        | 65dB                          | 55dB                            |
| Differential Phase/Gain | 2°/2%                      | 2°/2%                          | 2°/2%                       | 1°/1%                         | 1°/1.5%                         |
| K-Factor for 2T Pulse   | 1%                         | 1%                             | 1%                          | 1%                            | 1%                              |
| Residual Error (Mono)   | 10nsec                     | 12nsec                         | 12nsec                      | 10nsec                        | 25nsec                          |
| Sync Coherent 3.58MHz   | Yes                        | .....                          | .....                       | .....                         | Yes                             |
| Advanced Sync Output    | Yes                        | Yes                            | Yes                         | Yes                           | Yes                             |
| Composite Video Output  | 2                          | 2                              | 2                           | 4                             | 4                               |
| Reference (Sync/Video)  | Video/Sync                 | Video                          | Video                       | Either                        | Either                          |
| Velocity Compensation   | Line-by-line               | .....                          | Option, Look Ahead          | Line-by-line                  | Look Ahead                      |
| Heterodyne Processing   | Yes                        | Yes                            | Yes                         | .....                         | Option                          |
| Non-servoed Capstan VTR | Yes                        | .....                          | .....                       | .....                         | Option                          |
| Dropout Compensation    | Yes                        | .....                          | Yes                         | Yes                           | Yes                             |
| Dynamic Tracking Head   | .....                      | .....                          | .....                       | Yes                           | .....                           |
| Freeze Frame/Field      | .....                      | .....                          | Either                      | .....                         | .....                           |
| Noise Reduction         | To 6dB                     | .....                          | .....                       | To 5dB                        | To 3dB                          |
| Color Correction        | Yes                        | .....                          | .....                       | .....                         | .....                           |
| Image Enhancement       | Yes                        | .....                          | .....                       | .....                         | .....                           |
| Hot-Switch Capable      | .....                      | Yes                            | Yes                         | .....                         | .....                           |
| 19-inch Rack Space      | 7 in                       | 10.5 in                        | 10.5 in                     | 8.7 in                        | 12 in                           |
| Remote Controllable     | .....                      | .....                          | Option                      | Yes                           | Yes                             |
| Front Panel Control     | .....                      | .....                          | .....                       | .....                         | .....                           |
| Video Gain              | Yes                        | Yes                            | Yes                         | Yes                           | Yes                             |
| Chroma Gain             | Yes                        | Yes                            | Yes                         | Yes                           | Yes                             |
| Setup Level             | Yes                        | Yes                            | Yes                         | Yes                           | Yes                             |
| Hue Phase               | Yes                        | Yes                            | Yes                         | Yes                           | Yes                             |
| Subcarrier Phase        | .....                      | .....                          | .....                       | Yes                           | Yes                             |
| Horizontal Phase        | .....                      | .....                          | .....                       | Yes                           | Yes                             |
| Color Standards         | NTSC                       | NTSC                           | NTSC                        | NTSC                          | NTSC                            |

# TIME BASE CORRECTOR/SYNCHRONIZER

| Manufacturer            | NEC America                 |                             | Sony Broadcast                |                                   | Video Data Systems<br>V-TEC1H Video Time<br>and Error Corrector |
|-------------------------|-----------------------------|-----------------------------|-------------------------------|-----------------------------------|---|
|                         | FS-15 Frame<br>Synchronizer | FS-16 Frame<br>Synchronizer | BVT-2000 Digital<br>Video TBC | BVX-30 Digital<br>Video Processor |   |
| Model Number            |                             |                             |                               |                                   |   |
| Digital Sample Rate     |                             | 14.3MHz                     | 14.3MHz                       | 14.3MHz                           |   |
| Quantizing Bits         |                             | 9 Bits                      | 9 Bits                        |                                   |   |
| Window of Correction    | 1 TV Frame                  | 1 TV Frame                  | 1 TV Frame                    | 4 Lines, Expandable               | 1 TV Line   |
| Video Bandwidth         | 0.2dB to 4.2MHz             | .2dB to 5.5MHz              | .3dB to 4.2MHz                | .5dB to 5MHz                      |   |
| Signal-to-Noise Ratio   | 56dB                        | 56dB                        | 58dB                          | 51dB                              | 58dB  |
| Differential Phase/Gain |                             | 2°/2%                       | 2°/2%                         | 2°/3%                             | 1°/2%   |
| K-Factor for 2T Pulse   | 1%                          | 1%                          | 1%                            | 1%                                |   |
| Residual Error (Mono)   | 10nsec                      |                             | 15nsec                        |                                   |   |
| Sync Coherent 3.58MHz   | Yes                         |                             |                               | Yes                               |   |
| Advanced Sync Output    |                             |                             | Yes                           | Yes                               |   |
| Composite Video Output  | 2                           | 4                           | 3                             | 3                                 | Yes   |
| Reference (Sync/Video)  | Either                      | Sync                        | Video                         | Video                             |   |
| Velocity Compensation   | Option                      |                             | Line-by-line                  |                                   |   |
| Heterodyne Processing   |                             |                             | Option                        | Yes                               | Yes   |
| Non-servoed Capstan VTR |                             |                             |                               | Yes                               |   |
| Dropout Compensation    | Option                      | Last Video or Black         | For BVH equipment             | Yes                               |   |
| Dynamic Tracking Head   |                             |                             | Yes for BVH                   |                                   |   |
| Freeze Frame/Field      | Either                      | Either                      |                               | Yes                               |   |
| Noise Reduction         |                             |                             | Color                         | 60%                               |   |
| Color Correction        |                             |                             |                               | Option BK-31                      |   |
| Image Enhancement       |                             |                             |                               | H and V                           |   |
| Hot-Switch Capable      |                             | Yes                         |                               |                                   |   |
| 19-inch Rack Space      | 8.7 in                      | 3 in                        | 10.4 in                       | 7 in                              | 1.75 in   |
| Remote Controllable     | Yes                         | Yes                         |                               | Yes                               |   |
| Front Panel Control     |                             |                             |                               |                                   |   |
| Video Gain              | Yes                         | Yes                         | Yes                           | Yes                               | Yes   |
| Chroma Gain             | Yes                         | Yes                         | Yes                           | Yes                               | Yes   |
| Setup Level             | Yes                         | Yes                         | Yes                           | Yes                               | Yes   |
| Hue Phase               | Yes                         | Yes                         | Yes                           | Yes                               | Yes   |
| Subcarrier Phase        | Yes                         | Yes                         | Yes                           | Yes                               |   |
| Horizontal Phase        | Yes                         | Yes                         | Yes                           | Yes                               |   |
| Color Standards         | NTSC                        | NTSC                        | NTSC                          | NTSC                              | NTSC  |

## VIDEODISC SYSTEM

Equipment using magnetic disc materials for use with slow motion, slide storage, animation or graphics systems. Video signals are 1V P-P, 75 Ohm input and output. Pulse and reference signals are 4V P-P or 1V P-P, 75 Ohm.

| Manufacturer                | ADDA Corporation                      |   | Ampex Corporation                        | Echo Science Corporation     |                      |
|-----------------------------|---------------------------------------|---|--|------------------------------|----------------------|
|                             | ESP-100 Electronic<br>Still Processor | ESP-750/2 Electronic<br>Still Processor | ESS-2 Digital Video<br>Production System | ESF-1 Frame-Stor<br>Recorder | Slo/Mo-1             |
| Model Number                |                                       |   |  |                              |                      |
| Reference Input             | Composite Video                       | Composite Video                         | Composite Video                          | Composite Sync               | Composite Video      |
| Video Outputs               | 2 per Channel                         | 2 per Channel                           | 2 per Channel                            | 1                            | 1                    |
| Output Channels             | A and B                               | A and B                                 | To 3 Independent                         | 1                            | 1                    |
| Video Response (± dB/Hz)    |                                       |   | Flat/to 4.2M                             | 1.5/to 3.58M                 | - 3dB/at 4.2MHz      |
| Signal-to-Noise Ratio       | 56dB                                  | 56dB                                    | 50dB, Random,<br>Quantizing              | 42dB                         | 42dB                 |
| Differential Phase/Gain (±) | 2°/2%                                 | 2°/2%                                   | 3°/3%                                    |                              |                      |
| K Factors                   | 1% 2T                                 | 1% 2T                                   | 1% 2T                                    | 4% 2T                        | 4°/4%                |
| Chroma/Luminance Delay      |                                       |   | 20nsec, 12.5T                            |                              | 4% 2T                |
| Editing Capability          | Yes                                   | Yes                                     | Yes                                      | Yes                          |                      |
| Disc Type & Size            | Rigid Disc                            | Rigid Disc                              | Rigid Disc                               | Flexible, 12 in              | Flexible, 12 in      |
| Number of Drives            | 2 Max                                 | 4 Max                                   | 3 Max                                    | 1                            | 1                    |
| Frames per Sequence         | 400 Max                               | 800 Max                                 | 64                                       | 200 Max                      |                      |
| Frames per Disc             | 100                                   | 750                                     | 814                                      | 400                          |                      |
| Frame Storage               | 400 Max                               | 3000 Max                                | 2442 Max                                 | 400 Max                      | 1200 Fields, 20 sec  |
| Sequences, Programmable     | 50                                    | 100                                     | Yes                                      |                              |                      |
| Worst Case Access Time      | 450msec                               | 450msec                                 | 70msec                                   |                              | 3.3sec               |
| External TBC Required       | Included                              | Included                                | Included                                 | Yes                          | Field Store Included |
| Heterodyne Chroma           |                                       |   |  | Yes                          |                      |
| Moire Rating                |                                       |   |  |                              | - 40dB               |
| FM Carrier Frequency        |                                       |   |  |                              | 7.06 to 10MHz        |
| Time Base Stability         |                                       |   |  | 1msec Long Term              |                      |
| Unit Packaging              | Floor and Rack Units                  | Floor and Rack Units                    | Floor and Rack Units                     | Desktop                      | Table-top Unit       |
| Separate Control Unit       | Yes                                   | Yes                                     | Yes                                      | Option                       | Yes                  |
| Remote Control Unit         | 3 Possible                            | 3 Possible                              | Yes                                      | Yes                          | Yes                  |

# VIDEODISC SYSTEM

| Manufacturer                      | Elgen<br>Model 16 | Harris<br>Communications   | MCI/Quantel<br>DLS 6030 Production<br>Effects System | Oktel<br>Corporation<br>DM3000<br>Series | ShibaSoku<br>Co., Ltd. |
|-----------------------------------|-------------------|----------------------------|--|--|------------------------|
| Model Number                      | Videodisc (16-20) | IRIS                       |  |  | 680/1                  |
| Reference Input                   | Sync Drives       | Composite Video<br>or Sync | Composite Video                                      | Composite Sync                           | Composite Video        |
| Video Outputs                     | 1                 | 1 per Channel              | 2 per Channel  | .....                                    | .....                  |
| Output Channels                   | 1                 | 3 Max                      | 3  | 2 Possible                               | 3                      |
| Video Response ( $\pm$ dB/Hz)     | To 4.2M           | .....                      | .3fto 4.2M   | .....                                    | .5fto 4.5M             |
| Signal-to-Noise Ratio             | 42dB              | 57dB                       | 58dB   | 45dB                                     | 52dB                   |
| Differential Phase/Gain ( $\pm$ ) | 3°/3%             | 1.5°/1.5%                  | 1°/1%  | 3°/3%                                    | .....                  |
| K Factors                         | 1%                | 1% 2T                      | .....  | 2% 2T                                    | 2% 2T                  |
| Chroma/Luminance Delay            | .....             | 17nsec                     | .....  | .....                                    | .....                  |
| Editing Capability                | Yes               | Yes                        | Yes  | Yes                                      | Yes                    |
| Disc Type & Size                  | Flexible          | Rigid Disc                 | Winchester Drive                                     | .....                                    | Flexible               |
| Number of Drives                  | 1                 | 8 max                      | To 8   | 1  | 1                      |
| Frames per Sequence               | .....             | .....                      | .....  | .....                                    | .....                  |
| Frames per Disc                   | .....             | 95 to 730 per System       | 800  | .....                                    | 2                      |
| Frame Storage                     | 800, 20sec        | 5840 Max                   | 6400 Max   | 1200, or 30sec                           | 2                      |
| Sequences, Programmable           | .....             | Yes                        | .....  | .....                                    | .....                  |
| Worst Case Access Time            | .....             | .....                      | .....  | .....                                    | .....                  |
| External TBC Required             | Yes               | Included                   | .....  | Yes                                      | .....                  |
| Heterodyne Chroma                 | Yes               | .....                      | .....  | .....                                    | .....                  |
| Moire Rating                      | - 41dB, 75% Bars  | .....                      | .....  | - 40dB, 75% Bars                         | .....                  |
| FM Carrier Frequency              | 7.06 to 10MHz     | .....                      | .....  | .....                                    | .....                  |
| Time Base Stability               | 2msec             | .....                      | .....  | 2nsec                                    | .....                  |
| Unit Packaging                    | Table-top Unit    | Floor and Rack Units       | Rack-Mount Unit                                      | Table-top Unit                           | Rack-Mount Unit        |
| Separate Control Unit             | Yes               | Yes                        | Yes  | RS-232, IEEE-488                         | Optional               |
| Remote Control Unit               | Yes               | Yes                        | Yes  | Interfaces Available                     | Optional               |

## NEW PRODUCT NEWS "SPC-4"

OUR NEW "SPC-4" HAS BEEN ADAPTED AS A STANDARD BY SEVERAL CABLE TV COMPANIES FOR THEIR PUBLIC ACCESS FACILITIES. THE "SPC-4" PROVIDES AMPLE ROOM FOR ANY 3 1/4" EDITING SYSTEM WITH ALL THE OUTBOARD EQUIPMENT AS ILLUSTRATED BELOW.



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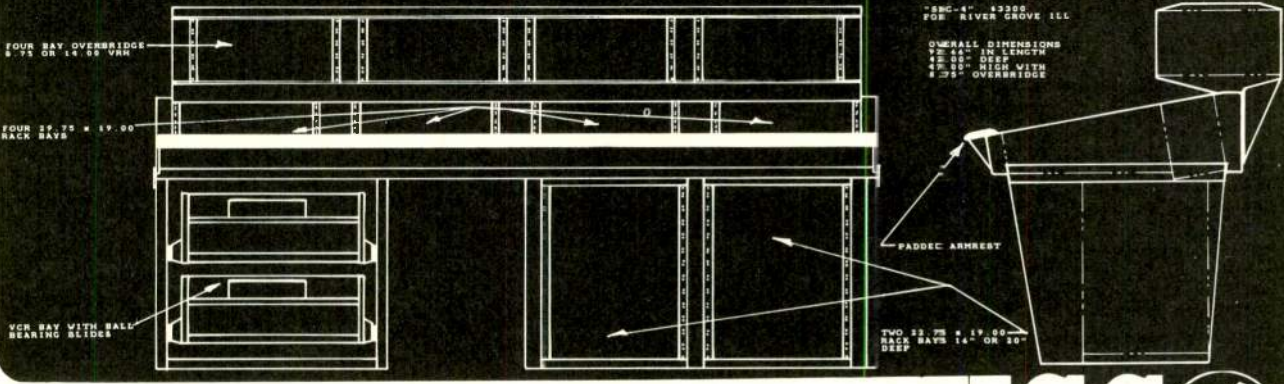
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# VIDEO PROCESSING EQUIPMENT

Signal improvement through image enhancement, noise reduction or signal/sync regeneration.

| Manufacturer           | Composite Video |                  | Faroudja Laboratories |   | Femseh                           |
|------------------------|-----------------|------------------|-----------------------|---|----------------------------------|
| Model Number           | VE-400 Enhancer | VP-200 Processor | Record-EX             | Record 1/<br>Playback 1 System            | TDF 2<br>Noise Reducer           |
| Major Function:        |                 |                  |                       |   |                                  |
| Image Enhancement      | With Delay Line | .....            | Signal Dependent      | H and V<br>Enhancement                    | ± 50% H and V                    |
| Noise Reduction        | 6dB Overall     | .....            | .....                 | 6dB Overall                               | 18dB Overall                     |
| Sync Regeneration      | Yes, Blackburst | Yes, Blackburst  | .....                 | Yes                                       | .....                            |
| Specific Use           | Editing System  | Editing System   | Before ENG VTR        | On Input and Output<br>of ¼-inch Recorder | On Multigeneration<br>Dubs/Tapes |
| Video Bandwidth        | To 5MHz         | To 5MHz          | ± 1dB/to 4.2MHz       | 5MHz and 2MHz                             | 5MHz                             |
| Signal-to-Noise Ratio  | .....           | 60dB             | .....                 | 65dB                                      | 58dB                             |
| Differential Phase     | 1°              | 1°               | 2.5°                  | 1.5°/2°                                   | 2°                               |
| Differential Gain      | 1%              | 1%               | 2.5%                  | 1.5%/2%                                   | 2%                               |
| Chroma/Luminance Delay | .....           | .....            | 20nsec                | 20nsec/Adjustable                         | Adjustable                       |
| K Factor               | .....           | .....            | 2% 2T                 | 1.5%/2.5% 2T                              | 2%                               |
| Parameter Controls     |                 |                  |                       |   |                                  |
| Video Level            | Yes             | + 12dB           | .....                 | .....                                     | .....                            |
| Chroma Level           | Yes             | Yes              | .....                 | .....                                     | .....                            |
| Setup Level            | .....           | .....            | .....                 | .....                                     | .....                            |
| Burst Phase            | Yes             | Yes              | .....                 | .....                                     | .....                            |
| Burst Level            | .....           | .....            | .....                 | .....                                     | .....                            |
| Sync Level             | .....           | .....            | .....                 | .....                                     | .....                            |

| Manufacturer           | Grass Valley Group   | Leitch Video Ltd.                | Lenco                | Philips PYE-TVT                        | Tektronix                    |
|------------------------|----------------------|----------------------------------|----------------------|--|------------------------------|
| Model Number           | 3240-10<br>Processor | VPA-300N<br>Processing Amplifier | PRC-361<br>Processor | LDM3001 Auto Noise<br>Reducer/Adaptive | 1440 Auto Video<br>Corrector |
| Major Function:        |                      |                                  |                      |  |                              |
| Image Enhancement      | .....                | .....                            | .....                | .....                                  | .....                        |
| Noise Reduction        | .....                | Hum by 34dB                      | Comb Filtering       | 16.9dB, 12.5Hz                         | .....                        |
| Sync Regeneration      | Yes                  | Yes, Blackburst                  | Yes                  | Yes                                    | Yes                          |
| Specific Use           | Any                  | Any                              | Any                  | Any                                    | Any                          |
| Video Bandwidth        | ± .2dB/to 6MHz       | ± .2dB/to 5MHz                   | ± .5dB/to 10MHz      | .....                                  | .....                        |
| Signal-to-Noise Ratio  | 70dB                 | 60dB                             | 60dB                 | .....                                  | 60dB                         |
| Differential Phase     | 0.25°                | .5°                              | .2°                  | .5°                                    | .....                        |
| Differential Gain      | 0.5%                 | 1%                               | .2%                  | .5%                                    | .....                        |
| Chroma/Luminance Delay | 10nsec               | .....                            | .....                | .....                                  | 10nsec                       |
| K Factor               | 1% T                 | .....                            | .5%                  | .....                                  | 1% 2T                        |
| Parameter Controls     |                      |                                  |                      |  |                              |
| Video Level            | ± 6dB                | + 11, - 2dB                      | + 6, - 40dB          | ± 3dB                                  | ± 6dB                        |
| Chroma Level           | ± 6dB                | ± 2dB                            | + 6, - 30dB          | .....                                  | ± 3dB                        |
| Setup Level            | ± 15IRE              | ± 10IRE                          | ± 40IRE              | .....                                  | ± 10IRE                      |
| Burst Phase            | ± 13°                | ± 20°                            | ± 45°                | .....                                  | ± 25°                        |
| Burst Level            | + 3, - 6dB           | ± 10IRE                          | 30 to 50IRE          | .....                                  | ± 6dB                        |
| Sync Level             | + 3, - 6dB           | ± 10IRE                          | 20 to 80IRE          | .....                                  | ± 3dB                        |

| Manufacturer           | Telemet                       | Thomson CSF                       |                                    |
|------------------------|-------------------------------|-----------------------------------|------------------------------------|
| Model Number           | Model 4600 Signal Conditioner | Model 8010 Mark IV Image Enhancer | Model 9100 Digital Video Processor |
| Major Function:        |                               |                                   |                                    |
| Image Enhancement      | High Frequency Boost          | Combed H/Crispening               | .....                              |
| Noise Reduction        | .....                         | Yes                               | To 15dB                            |
| Sync Regeneration      | Yes                           | Yes                               | Yes, Field Freeze                  |
| Specific Use           | Any                           | Any                               | Any                                |
| Video Bandwidth        | ± .5dB/to 8MHz                | 0, - 1dB/to 5MHz                  | ± .5dB/5MHz                        |
| Signal-to-Noise Ratio  | 60dB                          | 55dB                              | 56dB                               |
| Differential Phase     | 0.5°                          | 1°                                | 2°                                 |
| Differential Gain      | 0.1dB                         | .5%                               | 2%                                 |
| Chroma/Luminance Delay | .....                         | .....                             | Adjustable                         |
| K Factor               | .....                         | .....                             | 1%                                 |
| Parameter Controls     |                               |                                   |                                    |
| Video Level            | 0.7 to 1.4V                   | ± 1dB                             | Adjustable                         |
| Chroma Level           | ± 3dB                         | .....                             | Adjustable                         |
| Setup Level            | .....                         | .....                             | Adjustable                         |
| Burst Phase            | .....                         | .....                             | Adjustable                         |
| Burst Level            | .....                         | .....                             | Adjustable                         |
| Sync Level             | .....                         | .....                             | .....                              |

See Thomson-CSF advertisement on pages 40 and 41.

# VIDEO PRODUCTION SWITCHER

Vertical interval video switching systems for video production use. Video signals are 1V P-P composite video or 0.714V non-composite. Pulse inputs are 4V P-P. Reference subcarrier signals are 2V P-P. Impedance for all is 75 Ohms.

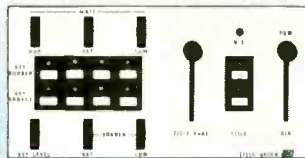
| Manufacturer             | American Data Corporation |                       |                          | Ampex Corporation          |                            |
|--------------------------|---------------------------|-----------------------|--------------------------|----------------------------|----------------------------|
| Model/Series             | 2104-10                   | 3101                  | 3104-20                  | AVC-33                     | Model 4100                 |
| Video Inputs             | 10 Looping                | 9                     | 20 Looping               | 32 Looping                 | 26 Looping                 |
| Color Black              | Included                  | Included              | Included                 | Included                   | Included                   |
| Color Backgrounds        | Included                  | Included              | Included                 | Included                   | Included                   |
| Non-Synchronous Detect   | Yes                       | Yes                   | Yes                      | Yes                        | Yes                        |
| Titler Input             | Yes                       | Yes                   | Yes                      | Yes                        | Yes                        |
| Key Source               | Internal and External     | Internal and External | Internal and External    | Internal and External (36) | Internal and External (10) |
| Chroma Key               | RGB Optional              | RGB or Encoded        | 4 Encoded, 4RGB Optional | 6RGB, Encoded Optional     | 4 RGB, 6 Encoded           |
| Downstream Key           | Yes                       | Yes                   | Optional                 | 1                          | Optional                   |
| Switching Buses          | 4                         | 4                     | 5                        | 8                          | 8                          |
| Mix/Effects Amplifiers   | 1                         | Mix/Effects, Mix/Key  | 2, Auto Transition       | 3, Auto Transition         | 3, Auto Transition         |
| Pattern Generator        | Yes                       | Yes                   | Yes                      | Yes                        | Yes                        |
| Rotary Wipe Patterns     | Yes, Adjustable           | Yes, Adjustable       | Yes, Adjustable          | Yes                        | Yes                        |
| Soft Wipe Capability     | Yes                       | Yes                   | Yes                      | Yes with Half-halo         | Yes                        |
| Spotlighting Effect      | Yes                       | Yes                   | Yes                      | Yes, with Half-pan         | Yes                        |
| Effects Position         | Yes                       | Yes                   | Yes                      | Yes                        | Yes                        |
| Effects Modulation       | Yes                       | Yes                   | Yes                      | Yes                        | Yes                        |
| Quad Split System        | Using 1290B Unit          | Optional              | Optional                 | Optional                   | Optional                   |
| Border Effects           | Yes                       | Yes                   | Yes                      | Yes                        | Optional                   |
| Re-Entry Facility        | Yes                       | Yes                   | Yes                      | Yes                        | Yes                        |
| Automation System        | Yes                       | Yes                   | ACTS System              | Internal CPU               | Yes                        |
| Programmability          | Yes                       | Yes                   | With ACTS Installed      | Option Uses STAR 9 Setups  | Yes                        |
| Digital Effects Port     | Yes                       | Yes                   | For Quantel System       | Yes                        | Yes                        |
| Tally Interface          | Yes                       | Yes                   | Yes                      | Yes                        | Yes                        |
| Gen-lock to Video        | Yes                       | Yes                   | Yes                      | Yes                        | Yes                        |
| Sync Drives Needed       | Yes                       | Yes                   | Yes                      | Yes                        | Yes                        |
| Program Outputs          | 2                         | 2                     | 2 and DSK Output         | 2 and DSK Output           | 3                          |
| Auxiliary Buses          | 2                         | 2                     | 5 Possible               | 16                         | 2                          |
| Differential Phase/Gain  | 1°/1%                     | 1.5°/1.5%             | 1.5°/1.5%                | 1°/1%                      | 1°/1%                      |
| K Factor                 | 1°                        | 1°                    | 1°                       | 1%, 2T                     | 1%, T                      |
| Path Length Accuracy     | 1°                        | 1°                    | 1°                       | 1°                         | 1°                         |
| Video Response (± dB/Hz) | 0.1/to 4.2M               | .2/to 4.2M            | .1/to 4.2M               | .1/to 4.2M                 | .1/to 6M                   |
| Signal-to-Noise Ratio    | 60dB                      | 60dB                  | 60dB                     | 60dB                       | 60dB                       |
| Field Tilt Distortion    | 1%                        | 1%                    | 1%                       | .5%                        | 1%                         |
| Crosstalk (Worst)        | - 52dB, 3.58, 4.3MHz      | - 52dB, 3.58MHz       | - 52dB, 3.58MHz          | - 55dB, 5MHz               | - 55dB, 5MHz               |
| Color Standards          | NTSC, PAL, PAL-M          | NTSC, PAL, PAL-M      | NTSC, PAL, PAL-M         | NTSC                       | NTSC                       |
| Related Models           | .....                     | .....                 | 3102, 3106               | Audio Switching Included   | Audio Switching Included   |

| Manufacturer             | Asaca/Sibasoku Corp. | Beaveronics, Inc.     |                       | Central Dynamics Ltd. |                       |
|--------------------------|----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Model/Series             | ASW-100              | B1-156                | J & D 705 ENG         | J & D 712             | VS-14S                |
| Video Inputs             | 3                    | 15 Looping            | 5 Looping             | 12 Looping            | 10 Looping            |
| Color Black              | Included             | Included              | Included              | Included              | Included              |
| Color Backgrounds        | Included             | Included              | Included              | Included              | Included              |
| Non-Synchronous Detect   | Yes                  | Yes                   | Yes                   | Yes                   | Yes                   |
| Titler Input             | Possible             | Yes                   | Yes                   | Yes                   | Yes                   |
| Key Source               | Possible             | Internal and External | Internal and External | Internal and External | Internal and External |
| Chroma Key               | RGB or Encoded       | RGB or Encoded        | RGB                   | RGB                   | RGB Optional          |
| Downstream Key           | Optional             | Optional              | Optional              | Optional              | Yes                   |
| Switching Buses          | 2                    | 6                     | 4                     | 4                     | 4                     |
| Mix/Effects Amplifiers   | Yes                  | 2                     | 1                     | 1                     | 1                     |
| Pattern Generator        | Optional             | Yes                   | Yes                   | Yes                   | Yes                   |
| Rotary Wipe Patterns     | Yes                  | Yes                   | Yes                   | Yes                   | Yes                   |
| Soft Wipe Capability     | Yes                  | Yes                   | Yes                   | Yes                   | Yes                   |
| Spotlighting Effect      | Yes                  | Yes                   | Yes                   | Yes                   | Yes                   |
| Effects Position         | Yes                  | Yes                   | Yes                   | Yes                   | Yes                   |
| Effects Modulation       | Yes                  | Yes                   | Yes                   | Yes                   | Yes                   |
| Quad Split System        | Optional             | Optional              | Optional              | Optional              | Optional              |
| Border Effects           | Yes                  | Yes                   | Yes                   | Yes                   | Yes                   |
| Re-entry Facility        | Yes                  | Yes                   | Yes                   | Yes                   | Yes                   |
| Automation System        | Yes                  | Yes                   | Yes                   | Yes                   | Yes                   |
| Programmability          | Yes                  | Yes                   | Yes                   | Yes                   | Yes                   |
| Digital Effects Port     | Yes                  | Yes                   | Yes                   | Yes                   | Yes                   |
| Tally Interface          | Yes                  | Yes                   | Yes                   | Yes                   | Yes                   |
| Gen-lock to Video        | Yes                  | Yes                   | Yes                   | Yes                   | Yes                   |
| Sync Drives Needed       | Yes                  | Yes                   | Yes                   | Yes                   | Yes                   |
| Program Outputs          | 2                    | 2                     | 2                     | 2                     | 3                     |
| Auxiliary Buses          | 2                    | 2                     | 2                     | 2                     | 3                     |
| Differential Phase/Gain  | 1°/1%                | 1°/1%                 | 1°/1%                 | 1°/1%                 | 1°/1%                 |
| K Factor                 | 1%                   | 1%                    | 1%                    | 1%                    | 1%                    |
| Path Length Accuracy     | 1°                   | 1.5°                  | 1°                    | 1°                    | 1°                    |
| Video Response (± dB/Hz) | 0.3/to 6M            | .5/to 8M              | .5/to 5M              | .5/to 5M              | .....                 |
| Signal-to-Noise Ratio    | 60dB                 | 60dB                  | 60dB                  | 60dB                  | .....                 |
| Field Tilt Distortion    | 1%                   | 1%                    | 1%                    | 1%                    | .....                 |
| Crosstalk (Worst)        | - 47dB, 3.58MHz      | - 56dB, 3.58, 4.3MHz  | - 53dB                | - 53dB                | .....                 |
| Color Standards          | NTSC, PAL            | NTSC, PAL, PAL-M      | NTSC, PAL, PAL-M      | .....                 | NTSC, PAL             |
| Related Models           | .....                | B1-154                | .....                 | .....                 | VS14-RS               |

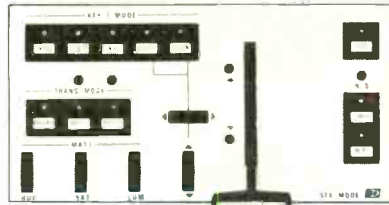
# VIDEO PRODUCTION SWITCHER

| Manufacturer             | Central Dynamics Ltd.           |                                   |                       | Crosspoint Latch Corporation |                       |
|--------------------------|---------------------------------|-----------------------------------|-----------------------|------------------------------|-----------------------|
|                          | Model/Series                    | CD-480 Model 10                   | CD-480 Model 4        | Model 6112                   | Model 6107            |
| Video Inputs             | To 32 Looping                   | To 24 Looping                     | 9, 8 Looping          | 6, 5 Looping                 | 8, 7 Looping          |
| Color Black              | Included                        | Included                          | Included              | Included                     | Included              |
| Color Backgrounds        | Included                        | Included                          | Included              | Included                     | Included              |
| Non-Synchronous Detect   | Yes                             | Yes                               | Yes                   | Yes                          | Yes                   |
| Title/ Input             | Yes                             | Optional                          | Yes                   | Yes                          | Yes                   |
| Key Source               | Internal and External           | Internal and External             | Internal and External | External                     | Internal and External |
| Chroma Key               | Encoded in SFX,<br>RGB Optional | Encoded,<br>RGB Optional          | Encoded               | .....                        | .....                 |
| Downstream Key           | Yes                             | Optional                          | Yes                   | .....                        | .....                 |
| Switching Buses          | 10                              | 4                                 | 4                     | 2                            | 3                     |
| Mix/Effects Amplifiers   | 2 SFX, Auto<br>Transitions      | SFX, Optional Auto<br>Transitions | 2                     | 1                            | 1                     |
| Pattern Generator        | Yes                             | Yes                               | Yes                   | Yes                          | Yes                   |
| Rotary Wipe Patterns     | Yes                             | Yes                               | .....                 | .....                        | .....                 |
| Soft Wipe Capability     | Yes                             | Yes                               | Yes                   | Yes                          | Yes                   |
| Spotlighting Effect      | Yes                             | Yes                               | Yes                   | Yes                          | Yes                   |
| Effects Position         | Yes                             | Yes                               | Yes                   | Yes                          | Yes                   |
| Effects Modulation       | Yes                             | Yes                               | Yes                   | .....                        | Yes                   |
| Quad Split System        | Optional Quadplexer             | .....                             | .....                 | .....                        | .....                 |
| Border Effects           | Optional                        | Optional                          | Optional              | .....                        | .....                 |
| Re-entry Facility        | Yes                             | Yes                               | Yes                   | Special Function             | Special Function      |
| Automation System        | CAP System                      | CAP System                        | 7200 AutoDrive        | .....                        | .....                 |
| Programmability          | Yes                             | Yes                               | .....                 | .....                        | .....                 |
| Digital Effects Port     | Yes                             | Yes                               | .....                 | .....                        | .....                 |
| Tally Interface          | Yes                             | Yes                               | Yes                   | Yes                          | Yes                   |
| Gen-lock to Video        | .....                           | .....                             | .....                 | .....                        | .....                 |
| Sync Drives Needed       | Yes                             | Yes                               | Yes                   | Yes                          | Yes                   |
| Program Outputs          | 2                               | 2                                 | 2                     | 2                            | 2                     |
| Auxiliary Buses          | 2                               | 4 Possible                        | .....                 | .....                        | .....                 |
| Differential Phase/Gain  | 1°/1%                           | 1°/1%                             | 1°/1%                 | 2°/2%                        | 2°/2%                 |
| K Factor                 | 0.25% T                         | .25% T                            | .....                 | .....                        | .....                 |
| Path Length Accuracy     | 1°                              | 1°                                | 1.5°                  | .....                        | 1.5°                  |
| Video Response (± dB/Hz) | 0.1 to 5M                       | .1 to 5M                          | .5 to 8M              | .5 to 8M                     | .5 to 8M              |
| Signal-to-Noise Ratio    | 60dB                            | 60dB                              | .....                 | 60dB                         | 60dB                  |
| Field Tilt Distortion    | 1%                              | 1%                                | 2%                    | .....                        | 2%                    |
| Crosstalk (Worst)        | -53dB                           | -56dB                             | -50dB, 3.58MHz        | -52dB, 3.58MHz               | -50dB, 3.58MHz        |
| Color Standards          | NTSC, PAL, PAL-M<br>SECAM       | NTSC, PAL, PAL-M<br>SECAM         | NTSC                  | NTSC                         | NTSC                  |
| Related Models           | .....                           | .....                             | .....                 | .....                        | .....                 |

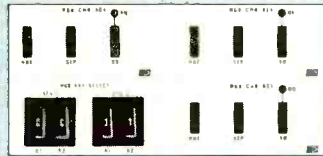
| Manufacturer                                 | Model/Series          | Grass Valley Group                |                             |                              | Image Video Limited |
|--|-----------------------|-----------------------------------|-----------------------------|------------------------------|---------------------|
|  |                       | 1600-3D                           | 1600-3K                     | 300-3A                       | SEG-801             |
| ECHOlab, Inc.<br>SE/3 Production<br>Switcher |                       |                                   |                             |                              |                     |
| Video Inputs                                 | 12, 10 Looping        | 16 Looping                        | 16 Looping                  | 24, 23 Looping               | 6                   |
| Color Black                                  | Included              | Included                          | Included                    | Included                     | Included            |
| Color Backgrounds                            | With 2 Mattes         | Included                          | Included                    | Included                     | Included            |
| Non-Synchronous Detect                       | Yes                   | Yes                               | Yes                         | Yes                          | .....               |
| Title/ Input                                 | Yes                   | Yes                               | Yes                         | 4 Possible                   | Possible            |
| Key Source                                   | Internal and External | Internal and External             | Internal and External       | Internal and External        | External            |
| Chroma Key                                   | Encoded Optional      | Encoded and<br>RGB Optional       | Encoded and<br>RGB Optional | 3 Encoded, 6 RGB<br>Optional | .....               |
| Downstream Key                               | Yes                   | Optional                          | Optional                    | 1                            | Yes                 |
| Switching Buses                              | 4                     | 6                                 | 8                           | 14                           | 3                   |
| Mix/Effects Amplifiers                       | 3                     | 2                                 | 3                           | 3                            | Yes                 |
| Pattern Generator                            | Yes                   | Yes                               | Yes                         | Yes                          | Yes                 |
| Rotary Wipe Patterns                         | Yes                   | Yes                               | Yes                         | Yes                          | .....               |
| Soft Wipe Capability                         | Yes                   | Yes                               | Yes                         | Yes                          | .....               |
| Spotlighting Effect                          | .....                 | Yes                               | Yes                         | .....                        | .....               |
| Effects Position                             | Yes                   | Yes                               | Yes                         | Yes                          | Yes                 |
| Effects Modulation                           | Yes                   | Yes                               | Yes                         | Yes                          | .....               |
| Quad Split System                            | Yes                   | Optional                          | Optional                    | Optional                     | .....               |
| Border Effects                               | 2                     | 3274 Optional                     | 3274 Optional               | Optional                     | .....               |
| Re-entry Facility                            | Yes                   | Yes                               | Yes                         | Unlimited                    | .....               |
| Automation System                            | .....                 | E-MEM Optional                    | E-MEM Optional              | E-MEM Optional               | .....               |
| Programmability                              | Yes                   | Yes as Optional                   | Yes as Optional             | Yes as Optional              | .....               |
| Digital Effects Port                         | .....                 | .....                             | .....                       | Mark II Uses NEC DVE         | .....               |
| Tally Interface                              | Yes                   | Yes                               | Yes                         | Yes                          | Yes                 |
| Gen-lock to Video                            | Yes                   | .....                             | .....                       | .....                        | Yes                 |
| Sync Drives Needed                           | .....                 | Yes                               | Yes                         | Yes                          | .....               |
| Program Outputs                              | 2                     | 4                                 | 4                           | 4                            | 2                   |
| Auxiliary Buses                              | .....                 | 8 or More Optional                | 8 or More Optional          | 2                            | .....               |
| Differential Phase/Gain                      | 1.5°/1.5%             | 1.5°/1.5%                         | 1.5°/1.5%                   | .5°/1.5%                     | 1°/1%               |
| K Factor                                     | .....                 | .5% 2T                            | .5% 2T                      | 1% T                         | .....               |
| Path Length Accuracy                         | 1°                    | 1.5°                              | 1.5°                        | .....                        | 1°                  |
| Video Response (± dB/Hz)                     | 0.5 to 5M             | .2 to 5M                          | .2 to 5M                    | .1 to 6M                     | 1 to 10M            |
| Signal-to-Noise Ratio                        | .....                 | 65dB                              | 65dB                        | 65dB                         | 60dB                |
| Field Tilt Distortion                        | .....                 | .5%                               | .5%                         | .5%                          | 1%                  |
| Crosstalk (Worst)                            | -52dB, 3.58MHz        | -55dB, 3.58MHz;<br>-52dB, 4.43MHz | -52dB, 3.58MHz              | -54dB, 3.58MHz               | -52dB, 3.58MHz      |
| Color Standards                              | NTSC                  | .....                             | .....                       | NTSC, PAL                    | NTSC                |
| Related Models                               | .....                 | 1600-3F/7F                        | 1600-3H/7H/7K               | 300-3B/2A/2B                 | .....               |



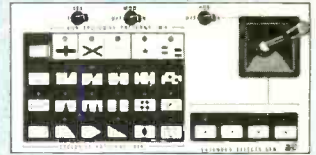
Title Keyer



SFX Amplifier



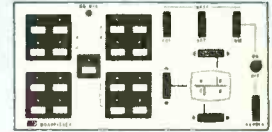
Chroma Keyers... RGB and Encoded



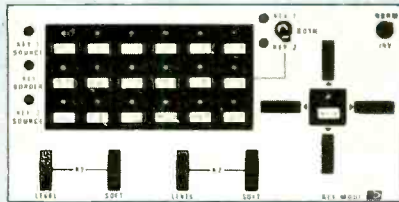
Extended Effects Generator



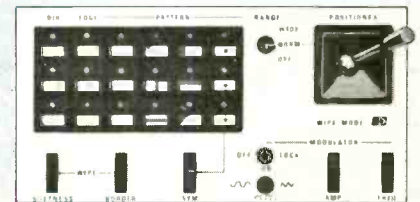
Master Mix & Auto Transitions



Quadplexer



Key Module



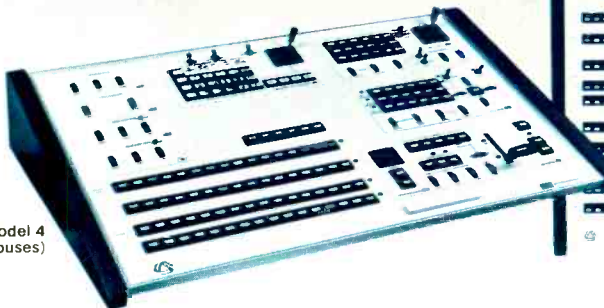
Wipe Module



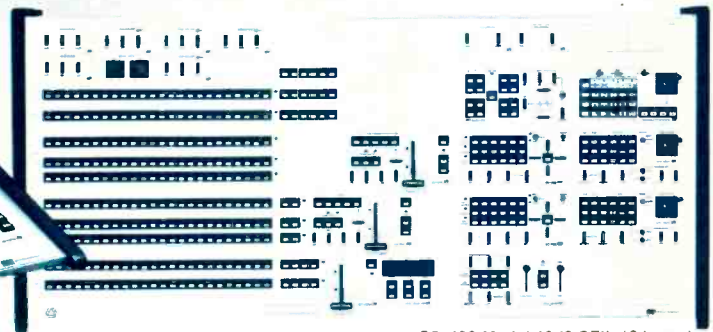
CAP... Computer Assisted Production System



CD-480 Model 4  
(1 SFX, 4 buses)



CD-480 Model 10 (2 SFX, 10 buses)



## CD-480...the most powerful and modular production switcher available today.

The 480's proven superior performance, reliability and flexibility has evolved from these powerful video production modules.

That's why you can customize a 480 to your specific production requirements... within your budget. And because of the 480's modular design we can deliver the largest model within 90-120 days.

Design your own switcher starting with any one of 9 basic models, and selectively equip it with a wide range of powerful 480 modules and accessories.

No other manufacturer can offer you that flexibility... and every 480 is equipped with the unbeatable video power of the CD-480 SFX Processor System that includes the SFX Amplifier, Key and Wipe Modules.

The 480 family includes switchers with 4 buses to 10 buses... even a model you can upgrade from 1 SFX and 5 buses to a Model 8 or 9 with 2 SFX Amplifiers and 8 or 9 buses. And the 480 continues to evolve which means you can always add the latest 480 production accessories.

That's why over 300 users call the 480 the most powerful and flexible new generation switcher available today.

Start designing your new CD-480 now so you can have the competitive advantage. Call or write for literature or *our complete CD-480 Design Kit*.

Central Dynamics Corporation, 900 Corporate Drive, Mahwah, NJ 07430. 201-529-1550.  
Central Dynamics Ltd., Montreal, 514-697-0810.



**CENTRAL DYNAMICS CORPORATION**

The U.S. Broadcast Company for ■ COL ■ PHILIPS ■ American Data  
Circle (36) on Reply Card

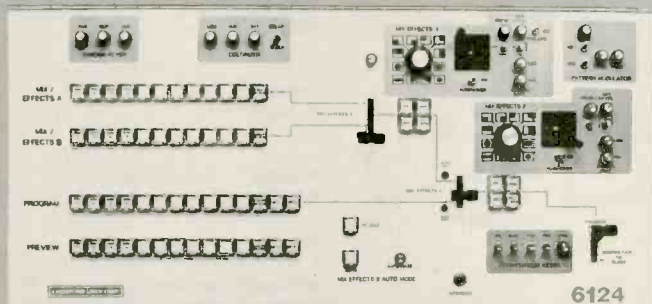
# VIDEO PRODUCTION SWITCHER

| Manufacturer             | Industrial Sciences, Inc.  | Marconi Broadcast            | NEC America, Inc.     |
|--------------------------|----------------------------|------------------------------|-----------------------|
| Model/Series             | 200 EdIFex                 | 1208                         | B3730                 |
| Video Inputs             | 10 Looping                 | 20 Looping                   | 22 Looping            |
| Color Black              | Included                   | Included                     | Included              |
| Color Backgrounds        | Included                   | Included                     | Included              |
| Non-Synchronous Detect   | Yes                        | Yes                          | Yes                   |
| Titler Input             | Yes                        | Yes                          | Yes                   |
| Key Source               | Internal and External      | Internal and External        | Internal and External |
| Chroma Key               | Encoded or RGB<br>Optional | Encoded or RGB               | Encoded               |
| Downstream Key           | Yes                        | Yes                          | Yes                   |
| Switching Buses          | 6                          | 8                            | 5                     |
| Mix/Effects Amplifiers   | Yes, Auto Transitions      | PolyKey, Auto<br>Transitions | 2                     |
| Pattern Generator        | Yes                        | Yes                          | Yes                   |
| Rotary Wipe Patterns     | Yes                        | Yes                          | Yes                   |
| Soft Wipe Capability     | Yes                        | Yes                          | Yes                   |
| Spotlighting Effect      | Yes                        | Yes                          | Yes                   |
| Effects Position         | Yes                        | Yes                          | Yes                   |
| Effects Modulation       | Yes                        | Yes                          | Yes                   |
| Quad Split System        | Optional                   | Optional                     | Optional              |
| Border Effects           | Yes                        | Yes                          | Yes                   |
| Re-entry Facility        | Yes                        | Yes                          | Yes                   |
| Automation System        | Yes                        | Yes with A.P.E.              | Yes                   |
| Programmability          | Internal Computer          | Yes                          | Yes                   |
| Digital Effects Port     | Yes                        | Yes                          | Yes                   |
| Tally Interface          | Yes                        | Yes                          | Yes                   |
| Gen-lock to Video        | Yes                        | Yes                          | Yes                   |
| Sync Drives Needed       | Yes                        | Yes                          | Yes                   |
| Program Outputs          | 2                          | 2                            | 2                     |
| Auxiliary Buses          | 2                          | 2                            | 2                     |
| Differential Phase/Gain  | 2°/2%                      | 1.5°/1.5%                    | 1°/1.5%               |
| K Factor                 | 1% T                       | 1% T                         | 1K 2T                 |
| Path Length Accuracy     | 1.5°                       | 1.5°                         | Adjustable            |
| Video Response (± dB/Hz) | 0.25°/6M                   | .1°/5M                       | .5°/5M                |
| Signal-to-Noise Ratio    | 60dB                       | 60dB                         | 60dB                  |
| Field Tilt Distortion    | 1%                         | 1%                           | 1%                    |
| Crosstalk (Worst)        | -53dB, 3.58MHz             | -52dB, 3.58MHz               | -52dB, 4.43MHz        |
| Color Standards          | NTSC, PAL                  | NTSC, PAL                    | NTSC, PAL             |
| Related Models           | .....                      | .....                        | .....                 |

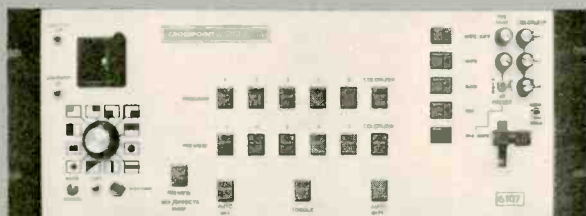
| Manufacturer             | Panasonic Video Systems | Ross Video Limited    |
|--------------------------|-------------------------|-----------------------|
| Model/Series             | WJ-550A                 | AV-800 Digital        |
| Video Inputs             | 10 Terminating          | 8                     |
| Color Black              | Included                | Included              |
| Color Backgrounds        | .....                   | Included              |
| Non-Synchronous Detect   | Yes                     | Yes                   |
| Titler Input             | Yes                     | Yes                   |
| Key Source               | External                | Internal and External |
| Chroma Key               | .....                   | Encoded               |
| Downstream Key           | Yes                     | .....                 |
| Switching Buses          | 5                       | 4                     |
| Mix/Effects Amplifiers   | Yes                     | Yes                   |
| Pattern Generator        | Yes                     | Yes                   |
| Rotary Wipe Patterns     | .....                   | Yes                   |
| Soft Wipe Capability     | Yes                     | Yes                   |
| Spotlighting Effect      | Yes                     | .....                 |
| Effects Position         | Yes                     | .....                 |
| Effects Modulation       | .....                   | .....                 |
| Quad Split System        | .....                   | Yes                   |
| Border Effects           | .....                   | Yes                   |
| Re-entry Facility        | Yes                     | Yes                   |
| Automation System        | .....                   | Yes                   |
| Programmability          | .....                   | Yes                   |
| Digital Effects Port     | .....                   | Yes                   |
| Tally Interface          | Yes                     | Yes                   |
| Gen-lock to Video        | AS-1000 Optional        | Yes                   |
| Sync Drives Needed       | Yes Unless Gen-locked   | .....                 |
| Program Outputs          | 3                       | 2                     |
| Auxiliary Buses          | .....                   | .....                 |
| Differential Phase/Gain  | 1.2°/1.2%               | 1.5°/1.5%             |
| K Factor                 | .....                   | .....                 |
| Path Length Accuracy     | .....                   | .....                 |
| Video Response (± dB/Hz) | 0.2°/8M                 | 1°/10M                |
| Signal-to-Noise Ratio    | 55dB                    | 60dB                  |
| Field Tilt Distortion    | .....                   | .....                 |
| Crosstalk (Worst)        | -50dB, 3.58M            | -50dB, 3.58           |
| Color Standards          | .....                   | .....                 |
| Related Models           | .....                   | .....                 |



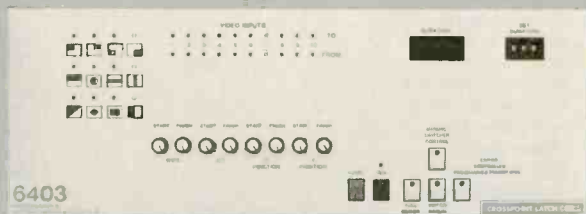
# VIDEO PRODUCTION SWITCHERS



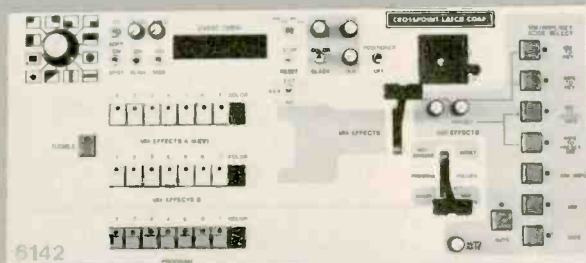
Model 6124 Twelve inputs (including colorizer/black). Two fully independent mix effects systems each with double re-entry. Master fade to black. Downstream keyer with matte and blink. RGB Chroma Keyer Plug compatible with AUTO DRIVE™ Price N.T.S.C. \$13,700. PAL \$14,700.



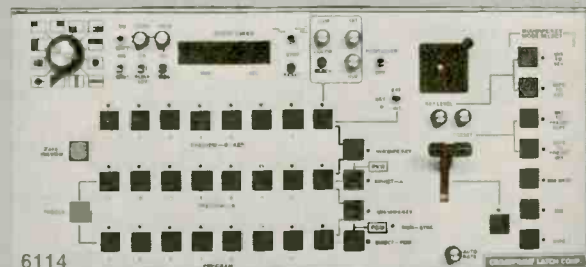
Model 6107 Two bus switcher with seven inputs (including colorizer/black). Full preview. Automatic mix wipe. Intercom amplifier. Price N.T.S.C. \$3,800. PAL \$4,800.



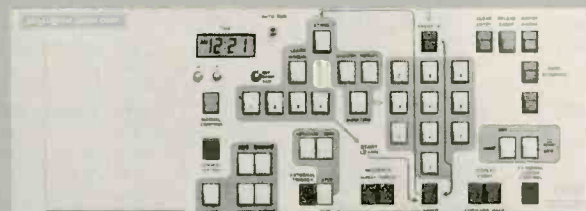
Model 6403 PROGRAMMABLE EDITOR-SWITCHER INTERFACE. Allows Crosspoint Latch switchers to interface directly with editors. The 6403 controls mix, wipe, positioner, pattern generator and A and B buses on one ME. Editor modules are available for Video Media editors. The 6403 interfaces with most simple editors without the use of the editor module. Price N.T.S.C. \$2,750.



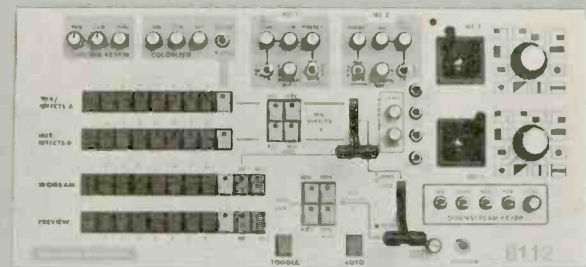
Model 6142 Three bus switcher with eight inputs including colorizer. Double re-entry. Two fader handles permits mixing from one input to a wipe between two other inputs. Price N.T.S.C. \$4,995. PAL \$5,995.



Model 6114 Eight input three bus switcher (including colorizer/black). Double re-entry. Full preview. Price N.T.S.C. \$4,450. PAL \$5,450.



Model 7200 AUTO DRIVE™ Computer controller. Plug compatible option for 6112 and 6124 switchers stores 255 events which can be grouped into any number of sequences. Each event has a maximum duration of 99 minutes: Frame accurate. Production tool which enables complex effects to be run in rapid sequence. Drastically cuts down editing time. It also interfaces with editors. Price N.T.S.C. \$12,500. PAL \$13,500.



Model 6112 Nine inputs (including colorizer/black) four buses. Two fully independent MIX EFFECTS systems, downstream keyer with preview, matte and blink. Remote control panel. Double re-entry on each ME. Price N.T.S.C. \$7,630. PAL \$8,630. Encoded Chroma Keyer \$1,050. Not available in PAL.

For information on other switchers and products write to:

**CROSSPOINT LATCH CORP.**

95 Progress Street • Union, N.J. 07083 • Tel. (201) 688-1510 • Telex 181160

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# VIDEO PRODUCTION SWITCHER

| Manufacturer             | Ross Video Ltd. | Shintron, Inc.        |                       | Sony Corporation     | Viscount Industries Ltd. |
|--------------------------|-----------------|-----------------------|-----------------------|----------------------|--------------------------|
|                          | Model/Series    | 375-375P Chromatic    | 374 Super 80          | SEG-1210             | 1127                     |
| Video Inputs             | 10 Terminating  | 12, 10 Looping        | 8, 7 Looping          | 5                    | 5 Looping                |
| Color Black              | Included        | Included              | Included              | Included             | .....                    |
| Color Backgrounds        | Included        | Included,             | Included              | Included             | .....                    |
|                          | .....           | 3 Generators          | 3 Generators          | .....                | .....                    |
| Non-Synchronous Detect   | .....           | Yes                   | Yes                   | .....                | .....                    |
| Titler Input             | .....           | Possible              | Possible              | .....                | .....                    |
| Key Source               | .....           | Internal and External | Internal and External | External             | Yes                      |
| Chroma Key               | RGB Optional    | Encoded               | Encoded               | External             | Internal and External    |
| Downstream Key           | Optional        | Yes                   | Yes                   | .....                | .....                    |
| Switching Buses          | 4               | 4                     | 6                     | Yes                  | .....                    |
| Mix/Effects Amplifiers   | Yes             | Yes                   | Yes                   | 4                    | 3                        |
| Pattern Generator        | Yes             | Yes                   | Yes                   | Semi-auto Transition | Yes                      |
| Rotary Wipe Patterns     | .....           | .....                 | .....                 | Yes, Plug-in Modules | Yes                      |
| Soft Wipe Capability     | Yes             | Yes                   | Yes                   | .....                | Yes                      |
| Spotlighting Effect      | .....           | .....                 | .....                 | Yes                  | .....                    |
| Effects Position         | Yes             | Yes                   | Yes                   | .....                | .....                    |
| Effects Modulation       | .....           | Yes                   | Yes                   | Yes                  | .....                    |
| Quad Split System        | .....           | .....                 | Yes                   | Yes                  | .....                    |
| Border Effects           | Yes             | .....                 | Yes                   | .....                | .....                    |
| Re-entry Facility        | Yes             | Yes                   | Yes                   | Yes                  | .....                    |
| Automation System        | .....           | .....                 | .....                 | Yes                  | Yes                      |
| Programmability          | .....           | .....                 | .....                 | .....                | .....                    |
| Digital Effects Port     | .....           | .....                 | .....                 | .....                | .....                    |
| Tally Interface          | Yes             | Yes                   | Yes                   | Yes                  | .....                    |
| Gen-lock to Video        | .....           | .....                 | Yes                   | .....                | Yes                      |
| Sync Drives Needed       | Yes             | Yes                   | .....                 | .....                | Yes                      |
| Program Outputs          | 2               | 2                     | 2                     | Yes                  | .....                    |
| Auxiliary Buses          | .....           | .....                 | .....                 | 3                    | 2                        |
| Differential Phase/Gain  | 1.5°/1.5%       | 0.5°/1.5%             | .5°/1.5%              | .....                | .....                    |
| K Factor                 | .....           | 1%                    | 1%                    | 2.5°/2.5%            | .5°/1%                   |
| Path Length Accuracy     | 1.5°            | 1°                    | 1°                    | .....                | .....                    |
| Video Response (± dB/Hz) | 0.15/to 5M      | 0.1/to 4.3MHz         | .1/to 4.3M            | 1°                   | 1°                       |
| Signal-to-Noise Ratio    | .....           | 55dB                  | 55dB                  | .5/to 5M             | .5/to 6M                 |
| Field Tilt Distortion    | 1%              | 1%                    | 1%                    | 52dB                 | 45dB, Hum                |
| Crosstalk (Worst)        | -53dB, 3.58MHz  | -50dB, 3.58MHz        | -50dB, 3.58, 4.43MHz  | .....                | .....                    |
| Color Standards          | NTSC            | NTSC, PAL, PAL-M      | NTSC, PAL, PAL-M      | -35dB                | .....                    |
| Related Models           | RVS10-4R        | .....                 | .....                 | NTSC                 | NTSC, PAL                |

| Manufacturer             | Viscount Industries, Ltd. | Vital Industries, Inc.   |                       |                        |
|--------------------------|---------------------------|--------------------------|-----------------------|------------------------|
|                          | Model/Series              | 250P/N                   | VIX-114-4A1           | Saturn Series          |
| Video Inputs             | 8 Terminating, 6 Looping  | 10 Looping               | To 24 Terminating     | 24                     |
| Color Black              | Included                  | Included                 | Included              | Included               |
| Color Backgrounds        | Included                  | Included                 | Included              | Included, 2 Generators |
| Non-Synchronous Detect   | Yes                       | Yes                      | Yes                   | Yes                    |
| Titler Input             | Yes                       | Yes                      | Yes                   | Yes                    |
| Key Source               | Internal and External     | Internal and External    | Internal and External | Internal and External  |
| Chroma Key               | Encoded and RGB           | RGB and Optional Encoded | RGB                   | RGB and Encoded        |
| Downstream Key           | .....                     | .....                    | Yes                   | Yes                    |
| Switching Buses          | 4 + Isolate               | 4                        | 8                     | 16                     |
| Mix/Effects Amplifiers   | Yes                       | Yes, Auto Transition     | Yes, Auto Transition  | Yes, Auto Transition   |
| Pattern Generator        | Yes                       | Yes                      | Yes                   | Yes                    |
| Rotary Wipe Patterns     | .....                     | Yes                      | Yes                   | Yes                    |
| Soft Wipe Capability     | Yes                       | Yes                      | Yes                   | Yes                    |
| Spotlighting Effect      | Yes                       | .....                    | Yes                   | .....                  |
| Effects Position         | Yes                       | Yes                      | Yes                   | Yes                    |
| Effects Modulation       | .....                     | Yes                      | Yes                   | Yes                    |
| Quad Split System        | .....                     | .....                    | Yes                   | Yes                    |
| Border Effects           | .....                     | Yes                      | Yes                   | Yes                    |
| Re-entry Facility        | Yes                       | .....                    | Yes                   | Yes                    |
| Automation System        | .....                     | RS232, SMPTE Optional    | Yes PSAS              | Yes PSAS               |
| Programmability          | .....                     | Yes                      | PSAS System           | PSAS System            |
| Digital Effects Port     | .....                     | Squeezezoom Optional     | Squeezezoom Optional  | Squeezezoom            |
| Tally Interface          | Yes                       | Yes                      | Yes                   | Yes                    |
| Gen-lock to Video        | Yes                       | .....                    | .....                 | .....                  |
| Sync Drives Needed       | .....                     | Yes                      | Yes                   | .....                  |
| Program Outputs          | 2                         | 2                        | 4                     | Yes                    |
| Auxiliary Buses          | .....                     | .....                    | .....                 | .....                  |
| Differential Phase/Gain  | 1°/1%                     | 1°/1%                    | Yes                   | Yes                    |
| K Factor                 | .....                     | .....                    | 1.5°/1.5%             | .....                  |
| Path Length Accuracy     | 1°                        | .....                    | 1.5% T                | .....                  |
| Video Response (± dB/Hz) | 0.25/to 5M                | 0.1/to 5.5M              | 1°                    | .....                  |
| Signal-to-Noise Ratio    | .....                     | .....                    | .1/to 5.5M            | .....                  |
| Field Tilt Distortion    | 54dB, Hum and Noise       | .....                    | 60dB                  | .....                  |
| Crosstalk (Worst)        | -60dB, 6MHz               | 1%                       | 1%                    | .....                  |
| Color Standards          | NTSC, PAL                 | -50dB, 3.58, 4.43MHz     | -52dB, 4.43MHz        | .....                  |
| Related Models           | .....                     | NTSC, PAL                | NTSC, PAL, PAL-M      | NTSC, PAL              |
|                          | .....                     | .....                    | VIX-114-Series        | .....                  |

# VIDEOTAPE RECORDER

¾-inch U-matic cassette videotape recorder.

Studio and portable equipment. Luminance recorded as FM with chroma down-converted typically. Dual audio channels. Video inputs and outputs are 1V P-P, 75 Ohms. NTSC Color Standards.

| Manufacturer                   | Panasonic Video Systems |                         | Recortec, Inc.            |                            |
|--------------------------------|-------------------------|-------------------------|---------------------------|----------------------------|
| Model Number                   | NV-9200A VCR            | AU-700 Editing Recorder | HBU-2860 Editing Recorder | HBU-4400 Portable Recorder |
| Video Response (± dB/Hz)       | .....                   | NV-9240/NV9600 VCRs     | 1 to 4.2M                 | 1 to 4.2M                  |
| Signal-to-Noise Ratio          | 50dB Luminance          | 46dB Color              | 46dB                      | 46dB                       |
| Horizontal Resolution          | 330 Lines Mono          | 330 Lines Mono          | .....                     | .....                      |
| Video AGC System               | Yes                     | Yes                     | Yes                       | Yes                        |
| Video Metering                 | Yes                     | Yes                     | Yes                       | .....                      |
| Advanced Sync Input            | Yes                     | Yes                     | Yes                       | .....                      |
| Composite Sync Input           | Yes                     | Yes                     | Yes                       | .....                      |
| Subcarrier Input               | Yes                     | Yes                     | Yes                       | .....                      |
| Dubbing Input/Output           | .....                   | Yes                     | .....                     | .....                      |
| RF Signal Output               | Yes                     | Yes                     | Yes                       | .....                      |
| Tracking Metering              | Yes                     | Yes                     | Yes                       | .....                      |
| Audio Line Input (Ohms)        | 100K Unbal              | High Z Bal              | 100K Unbal (50K Bal)      | 220K Unbal                 |
| Audio Line Level Input         | -20dB                   | +4dB Max                | -20dB                     | -20dB                      |
| Line Output Load (Ohms)        | 600 Unbal               | 600 Bal                 | 100K Unbal                | 600 Unbal                  |
| Line Output Level Max          | -6dB Nominal            | +4dB                    | -5dB                      | -10dB                      |
| AF Response (± dB/Hz)          | -/50-15K                | 50-15K                  | 3/50-20K                  | 3/50-17K                   |
| Signal-to-Noise Ratio          | 45dB                    | 48dB                    | 56dB                      | 56dB                       |
| Harmonic Distortion            | 40dB Crosstalk          | 3% Max                  | 40dB Crosstalk            | .....                      |
| Audio Metering                 | Yes                     | Yes                     | Yes                       | .....                      |
| Time Code Track                | .....                   | Yes                     | .....                     | .....                      |
| Normal Tape Speed              | 3.75ips                 | 3.75ips                 | 11.25ips                  | 11.25ips                   |
| Search Tape Speeds             | 1/5, 2x with controller | 1/20 to 5x with AU-A70  | .....                     | .....                      |
| Wow/Flutter                    | .....                   | .1%                     | .08% rms                  | .08%                       |
| Recording Time Maximum         | 60 min.                 | 60 min. NV.P26          | 30 min. (90-minute tape)  | 10 min. (30-minute tape)   |
| Color Playback Without Adapter | Yes                     | Yes                     | Yes                       | .....                      |
| Integral Editor System         | .....                   | Yes                     | Yes                       | .....                      |
| Assemble/Insert Editing        | .....                   | Yes                     | Yes                       | .....                      |
| Specific Edit Controller       | Panasonic NV-A950       | AU-A70                  | Panasonic NV-A960         | .....                      |
| Interface to Other Editors     | AU-A70                  | NV-A960                 | AU-A70                    | .....                      |
| ac Powering                    | 115/220Vac, 130W        | Yes                     | 115/220Vac, 130W          | Yes                        |
| External Battery               | .....                   | .....                   | .....                     | Yes. 12Vdc, 30W            |
| Internal Battery               | .....                   | .....                   | .....                     | Yes                        |
| Useful Battery Life            | .....                   | .....                   | .....                     | .....                      |
| Other Units for System         | Complete                | .....                   | Complete                  | .....                      |
| Weight (Portable Models)       | .75 lb                  | 80 lb                   | 77 lb                     | 25 lb                      |



## Beaveronics, Inc.

Write or phone for details.

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Port Washington, New York 11050  
Tel: (516) 883-4414

### STUDIO PRODUCTION VIDEO SWITCHING SYSTEMS

(Also available in PAL and PAL-M versions)

**FOR MODERATE SIZE FACILITIES**  
**MODEL B1-154**



15-input, 4-bus mix/eff/key amp with downstream mix/key amp. Many optional features including DSK & quad-split, etc.

**FOR SOPHISTICATED FACILITIES**  
**MODEL B1-156**

**\$21,795.00**



15-input, 6-bus with two full mix/eff/key systems and dir. pgm and pre busses; many options available, DSK, quad, etc.

**FOR REMOTE & SMALL PRODUCTION FACILITIES**

**MODEL J & D 712**

**\$7,400.00**



12-input, 4-output mix-effects amp with downstream mixer, includes downstream preset & program busses with cut bar, RGB chroma key

**ENG Switcher**  
**Model J & D 705**

**\$7,990.00**



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# VIDEOTAPE RECORDER

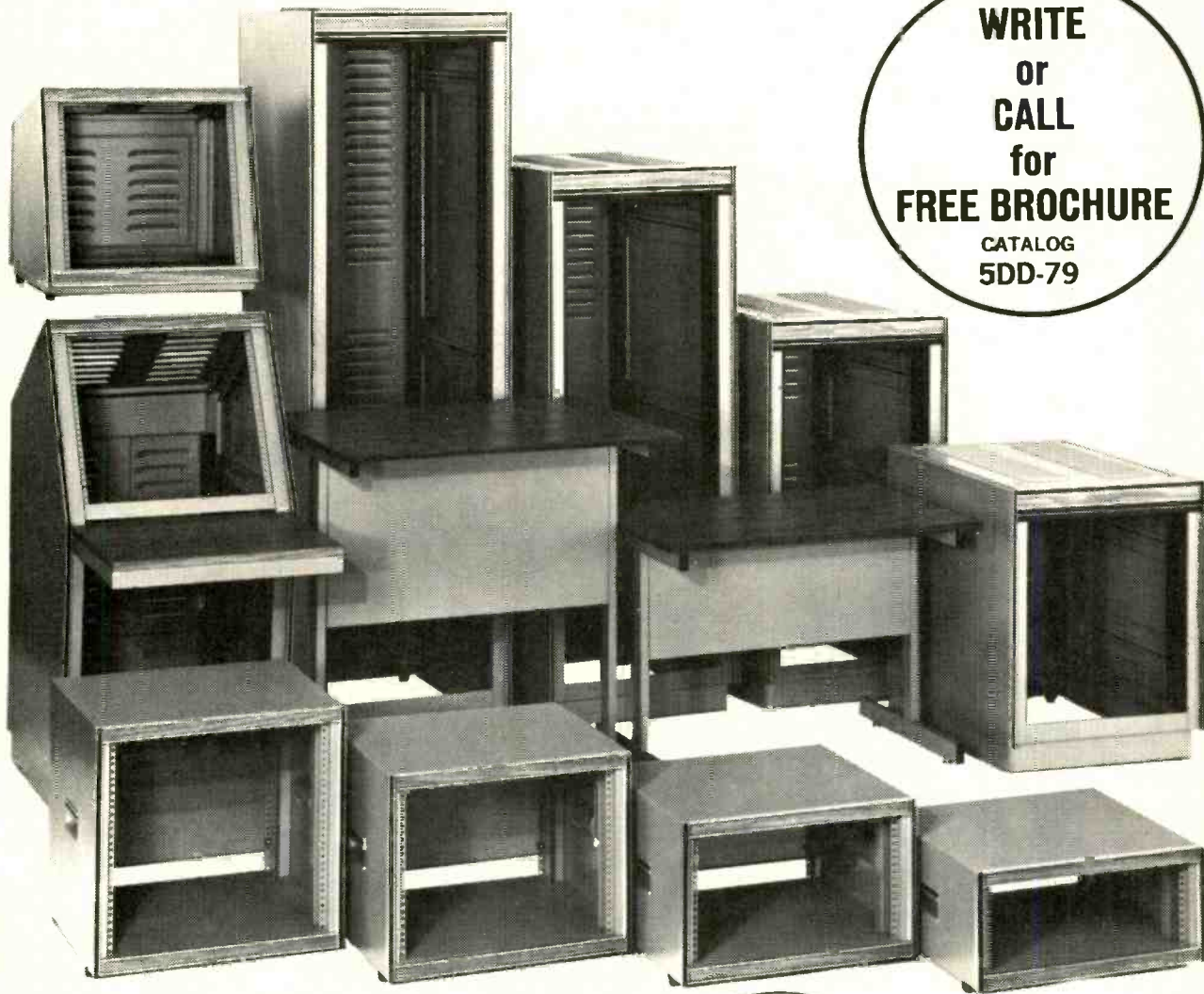
| Manufacturer                   | Sony Broadcast |                           |                              |                             | TEAC<br>V-1000AB-R Record<br>Only, Airborne |
|--------------------------------|----------------|---------------------------|------------------------------|-----------------------------|---|
|                                | Model Number   | BUV-100<br>Portable       | BUV-200A<br>Editing Recorder | BUV-800<br>Editing Recorder |   |
| Video Response ( $\pm$ dB/Hz)  | .....          | .....                     | .....                        | .....                       | -5/10 to 3.58M                              |
| Signal-to-Noise Ratio          | .....          | 46dB Color                | 46dB Color                   | 46dB                        | 43dB  |
| Horizontal Resolution          | .....          | 330TVL Mono               | 330TVL Mono                  | 260TVL Color                | 340 Lines, NTSC                             |
| Video AGC System               | .....          | Yes                       | Yes                          | Yes                         | Yes   |
| Video Metering                 | .....          | Yes                       | Yes                          | Yes                         | .....                                       |
| Advanced Sync Input            | .....          | Yes                       | Yes                          | .....                       | .....                                       |
| Composite Sync Input           | .....          | Yes                       | Yes                          | .....                       | .....                                       |
| Subcarrier Input               | .....          | Yes                       | Yes                          | .....                       | .....                                       |
| Dubbing Input/Output           | .....          | Yes                       | Yes                          | .....                       | .....                                       |
| RF Signal Output               | .....          | Yes                       | Yes                          | .....                       | .....                                       |
| Tracking Metering              | .....          | Yes                       | Yes                          | .....                       | .....                                       |
| Audio Line Input (Ohms)        | .....          | 600, 10K Bal              | 10K Bal                      | 3K Bal (Mic)                | 5K, Adjustable                              |
| Audio Line Level Input         | .....          | -60dB                     | +4dB                         | -60dB                       | .1 to 10V with AGC                          |
| Line Output Load (Ohms)        | .....          | 600 Bal                   | 600 Bal                      | .....                       | 100K  |
| Line Output Level Max          | .....          | +4dBm Nominal             | +4dBm Nominal                | .....                       | -6dBs, E-E Mode Only                        |
| AF Response ( $\pm$ dB/Hz)     | .....          | 50-15K                    | 50-15K                       | 50-15K                      | 3/80-12.5K                                  |
| Signal-to-Noise Ratio          | .....          | 48dB                      | 48dB                         | 48dB                        | 40dB  |
| Harmonic Distortion            | .....          | 3%                        | 2.5%, 1kHz                   | 2%                          | 2.5%  |
| Audio Metering                 | .....          | Yes                       | Yes                          | Yes                         | .....                                       |
| Time Code Track                | .....          | Yes                       | Yes                          | Yes (CG-100)                | Event Marker on<br>Audio 1                  |
| Normal Tape Speed              | .....          | 3.75ips                   | 3.75ips                      | 3.75ips                     | 3.75ips                                     |
| Search Tape Speeds             | .....          | With Edit Controller      | 1/30 to 10x                  | .....                       | .....                                       |
| Wow/Flutter                    | .....          | .02%                      | .....                        | .2%                         | .....                                       |
| Recording Time Maximum         | .....          | 20 min. (KCS-20)          | 1 hr (KCA-60)                | 1 hr (KCA-60)               | 20 min. (KCS-20)                            |
| Color Playback Without Adapter | .....          | Yes                       | Yes                          | .....                       | 30 min.                                     |
| Integral Editor System         | .....          | Yes                       | Yes                          | .....                       | .....                                       |
| Assemble/Insert Editing        | .....          | Yes                       | Yes                          | .....                       | .....                                       |
| Specific Edit Controller       | .....          | Various                   | Various                      | .....                       | .....                                       |
| Interface to Other Editors     | .....          | .....                     | .....                        | .....                       | .....                                       |
| ac Powering                    | .....          | With AC5000 and<br>CLP500 | Yes                          | Yes                         | AC500 Adapter                               |
| External Battery               | .....          | 12Vdc                     | .....                        | .....                       | .....                                       |
| Internal Battery               | .....          | BP20A                     | .....                        | .....                       | 28Vdc Unregulated                           |
| Useful Battery Life            | .....          | 40 min.                   | .....                        | BP90, 3.5Ah                 | .....                                       |
| Other Units for System         | .....          | CLP-500, AC5000           | .....                        | .....                       | .....                                       |
| Weight (Portable Models)       | .....          | 27 lb                     | 102 lb                       | 81.6 lb                     | 17 lb                                       |
|                                |                |                           |                              |                             | 23 lb                                       |

| Manufacturer                   | Teac Video (Teac Corp. of America) |                            | US JVC Corporation         |                      |                             |                      |
|--------------------------------|------------------------------------|----------------------------|----------------------------|----------------------|-----------------------------|----------------------|
|                                | Model Number                       | V-1000AB-F<br>Airborne VCR | V-1000AB-N<br>Airborne VCR | CR6600U<br>Recorder  | CR8200U<br>Editing Recorder | CR5500U<br>Player    |
| Video Response ( $\pm$ dB/Hz)  | .....                              | -1/10-5M                   | -5/10 to 3.58M             | .....                | .....                       | .....                |
| Signal-to-Noise Ratio          | .....                              | 40dB                       | 43dB                       | 48dB                 | 48dB                        | 48dB                 |
| Horizontal Resolution          | .....                              | 420 Lines, NTSC            | 340 Lines, NTSC            | 330TVL Color         | 330TVL Color                | 330TVL Color         |
| Video AGC System               | .....                              | Yes                        | Yes                        | Yes                  | Yes                         | Yes                  |
| Video Metering                 | .....                              | .....                      | Yes                        | .....                | .....                       | .....                |
| Advanced Sync Input            | .....                              | .....                      | .....                      | Yes                  | Yes                         | Yes                  |
| Composite Sync Input           | .....                              | .....                      | .....                      | Yes                  | Yes                         | Yes                  |
| Subcarrier Input               | .....                              | .....                      | .....                      | Yes                  | Yes                         | Yes                  |
| Dubbing Input/Output           | .....                              | .....                      | .....                      | Yes                  | Yes                         | Out                  |
| RF Signal Output               | .....                              | .....                      | .....                      | Yes                  | Yes                         | Yes                  |
| Tracking Metering              | .....                              | .....                      | .....                      | .....                | .....                       | .....                |
| Audio Line Input (Ohms)        | .....                              | 600 Bal                    | To 10K Adjustable          | 10K Unbal            | 10K Unbal                   | .....                |
| Audio Line Level Input         | .....                              | 0dBm                       | .5V P-P                    | -20 to -6dBs         | -20 to -6dBs                | .....                |
| Line Output Load (Ohms)        | .....                              | 600 Bal                    | 100K                       | 600 Unbal            | 600 Unbal                   | 600 Unbal            |
| Line Output Level Max          | .....                              | 0dBm                       | -6dBs, 1.1V P-P            | -6dBs Nominal        | -6dBs Nominal               | -6dBs Nominal        |
| AF Response ( $\pm$ dB/Hz)     | .....                              | 3/80-10K                   | 3/80-10K                   | 50-15K               | 50-15K                      | 50-15K               |
| Signal-to-Noise Ratio          | .....                              | 40dB                       | 40dB                       | 48dB                 | 48dB                        | 48dB                 |
| Harmonic Distortion            | .....                              | 3%                         | 2.5%                       | .....                | .....                       | .....                |
| Audio Metering                 | .....                              | .....                      | .....                      | Yes                  | Yes                         | .....                |
| Time Code Track                | .....                              | On Audio 1                 | Event Marker on<br>Audio 1 | .....                | .....                       | .....                |
| Normal Tape Speed              | .....                              | 3.75ips, 1.5ips            | 3.75ips                    | 3.75ips              | 3.75ips                     | 3.75ips              |
| Search Tape Speeds             | .....                              | To 7x Either Way           | .....                      | With Edit Controller | With Edit Controller        | With Edit Controller |
| Wow/Flutter                    | .....                              | .....                      | .....                      | .15%                 | .15%                        | .15%                 |
| Recording Time Maximum         | .....                              | 30 min.                    | 30 min.                    | 60 min. (KCA-60)     | 60 min. (KCA-60)            | .....                |
| Color Playback Without Adapter | .....                              | Yes                        | .....                      | Yes                  | Yes                         | Yes                  |
| Integral Editor System         | .....                              | .....                      | .....                      | .....                | Yes                         | .....                |
| Assemble/Insert Editing        | .....                              | .....                      | .....                      | .....                | Yes                         | .....                |
| Specific Edit Controller       | .....                              | .....                      | .....                      | RM-82U, RM-88U       | RM-82U, RM-88U              | RM-82U, RM-88U       |
| Interface to Other Editors     | .....                              | .....                      | .....                      | .....                | .....                       | .....                |
| ac Powering                    | .....                              | 115Vac, 400Hz              | .....                      | Yes                  | Yes                         | Yes                  |
| External Battery               | .....                              | 28Vdc Unregulated          | 28Vdc Unregulated          | .....                | .....                       | .....                |
| Internal Battery               | .....                              | .....                      | .....                      | .....                | .....                       | .....                |
| Useful Battery Life            | .....                              | .....                      | .....                      | .....                | .....                       | .....                |
| Other Units for System         | .....                              | Complete                   | Color Adapter              | .....                | .....                       | .....                |
| Weight (Portable Models)       | .....                              | 28.6 lb                    | 30 lb                      | 67 lb                | 67 lb                       | 65 lb                |

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November 30, 1981 *Broadcast Engineering's Spec Book* 99

# VIDEOTAPE RECORDER

1-inch Type "B" and "C" format as noted.

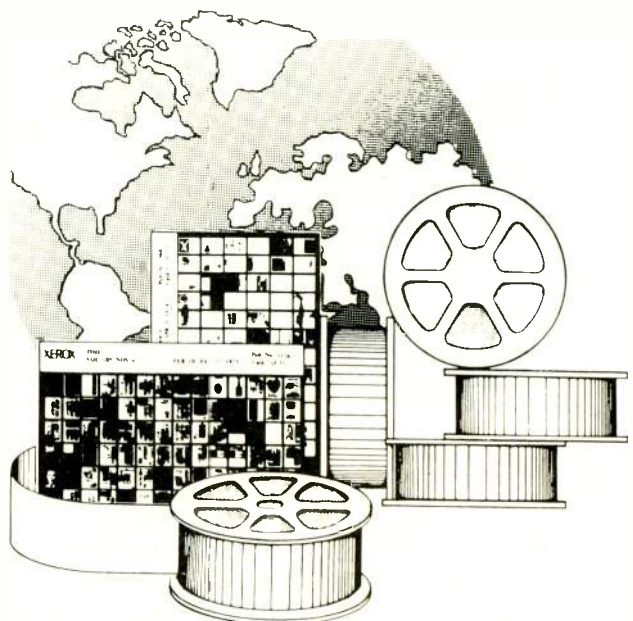
Portable and studio equipment, with three audio channels, the third being used for longitudinal time code (not speced). Video input signals are 1V P-P, 75 Ohm, as are video outputs. Audio inputs for line use are +8dBm, 600 Ohm balanced typical.

| Manufacturer                      | Ampex Corporation       |                          |                          | Bosch-Fernseh    |                              |
|-----------------------------------|-------------------------|--------------------------|--------------------------|------------------|------------------------------|
|                                   | VPR-2B Editing Recorder | VPR-20 Portable Recorder | BCN 5 Portable Cassette* | BCN 20 Portable* | BCN 41/51 Editing*           |
| Video Response ( $\pm$ dB/Hz)     | 0.5/to 4.2M             | .5/to 4.2M               | .5/to 4.5M               | .5/to 4.5M       | .5/to 4.5M                   |
| Signal-to-Noise Ratio             | 46dB                    | 46dB                     | 47dB                     | 47dB             | 47dB                         |
| Differential Phase/Gain ( $\pm$ ) | 4°/4%                   | 4°/4%                    | 4°/4%                    | 4°/4%            | 4°/4%                        |
| K Factors                         | 1% 2T                   | 1% 2T                    | 1.5% 2T                  | 1.5% 2T          | 1.5% 2T                      |
| Chroma/Luminance Delay            | 20nsec                  | 20nsec                   | .....                    | .....            | .....                        |
| Moire Rating                      | -40dB, 75% Bars         | -40dB, 75% Bars          | -37dB, 75% Bars          | -37dB, 75% Bars  | -37dB, 75% Bars              |
| Input Video Reference             | Yes or Sync             | Yes or Sync              | .....                    | .....            | Yes                          |
| Advanced Sync Input               | Yes                     | Yes                      | .....                    | .....            | .....                        |
| D.O.C. Output Signal              | .....                   | .....                    | .....                    | .....            | Included in 51 (BCN 51 Only) |
| System Time Base Corrector        | TBC-28                  | .....                    | .....                    | .....            | 1, -3/40-14K                 |
| AF Response ( $\pm$ dB/Hz)        | 2/50-15K                | 2/50-15K                 | 1, -3/40-14K             | 1, -3/40-14K     | 1, -3/40-14K                 |
| Signal-to-Noise Ratio             | 56dB Channel 1 and 2    | 56dB Channel 1 and 2     | 52dB                     | 56dB             | 56dB                         |
| Harmonic Distortion               | 3%, +16dBm Output       | 3%, +16dBm Output        | 3%                       | 3%               | 3%                           |
| Crosstalk (Worst Case)            | -50dB, 1kHz, +8dBm      | -50dB, 1kHz, +8dBm       | 60dB                     | 60dB             | 60dB                         |
| Audio Output Load (Ohms)          | 600                     | 600                      | 600 Unbal                | 600 Unbal        | 600 Unbal                    |
| Audio Output Level Max            | +16dBm                  | +16dBm                   | +6dBm Nominal            | +6dBm Nominal    | +6dBm Nominal                |
| Integral Editing System           | Yes                     | .....                    | Yes                      | Yes              | Yes                          |
| Assemble/Insert Editing           | Yes                     | .....                    | Yes                      | Yes              | Yes                          |
| Edit Controller Interface         | Yes                     | .....                    | Yes                      | Yes              | Yes                          |
| SMPTE Time Code Generator         | Available               | Optional                 | Optional                 | Optional         | Optional                     |
| VITC Time Code Generator          | .....                   | .....                    | .....                    | .....            | .....                        |
| Still Frame/Slow Motion           | Optional                | .....                    | .....                    | .....            | Optional                     |
| Maximum Reel Size                 | 10.5 in                 | 9 in                     | Cassette                 | 9 in             | 10.5 in                      |
| Record Time for Max Reel          | 92 min.                 | 60 min.                  | 30 min.                  | 65 min.          | 98 min.                      |
| Standard Packaging                | Table-top               | Portable Case            | Portable Case            | Portable Case    | Cabinet                      |
| Weight (Portable Model)           | .....                   | 53 lb                    | 27 lb                    | 45 lb            | .....                        |
| Color Standards                   | NTSC, PAL, SECAM        | NTSC, PAL, SECAM         | NTSC, PAL, SECAM         | NTSC, PAL, SECAM | NTSC, PAL, SECAM             |

\*Only Bosch Fernseh uses SMPTE "B" format. It is not compatible with Type C.

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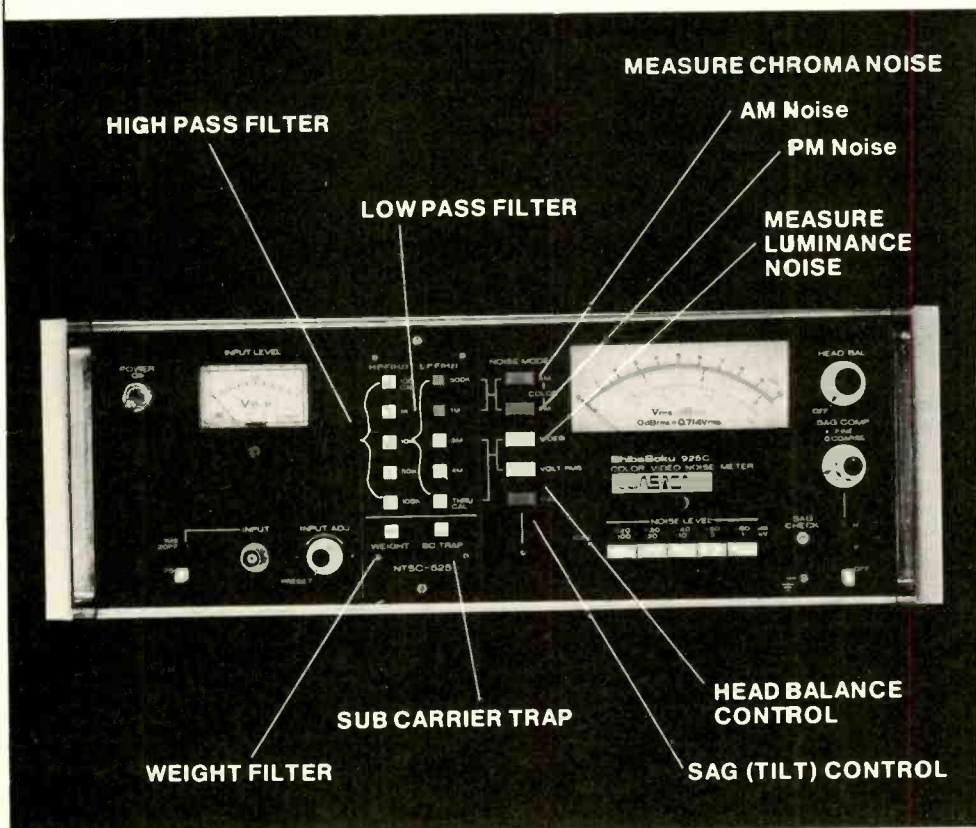
18 Bedford Row  
London, WC1R 4EJ  
England

# VIDEOTAPE RECORDER

| Manufacturer                      | Bosch-Fernseh<br>BCN 100<br>Multicassette* | Hitachi Denshi Ltd. | HR-100<br>Portable | HR-200 Editing    | HR-300<br>Long Play | Marconi Broadcast<br>B4600-MR2<br>Recorder |
|-----------------------------------|--|---------------------|--------------------|-------------------|---------------------|--|
| Video Response ( $\pm$ dB/Hz)     | 0.5/10 to 4.5M                             |                     | .5/10 to 4.2M      | .5/10 to 4.2M     | .5/10 to 4.2M       | Flat/10 to 4.2M                            |
| Signal-to-Noise Ratio             | 47dB                                       |                     | 48dB               | 48dB              | 48dB                | 46dB                                       |
| Differential Phase/Gain ( $\pm$ ) | 4 $\frac{1}{4}$ %                          |                     | 4 $\frac{1}{4}$ %  | 3 $\frac{1}{4}$ % | 3 $\frac{1}{4}$ %   | 4 $\frac{1}{4}$ %                          |
| K Factors                         | 1.5% 2T                                    |                     | 1% 2T              | 1% 2T             | 1% 2T               | 1% 2T                                      |
| Chroma/Luminance Delay            |  |                     |                    |                   | 20nsec              | 20nsec                                     |
| Moire Rating                      | -37dB, 75% Bars                            |                     | -40dB, 75% Bars    | -40dB, 75% Bars   | -40dB               | -40dB                                      |
| Input Video Reference             | Yes  |                     |                    | Yes               | Yes                 | Yes  |
| Advanced Sync Input               |  |                     |                    | Yes               | Yes                 |  |
| D.O.C. Output Signal              | Included                                   |                     |                    | Yes               | Yes                 |  |
| System Time Base Corrector        | Yes  |                     | TC200              | TC200             | TC200               | MTBC2                                      |
| AF Response ( $\pm$ dB/Hz)        | 1, -3/40-14K                               |                     | 2/50-15K           | 2/50-15K          | 1.5, -3/50-15K      | 2/50-15K                                   |
| Signal-to-Noise Ratio             | 53dB                                       |                     | 56dB               | 56dB              | 56dB                | 56dB                                       |
| Harmonic Distortion               | 3%   |                     | 1%                 | 1%                | 1%                  | 1% +8dBm                                   |
| Crosstalk (Worst Case)            | -60dB                                      |                     | -50dB, 1kHz        | -56dB, 1kHz       | -50dB, 1kHz         | -50dB, +8dBm                               |
| Audio Output Load ( $\Omega$ ms)  | To 5K                                      |                     | 600 Unbal          | 600 Bal           | 600 Bal             | 600 Bal                                    |
| Audio Output Level Max            | +24dBm                                     |                     | -20dBm Nominal     | +8dBm Nominal     | +8dBm Nominal       | +25dBm                                     |
| Integral Editing System           | Yes  |                     | Yes                | Yes               | Yes                 | Back-Space Only                            |
| Assemble/Insert Editing           | Yes  |                     | Assemble           | Yes               | Yes                 | Assemble                                   |
| Edit Controller Interface         |  |                     |                    | Yes               |                     |  |
| SMPTE Time Code Generator         | Yes  |                     | Yes                | Option            |                     |  |
| VITC Time Code Generator          |  |                     |                    |                   |                     |  |
| Still Frame/Slow Motion           | Yes  |                     |                    | Option            | Possible            | Yes  |
| Maximum Reel Size                 | Cassette                                   |                     | 9 in               | 10.5 in           | 14 in               | 10.5 in                                    |
| Record Time for Max Reel          | 30 min.                                    |                     | 64 min.            | 96 min.           | 180 min.            | 92 min.                                    |
| Standard Packaging                | Rack-Mounted                               |                     | Portable Case      | Cabinet           | Console             | Table-top Cabinet                          |
| Weight (Portable Model)           |  |                     | 42 lb              |                   |                     |  |
| Color Standards                   | NTSC, PAL, SECAM                           |                     | NTSC, PAL          | NTSC, PAL         | NTSC                | NTSC, PAL, SECAM                           |

\*Only Bosch Fernseh uses SMPTE "B" format. It is not compatible with Type C.

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# VIDEOTAPE RECORDER

| Manufacturer                      | Marconi Broadcast |          | — Philips Broadcast Equipment Company |                  | RCA Broadcast Systems |                  |
|-----------------------------------|-------------------|----------|---------------------------------------|------------------|-----------------------|------------------|
|                                   | B4600-MR20        | Portable | PVR2 Editing Recorder                 | PVR20 Portable   | TR-800 System         | TH-50 Portable   |
| Video Response ( $\pm$ dB/Hz)     | Flat/to 4.2M      |          | Flat/to 4.2M                          | Flat/to 4.2M     | Flat/to 4.2M          | .5/to 4.2M       |
| Signal-to-Noise Ratio             | 46dB              |          | 46dB                                  | 46dB             | 48dB                  | 47dB             |
| Differential Phase/Gain ( $\pm$ ) | 4°/4%             |          | 4°/4%                                 | 4°/4%            | 3°/3%                 | 4°/4%            |
| K Factors                         | 1% 2T             |          | 1% 2T                                 | 1% 2T            | 1% 2T                 | 1% 2T            |
| Chroma/Luminance Delay            | 20nsec            |          | 20nsec                                | 20nsec           | 20nsec                | .....            |
| Moire Rating                      | - 40dB            |          | - 40dB, 75% Bars                      | - 40dB, 75% Bars | - 43dB                | - 40dB, 75% Bars |
| Input Video Reference             | Yes               |          | Sync or Video                         | .....            | Yes                   | .....            |
| Advanced Sync Input               | .....             |          | .....                                 | .....            | .....                 | .....            |
| D.O.C. Output Signal              | .....             |          | .....                                 | .....            | .....                 | .....            |
| System Time Base Corrector        | .....             |          | PVC2                                  | .....            | TBC8000               | .....            |
| AF Response ( $\pm$ dB/Hz)        | 2/50-15K          |          | 2/50-15K                              | 2/50-15K         | 2/40-16K              | 1.5, - 3/50-15K  |
| Signal-to-Noise Ratio             | 56dB              |          | 56dB                                  | 56dB             | 57dB                  | 56dB             |
| Harmonic Distortion               | 1%, + 8dBm        |          | 3%, + 16dBm                           | 3%, + 16dBm      | 1% Max                | 1%, 1kHz         |
| Crosstalk (Worst Case)            | - 50dB, + 8dBm    |          | - 50dB Max                            | - 50dB Max       | - 50dB                | - 50dB           |
| Audio Output Load (Ohms)          | .....             |          | 600 Bal                               | .....            | 150, 600 Bal          | .....            |
| Audio Output Level Max            | .....             |          | + 25dBm                               | .....            | + 24dBm, 600 Ohm      | .....            |
| Integral Editing System           | Back-Space Only   |          | Yes                                   | Back-Space Only  | Yes                   | Back-Space Only  |
| Assemble/Insert Editing           | Assemble          |          | Yes                                   | Assemble         | Yes                   | Assemble         |
| Edit Controller Interface         | .....             |          | Yes                                   | .....            | AE800                 | .....            |
| SMPTE Time Code Generator         | .....             |          | .....                                 | .....            | Yes                   | Optional         |
| VITC Time Code Generator          | .....             |          | .....                                 | .....            | Yes                   | Optional         |
| Still Frame/Slow Motion           | .....             |          | .....                                 | .....            | Yes                   | .....            |
| Maximum Reel Size                 | 9 in              |          | 10.5 in                               | 9 in             | 11.75 in              | 9 in             |
| Record Time for Max Reel          | 60 min.           |          | 90 min.                               | 60 min.          | 120 min.              | 64 min.          |
| Standard Packaging                | Portable Case     |          | Table-top Cabinet                     | Portable Case    | Studio Console        | Portable Case    |
| Weight (Portable Model)           | 45 lb             |          | .....                                 | 45 lb            | .....                 | 43 lb            |
| Color Standards                   | NTSC, PAL, SECAM  |          | NTSC, PAL, SECAM                      | NTSC, PAL, SECAM | NTSC                  | NTSC             |

| Manufacturer                      | RCA Broadcast Systems   |                          | Sony Broadcast    |                   | 3M Company (NEC)  |
|-----------------------------------|-------------------------|--------------------------|-------------------|-------------------|-------------------|
|                                   | TH-100 Editing Recorder | TH-200A Editing Recorder | BVH-500A Portable | BVH-1100A Studio  | TT-7000           |
| Video Response ( $\pm$ dB/Hz)     | 0.5/to 4.2M             | .5/to 4.2M               | .5/to 4.2M        | .5/to 4.2M        | Flat/to 4.2M      |
| Signal-to-Noise Ratio             | 48dB                    | 48dB                     | 48dB              | 48dB              | 48dB              |
| Differential Phase/Gain ( $\pm$ ) | 4°/4%                   | 4°/4%                    | 4°/4%             | 4°/4%             | 4°/4%             |
| K Factors                         | 1% 2T                   | 1% 2T                    | 1% 2T             | 1% 2T             | 1% 2T             |
| Chroma/Luminance Delay            | 40nsec                  | 25nsec                   | .....             | 25nsec            | 20nsec            |
| Moire Rating                      | - 40dB, 75% Bars        | - 40dB, 75% Bars         | - 40dB, 75% Bars  | - 40dB, 75% Bars  | - 40%dB, 75% Bars |
| Input Video Reference             | Sync                    | Video or Sync            | .....             | Video or Sync     | Video or Sync     |
| Advanced Sync Input               | Yes                     | Yes                      | .....             | .....             | .....             |
| D.O.C. Output Signal              | Yes                     | Yes                      | .....             | Yes               | .....             |
| System Time Base Corrector        | TBC-100                 | TBC-200                  | .....             | BVT-2000          | NTC-10            |
| AF Response ( $\pm$ dB/Hz)        | 1.5, - 3/50-15K         | 1.5, - 3/50-15K          | 50-15K            | 50-15K            | 2/50-15K          |
| Signal-to-Noise Ratio             | 56dB                    | 56dB                     | 56dB              | 56dB              | 56dB              |
| Harmonic Distortion               | 1%, 1kHz                | 1%, 1kHz                 | 1%, + 8dBm        | 1%, + 8dBm        | 1%                |
| Crosstalk (Worst Case)            | - 50dB                  | - 60dB                   | - 60dB, 1kHz      | .....             | - 50dB            |
| Audio Output Load (Ohms)          | 600 Bal                 | 600 Bal                  | .....             | 600 Bal           | 600 Bal           |
| Audio Output Level Max            | + 31dBm                 | + 31dBm                  | .....             | + 8dBm Nominal    | + 8dBm Nominal    |
| Integral Editing System           | Yes                     | Yes                      | Back-Space Only   | Yes               | Yes               |
| Assemble/Insert Editing           | Yes                     | Yes                      | .....             | Yes               | Yes               |
| Edit Controller Interface         | AE-600                  | AE-600                   | .....             | Yes BVE5000       | Yes               |
| SMPTE Time Code Generator         | Optional                | Optional                 | Yes               | Yes               | Optional          |
| VITC Time Code Generator          | Optional                | Optional                 | .....             | BVG-1000          | .....             |
| Still Frame/Slow Motion           | Optional                | Optional                 | .....             | Optional          | Optional          |
| Maximum Reel Size                 | 10.5 in                 | 10.5 in                  | 9 in              | 10.5 in           | 10.5 in           |
| Record Time for Max Reel          | 96 min.                 | 96 min.                  | 64 min.           | 96 min.           | 96 min.           |
| Standard Packaging                | Table-top Cabinet       | Table-top Cabinet        | Portable Case     | Table-top Cabinet | Table-top Cabinet |
| Weight (Portable Model)           | .....                   | .....                    | 43 lb             | .....             | .....             |
| Color Standards                   | NTSC                    | NTSC                     | NTSC              | NTSC              | NTSC              |



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# ENG MICROWAVE EQUIPMENT

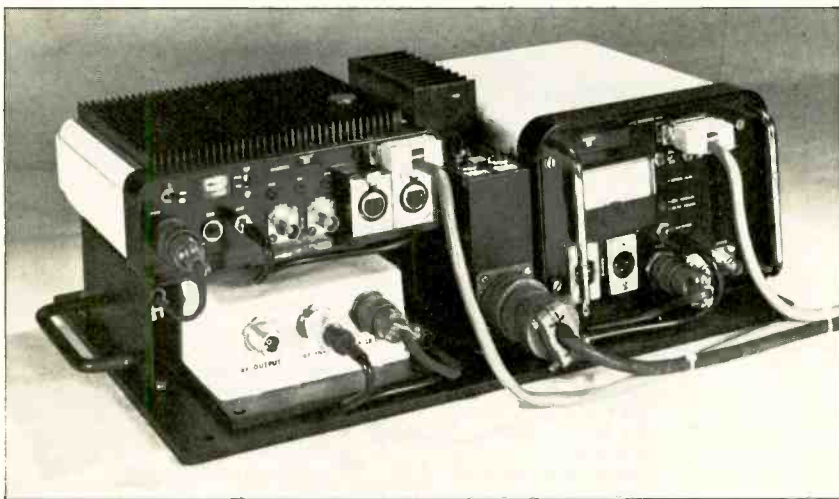
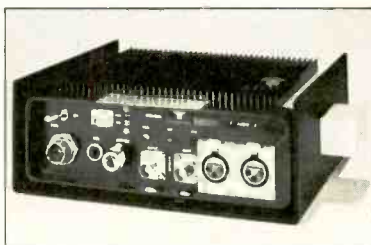
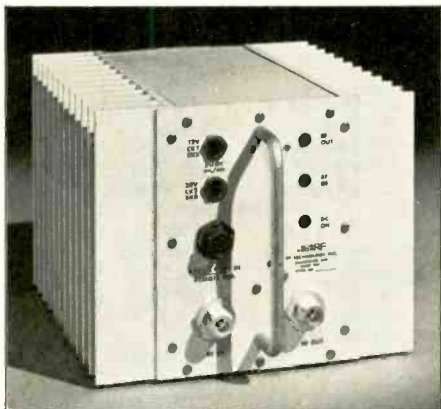
Operation in 2 to 13GHz spectrum, specifications limited to 2, 7 or 13GHz use. Transmitter units are portable or mobile. Receivers are typically rack-mounted equipment. Video signals to transmitters and from receivers are 1V P-P, 75 Ohm. Receiver units provide audio output signals approximately +8dBm, 600 Ohm balanced. Fm modulation is used.

| Manufacturer                      | Harris Corporation (Farinon Video) |                        |                 | Microwave Associates Communications |
|-----------------------------------|------------------------------------|------------------------|-----------------|-------------------------------------|
| Transmitter Number                | FV2/2.5G Global IX                 | FV2/2.5MP Mini-Link    | FV7MP Mini-Link | MA-2MX Mini-Mac                     |
| Frequency Range                   | 1.9-2.7GHz                         | 1.7-2.11* 2.45-2.69GHz | 6.875-7.125GHz  | 1.99-2.11GHz                        |
| Frequency Agile                   | 55 Channels Synthesized            | 12 Channels in 1 Band  | 12 Channels     | 21 Channels Synthesized             |
| Crystal Control                   | .....                              | Yes                    | Yes             | .....                               |
| Aural Subcarriers                 | 2                                  | 2                      | 2               | 2                                   |
| IF Input Interface                | Yes                                | Yes                    | Yes             | .....                               |
| Audio Inputs                      | 2 Mic or Line                      | 2 Line                 | 2 Line          | 2 Mic or Line                       |
| RF Output Power                   | 3W                                 | 1W                     | 250mW, 1W       | 12W Nominal                         |
| Power Requirement                 | 115/220Vac                         | 115/230Vac             | 115/230Vac      | .....                               |
| Dc Power                          | 10.5 to 16Vdc                      | -24Vdc                 | -24Vdc          | 24 to 32Vdc, 2.6A                   |
| Dimensions (Inches)               | .....                              | 14.75x7.25x8.5         | 14.75x7.25x8.5  | 4.75x2.5x5.75                       |
| Weight                            | 15 lb                              | 14 lb                  | 14 lb           | 3.53 lb                             |
| Receiver Number                   | FV2CR Central Receiver             | FV2/2.5MP              | FV7/8MP         | MA-2GU Central Receiver             |
| Frequency Range                   | 1.99-2.11GHz                       | 1.7-2.11* 2.45-2.69GHz | 6.875-8.5GHz    | 1.99-2.11GHz                        |
| Frequency Agile                   | 21 Channels Synthesized            | 12 Channels in 1 Band  | 12 Channels     | 21 Channels Synthesized             |
| IF Output Interface               | Yes                                | Yes                    | Yes             | .....                               |
| System Noise Figure               | 3dB                                | .....                  | 6dB             | 3.5dB                               |
| Video Response ( $\pm$ dB/Hz)     | 0.6/to 4.2M                        | .4/to 4.2M             | .4/to 4.2M      | .5/10K-4M                           |
| Signal-to-Noise Ratio             | 70dB                               | 70dB                   | 70dB            | 70dB                                |
| Differential Phase/Gain ( $\pm$ ) | 3°/5%                              | 5°/1%                  | 5°/1%           | 3°/5%                               |
| K Factors                         | 7IRE T-Bar                         | 4IRE T-Bar             | 4IRE T-Bar      | 7IRE T-Bar                          |
| Field Time Distortion             | 2IRE                               | 2IRE                   | 2IRE            | 3IRE                                |
| Audio Response ( $\pm$ dB/Hz)     | 1/40-15K                           | 1/40-15K               | 1/40-15K        | -1/50-15K                           |
| Signal-to-Noise Ratio             | 66dB                               | 70dB                   | 70dB            | 60dB                                |
| Harmonic Distortion               | 1%                                 | 1%                     | 1%              | 1%                                  |
| Power Requirement                 | 115/220Vac                         | 115/220Vac             | 115/220Vac      | 115/230Vac                          |
| Dc Power                          | -24, +28Vdc                        | -24Vdc                 | -24Vdc          | 24 to 48Vdc                         |
| Dimensions (Inches)               | 5.25x19x15                         | 14.75x7.25x8.5         | 14.75x7.25x8.5  | 5.25x19x15.2                        |
| Weight                            | 35 lb                              | 17 lb                  | 17 lb           | 28 lb                               |

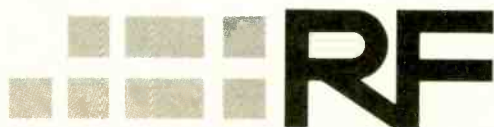
| Manufacturer                      | Microwave Associates Communications |                         |                         | RF Technology, Inc.     |
|-----------------------------------|-------------------------------------|-------------------------|-------------------------|-------------------------|
| Transmitter Number                | MA-2.5EP Portable                   | MA-7CP Portable         | .....                   | MA-13CP Ultra Portable  |
| Frequency Range                   | 2.3-2.5, 2.45-2.65GHz               | 6.87-7.125GHz           | .....                   | 12.7-13.25GHz           |
| Frequency Agile                   | 10 Channels Synthesized             | 10 Channels Synthesized | .....                   | 13 Channels Synthesized |
| Crystal Control                   | .....                               | .....                   | .....                   | 1 Channel               |
| Aural Subcarriers                 | 2                                   | 2                       | .....                   | 1                       |
| IF Input Interface                | Optional                            | .....                   | .....                   | .....                   |
| Audio Inputs                      | 2 Line                              | 2 Line                  | .....                   | 1 Line                  |
| RF Output Power                   | 5W                                  | .5W                     | .....                   | +17dBm                  |
| Power Requirement                 | 115/220Vac                          | 110/220Vac              | .....                   | 115/230Vac              |
| Dc Power                          | .....                               | +12Vdc                  | .....                   | 8 hour Battery Pack     |
| Dimensions (Inches)               | 5.5x7x13.5                          | 5.5x7x16.5              | .....                   | 4.5x4.5x8               |
| Weight                            | 18 lb                               | 23 lb                   | .....                   | 12.5 lb                 |
| Receiver Number                   | MA-2GD                              | MA-7CP Portable         | MA-7GU Central Receiver | MA-13CP Ultra Portable  |
| Frequency Range                   | 2.3-2.7GHz                          | 6.875-7.125GHz          | 6.875-7.125GHz          | 12.7-13.25GHz           |
| Frequency Agile                   | 10 Channels Synthesized             | 10 Channels Synthesized | 10 Channels Synthesized | .....                   |
| IF Output Interface               | .....                               | .....                   | .....                   | .....                   |
| System Noise Figure               | 3.5dB                               | 4dB                     | 4dB                     | 9.5dB with Filter       |
| Video Response ( $\pm$ dB/Hz)     | 0.5/10K-7M                          | .....                   | .5/10K-4M               | .5/300-5M               |
| Signal-to-Noise Ratio             | 65dB                                | .....                   | 70dB                    | 65dB                    |
| Differential Phase/Gain ( $\pm$ ) | 1°/4%                               | .....                   | 3°/5%                   | -1.2dB                  |
| K Factors                         | .....                               | .....                   | .....                   | .....                   |
| Field Time Distortion             | 3IRE                                | .....                   | 3IRE                    | 1%                      |
| Audio Response ( $\pm$ dB/Hz)     | 1.5/50-15K                          | .....                   | 1.5, - .5/50-10K        | .5, - 1.5/50-15K        |
| Signal-to-Noise Ratio             | 60dB                                | .....                   | 65dB                    | 60dB                    |
| Harmonic Distortion               | 1%                                  | .....                   | 1%                      | 1% Max                  |
| Power Requirement                 | 115/230Vac                          | 110/220Vac              | 115/220Vac              | 110/230Vac              |
| Dc Power                          | 48 or 24Vdc                         | +12Vdc                  | .....                   | .....                   |
| Dimensions (Inches)               | 5.25x19x15.2                        | 5.5x7x16.5              | 5.25x19x15.2            | 5.5x6x10.5              |
| Weight                            | .....                               | 23 lb                   | 28 lb                   | 12.5 lb                 |
|                                   |                                     |                         |                         | RF-203 Wireless Camera  |
|                                   |                                     |                         |                         | 1.99-2.11GHz            |
|                                   |                                     |                         |                         | 13 Channels             |
|                                   |                                     |                         |                         | Synthesized             |
|                                   |                                     |                         |                         | 1 Mic and 1 Line        |
|                                   |                                     |                         |                         | .2W                     |
|                                   |                                     |                         |                         | 10.5 to 17Vdc, .6A      |
|                                   |                                     |                         |                         | 6x4.25x2                |
|                                   |                                     |                         |                         | 2 lb                    |
|                                   |                                     |                         |                         | RF-200 Compact Portable |
|                                   |                                     |                         |                         | 1.99-2.11GHz            |
|                                   |                                     |                         |                         | 21 Channels             |
|                                   |                                     |                         |                         | Synthesized             |
|                                   |                                     |                         |                         | 5dB                     |
|                                   |                                     |                         |                         | .5/to 4.5M              |
|                                   |                                     |                         |                         | 65dB                    |
|                                   |                                     |                         |                         | .5°/1%                  |
|                                   |                                     |                         |                         | 1IRE 2T                 |
|                                   |                                     |                         |                         | 2%                      |
|                                   |                                     |                         |                         | 1/50-15K                |
|                                   |                                     |                         |                         | 60dB                    |
|                                   |                                     |                         |                         | 1%                      |
|                                   |                                     |                         |                         | 120/240Vac              |
|                                   |                                     |                         |                         | 10.5 to 20Vdc, 1.5A     |
|                                   |                                     |                         |                         | 8.75x6.75x5             |
|                                   |                                     |                         |                         | 11 lb                   |

\*Frequencies from 1.915 to 1.990GHz are not available.

# Flexibility Plus



- FLEXIBILITY—RF portable or fixed microwave to fit every broadcaster requirement.
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# ENG MICROWAVE EQUIPMENT

| Manufacturer                      | RF Technology Inc.       |                          |                         | Tayburn Electronics      |
|-----------------------------------|--------------------------|--------------------------|-------------------------|--------------------------|
| Transmitter Number                | RF-202 Compact Portable  | RF-251                   | RF-701 Portable         | TBT-50-A                 |
| Frequency Range                   | 1.99-2.11GHz             | 2.45-2.5GHz              | 6.875-7.125GHz          | 1.99-2.11GHz             |
| Frequency Agile                   | 13 Channels Synthesized  | 9 Channels Synthesized   | 30 Channels Synthesized | 21 Channels Synthesized  |
| Crystal Control                   | .....                    | .....                    | .....                   | .....                    |
| Aural Subcarriers                 | 2                        | 2                        | 2                       | 2                        |
| IF Input Interface                | .....                    | .....                    | .....                   | .....                    |
| Audio Inputs                      | 2 Line                   | 1 Line, 1 Mic            | 2 Line                  | 1 Line, 1 Mic            |
| RF Output Power                   | 2W                       | 1W                       | 1W                      | 15W Maximum              |
| Power Requirement                 | 120/240Vac               | 120/240Vac               | 120/240Vac              | 110/240Vac               |
| Dc Power                          | 10.5 to 17Vdc            | 10.5 to 17Vdc            | 12 to 17Vdc             | + 28Vdc, 3A              |
| Dimensions (Inches)               | 7x7.5x3.5                | 7x7.5x3                  | 8x8x4                   | 4x5.5x1.8                |
| Weight                            | 7 lb                     | 7 lb                     | 8 lb                    | 2 lb                     |
| Receiver Number                   | RF-204C Central Receiver | RF-254C Central Receiver | RF-700 Portable         | RF-704C Central Receiver |
| Frequency Range                   | 1.99-2.11GHz             | 2.45-2.5GHz              | 6.875-7.125GHz          | 6.875-7.125GHz           |
| Frequency Agile                   | 21 Channels Synthesized  | 9 Channels Synthesized   | 30 Channels Synthesized | 30 Channels Synthesized  |
| IF Output Interface               | .....                    | .....                    | .....                   | .....                    |
| System Noise Figure               | 2.5dB                    | 2.5dB                    | 3dB                     | 3dB                      |
| Video Response ( $\pm$ dB/Hz)     | 0.5/10 to 4.5M           | .5/10 to 4.5M            | .5/10 to 4.2M           | .5/10 to 4.2M            |
| Signal-to-Noise Ratio             | 60dB                     | 60dB                     | 70dB                    | 60dB                     |
| Differential Phase/Gain ( $\pm$ ) | 0.5°/1%                  | .5°/1%                   | .5/1%                   | .5°/1%                   |
| K Factors                         | 1IRE 2T                  | 1IRE 2T                  | 1IRE 2T                 | 1IRE 2T                  |
| Field Time Distortion             | 2%                       | 2%                       | 2%                      | 2%                       |
| Audio Response ( $\pm$ dB/Hz)     | 1/50-15K                 | 1/50-15K                 | 1/50-15K                | 1/50-15K                 |
| Signal-to-Noise Ratio             | .....                    | .....                    | 65dB                    | .....                    |
| Harmonic Distortion               | 1%                       | 1%                       | 1%                      | 1%                       |
| Power Requirement                 | 110/220Vac               | 110Vac                   | 120/240Vac              | 110Vac                   |
| Dc Power                          | .....                    | .....                    | 12 to 17Vdc             | .....                    |
| Dimensions (Inches)               | 5.25x19x8                | 5.25x19x8                | 6.75x5x10               | 5.25x19x8                |
| Weight                            | 23 lb                    | 23 lb                    | 12 lb                   | 23 lb                    |

| Manufacturer                      | Tayburn                   | TerraCom (Loral Corporation) |
|-----------------------------------|---------------------------|------------------------------|
| Transmitter Number                | TBT-50-A                  | TCM-6 Series                 |
| Frequency Range                   | Available for 2.45-2.5GHz | 1.7-15.35GHz                 |
| Frequency Agile                   | 9 Channels Synthesized    | Plug-in Synthesizers         |
| Crystal Control                   | .....                     | .....                        |
| Aural Subcarriers                 | 2                         | 2                            |
| IF Input Interface                | .....                     | Yes                          |
| Audio Inputs                      | 1 Line, 1 Mic             | 2 Line                       |
| RF Output Power                   | 15W Max                   | 5 to .15W per Band           |
| Power Requirement                 | 110/240Vac                | 110/220Vac                   |
| Dc Power                          | + 28Vdc, 3A               | $\pm$ 24 or $\pm$ 48Vdc      |
| Dimensions (Inches)               | 4x5.5x1.8                 | 16.25x9.5x12                 |
| Weight                            | .2 lb                     | 45 lb                        |
| Receiver Number                   | TBR-1K Central Receiver   | .....                        |
| Frequency Range                   | 1.99-2.11GHz              | Per Transmitter              |
| Frequency Agile                   | 21 Channels Synthesized   | Per Transmitter              |
| IF Output Interface               | .....                     | Yes                          |
| System Noise Figure               | 3dB                       | 8 to 12dB per Band           |
| Video Response ( $\pm$ dB/Hz)     | 0.5/10 to 4.5M            | .5/20-10M                    |
| Signal-to-Noise Ratio             | .....                     | 76 to 67dB per Band          |
| Differential Phase/Gain ( $\pm$ ) | .....                     | .2°/1%                       |
| K Factors                         | .....                     | 1% 1T, 1.5% 2T               |
| Field Time Distortion             | 1%                        | .7%                          |
| Audio Response ( $\pm$ dB/Hz)     | Data Not Available        | 1/10 to 15K                  |
| Signal-to-Noise Ratio             | .....                     | .....                        |
| Harmonic Distortion               | .....                     | 1%                           |
| Power Requirement                 | 115Vac                    | 110/220Vac                   |
| Dc Power                          | 24Vdc, .5A                | $\pm$ 24 or $\pm$ 48Vdc      |
| Dimensions (Inches)               | 5.25x19x17                | 16.25x9.5x12                 |
| Weight                            | 30 lb                     | 45 lb                        |
|                                   |                           | TCM-7 Series                 |
|                                   |                           | 1.7-15.35GHz                 |
|                                   |                           | Yes                          |
|                                   |                           | Plug-in Oscillators          |
|                                   |                           | 1 and Digital                |
|                                   |                           | .....                        |
|                                   |                           | 1 Line                       |
|                                   |                           | .5 to .04W per Band          |
|                                   |                           | 115/230Vac                   |
|                                   |                           | - 22 to - 28Vdc              |
|                                   |                           | 7.5x5.5x10                   |
|                                   |                           | 10.5 lb                      |
|                                   |                           | .....                        |
|                                   |                           | Per Transmitter              |
|                                   |                           | Per Transmitter              |
|                                   |                           | .....                        |
|                                   |                           | 7.5 to 11 per Band           |
|                                   |                           | .25/20-6M                    |
|                                   |                           | 72 to 67dB per Band          |
|                                   |                           | .5°/1%                       |
|                                   |                           | 1.5% 2T                      |
|                                   |                           | .7%                          |
|                                   |                           | 1/20-15K                     |
|                                   |                           | 70dB                         |
|                                   |                           | 1%                           |
|                                   |                           | With Transmitter             |
|                                   |                           | .....                        |
|                                   |                           | With Transmitter             |
|                                   |                           | 12.5 lb                      |

# TRANSMITTER, AMPLITUDE MODULATION

Standard Broadcast 535 to 1635kHz.

Radio transmitting equipment for generation, modulation and amplification of amplitude-modulated signals from audio signals. The RF output impedance is 50 Ohms. Audio signals applied to the transmitter are approximately +10dBm for 100% modulation, 600 Ohm balanced.

| Manufacturer              | CCA (Singer)        |                     |                     | Continental Electronics |                      |
|---------------------------|---------------------|---------------------|---------------------|-------------------------|----------------------|
|                           | AM-1000D            | AM-2500D            | AM50000D            | 314R-1(828C-1)          | 315F/316F            |
| Power Output Level        | 1200W               | 3000W               | 55kW                | 1100W                   | 5.5kW/10.6kW         |
| Frequency Stability (±)   | 5Hz                 | 5Hz                 | 5Hz                 | 5Hz                     | 5Hz                  |
| Carrier Shift             | 3%, 100% Modulation | 3%, 100% Modulation | 3%, 100% Modulation | 2%, 95% Modulation      | 3%, 100% Modulation  |
| Modulation Capability (±) | 125%                | 125%                | 125%                | 125%                    | 125%                 |
| AF Response (± dB/Hz)     | 1.5/30-10K          | 1.5/50-10K          | 1.5/50-10K          | 1/20-10K                | 1.5/20-15K           |
| Harmonic Distortion       | 2.5% max            | 2.5% max            | 3%, 90% Modulation  | 2%, 95% Modulation      | 3%                   |
| AM Noise Figure           | -55dB below 100%    | -45dB below 100%    | -55dB below 100%    | -55dB below 95%         | -60dB below 100%     |
| Power Consumption         | 4kW max             | 10kW max            | 140kW max           | 3.5kW                   | 14.2kW/28.4kW        |
| Final Amplifier Tube      | (2) 4-400A          | (2) 4-1000A         | 4CX35000C           | (2) 3-500Z              | (2) 4CX10000D/15000D |
| RF Driver Amplifier       | 6146                | 6146                | 4-1000A             | Solid-State             | Solid-State          |
| Modulator Final Tube      | (2) 4-400A          | (2) 4-1000A         | (2) 4CX15000A       | 3-500Z                  | Solid-State          |
| Modulator Driver          | (2) 12BY7A          | (2) EL34            | (2) 6146            | Solid-State             | Solid-State          |

| Manufacturer              | Continental Electronics |                       | CSI Electronics Inc.  |                      |                      |
|---------------------------|-------------------------|-----------------------|-----------------------|----------------------|----------------------|
|                           | 315R-1(828E-1)          | 317C-2                | T-1-A                 | T-3-A                | T-5-A                |
| Power Output Level        | 5500W                   | 60kW                  | 1.1kW                 | 3.3kW                | 6kW                  |
| Frequency Stability (±)   | 5Hz                     | 5Hz                   | 10Hz                  | 10Hz                 | 10Hz                 |
| Carrier Shift             | 2%, adjustable to 0     | 2%, 100% Modulation   | .....                 | .....                | .....                |
| Modulation Capability (±) | 125%                    | 125%                  | 100%                  | 100%                 | 100%                 |
| AF Response (± dB/Hz)     | 1/20-10K                | -1.5/10 15K, 70%      | 1.5/50-10K            | 1.5/50-10K           | 1.5/50-10K           |
| Harmonic Distortion       | 2%, 95% Modulation      | 2.5%, 95% Modulation  | 2.5%, 95% Modulation  | 2.5%, 95% Modulation | 2.5%, 95% Modulation |
| AM Noise Figure           | -60dB below 100%        | -60dB below 100%      | -55dB below 100% Mod. | -55dB, 100% Mod.     | -55dB, 100% Mod.     |
| Power Consumption         | 13kVA                   | 60% Efficient Overall | 100% Mod.             | .....                | .....                |
| Final Amplifier Tube      | 3CX3000F7               | .....                 | 3.75kW                | 8.6kW                | 13.5kW               |
| RF Driver Amplifier       | Solid-State             | .....                 | (2) 7527A             | (2) 4-1000A          | 3CX10000A3           |
| Modulator Final Tube      | 3CX3000F7               | .....                 | 6146                  | 6146                 | 6146                 |
| Modulator Driver          | Solid-State             | .....                 | (2) 7527A             | (2) 4-1000A          | (2) 4CX3000A         |
|                           |                         |                       | .....                 | (2) EL34             | (2) EL34             |

| Manufacturer              | CSI Electronics      |                      |                      | Elcom-Bauer          |                     |
|---------------------------|----------------------|----------------------|----------------------|----------------------|---------------------|
|                           | T-10-A               | T-25-A               | T-50-A               | 701B                 | 705C                |
| Power Output Level        | 12kW                 | 30kW                 | 55kW                 | 1100W                | 6000W               |
| Frequency Stability (±)   | 10Hz                 | 10Hz                 | 10Hz                 | 5Hz                  | 5Hz                 |
| Carrier Shift             | .....                | .....                | .....                | 3%, 100% Modulation  | 2%, 100% Modulation |
| Modulation Capability (±) | 100%                 | 100%                 | 100%                 | 125%                 | 125%                |
| AF Response (± dB/Hz)     | 1.5/50-10K           | 1.5/50-10K           | 1.5/50-10K           | 1.5/50-10K           | 1/50-10K            |
| Harmonic Distortion       | 2.5%, 95% Modulation | 2.5%, 95% Modulation | 2.5%, 95% Modulation | 2.5%, 95% Modulation | 2%, 95% Modulation  |
| AM Noise Figure           | -55dB, 100% Mod.     | -55dB, 100% Mod.     | -55dB, 100% Mod.     | -55dB below 100%     | -60dB below 100%    |
| Power Consumption         | 27kW                 | 60kW                 | 130kW                | 4150W                | 15.5kW              |
| Final Amplifier Tube      | 3CX10000A3           | (2) 3CX10000A3       | 4CX35000C            | (2) 4-500A           | 4CX5000A            |
| RF Driver Amplifier       | 7527A                | (2) 7527A            | 4-1000A              | Solid-State          | Solid-State         |
| Modulator Final Tube      | (2) 4CX3000A         | (4) 4CX3000A         | (2) 4CX15000A        | (2) 4-500A           | (2) 4CX5000A        |
| Modulator Driver          | (2) EL34             | (4) EL34             | 6146                 | Solid-State          | Solid-State         |

# TRANSMITTER, AMPLITUDE MODULATION

| Manufacturer            | Elcom-Bauer         | Harris Communications |                     |                    |                     |
|-------------------------|---------------------|-----------------------|---------------------|--------------------|---------------------|
|                         |                     | Model Number          | MW-1A               | MW-5A              | MW-10               |
| Model Number            | 710715C             |                       |                     |                    |                     |
| Power Output Level      | 12kW/15kW           | 1100W                 | 5000W               | 10kW               | 50kW                |
| Frequency Stability (±) | 5Hz                 | .....                 | .....               | 20Hz               | 5Hz                 |
| Carrier Shift           | 2%, 100% Modulation | 2%, 100% Modulation   | 2%, 100% Modulation | 2%, 95% Modulation | 2%, 100% Modulation |
| Modulation Capability   | 125%                | 125%                  | 125%                | + 125%, - 95%      | 125%                |
| AF Response (± dB/Hz)   | 1/50-10K            | 1/20-10K              | 1/20-10K            | 1/20-10K           | 1.5/20-10K          |
| Harmonic Distortion     | 2%, 95% Modulation  | 1.5%, 95% Modulation  | 2%, 95% Modulation  | 2%, 95% Modulation | 3%, 95% Modulation  |
| AM Noise Figure         | - 60dB below 100%   | - 60dB below 100%     | - 60dB below 100%   | - 60dB below 100%  | - 57dB below 100%   |
| Power Consumption       | 27kW/40kW           | 3kW                   | 13kW                | 30.8kW             | 110kW               |
| Final Amplifier Tube    | 4CX15000Z           | Solid-State           | 3CX2500F3           | 3CX15000H3         | 4CX35000C           |
| RF Driver Amplifier     | Solid-State         | Solid-State           | Solid-State         | Solid-State        | 4CX1500A            |
| Modulator Final Tube    | (2) 4CX5000A        | Solid-State           | 4CX3000A            | 4CX15000A          | 4CX35000C           |
| Modulator Driver        | Solid-State         | Solid-State           | Solid-State         | Solid-State        | 4CX1500A            |

| Manufacturer              | Harris              | LPB, Inc.          |                    |                    | Marconi             |
|---------------------------|---------------------|--------------------|--------------------|--------------------|---------------------|
|                           |                     | Model Number       | AM-100             | AM-150             |                     |
| Model Number              | VP-100A             |                    |                    |                    |                     |
| Power Output Level        | 100kW (230 Ohm)     | 50-110W            | 75-165W            | 125-275W           | 50kW                |
| Frequency Stability (±)   | 5Hz                 | 10Hz               | 10Hz               | 10Hz               | 10Hz                |
| Carrier Shift             | 5%, 100% Modulation | 2%                 | 2%                 | 2%                 | 4%, 100% Modulation |
| Modulation Capability (±) | .....               | .....              | .....              | .....              | 125%                |
| AF Response (± dB/Hz)     | 1.5/40-10K          | 1.5/20-15K         | 1.5/20-15K         | .5/20-15K          | 1.5/30-10K          |
| Harmonic Distortion       | 3%, 95% Modulation  | 2%, 95% Modulation | 2%, 95% Modulation | 2%, 95% Modulation | 3%, 90% Modulation  |
| AM Noise Figure           | - 55dB below 100%   | - 55dB below 100%  | - 55dB below 100%  | - 55dB below 100%  | - 58dB              |
| Power Consumption         | 215kW               | 450W               | 600W               | 1200W              | 117kW               |
| Final Amplifier Tube      | 4CV100000C          | Solid-State        | Solid-State        | Solid-State        | (2) 4CX35000C       |
| RF Driver Amplifier       | 4CX1500A            | .....              | .....              | .....              | Solid-State         |
| Modulator Final Drive     | 4CV100000C          | Solid-State        | Solid-State        | Solid-State        | (2) 4CX1500B        |
| Modulator Driver          | 4CX1500A/2CX10000F  | .....              | .....              | .....              | Solid-State         |

| Manufacturer              | Marconi Communications | McMartin Industries |                     |                     |                     |
|---------------------------|------------------------|---------------------|---------------------|---------------------|---------------------|
|                           |                        | Model Number        | B6021               | BA-1K               | BA-2.5K             |
| Model Number              | B6026                  |                     |                     |                     |                     |
| Power Output Level        | 750kW                  | 500kW               | 1000W               | 3000W               | 6000W               |
| Frequency Stability (±)   | 10Hz                   | 10Hz                | 5Hz                 | 5Hz                 | 5Hz                 |
| Carrier Shift             | 5%, 100% Modulation    | 5%, 100% Modulation | 3%, 100% Modulation | 3%, 100% Modulation | 3%, 100% Modulation |
| Modulation Capability (±) | 100%                   | 100%                | 125%                | 125%                | 125%                |
| AF Response (± dB/Hz)     | 1/60-7.5K (70% Mod)    | 1/60-7.5K (70% Mod) | 1/10-10K            | 1.5/50-10K          | 1.5/50-10K          |
| Harmonic Distortion       | 3% max, 95% Mod        | 3% max, 95% mod     | 2.5%, 100% Mod      | 2.5%, 100% Mod      | 2.5%, 100% Mod      |
| AM Noise Figure           | - 60dB                 | - 60dB              | - 60dB below 100%   | - 55dB below 100%   | - 55dB below 100%   |
| Power Consumption         | 1170kW                 | 1647kW              | 3.5kW               | 10.3kW              | 17.2kW              |
| Final Amplifier Tube      | (3) VCP2002            | (2) VCP2002         | (2) 4-500A          | (2) 4-1000A         | (4) 4-1000A         |
| RF Driver Amplifier       | 4CX5000A               | 4CX5000A            | Solid-State         | Solid-State         | Solid-State         |
| Modulator Final Tube      | (2) VCP2002            | (2) VCP2002         | (2) 4-500A          | (2) 4-1000A         | (4) 4-1000A         |
| Modulator Driver          | (2) 4CX1000A           | (2) 4CX1000A        | Solid-State         | Solid-State         | Solid-State         |

# TRANSMITTER, AMPLITUDE MODULATION

| Manufacturer              | McMartin Industries | RCA Broadcast    | Sintronic (Singer) |
|---------------------------|---------------------|------------------|--------------------|
| Model Number              | BA-5K2              | BA-10K           | BA-50K             |
| Power Output Level        | 5.5kW               | 11kW             | 50kW               |
| Frequency Stability (±)   | 5Hz                 | 5Hz              | 5Hz                |
| Carrier Shift             | 3%, 100% Mod        | 3%, 100% Mod     | 2%, 100% Mod       |
| Modulation Capability (±) | 125%                | 125%             | 125%               |
| AF Response (± dB/Hz)     | 1.5/50-10K          | 1.5/50-10K       | 1.5/40-10K         |
| Harmonic Distortion       | 2.5%, 95% Mod       | 2.5%, 95% Mod    | 2%, 95% Mod        |
| AM Noise Figure           | -60dB below 100%    | -60dB below 100% | -63dB below 100%   |
| Power Consumption         | 14kW                | 27kW             | 106.99kVA          |
| Final Amplifier Tube      | 4CX5000A            | (2) 4CX5000A     | (2) 4CX20000A      |
| RF Driver Amplifier       | Solid-State         | Solid-State      | Solid-State        |
| Modulator Final Tube      | (2) 4CX5000A        | (2) 4CX5000A     | (2) 4CX20000A      |
| Modulator Driver          | Solid-State         | Solid-State      | Solid-State        |

| Manufacturer              | Sintronic (Singer)  | Wilkinson Electronics |
|---------------------------|---------------------|-----------------------|
| Model Number              | S1-A-5              | S1-A-10               |
| Power Output Level        | 5.5kW               | 12kW                  |
| Frequency Stability (±)   | 0.0005%             | .0005%                |
| Carrier Shift             | 2%, 100% Modulation | 2%, 100% Modulation   |
| Modulation Capability (±) | 125%                | 125%                  |
| AF Response (± dB/Hz)     | 1.5/50-10K          | 1.5/50-10K            |
| Harmonic Distortion       | 2.5%                | 2.5%                  |
| AM Noise Figure           | -55dB below 100%    | -55dB below 100%      |
| Power Consumption         | 12kVA               | 22.5kVA               |
| Final Amplifier Tube      | 4CX5000A            | 4CX15000A             |
| RF Driver Amplifier       | Solid-State         | Solid-State           |
| Modulator Final Tube      | (2) 4CX5000A        | (2) 4CX5000A          |
| Modulator Driver          | Solid-State         | Solid-State           |

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# TRANSMITTER, AMPLITUDE MODULATION

| Manufacturer .....              | Wilkinson Electronics |                    |                      |
|---------------------------------|-----------------------|--------------------|----------------------|
|                                 | Model Number .....    | AM5000D            | AM10000D             |
| Power Output Level .....        | 5kW                   | 10kW               | 22.5 to 26.5kW       |
| Frequency Stability (±) .....   | .....                 | .....              | .....                |
| Carrier Shift .....             | 3%                    | 3%                 | 5%                   |
| Modulation Capability (±) ..... | 125%                  | 125%               | 125%                 |
| AF Response (± dB/Hz) .....     | 1/50-7.5K             | 1/50-7.5K          | 1.5/50-10K           |
| Harmonic Distortion .....       | 3%, 95% Modulation    | 3%, 95% Modulation | 3.5%, 95% Modulation |
| AM Noise Figure .....           | -60dB                 | -60dB              | -54dB below 100%     |
| Power Consumption .....         | 14kW                  | 27kW               | 58kW to 65kW         |
| Final Amplifier Tube .....      | 3CX2500F3             | 3CX10000A3         | 8990                 |
| RF Driver Amplifier .....       | 4-400A                | 4-400A             | 4-400                |
| Modulator Final Tube .....      | (2) 4CX1500           | (2) 4CX3000        | (2) 4CX10000D        |
| Modulator Driver .....          | Solid-State           | Solid-State        | (2) 6146             |

# TRANSMITTER, FREQUENCY MODULATED

FM Broadcast 88 to 108MHz.

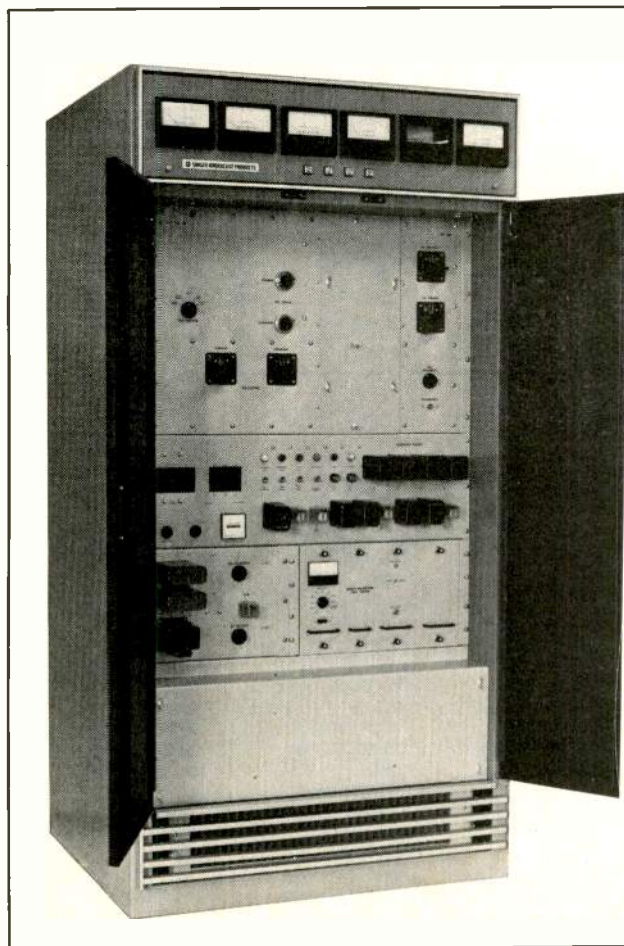
Radio transmitting equipment for generation, modulation and amplification of frequency modulated signals from audio signals. The RF output impedance is 50 Ohms. Audio signals applied to the exciter are approximately + 10dBm for 100% modulation or a frequency deviation of ± 75kHz, 600 Ohm balanced.

| Manufacturer .....            | Broadcast Electronics |               |               | Canadian General Electric |                  |
|-------------------------------|-----------------------|---------------|---------------|---------------------------|------------------|
|                               | Model Number .....    | FM1.5         | FM3.5         | FM-30                     | FMT10F           |
| Output Power Level .....      | 500-1500W             | 1.5-3.5kW     | 15-30kW       | To 10kW                   | To 15kW          |
| Feed Line Size .....          | 1% EIA                | 1% EIA        | 3% EIA        | .....                     | 3% EIA           |
| Final PA Tube .....           | 4CX1500B              | 4CX3000A      | 4CX20000A     | 8986                      | 8985             |
| Driver Tube .....             | .....                 | .....         | .....         | .....                     | .....            |
| IPA Tube .....                | Solid-State           | Solid-State   | Solid-State   | Solid-State               | Solid-State      |
| Frequency Stability (±) ..... | 300Hz                 | 300Hz         | 300Hz         | 700Hz                     | 700Hz            |
| Modulation Capacity (±) ..... | 200kHz                | 200kHz        | 200kHz        | 100kHz                    | 100kHz           |
| RF Harmonic Suppression ..... | Per FCC               | Per FCC       | Per FCC       | -80dB                     | -80dB            |
| FM Exciter .....              | FX-30                 | FX-30         | FX-30         | Telefunken Bayly          | Telefunken Bayly |
| AF Response (± dB/Hz) .....   | 0.5/30-15K            | .5/30-15K     | .5/30-15K     | .5/30-15K                 | .5/30-15K        |
| Pre-emphasis (µsec) .....     | 75, 50, 25            | 75, 50, 25    | 75, 50, 25    | Flat, 75                  | Flat, 75         |
| Harmonic Distortion .....     | 0.08%, Exciter        | .08%, Exciter | .08%, Exciter | .4%                       | .4%              |
| FM Noise Figure .....         | -72dB                 | -72dB         | -72dB         | -67dB                     | -67dB            |
| AM Noise Figure .....         | -55dB                 | -55dB         | -55dB         | -61dB                     | -61dB            |
| Cooling System .....          | Forced Air            | Forced Air    | Forced Air    | Forced Air                | Forced Air       |
| Power Consumption .....       | 2.5kW                 | 6kW           | 50kW          | 16kVA                     | 23kVA            |
| Automatic Recycling .....     | Yes                   | Yes           | Yes           | Yes                       | Yes              |
| Parallel Operation .....      | .....                 | .....         | .....         | .....                     | .....            |
| Final Stage Efficiency .....  | 75%                   | .....         | .....         | 80%                       | 80%              |
| Power Factor .....            | .....                 | .....         | .....         | .95                       | .95              |



# TRANSMITTER, FREQUENCY MODULATED

| Manufacturer            | Canadian GE      | CCA (Singer)     |                  |                  |                  |
|-------------------------|------------------|------------------|------------------|------------------|------------------|
|                         | Model Number     | FM12000E         | FM20000E         | FM27500E         | FM55000EP        |
| Output Power Level      | 15-25kW          | 12kW             | 20kW             | 27.5kW           | 55kW             |
| Feed Line Size          | 3 1/2 EIA        | 3 1/2 EIA        | 3 1/2 EIA        | 3 1/2 EIA        | 4 or 6 1/2 EIA   |
| Final PA Tube           | 8985             | 3CX10000A7       | 3CX15000A7       | 3CX20000A7       | (2) 3CX20000A7   |
| Driver Tube             | .....            | .....            | .....            | .....            | .....            |
| IPA Tube                | Solid-State      | 5CX1500A         | .....            | 5CX1500A         | (2) 5CX1500A     |
| Frequency Stability (±) | .700Hz           | .0005%           | 500Hz            | 0.0005%          | .0005%           |
| Modulation Capacity (±) | 100kHz           | 100kHz           | 150kHz           | 100kHz           | 100kHz           |
| RF Harmonic Suppression | -80dB            | -80dB            | -80dB            | -80dB            | -80dB            |
| FM Exciter              | Telefunken Bayly | FM-40E           | FM-40E           | FM-40E           | FM-40E           |
| AF Response (± dB/Hz)   | 0.5/30-15K       | 1.5/75µsec curve | 1.5/75µsec curve | 1.5/75µsec curve | 1.5/75µsec curve |
| Pre-emphasis (µsec)     | Flat 75          | 75, 50           | 75, 50           | 75, 50           | 75, 50           |
| Harmonic Distortion     | 0.4%             | .5%              | .5%              | 0.5%             | .5%              |
| FM Noise Figure         | -67dB            | -60dB            | -60dB            | -60dB            | -60dB            |
| AM Noise Figure         | -61dB            | -50dB            | -50dB            | -50dB            | -50dB            |
| Cooling System          | Forced Air       | Forced Air       | Forced Air       | Forced Air       | Forced Air       |
| Power Consumption       | 37kVA            | 18kW             | 32kW             | 43.5kW           | 87kW             |
| Automatic Recycling     | Yes              | Yes              | Yes              | Yes              | Yes              |
| Parallel Operation      | .....            | .....            | .....            | .....            | Yes              |
| Final Stage Efficiency  | 80%              | .....            | .....            | .....            | .....            |
| Power Factor            | 0.95             | .....            | .....            | .....            | .....            |



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# TRANSMITTER, FREQUENCY MODULATED

| Manufacturer            | Continental Electronics |                |                |               | CSI Electronics Inc. |
|-------------------------|-------------------------|----------------|----------------|---------------|----------------------|
| Model Number            | 814 R-1                 | 816 R-2        | 816R-3         | T-1-F         | T-20-F               |
| Output Power Level      | 2.5kW                   | 21.5kW         | 25kW           | 1kW           | 20kW                 |
| Feed Line Size          | .....                   | .....          | .....          | 1% EIA        | 3% EIA               |
| Final PA Tube           | 5CX1500A                | 4CX15000A      | 4CX15000A      | .....         | .....                |
| Driver Tube             | .....                   | .....          | .....          | .....         | .....                |
| IPA Tube                | Solid-State             | Solid-State    | Solid-State    | .....         | .....                |
| Frequency Stability (±) | 500Hz                   | 500Hz          | 500Hz          | .....         | .....                |
| Modulation Capacity (±) | 100kHz                  | 100kHz         | 100kHz         | 25kHz nominal | 25kHz nominal        |
| RF Harmonic Suppression | Per FCC                 | Per FCC        | -80dB          | Per FCC       | Per FCC              |
| FM Exciter              | 510R-1                  | 510R-1         | FM-40E         | .....         | .....                |
| AF Response (± dB/Hz)   | 1/75µsec curve          | 1/75µsec curve | 1/75µsec curve | 1/30-15K      | 1/30-15K             |
| Pre-emphasis (µsec)     | 75                      | 75             | 75             | 75            | 75                   |
| Harmonic Distortion     | 0.25%                   | 0.25%          | .25%           | .5%           | 0.5%                 |
| FM Noise Figure         | -65dB                   | -65dB          | -65dB          | -68dB         | -68dB                |
| AM Noise Figure         | -55dB                   | -55dB          | -55dB          | -55dB         | -55dB                |
| Cooling System          | Forced Air              | Forced Air     | Forced Air     | Forced Air    | Forced Air           |
| Power Consumption       | 4.9kW                   | 32kW           | 40kW           | 1.7kW         | 30.5kW               |
| Automatic Recycling     | Yes                     | Yes            | Yes            | Yes           | Yes                  |
| Parallel Operation      | .....                   | .....          | .....          | .....         | .....                |
| Final Stage Efficiency  | .....                   | .....          | .....          | .....         | .....                |
| Power Factor            | .97                     | .....          | .....          | .....         | .....                |

| Manufacturer            | CSI Electronics, Inc. | Elcom-Bauer Broadcast Products |                  |                  |                  |
|-------------------------|-----------------------|--------------------------------|------------------|------------------|------------------|
| Model Number            | T-25-F                | 602A                           | 605B             | 610A             | 625A             |
| Output Power Level      | 25kW                  | 1-2.5kW                        | 3.5-5kW          | 7.5-13kW         | 17.5-25kW        |
| Feed Line Size          | 3% EIA                | 1% EIA                         | 1% EIA           | 3% EIA           | 3% EIA           |
| Final PA Tube           | 5CX1500A              | 5CX1500A                       | 3CX3000A7        | 3CX10000A7       | 3CX15000A7       |
| Driver Tube             | .....                 | .....                          | .....            | .....            | .....            |
| IPA Tube                | .....                 | 4CX250B                        | 4CX250B          | 5CX1500A         | 3CX3000A7        |
| Frequency Stability (±) | .....                 | 300Hz                          | 300Hz            | 300Hz            | 300Hz            |
| Modulation Capacity (±) | 25kHz nominal         | 150kHz                         | 150kHz           | 150kHz           | 150kHz           |
| RF Harmonic Suppression | Per FCC               | Per FCC                        | Per FCC          | Per FCC          | Per FCC          |
| FM Exciter              | .....                 | 690PLL                         | 690PLL           | 690PLL           | 690PLL           |
| AF Response (± dB/Hz)   | 1/30-15K              | Per 75µsec curve               | Per 75µsec curve | Per 75µsec curve | Per 75µsec curve |
| Pre-emphasis (µsec)     | 75                    | 75                             | 75               | 75               | 75               |
| Harmonic Distortion     | 0.5%                  | .25%                           | 0.25%            | .25%             | .25%             |
| FM Noise Figure         | -68dB                 | -65dB                          | -65dB            | -65dB            | -65dB            |
| AM Noise Figure         | -55dB                 | -50dB                          | -50dB            | -50dB            | -50dB            |
| Cooling System          | Forced Air            | Forced Air                     | Forced Air       | Forced Air       | Forced Air       |
| Power Consumption       | 36kW                  | 5.4kW                          | 8.9kW            | 21kW             | 38kW             |
| Automatic Recycling     | Yes                   | Yes                            | Yes              | Yes              | Yes              |
| Parallel Operation      | .....                 | .....                          | .....            | .....            | .....            |
| Final Stage Efficiency  | .....                 | .....                          | .....            | .....            | .....            |
| Power Factor            | .....                 | 9                              | 0.9              | .9               | .9               |

| Manufacturer            | Harris Communications |                  |                  |                  | Marconi         |
|-------------------------|-----------------------|------------------|------------------|------------------|-----------------|
| Model Number            | FM-1K                 | FM-5K            | FM-10K           | FM-25K           | B6523           |
| Output Power Level      | 1kW                   | 1-5.1kW          | 10kW             | 10-25kW          | 1kW             |
| Feed Line Size          | 1% EIA                | 3% EIA           | 3% EIA           | 3% EIA           | 1% EIA          |
| Final PA Tube           | 4CX1000A              | 4CX5000A         | 4CX10000D        | 8990             | 4CX1000A        |
| Driver Tube             | .....                 | .....            | .....            | Solid-State      | .....           |
| IPA Tube                | Solid-State           | 4CX250B          | 4CX300A          | Solid-State      | Solid-State     |
| Frequency Stability (±) | 300Hz                 | 300Hz            | 300Hz            | 300Hz            | 1kHz            |
| Modulation Capacity (±) | 100kHz                | 100kHz           | 100kHz           | 100kHz           | 200kHz          |
| RF Harmonic Suppression | Per FCC               | Per FCC          | Per FCC          | Per FCC          | 1mW             |
| FM Exciter              | MS-15                 | MS-15            | MS-15            | MS-15            | Solid-State     |
| AF Response (± dB/Hz)   | 0.5/30-15K            | .5/30-15K        | .5/30-15K        | .5/30-15K        | .5/30-40K       |
| Pre-emphasis (µsec)     | 75, 50, 25, Flat      | 75, 50, 25, Flat | 75, 50, 25, Flat | 75, 50, 25, Flat | 75, 50          |
| Harmonic Distortion     | 0.2%                  | .2%              | .2%              | .2%              | .6% maximum     |
| FM Noise Figure         | -68dB                 | -68dB            | -68dB            | -68dB            | -60dB           |
| AM Noise Figure         | -50dB                 | -50dB            | -50dB            | -55dB            | -40dB           |
| Cooling System          | Forced Air            | Forced Air       | Forced Air       | Forced Air       | Forced Air      |
| Power Consumption       | 2.1kW                 | 10kW             | 17kW             | 40kW             | 2.8kW           |
| Automatic Recycling     | Yes                   | Yes              | Yes              | Yes              | Yes             |
| Parallel Operation      | .....                 | .....            | .....            | .....            | Possible for 2W |
| Final Stage Efficiency  | .....                 | .....            | .....            | .....            | .....           |
| Power Factor            | .....                 | .....            | .....            | .....            | .8              |

# TRANSMITTER, FREQUENCY MODULATED

| Manufacturer            | McMartin Industries |             |            |            | NEC America, Inc.<br>FBN-7000 Series   |
|-------------------------|---------------------|-------------|------------|------------|--|
|                         | Model Number        | BF-1M       | BF-5M      | BF-10M     |  |
| Output Power Level      | 250-1500W           | 3.5-5.5kW   | 5.5-15kW   | 10-27.5kW  | 15W, 150W, 300W, 500W, 1kW, 3kW, 5kW, 10kW, 12kW and 20kW models are available.                      |
| Feed Line Size          | 1% EIA              | 1% EIA      | 3% EIA     | 3% EIA     | Units up to 1kW are all solid-state, with higher power units using 1 Eimac 4CX power amplifier tube. |
| Final PA Tube           | 3CX1500A7           | 3CX3000A7   | 3CX10000A7 | 3CX10000A7 |  |
| Driver Tube             | .....               | .....       | 3CX1500A7  | 3CX1500A7  |  |
| IPA Tube                | Solid-State         | (2) 4CX250B | 4CX250B    | 4CX250B    |  |
| Frequency Stability (±) | 500Hz               | 500Hz       | 500Hz      | 500Hz      |  |
| Modulation Capacity (±) | 150kHz              | 150kHz      | 150kHz     | 150kHz     |  |
| RF Harmonic Suppression | Per FCC             | Per FCC     | Per FCC    | Per FCC    |  |
| FM Exciter              | BFM8000             | BFM8000     | BFM8000    | BFM8000    |  |
| AF Response (± dB/Hz)   | 0.5/30-15K          | .5/30-15K   | .5/30-15K  | .5/30-15K  |  |
| Pre-emphasis (µsec)     | 75                  | 75          | 75         | 75         |  |
| Harmonic Distortion     | 0.3%                | .3%         | .3%        | .3%        |  |
| FM Noise Figure         | -65dB               | -65dB       | -65dB      | -65dB      |  |
| AM Noise Figure         | -55dB               | -55dB       | -55dB      | -55dB      |  |
| Cooling System          | Forced Air          | Forced Air  | Forced Air | Forced Air |  |
| Power Consumption       | 2.6kW               | 12.5kW      | 27kVA      | 38kVA      | Detailed data unavailable.   |
| Automatic Recycling     | Yes                 | Yes         | Yes        | Yes        |  |
| Parallel Operation      | .....               | .....       | .....      | .....      |  |
| Final Stage Efficiency  | 70-80%              | 70-80%      | 70-80%     | 70-80%     |  |
| Power Factor            | .....               | .....       | .....      | .....      |  |

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# TRANSMITTER, FREQUENCY MODULATED

| Manufacturer            | Sintronic (Singer) |                 |            | Wilkinson Electronics |            |
|-------------------------|--------------------|-----------------|------------|-----------------------|------------|
| Model Number            | S1-F-3             | S1-F-5          | FM7500E    | FM10000E              | FM30000E   |
| Output Power Level      | 2-3.5kW            | 2.5-5.5kW       | 7.5kW      | 10kW                  | 30kW       |
| Feed Line Size          | 3/4 EIA            | 3/4 EIA         | 1 1/4 EIA  | 1 1/4 EIA             | 3 1/4 EIA  |
| Final PA Tube           | 3CX3000A7          | 3CX3000A7       | 4CX5000A   | 4CX10000D             | 8990       |
| Driver Tube             | .....              | .....           | .....      | .....                 | .....      |
| IPA Tube                | (2) 4CX250B        | (2) 4CX250B     | 4CX250B    | 4CX250B               | 4CX250B    |
| Frequency Stability (±) | 0.001%             | .001%           | 1kHz       | 1kHz                  | 1kHz       |
| Modulation Capacity (±) | 100kHz             | 100kHz          | 150kHz     | 150kHz                | 150kHz     |
| RF Harmonic Suppression | Per FCC            | Per FCC         | Per FCC    | Per FCC               | Per FCC    |
| FM Exciter              | S1-10-E            | S1-10-E         | FME-10     | FME-10                | FME-10     |
| AF Response (± dB/Hz)   | .5/75µsec curve    | .5/75µsec curve | 1/50-15K   | 1/50-15K              | 1/50-15K   |
| Pre-emphasis (µsec)     | 75, 50             | 75, 50          | 75         | 75                    | 75         |
| Harmonic Distortion     | 0.5%               | .5%             | 0.5%       | .5%                   | .5%        |
| FM Noise Figure         | -63dB              | -63dB           | -65dB      | -65dB                 | -65dB      |
| AM Noise Figure         | -52dB              | -52dB           | -55dB      | -55dB                 | -55dB      |
| Cooling System          | Forced Air         | Forced Air      | Forced Air | Forced Air            | Forced Air |
| Power Consumption       | 7kVA               | 10.5kVA         | 13kW       | 16kW                  | 45kW       |
| Automatic Recycling     | Yes                | Yes             | Yes        | Yes                   | Yes        |
| Parallel Operation      | .....              | .....           | .....      | .....                 | .....      |
| Final Stage Efficiency  | .....              | .....           | 72.5%      | 70%                   | 70%        |
| Power Factor            | 0.95               | .95             | .9         | .9                    | .9         |

# TRANSMITTER, TELEVISION

UHF (approximately 470 to 800MHz)

TV transmitting equipment for generation, modulation and amplification of the visual and aural carrier signals from baseband audio and video. The RF output impedance is 50 Ohms. The video signal to the exciter is 1V P-P, 75 Ohm. Audio signals to the exciter are approximately +10dBm, 600 Ohm balanced. The aural carrier frequency shall be 4.5MHz higher than the visual carrier. The transmitted sideband response and envelop delay characteristics fall within FCC regulations. Visual modulation is negative, i.e., sync tip produces maximum output power. Aural modulation is FM. Channel bandwidth is 6MHz.

| Manufacturer                | Acrodyne       |                | Canadian GE     | CCA (Singer Broadcast Products Inc.) |                      |
|-----------------------------|----------------|----------------|-----------------|--------------------------------------|----------------------|
| Model Number                | TT-340U        | TT-3420U       | TTU2F           | CTU-15BT                             | CTU-30BT             |
| <b>Visual Section:</b>      |                |                |                 |                                      |                      |
| Output Power (Peak)         | 1kW            | 2.5kW          | 2kW             | 15kW                                 | 30kW                 |
| Carrier Stability (±)       | 500Hz          | 250Hz          | 250Hz           | 250Hz/3 months                       | 250Hz/3 months       |
| Carrier Regulation          | 3%             | 3%             | 3%              | 3%                                   | 3%                   |
| Response vs. Brightness     | 0.5dB          | .25dB          | .75dB           | .....                                | .....                |
| Modulation Capability       | 5%             | 3%             | 2%              | 8%                                   | 8%                   |
| Differential Phase/Gain (±) | 1.5°/15dB      | 1°/7.5         | 3°/5dB          | 5°/9dB                               | 5°/9dB               |
| Linearity (Low Frequency)   | 5%             | 5%             | .75dB           | .9dB                                 | .9dB                 |
| Signal-to-Noise Ratio       | 55dB           | 55dB           | 55dB            | 51dB                                 | 51dB                 |
| K Factors                   | 2T 2%          | 2T 2%          | 2T 2%, 12.5T 5% | .....                                | .....                |
| Harmonic Radiation          | -60dB          | -60dB          | .....           | -60dB                                | -60dB                |
| Visual PA Tube or Type      | TH347          | TH 393         | RS1054L         | Ext. Cavity Klystron                 | Ext. Cavity Klystron |
| IPA Tube or Type            | Solid-State    | Solid-State    | YD1381          | .....                                | .....                |
| Mod Anode Pulsar            | .....          | .....          | .....           | .....                                | .....                |
| IF Level Modulation         | Yes            | Yes            | Yes             | Yes                                  | Yes                  |
| SAW Filtering               | .....          | .....          | Yes             | .....                                | .....                |
| <b>Aural Section:</b>       |                |                |                 |                                      |                      |
| Output Power Level          | 100W           | 250W           | 200W            | 1.5kW to 3kW                         | 3kW to 6kW           |
| Carrier Stability (±)       | 100Hz          | 100Hz          | 250Hz           | 250Hz/3 months                       | 250Hz/3 months       |
| Frequency Deviation (±)     | 25kHz          | 50kHz          | 50kHz           | 25kHz                                | 25kHz                |
| Pre-Emphasis (µsec)         | 75             | 75             | 75, 50          | 75                                   | 75                   |
| Harmonic Distortion         | 0.5%           | .5%            | .75%            | 1%                                   | 1%                   |
| FM Noise Figure             | -60dB          | -60dB          | -60dB           | -60dB                                | -60dB                |
| AM Noise Figure             | -50dB          | -50dB          | -50dB           | -52dB                                | -52dB                |
| AF Response (± dB/Hz)       | 0.5/30-15K     | .5/30-15K      | .5/30-15K       | 1/30-15K                             | 1/30-15K             |
| Aural PA Tube or Type       | IF Diplexed    | IF Diplexed    | IF Diplexed     | .....                                | .....                |
| IPA Tube or Type            | .....          | Solid-State    | Solid-State     | .....                                | .....                |
| Cooling System Type         | Forced Air     | Forced Air     | Forced Air      | Water-cooled                         | Water-cooled         |
| Power Consumption           | 8kW            | 15kVa          | 10kVA           | 75kVA                                | 120kVA               |
| Power Factor                | .....          | .....          | .9              | .9                                   | .9                   |
| Color Standards             | NTSC, CCIR "B" | NTSC, CCIR "B" | NTSC, CCIR      | FCC, CCIR                            | FCC, CCIR            |

# Who'll beat Bogner Antennas this year?

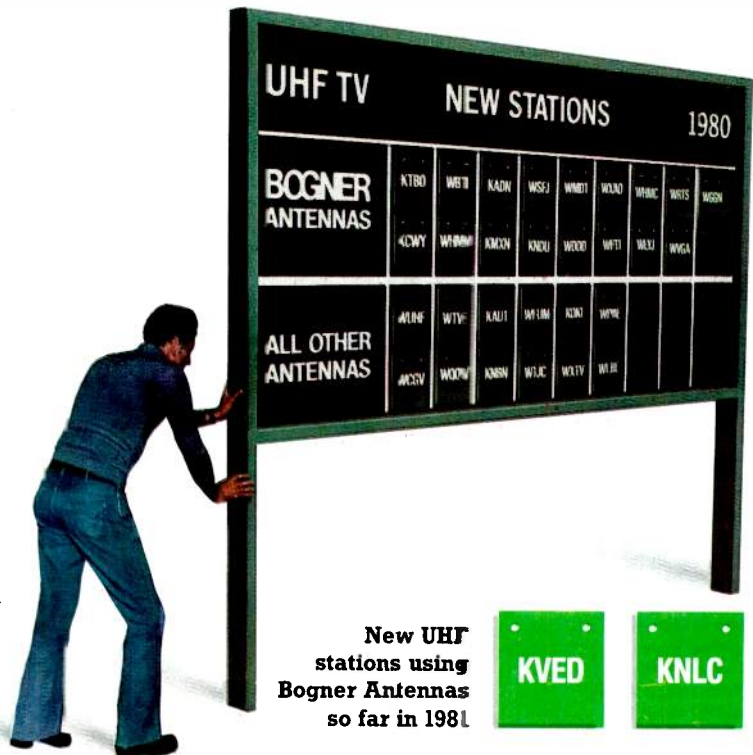
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# TRANSMITTER, TELEVISION

| Manufacturer                | CCA (Singer Broadcast Products Inc.) | Comark Corporation   |                      | EMCEE          |                |
|-----------------------------|--------------------------------------|----------------------|----------------------|----------------|----------------|
| Model Number                | CTU-55BT                             | CTT-U-30             | CTT-U-55             | TTU1000B       | TTU1000RM      |
| <b>Visual Section:</b>      |                                      |                      |                      |                |                |
| Output Power (Peak)         | 55kW                                 | 30kW                 | 55kW                 | 1kW            | 1kW            |
| Carrier Stability (±)       | 250Hz/3 months                       | .....                | .....                | 200Hz          | 300Hz          |
| Carrier Regulation          | 3%                                   | 5%                   | 5%                   | .....          | .....          |
| Response vs. Brightness     | .....                                | 5%                   | 5%                   | .....          | .....          |
| Modulation Capability       | 8%                                   | 3%                   | 3%                   | .....          | .....          |
| Differential Phase/Gain (±) | 5°/9dB                               | 3°/5dB               | 3°/5dB               | 3°/5dB         | 3°/5dB         |
| Linearity (Low Frequency)   | 0.9dB                                | .75dB                | .75dB                | .....          | .....          |
| Signal-to-Noise Ratio       | 51dB                                 | 55dB                 | 55dB                 | .....          | .....          |
| K Factors                   | .....                                | .....                | .....                | 2T 2%          | 2T 2%          |
| Harmonic Radiation          | -60dB                                | per FCC              | per FCC              | -60dB          | -60dB          |
| Visual PA Tube or Type      | Ext. Cavity Klystron                 | EEV Klystron         | EEV Klystron         | Ceramic Triode | Ceramic Triode |
| IPA Tube or Type            | .....                                | Solid-State          | Solid-State          | Solid-State    | Solid-State    |
| Mod Anode Pulsar            | .....                                | Option               | Option               | .....          | .....          |
| IF Level Modulation         | Yes                                  | Yes (Philips PD5580) | Yes (Philips PD5580) | Yes            | Yes            |
| SAW Filtering               | .....                                | Optional             | Optional             | .....          | .....          |
| <b>Aural Section:</b>       |                                      |                      |                      |                |                |
| Output Power Level          | 5.5kW to 11kW                        | 7kW                  | 12kW                 | 100W           | 100W           |
| Carrier Stability (±)       | 250Hz/3 months                       | .....                | .....                | 300Hz          | 300Hz          |
| Frequency Deviation (±)     | 25kHz                                | 25kHz nominal        | 25kHz nominal        | .....          | .....          |
| Pre-Emphasis (µsec)         | 75                                   | 75                   | 75                   | .....          | .....          |
| Harmonic Distortion         | 1%                                   | .....                | .....                | .5%            | 1%             |
| FM Noise Figure             | -60dB                                | Per FCC              | Per FCC              | .....          | .....          |
| AM Noise Figure             | -52dB                                | Per FCC              | Per FCC              | .....          | .....          |
| AF Response (± dB/Hz)       | 1/30-15K                             | .....                | .....                | .....          | .....          |
| Aural PA Tube or Type       | .....                                | EEV Klystron         | EEV Klystron         | IF Diplexed    | IF Diplexed    |
| IPA Tube or Type            | .....                                | Solid-State          | Solid-State          | .....          | .....          |
| Cooling System Type         | Water-cooled                         | Water                | Water                | Forced Air     | Forced Air     |
| Power Consumption           | 190kVA                               | 97kW (75kW)          | 178kW (138kW)        | 5.5kW          | 5.5kW          |
| Power Factor                | 0.9                                  | .....                | .....                | .....          | .....          |
| Color Standards             | FCC, CCIR                            | .....                | .....                | NTSC           | NTSC           |

| Manufacturer                | Harris Communications |                       |                       | Marconi Communications Systems Ltd.  |                                |
|-----------------------------|-----------------------|-----------------------|-----------------------|--------------------------------------|--------------------------------|
| Model Number                | TV-30U                | TV-80U                | TV-110U               | B7319                                | B7309                          |
| <b>Visual Section:</b>      |                       |                       |                       |                                      |                                |
| Output Power (Peak)         | 30kW                  | 60kW                  | 110kW                 | 4kW                                  | 40kW                           |
| Carrier Stability (±)       | 500Hz                 | 500Hz                 | 500Hz                 | 500Hz                                | 500Hz                          |
| Carrier Regulation          | 3%                    | 3%                    | 2%                    | .....                                | .....                          |
| Response vs. Brightness     | 0.75dB                | .75dB                 | .75dB                 | .....                                | .....                          |
| Modulation Capability       | 1%                    | 1%                    | 1%                    | 3%                                   | 3%                             |
| Differential Phase/Gain (±) | 4°/5dB                | 4°/5dB                | 4°/5dB                | 3°/95                                | 3°/85                          |
| Linearity (Low Frequency)   | 1dB                   | 1dB                   | 1dB                   | .9                                   | .9                             |
| Signal-to-Noise Ratio       | 50dB                  | 50dB                  | 50dB                  | 59dB                                 | 49dB                           |
| K Factors                   | 2T 2%, 12.5T 5%       | 2T 2%, 12.5T 5%       | 2T 2%, 12.5T 5%       | 2T 2%, Bar 1%                        | 2T 2%, Bar 1%                  |
| Harmonic Radiation          | -80dB                 | -60dB                 | -90dB                 | -60dB                                | 20mW                           |
| Visual PA Tube or Type      | 5-Cavity Klystron     | 5-Cavity Klystron (2) | 5-Cavity Klystron (2) | EEV 370                              | 4-Cavity Klystron              |
| IPA Tube or Type            | Solid-State           | Solid-State           | Solid-State           | Solid-State                          | Solid-State                    |
| Mod Anode Pulsar            | Option                | Option                | Option                | .....                                | .....                          |
| IF Level Modulation         | Yes                   | Yes                   | Yes                   | Yes                                  | Yes                            |
| SAW Filtering               | Yes                   | Yes                   | Yes                   | .....                                | .....                          |
| <b>Aural Section:</b>       |                       |                       |                       |                                      |                                |
| Output Power Level          | 6kW                   | 12kW                  | 22kW, 11kW Ch 52 up   | .4kW (.8kW)                          | 4kW (8kW)                      |
| Carrier Stability (±)       | 500Hz                 | 500Hz                 | 500Hz                 | 500Hz                                | 500Hz                          |
| Frequency Deviation (±)     | 25kHz                 | 25kHz                 | 25kHz                 | 50kHz                                | 50kHz                          |
| Pre-Emphasis (µsec)         | 75                    | 75                    | 75                    | 75, 50                               | 75, 50                         |
| Harmonic Distortion         | 0.5%                  | .5%                   | .5%                   | .1%                                  | 1%                             |
| FM Noise Figure             | -59dB                 | -59dB                 | -59dB                 | -60dB                                | -60dB                          |
| AM Noise Figure             | -55dB                 | -55dB                 | -55dB                 | -50dB                                | -50dB                          |
| AF Response (± dB/Hz)       | 0.5/30-15K            | .5/30-15K             | .5/30-15K             | 1/30-15K                             | 1/30-15K                       |
| Aural PA Tube or Type       | 5-Cavity Klystron     | 5-Cavity Klystron     | 5-Cavity Klystron     | IF Diplexed                          | 4-Cavity Klystron              |
| IPA Tube or Type            | Solid-State           | Solid-State           | Solid-State           | Solid-State                          | Solid-State                    |
| Cooling System Type         | Vapor-Phase           | Vapor-Phase           | Vapor-Phase           | Vapor-Phase                          | Vapor-Phase                    |
| Power Consumption           | 146kW                 | 236kW                 | 377kW, 465kW Ch 52 up | 48kW                                 | 198kW                          |
| Power Factor                | 0.9                   | .9                    | .9                    | .9                                   | .9                             |
| Color Standards             | NTSC                  | NTSC                  | NTSC                  | NTSC, PAL, SECAM, CCIR G, K, I, M, N | NTSC, PAL, SECAM, CCIR G, M, N |

# TRANSMITTER, TELEVISION

| Manufacturer                | Marconi<br>Communications<br>Systems Ltd. | NEC America Inc.  | PCU-705M          | PCU-740J          | PCU-780K            | PYE TVT (Phillips)<br>LDM1208 |
|-----------------------------|---|-------------------|-------------------|-------------------|---------------------|-------------------------------|
| Model Number                | B7321                                     |                   |                   |                   |                     |                               |
| Visual Section:             |   |                   |                   |                   |                     |                               |
| Output Power (Peak)         | 55kW                                      | 5kW               | 40kW              | 80kW              | 55kW                |                               |
| Carrier Stability (±)       | 500Hz                                     | 150Hz in 3 Months | 150Hz in 3 Months | 150Hz in 3 Months | 200Hz               |                               |
| Carrier Regulation          | .....                                     | 2%                | 2%                | 2%                | 2%                  |                               |
| Response vs. Brightness     | .....                                     | 2%                | 2%                | 2%                | .75dB               |                               |
| Modulation Capability       | 3%  | .....             | .....             | .....             | .5%                 |                               |
| Differential Phase/Gain (±) | 3%/95                                     | 3%/5%             | 3%/5%             | 3%/5%             | 1.5%/5dB            |                               |
| Linearity (Low Frequency)   | 0.9                                       | .....             | .....             | .....             | 2%                  |                               |
| Signal-to-Noise Ratio       | 49dB                                      | 52dB              | 52dB              | 52dB              | 55dB                |                               |
| K Factors                   | 2T 2%, Bar 1%                             | 1.5% 2T           | 1.5% 2T           | 1.5% 2T           | 2T 2%, 12.5T 5%     |                               |
| Harmonic Radiation          | -60dB                                     | -60dB             | -80dB             | -80dB             | -60dB               |                               |
| Visual PA Tube or Type      | VA935A Int. Cavity                        | 1AV57 Series      | 1AV97 Series      | 1AV97 Series (2)  | Ext./Int. Klystron* |                               |
| IPA Tube or Type            | Solid-State                               | Solid-State       | Solid-State       | Solid-State       | Solid-State         |                               |
| Mod Anode Pulsar            | .....                                     | .....             | .....             | .....             | .....               |                               |
| IF Level Modulation         | Yes                                       | Yes               | Yes               | Yes               | Yes                 |                               |
| SAW Filtering               | .....                                     | Yes               | Yes               | Yes               | Yes                 |                               |
| Aural Section:              |   |                   |                   |                   |                     |                               |
| Output Power Level          | 5.5kW (11kW)                              | 0.5kW             | 4kW               | 8kW               | 5.5kW               |                               |
| Carrier Stability (±)       | 500Hz                                     | 150Hz in 3 Months | 150Hz in 3 Months | 150Hz in 3 Months | 200Hz               |                               |
| Frequency Deviation (±)     | 50kHz                                     | 100kHz            | 100kHz            | 100kHz            | 100kHz              |                               |
| Pre-Emphasis (µsec)         | 75, 50                                    | 75                | 75                | 75                | 75                  |                               |
| Harmonic Distortion         | 1%  | .5%               | .5%               | .5%               | .5%                 |                               |
| FM Noise Figure             | -60dB                                     | -60dB             | -60dB             | -60dB             | -60dB               |                               |
| AM Noise Figure             | -50dB                                     | -50dB             | -50dB             | -50dB             | -55dB               |                               |
| AF Response (± dB/Hz)       | 1/30-15K                                  | .5/30-15K         | .5/30-15K         | .5/30-15K         | .5/30-15K           |                               |
| Aural PA Tube or Type       | VA935A Int. Cavity                        | IF Multiplexed    | 1AV97 Series      | 1AV97 Series      | Ext./Int. Klystron* |                               |
| IPA Tube or Type            | Solid-State                               | Solid-State       | Solid-State       | Solid-State       | Solid-State         |                               |
| Cooling System Type         | Vapor-Phase                               | Forced Air        | Vapor-Phase       | Vapor-Phase       | Vapor-Phase         |                               |
| Power Consumption           | 264kW                                     | 33kW              | 175kW             | 280kW             | 175kW <sup>1</sup>  |                               |
| Power Factor                | 0.9                                       | .....             | .....             | .....             | .9                  |                               |
| Color Standards             | NTSC, CCIR M                              | CCIR-G, K, I, M   | CCIR-G, K, I, M   | CCIR-G, K, I, M   | NTSC                |                               |

| Manufacturer                | RCA Broadcast Systems |                    |                    |                    | Townsend Associates, Inc. |
|-----------------------------|-----------------------|--------------------|--------------------|--------------------|---------------------------|
| Model Number                | TTU-30D               | TTU-55C            | TTU-110C           | TTU-220D           | TA-1000 ATU               |
| Visual Section:             |                       |                    |                    |                    |                           |
| Output Power (Peak)         | 30kW                  | 55kW               | 110kW              | 220kW              | 1kW                       |
| Carrier Stability (±)       | 365Hz                 | 365Hz              | 365Hz              | 365Hz              | 500Hz                     |
| Carrier Regulation          | 3%                    | 3%                 | 3%                 | 3%                 | .....                     |
| Response vs. Brightness     | -1, +1.5dB            | -1, +1.5dB         | -1, +1.5dB         | -1, +1.5dB         | .....                     |
| Modulation Capability       | 3%                    | 3%                 | 3%                 | 3%                 | 5%                        |
| Differential Phase/Gain (±) | 3%/5dB                | 3%/5dB             | 3%/5dB             | 3%/5dB             | 3%/1dB                    |
| Linearity (Low Frequency)   | 1dB                   | 1dB                | 1dB                | 1dB                | 1dB                       |
| Signal-to-Noise Ratio       | 55dB                  | 55dB               | 55dB               | 55dB               | 60dB                      |
| K Factors                   | 2T 2%, 12.5T 8%       | 2T 2%, 12.5T 8%    | 2T 2%, 12.5T 8%    | 2T 2%, 12.5T 8%    | .....                     |
| Harmonic Radiation          | -60dB                 | -60dB              | -60dB              | -60dB              | -60dB                     |
| Visual PA Tube or Type      | 4 Int. Cavity         | 5 Int. Cavity      | 5 int. Cavity (2)  | 5 int. Cavity (4)  | RCA 4628                  |
| IPA Tube or Type            | Solid-State           | Solid-State        | Solid-State        | Solid-State        | Solid-State               |
| Mod Anode Pulsar            | Option                | Option             | Option             | Option             | .....                     |
| IF Level Modulation         | Yes                   | Yes                | Yes                | Yes                | Yes                       |
| SAW Filtering               | Yes                   | Yes                | Yes                | Yes                | Yes                       |
| Aural Section:              |                       |                    |                    |                    |                           |
| Output Power Level          | 2.4 to 6.6kW          | 6 to 12kW          | 8 to 24kW          | 24kW               | 100W                      |
| Carrier Stability (±)       | 365Hz                 | 365Hz              | 365Hz              | 365Hz              | 500Hz                     |
| Frequency Deviation (±)     | 50kHz                 | 50kHz              | 50kHz              | 50kHz              | 25kHz                     |
| Pre-Emphasis (µsec)         | 75                    | 75                 | 75                 | 75                 | 75                        |
| Harmonic Distortion         | 1%                    | 1%                 | 1%                 | 1%                 | 1%                        |
| FM Noise Figure             | -60dB                 | -60dB              | -60dB              | -60dB              | -58dB                     |
| AM Noise Figure             | -50dB                 | -50dB              | -50dB              | -50dB              | -50dB                     |
| AF Response (± dB/Hz)       | 1/30-15K              | 1/30-15K           | 1/30-15K           | 1/30-15K           | 1/75µsec Curve            |
| Aural PA Tube or Type       | 4 Int. Cavity         | 5 Int. Cavity      | 5 Int. Cavity      | 5 Int. Cavity      | Solid-State               |
| IPA Tube or Type            | Solid-State           | Solid-State        | Solid-State        | Solid-State        | .....                     |
| Cooling System Type         | Vapor-Phase           | Vapor-Phase        | Vapor-Phase        | Vapor-Phase        | Forced Air                |
| Power Consumption           | 93kW <sup>1</sup>     | 158kW <sup>1</sup> | 315kW <sup>1</sup> | 610kW <sup>1</sup> | 8.15kW                    |
| Power Factor                | 0.9                   | .9                 | .9                 | .9                 | .....                     |
| Color Standards             | NTSC                  | NTSC               | NTSC               | NTSC               | NTSC, CCIR M              |

\*EEV K3382, 3383, EEV K3555HA, 56HA, 57HA, Valvo YK1195, 96, 97, Varian VA953HA, 54HA, 55HA.  
<sup>1</sup>System with pulsar, 10% aural power.

# TRANSMITTER, TELEVISION

| Manufacturer                | Townsend Associates, Inc.    |                                | Townsend Associates, Inc.  |                               |                                |
|-----------------------------|------------------------------|--------------------------------|----------------------------|-------------------------------|--------------------------------|
| Model Number                | TA-30NET (NVT)               | TA-55NV                        | TA-110NV                   | TA-30NE                       | TA-110NE                       |
| <b>Visual Section:</b>      |                              |                                |                            |                               |                                |
| Output Power (Peak)         | 30kW                         | 55kW                           | 110kW                      | 30kW                          | 110kW                          |
| Carrier Stability (±)       | 150Hz                        | 150Hz                          | 150Hz                      | 150Hz                         | 150Hz                          |
| Carrier Regulation          | 3%                           | 3%                             | 3%                         | 3%                            | 3%                             |
| Response vs. Brightness     | -1.5dB                       | -1.5dB                         | -1.5dB                     | -1.5dB                        | -1.5dB                         |
| Modulation Capability       | 5%                           | 5%                             | 5%                         | 5%                            | 5%                             |
| Differential Phase/Gain (±) | 3°/1dB                       | 3°/1dB                         | 3°/1dB                     | 3°/1dB                        | 3°/1dB                         |
| Linearity (Low Frequency)   | 1dB                          | 1dB                            | 1dB                        | 1dB                           | 1dB                            |
| Signal-to-Noise Ratio       | 60dB                         | 60dB                           | 60dB                       | 60dB                          | 60dB                           |
| K Factors                   | .....                        | .....                          | .....                      | .....                         | .....                          |
| Harmonic Radiation          | -60dB                        | -60dB                          | -60dB                      | -60dB                         | -60dB                          |
| Visual PA Tube or Type      | EEV K3276H*                  | Varian VA953H                  | Varian VA953H (2)          | EEV K3276H*                   | EEV K3276H* (2)                |
| IPA Tube or Type            | Solid-State                  | Solid-State                    | Solid-State                | Solid-State                   | Solid-State                    |
| Mod Anode Pulsar            | Available                    | Available                      | Available                  | Available                     | Available                      |
| IF Level Modulation         | Yes                          | Yes                            | Yes                        | Yes                           | Yes                            |
| SAW Filtering               | Yes                          | Yes                            | Yes                        | Yes                           | Yes                            |
| <b>Aural Section:</b>       |                              |                                |                            |                               |                                |
| Output Power Level          | 3kW                          | 11kW                           | 22kW                       | 6kW                           | 22kW                           |
| Carrier Stability (±)       | 500Hz                        | 500Hz                          | 500Hz                      | 500Hz                         | 500Hz                          |
| Frequency Deviation (±)     | 50kHz                        | 50kHz                          | 50kHz                      | 50kHz                         | 50kHz                          |
| Pre-Emphasis (µsec)         | 75                           | 75                             | 75                         | 75                            | 75                             |
| Harmonic Distortion         | 1.2%                         | 1.5%                           | 1.5%                       | 1.5%                          | 1.5%                           |
| FM Noise Figure             | -58dB                        | -58dB                          | -58dB                      | -58dB                         | -58dB                          |
| AM Noise Figure             | -50dB                        | -50dB                          | -50dB                      | -50dB                         | -50dB                          |
| AF Response (± dB/Hz)       | 1/75µsec Curve               | 1/75µsec Curve                 | 1/75µsec Curve             | 1/75µsec Curve                | 1/75µsec Curve                 |
| Aural PA Tube or Type       | CSF-382                      | Varian VA953H                  | Varian VA953H              | EEV K3276H                    | EEV K3276H*                    |
| IPA Tube or Type            | Solid-State                  | Solid-State                    | Solid-State                | Solid-State                   | Solid-State                    |
| Cooling System Type         | Air/Water                    | Vapor-Phase                    | Vapor-Phase                | Water                         | Water                          |
| Power Consumption           | 100.2kW(78.7kW) <sup>2</sup> | 187.7kW (146.7kW) <sup>2</sup> | 369kW (287kW) <sup>2</sup> | 100.4kW (78.9kW) <sup>2</sup> | 346.6kW (266.3kW) <sup>2</sup> |
| Power Factor                | .....                        | .....                          | .....                      | .....                         | .....                          |
| Color Standards             | CCIR M                       | CCIR M                         | CCIR M                     | CCIR M                        | CCIR M                         |

\*Varian 4KM100

<sup>2</sup>Figure in parenthesis is consumption using an optional mod anode pulsar system.

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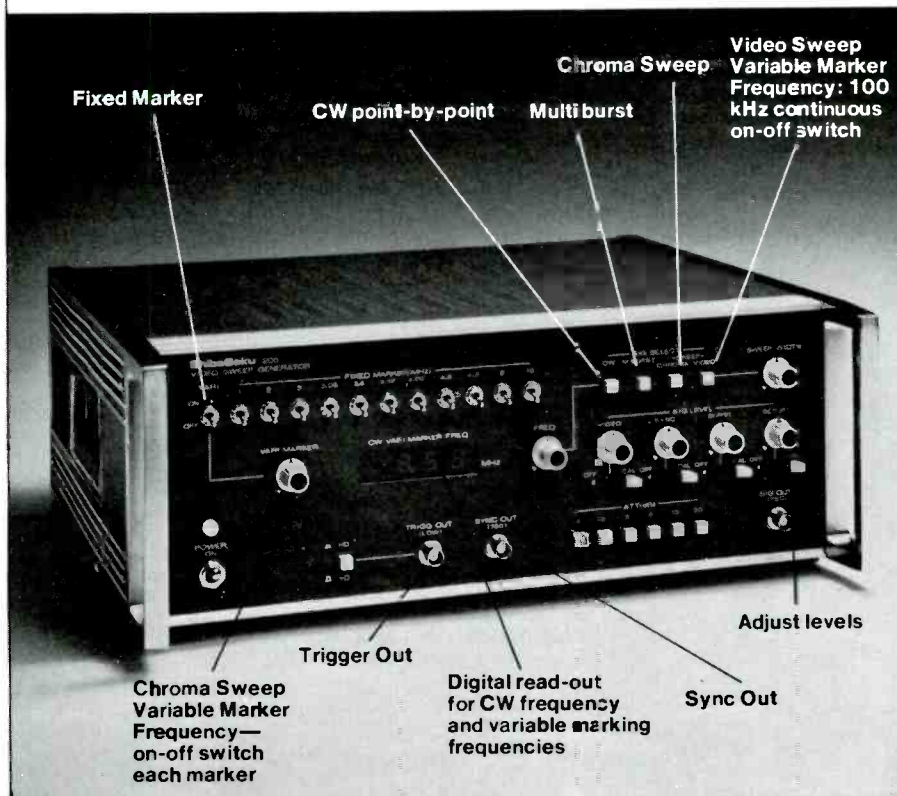
# TRANSMITTER, TELEVISION

VHF (Low Band 2-6, High Band 7-13)

TV transmitting equipment for generation, modulation and amplification of the visual and aural carrier signals from baseband audio and video. The RF output impedance is 50 Ohms. The video signal to the exciter is 1V P-P, 75 Ohm. Audio signals to the exciter are approximately +10dBm, 600 Ohm balanced. The aural carrier frequency shall be 4.5MHz higher than the visual carrier. The transmitted sideband response and envelop delay characteristics fall within FCC regulations. Visual modulation is negative, i.e., sync tip produces maximum output power. Aural modulation is FM. Channel bandwidth is 6MHz.

| Manufacturer                | Acrodyne         |                 |                   | Canadian G.E.   |                 |
|-----------------------------|------------------|-----------------|-------------------|-----------------|-----------------|
| Model Number                | TT-330VL(VH)     | TT-348VL(VH)    | TT350VH           | TTC500CFH       | TTC6000FL       |
| <b>Visual Section:</b>      |                  |                 |                   |                 |                 |
| Output Power (Peak)         | 100W CH2-6(7-13) | 5kW CH2-6(7-13) | 10kW (Hi VHF)     | 5kW (Hi VHF)    | 6kW (Lo VHF)    |
| Carrier Stability (±)       | 250Hz            | 250Hz           | 250Hz             | 250Hz           | 250Hz           |
| Carrier Regulation          | 3%               | 3%              | 3%                | 3%              | 3%              |
| Response vs. Brightness     | .05dB            | .5dB            | .25%              | .75dB           | .75dB           |
| Modulation Capability       | 5%               | 5%              | 3%                | 2%              | 2%              |
| Differential Phase/Gain (±) | 1.5°/.5dB        | 1.5°/.5dB       | 1°/.5dB           | 3°/.5dB         | 3°/.5dB         |
| Linearity (Low Frequency)   | .....            | 5%              | 5%                | .75dB           | .75dB           |
| Signal-to-Noise Ratio       | 55dB             | 55dB            | .....             | 55dB            | 54dB            |
| K Factors                   | 2T 2%            | 2T 2%           | .....             | 2T 2%, 12.5T 5% | 2T 2%, 12.5T 5% |
| Harmonic Radiation          | -80dB            | -80dB           | -80dB             | -75dB           | -75dB           |
| Visual PA Tube or Type      | 1                | 2               | CSF TH561         | 8806            | 8806            |
| IPA Tube or Type            | Solid-state      | Solid-state     | Solid-state       | Solid-state     | Solid-state     |
| IF Level Modulation         | Yes              | Yes             | Yes               | Yes             | Yes             |
| SAW Filtering               | .....            | .....           | .....             | Yes             | Yes             |
| <b>Aural Section:</b>       |                  |                 |                   |                 |                 |
| Output Power Level          | 10W              | 500W            | 1kW               | .5kW            | .6kW            |
| Carrier Stability (±)       | PLL to Visual    | PLL to Visual   | 100Hz             | 250Hz           | 250Hz           |
| Frequency Deviation (±)     | 25kHz            | 25kHz           | to 50kHz          | to 50kHz        | to 50kHz        |
| AF Response (± dB/Hz)       | .5/30-15K        | .5/30-15K       | .5/30-15K         | .5/30-15K       | .5/30-15K       |
| Pre-emphasis (µsec)         | 75               | 75              | .....             | 50, 70          | 50, 70          |
| Harmonic Distortion         | 0.5%             | .5%             | .5%               | .75%            | .75%            |
| FM Noise Figure             | -60dB            | -60dB           | -60dB             | -60dB           | -60dB           |
| AM Noise Figure             | -50dB            | -50dB           | -50dB             | -50dB           | -50dB           |
| Aural PA Tube or Type       | Solid-state      | .....           | Lo Level Diplexed | 8791            | 8791            |
| IPA Tube or Type            | .....            | Solid-state     | Solid-state       | Solid-state     | Solid-state     |
| Cooling System Type         | Forced Air       | Forced Air      | Vapor-Phase       | Forced Air      | Forced Air      |
| Power Consumption           | 1100W            | 20kW            | 31KVA             | 14.5kVA         | 19KVA           |
| Power Factor                | .....            | .....           | .....             | .9              | .9              |
| Color Standards             | NTSC, CCIR "B"   | NTSC, CCIR "B"  | NTSC, CCIR "B"    | NTSC, CCIR      | NTSC, CCIR      |

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# TRANSMITTER, TELEVISION

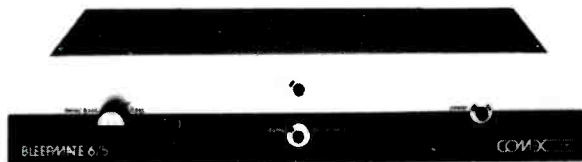
| Manufacturer                | Canadian GE         |                     |                     | EMCEE                        | Harris Communications       |
|-----------------------------|---------------------|---------------------|---------------------|------------------------------|-----------------------------|
| Model Number                | TTC18000FH          | TTC30000FH          | TTV10RM             | TTV100RM                     | TV-25H                      |
| <b>Visual Section:</b>      |                     |                     |                     |                              |                             |
| Output Power (Peak)         | 16kW (Hi VHF)       | 30kW (Hi VHF)       | 10W (CH2-13)        | 100W (Ch2-13)                | 25kW (Hi VHF)               |
| Carrier Stability (±)       | 250Hz               | 250Hz               | 300Hz               | 300Hz                        | 250Hz                       |
| Carrier Regulation          | 3%                  | 3%                  | .....               | .....                        | 3%                          |
| Response vs. Brightness     | 0.75dB              | .75dB               | .....               | .....                        | .75dB                       |
| Modulation Capability       | 2%                  | 2%                  | .....               | .....                        | 1%                          |
| Differential Phase/Gain (±) | 3 <sup>o</sup> /5dB | 3 <sup>o</sup> /5dB | 3 <sup>o</sup> /5dB | 3 <sup>o</sup> /5dB          | 1 <sup>o</sup> /3%          |
| Linearity (Low Frequency)   | 0.75dB              | .75dB               | .....               | .....                        | 1%                          |
| Signal-to-Noise Ratio       | 55dB                | 55dB                | .....               | .....                        | 55dB                        |
| K Factors                   | 2T 2%, 12.5T 5%     | 2T 2%, 12.5T 5%     | 2T 2%               | 2T 2%                        | 2T 2%, 12.5T 5%             |
| Harmonic Radiation          | -75dB               | -75dB               | -60dB               | -60dB                        | -80dB                       |
| Visual PA Tube or Type      | 8807                | 9007                | Solid-state         | Solid-state                  | 8916                        |
| IPA Tube or Type            | Solid-state         | Solid-state         | .....               | .....                        | 8988                        |
| IF Level Modulation         | Yes                 | Yes                 | .....               | .....                        | Yes                         |
| SAW Filtering               | Yes                 | Yes                 | .....               | .....                        | Yes                         |
| <b>Aural Section:</b>       |                     |                     |                     |                              |                             |
| Output Power Level          | 1.6kW               | 3kW                 | 1W                  | 10W                          | 5kW                         |
| Carrier Stability (±)       | 250Hz               | 250Hz               | .0015%              | .0015%                       | 250Hz                       |
| Frequency Deviation (±)     | to 50kHz            | to 50kHz            | .....               | .....                        | 25kHz                       |
| AF Response (± dB/Hz)       | 0.5/30-15K          | .5/30-15K           | .....               | .....                        | 0.5/75µsec curve            |
| Pre-emphasis (µsec)         | 50, 70              | 50, 75              | .....               | .....                        | 75                          |
| Harmonic Distortion         | .75%                | .75%                | 1%                  | 1%                           | 0.5%                        |
| FM Noise Figure             | -60dB               | -60dB               | .....               | .....                        | -60dB                       |
| AM Noise Figure             | -50dB               | -50dB               | .....               | .....                        | -55dB                       |
| Aural PA Tube or Type       | 8792                | 8806                | Solid-state         | Solid-state                  | 8807                        |
| IPA Tube or Type            | Solid-state         | Solid-state         | .....               | .....                        | Solid-state                 |
| Cooling System Type         | Forced Air          | Forced Air          | Forced Air          | Forced Air                   | Forced Air                  |
| Power Consumption           | 39kVA               | 62kVA               | 180W                | 250W                         | 62kVA                       |
| Power Factor                | 0.9                 | .95                 | .....               | .....                        | .....                       |
| Color Standards             | NTSC, CCIR          | NTSC, CCIR          | NTSC, PAL, SECAM    | NTSC, PAL, SECAM<br>CCIR "B" | NTSC, CCIR "M",<br>CCIR "B" |

| Manufacturer                | Harris Communications |                    |                    |                             |                     |
|-----------------------------|-----------------------|--------------------|--------------------|-----------------------------|---------------------|
| Model Number                | BT-35L2               | TV-10H             | BT-18L2            | TV-18H                      | TV-50H              |
| <b>Visual Section:</b>      |                       |                    |                    |                             |                     |
| Output Power (Peak)         | 35kW (Lo VHF)         | 13kW (Hi VHF)      | 18kW (Lo VHF)      | 18kW (Hi VHF)               | 50kW (Hi VHF)       |
| Carrier Stability (±)       | 250Hz                 | 250Hz              | 250Hz              | 250Hz                       | 250Hz               |
| Carrier Regulation          | 3%                    | 3%                 | 3%                 | 3%                          | 3%                  |
| Response vs. Brightness     | 0.75dB                | .75dB              | .75dB              | .75dB                       | .75dB               |
| Modulation Capability       | 3%                    | 0%                 | 3%                 | 1%                          | 1%                  |
| Differential Phase/Gain (±) | 1 <sup>o</sup> /3%    | 1 <sup>o</sup> /3% | 1 <sup>o</sup> /3% | 1 <sup>o</sup> /3%          | 1 <sup>o</sup> /5dB |
| Linearity (Low Frequency)   | 0.5%                  | 10%                | .5dB               | 1dB                         | 1%                  |
| Signal-to-Noise Ratio       | 53dB                  | 55dB               | 53dB               | 55dB                        | 55dB                |
| K Factors                   | 2T 2%, 12.5T 5%       | 2T 2%, 12.5T 5%    | 2T 2%, 12.5T 5%    | 2T 2%, 12.5T 5%             | 2T 2%, 12.5T 5%     |
| Harmonic Radiation          | -80dB                 | -80dB              | -80dB              | -80dB                       | -80dB               |
| Visual PA Tube or Type      | (2) 8807, 8806        | 8807               | 8807, 8792         | 8916                        | 8984                |
| IPA Tube or Type            | 7289, 8122            | 8988               | 7289, 8122         | 8988                        | 8988                |
| IF Level Modulation         | Yes                   | Yes                | Yes                | Yes                         | Yes                 |
| SAW Filtering               | Yes                   | Yes                | Yes                | Yes                         | Yes                 |
| <b>Aural Section:</b>       |                       |                    |                    |                             |                     |
| Output Power Level          | 7kW                   | 1.3kW              | 3.6kW              | 3.6kW                       | 5kW (10kW Option)   |
| Carrier Stability (±)       | 250Hz                 | 250Hz              | 250Hz              | 250Hz                       | 250Hz               |
| Frequency Deviation (±)     | 25kHz                 | 25kHz              | 25kHz              | 25kHz                       | 25kHz               |
| AF Response (± dB/Hz)       | 0.5/75µsec curve      | .5/75µsec curve    | .5/75µsec curve    | .5/75µsec curve             | .5/75µsec curve     |
| Pre-emphasis (µsec)         | 75                    | 75                 | 75                 | 75                          | 75                  |
| Harmonic Distortion         | 0.5%                  | .5%                | .5%                | .5%                         | .5%                 |
| FM Noise Figure             | -80dB                 | -80dB              | -60dB              | -60dB                       | -60dB               |
| AM Noise Figure             | -55dB                 | -55dB              | -55dB              | -55dB                       | -55dB               |
| Aural PA Tube or Type       | 8807, 8792            | 3CX3000A7          | 8807               | 8807                        | 8807                |
| IPA Tube or Type            | 8122                  | Solid-state        | 8122               | Solid-state                 | Solid-state         |
| Cooling System Type         | Forced Air            | Forced Air         | Forced Air         | Forced Air                  | Forced Air          |
| Power Consumption           | 82kVA                 | 30kVA              | 43kVA              | 59kVA                       | 125kVA              |
| Power Factor                | 0.95                  | .97                | .....              | .....                       | .....               |
| Color Standards             | NTSC                  | CCIR "M"           | NTSC, CCIR "B"     | NTSC, CCIR "M",<br>CCIR "B" | NTSC                |

# TRANSMITTER, TELEVISION

| Manufacturer                      | Marconi            | NEC America Inc. |                 | Pye TVT (Philips) |
|-----------------------------------|--------------------|------------------|-----------------|-------------------|
| Model Number                      | B7433              | PCN-1205AH       | PCN-1213BL      | LDM 1211/06       |
| <b>Visual Section:</b>            |                    |                  |                 |                   |
| Output Power (Peak)               | 10kW (Hi VHF)      | 5kW (Ch 7-13)    | 10kW (Ch 2-6)   | 25kW (Ch 7-13)    |
| Carrier Stability ( $\pm$ )       | 200Hz              | 150Hz per Month  | 150Hz per Month | 150Hz per Month   |
| Carrier Regulation                | 2%                 | 2%               | 2%              | 2%                |
| Response vs. Brightness           | .....              | .....            | .....           | .....             |
| Modulation Capability             | 3%                 | .....            | .....           | 0.5%              |
| Differential Phase/Gain ( $\pm$ ) | 20nsec/5%          | 1°/3%            | 1°/3%           | 3°/5dB            |
| Linearity (Low Frequency)         | 2%                 | .....            | .....           | 1dB               |
| Signal-to-Noise Ratio             | 54dB               | 52dB             | 52dB            | 55dB              |
| K Factors                         | 2T 2%, Bar 1%      | 1.5% 2T          | 1.5% 2T         | 2T 2%             |
| Harmonic Radiation                | 1mW                | -80dB            | -80dB           | -40dB             |
| Visual PA Tube or Type            | T-CSF TH361        | 8F76R            | 8F76R           | 8F68R             |
| IPA Tube or Type                  | Solid-state        | Solid-State      | Solid-State     | Solid-State       |
| IF Level Modulation               | Yes                | Yes              | Yes             | Yes               |
| SAW Filtering                     | Yes                | Yes              | Yes             | .....             |
| <b>Aural Section:</b>             |                    |                  |                 |                   |
| Output Power Level                | 1kW                | 500W/1kW         | 1kW/2kW         | 2.5kW/5kW         |
| Carrier Stability ( $\pm$ )       | 200Hz              | 150Hz per Month  | 150Hz per Month | 150Hz per Month   |
| Frequency Deviation ( $\pm$ )     | to 50kHz           | 100kHz           | 100kHz          | 100kHz            |
| AF Response ( $\pm$ dB/Hz)        | 1/30-15K           | .5/30-15K        | .5/30-15K       | .5/30-15K         |
| Pre-emphasis ( $\mu$ sec)         | 50, 75             | 75               | 75              | 75                |
| Harmonic Distortion               | 1%                 | .5%              | .5%             | .5%               |
| FM Noise Figure                   | -60dB              | -60dB            | -60dB           | -60dB             |
| AM Noise Figure                   | -50dB              | -50dB            | -50dB           | -50dB             |
| Aural PA Tube or Type             | Solid-state        | Solid-State      | Solid-State     | Solid-State       |
| IPA Tube or Type                  | .....              | Solid-State      | Solid-State     | Solid-State       |
| Cooling System Type               | Forced Air         | Forced Air       | Forced-Air      | Forced Air        |
| Power Consumption                 | 25kW               | 16kW             | 30kW            | 56kW              |
| Power Factor                      | 0.9                | .....            | .....           | 0.9               |
| Color Standards                   | NTSC-M, PAL, SECAM | CCIR-B, M        | CCIR-B, M       | CCIR-B, M         |

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# TRANSMITTER, TELEVISION

| Manufacturer                      | Model Number        | RCA Broadcast Systems |                   |                   |                   |
|-----------------------------------|---------------------|-----------------------|-------------------|-------------------|-------------------|
|                                   |                     | TTG-12H               | TTG-16L           | TTG-17H           | TTG-30H           |
| <b>Visual Section:</b>            |                     |                       |                   |                   |                   |
| Output Power (Peak)               | 22kW (Lo VHF)       | 12kW (Hi VHF)         | 16kW (Lo VHF)     | 17kW (Hi VHF)     | 30kW (Hi VHF)     |
| Carrier Stability ( $\pm$ )       | 50Hz                | 250Hz                 | 250Hz             | 250Hz             | 250Hz             |
| Carrier Regulation                | 2%                  | 2%                    | 3%                | 3%                | 3%                |
| Response vs. Brightness           | 0.75dB              | .75dB                 | .75dB             | .75dB             | .75dB             |
| Modulation Capability             | 0.5%                | 1%                    | 1%                | 1%                | 1%                |
| Differential Phase/Gain ( $\pm$ ) | 1.5 $^{\circ}$ /5dB | 2 $^{\circ}$ /5dB     | 2 $^{\circ}$ /5dB | 2 $^{\circ}$ /5dB | 2 $^{\circ}$ /5dB |
| Linearity (Low Frequency)         | 1%                  | 1dB                   | 1dB               | 1dB               | 1dB               |
| Signal-to-Noise Ratio             | 55dB                | 55dB                  | 55dB              | 55dB              | 55dB              |
| K Factors                         | 2T 2%, 12.5T 5%     | 2T 2%, 12.5T 5%       | 2T 2%, 12.5T 5%   | 2T 2%, 12.5T 5%   | 2T 2%, 12.5T 5%   |
| Harmonic Radiation                | -70dB               | -60dB                 | -80dB             | -80dB             | -80dB             |
| Visual PA Tube or Type            | YL1440              | 8976                  | 8976              | 8976              | 9007              |
| IPA Tube or Type                  | YL1520              | Solid-state           | Solid-state       | Solid-state       | Solid-state       |
| IF Level Modulation               | Yes                 | Yes                   | Yes               | Yes               | Yes               |
| SAW Filtering                     | Yes                 | Yes                   | Yes               | Yes               | Yes               |
| <b>Aural Section:</b>             |                     |                       |                   |                   |                   |
| Output Power Level                | 2.4kW               | 1.2kW                 | 3.6kW             | 3.75kW            | 6.6kW             |
| Carrier Stability ( $\pm$ )       | 200Hz               | 5Hz                   | 5Hz               | 5Hz               | 5Hz               |
| Frequency Deviation ( $\pm$ )     | to 100kHz           | to 50kHz              | to 50kHz          | to 50kHz          | to 50kHz          |
| AF Response ( $\pm$ dB/Hz)        | 0.5/30-15K          | .5/30-15K             | .5/30-15K         | .5/30-15K         | .5/30-15K         |
| Pre-emphasis ( $\mu$ sec)         | .75                 | .75                   | .75               | .75               | .75               |
| Harmonic Distortion               | 0.5%                | .5%                   | .5%               | .5%               | .5%               |
| FM Noise Figure                   | -60dB               | -60dB                 | -60dB             | -60dB             | -60dB             |
| AM Noise Figure                   | -55dB               | -52dB                 | -50dB             | -56dB             | -56dB             |
| Aural PA Tube or Type             | YL1440              | Lo Level Diplexed     | 8977              | 8977              | 8977              |
| IPA Tube or Type                  | Solid-state         | Solid-state           | Solid-state       | Solid-state       | Solid-state       |
| Cooling System Type               | Forced Air          | Forced Air            | Forced Air        | Forced Air        | Forced Air        |
| Power Consumption                 | 37kW                | 29kW                  | 44kW              | 45kW              | 60kW              |
| Power Factor                      | .09                 | .94                   | .94               | .94               | .94               |
| Color Standards                   | NTSC                | NTSC-M, PAL-M, PAL-N  | NTSC, PAL-M       | NTSC, PAL-M       | NTSC, PAL-M       |

| Manufacturer                      | RCA Broadcast Systems |                   | Townsend Associates Inc. |                      | Television Technology |
|-----------------------------------|-----------------------|-------------------|--------------------------|----------------------|-----------------------|
|                                   | Model Number          | TTG-30L           | TTG-50H                  | TA-100ATL(H)         | TA-1000ATL(H)         |
| <b>Visual Section:</b>            |                       |                   |                          |                      |                       |
| Output Power (Peak)               | 30kW (Lo VHF)         | 50kW (Hi VHF)     | 100W CH2-6 (7-13)        | 1kW CH2-6 (7-13)     | 10W (CH2-13)          |
| Carrier Stability ( $\pm$ )       | 250Hz                 | 250Hz             | 500Hz                    | 500Hz                | 0.003%                |
| Carrier Regulation                | 3%                    | 3%                | .....                    | .....                | .....                 |
| Response vs. Brightness           | 0.75dB                | .75dB             | .....                    | .....                | .....                 |
| Modulation Capability             | 0.5%                  | 1%                | 5%                       | 5%                   | .....                 |
| Differential Phase/Gain ( $\pm$ ) | 2 $^{\circ}$ /5dB     | 2 $^{\circ}$ /5dB | 3 $^{\circ}$ /1dB        | 3 $^{\circ}$ /1dB    | 2 $^{\circ}$ /5dB     |
| Linearity (Low Frequency)         | 1dB                   | 1dB               | 1dB                      | 1dB                  | .....                 |
| Signal-to-Noise Ratio             | 55dB                  | 55dB              | .....                    | .....                | .....                 |
| K Factors                         | 2T 2%, 12.5T 5%       | 2T 2%, 12.5T 5%   | .....                    | .....                | 2%                    |
| Harmonic Radiation                | -80dB                 | -80dB             | -60dB, 10th harmonic     | -60dB, 10th harmonic | -70dB                 |
| Visual PA Tube or Type            | 9007                  | 8984              | Solid-state              | Solid-state          | Solid-state           |
| IPA Tube or Type                  | Solid-state           | Solid-state       | .....                    | .....                | .....                 |
| IF Level Modulation               | Yes                   | Yes               | Yes                      | Yes                  | .....                 |
| SAW Filtering                     | Yes                   | Yes               | Yes                      | Yes                  | .....                 |
| <b>Aural Section:</b>             |                       |                   |                          |                      |                       |
| Output Power Level                | 6.6kW                 | 6.6kW             | 10W                      | 100W                 | 2W                    |
| Carrier Stability ( $\pm$ )       | 5Hz                   | 5Hz               | 500Hz                    | 500Hz                | 1kHz                  |
| Frequency Deviation ( $\pm$ )     | to 50kHz              | to 50kHz          | 25kHz                    | 25kHz                | .....                 |
| AF Response ( $\pm$ dB/Hz)        | 0.5/30-15K            | .5/30-15K         | 1/75 $\mu$ sec curve     | 1/75 $\mu$ sec curve | .....                 |
| Pre-emphasis ( $\mu$ sec)         | .75                   | .75               | .75                      | .75                  | .....                 |
| Harmonic Distortion               | 0.5%                  | .5%               | 1%                       | 1%                   | .....                 |
| FM Noise Figure                   | -60dB                 | -60dB             | -58dB                    | -58dB                | .....                 |
| AM Noise Figure                   | -56dB                 | -56dB             | -50dB                    | -50dB                | .....                 |
| Aural PA Tube or Type             | 8977                  | 8977              | Solid-state              | Solid-state          | Solid-state           |
| IPA Tube or Type                  | Solid-state           | Solid-state       | .....                    | .....                | .....                 |
| Cooling System Type               | Forced Air            | Forced Air        | Forced Air               | Forced Air           | Forced Air            |
| Power Consumption                 | 59kW                  | 106kW             | 620W                     | 6.1kW                | 75VA                  |
| Power Factor                      | .094                  | .94               | .....                    | .....                | .....                 |
| Color Standards                   | NTSC, PAL-M           | NTSC              | NTSC, CCIR "M"           | NTSC, CCIR "M"       | NTSC                  |

# ANTENNA SYSTEMS

When improvements are considered for the transmitting plant, often it may be discovered through field surveys that the antenna is the culprit in a failure to properly cover a vital portion of the licensed coverage area. Comparison of antenna parameters is difficult. For that reason, the following listing of manufacturers are keyed to the type of antennas they provide for the broadcasting industry.

|  |  |  |
|--|--|--|
| Acrodyne Industries Inc.<br>516 Township Line Road<br>Blue Bell, PA 19422<br>*TV                   | Comark Industries Inc.<br>Box 229<br>Southwick, MA 01077<br>*FM, *TV   | McMartin Industries Inc.<br>4500 South 76 St.<br>Omaha, NE 68127<br>*FM                    |
| Alford Manufacturing Company<br>15 Sixth Road<br>Woburn, MA 01801<br>*FM, *TV                      | Continental Electronics Manufacturing Co.<br>Box 270879<br>Dallas, TX 75227<br>*AM, *FM                          | Micro Communications Inc.<br>Box 4365, Grenier Field<br>Manchester, NH 03108<br>*FM, *TV   |
| Andrew Corporation<br>10500 West 153 St.<br>Orland Park, IL 60462<br>*TV                           | Dielectric Communications<br>Route 121<br>Raymond, ME 04071<br>*FM, *TV  | Nurad Inc.<br>2165 Druid Park Drive<br>Baltimore, MD 21211<br>*TV                          |
| Anixter Mark<br>Box 1548<br>Des Plaines, IL 60018<br>*TV   | EMCEE Broadcast Products<br>Box 68<br>White Haven, PA 19661<br>*TV   | Phelps Dodge Communications Company<br>Route 79<br>Marlboro, NJ 07746<br>*FM, *TV          |
| Bogner Broadcast Equipment Company<br>401 Railroad Ave.<br>Westbury, NY 62305<br>*FM, *TV          | Harris Communications Broadcast Products<br>Box 4290<br>Quincy, IL 62301<br>*AM, *FM, *TV                        | RCA Broadcast Systems<br>Front & Cooper Streets, Bldg. 2-2<br>Camden, NJ 08102<br>*FM, *TV |
| Broadcast Electronics Inc.<br>4100 North 24, Box 3606<br>Quincy, IL 62305<br>*FM                   | HN Engineering Inc.<br>4664 Lougheed Highway<br>Burnaby, British Columbia, Canada V5C 5R7<br>*AM                 | Scala Electronics Corporation<br>Box 4580<br>Medford, OR 97501<br>*FM, *TV                 |
| Canadian General Electric Co., Ltd.<br>396 Atwell Drive<br>Texdale, Ontario, Canada M9W 5C3<br>*TV | Marconi Communications Systems Ltd.<br>Marconi House, New Street<br>Chelmsford, England CM1 1PL<br>*AM, *FM, *TV | Shively Laboratories Inc.<br>36 Harrison Road<br>Bridgton, ME 04009<br>*FM                 |
| Cetec Broadcast Group<br>1110 Mark Ave.<br>Carpinteria, CA 93013<br>*FM, *TV                       | Marconi Electronics Inc. Broadcast Division<br>100 Stonehurst Court<br>Northvale, NJ 07647<br>*AM, *FM, *TV      | Tennaplex Systems Ltd.<br>34 Bentley Ave.<br>Ottawa, Ontario, Canada K2E 6T8<br>*FM, *TV   |

# STL EQUIPMENT

As broadcast stations improve their facilities, occasionally relocation of the studio facilities is required. Relocation of the transmitter is not as feasible. Current equipment for Studio-Transmitter-Link operation far surpass use of leased telephone lines for signal transmission from the studio to the transmitting plant both in signal quality and in overall and long range costs. For stations that want to replace STL equipment or perhaps begin to use such operation, no comparison materials were compiled from information received from manufacturers. The following list of manufacturers of STL equipment will provide a source guide to the equipment currently available.

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| Avantek Inc.<br>3175 Bowers Ave.<br>Santa Clara, CA 95051  | LeCroy Fiberoptic Systems Division<br>700 S. Main St.<br>Spring Valle, NY 10977 | NEC America Inc.<br>130 Martin Lane<br>Elk Grove, IL 60007                          |
| Bayly Engineering Limited<br>(AEG-Telefunken Group)<br>167 Hunt St.<br>Ajax, Ontario, Canada L1S 1P6 | Marti Electronics<br>Box 661<br>Cleburne, TX 76031                              | Nurad Inc.<br>2165 Druid Park Drive<br>Baltimore, MD 21211                          |
| Coastcom<br>2312 Stanwell Drive<br>Concord, CA 94520   | McMartin Industries Inc.<br>4500 S. 76th St.<br>Omaha, NE 68127                 | RHG Electronics Laboratories Inc.<br>161 East Industry Court<br>Deer Park, NY 11729 |
| Contel Manufacturing<br>1620 W. 32 Place<br>Hialeah, FL 33012  | Micro Control Associates Inc.<br>Box 694<br>Cleburne, TX 76031                  | Rockwell International (Collins)<br>P.O. Box 10462<br>Dallas, TX 65a207             |
| Harris Corporation<br>Box 4290<br>Quincy, IL 62301   | Microwave Associates Communications<br>63 Third Ave.<br>Burlington, MA 01803    | Tepco Corporation<br>Box 680<br>Rapid City, SD 57709                                |
| Harris Video Systems (Farinon)<br>1255 East Arques Ave.<br>Sunnyvale, CA 94086                       | Moseley Associates<br>111 Castilian Drive<br>Goleta, CA 93117                   | TFT Inc.<br>3090 Oakmead Village Drive<br>Santa Clara, CA 95051                     |
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## ad index

|   |              |                                   |       |
|---|--------------|-----------------------------------|-------|
| ADM Technology .....                      | BC           | Singer Broadcast Products .....   | 111   |
| Amperex Electronic Corp. Inc. ....        | 59           | Stantron div. of Wyco Metal ..... | 99    |
| Arrakis Systems .....                     | 6            | Studer ReVox America .....        | 31    |
| Asaca/Shibasoku Corp. ....                | 67, 101, 119 | Teac Corp. of America .....       | 29    |
| Audiomedia Associates .....               | 17           | Temtron Electronics Ltd. ....     | 61    |
| Aurora Systems .....                      | 84           | Tennaplex Systems .....           | 113   |
| Barco Video Systems .....                 | 69           | Thomson CSF Broadcast ..          | 40-41 |
| Beaveronics Inc. ....                     | 97           | Total Spectrum Mfg. Inc. ....     | 53    |
| Bogner Broadcast Equipment Corp. ....     | 115          | US JVC Corp. ....                 | 43    |
| Broadcast Systems Inc. ....               | 68           | Utah Scientific .....             | 79    |
| CMX Orrox .....                           | 73           | Videomedia Inc. ....              | 75    |
| Camera Mart Inc. ....                     | 85           |                                   |       |
| Capitol Magnetic Products ..              | 27           |                                   |       |
| Central Dynamics Corp. ....               | 93           |                                   |       |
| Cetec Vega .....                          | 37           |                                   |       |
| Comex Systems .....                       | 121          |                                   |       |
| Compact Video Sales Inc. ....             | 3            |                                   |       |
| Computer Video Systems .....              | 63           |                                   |       |
| Crosspoint Latch Corp. ....               | 95           |                                   |       |
| EEV, Inc. ....                            | 57           |                                   |       |
| Elector .....                             | 68           |                                   |       |
| Fujinon Inc. ....                         | 51           |                                   |       |
| R. F. Gain Ltd. ....                      | 109          |                                   |       |
| HSC, Inc. ....                            | 89           |                                   |       |
| Clifford B. Hannay & Son Inc. ....        | 49           |                                   |       |
| Listec Television Corp. ....              | 61           |                                   |       |
| Midwest Corp. ....                        | 45           |                                   |       |
| NEC America Inc. ....                     | IFC          |                                   |       |
| Rupert Neve Inc. ....                     | 9            |                                   |       |
| Panasonic .....                           | IBC          |                                   |       |
| Pinzone Communications Products Inc. .... | 1            |                                   |       |
| RCA Camera Tube Marketing .....           | 47           |                                   |       |
| RF Technology .....                       | 105          |                                   |       |
| RTS Systems .....                         | 77           |                                   |       |
| Russco Electronics .....                  | 13           |                                   |       |

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