

*Spotmaster®*

**Tape Cartridge Machines  
Audio Consoles  
Studio Accessories**

**BROADCAST ELECTRONICS INC.**  
— A FILMWAYS COMPANY —



MARCH 1, 1976

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## Warranty

Broadcast Electronics tape cartridge machines are guaranteed to be free from defects in workmanship and material for a period of two years. During the second year those items subject to normal wear, such as tape heads and pinch rollers, will not be covered under this guarantee. All other Broadcast Electronics' products are guaranteed for a period of one year. All warranties are void, A) If equipment has been altered or repaired by others without Broadcast Electronics' specific prior authorization, or B) If equipment is operated under environmental conditions or circumstances other than those specifically described in Broadcast Electronics' literature or instruction manuals. Liability extends only to value of equipment.

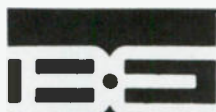
### ADDITIONAL INFORMATION

Additional information and product literature are available from your SPOTMASTER Distributor or Broadcast Electronics, Inc.



VIDEO  
MONITORS

Broadcast Electronics, Inc. Modtec Division  
manufactures monochrome video monitors.



**BROADCAST ELECTRONICS INC.** — A FILMWAYS COMPANY —

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# Series 5000

- NEW, RUGGED MULTI-DECKS FROM SPOTMASTER
- COMPLETELY MODULAR CONSTRUCTION WITH HINGED FRONT PANEL, SLIDE OUT DECKS AND PLUG-IN ELECTRONICS

The SERIES 5000 Multi-Deck Cartridge Machines, with their innovations in electronics, mechanical design and packaging, are built for reliability and ease of maintenance when subjected to the abuse and rigors of continuous daily use. One half inch thick slide out machined decks, massive air damped solenoids and a direct drive hysteresis synchronous motor provide rugged, reliable and quiet tape handling. Plug-in electronics (separate for each deck), ribbon cabling, and conservatively rated components give today's broadcaster the ultimate in cartridge machine quality and reliability.

All SERIES 5000 decks may operate simultaneously supplying independent audio to separate console inputs. If a single output is desired, all 3 or 5 decks may be joined together through a SPOTMASTER® audio mixer or switcher. The mixer allows overlap of audio from one deck to the next. The switcher allows output from only one deck at a time, and automatically switches the output from the last started deck. Thus, if the operator has started the wrong deck, he can immediately start another deck without having to worry about the output from the first deck which will automatically re-cue.

A standard feature of SERIES 5000 machines is an audio muting circuit that independently turns off the audio from any idle deck. This feature keeps unnecessary noise to a minimum.

Secondary and tertiary cue tones, complete with front panel indicators and dry contact closures, are available as an op-

## SPECIFICATIONS

**Equalization:** NAB Standard, (CCIR Standard) adjustable to compensate for head wear.

**Frequency Response:** 50 Hz to 15 kHz  $\pm 2$  dB

**Distortion:** 1% or less at 0 VU (400 Hz).

**Noise:** -60 dB or better at 400 Hz, 3% THD unweighted.

**Wow and Flutter:** 15% peak weighted.

**Crosstalk:** Better than 50 dB at 1 kHz.

**Output:** +21 dBm peak output, adjustable (independent for each deck).

**Output Impedance:** 600 ohms balanced, alternate strapping for 150 ohms at 18 dBm.

**Speed Accuracy:** .10% or better at 7.5 ips.

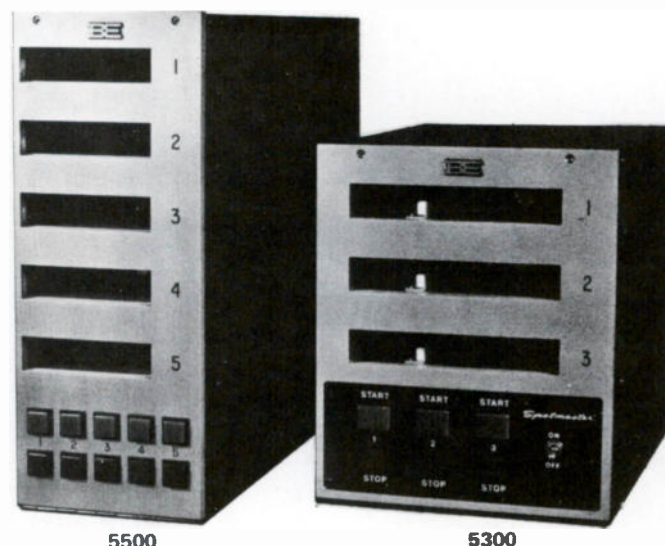
**Motor:** Direct drive hysteresis synchronous.

**Cue Trip:** Stop Cue (1 kHz)

Cue Trip I (150 Hz): Optional. Normally open or normally closed isolated contacts.

Cue Trip II (8 kHz): Optional. Normally open or normally closed isolated contacts.

## MULTI-DECK CARTRIDGE MACHINES



### MONO OR STEREO

tion. These optional cue tones can be used to sequence the decks, start other equipment, and alert the operator prior to the end of a cartridge.

An optional recording amplifier (mono or stereo) is available for the three deck reproducer to allow recording on the third deck independent of the other two decks; thus, the single machine can operate as three separate machines — a record/playback deck and two playback decks.

The SERIES 5000 machines are designed for either table top mounting or single and multiple rack mounting. Two of the three deck machines can be mounted side-by-side in a standard 19" rack, or three of the five deck machines can be mounted side-by-side in the same space.

**Cueing Accuracy:** 0.1 second.

**Tape Capacity:** Size A or B NAB standard cartridge.

**Power Requirement:** 120 watts, 117 V/60 Hz. Other voltages and frequencies available on special order.

**Max. Ambient Operating Temperature:** 50°C (122°F)

**Remote Control:** All front panel controls and indicators. Individual audio output.

**External Connections:** Mating plugs furnished.

**Mounting:** Table top or optional rack mounting.

**Dimensions:** 5300 SERIES (3-deck) 10-5/8" high, 8-5/8" wide, 13-3/8" deep.

5500 SERIES (5-deck) 14-3/4" high, 5-3/4" wide, 17" deep.

**Weight:** 5300 SERIES 37 lbs.

5500 SERIES 44 lbs.

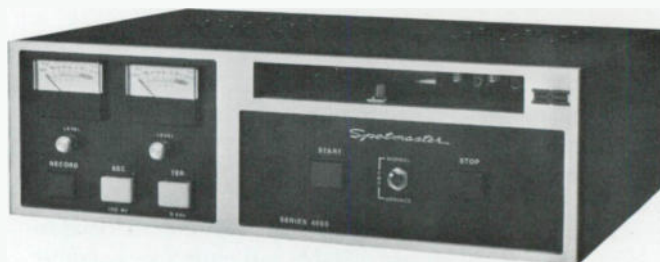
# Series 4000

## THE RUGGED ONES

SINGLE DECK  
CARTRIDGE MACHINES



Model 4200 space saver for size A and B cartridges, available in mono and stereo playback.



Model 4300 for size A, B and C cartridges, available in mono and stereo playback only or record/playback.

## SERIES 4000 - THE ULTIMATE CARTRIDGE MACHINE FROM SPOTMASTER®

The SERIES 4000 is the ultimate cartridge machine from SPOTMASTER — and the ultimate machine for the most discriminating broadcaster. It proves that a no-nonsense cartridge machine can be innovative, reliable and durable without being overly complex or expensive. It's a unique machine with unique features — features like the SPOTMASTER PHASE-LOK III head bracket that provides accurate phase response with its exclusive and simple independent azimuth adjustment. SERIES 4000 machines have 15 years of SPOTMASTER experience and design leadership in a new style of packaging that is preferred by many of today's broadcasters.

### SPECIFICATIONS

**Record/Playback Equalization:** NAB Standard ( $\infty$ , 50 usec).

**Tape Velocity:** 7.5 ips (19.05 cm/s).

**Timing Accuracy (7.5 ips):** 0.1%.

**Frequency Response:**  $\pm 1$  dB 50 Hz to 15 kHz exclusive of head contour effect.

**Noise:** 62 dB mono, 60 dB stereo. Below 400 Hz at 3% THD level, 3M156 tape, 20 Hz to 20 kHz.

**Cross Talk (Magnetic head limited):**

Cue channel to program channel:

150 Hz: -50 dB max.

1000 Hz: -55 dB max.

8000 Hz: -50 dB max.

Stereo: Less than 50 dB, 50 Hz to 15 kHz.

**Input Impedance:**

Recorder Input

Low level/high level input amplifier.

! Mic: 150 ohm balanced floating.

Line: 50k ohms balanced floating.

The SERIES 4000 features an automatic release deck, a direct drive motor and a large air-damped solenoid to assure trouble-free operation. Power consumption is low, only 45 watts, so the machine remains cool hour-after-hour. High quality components and conservative design are combined to provide high reliability and minimize down time. These ruggedly built machines also feature a massive machine deck and heavy cast frame for added durability and performance. An integral tape fault/splice detector is available as an option for record/playback models. This allows the operator to quickly locate and position the splice without removing the cartridge from the machine.

**Input Levels:**

High level inputs: -24 to +20 dBm (50mV to 7.7V).

Microphone inputs: -70 to -24 dBm.

**Output Impedance (Balanced):** Less than 1/8 load of 150/600 ohms.

**Output Level (From 160 nW/M Recording):** +8 dBm.

**Peak Output Level:** +20 dBm before clipping.

**Bias Oscillator Frequency:** 100 KHz.

**Fast-Forward Tape Velocity:** 22.5 ips (57 cm/s).

**Ambient Operating Temperature (Machine Only):** 0° to 55°C (32° to 130°F).

**Tape Start/Stop Time:** 0.1 s max.

**Tape Pull Force:** 1.5 lbs. (6.67N) min.

**Power Requirements:** 105-125/210-230V, 50 or 60 Hz, 45-50W max.

**Dimensions:** Model 4200: 5-1/4" H, 8-1/2" W, 12-1/8" D

Model 4300: 5-1/4" H, 17" W, 12-1/8" D  
(Height without feet)

**Remote Control:** Complete duplication of front panel controls and indicators.

# Series 3000

## THE RUGGED ONES

### SINGLE DECK CARTRIDGE MACHINES

- AUTOMATIC RELEASE DECK WITH LARGE AIR DAMPED SOLENOID
- LOW POWER CONSUMPTION – COOLEST RUNNING UNIT IN THE INDUSTRY
- PHASE-LOK III HEAD BRACKET ELIMINATES STEREO PHASING PROBLEMS
- EXCEEDS PRESENT AND PROPOSED NAB SPECIFICATIONS
- FULL RANGE OF MODELS AND OPTIONS

SPOTMASTER® maintains its leadership in the tape cartridge machine field with the SERIES 3000 – the first SPOTMASTER to incorporate an automatic release deck. SERIES 3000 machines are heavy duty units built to assure long, trouble-free life. Mechanically, these machines use rugged components with a large air damped solenoid and a machined deck surface. Electrically, all components are chosen for proven dependability with gold plated card edge connector contacts, internally shielded audio circuitry, and extensive use of integrated circuits. SERIES 3000 cartridge machines exceed both present and proposed NAB specifications.

Total power consumption is so low – less than 50 watts – that these machines are the coolest running units in the industry. There is no excessive heat build-up to damage tape. An efficient hysteresis synchronous motor provides direct tape drive and optional fast forward.

Standard features include balanced transformer output, FET output switching for paralleling machines, rear panel connector for full remote control, and – on stereo models – the unique PHASE-LOK III head bracket with independent azimuth adjustment to assure extremely tight control of stereo phasing. Options include secondary and tertiary cue tones, fast forward, microphone input on record models and alternate tape speeds. Accessories include a tape fault/splice detector – see page 9.

### SPECIFICATIONS

**Record/Playback Equalization:** NAB Standard ( $\infty$ , 50 usec).

**Tape Velocity:** 7.5 ips (19.05 cm/s).

**Timing Accuracy (7.5 ips):** 0.1%;

**Frequency Response:**  $\pm 1$  dB 50 Hz to 15 kHz exclusive of head contour effect.

**Noise:** 62 dB mono, 60 dB stereo. Below 400 Hz at 3% THD level, 3M156 tape, 20 Hz to 20 kHz.

**Cross Talk (Magnetic head limited):**

**Cue channel to program channel:**

150 Hz: –50 dB max.

1000 Hz: –55 dB max.

8000 Hz: –50 dB max.

**Stereo:** Less than 50 dB, 50 Hz to 15 kHz.

**Input Impedance:**

Recorder Input

Low level/high level input amplifier.

Mic: 150 ohm balanced floating.

Line: 50k ohms balanced floating.



Model 3100 for A size cartridges, available in mono or stereo playback. Three Model 3100's mount side-by-side in 19 inch rack adapter.



Model 3200 for A and B size cartridges, available in mono or stereo playback only, record/playback, or delay programmer. Mono record/playback shown. Two Model 3200's mount side-by-side in 19 inch rack adapter.



Model 3200 stereo record/playback with optional fast forward, secondary cue tone (150 Hz) and tertiary cue tone (8 KHz).



Model 3300 for A, B and C size cartridges, available in mono or stereo playback only or record/playback. A Model 3300 may be mounted side-by-side with a Model 3100 in a 19 inch rack adapter.

**Input Levels:**

High level inputs: –24 to +20 dBm (50 mV to 7.7V).

Microphone inputs: –70 to –24 dBm.

**Output Impedance (Balanced):** Less than 1/8 load of 150/600 ohms.

**Output Level (From 160 nW/M Recording):** +8 dBm.

**Peak Output Level:** +20 dBm before clipping.

**Bias Oscillator Frequency:** 100 KHz.

**Fast-Forward Tape Velocity:** 22.5 ips (57 cm/s).

**Ambient Operating Temperature (Machine Only):** 0° to 55°C (32° to 130°F).

**Tape Start/Stop Time:** 0.1 s max.

**Tape Pull Force:** 1.5 lbs. (6.67N) min.

**Power Requirements:** 105-125/210-230V, 50 or 60 Hz, 45-50W max.

**Dimensions:** Model 3100: 5-1/4" H, 5-7/8" W, 15-1/2" D

Model 3200: 5-1/4" H, 8-3/4" W, 15-1/2" D

Model 3300: 5-1/4" H, 11-3/4" W, 15-1/2" D  
(Height without feet)

**Remote Control:** Complete duplication of front panel controls and indicators.

## Series 2000

- **PLUG-IN MODULES FOR RECORD AND AUDITION FUNCTIONS PERMIT FIELD CONVERSION OF PLAYBACK UNITS**

SERIES 2000 cart machines have low power consumption and run cool to protect your tapes. Their noise figure exceeds 57 dB. Start/stop times are fast — under 80 milliseconds. Standard features include balanced transformer output, 150 Hz cue, 1000 Hz cue, and provision for remote control and telephone interface.

Separate front panel plug-in modules are used to implement record and audition functions. These add flexibility and

## SERIES 1000

- **SIMPLE, BASIC CART MACHINES AT VERY LOW PRICES**
- **FULL +16 DBM PEAK OUTPUT WITH EXCELLENT FREQUENCY RESPONSE**

In today's battle against inflation, SPOTMASTER® introduces a basic, spartan audio tape cartridge machine — the SERIES 1000. The SERIES 1000 combines a rock-bottom price with the quality and reliability of the SERIES 2000.

The SERIES 1000 includes: low noise electronics; fast starting and stopping tape transport; full +16 dBm peak output; excellent frequency response with high frequency adjustment; automatic cueing with 1 KHz tone; rugged construction for durability and long life; cool and quiet operation; easy accessibility for periodic maintenance; table top or rack mounting; adjustable head mounting; self-cancelling record preset; stable, low flutter, hysteresis synchronous tape drive; minimum component circuitry; and line or microphone input capability to the recorder.

The SERIES 1000 delay model provides facilities for simultaneous recording and playback to temporarily store programming material. Primary users are stations with telephone

### SPECIFICATIONS — SERIES 1000 AND 2000

- Noise:** 60 dB below 3% THD level
- Frequency Response:**  $\pm 1.5$  dB, 50 Hz to 15 kHz exclusive of head contour effect.
- Distortion:** 2% or less at +16 dBm output
- Tape Speed:** 7.5 ips accurate 0.2% or better  
Optional 3.75 ips accurate 0.4% or better
- Wow and Flutter:** .15% Peak, weighted
- Output (SERIES 2000):** Peak output +16 dBm, continuously adjustable, 600 ohms, transformer balanced
- Output (SERIES 1000):** Peak output +16 dBm, continuously adjustable. Output load 150 ohms or higher unbalanced, 600 ohm balanced in delay models
- Start and Stop Time:** 80 milliseconds
- Equalization:** NAB standard
- Drive:** Hysteresis synchronous, indirect
- Power:** 117 VAC/60 Hz standard  
220 VAC/50 Hz optional  
117 VAC/50 Hz optional
- Cue Tones (SERIES 2000):** 1 KHz stop standard, 150 Hz standard
- Cue Tones (SERIES 1000):** 1 KHz stop standard (not included in delay models)

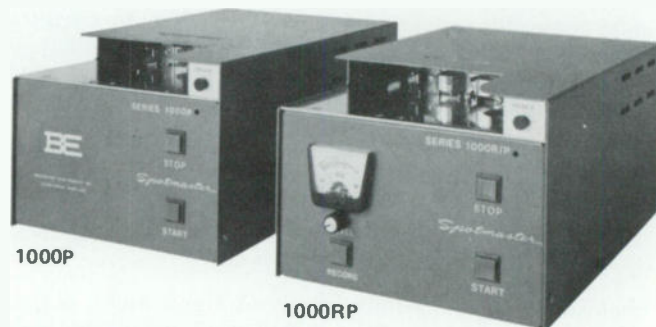
### SINGLE DECK CARTRIDGE MACHINES



2000PA

2000RP

permit instant field conversion of Series 2000 playback machines. Table top units accept A, B and C size cartridges, and the dual rack mount configuration accepts size A and B cartridges. Available in mono and stereo playback and record/playback, and mono playback/audition.



1000P

1000RP

call-in programs where the delay permits editing of extraneous material. Since the delay length is determined by the cartridge used, the delay time may be easily changed. This permits delaying whole programs for up to 60 minutes.

**MODELS AVAILABLE:** Mono Playback Only, Model 1000P; Mono Record/Playback, Model 1000RP; Mono Delay, Model 1000DL.

**Remote Control (SERIES 2000 Only):** Stop and start lamps, stop and start TELCO telephone answering accessory, and 150 Hz cue tone logic ground.

**Delay (SERIES 1000 Only):** 3 seconds to 60 minutes depending on cartridge length and tape speed. Uses standard NAB cartridges. 6 second length cartridges available for telephone delay purposes.

**Dimensions:** 5-5/8" high x 8-1/2" wide x 12" deep

#### OPTIONS — SERIES 2000

**Cue Tones:** 8 KHz auxiliary in lieu of standard 150 Hz

**Record Module:** Plug-in for simple field installation; includes VU meter, microphone input provision, and 150 Hz tone generator

**Audition Module:** Plug-in module with 1 watt amplifier and speaker; output jack for external speaker with 10 watt amplifier

**Rack Adapter:** Mounts two SERIES 2000 units side by side in 19" rack

**Telephone Answering:** Prewired for TELCO telephone answering interface.

#### OPTIONS — SERIES 1000

**Rack Adapter:** Mounts two SERIES 1000 units side by side in 19" rack

## Three/70 Series

### SINGLE DECK CARTRIDGE MACHINES

- COMPACT PLAYBACK MACHINE FOR SIZE A CARTS
- HIGH PERFORMANCE WITH EXCELLENT ELECTRICAL SPECIFICATIONS
- PLUG-IN MODULAR ELECTRONICS AND PLUG-IN DECK
- LOW POWER, COOL OPERATION



### SPECIFICATIONS

**Frequency Response:** 50-15 kHz,  $\pm 2.5$  dB.  
**Equalization:** NAB or IEC standards.  
**Distortion:** Less than 1.75% @ 0 VU (400 Hz).  
**Noise:** 58 dB below 3% THD level (400 Hz).  
**Output:** Adj. to +8 dBm.  
**Max. Output:** +18 dBm (before clipping).

**Wow and Flutter:** 0.15% or less @ 7.5 ips.

**Cue Circuitry:** Stop Cue (1 KHz) (150 Hz, 8 KHz optional).

**Cueing Accuracy:** 0.1 second.

**Speed Accuracy:**  $\pm 0.15\%$  @ 7.5 ips.

$\pm 0.4\%$  @ 3.75 ips.

**Power Requirements:** 117 V/60 Hz; less than 30 Watts. 220 V/240 V, 50 Hz; less than 35 Watts.

**Remote Control:** Use BE-102.

### MECHANICAL

**Size:** 5.625" wide, 5.75" high, 12.5" long.

**Weight:** 12 lbs.

### Rear Panel Configuration:

**Remote Control/Telco:** Octal, 8 pin

**Line Out:** Jack, 3 connector phone

**Output Level Potentiometer**

**Contact closures derived from Cue Trip I and II Tone Sensors.**

### OPTIONAL ACCESSORIES

600 ohm balanced transformer output

Telco Telephone Answering Accessory

Rack Adaptor

BE 102 Remote Control

220V/240V, 50 Hz power conversion

3.75 ips speed option

Cue Trip I (150 Hz) and Cue Trip II (8 KHz) Tone Sensors

## Ten/70 Series



**1070P** - Mono playback - compact and light.

**1070PS** - Stereo playback.



**1070RP** - Record/playback.

**1070RP/DL** - Record/playback/delay three-in-one machine ideal for talk shows. Electronic output mute remote controllable.



**1070RPS** - Stereo record/playback with Phase-Lok II head bracket to eliminate FM phasing problems.

**1070SDL** - Stereo delay programmer.

### SPECIFICATIONS

**Equalization:** NAB or IEC Standards.

**Frequency Response:** 50 - 15 kHz,  $\pm 2.5$  dB.

**Distortion:** 1% or less @ 0 VU (400 Hz).

**Noise:** 58 dB below 3% THD level (400 Hz).

**Wow and Flutter:** 0.15% or less @ 7.5 ips.

**Cross Talk:** Cue/Program -55 dB or better. Stereo - 50 dB or better.

**Output:** -10 dBm/0 dBm/+8 dBm switchable. Adjustable 10 dB. Peak output +18 dBm.

**Output Impedance:** 600 ohms balanced. Alternate strapping for 150 ohms.

**Speed:** 7.5 ips accurate 0.2% or better. Fast Forward\*\* to 22.5 ips (Other speeds optional).

**Motor:** Direct drive hysteresis synchronous.

**Cue Trip:** Stop Cue (1 KHz)

Cue Trip I (150 Hz) Optional.

Cue Trip II (8 KHz) Optional.

**Cueing Accuracy:** 0.1 Second.

**Capacity:** Size A or B NAB standard cartridge.

**\*Input:** Line -15 dBm to 0 dBm to +15 dBm switchable @ 10,000 ohms bridging balanced. Mic 0.1 mv @ 150 ohms balanced (Optional, RP and RP/DL only).

**Power Requirement:** 117 V/60 Hz, 50 Watts. 220-240 V/50 Hz (Optional).

**Controls:** Start \*Record Preset

Stop \*Line Level

On-Off \*Mike Level

\*VU Meter \*\*Advance

Cartridge Release

Optional: Cue I (150 Hz) Generator\*/Sensor

Cue II (8 KHz) Generator\*/Sensor

Auto Cue Automatic Advance\*\*

**Size:** 8-3/8" H, 8-1/2" W, 12" D.

**Shipping Weight:** 15 lbs.

\*Applies to RP Models Only. \*\*Not available on delay models.

# 500 D Series

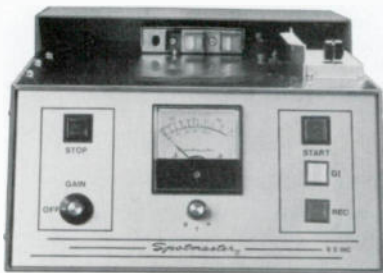
SINGLE DECK  
CARTRIDGE MACHINES



500 D MONO  
RECORDER/PLAYBACK

505 D MONO  
PLAYBACK

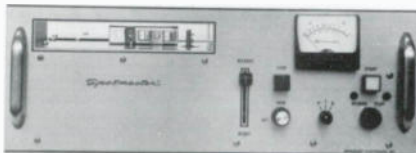
- TRADITIONAL FAVORITE THAT MEETS OR EXCEEDS NAB SPECIFICATIONS
- COMPLETE RANGE OF MODELS AT MODERATE PRICES
- 500 D FEATURES AUTOMATIC RECORD CANCEL, BUILT IN MIKE PRE-AMP AND FULL AUXILIARY CUE TONE OPTIONS



500 D/DL Record/Playback/Delay. Records, stores and plays back any program material for pre-determined length on standard cartridges. Also normal record/playback functions.



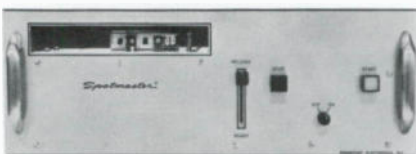
500 DS Stereo Record/Playback. Optional mike pre-amp.



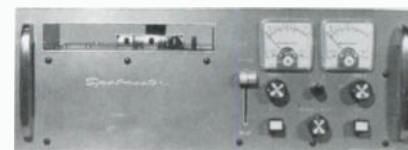
500 DR. Rack Mount 500 D in 7" panel height. Chassis rolls out for access. Optional mike pre-amp.



500 DR/DL Record/Playback/Delay. Rack mount version of 500 D/DL. Optional mike pre-amp.



505 DR and 505 DRS. Rack mount mono and stereo playback units. All rack mount units accept A, B or C size cartridges.



505 DRS Stereo Record/Playback. Full stereo record and playback in a 7" rack unit.

## SPECIFICATIONS

**Equalization:** NAB Standard.

**Frequency Response:**  $\pm 2$  dB 50 - 12 kHz @ 7.5 ips  $\pm 3$  dB 40 - 15 kHz @ 7.5 ips.

**Distortion:** 2% or less @ 0 VU recording level.

**Noise:** 55 dB below 3% THD (400 Hz), peak weighted.

**Wow & Flutter:** 0.2% or less @ 7.5 ips.

**Tape Speed:** 7.5 ips..

**\*Input (Line):** 0.1 Volt (Bridging)

**\*Input (Microphone, 150 ohms):** 0.25 mv (-64 dBm)

**Output:** +4 dBm @ 600 ohms. Peak output +14 dBm. (Transformer output.)

**Cue-Tones:** Primary - 1,000 Hz (Stop). Cue-Trip No. 1 - 150 Hz (Optional). Cue-Trip No. 2 - 8,000 Hz (Optional).

**Cueing Accuracy:** 0.1 Second.

**Starting Time:** 0.1 Second.

**Power Requirement:** 105 - 125 VAC, 60 Hz, 50 watts (115/220 VAC, 50 Hz optional extra).

**Playing Time:** 1 second to 31 minutes @ 7.5 ips.

**Motor:** Hysteresis Synchronous

**Controls:** \*Gain, \*Automatic Record Pre-set, \*VU Meter Selector, Start Switch, Stop Switch, Output Level, On-Off

**Size:** 10-1/4" W, 12-3/4" L, 6-5/8" H (Desk top). 7" panel height (Rack mount)

**Weight:** 18 lbs. (Model 500) 15 lbs. (Model 505)

**Finish:** Silver Gray and satin aluminum panel.

\*Applies to Model 500 combination Record/Play units only.



# Models 605C 610CR

*FIVE SPOT®*  
*TEN SPOT®*

MULTI-DECK  
CARTRIDGE MACHINES

SPOTMASTER® TEN-SPOT and FIVE-SPOT multiple cartridge units are capable of manual operation or may be incorporated into programmed automation systems making use of one, two or three NAB standard cueing tones.

A flywheel loaded common capstan supplies tape motive force, the flywheel in turn being driven by a heavy duty hysteresis synchronous motor. Individual power supplies are provided for each solenoid thereby making each deck independent of the other and, in the TEN-SPOT, each module of five decks is completely separate and independent of the other five deck module both mechanically and electronically. Each reproduce channel is separately equipped with cueing amplifier/s and a program amplifier with the output level adjustable to +4 dBm by means of locking type controls. The amplifier power supply is transistorized and zener regulated.

## SPECIFICATIONS

Equalization: NAB standard.

Frequency Response:  $\pm 2$  dB, 50 Hz - 12 kHz  
 $\pm 4$  dB, 50 Hz - 15 kHz

Distortion: 2% or less @ normal recording level.

Noise -45 dB, ref. 3% THD.

Wow and Flutter: .2% or less (RMS).

Tape Speed: 7.5 ips (3.75 ips available).

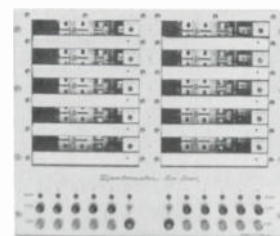
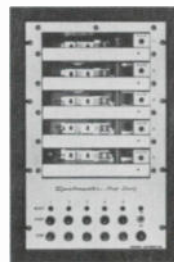
Output Level: Adjustable to +4 dBm @ 600 ohms, peak output +12 dBm.

Output Load Impedance: 600 ohms (emitter-follower). \*600/150 ohms (transformer output).

Cueing Accuracy: .1 second.

Cueing Tones: Primary - 1,000 Hz (Stop/Re-Cue). \*Cue Trip No. 1: 150 Hz (end of message). \*Cue Trip No. 2: 8,000 Hz (auxiliary).

Playing Time: 3 sec. to 16 mins. per deck @ 7.5 ips using NAB type A & B cartridges.



Facilities are provided on the rear panel for remote control and for inter-connections between channels so as to permit automatic sequencing from channel to channel. All amplifiers are plug-in modular units. Enclosed plug-in relays are used throughout.

Capacity: FIVE-SPOT - 5 type A or B cartridges. TEN-SPOT - 10 type A or B cartridges.

Circuitry: All silicon solid state.

Power Supply: Transistor, filtered, zener regulated.

Power Requirements: 108-125 VAC, 60 Hz.  
75 watts - FIVE-SPOT  
150 watts - TEN-SPOT  
Optional 220 VAC, 50 Hz (step down transformer supplied).

Dimensions: FIVE-SPOT - 9-13/16" W x 15" D x 15-3/4" H.  
TEN-SPOT - 19" W x 15" D x 15-3/4" H.

Mounting: FIVE-SPOT - Walnut Formica Cabinet (Model 605C).  
FIVE-SPOT - in 19" rack panel with cartridge storage cubicle (Model 605CR).  
TEN-SPOT - 19" rack (Model 610CR).

Weight: FIVE-SPOT - 44 lbs.  
TEN-SPOT - 89 lbs.

\*Optional

## Model 610CX Automatic Audio System

The SPOTMASTER 610CX is provided with 6 Playback and 2 Record/Playback channels. The two record/playback channels may be utilized for recording purposes while the other playback channels are in use. The 610CX may be operated as one, 8 channel system, or as two, 4 channel systems. A front-panel "Split-Combined" function switch is provided for the selection of this mode of operation.

The Automatic Audio System is equipped with an integral sequential switcher that may be programmed to automatically playback any of two to eight cartridges.

## SPECIFICATIONS

Frequency Response:  $\pm 3$  dB, 50 Hz - 12 kHz  
 $\pm 5$  dB, 50 Hz - 15 kHz

Output Level: -4 dBm,  $\pm 3$  dB.

Cueing Tones: 1 KHz, 150 Hz.

Tape Speed: 7.5 ips.

Drive: Each 4 channel unit is driven by a common capstan thru a belt and pulley.

Power: 108-125 VAC, 60 Hz, 200 watts.

Distortion: 2% or less.

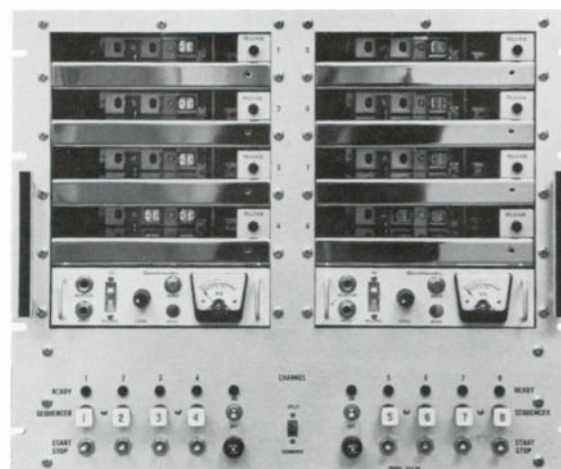
Wow and Flutter: 0.2% RMS.

Inputs: (2) microphone, 250 mv sens. low impedance.  
(2) Line, 0.1 v sens., 2.5 k nom. impedance.

Cartridges: NAB types A, B.

Mounting: Standard 19" rack, 15-3/4" high.

Weight: 95 pounds.



# Mini Series 303/305

## MULTI-DECK CARTRIDGE MACHINES

- MINI-SPACE, MAXI-PERFORMANCE
- LOGIC SWITCHING
- FORCED AIR VENTILATION
- MONO OR STEREO

### SPECIFICATIONS

#### ELECTRICAL:

Frequency Response:  $\pm 2$  dB 50 Hz to 15,000 Hz,  $\pm 4$  dB 30 Hz to 18,000 Hz

Distortion: 1.5% or less @ 0 VU, Ref: 400 Hz

Noise Unweighted  $-55$  dB or better, Ref: NAB Standards Section 2.35

Cross Talk: Cue/Pgm:  $-55$  dB or better @ 1 kHz, Ref: NAB Standard 2:40

Equalization: NAB or IEC standards

Output Level:  $+18$  dBm peak, continuously adjustable

Output Impedance: 600 ohm balanced transformer out, alternate strapping for 150 ohm

Cue Tones: Primary: 1000 Hz (Stop/Re-cue), Secondary: 150 Hz (End of Message-Optional), Tertiary: 8000 Hz (Auxiliary-Optional)

Cue Output: N/O contact closure available on rear panel for 150 Hz and 8 KHz tones.

Cueing Accuracy: 0.1 seconds

Cue Sensitivity: Exceeds NAB Standards by 10 dB

Speed: 7.5 ips (Standard), 3.75 ips (Optional)

Speed Accuracy:  $\pm 0.4\%$  or better

Wow & Flutter: 0.2% or better @ 7.5 ips, 0.25% or better @ 3.75 ips (Optional)

Capacity NAB Standard Cartridge: Size "A"

Power Requirements: 105 - 125 VAC, 60 Hz @ 75 watts (305), 60 watts (303), 220 - 250 VAC, 50 Hz @ 75 watts (305), 60 watts (303) (Other Line Standards on Special Request).



Controls: Front Panel illuminated pushbuttons for Start (green), and Stop (red). Rear Panel each channel, Output: 3 circuit std. phone jack, Level Trim: Potentiometer

Remote and Accessory Control Connections: Remote: Amphenol Blue Ribbon (50) pin connector providing remote control and indication of all front panel pushbutton control functions. Accessory: Amphenol Blue Ribbon (24 pin) connector providing normally open relay contacts from optional 150 Hz and 8000 Hz auxiliary tone sensors.

#### MECHANICAL:

Overall Dimensions: Model 305 - 14.39" H x 5.44" W x 17.75" D, Model 303 - 10.45" H x 5.44" W x 17.75" D

Weight: Model 305 - 42 lbs; Model 303 - 30 lbs.

Rack Panel Adapter: RA35 (for 3 - Model 305): 15 $\frac{1}{2}$ " H x 19" W x 18" D, RA33 (for 3 model 303) 12 $\frac{1}{2}$ " H x 19" W x 18" D

## Model A77 Mark III B from Spotmaster/Revox

*Broadcast version of the renowned REVOX A77 stereo/mono tape recorder.*



REVOX has been an innovator in tape recorder design for almost twenty years. Among the first to pioneer a three motor tape deck and:

- An electronically regulated (servo) capstan motor
- Capstan system of one revolving part construction. No belts or idler wheels are employed. Speed change effected electronically
- Electromagnetic servo braking system
- Optical end-of-tape switch
- Electromagnetic pressure roller
- 50 or 60 Hz operation without any adjustment

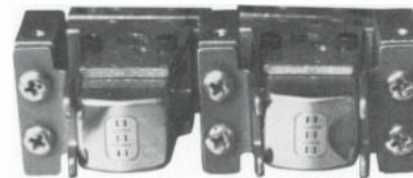
#### Other features:

- Accurately calibrated VU meters with special lights to indicate record mode
- Dual inputs for front or rear microphone connection plus switchable choice of matching impedance either high or low
- Professional three-head design for on/off tape monitoring as well as provision for mixing, multi-track and echo effects
- Reel motor defeat switch for manual reel handling during editing
- 10 $\frac{1}{2}$ " reels for longer uninterrupted recording time
- Exceptionally smooth fast forward and rewind speeds thanks to professional three motor design and servo braking system
- Headphone monitoring available on front panel with stereo balance and volume control
- Selectable tension for large or small spool operation.

## Phase-Lok III Head Bracket

The PHASE-LOK III head bracket provides independent azimuth adjustment for quick, accurate azimuth setting without disturbing height and zenith. Rugged construction and locking provision ensure continued optimum performance. Precision tape guidance provides accurate and permanent tape to head alignment. Installed as standard equipment on 3000, 4000 and 5000 SERIES units.

### CARTRIDGE MACHINE ACCESSORIES



## Remote Controls

Almost all BE tape cartridge machines may be operated by remote control. Typical SPOTMASTER® remote control panels are:

- BE-106 with illuminated start/stop switches and electronic sequence indicator for models 605C and 610CR.
- 303D remote control for Mini Series duplicates front panel start/stop functions. Suitable for mounting in console desk cut-out. 5" wide, 1-7/8" high, 2-7/8" deep.
- RC1070 duplicates all Ten/70 front panel functions. Suitable for desk cut-out or blank rack panel. 5 1/2" wide, 2 1/4" high, 4" deep. Supplied with 15' cable and 24 pin connector.
- BE-102 controls up to 3 single deck units such as the 500D Series. Desk top panel with 15' cable supplied.



Series 3000 remote control offers complete duplication of front panel controls and indicators

## Fault/Splice Detector Models BEFSD-100/200

Spotmaster Fault/Splice Detectors function as tape quality inspectors or as splice detectors. All electronic detection is used, with variable sensitivity, to sense only major tape defects or all surface characteristics which affect recording. As a fault detector, tape is stopped whenever drop-outs, wrinkles or surface blemishes occur to allow a quick check of tape quality. As a splice detector, the BEFSD saves manual search for splices and prevents recording over splices.

Conveniently, the defect or splice is positioned directly opposite the capstan opening in the cartridge to permit easy inspection. This also allows storing of cartridges after splice positioning, since the splice is readily visible and permits running the cartridge briefly before recording without run-the splice out-of-sight in the tape pack.

The model BEFSD 100 is a completely self-contained detector with tape drive system. The model BEFSD 200 is used in conjunction with SPOTMASTER SERIES 3000 record/playback tape cartridge machines. Cables and controls are provided so that the BEFSD 200 may be connected to two SERIES 3000 machines.

### SPECIFICATIONS

#### MODEL BEFSD 100:

Tape Speed: 22 1/2 IPS

Power Requirements: 117 VAC, 60 Hz; 117 VAC, 50 Hz; 220 VAC, 50 Hz

Dimensions: 5-5/8" high x 8-1/2" wide x 12" deep

Weight: 14 lbs.

Mounting: Desk top or in SERIES 1000/2000 rack adaptor

Cartridge Capacity: NAB A, B, or C when operated on table top; NAB A or B when rack mounted



#### MODEL BEFSD 200:

Tape Speed: 22 1/2 IPS

Power Requirements: Supplied by cartridge machine

Dimensions: 3" high x 9-1/2" wide x 6-1/2" deep

Weight: 3.5 lbs.

Mounting: Desk top or optional rack mount

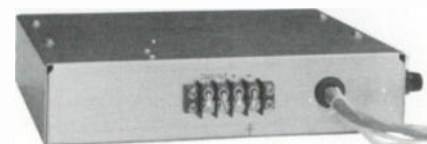
Cartridge Capacity: Same as cartridge machine used



## Sequencers/Switchers

Sequencers and switchers are used with individual cart machines, or with multi-deck machines that do not have internal sequencer or switcher functions. Examples are:

- ESD-15 Sequencer pre-programs playback sequence of 1 to 15 decks. May be used with Mini Series 303/305. Rack mount in 3 1/2".
- SW-5B Audio Switcher used with Five-Spot and Ten-Spot. Provides single balanced output and automatically mutes non-active channels.
- SW-5D Audio Switcher used with 5000 Series Multi-decks. Provides single balanced output and automatically mutes non-active channels.



*Spotmaster*<sup>®</sup>

# THE VERSATILE ONES

## All Consoles Feature:

- INTERNAL POWER SUPPLY
- ½ WATT CUE AMPLIFIER AND INTERNAL CUE SPEAKER
- HEADPHONE AMPLIFIER, FRONT PANEL HEADPHONE JACK FOR LOW OR HIGH IMPEDANCE PHONES
- NOISE SPECIFICATION 65 dB (UNWEIGHTED) BELOW +8 dBm OUTPUT
- INPUT AND OUTPUT CONNECTIONS MADE INTERNALLY TO SCREW TERMINALS
- ALL INPUT AND OUTPUT TERMINALS LABELED IN CONSOLE
- ALL STEREO MODELS – OUTPUT AMPLIFIERS EQUIPPED WITH LEFT AND RIGHT CHANNEL BALANCE TRIMMERS
- DUAL CHANNEL OPERATION IN 100/200 and 3006/4006 SERIES
- DC CONTROLLED, LOW NOISE FET, AUDIO SWITCHING IN 100/200 SERIES



AUDIO CONSOLES

# AUDIO CONSOLES COMPARISON CHART

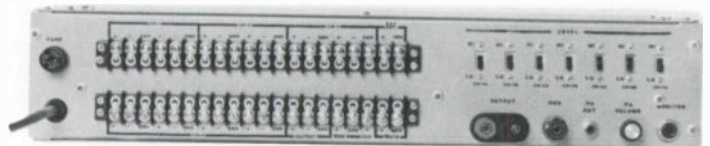
MODEL	4 BEV-50	4BEM-50	4BES-50	5BEM-75	5BEM-100	5BES-100	5BEM-200	5BES-200	8BEM-100	8BES-100	8BEM-200	8BES-200	BEML-3006-10	BESL-3006-10	BEML-4006-10	BESL-4006-10	BE12A BE13A		
MONO/STEREO	MONO		STEREO	MONO		STEREO	MONO	STEREO	MONO	STEREO	MONO	STEREO	MONO	STEREO	MONO	STEREO	MONO		
NUMBER MIXERS	4 MIXERS			5 MIXERS				8 MIXERS				10 MIXERS				4 MIXER A00-ON			
FAOERS	SEALED			SEALED (STEP)**	STEREO SEALED (STEP)**	STEP LAOOER	STEREO STEP LAOOER	SEALED (STEP)**	STEREO SEALED (STEP)**	STEP LAOOER	STEREO STEP LAOOER	LINEAR CONDUCTIVE PLASTIC	STEREO LINEAR CONDUCTIVE PLASTIC	LINEAR CONDUCTIVE PLASTIC	STEREO LINEAR CONDUCTIVE PLASTIC	ROTARY SEALED (100 SERIES) OR STEP LADDER (200 SERIES)			
NUMBER INPUTS	10 INPUTS	8 INPUTS		5 INPUTS	10 INPUTS			16 INPUTS				22 INPUTS		24 INPUTS		12 INPUTS WITH 10 REMOTE LINES			
TYPE INPUTS	7 MIC/LINE SWITCHABLE, 3 LINE	MIC/LINE STRAPPABLE	MIC/LINE		MICROPHONE OR LINE; SWITCH SELECTABLE												MAX 18 SWITCHABLE MIC OR LINE & 6 REMOTE LINES		LINE
	MONO		MONO OR STEREO	MONO	MONO OR STEREO	MONO	MONO OR STEREO	MONO	MONO OR STEREO	MONO	MONO OR STEREO	MONO	MONO OR STEREO	MONO	MONO OR STEREO	MONO	MONO OR STEREO	MONO	
LINE INPUTS	BALANCEO BRIDGING (18K)		10K BAL -20 TO 0 dBm		BALANCEO BRIDGING (18K), 20 dBm NOMINAL, +10 dBm MAXIMUM												BALANCEO BRIDGING (68K) -20 dB NOMINAL, +20 dB MAXIMUM		0 dBm 8 dBm MAX BALANCED XFMR COUPLED
MIC INPUT	150 OHMS BALANCED		150 OHM -65 TO -45 dBm		150 OHMS, BALANCED, 65 dBm NOMINAL, -30 dBm MAXIMUM; 92 dB MAXIMUM GAIN												150 OHM BALANCED, -70 dBm NOMINAL, -30 dBm MAX; 130 OB MAX GAIN		150 OHMS, BALANCED, -85 dBm NOMINAL, -38 dBm MAXIMUM, 92 dB MAXIMUM GAIN
OUTPUTS	PGM XFMR +8 dBm (+18 max)	PA UNBAL 0.46V max	PGM 600 OHM XFMR +8 dBm (15 max)		PGM-AUD	PGM (AUD* MONO*)	PGM AUO	PGM AUD, MONO	PGM AUO	PGM (AUD* MONO*)	PGM-AUD	PGM AUD, MONO	MIX I, MIX II	MIX I, MIX II, MONO	MIX I, MIX II	MIX I, MIX II, MONO	AS MAIN CONSOLE		
	600 OHM XFMR +8 dBm, +18 dBm MAX																		
FREQUENCY RESPONSE	±1.5 dB, 20-30K		±2 dBm, 30 Hz to 20 kHz		±0.5 dBm 20 Hz TO 20 kHz @ +8 dBm OUTPUT														
DIORTION	0.5% @ +8 dBm				0.5% @ +18 dBm														
NOISE	65 dB (UNWEIGHTED) BELOW +8 dBm OUTPUT WITH -50 dBm INPUT														65 dB (UNWEIGHTED) BELOW +8 dBm OUTPUT WITH -60 dBm INPUT				
MONITOR (SPEAKER)	N/A	1.5W		8W	4W (2W/ CHAN)	8W	16W (8W/CHAN)	8W	4W (2W/ CHAN)	8W	16W (8W/CHAN)	8W	16W (8W/CHAN)	12W	24W 12W/CHAN	N/A			
CUE	5W INT SPEAKER		5W INTERNAL SPEAKER PROVIDED, TERMINALS FOR EXTERNAL SPEAKER																
HEADPHONES	1W FRONT PANEL JACK		5W FRONT PANEL JACK FOR LOW OR HIGH IMPEADANCE HEADPHONES																
MUTING RELAY W/CONTACT FOR ON AIR LIGHTS	CUE SPEAKER MUTING ONLY		1	2	1 (2ND OPT)*	3	2	1 (2ND OPT)*	3	2	1 (2ND OPT)*	3	2	3 (4TH OPTION)*					
VU METERS	1 PGM		2 PGM	1 PGM		2 PGM	1 PGM 1 AUD	2 PGM OR AUD	1 PGM 1 AUD	2 PGM	1 PGM 1 AUD	2 PGM OR AUD	1 MIX I 1 MIX II	2 MIX I OR MIX II	1 MIX I 1 MIX II	2 MIX I 2 MIX II			
SPECIAL FEATURES	RACK MOUNT TEST OSC EXTERNAL CONNECTIONS		RACK MOUNT OPTION	RACK MOUNT OR TABLE MOUNT		MODULAR PLUG-IN ELECTRONICS OPTIONAL RIAA TURNTABLE PREAMPLIFIER MODULE						MODULAR PLUG-IN ELECTRONICS OPTIONAL RIAA TURNTABLE PREAMPLIFIER INTERCOM/TALKBACK PROVISION				MODULAR PLUG-IN ELECTRONICS INTERCOM/TALKBACK PROVISION LOW NOISE REEO RELAY SWITCHING EXTENSIVE LOGIC CIRCUITRY FOR MUTING RELAYS QUAO CAPABILITY FOR STEREO VERSION NO. CONTACTS PROVIDED ON EACH PGM SWITCH		REMOTE LINES EQUIPPED W/PROVISION TO MIX CUE OR FEED MONITOR SIGNAL TO REMOTE LINE	

\*PLUG-IN OPTION  
\*\*OPTION

# 4BEV-50 Versa Console

AUDIO CONSOLES

- COMPACT RACK MOUNT SINGLE CHANNEL MIXER
- EXTERNALLY SWITCHABLE INPUT LEVELS
- LINE AND PA OUTPUTS
- IDEAL FOR CATV, CCTV AND REMOTE BROADCASTS
- SMALLEST FULL FEATURE CONSOLE AVAILABLE

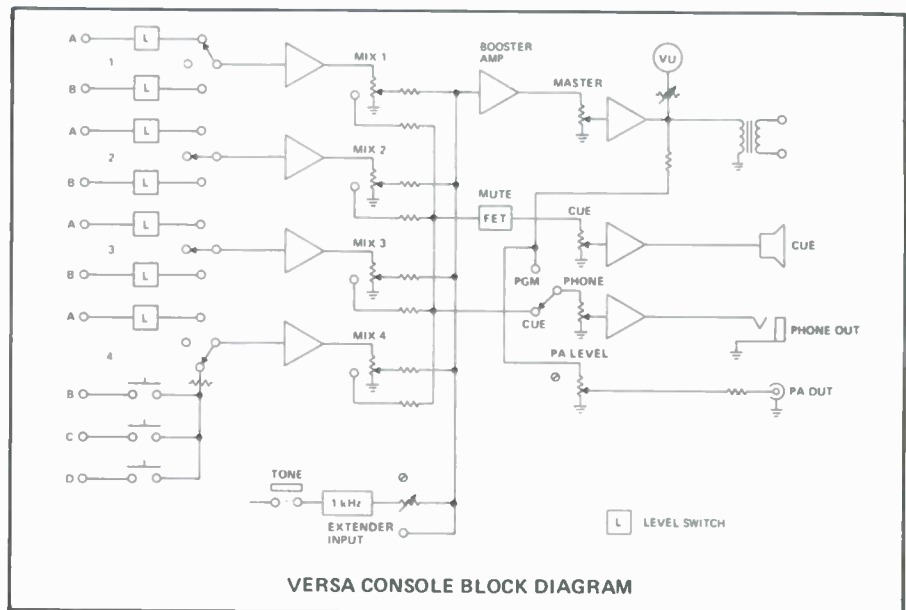


The 4BEV-50 Versa Console is an ideal single channel mixer for CATV, CCTV, film studios, commercial sound installations, dubbing facilities and remote broadcasts. This four mixer monophonic console accepts ten inputs – seven externally switchable for microphone or line sources. The Versa Console provides both a balanced 600 ohm line output and a high impedance PA output. A 1 KHz test oscillator supplies tone directly to the mixing bus to facilitate quick and accurate level adjustments.

All inputs are transformer coupled to IC pre-amplifiers. Three of the four mixers accept two inputs each, and each input is externally switchable for microphone or line level sources. The fourth mixer accepts four inputs – one switchable and three direct high level. Mixers are long life sealed pots with cue detents.

Monitoring facilities in the Versa Console include a VU meter switchable for +4 or +8 VU output. A one watt amplifier powers the front panel headset jack which is switchable to the program or cue circuits. A separate FET muted cue amplifier and speaker are included.

The Versa Console is designed for quick and convenient installation. Input connections are made to rear panel screw terminals, and input level selectors are located on the rear panel. Color coded program output binding posts, the PA output and the PA level control are also located on the rear panel.



## SPECIFICATIONS

### INPUTS

Mixers 1-3: two per mixer, externally switch selectable, high or low level.

Mixer 4: one switch selectable high or low; three high level.

### TEST

Internal 1 KHz oscillator, level adjustable.

### OUTPUTS

Program: 600 ohms, transformer balanced, +8 dBm nominal, +18 dBm maximum.

Cue: 0.5 watts RMS; internal speaker provided, FET muted.

Headphones: 1.0 watts RMS at 8 ohms. Front panel jack for 8 ohms, 16 ohms, or HiZ headphones.

PA: 10,000 ohms unbalanced, 0.45 V for +8 dBm maximum output.

### FREQUENCY RESPONSE

Program and PA Outputs  
±1.5 dB, 30 Hz to 20 kHz

### POWER REQUIREMENTS

10.5 watts, 117 VAC, 50/60 Hz.

### DISTORTION

Program output less than 0.5% at +8 dBm into 600 ohms. No clipping at +18 dBm.

### SIGNAL TO NOISE

Program output at least 60 dB below +8 dBm output with -50 dBm input.

### SIZE

19" wide x 10" deep x 3.5" high.

### MOUNTING

Standard EIA 19" rack.

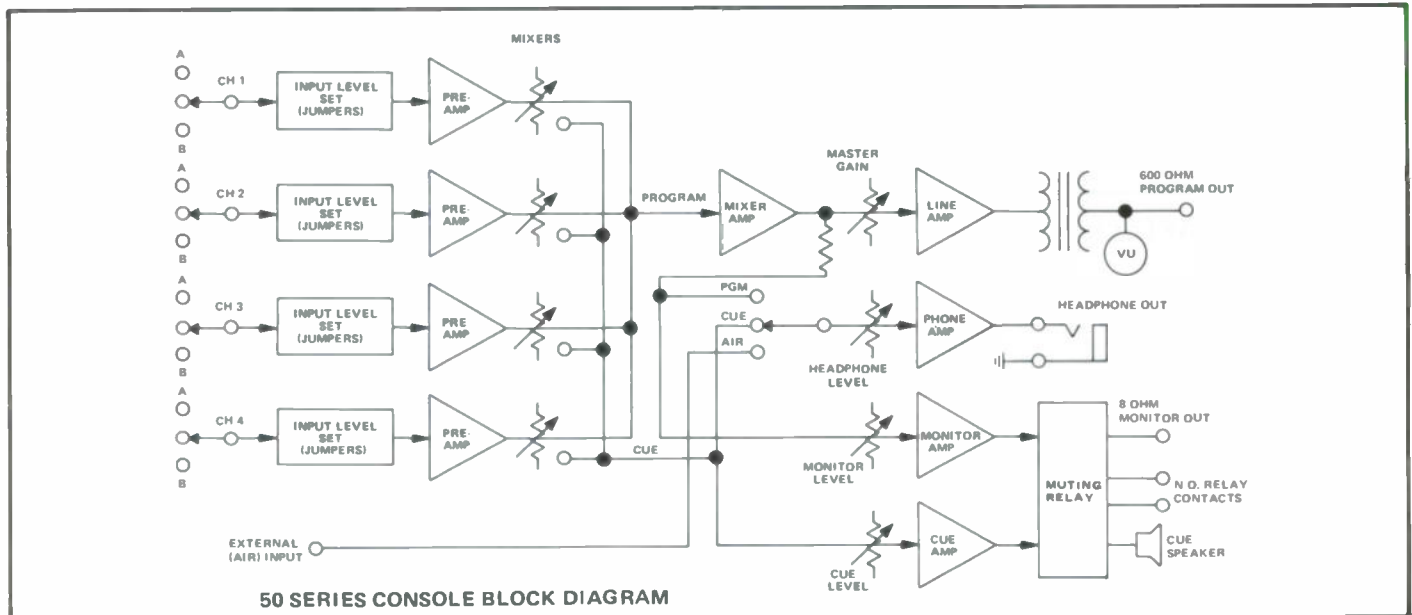
# 50 Series Mono

## AUDIO CONSOLES



The monaural 4BEM-50 is a complete small console ideal for production, on-air, educational, or CATV use. The 4 mixers each accept two switch selectable inputs for a total of eight. Each mixer preamplifier can be wired for either microphone or line level sources. The mixers are long-life, sealed units for quiet, trouble-free operation. Speaker and headphone amplifiers are built-in for monitoring the console output, an

external source ("off-the-air"), or the cue circuit. Each mixer is equipped with a cue position which also feeds a built-in cue speaker. The cue speaker and outputs are controlled by a muting relay supplied as standard. The heavily filtered power supply is mounted in the cabinet. The optional rack version permits mounting the console in a standard 19" rack.



## SPECIFICATIONS

### INPUTS

Number: 8 inputs to 4 mixers, High or Low level, strappable.  
 Low Level: 150 ohm balanced; -65 dBm nominal, -42 dBm maximum; maximum gain 50 dB.  
 High Level: Balanced Bridging (10K ohms each side to ground); -20 dBm nominal, 0 dBm maximum, maximum gain 50 dB.

### OUTPUTS

Program: 600 ohms, transformer balanced. +8 dBm nominal, +16 dBm maximum.  
 Monitor: 2.0 Watts RMS at 8 ohms.  
 Cue: 0.5 Watts RMS at 4 ohms. Internal cue speaker provided; external connections available.  
 Headphones: 0.5 Watts RMS at 8 ohms. Front panel jack for 8 ohms, 16 ohms, or HiZ headphones.

### FREQUENCY RESPONSE

Program Output:  $\pm 1.5$  dB, 30 Hz to 20 kHz at 0 dBm.  
 Monitor Output:  $\pm 2$  dB, 30 Hz to 20 kHz at 1 Watt into 8 ohms.

### DISTORTION

Program Output: Less than 0.5% at +8 dBm into 600 ohms.  
 Monitor Output: Less than 1% at 2 Watts into 8 ohms.

### SIGNAL TO NOISE

Program Output: At least 65 dB below +8 dBm output with -50 dBm input.

### MUTING

One muting relay provided to mute monitor output and cue speaker (internal or external). Normally open contacts provided for ON AIR light. Muting relay activated by any input.

### CONTACTS

1A at 125 VAC, 1/2A at 250 VAC, resistive loads.

### SIZE

18" wide x 13" deep x 7.5" high.

### POWER REQUIREMENTS

30 Watts; 117 VAC 50/60 Hz or 230 VAC 50/60 Hz.

# 50 Series Stereo

The stereo 4 BES-50 is a complete small console ideal for production, on air, or educational use. The 4 mixers each accept two switch selectable inputs for a total of eight inputs. Each mixer preamplifier can be wired for either microphone or line level sources. The mixers are long-life, sealed units for quiet, trouble-free operation. Speaker and headphone amplifiers are built-in for monitoring the console output, an external source, or the cue circuit. Each stereo mixer comes equipped with a cue position for feeding a built in cue speaker. The cue speaker is controlled by an internal muting relay. The unit may be easily rack mounted with the addition of a rack mount kit.

## INPUTS

Number: 8 inputs into 4 mixers, high or low level.

Low Level: 150 ohms, balanced; -65 dBm nominal; -38 dBm maximum available gain = 92 dB.

High Level: Bridging (18K ohms each side to ground); -20 dBm nominal; +10 dBm maximum.

## OUTPUTS

Program: 600 ohms, transformer balanced; +8 dBm nominal, +18 dBm maximum.

Audition: 600 ohms, transformer balanced; +8 dBm nominal, +18 dBm maximum.

Monitor: 8 Watts RMS; will drive 8 or 16 ohms.

Cue: 0.5 Watt RMS; internal speaker and external connections provided.

## AUDIO CONSOLES



Headphones: 0.5 Watt RMS; 8 or 16 ohms. Front panel jack and internal connections available.

## FREQUENCY RESPONSE

Program & Audition:  $\pm 0.5$  dB, 20 Hz to 20 kHz Ref: 1 kHz @ +8 dBm output into 600 ohms.

Monitor:  $\pm 2$  dB, 50 Hz to 20 kHz Ref: 1 kHz = 1 Watt output into 8 ohms.

## DISTORTION

Program & Audition: 0.5% THD or less, +18 dBm output into 600 ohms.

Monitor: 1% THD or less at rated load and output.

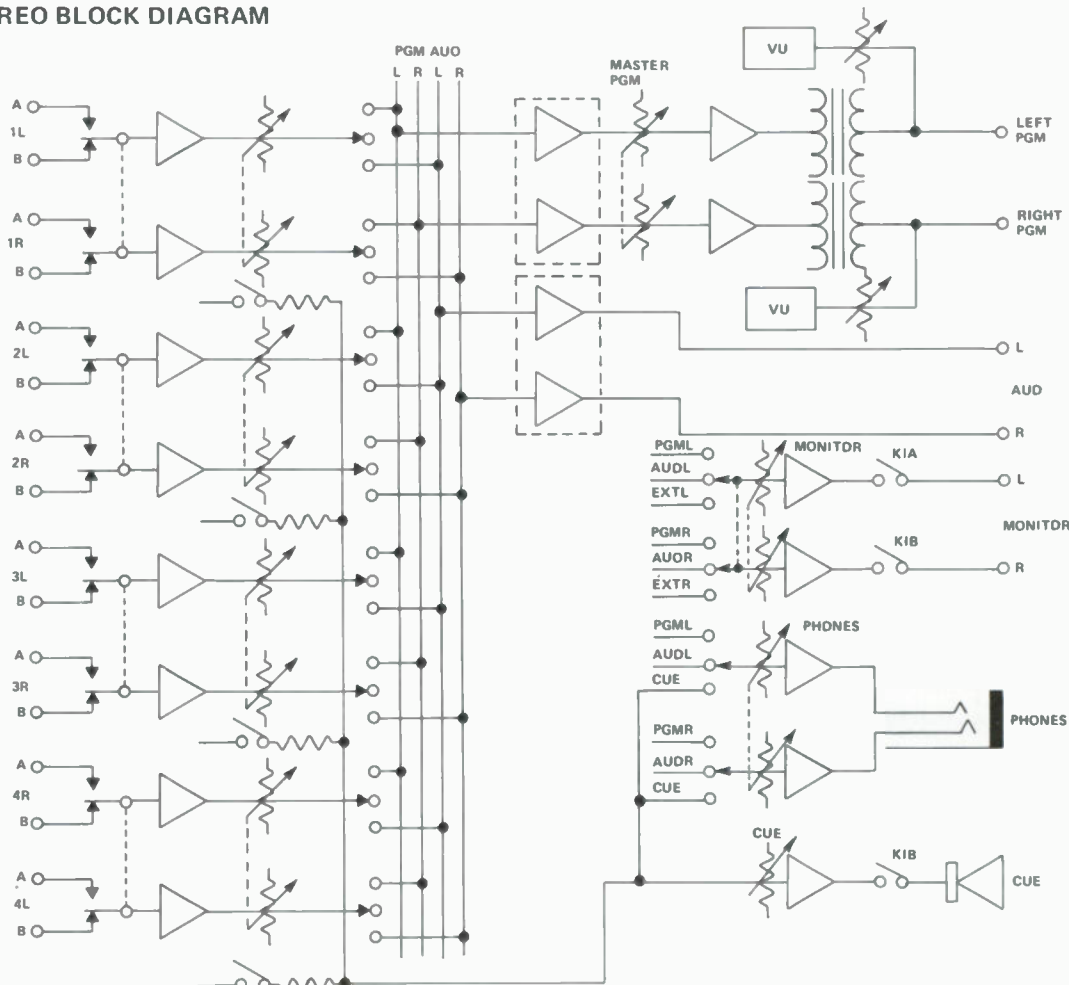
## SIGNAL TO NOISE

Program & Audition: Noise (unweighted) 65 dB below +8 dBm output referenced to -50 dBm input.

## MUTING

One muting relay provided to mute monitor output and cue speaker.

## 50 SERIES STEREO BLOCK DIAGRAM





# 100/200 Series Mono

- 5 AND 8 MIXER MONAURAL, DUAL CHANNEL
- HIGH OR LOW LEVEL INPUTS ON ALL MIXERS

## AUDIO CONSOLES



5BEM-200



8BEM-200



5BEM-100



8BEM-100

The monaural 100 and 200 Series are high quality full dual channel audio consoles. Pushbutton selected inputs are available to high or low level (switchable) plug-in preamps. Mixers are precision ladder attenuators (200 Series) or sealed long-life potentiometers (100 Series). Selection of audition or program channels is by FET's for fast, quiet and distortion-free operation. Both output channels are continually monitored by individual 3½" illuminated VU meters. Both audition and program channels have transformer balanced outputs rated at over +18 dBm peak, and are on interchangeable plug-in PC cards.

These consoles have full built-in monitoring capabilities. The eight watt monitor amplifier delivers sharp, true sound to three individually muted outputs. Program, audition,

and external (Off-Air) sources are front panel selectable. The separate headphone amplifier has both front panel and internal outputs. The cue amplifier (relay muted) drives a built-in or external speaker.

Three muting relays (two 100 Series) are provided for user convenience. Each can be wired to any mixer (channels 1, 2 and 3 are standard). Relay No. 1 mutes the cue speaker, and all relays control a monitor speaker output and a normally-open contact for warning lights, etc.

All internal connections are to screw-type barrier strips (except relay contacts and station ground) through two access openings in console bottom.

## SPECIFICATIONS

### INPUTS

**Number:** 10 inputs into 5 mixers (5BEM) and 16 inputs into 8 mixers (8BEM). All mixers high or low level (internally switchable).

**Low Level:** 150 ohms, balanced; -65 dBm nominal; -38 dBm maximum; maximum available gain = 92 dB.

**High Level:** Bridging (18K ohms each side to ground); -20 dBm nominal; +10 dBm maximum.

### OUTPUTS

**Program:** 600 ohm, transformer balanced; +8 dBm nominal, +18 dBm maximum.

**Audition:** 600 ohm, transformer balanced; +8 dBm nominal, +18 dBm maximum.

**Monitor:** 8 Watts RMS; will drive 8 or 16 ohms.

**Cue:** 0.5 Watt RMS; 8 or 16 ohms; internal speaker and external connections provided.

**Headphones:** 0.5 Watt RMS; 8 or 16 ohms. Front panel jack and internal connections available.

### FREQUENCY RESPONSE:

**Program & Audition:** ±0.5 dB, 20 Hz to 20 kHz Ref: 1 kHz @ +8 dBm output into 600 ohms.

**Monitor:** +2 dB, 50 Hz to 20 kHz Ref: 1 kHz @ 1 Watt output into 8 ohms.

### DISTORTION

**Program & Audition:** 0.5% THD or less, +18 dBm output into 600 ohms.

**Monitor:** 1% THD or less at rated load and output.

### SIGNAL TO NOISE

**Program & Audition:** Noise (unweighted) 65 dB below +8 dBm output; referenced to -50 dBm input.

### MUTING

**100 Series:** Two relays standard

**200 Series:** Three relays standard

**Monitor:** Monitor outputs through the relays.

**Cue:** Relay 1 mutes internal and external speakers.

CONTINUED ON NEXT PAGE

# 100/200 Series Mono

## AUDIO CONSOLES

### SPECIFICATIONS (Cont.)

**Switching:** Any relay can be activated through any mixer key, audition and/or program positions. Comes wired with relay one activated by channel 1, etc.

**External Contacts (On-Air lights, etc.):** 1 A. at 125 VAC; 5 A. at 250 VAC; resistive loads.

### POWER REQUIREMENTS

115V or 230V, 50/60 Hz. 50 watts max. (100 Series), 70 watts max. (200 Series).

### SIZE:

5BEM-100: 29.5" wide x 13" deep x 7.5" high.

5BEM-200: 29.5" wide x 14" deep x 9.5" high.

8BEM-100: 32.5" wide x 13" deep x 7.5" high.

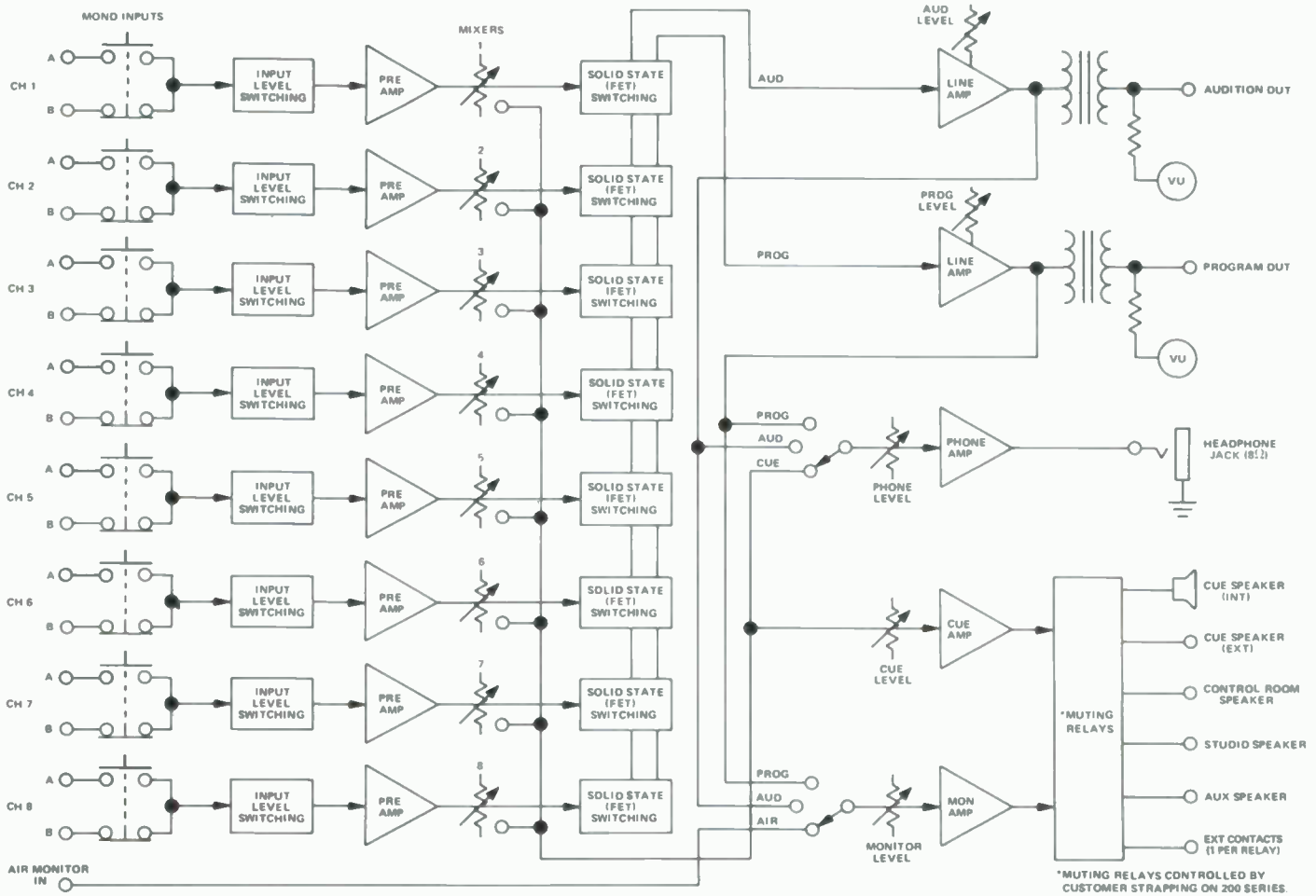
8BEM-200: 32.5" wide x 14" deep x 9.5" high.

### OPTIONS

230V, 50/60 Hz operation.

4 mixer extender with remote line provisions.

Step attenuators (100 Series).



100/200 SERIES MONO CONSOLE BLOCK DIAGRAM

# 100/200 Series Stereo

## AUDIO CONSOLES

- 5 AND 8 MIXER STEREO
- ALL MIXERS ACCEPT MONO OR STEREO, HIGH OR LOW LEVEL



5BES-200



8BES-200



5BES-100



8BES-100

These stereo consoles feature stereo mixers with pushbutton selection of high or low level inputs. Each preamp can also provide in-phase stereo from a mono source (switchable) to eliminate jumpers, impedance mismatch and phase errors. Mixers are long-life, low noise sealed pots (100 Series) or precision step attenuators (200 Series). Switching is accomplished with FET's, for fast, quiet, low maintenance operation. Two 3½" illuminated VU meters continually monitor the program outputs (100 Series). On the 200 Series the meters are switchable to either the program or

audition outputs. Program (and optional audition) plug-in mixer-line driver cards provide a transformer-balanced +18 dBm output.

Built-in amplifiers are provided for stereo monitoring capabilities by speaker or headphones of the program, optional audition, external ('Off-the-Air'), and cue circuits. The cue bus features a composite of both the left and right channels for positive preview of stereo sources.

## SPECIFICATIONS

### INPUTS

**Numbers:** 10 inputs into 5 mixers (5BES) and 16 inputs into 8 mixers (8BES); all mixers high or low level (internally switchable).

**Low Level:** 150 ohms, balanced; maximum available gain = 92 dB; -65 dBm nominal; -38 dBm maximum.

**High Level:** Bridging (18K ohms each side to ground); -20 dBm nominal; +10 dBm maximum.

### OUTPUTS

**Program:** 600 ohm, transformer balanced; +8 dBm nominal; +18 dBm maximum.

**Audition (Optional in 100 Series):** 600 ohm, transformer balanced; +8 dBm nominal; +18 dBm maximum.

**Mono (Optional in 100 Series):** 600 ohm transformer balanced; +8 dBm nominal; +18 dBm maximum; mixing ratio adjustable ±6 dB, left and right program channels.

**Monitor:** 8 Watts RMS per channel (200 Series), 2 Watts (100 Series), will drive 8 or 16 ohms.

**Cue:** 0.5 Watt RMS; 8 or 16 ohms; internal speaker and external connections provided.

**Headphone:** 0.5 Watt RMS per channel; 8 or 16 ohms, or HiZ; front panel jack and internal connections available.

### FREQUENCY RESPONSE

**Program & Audition:** ±0.5 dB, 20 Hz to 20 kHz Ref: 1 kHz @ +8 dBm output into 600 ohms.

**Monitor:** ±2 dB, 50 Hz to 20 kHz Ref: 1 kHz @ 1 Watt output into 8 ohms.

### DISTORTION

**Program & Audition:** 0.5% THD or less, +18 dBm output into 600 ohms.

**Monitor:** 1% THD or less at rated load and output.

### SIGNAL TO NOISE

**Program & Audition:** Noise (unweighted) 65 dB below +8 dBm output referenced to -50 dBm input.

### MUTING

**100 Series:** One relay standard, second relay optional.

**200 Series:** Three relays standard.

**Monitor:** Monitor outputs through each relay.

**Cue:** Relay 1 mutes internal and external speakers.

**Switching:** Any relay can be activated through any mixer key, audition and/or program positions; comes wired with relay one activated by channel 1, etc.

CONTINUED ON NEXT PAGE

# 100/200 Series Stereo

## AUDIO CONSOLES

External Contacts (On-Air lights, etc.): 1 A. at 125 VAC; .5 A. at 250 VAC; resistive loads.

### POWER REQUIREMENTS

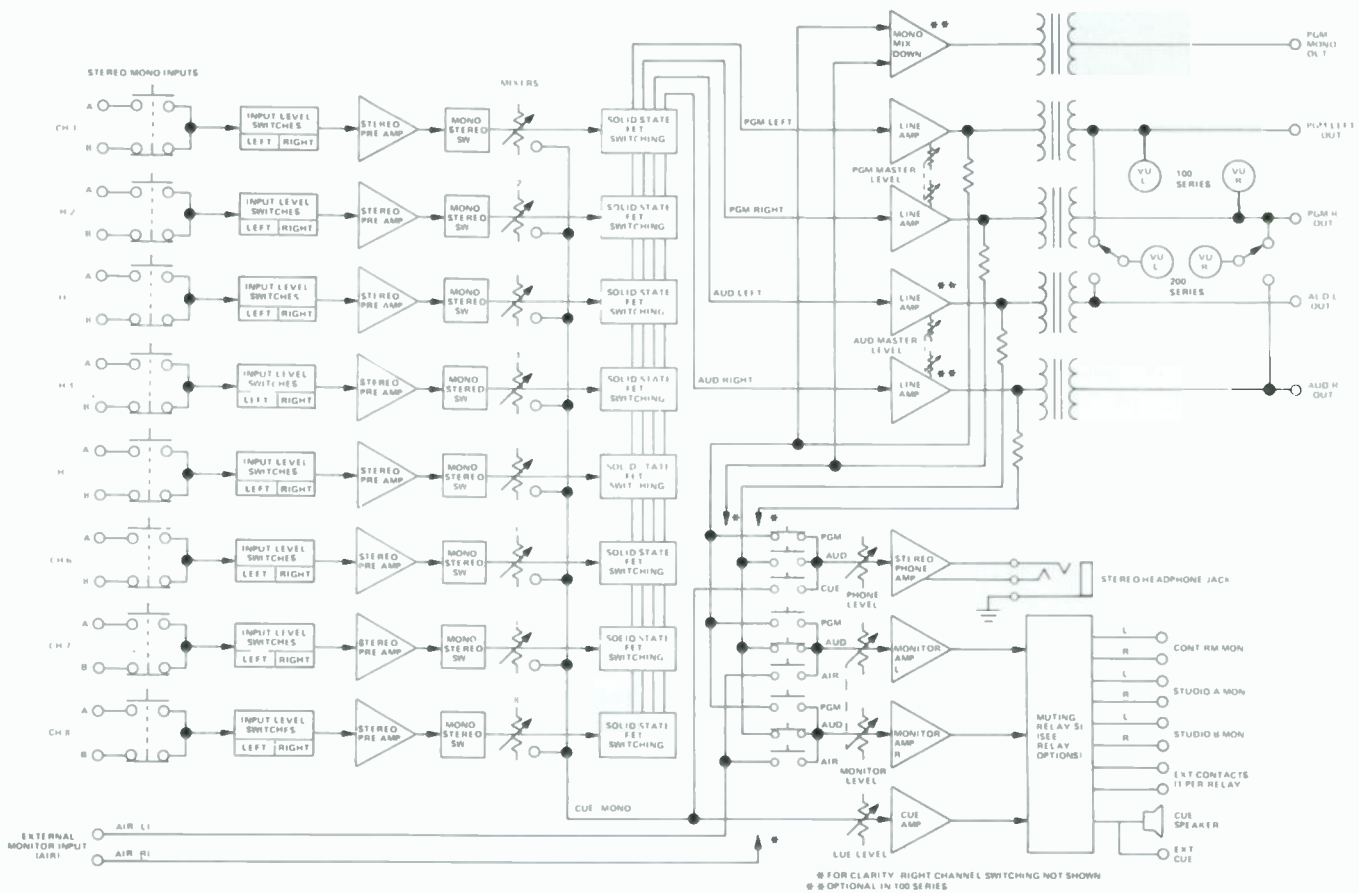
115V or 230V, 50/60 Hz. 85 Watts max. (100 Series), 105 Watts max. (200 Series).

### SIZE

- 5BES-100: 29.5" wide x 13" deep x 7.5" high.
- 5BES-200: 29.5" wide x 14" deep x 9.5" high.
- 8BES-100: 32.5" wide x 13" deep x 7.5" high.
- 8BES-200: 32.5" wide x 14" deep x 9.5" high.

### OPTIONS

- 230 VAC, 50/60 Hz operation.
- 4 mixer extender with remote line provisions.
- Mono matrix module (100 Series).
- Second muting relay (100 Series).
- Step attenuators (100 Series).
- Line amplifier module for audition channel (100 Series).



100/200 SERIES STEREO CONSOLE BLOCK DIAGRAM

# Series 4006 Slide Type Mono/Stereo Consoles

AUDIO CONSOLES

- COMPLETELY MODULAR CONSTRUCTION – ALL ACTIVE ELECTRONICS ARE UNPLUGGABLE

The NEW SPOTMASTER® 4006 SLIDE-MOD is a truly complete, versatile, totally modular console for the broadcaster.

It accepts up to ten input and two remote modules (a total of 26 inputs) or 12 input modules (a total of 24 inputs). Each input module accommodates two high or low level (switchable) sources. In stereo modules, left and right channels of each input are individually level selectable. All inputs are balanced and specially RFI protected. Each module is completely enclosed and shielded. Each module also contains its own voltage regulator to eliminate crosstalk and externally generated noise. All "live" switching is performed by fast, low-noise reed relays for quiet and distortion-free operation. The mix-buss output of each module is balanced to eliminate the possibility of unwanted noise pick-up, crosstalk, or ground loops.

The Slide-Mod consoles have four muting/control relays. A miniature switch matrix and logic in 2 of the 10 input modules allows any relay to be programmed to function when any combination of inputs and mix-busses are activated (16 combinations for each input module!). Monitor outputs and relay contacts are brought out for each relay.

The remote modules accept three high-level inputs each (two stereo and one mono in stereo versions). The remote source selected may either be fed to the "A" input of the adjacent input module for mixing; or the output of the monitor amplifier may be sent down the line for timing and cuing. The line remains balanced and isolated at all times.

The cue function has been taken off the slide fader and brought up to a "Program-Off-Cue" selector switch. This allows cuing without disturbing pre-set levels. It also allows a cue override in the headphones! When any channel is placed in the Cue mode, the program level in the headphones (either mix-busses or external) is dropped in level by 10 dB, and the cue is fed over it. Two headphone level controls allow separate adjustment to suit the operator. A three-function front panel cue speaker is also provided. It can be used as a normal cue speaker, or for Intercom Listen or Intercom Talk. The Intercom function can be used with either of two totally separate external locations (Studio A and Studio B on the Intercom selector switch). Only a small PM speaker and two wires are necessary for full two-way conversation. The Monitor amplifier provides a solid 12W RMS (per channel, stereo) of exceptionally clean audio. All high-level amplifiers are plug-ins and readily accessible for inspection and service.

## SLIDE-MOD SPECS:

**INPUTS:** 20 High or Low level, switchable, 6 High level only.

**INPUT LEVELS:** Low - -70 dBm to -30 dBm, 200 ohm nom., balanced; High - -20 dBm to +20 dBm, balanced bridging.

**OUTPUTS:** Mix 1 and Mix 2, (mono Mix 1, mono Mix 2, stereo versions), 150/600 ohm, +8 dBm nominal +20 dBm maximum.

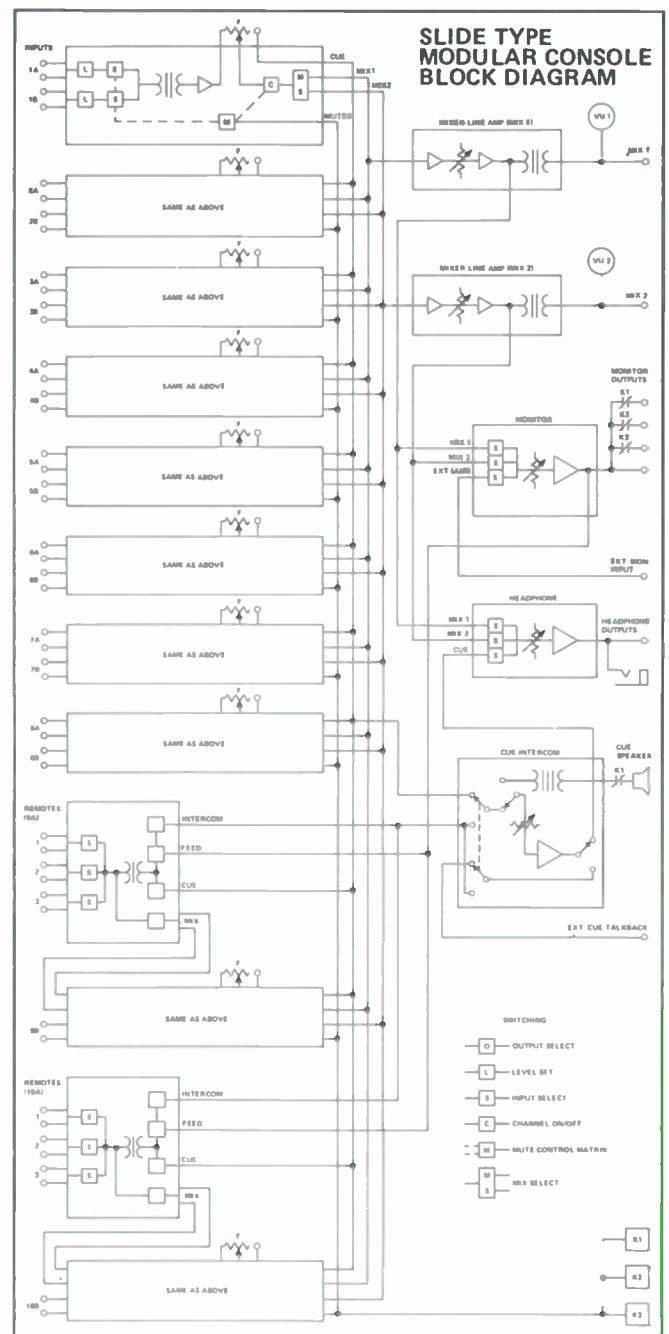
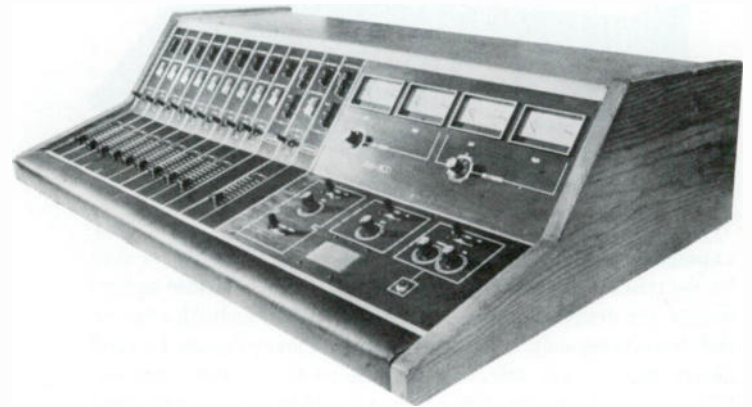
**FREQUENCY RESPONSE:** ±0.5 dB, 20 Hz-20 kHz, +8 dBm output.

**DISTORTION:** 0.5% or less THD at +18 dBm output.

**NOISE, RELATIVE INPUT:** -122 dBm (i.e., 72 dB below a -50 input).

**CUE & HEADPHONE:** 1% or less THD = .5W RMS; ±1.5 dB, 50 Hz-15 kHz.

**MONITOR:** 2% or less THD @ 12W RMS; ±2 dB, 50 Hz-15 kHz.



# Series 3006



The 3006 Series Consoles bring economy to the once very expensive slide-type mixer consoles. Ten slide mixers may be switched to either of two output circuits. These assignments are made by pushbuttons, and either or both may be fed simultaneously by each mixer. A lever switch located above each mixer selects the mode of that mixer channel. When placed in the "Pgm" mode, that mixer will feed whichever output assignment the operator had selected.

Two VU meters are provided — in the monaural units one for each separate output, and in the stereo units, one for the left channel and one for the right channel.

Two pushbutton selectable inputs are available for each of the first eight mixers and three for each mixers nine and ten. Each mixer has switch selectable high and low level inputs. The stereo units have a switch for each mixer to provide in-phase left and right output from a mono input.

A monitor selector switch allows the operator to select either output or an external source for monitoring. A headphones selector switch permits selection of either output or the cue buss.

The cue circuit may be switched from the front panel to an intercom function allowing communication between another studio or control room. This may be accomplished by placing a small speaker in the other room. All other switching and circuitry is provided in the console.

All amplifier circuits are on plug-in PC boards and use high quality components.

## AUDIO CONSOLES

### SPECIFICATIONS

#### INPUTS

**Number:** 22 inputs into 10 mixers (2 per mixer and 3 on mixers 9 and 10). All mixers high or low level (internally switchable).

**Low Level:** 150 ohms, balanced; -65 dBm nominal; -38 dBm maximum; maximum available gain = 92 dB.

**High Level:** Bridging (18K ohms each side to ground); -20 dBm nominal; +10 dBm maximum.

#### OUTPUTS

**Program:** 600 ohms, transformer balanced; +8 dBm nominal, +18 dBm maximum.

**Audition:** 600 ohms, transformer balanced; +8 dBm nominal, +18 dBm maximum.

**Monitor:** 8 Watts RMS; will drive 8 or 16 ohms.

**Cue:** 0.5 Watt RMS; 8 or 16 ohms; internal speaker and external connections provided.

**Headphones:** 0.5 Watt RMS; 8 or 16 ohms. Front panel jack and internal connections available.

**Intercom:** Selector switch with cue.

#### FREQUENCY RESPONSE

**Program & Audition:**  $\pm 0.5$  dB, 20 Hz to 20 kHz Ref: 1 kHz @ +8 dBm output into 600 ohms.

**Monitor:**  $\pm 2$  dB, 50 Hz to 20 kHz Ref: 1 kHz @ 1 Watt output into 8 ohms.

#### DISTORTION

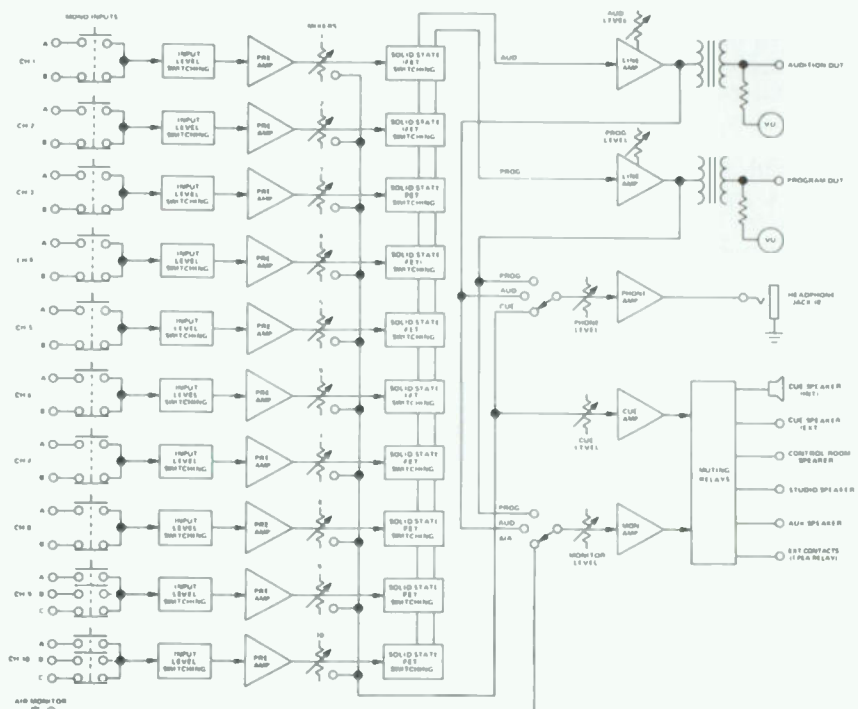
**Program & Audition:** 0.5% THD or less, +18 dBm output into 600 ohms.

**Monitor:** 1% THD or less at rated load and output.

#### SIGNAL TO NOISE

**Program & Audition:** Noise (unweighted) 65 dB below +8 dBm output; referenced to -50 dBm input.

**3006 SERIES MONO CONSOLE  
BLOCK DIAGRAM  
(STEREO ALSO AVAILABLE)**



# CLE-FM Sound Britener Compressor/Limiter/Expander

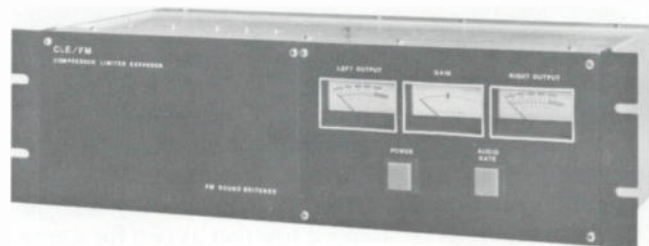
AUDIO PROCESSING AND  
DISTRIBUTION AMPLIFIERS

- AUTOMATIC LEVEL CONTROL FOR THE FM AND FM STEREO BROADCASTER
- PROVIDES MAXIMUM TRANSMITTER MODULATION WITH PROTECTION AGAINST OVER MODULATION

The SPOTMASTER<sup>®</sup> FM SOUND BRITENER provides the FM or FM stereo broadcaster with a combination compressor/limiter/expander specifically designed for his needs. The FM SOUND BRITENER provides automatic level control to maximize transmitter modulation, while preventing over modulation.

Two controls are employed to adjust the operating characteristics of the unit. The unique AVERAGE/PEAK RATIO control sets the dynamic range desired from a tight 1 dB to a loose 35 dB. The RETURN RATE determines the speed with which low level signals are expanded. In combination, these two controls permit tailoring the FM SOUND BRITENER operation for the exact sound required for the individual station's programming.

The CLE-FM comes equipped for operation with the DOLBY B FM encoder. It may be used ahead of the DOLBY B encoder to provide compression or used as a peak limiter between the DOLBY B and the transmitter. Alternately, the CLE-FM may be placed in the TEST mode as a straight line amplifier when DOLBY encoding is employed.



## SPECIFICATIONS

- INPUT:** 600 ohms, transformer balanced.
- INPUT SENSITIVITY:** Maximum: +26 dBm for +20 dBm output.  
Minimum: -20 dBm for +20 dBm output. -20 dBm input yields +20 dBm output with 0 compression/expansion.
- MAXIMUM OVERALL GAIN:** 64 dB (full expansion).
- OUTPUT:** 600 ohms, transformer balanced, +22 dBm maximum.
- MAXIMUM EXPANSION:** 20 dB.
- MAXIMUM COMPRESSION:** 30 dB before clipping.
- AVERAGE/PEAK RATIO:** adjustable from minimum 35 dB to maximum 1 dB.
- FREQUENCY RESPONSE:** +0.5 dB, 20 Hz, to 20 KHz.
- EQUALIZATION:** Test and Limit Only: flat. Normal: 75 microsecond, 25 microsecond, or flat; optional 50 microsecond, 25 microsecond, or flat.
- EXPANSION (RETURN) RATE:** adjustable from 20 seconds to 5 seconds for 20 dB expansion.
- DISTORTION:** less than 0.5% total harmonic before clipping.
- NOISE:** minimum 70 dB below +8 dBm output with -10 dBm input.

# CLE-500 Sound Britener Compressor/Limiter/Expander



The Sound Britener combines compressor, limiter and expander functions to provide optimum level for maximum modulation power and coverage without danger of over modulation. Signal processing is smooth and quiet without distortion, pumping, or sucking of background noise. As a compressor/limiter/expander, the Sound Britener includes all characteristics of traditional gated automatic gain control amplifiers and fast acting peak limiters.

Automatic and self-controlling functions within the CLE-500 eliminate the need for several companion units required in

## SPECIFICATIONS

- Input:** 600 ohms, transformer balanced.
- Input Sensitivity:** Minimum: -40 dBm for +25 dBm output.  
Maximum: +30 dBm for +25 dBm output.  
-20 dBm yields +25 dBm output with 0 compression/expansion.
- Maximum Overall Gain:** 65 dB (full expansion).
- Output:** 600 ohms, transformer balanced, +25 dBm maximum.
- Maximum Expansion:** 20 dB.
- Maximum Compression:** 30 dB before clipping.

- AUTOMATIC LEVEL CONTROL FOR THE AM BROADCASTER
- SINGLE UNIT CONTAINS ALL FUNCTIONS - NO NEED FOR ADDITIONAL AUDIO PROCESSORS
- SIMPLIFIED OPERATION - ONLY THREE CONTROLS

some audio enhancement systems. There are just three controls:

- Input level control
- Output level control
- Unique peak-to-average "tightness" control.

A large 3" meter indicates expansion and compression. Compression, timing, and expansion limits are all determined automatically, while a switch provides for test and proofs of performance. In the "test" mode, the unit acts as a fixed gain amplifier.

- Average/Peak Ratio:** Adjustable from minimum 35 dB to maximum 1 dB.
- Limiting Selection:** Symmetrical (positive and negative) or asymmetrical (negative only) peak limiting.
- Frequency Response:**  $\pm 0.5$  dB, 20 Hz to 20 KHz.
- Distortion:** Less than 0.5% total harmonic before clipping.
- Noise:** Minimum 70 dB below normal output with -20 dB input.
- Equalization:** Flat.
- Power Requirements:** 117 VAC, 50/60 Hz, 11 Watts.

# Model CLA 20/40A

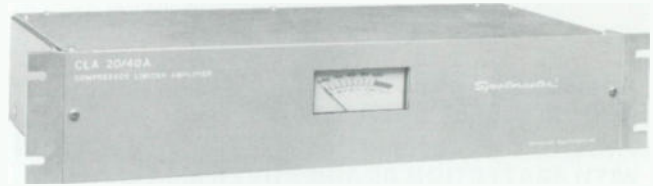
## Compressor-Limiter Amplifier

AUDIO PROCESSING AND  
DISTRIBUTION AMPLIFIERS

The CLA 20/40A, combining both compression and limiting functions, has applications in both AM and FM installations. This amplifier has switchable control systems for symmetrical or asymmetrical peak limiting; pre-emphasized or flat audio response; and compress/limit, compress only or compress/limit off to provide complete flexibility. Any number of CLA 20/40A's can be strapped together as two for stereo or four for quad. Tracking accuracy is 2 dB or better (over 30 dB level differential range). A minor adjustment permits changing the time constant to 25 microseconds for use with Dolby B.

### SPECIFICATIONS

**Input and Output Impedance:** 600 ohms balanced or unbalanced  
**Input Level:** -20 dBm to +20 dBm  
**Maximum Output Level:** +24 dBm RMS  
**Frequency Response:** 20 Hz to 20 KHz flat within 0.5 dB in AM or FM mode  
**Distortion:** 0.5% or less, -20 dBm input with +10 dBm output  
**Maximum Gain:** 40 dB  
**Noise Level:** -65 dB below -20 dBm input with +10 dBm output



- SWITCHABLE SYMMETRICAL OR ASYMMETRICAL PEAK LIMITING
- SWITCHABLE EQUALIZED OR FLAT RESPONSE - AM/FM
- 40 dB DYNAMIC RANGE

**Compression Ratio:** 30 to 1  
**Automatic Gain Control Range:** Better than 10:1  
**Metering:** Gain reduction, output level +4 VU, +10 VU  
**AM-FM Operation:** Both. Standard 75 microsecond pre-emphasis/de-emphasis used in FM operation or flat  
**Physical Dimensions:** 3½" x 19" rack panel  
**Power Requirements:** 120/240 volts, 50/60 Hz, 10 watts

# AD1B Audio Distribution Amplifier



The AD1B distributes audio signals within a studio or to telephone lines. VU meter and aural monitoring of the input signal is provided, as well as separate monitoring and level controls for each output. The five highly isolated output channels are expandable up to 25 by the addition of AD1B-X Extenders, which also contain the same aural monitoring facilities as the AD1B. Both units are available with either optional output transformers or standard unbalanced emitter follower output. Input circuitry may be operated either bridging or matching and balanced or unbalanced.

### SPECIFICATIONS

**Input Impedance:** Matching: 600 ohms, Bridging, 10 K-ohms. AD1B-X: 10 K-ohms, unbalanced.  
**Output Load Impedance:** 600 ohms (Optional 150/600 ohms).  
**Input Level:** Max.: +30 dBm, AD1B-X: +5 dBm. Min.: Matching -26 dBm, Bridging -10 dBm.  
**Output Level: (Per Channel)** +4 dBm (+14 dBm peak).  
**Gain:** Matching: 30 dB, Bridging: 14 dB. AD1B-X: Unity.  
**Frequency Response:** ±1 dB @ 30 - 15 KHz, ±2 dB @ 20 - 20 KHz.  
**Distortion:** Less than 1%.  
**Noise:** 65 dB or better, below rated output.  
**Channel Separation:** 60 dB.  
**Power Requirements:** 115 VAC, 50/60 Hz, 50 watts, AD1B-X: 40 watts.  
**Dimensions:** 19" wide x 5¼" high x 7-1/8" long.

# Model BEM-10 Monitor Amplifier

The BEM-10 is a conservatively rated wide band amplifier capable of delivering from 10 to 15 watts RMS. Electronic muting is incorporated to enable the microphone and mute the program channel for paging operation.

### SPECIFICATIONS

**Power Output:** 10 watts rms - 16 ohms unbalanced 25/70.7 volt balanced line. 12.5 watts rms - 8 ohms unbalanced. 15 watts rms - 4 ohms unbalanced.  
**Frequency Response:** ±1 dB, 50-15,000 Hz.  
**Hum & Noise:** Mic: 60 dB below 10 watts output. Pgm: 70 dB below 10 watts output.



**Program/Line Input:** 25 K-ohm unbalanced; or 600 ohms balanced.  
**Mic Input:** 150 ohms balanced (internal transformer). Screw Terminals.  
**Power Requirements:** 115 VAC, 50/60 Hz, 30 watts.



# Turntable Pre-Amplifiers Models BETMS-100/200

STUDIO EQUIPMENT



- UNBALANCED OUTPUT - BETMS 100
- BALANCED TRANSFORMER OUTPUT - BETMS 200

### SPECIFICATIONS

**Output Level:** +8 dBm nominal, +16 dBm peak, into 600 ohms. Each output continuously adjustable.

**Output Impedance:** BETMS-100 150 ohms unbalanced. BETMS-200: 600 ohms balanced, 150 ohms balanced (wiring option).

**Input Sensitivity:** 5 mV. for +8 dBm output, at 1 kHz.

**Input Impedance:** 47,000 ohms resistive (50 pf parallel).

**Signal to Noise:** 65 dB or better for 5 mV. input, +8 dBm output, 1 KHz.

**Equivalent Input Noise:** 2.8 microvolts (116 dB below output with 600 ohm load).

**Channel Separation:** 65 dB or better for +8 dBm output, 1 kHz, into 600 ohms, with 5 mV input.

**Frequency Response:**  $\pm 1$  dB of RIAA equalization curve, 50 - 15,000 Hz.

**Distortion:** Less than 0.25% THD at 1 kHz, +8 dBm output into 600 ohms.

**Equalization:** Standard NAB/RIAA Disc Reproduction.

**Front Panel Controls:** Power on/off, Left Output Level, Right Output Level, Mono/Stereo Mode Switch, Right Channel Phase Reversal Switch.

**AC Power:** 100 to 135 VAC, 50/60 Hz. 200 to 270 VAC, 50/60 Hz (optional) 6 watts max.

**Dimensions:** 9 1/2 inches wide (24.1 cm.). 6 1/2 inches deep (16.5 cm.). 3 inches high (7.62 cm.).

**Weight:** 3.5 lbs. (1.6 Kg.)

## Professional Turntables

### CUE-MASTER - 3 SPEED

- No slip starting
- Bronze platter shaft bearing
- Motor on-off switch light
- Rugged construction, only 3 rotating parts
- Simple capstan to idler drive

### SPECIFICATIONS

**Dimensions:** 15 1/2" x 15 1/2"

**Weight:** 16 lbs.

**Wow & Flutter:** .3 of 1%.

**Motor:** Hysteresis Sync

**Rumble:** 36 dB below NAB level at all speeds.



### STUDIO-PRO B - 2 SPEED

- Precision engineered for quiet, dependable operation
- Solid cast aluminum chassis and turntable
- Illuminated speed indicators
- Tightest cue potential in the industry
- "Direct Drive" . . . no belts
- Detachable tone arm mounting plate

### SPECIFICATIONS

**Dimensions:** 15 1/2" x 15 1/2"

**Weight:** 20 lbs.

**Wow & Flutter:** Less than .2 of 1%

**Motor:** Hysteresis Sync

**Rumble:** 38 dB below NAB level @33 and 45 RPM

**Bearings:** Bronze Oilite throughout

**Power Requirements:** 110 V ac, 60 Hz (50 Hz available)



## Micro-Trak Tone Arms

Micro-Trak tone arms feature low resonance and very small tracking errors. Available in 12 and 16 inch models. Full line of cartridges and styli available, see price list.

No. 303 12"  
No. 306 16"



## Broadcast and Recording Microphones



COMPLETE LINE  
OF MICROPHONES  
AVAILABLE



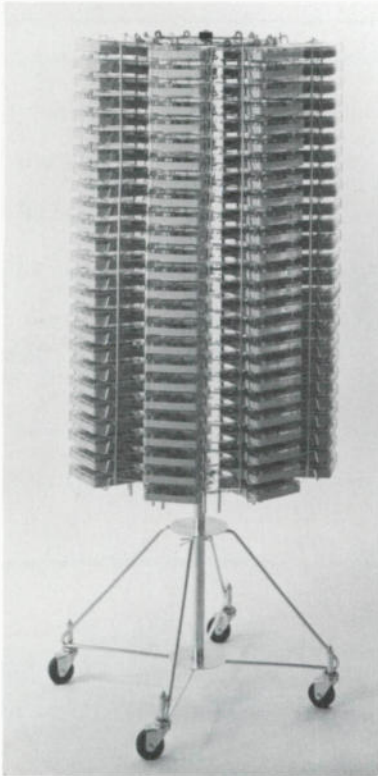
**635A:** Smooth, carefully shaped response yields "flat effect" when used close up. Built-in four-stage pop and breath blast filter.

Cable and mounting clamp furnished. Response: 80 to 13,000 Hz. Lo-Z. Output level: -55 dB.

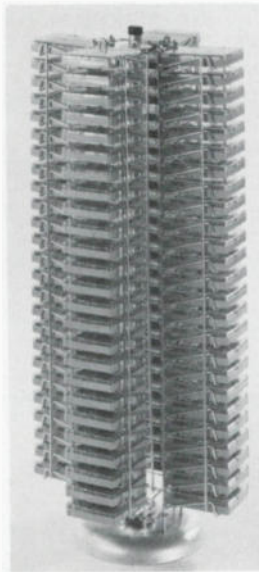
**RE50:** For vocals, interviewing, instrumental broadcast, and recording. Extremely low susceptibility to mechanical shock, handling and cord noise, or breath pops due to unique double case design separated by rubber isolation mounting. Same electrical characteristics as the 635A.

# Cartridge Storage Racks

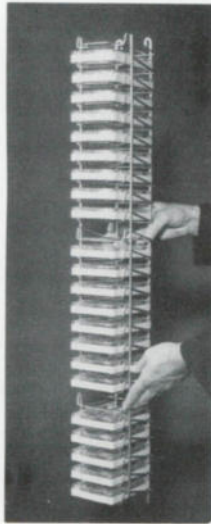
STUDIO EQUIPMENT



LS-200



LS-100



RS-25 RACK SECTION

## Wire Units

**LS-200 Lazy Susan** – Holds 200 cartridges on rotating stand. Ideal for large storage situations requiring mobility. Equipped with 4 heavy-duty casters and constructed of rugged steel rod finished bright zinc. Each individual RS-25 section is removable 51¼" high, 20½" diameter.

**LS-100 Lazy Susan** – Designed for table top use. Holds 100 cartridges with 4 removable RS-25 sections. Weighted Base. Ball bearing rotating stand. 39" high, 15" diameter.

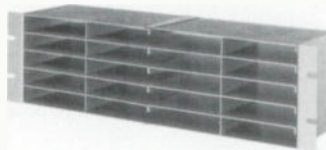
## Modular Units



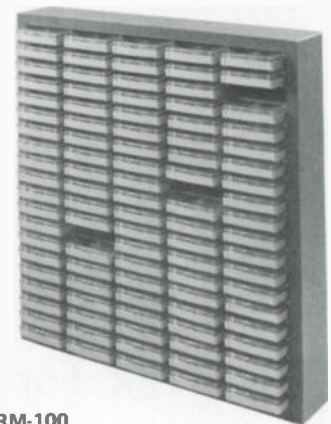
DM-40



DM-20



RM-20



RM-100

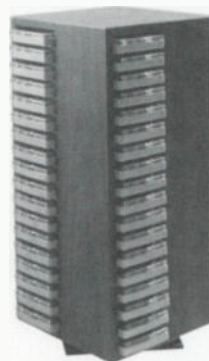
**Desk Mount Modules** – Rotating racks present four-sided storage in attractive Walnut Formica. DM-72 holds 72 cartridges, measures only 22" x 11" x 11". DM-200 provides 200 storage slots. 29½" x 15¼" x 15¼".

**DM-40 Walnut Woodgrain Finished Cabinet** – Lazy Susan designed for tabletop operation; holds 40 "A" cartridges. 9-1/2" W x 8" D x 11-7/8" H. Weight 6-1/2 lbs.

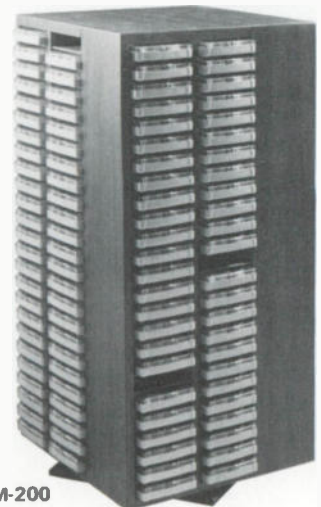
**DM-20 Walnut Woodgrain Finished Cabinet** – Holds 20 "A" cartridges. Units may be stacked; 9-1/2" W x 4" D x 10-7/8" H. Weight 3-1/4 lbs.

**RM-100 Wall Mount Rack** – Holds 100 A size cartridges in minimum space. Walnut Formica trim. 2' x 2' x 4-3/8".

**RM-20** is designed for standard 19" rack installation. Put vacant rack space to good use. Holds 20 A size cartridges in only 5¼" vertical space. Made of aluminum.



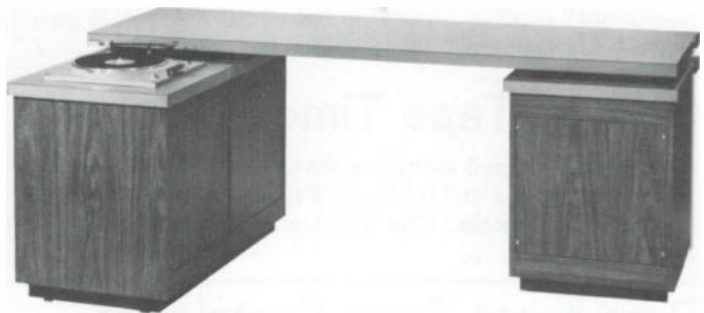
DM-72



DM-200

# Control Room Furniture

STUDIO EQUIPMENT



- MODULAR DESIGN FOR COMPLETE FLEXIBILITY.
- SINGLE AND DUAL TURNTABLE CABINETS.
- DESK TOP SECTION MOUNTS ON CABINETS OR METAL LEGS.

A new look is offered in the SPOTMASTER® modular control room furniture. This modular design provides a unique solution to the problem of providing functional workspace in the broadcast studio. Turntables, tape cartridge machines, cueing, and switching control panels may all be located within arms reach of the main control board. This "human engineered" system provides almost ultimate flexibility in a group of off the shelf components used to make your custom studio installations. Durable, color keyed, suede formica covered side panels (in a summer pecan wood grain finish) and tops (in French Blue) create an exciting attractiveness. Formica, with its inherent resistance to damage from coffee stains, cigarette burns, and the like insures that your furniture will maintain its initial beauty for many years. (Special colors available at extra cost)

## SPECIFICATIONS

### DUAL TURNTABLE CABINET

**Construction:** Panels fabricated from high density particle board 3/4" thick (front and rear closure panels 5/8" thick) with formica press bonded using urea type heat activated adhesive.

**Panel Space:** Two 17-1/2" high panel openings front and rear to accommodate standard 19 inch E.I.A. style equipment panels on steel mounting rails.

**Weight:** 117 lbs. Includes complete cabinet with wood grained closure panels for front and rear openings.

### SINGLE TURNTABLE CABINET

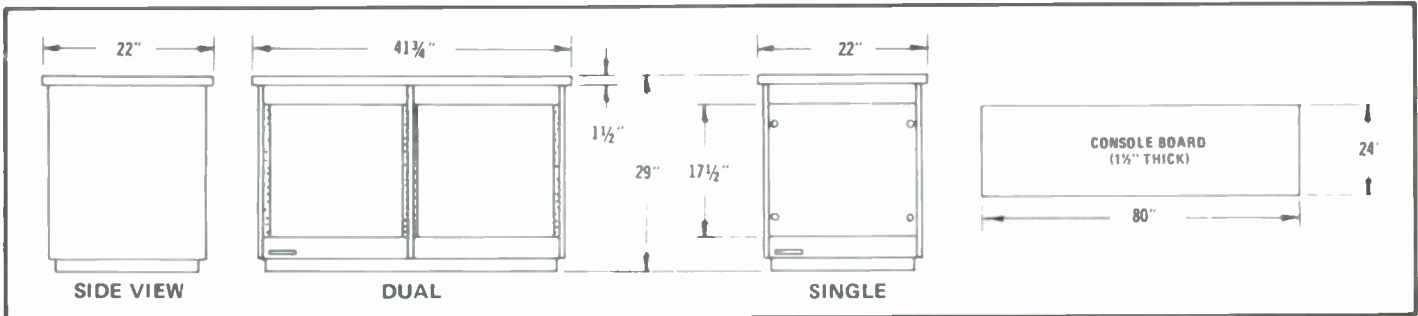
**Construction:** Panels fabricated from high density particle board 3/4" thick (front and rear closure panels 5/8" thick) with formica press bonded using urea type heat activated adhesive.

**Weight:** 66 lbs. Includes complete cabinet with wood grained closure panels for front and rear openings.

### DESK TOP

**Mounting:** Mounts on top of single or double bay cabinets with brackets provided or on separate bright metal legs.

**Height Mounted:** 29 inches.



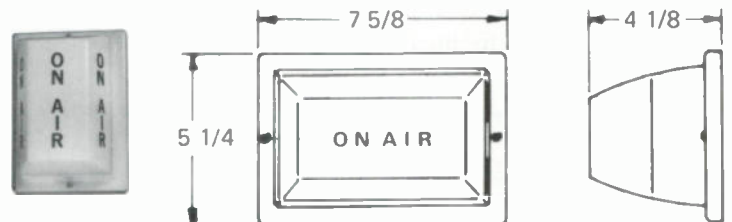
## Studio Clock



- LARGE 12" DIAMETER FACE WITH 1-1/2" NUMERALS, RED SWEEP SECOND HAND.
- PRECISION ACCURACY ±1 MINUTE IN ONE YEAR.
- 1 YEAR FACTORY WARRANTY.
- POWERED BY 2 "C" BATTERIES FOR 1 YEAR BATTERY LIFE.
- WHITE OR TAN FACE WITH CHARCOAL NUMERALS IN WOODHUE CASE 2-7/8" DEEP x 14-1/8" DIAMETER.

## Warning Light

- OPTIONAL "ON-AIR" OR "AUDITION" SILK-SCREENING
- HORIZONTAL OR VERTICAL FORMATS



The STUDIO WARNING LIGHT is designed to mount to a flush wall or ceiling surface in a vertical or horizontal plane. Supplied complete with 25 watt red bulb and "Attention-Getter" flasher. Rated at 120V, 100watts; UL approved.

## BETM-100 Tape Cartridge Winder

The SPOTMASTER® BETM-100 Tape Cartridge Winder is a rugged, dependable and field tested unit which fills a need in every station using cartridge equipment. It handles all reel sizes and runs at 22.5 ips. Worn tape in old cartridges is easily replaced, and new or old cartridges may be wound to any length. Tape timer installed, optional.

## BET-50 Tape Timer

Precise tape or speed measuring device with scale calibrated in minutes and seconds at 7.5 and 3.75 ips. Features time reset knob and strobe disc for speed checks. Use with reel-to-reel decks, cart machines and tape winder.

## Broadcast Tape Cartridges Audiopak and Fidelipac

SPOTMASTER maintains complete stocks of AUDIOPAK and FIDELIPAC NAB specification tape cartridges. A, B and C size cartridges are available empty, or pre-loaded with lubricated tape in various playtime lengths.

## Tape Cartridge Tags

SPOTMASTER Tape Tags are handy self-adhesive labels, easy to apply and remove; room for three typewritten lines. Sheets of eight tags each, available in eight distinctive colors.

## Alignment Tapes

Specially pre-recorded cartridges contain 10 KHz alignment tones. NAB Test Tape No. 3 contains program test frequencies consistent with NAB cartridge specifications. Available in mono or stereo.

## Tape Erasers

Handy bulk erasers essential for cartridge users to assure clean, noiseless tape. Model 200C handheld, easy to use with 6-foot cord and push-button thumb switch. Model 300C heavy-duty table top unit for cartridges, and equipped with spindle for reels up to 10.5 inches diameter, 1 inch wide. Both available in 117 or 230 VAC.

## Supplies

HEAD DEMAGNETIZERS, TAPE SPLICERS AND CLEANING FLUID

## Cue Clock

The CUE CLOCK is a digital timer that counts up or down from preset time, set by thumbwheel switches. It shows a light at the end of count, can be remotely operated, has a capacity of 99 minutes, 59 seconds. It can start turntables, tape decks or other units automatically, uses TTL logic, with outputs for interface with automation.

### SPECIFICATIONS

**Maximum Time:** 99 min. 59 sec.

**Frequency Standard:** 120 VAC/60 Hz Line.

**Readouts:** Four Digit Readouts for Time. GREEN LED for SET Indication. RED LED for CUE indications.

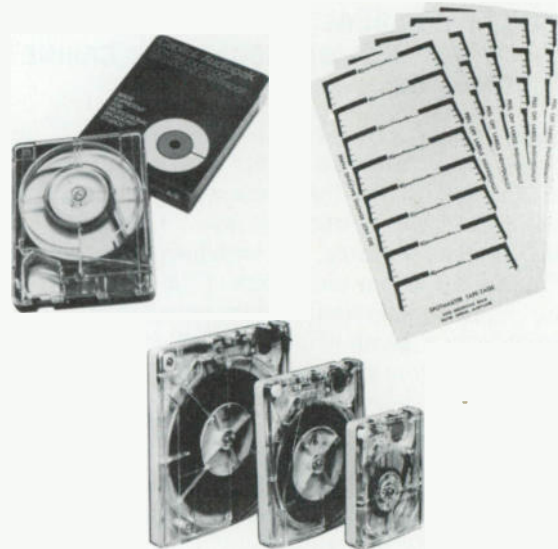
**Timer Start Input Levels:** Accepts up to four "START" signals independently. These can be from 5v AC/DC to 120v AC/DC with the proper attenuator (2 Attenuator for 120 VAC supplied).

**Power Source:** 120 Volts, 60 Hz, 10 Watts.

**Size:** 9½" Deep x 4½" high x 10" Wide.

**Weight:** 6½ Lbs.

### STUDIO AND CARTRIDGE ACCESSORIES



# TELCO/80 and TELCO/90 Automatic Telephone Message Systems

TELEPHONE ANSWERING  
INTERFACE SYSTEMS

- PROVIDES AUTOMATIC RESPONSE AND RECORDS MESSAGE FROM CALLER
- TELCO/80 FOR USE WITH 400, 500 AND 605/610 SERIES CARTRIDGE MACHINES
- TELCO/90 FOR USE WITH 303, 305, 370 AND 1070 SERIES CARTRIDGE MACHINES

The TELCO 80/90 units provide audio and cartridge recorder-reproducer control interfaces with the Western Electric RDM/RDL Recorder Connectors. They give the user the option of fully automatic or manual announcement play and/or message record operation. These capabilities are totally unique in telephone/tape cartridge interface devices.

## CONTROLS

**Manual/Automatic Select:** Selects operational mode. Will allow Recorder Connector to start cartridge machine, seize phone line, and connect audio path in Auto mode, when ringing voltage is sensed.

**Manual Play:** Connects audio to phone line and starts cartridge deck in play position. Phone line is held by TELCO even if handset is replaced in cradle, until message is over or distant party disconnects (most newer exchanges).

**Manual Record:** Same as Manual Play, but record cartridge deck is activated. Unless disabled, this deck will be in record mode and will hold line until manually stopped, automatically re-cues, or distant party disconnects.

**Auto Play Only:** Starts playback deck and seizes line when ringing voltage is sensed. The line is released when the cartridge re-cues. The TELCO will only seize the line if a cartridge is loaded and actually starts.

**Auto Play/Record:** Will play the pre-recorded announcement as in Play Only mode. When the TELCO detects the 150 Hz (Q1) closure from the playback deck, the audio direction of the recorder connector is reversed (RDL version), the record deck is started in the record mode, and a tone is sounded to the distant party. The TELCO can be wired so that the playback deck re-cue disconnects the phone line and stops the recording, or the distant party disconnect or recording cartridge re-cue can disconnect the line.

If the second deck is a play only deck, and the RDM (bi-directional audio) Recorder Connector is used, two different announcement can be aired in sequence. The second deck re-cue will disconnect the phone line.

**Auto Record Only:** The ring-up voltage will start the record deck directly, and switch audio to its line input. The function is the same as the second half of the Play/Record mode.

## SPECIFICATIONS

**Dimensions:** 10-1/8" wide x 2-3/4" high x 8-5/8" deep.

**Connecting Cable:** Provided with 15 feet of cabling and mating connector for W.E. RDM/RDL Connector. Also provided with 15 feet of cabling and connectors for two Spotmaster cartridge units.

**Power:** Required voltage supplied from associated cartridge machine.

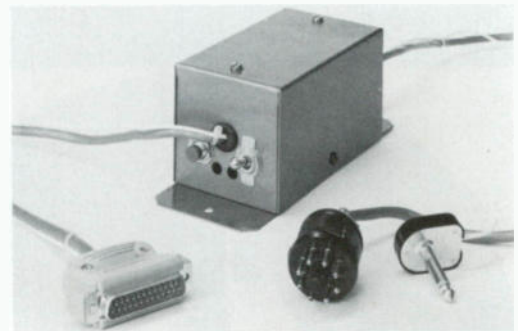
**Play Audio Monitor:** Allows normal use of cartridge machine without disconnecting the TELCO 80/90.



# TELCO III, IV, V and VI Series Answering Systems

- PROVIDES AUTOMATIC RESPONSE TO INCOMING CALLS
- INTERFACES BETWEEN SPOTMASTER® CARTRIDGE MACHINE AND BELL RECORDER COUPLER

All SPOTMASTER record-playback and playback units can be adapted for Automatic telephone response. Install the Telco between the unit and a standard Bell System RDM Recorder Coupler. Allows pre-recorded messages, advertising, audio reports, etc. to automatically respond to incoming calls. The Telco provides the required signal level and switching interface between the cartridge machine and Bell KS19522-L1 (or L2) recorder coupler. Models available for automatic or combined manual/automatic operation.



## TC-4 Counter



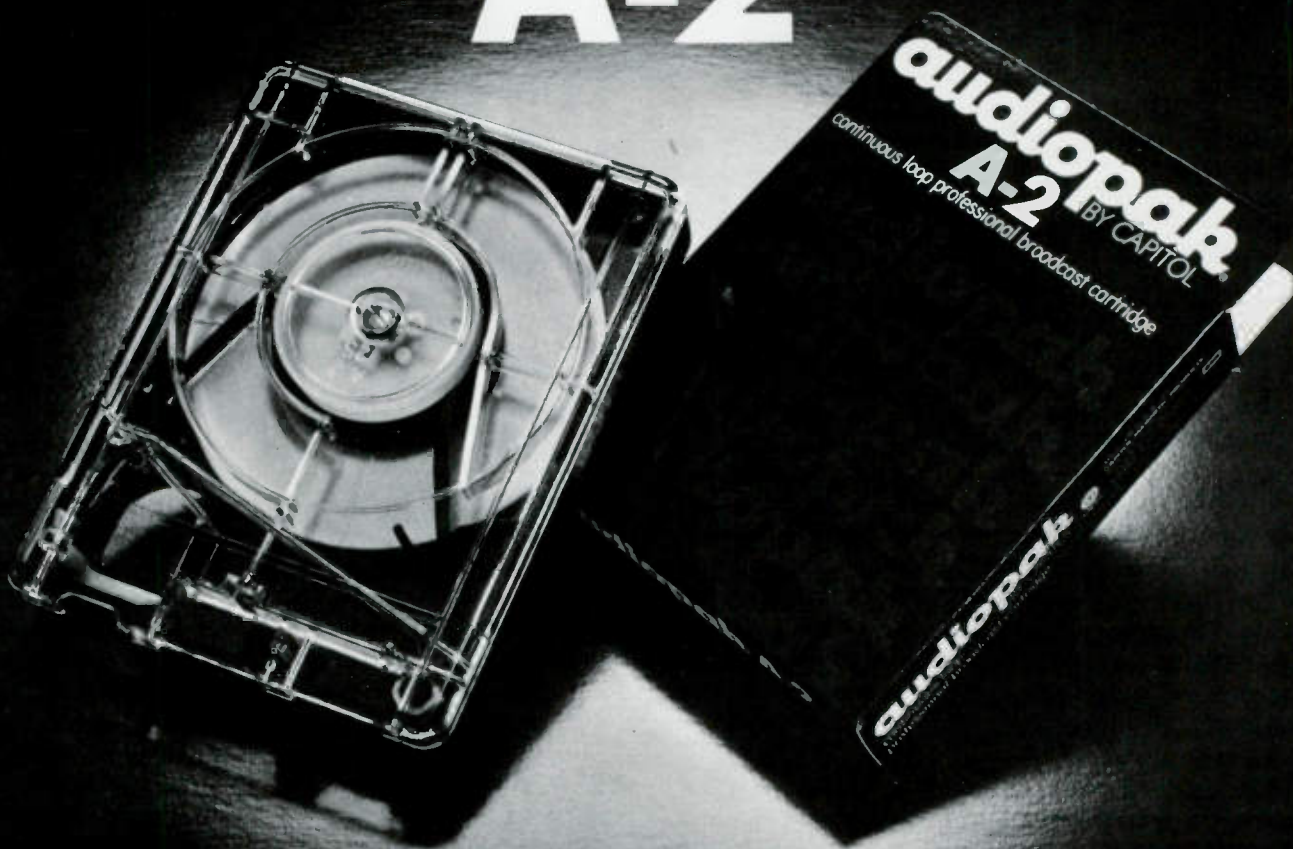
The TC-4 registers the number of incoming calls to the Spotmaster unit. Counter installs under tape deck lid.

# audiopak<sup>®</sup>

BROADCAST CARTRIDGE

# A-2

BY CAPITOL



In the broadcast cartridge world, the more efficient the better. That's why each Audiopak A-2 cart is individually tested—100%—to insure accurate azimuth control.

The lessons learned by Capitol Magnetics from their years of experience developing the world's leading

8-track cartridge have been applied to their Audiopak A-2. The result is a more durable, more reliable broadcast cartridge. And because Capitol manufactures the entire product—from tape to packaging—they can assure you of the highest possible quality control.



## audiotape

BY CAPITOL

HIGH OUTPUT/LOW NOISE...  
FOR YOUR MOST DEMANDING  
RECORDING REQUIREMENTS

- The Compatible Tape—No Equipment Changes Necessary
- Superior Signal-To-Noise Ratio



## audiotape

BY CAPITOL

LOW NOISE—A GOOD  
QUALITY TAPE FOR YOUR  
EVERYDAY NEEDS

- Heavy-Duty Binder System
- Low Print Through



## audiofilm

BY CAPITOL

A STABILIZED TRI-ACETATE BASE  
FILM FOR ALL YOUR SOUND  
FILM REQUIREMENTS

- Highest Dynamic Range
- Consistent and Reliable

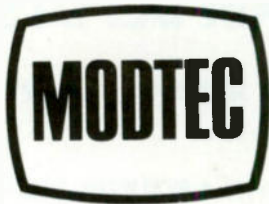


## the learning tape

BY CAPITOL

A PROFESSIONAL LOW NOISE  
PRODUCT FOR ALL YOUR  
CASSETTE REQUIREMENTS

- Moderately Priced
- Highly Reliable



# SOLID STATE TELEVISION MONITORS

- TOTAL MODULAR CHASSIS CONSTRUCTION
- 800 LINE RESOLUTION
- CRT SIZES FROM 9 TO 23 INCHES
- AVAILABLE IN CHASSIS, CABINET AND RACK MOUNT MODELS



## TECHNICAL DATA

**Input Power:** 50 watts at 120/240 volts, 60 Hz (525/60 U.S.) or 50 Hz (625/50 CCIR). All performance specifications will be met while the line voltage varies from 105 to 130 or 210 to 260 volts AC. Units easily converted from 120 to 240 volts. A three wire line cord, 6 feet long is provided.

**Video Signal:** 0.25 volts p-p (minimum for 50 volts at the kinescope). Sync negative at monitor input.

**Video Input Impedance:** High impedance bridging which can be terminated by an internal 75 ohm load  $\pm 5\%$  through a switch located on rear apron.

**Video Response:** 12 MHz  $\pm 1$  MHz. Differential gain below 5% with 50 volts of kinescope drive.

**DC Restoration:** Switchable 100% or zero, sync tip clamp.

**External Sync:** 1 to 8 volts. Parallel connectors. Monitors will operate from either composite video and sync signals or separate composite sync.

**Linearity:** Within 2% of picture height.

**Kinescopes:** 9", 12", 15", 19", 23". All CRT's provided with integral implosion protection. (800 line center resolution and 650 line corner resolution.)

**Environmental:** 0° to 50°C (32° to 122°F).

## OPTIONS

**Kinescopes:** 9", 12", 15", 19", 23". Etched anti-glare laminated safety shields. (640 line center resolution and 520 line corner resolution).

**Special Phosphors:** Long or short decay times, various emission spectra characteristics and intensities, according to EIA specifications, on special order.

**Pulse Cross Delay:** Displays the sync signals approximately centered in the raster for analysis.

**Separate Drive:** Separate horizontal and vertical drive in place of external sync.

## CONTROLS, CONNECTORS, ADJUSTMENTS

### Front Panel:

On-Off Switch	Height	Vertical Linearity
Horizontal Hold	Contrast	Focus
Vertical Hold	Brightness	Underscan Switch
Pulse Cross Selector (Optional)		

### Rear Apron:

Video Termination Switch	Paralleled Sync Input
Sync Selector Switch	Connectors
DC Restoration Switch	Horizontal AFC Adjust

Paralleled Video Input  
Connectors  
Horizontal Linearity Adjust  
AC Line Fuse

24 V B+ Adjust  
Vertical Frequency Adjust  
Vertical Top Linearity Adjust  
Horizontal Duty Cycle Adjust

**Connectors:** All connectors BNC type.

## PACKAGING

9" monitors – Single and dual rack mount, single cabinets and chassis only.

12" and 15" monitors – Rack mount, cabinet and chassis only.

19" and 23" monitors – Cabinet only.

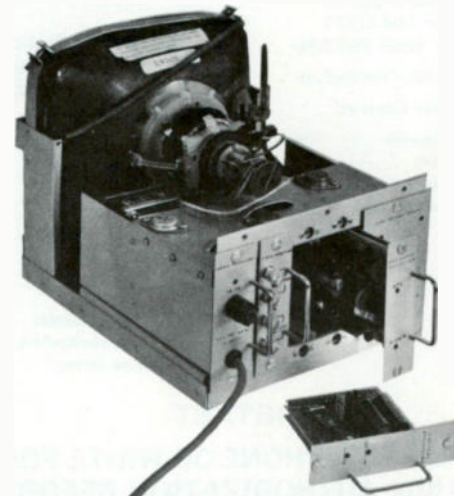
## CONSTRUCTION

Racks and cabinets are constructed of heavy gauge steel. Cabinets are finished in deep umber gray and complete with metal back. Chassis is heavy gauge aluminum. All units are shipped with kinescope in place. Front controls are readily accessible in recessed panel with hinged cover (lockable on 23" model). All glass epoxy circuit modules plug in directly from rear of set. High quality components are used throughout.

All units comply with the Department of Health, Education and Welfare X-Radiation safety rules, 42CFR, Part 78, applicable at time of manufacture.

## U/L AND CSA SPECIFICATIONS

All MODTEC monitors have been designed to meet or exceed U/L (Underwriters Laboratories) and CSA (Canadian Standards Association) engineering standards and requirements.



**MODTEC'S EXCLUSIVE  
TOTALLY MODULAR CHASSIS**

For More Information Call or Write

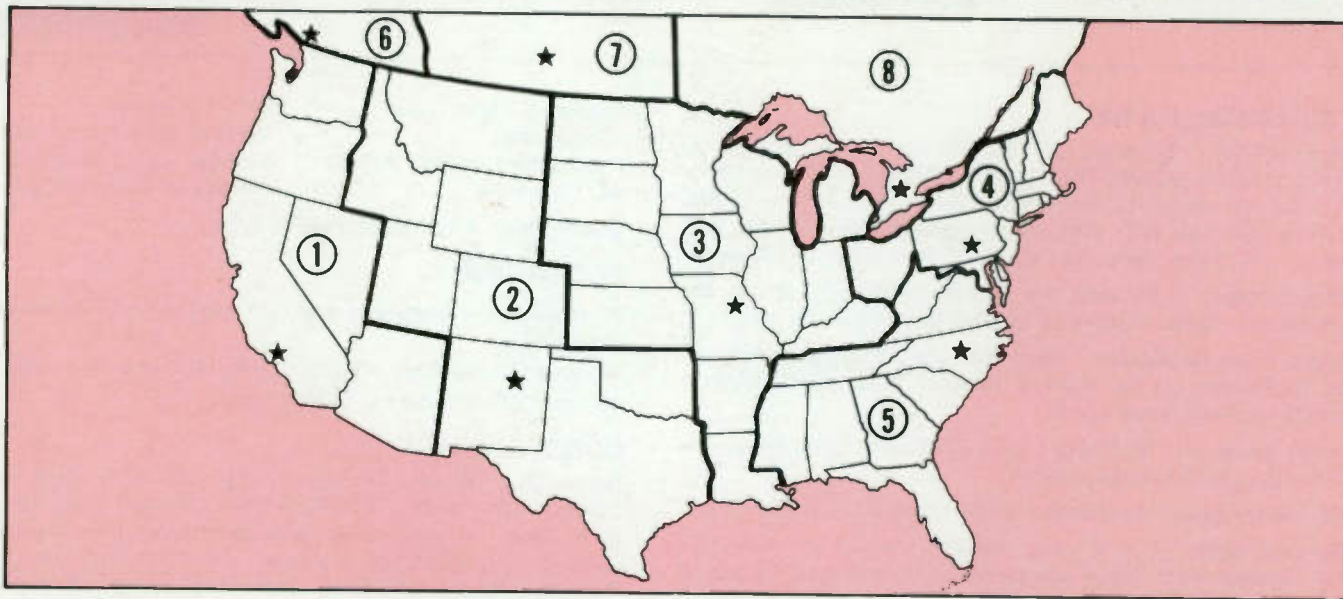


## MODTEC DIVISION

BROADCAST ELECTRONICS INC. – A FILMWAYS COMPANY –

8810 BROOKVILLE ROAD SILVER SPRING, MD. 20910 PHONE 301-588-4983 CABLE "SPOTMASTER"

- COMPLETELY EQUIPPED TO SERVE YOU WITH SPOTMASTER PARTS AND REPAIRS – BOTH IN AND OUT OF WARRANTY
- REGIONAL DEPOTS REDUCE PARTS DELIVERY TIME AND REPAIR TURN-AROUND TIME



**1. Riggins Electronics**  
 3272 E. Willow St.  
 Long Beach, CA 90815  
 Ph: (213) 598-7007  
 George Riggins  
 States Covered:  
 Alaska Nevada  
 Arizona Oregon  
 California Washington  
 Hawaii

**3. TV Engineering Corporation**  
 519 Rudder Road  
 Fentoh, MO 63026  
 Ph: (314) 343-5605  
 Jack Vines  
 States Covered:  
 Arkansas Michigan  
 Illinois Minnesota  
 Indiana Missouri  
 Iowa Nebraska  
 Kansas North Dakota  
 Kentucky South Dakota  
 Louisiana Wisconsin

**5. Broadcast Services, Inc.**  
 Micro Road  
 Micro, NC 27555  
 Ph: (919) 284-2102  
 Neal Davis  
 States Covered:  
 Alabama South Carolina  
 Florida Tennessee  
 Georgia Virginia  
 Mississippi West Virginia  
 North Carolina

**7. Nortec West, Ltd.**  
 7056B Farrell Road  
 Calgary, Alta., Canada  
 Ph: (403) 252-8141  
 Ron Hill  
 Provinces Covered:  
 Alberta  
 Manitoba  
 NW Territory  
 Saskatchewan

**2. Dyma Engineering**  
 Route 1, Box 51  
 Taos, NM 87571  
 Ph: (505) 758-2686  
 Carroll Cunningham  
 States Covered:  
 Colorado Oklahoma  
 Idaho Texas  
 Montana Utah  
 New Mexico Wyoming

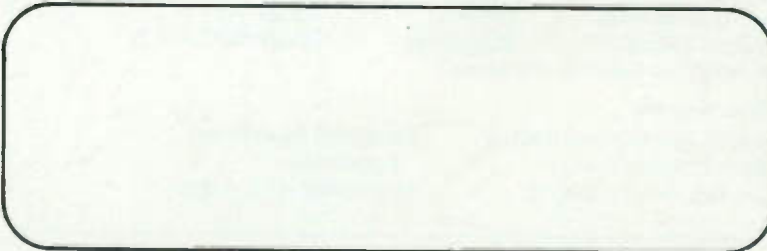
**4. Communication Medias**  
 1223 Tilghman Street  
 Allentown, PA 18102  
 Ph: (215) 437-0607  
 Bill Davies  
 States Covered:  
 Connecticut New York  
 Delaware Ohio  
 Maine Pennsylvania  
 Maryland Rhode Island  
 Massachusetts Vermont  
 New Hampshire Washington, D. C.  
 New Jersey

**6. Nortec West, Ltd.**  
 325 West Fifth Avenue  
 Vancouver 10, B.C., Canada  
 Ph: (604) 872-8525  
 Bob Whitehouse  
 Provinces Covered:  
 British Columbia  
 Yukon Territory

**8. J-Mar Electronics, Ltd.**  
 6 Banigan Drive  
 Toronto 17, Ontario, Canada  
 Ph: (416) 421-9080  
 Bill Woods  
 Provinces Covered:  
 New Brunswick  
 Nova Scotia  
 Ontario  
 Quebec

### IMPORTANT

PLEASE TELEPHONE OR WRITE FOR RETURN AUTHORIZATION BEFORE RETURNING EQUIPMENT OR PARTS. THIS WILL EXPEDITE SERVICE.



**BROADCAST ELECTRONICS INC.** — A FILMWAYS COMPANY —

8810 BROOKVILLE ROAD • SILVER SPRING, MARYLAND, 20910  
 PHONE 301-588-4983 • TWX 710-825-0432 • CABLE "SPOTMASTER"

WEST COAST SALES OFFICE: 1604 N. CAHUENGA BLVD. • LOS ANGELES, CA. 90028 • 213-465-1755



*The* **BE** *Story*

# About Our Company: Broadcast Electronics

Broadcast Electronics is the third largest manufacturer of radio broadcasting equipment in the United States. Our broad product line includes tape cartridge machines, audio consoles, turntables, program automation systems, AM Stereo exciters and monitors, TV, Stereo generators, and FM transmitters.

## Our 27th Year:

The history of Broadcast Electronics (B/E) begins in 1959 when it was founded in Silver Springs, Maryland. In that year Broadcast Electronics developed the first magnetic tape cartridge machine for use by radio broadcast stations. It was a breakthrough that would change broadcasting for decades to come. Broadcast Electronics has been making cart machines longer than any other company in the world. Since 1959 over forty thousand units have been delivered to users in over one hundred countries.

## B/E Moves to Mid-America Location:

In 1977, Broadcast Electronics relocated to new facilities on a ten acre site in Quincy, Illinois. In 1980 B/E acquired the QRK product line of turntables and Rek-O-Kut tone arms, which was moved from Fresno, California to Quincy.

## Facilities:

Broadcast Electronics occupies a 70,000 square foot manufacturing, engineering, and administrative complex. The fully air conditioned building is one of the most modern electronic equipment manufacturing facilities in the country.

## Company Ownership:

Broadcast Electronics is a privately owned, independent corporation with all employees located in the Quincy, Illinois headquarters. The company maintains large resources with strong financial backing for continued growth.

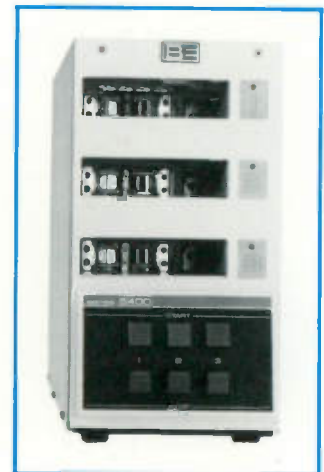
## Expansion of Product Line:

In 1978 the highly advanced Control 16 microprocessor program control system was introduced. Its dependability and popularity have made it an industry standard.

Beginning in 1980, B/E developed a line of FM broadcast transmitters with power output levels of 100 watts, 250 watts, 1.5 kW, 3.5 kW, 5 kW, 30 kW, and 60 kW. In early 1986, new one tube 35 kW and 10 kW transmitters were also introduced. All FM transmitters incorporate the widely acclaimed FX-30 high performance FM exciter. More than one thousand FX-30's are presently (1986) in use.



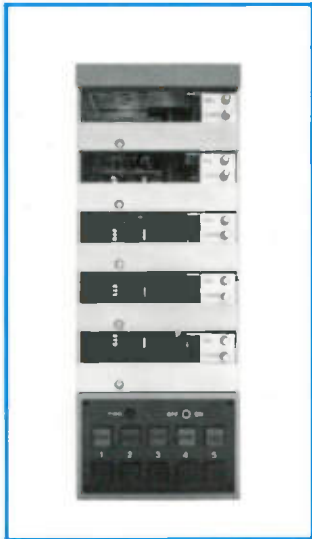
Control 16x Microprocessor or Program Control



The Three Deck Series 5400 — the latest addition to the B/E line of tape cartridge machines.

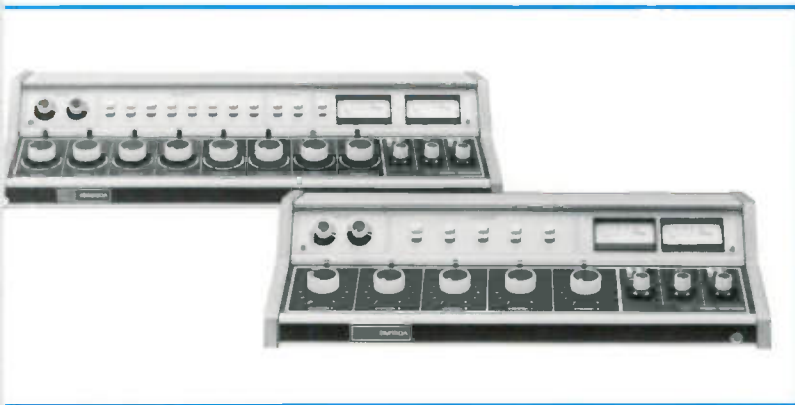
Tape Cartridge Machines





One of the custom built, five deck D.C. servo stereo cart machines in use at Disney's EPCOT Center.

Audio Consoles



FM Broadcast Transmitter, FM-35A



## Advanced Technology:

Innovative engineering has led to the development of the TZ-30 TV Stereo generator, AX-10 C-QUAM AM Stereo exciter, the Microprocessor Video Diagnostic System (MVDS) for FM broadcast transmitters, the DV-2 "Digitalk" digital recorder/player, and the AS-10 AM Stereo Modulation Monitor. Broadcast Electronics will continue to explore new product areas in our unceasing effort to meet changing technologies and expanding customer needs.

## Worldwide Customer Base:

Broadcast equipment manufactured by B/E is used in thousands of radio stations in the USA and overseas. Large installations of cartridge machines are in prominent broadcast organizations such as the BBC, Radio Eire, Radio Free Europe, Voice of America, the Broadcast Corporation of New Zealand, Televisa, RDP, Radio France, Dutch Radio, Radio Finland, and major U.S. broadcast stations and networks.

The model FM-30 single tube 30 kW transmitter is in service at CBS, Capitol Cities/ABC, and Group W owned stations in the Sears Tower, Empire State Building, Mount Wilson, and the Houston Tower Site. By mid-1986, the new one tube model FM-35A thirty-five thousand watt transmitter will be operational at three leading stations in St. Louis, Missouri.

Over one hundred and thirty model FM-30 transmitters are on the air or on order including twenty units for FM stations in Brazil, Chile, Canada, Mexico, and Taiwan.

More than two hundred and fifty FM transmitters have been supplied to FM stations in almost every state in the U.S. and to prominent broadcast organizations overseas. Control 16 automation systems are in service in one hundred and forty stations in the U.S.A., Australia, Brazil, Japan, Italy, West Germany, The Vatican, South Africa, and many other countries.

## Pioneering The New Era Of TV Stereo:

Broadcast Electronics pioneered the first TV Stereo generator to go on the air for regular program service in the United States (WTTW, Chicago). Full production began in 1985 and the response has been enthusiastic with TZ-30's on the air in dozens of television stations across the U.S. and Canada. Recent TZ-30 users (such as WFAA, WLS, WWL, WJAC, KUSA, WMAQ, and KABC) include several prominent network owned stations in major metropolitan areas. Multi-channel sound for television heralds the beginning of an expanding product area for our company.

## Cartridge Machines At EPCOT:

In 1980, Broadcast Electronics was awarded a contract by Walt Disney Enterprises to design and manufacture a large quantity of five deck tape cartridge machines. These technically advanced, DC servo cart machines (now in their fifth year of service), were custom built to the exacting specifications of Disney and were ready for operation at the 1982 opening of Disney's EPCOT Center. The EPCOT facility of B/E-built five deck machines may be the largest and most sophisticated stereo tape cartridge system in use.

## Engineering Expertise:

Broadcast Electronics' design engineering staff includes a blend of expertise in mechanical, analog, digital, and RF electronics. Many have broadcast station operational experience and most have BSEE or advanced degrees from top universities.

The large design engineering staff is comprised of specialized groups, each headed by a Section Manager for Audio Products, Digital Products, RF Products, and Mechanical Engineering. Design emphasis is placed on the appropriate application of advanced technology into new products to satisfy the most discriminating broadcast engineer.

Our fully equipped laboratories contain the very latest instruments for research, new product development, prototype fabrication and testing. Two Telesis CAD workstations permit the rapid creation of complex printed circuit boards while simultaneously ensuring a high degree of quality and consistency in PC board artwork.

Each year a substantial investment is made in acquiring the very latest instruments from Hewlett Packard, Tektronix, Sound Technology and other manufacturers

of quality laboratory test gear. Recent additions include an Eiden TV demodulator for TV Stereo development and testing.

## Quality Manufacturing:

The large Broadcast Electronics plant is an ultra-modern, well lighted, air conditioned manufacturing facility with individual production lines and work centers devoted to specific products.

B/E produces all of its printed circuit boards on FR-4 glass laminated substrate using only the highest quality components. Following component insertion, the circuit boards are soldered on a modern incline plane wave solder unit. The assemblies are then pre-tested to performance specifications before being subjected to a twenty-four hour burn-in period. After final testing, a quality audit is performed on each unit to ensure that it meets precise standards in compliance with published specifications.

Semi-automated production machinery includes the Logpoint component hole finder and a Eubanks automatic wire cutter, marker, and stripper. A separate production area is devoted to building FM transmitters with the capability of testing several 35 kW transmitters at once using calometric and air cooled dummy loads.

## Dedicated Service:

You will find everyone at Broadcast Electronics to be fully experienced in the manufacture of broadcasting equipment. Key operating personnel at B/E are all career broadcast people. At the very top company levels, the heads of B/E's engineering, marketing, manufacturing, and company management have over 120 years of combined experience in broadcast operation or broadcast equipment manufacturing. They are professionals who care about their company and the industry it serves.

## Customers' Who's Who at Broadcast Electronics

### Management

Lawrence J. Cervon	.....	President
Curtis I. Kring	.....	V.P. Marketing
W. Thomas Ash	.....	V.P. Operations
Geoffrey N. Mendenhall	.....	V.P. Engineering
Robert J. Weaver, Jr.	.....	V.P./Treasurer
John A. Burtle	.....	Dir. Product Management

### Sales and Service

Bill Harland	.....	National Sales Manager-RF
E. L. Corujo	.....	Director, International Sales
Timothy Bealor	.....	Manager, Audio Products
Dave Evers	.....	Manager, Automation Sales
Kirk Walker	.....	Sales Engineer
"Mac" McEachern	.....	Manager, Customer Service
Gil Housewright	.....	Service Representative
Jim Nichols	.....	Service Representative
C. Elaine Hayes	.....	Customer Orders
Marilyn L. Tournear	.....	Service Parts
Cathy Bentley	.....	Credit Manager
Mike Giesing	.....	Credit Assistant
Steven Ford	.....	Advertising Manager
Cindy Smith	.....	Advertising Production Manager

## Regional Service Centers

In addition to factory service facilities at the Quincy plant, there are eleven authorized Audio Service Centers in the U.S.A. and Canada equipped to assist our customers with parts and repair service for BE audio products. Audio Service Centers are located in:

Long Beach, Cal.	Richmond, Ind.	Oshkosh, Wis.	Toronto, Ont.
Lanham, Md.	Los Lunas, N.M.	Calgary, Alta.	
Four Oaks, N.C.	Edgemont, Pa.	Vancouver, B.C.	



# BROADCAST EQUIPMENT

— FROM —



BROADCAST  
ELECTRONICS INC.

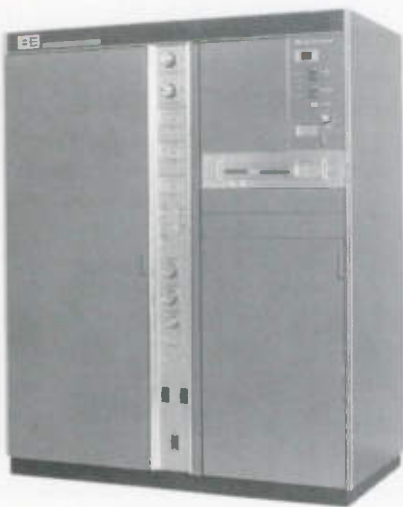


**ALLIED**  
Broadcast Equipment

## One-Tube FM Transmitters

### Model FM-30, 10-30 kW

The single-tube FM-30 utilizes a folded half-wave cavity which eliminates troublesome plate blocker capacitors and sliding RF contacts. Includes second generation digital controller with diagnostic LED readout. The FM-30 is the most advanced transmitter since the advent of FM broadcasting.



### Model FM-3.5A, 3.5 kW

Other than for its lower output rating which permits the use of a single phase power supply, the FM-3.5A is identical to the FM-5A. Both models use a single type 4CX3500A tube. Conservatively-rated components and intelligent and practical application of advanced engineering concepts contribute to long-term reliability and superlative performance. Let **ALLIED** supply you with one today!



### Model FM-5A, 5 kW

Incorporating the same patented folded half-wave cavity technique used in the FM-30, the Model FM-5A provides optimum reliability and superb FM performance. Single tube PA's ensure excellent bandwidth and long-term operating economy. Self-contained in 34.5 inch wide cabinet with built-in low pass filter. Primary power requirements are 208V WYE/240V DELTA, 50/60 Hz, 30. Taps for 196-252 Vac. Call **ALLIED** today for yours!



### Model FM-1.5A, 1.5 kW

Superb performance is assured from this single tube FM-1.5 transmitter. Only 5'10" high, this 1.5 kW transmitter occupies only five square feet of floor space. Employing a single type 3CX1500A7/8877 triode tube, the entire PA stage is contained in a slide-out drawer for instant accessibility.



### Model FM-60, 60 kW

The Model FM-60, 60 kilowatt FM transmitter consists of two FM-30 units, the outputs of which are combined to provide 60 kilowatts output power. In the event of malfunction of one of the FM-30's,

transmission continues uninterrupted at a 15 kilowatt output level. An automatic output switching option is available which bypasses the combiner network and feeds one FM-30 output directly to the transmission line.

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## 150 Series Mono/Stereo

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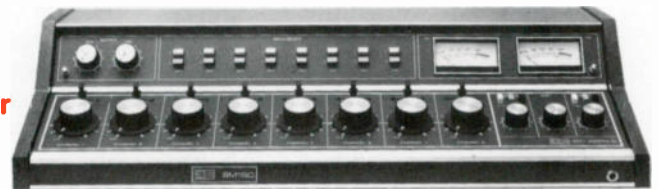


**MODEL 5S150**

**5-Mixer**

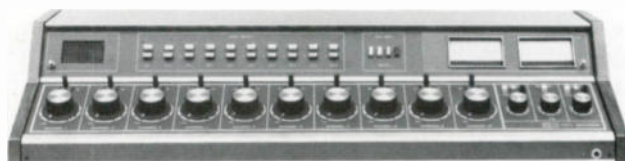
Models 5M150, mono dual-channel and 5S150, stereo, five-mixer consoles employ high quality conductive-plastic attenuators for economical, yet extended noise-free operation. Premixer loud-speaker cueing is effected by setting mixer controls to a detented, fully- CCW position. Separate headphone and monitor amplifiers permit full aural monitoring.

Eight-mixer consoles are also available in the 150 Series. Other than the number of mixing channels, these models are essentially identical to their five-and ten-mixer counterparts. All consoles in the 150 Series feature elegant and durable styling with clean, crisp front panel graphics protected by a laminated polycarbonate overlay. Contact **ALLIED** today!



**8-Mixer**

**MODEL 8M150**



**10-Mixer**

**MODEL 10S150**

The newest members of the Series 150 family are the 10S150 stereo and 10M150 dual-channel mono, 10-mixer models. The 150 Series consoles are supplied with one speaker muting/warning light relay with a second as an option. Stereo models also accept an optional plug-in mono matrix card. **ALLIED** has a console priced for you!

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## 250 Series Deluxe Dual Channel, Mono/Stereo

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Series 250 consoles are deluxe in every way. This is a full feature console line with superior audio performance. 5-, 8- and 10-mixing channel models are available in mono or stereo with dual channel provisions. Three muting relays are included. Series 3700 plug-in amplifiers provide unexcelled response, distortion and noise specifications.



**5-Mixer**

**MODEL 5S250**



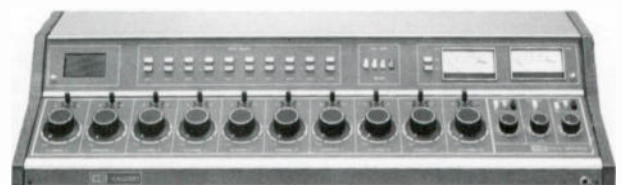
**8-Mixer**

**MODEL 8S250**

In addition to mic preamplifier and line amplifiers, all Series 250 consoles are supplied with required monitor, cue and headphone amplifiers. The front panel features crisp, clean graphics protected by a laminated polycarbonate overlay. Call **ALLIED** for details!

The 10S250 stereo console accommodates twenty inputs into ten mixing channels. The console features identical line level stereo program and audition output channels with VU meter switching to either stereo pair. Mixing controls are maintainable, step type dual ladder attenuators. A mono model, the 10M250 is also available. Call **ALLIED** today for pricing!

**10-Mixer**



**MODEL 10S250**

## 50 Series Mono/Stereo 4-Mixer

### Model 4M50, Mono



The 4M50 is a complete console ideal for production or on-air use. The 4 mixers each accept two switch selectable inputs and each preamplifier can be wired for either microphone or line level sources. Speaker and headphone amplifiers are built-in for monitoring console output, an external source, or the cue circuit. Each mixer is equipped with a cue position which also feeds a built-in cue speaker controlled by a muting relay. Optional rack adapter permits mounting in a standard 19" rack.

### Model 4S50, Stereo



This four mixer, 12 input stereo console features quality performance at a practical price. Easily installed it has cue-switches on all faders. In addition to level selectable preamplifiers, the 4S50 has individual selectable preamplifiers, the 4S50 has individual monitor, cue and headphone amplifiers.

The stereo performance of the 4S50 makes it ideal for production or on-air broadcast use. Call **ALLIED** now for yours!

### Model 4R50, Rack-Mount Mixer



The 4R50 console is a compact rack mount mixer suitable for use by TV, CATV, CCTV, film studios, commercial sound, remote broadcast and dubbing facilities. A unique feature is an output to feed a public address amplifier. The 4R50 console has four mixers — sealed pots with cue detents. Three accept two inputs (switchable high or low level) and one accepts a single switchable input plus three high level inputs. Monitoring includes a switchable VU meter, headphone amp and muted cue amp/speaker.

## Single Deck Cartridge Machines

### Series 3000



Model 3200RPS  
(A & B Size)



MODEL 3300P  
(A, B & C Size)

Series 3000 are B/E's top of the line cartridge machines. They feature superb electronics, low wow and flutter, 52 dB stereo S/N, a large air damped and current regulated low voltage solenoid, direct drive synchronous motor and a rugged 1/2 inch machined deck. Operates from 105 to 125V, 60 Hz or 210V to 230V, 50 Hz as specified. These premium quality cartridge machines include exclusives such as the Phase-Lok IV head bracket; integrated circuit/solid-state design with exceptionally wide dynamic operating ranges; premium long life heads; and outstanding performance.

### Recording Amplifier



Model 5410



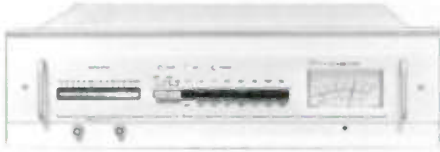
Model 5310

The Model 5409 mono or Model 5410 stereo recording amplifier is a perfect match for the Model 5400 Three Deck. This record amplifier permits recording on the bottom deck. Designed as a separate independent unit, the Model 5409 or 5410 can stand along side the 5400 Three Deck or can be rack mounted. Two Model 5400 Three Decks and two recording amplifiers may be mounted in any rack shelf. For use with the Model 5300B, an optional recording amplifier (mono Model 5309 or stereo Model 5310) is available for recording on the bottom deck with playback on the other decks. **ALLIED** has these priced for you!



## Exciters and Generators

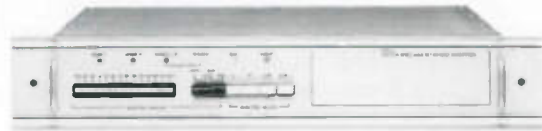
### FX-30 Synthesized FM Exciter



The FX-30, 30 watt FM exciter/transmitter provides excitation for each of the B/E FM transmitter models. It is, however, readily adaptable to interfacing with FM transmitters of almost any manufacturer or vintage to dramatically update performance to today's most stringent standards.

The FX-30 features typical THD and IMD at less than 0.02%; is extremely quiet in operation with a typical SNR of 80 dB; and is completely broadband, requiring no tuning adjustments. Pushbutton-selectable analog metering and a color-coded LED digital display afford highly accurate parameter and modulation monitoring.

### AX-10 AM Stereo Exciter



Incorporating highly advanced, second-generation C-QUAM® digital design, the new B/E Model AX-10 stereo exciter is compatible with essentially any existing AM broadcast transmitter.

Utilizing independent, non-interfacing left- and right-channel modulators in an IF modulation configuration, the AX-10 combines superior stereo performance with full monaural compatibility.

Independent, switch-selectable, equalization networks for two-transmitter or dual antenna pattern operation are standard. The AX-10 is fully capable of remote control operation.

**ALLIED** would be pleased to fill your needs today!

• Registered trademark, Motorola Inc.

### FS-30 FM Stereo Generator



Teamed-up with the widely acclaimed FX-30 FM exciter, the new digital FS-30 stereo generator provides the very best stereo performance available. Includes linear, delay equalized audio low pass filters for minimum overshoot without the use of clippers or other non-linear devices. Includes front panel LED peak reading modulation status display; RFI protection; and it is ready for remote control. Give **ALLIED** a call for pricing!

### FC-30 SCA Generator



The FC-30 SCA Generator assures very low FM noise, high stability and, with its ultra linear 67 kHz modulated oscillator, minimum distortion. Front panel LED peak modulation indicator, extensive RF filtering and front panel test jacks are other features. The controlled delay muting is designed to be compatible with today's SCA receivers.

### TZ-30 with SAP and PRO Generators



The TZ-30 features highly reliable stereo TV operation in conformance with Zenith/dbx TV/MCS Standards. It employs unique digital modulator and pilot generator design, complemented by a genuine dbx encoder card to insure precise L - R encoding. Audio filtering of both L and R as well as L<sup>s</sup> R and L - R channels minimizes crosstalk and preserves optimum stereo separation. It may be interfaced with B/E Second Audio Program (SAP) and Professional (PRO) subchannel audio/data generators.

## Multiple Deck Cartridge Machines

### Model 5400 Three Deck

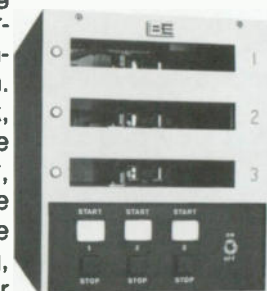
(A Size)



The newest of the B/E advanced-design cartridge machines. Its trim-line configuration permits three machines to be rack mounted, side-by-side. Featuring clean sound, the 5400 provides low wow and flutter, 52 dB stereo S/N ratio, Phase Lok IV head brackets for optimum stereo phasing and solid 1/2-inch precision-machined aluminum decks for stable cartridge positioning. Plug-in decks and PCB's expedite servicing and maintenance. Air-dampened solenoids for cool, quiet operation.

### Model 5300B Three Deck

(A & B Size)



Features extremely stable and accurate deck and capstan positioning independent of front panel reference attributable to advanced, internal bulkhead mechanical design. Run lights adjacent to each deck, removable upper decks, direct-drive hysteresis synchronous motor, reliable low-voltage solid-state solenoid switching, superb Phase Lok IV head bracket, FET muting, active cue tone filters and rear panel LED service aids. Each contribute to outstanding performance.

### QRK-B/E Turntables



Now manufactured by Broadcast Electronics, the Models 12C2 and 12C are rugged two- and three-speed professional turntables pioneered by QRK with more than 25,000 in use worldwide. The Galaxy II is a variable speed turntable with digital speed readout and DC servo motor; dual speed range adjustable 15 to 85 rpm.

### Series 2100

Model 2100RPS  
(A, B & C Size)



Available in mono or stereo models, the Series 2100 accepts A, B or C-size cartridges. 1 kHz and 150 Hz cue tones are standard. Low wow and flutter from the direct drive synchronous motor, superb electronics and low voltage DC solenoid for cool, quiet operation. Over 2000 machines in use. Phase Lok IV head bracket with azimuth adjustment independent of height and zenith.



BROADCAST  
ELECTRONICS INC.



Broadcast Electronics (BE) and Allied Broadcast Equipment are two of the top names in our industry dedicated to quality. BE's wide range of equipment combined with Allied's pricing, availability and product knowledge provides the right equipment — at the right price — for the right people — you!

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Broadcast Equipment

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# BROADCAST EQUIPMENT CATALOG

## Condensed Edition 1987-1988





# FM TRANSMITTING EQUIPMENT

## Model FM-35A, 35 kW



This powerful, single tube thirty-five thousand watt transmitter represents a new standard of excellence. The FM-35A offers years of trouble free service through the use of a patented folded half-wave cavity (no troublesome plate blocking capacitors or sliding contacts), automatic proportional VSWR foldback and slide-out solid state IPA's. The FM-35A transmitter also employs the high fidelity FX-30 exciter and the 4CX20,000C tetrode. The 4CX20,000C features the largest filament

and anode of any tube used in ANY 35 kW transmitter. Operates from 208 Volt WYE, 240 Volt Delta, three phase 60 Hz or from 380/415 Volt, three phase 50 Hz as specified.

## Model FM-30A, 30 kW

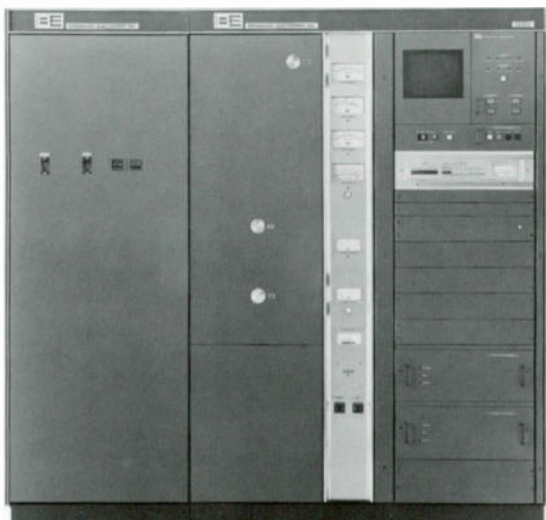


With an ultra-quiet air cooling system and state-of-the-art characteristics, the FM-30A single tube, 30 kW transmitter has evolved from the field proven design of its predecessor, the FM-30. The FM-30A employs the long life 4CX20,000A tetrode and incorporates advanced features such as the folded half-wave cavity, second generation digital controller, automatic proportional VSWR foldback, and new modular slide-out, solid state

IPA's. Power source is 208 Volts WYE, 240 Volts Delta, three phase 60 Hz or 380/415 Volts three phase 50 Hz as specified.

**NEW**

## Model FM-20A, 20 kW Transmitter

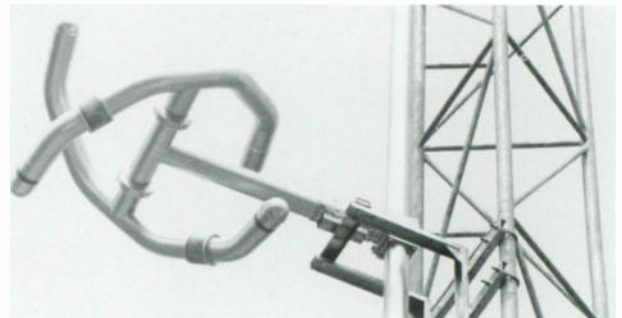


The single tube, twenty thousand watt FM-20A is the latest addition to the Broadcast Electronics line of full-featured FM transmitters. The FM-20A utilizes field proven design innovations that were developed through years of intensive testing and investigation. The final result is a 20 kW FM transmitter that is guaranteed to provide the utmost in reliable, consistent service.

Among the unique features of the FM-20A is the patented folded half-wave output cavity, the efficient 4CX12,000A single tube design, the modular slide-out IPA's, and the Automatic Power Control system. Operates from 208 Volt WYE, 240 Volt Delta, three phase 60 Hz or 380/415 Volt three phase 50 Hz as specified. (Available Spring 1988)

**NEW**

## B/E FM Antennas



Broadcast Electronics is proud to introduce its new line of FM broadcast antennas! Three models are available:

**Model BESP**—The BESP antenna series is designed for high power operation with each element rated from 32-40 kW. All models are manufactured from rugged, corrosion resistant material with an internal feed point design. The BESP's support multi-station operation and offer superior bandwidth characteristics.

**Model BEMP**—BEMP antennas are ideal for medium power applications. Elements are rated from 9 to 12 kW depending on model. BEMP antennas feature excellent circularity and bandwidth. All radiating elements are constructed of tubular brass.

**Model BELP**—Broadcast Electronics offers the BELP antennas for those applications that require optimum low power performance (10 Watts to 800 Watts). Horizontally polarized ring radiators assure an omnidirectional pattern in the horizontal plane.

**Deicers, radomes and pattern optimization options are available for the BESP and BEMP antennas.**

### Model FM-10A, 10 kW



The single tube FM-10A represents 10,000 watts of advanced technology. The FM-10A incorporates the ultra-high fidelity FX-30 exciter, the reliable folded half-wave cavity, slide-out solid state IPA's, automatic power control with proportional VSWR foldback (in a convenient slide-out assembly), and ten individual meters. As a result of its advanced engineering, the Broadcast Electronics FM-10A is the quietest, most reliable 10 kW transmitter ever produced. Operates from 208 Volts WYE, 240 Volts Delta three phase 60 Hz or 380/415 Volts three phase 50 Hz as specified.

### Model FM-5A, 5 kW



The FM-5A has been a proven performer in stations world-wide. This five thousand watt transmitter utilizes a folded half-wave cavity. Its single tube 4CX3500A PA ensures excellent bandwidth and long term operating economy. Self contained in a cabinet 34.5 inches wide with a built-in low pass filter, the FM-5A is a cool operating, compact transmitter. Primary power requirements are 208/240 Volts, 50 or 60 Hz or 380/415 Volts, 50 Hz three phase. Taps for 196-252 Vac. For use from a single phase power source, the model FM-5AS is also available.

### Model FM-3.5A, 3.5 kW



Utilizing the FX-30 exciter and the folded half-wave cavity, the FM-3.5 is conservatively rated with its single 4CX3500A output tube design. This 3,500 watt model is a field proven, consistent performer offering a level of reliability that is unmatched in any other transmitter of its type. Power source is 208/240 Volts single phase 60 Hz or 50 Hz as specified.

### Model FM-1.5A, 1.5 kW



Powerful performance in a small package—that's the FM-1.5A. At five feet, ten inches high, this compact transmitter occupies only five square feet of floor space. The FM-1.5A produces a conservative fifteen hundred watts with its single 3CX1500A7/8877 triode tube. The FM-1.5A is designed for easy operation and maintenance. The entire PA stage (including the folded half-wave cavity) is contained in a slide-out drawer for instant accessibility. Operates from 208/240 Volts single phase 60 Hz or 50 Hz as specified.

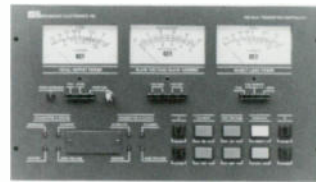
# BE TRANSMITTER ACCESSORIES

## Microprocessor Video Diagnostic System (MVDS) Option



The Microprocessor Video Diagnostic System (MVDS) will add a new dimension of operational monitoring and control to any "A" series B/E FM transmitter. MVDS provides a visual display of all critical transmitter parameters in either a tabular chart or bargraph form. This permits easy transmitter analysis and adjustment. In addition, the MVDS can provide "hardcopy" logs on demand, or at regular intervals. All that is required is an inexpensive home computer printer.

MVDS is constantly alert for any abnormality. Its diagnostics will display the nature of a detected malfunction AND its approximate location within the transmitter system. MVDS can also function as the primary transmitter controller. (The standard digital controller assumes the role of backup) This redundant capability provides a considerable enhancement to the overall reliability of the transmitter. The MVDS is available for use with all B/E FM transmitters.



FD-2

## FD-2 Dual Transmitter Controller

The FD-2 provides complete monitoring and control of two combined Broadcast Electronics FM transmitters from ONE convenient panel. The FD-2 offers the ability to raise and lower the output of two transmitters together or separately. Complete output monitoring is included with combined output VSWR protection for both transmitters.



FO-2

## FO-2 Transmitter Output Switcher Controller

When used with the FD-2 Dual Transmitter Controller, the FO-2 will provide automatic or manual output switching through the use of motorized coaxial switches (not supplied). Automatic switching can be set to take place when an interruption in output power is detected.



FW-30

## FW-30 Exciter Switcher

The FW-30 offers the ultimate in transmitter system redundancy. It continually monitors the status of the on-air FM exciter and will quickly switch to the hot-standby unit if a failure is detected. (Switching time is less than one second.)

## SOLID STATE FM TRANSMITTERS



FM-300 M/A  
300 Watt Main/Alternate Main

## 100, 250, 300 Watt Solid State FM Transmitters

Broadcast Electronics offers three low power, solid state FM transmitters to suit almost any requirement. They are: the FM-100 (100 watts), the FM-250 (250 watts), and the FM-300A (300 watts). Each transmitter employs the industry acclaimed FX-30 synthesized exciter. The FM-100 and FM-250 utilize single, solid state broadband amplifiers while the FM-300A uses a pair of 150 watt amplifiers (the outputs of which are isolated and combined) to produce 300 watts. Amplifier stages are mounted in slide-out drawers for easy access.

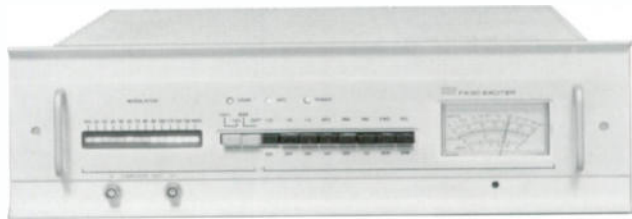
Each model is also available in dual transmitter, main/alternate configurations. These include automatic changeover systems which monitor the operation and switch to the alternate transmitter in the event of a malfunction. Built-in dummy loads permit testing of the off-air unit for maintenance purposes.

All models are housed in 19" enclosed rack cabinets and include low pass output filters.



FM-250 250 Watt

## FX-30 Synthesized FM Exciter



With more than 1,500 in use, the synthesized FX-30 thirty watt FM exciter/transmitter has been universally accepted as the industry standard.

The FX-30 is designed for use with all Broadcast Electronics FM transmitters. However, it can also be adapted for use with virtually any FM transmitter in the industry. The FX-30 features typical THD and IMD at less than .02%, an extremely quiet signal (typical SNR of 80 dB), and complete broadband operation (no tuning adjustments required). Pushbutton-selectable analog metering and a color coded LED digital display allow highly accurate modulation and parameter monitoring.

## FS-30 FM Stereo Generator



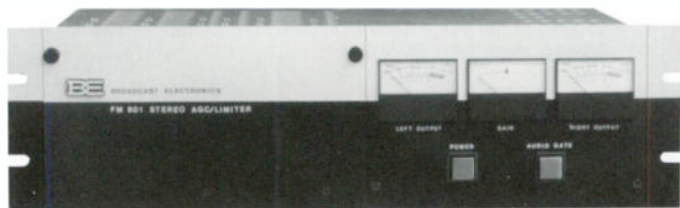
Teamed up with the widely acclaimed FX-30 FM exciter, the digital FS-30 stereo generator provides the very best stereo performance available. Included in its advanced design are linear, delay equalized audio low pass filters for minimum overshoot without the use of clippers or other non-linear devices. Additional features include a front panel LED peak modulation indicator, RFI protection, composite baseband equalization, and remote control capability.

## FC-30 SCA Generator



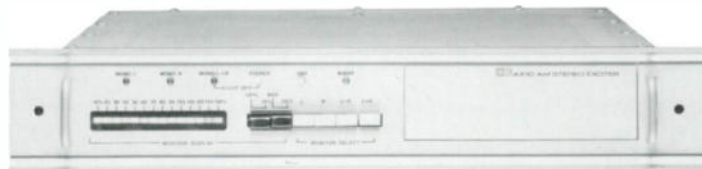
The FC-30 SCA Generator guarantees low FM noise and high operational stability. Distortion is minimized with its 67 kHz modulated oscillator. Quality features include extensive RFI filtering, an LED peak modulation indicator, and convenient front panel test jacks. The controlled delay muting design of the FC-30 is compatible with today's SCA receivers.

## FM AGC/Limiters



The Broadcast Electronics FM-600 (monaural) and FM-601 (stereo) AGC/Limiter amplifiers are the sure cure for "flat" on-air sound. The FM-600/601 allows you to modulate your transmitter at the highest permissible level with precise control of signal compression and expansion. The FM-600/601 is free of the inherent "response tailoring" often found in many audio processors. Instead, it allows you to smoothly establish the distinctive sound that's right for YOU—whether it is "the loudest sound in town" or the gentle textures of classical music.

## AX-10 AM Stereo Exciter

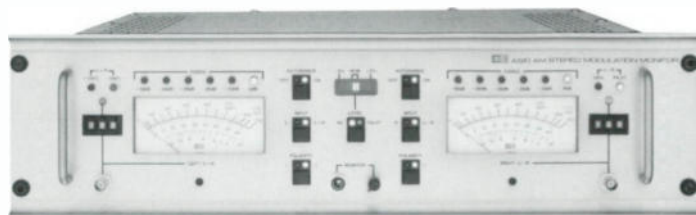


Join the new age of AM Stereo with the AX-10! This highly advanced exciter incorporates a second generation C-QUAM® digital design and is compatible with almost any existing AM broadcast transmitter. The AX-10 offers truly superior stereo performance through the use of independent, non-interfacing, left and right channel modulators in an IF modulation configuration. The AX-10 is fully monaural compatible.

The Broadcast Electronics AX-10 also provides such standard features as independent, switch selectable equalization networks (for two transmitter or dual antenna pattern operation) and remote control capability.

® C-QUAM is a registered trademark of Motorola, Inc.

## AS-10 AM Stereo Modulation Monitor

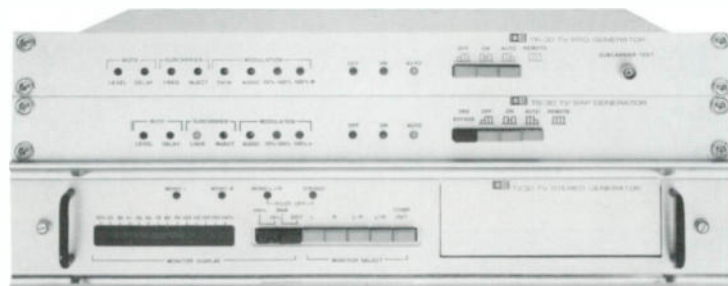


With the AS-10 Modulation Monitor, you can be certain that you're getting maximum performance from your AM Stereo transmission system. The AS-10 utilizes rapid response LED indicators and large, easy to read meters (with auto-ranging capability).

Advanced design innovations include RF AGC for optimum C-QUAM® decoder performance, high stability digital pilot detection, reduced overshoot for accurate modulation level measurement, and front panel audio outputs for easy transmitter alignment and proof of performance. The AS-10 is compatible with any C-QUAM AM Stereo system.

® C-QUAM is a registered trademark of Motorola, Inc.

## TZ-30 TV Stereo Generator with SAP and PRO Generators



TV Stereo is here and the TZ-30 is ready! The TZ-30 is an advanced, second generation MTS generator incorporating a digital pilot generator, digital modulator, and a genuine dbx® encoder card. Audio filtering of both L and R as well as L + R/L - R channels minimizes crosstalk and guarantees excellent stereo separation. If your TV Stereo requirements include audio processing, Broadcast Electronics has complete processing packages designed to complement the TZ-30. Contact our RF Sales department for more details.

The TZ-30 can be easily interfaced with the Broadcast Electronics TS-30 SAP (Second Audio Program) generator and/or the TP-30 PRO (Professional Channel) generator. These generators will expand your MTS system to offer profitable audio/data subchannel capabilities!

® dbx is a registered trademark of the dbx corporation

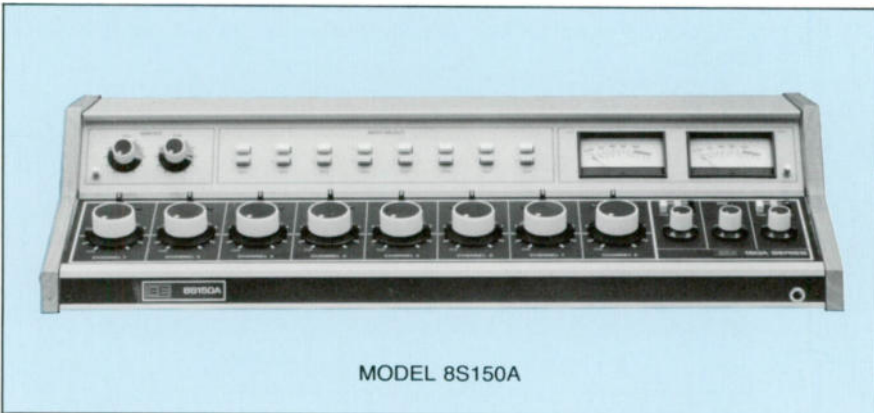
## 150A SERIES MONO/STEREO



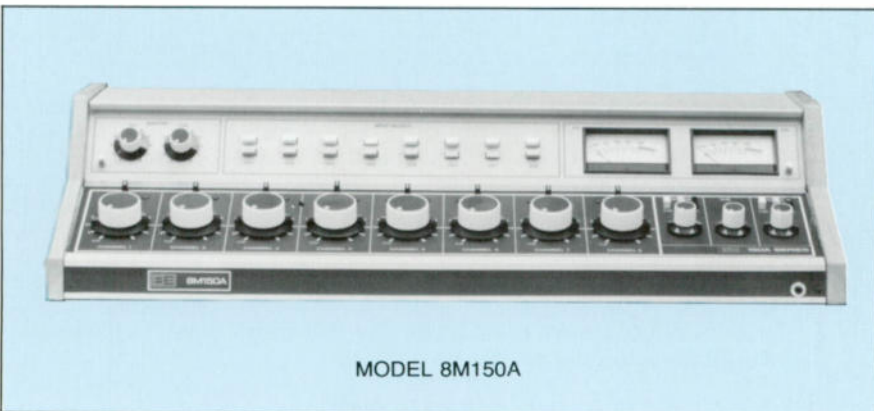
MODEL 5S150A



MODEL 5M150A



MODEL 8S150A



MODEL 8M150A

### 5-Mixer

When you need a high performance, five channel console, specify the 5M150A or the 5S150A! The re-styled model 5M150A (mono dual-channel) and the 5S150A (stereo) consoles employ high quality conductive plastic attenuators for noise-free operation at an economical price. Identical plug-in preamplifier modules (pre-settable for microphone or line input) feature gold-to-gold contacts. Electronic gated FET bus selection is silent and fast. Source selection for each mixer is provided through the use of two interlocking pushbuttons. Pre-mixer cueing is easily accomplished by setting the attenuator controls to their fully detented, counterclockwise positions. Separate headphone and monitor amplifiers are also included. All of these quality features combine to make the 5S150A/5M150A consoles the perfect choice for virtually any application and, styling is truly elegant with the new two tone technical white and gray finish with solid oak end bells.

### 8-Mixer

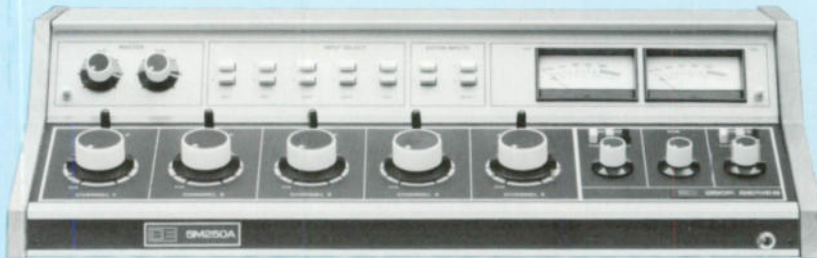
The 8M150A (dual channel monaural) and 8S150A (stereo) consoles offer sharp styling and superior performance to match! The two-tone technical white and gray finish adds a touch of elegance to these popular consoles while the advanced electronic design ensures years of dependable service. Each of the eight mixing controls in the 8M150A/8S150A utilize conductive plastic attenuators for silent operation. Detent cueing is employed on each control when set to the full counterclockwise position. All plug-in preamplifiers are pre-settable for microphone or line level input service with two interlocking pushbuttons providing source selection for each channel. Separate headphone and monitor amplifiers are also included. The front panel graphics are protected by a laminated polycarbonate overlay. This tough, protective surface makes it virtually impossible to scratch the panel or wear away the lettering.

### 10-Mixer (not shown)

Elegantly styled in new two-tone technical white and gray with solid oak end bells, the ten channel 10M150A (dual channel, monaural) and 10S150A (stereo) consoles are ideal for the active studio environment. Like their smaller 150A series cousins, the 10M150A and 10S150A feature full response, low distortion, and professional performance. The consoles are supplied with one relay for a speaker muting/warning light. (An optional second relay is available) Stereo models also accept an optional plug-in mono matrix card. Channel key switches and telephone type with roller cams for long life and silent operation.



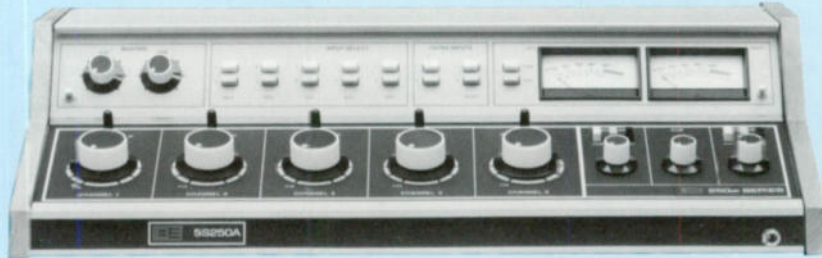
## 250A SERIES DELUXE DUAL CHANNEL MONO/STEREO



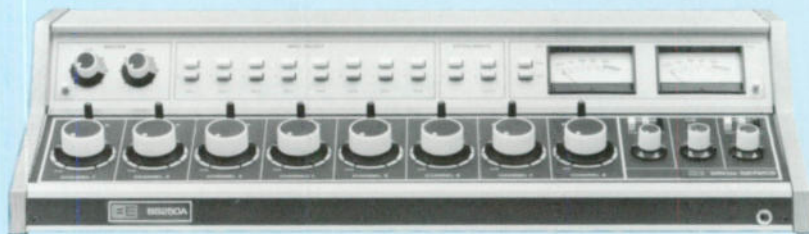
MODEL 5M250A

### 5-Mixer

Outstanding in both appearance and reliability, the re-styled 250A series consoles are deluxe in every way! The five mixer 5M250A (monaural) and 5S250A (stereo) consoles offer superior performance in an attractive, two-tone technical white and gray design with solid oak end bells. Both the monaural and stereo consoles feature dual channel capability. Step-type ladder attenuators are used in each channel for precise level control and trouble-free service. Channel key switches utilize telephone-type roller cams for long life and silent operation. Three muting relays are included. Series 3600 plug-in amplifiers provide superb response with low noise and distortion. The overall layout is clean and uncluttered for easy operation. A laminated polycarbonate overlay protects the front panel graphics from scratches and wear.



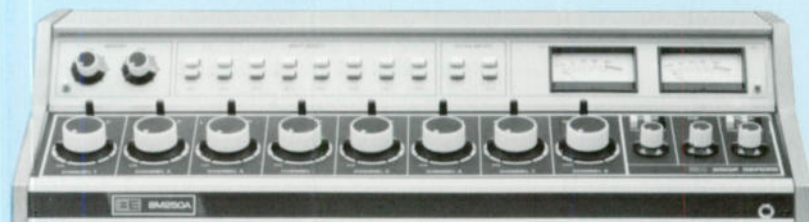
MODEL 5S250A



MODEL 8S250A

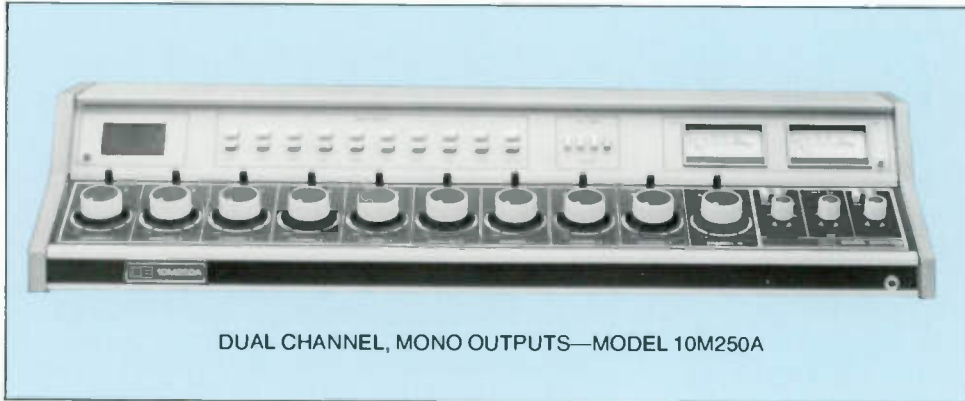
### 8-Mixer

The 8M250A (monaural) and 8S250A (stereo) consoles offer all of the features included in the five channel consoles plus the added versatility of eight channel capability. Like the other 250A Series consoles, the 8M250A and the 8S250A include the new two-tone technical white and gray finish with solid oak end bells. Both the mono and stereo consoles are supplied with the required monitor, cue, and headphone amplifiers. A sum-derived, mono matrixed output is optional for stereo models. As in the five channel models, each mixing channel utilizes step-type ladder attenuators for precise level control. Channel key switches are telephone roller cam type for long life and silent operation. The Series 3600 plug-in amplifiers offer superior low noise, low distortion performance. The front panel is protected by a laminated polycarbonate overlay. This tough exterior surface is almost impervious to wear and tear.

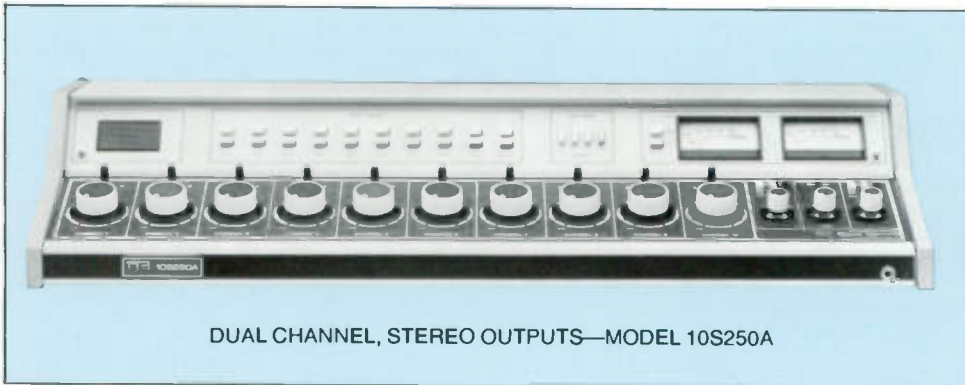


MODEL 8M250A

## SERIES 250A CONSOLES



DUAL CHANNEL, MONO OUTPUTS—MODEL 10M250A

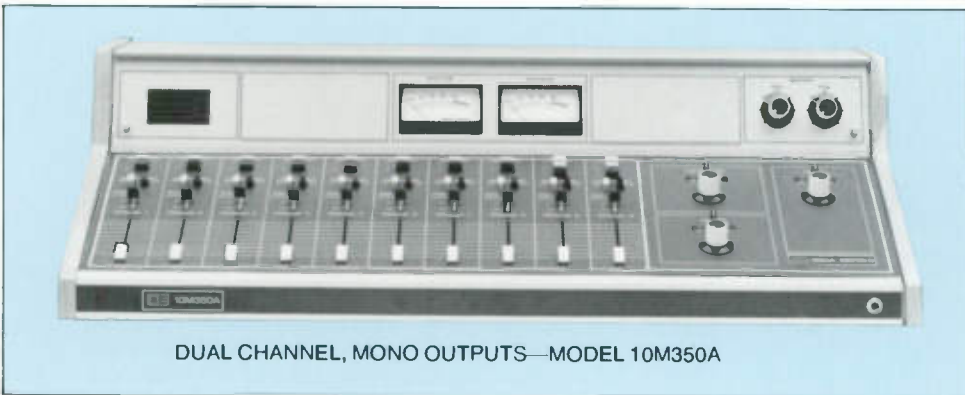


DUAL CHANNEL, STEREO OUTPUTS—MODEL 10S250A

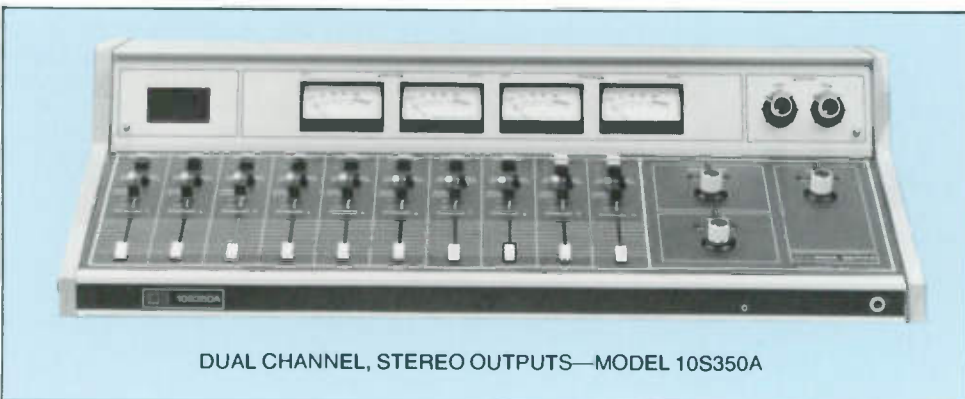
### 10-Mixer

The versatile 10S250A stereo console represents the ultimate in state-of-the-art rotary console design. With the new two-tone technical white and gray finish, the 10S250A console is as attractive as it is innovative. The 10S250A accommodates twenty inputs into ten mixing channels and features identical line level stereo and audition output channels with VU meter switching to either stereo pair. The mixing controls are step-type, dual ladder attenuators. Channel selection is accomplished with silent, telephone-type cam switches. The Series 3600 plug-in amplifiers are included for outstanding audio performance and easy serviceability. The 10S250A is pre-wired to accept an optional plug-in module for applications requiring a summed L+R mono in addition to the stereo program outputs. A monaural model (the 10M250A) is also available.

## 10 MIXER VERTICAL FADER SERIES 350A CONSOLES



DUAL CHANNEL, MONO OUTPUTS—MODEL 10M350A

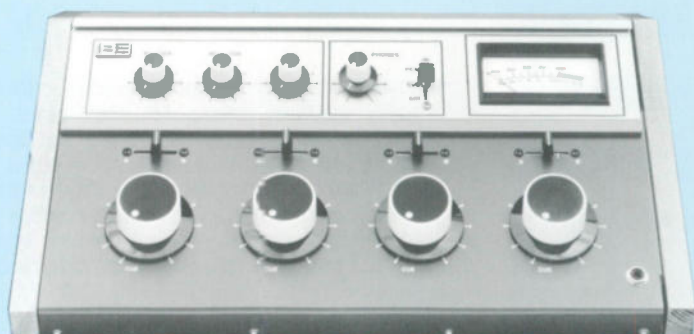


DUAL CHANNEL, STEREO OUTPUTS—MODEL 10S350A

### Series 350A 10 Mixer, Vertical Attenuator, Mono/Stereo

When your requirement calls for a full featured, vertical fader console at an economical price, choose the Series 350A! Two models are available: the 10S350A (Stereo) and the 10M350A (dual channel monaural). Both models feature ten mixing channels (twenty-two inputs) controlled by Penny & Giles vertical precision faders. All faders include a bottom detent "drop cue" for easy cueing of each individual source. Full fidelity loudspeaker monitoring is included plus convenient headphone monitoring for output channels and cue bus audio. The 10S350A stereo console includes separate Right and Left channel VU metering for both the Program and Audition buses. (four meters total) The monaural 10M350A console employs two separate Audition and Program VU meters. Both consoles incorporate the 3600 series plug-in amplifiers, for superb response with low noise and distortion.

## SERIES 50A CONSOLES



### Model 4M50A, Mono

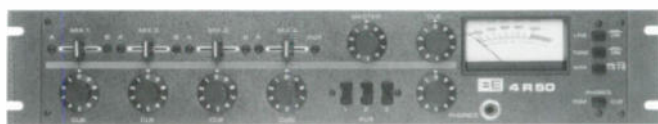
The 4M50 is a compact four channel console ideally suited for production or on-air use. Like the larger consoles, the 4M50 features the attractive new technical white and gray styling with solid oak end bells. The four mixers each accept two switch selectable inputs. In addition, each preamplifier can be wired for microphone or line level input. Speaker and headphone amplifiers are included to monitor console output, cue bus audio, or external source audio. Each attenuator is equipped with a detent cue position feeding a built-in cue speaker, the output of which is controlled by a muting relay. Optional rack adaptors permit mounting in a standard 19" rack.



### Model 4S50A, Stereo

This four mixer, twelve input console features quality stereo performance at a price that won't dent your budget! The stylish technical white and gray finish and solid oak end bells complement the superior design. The 4S50 is simple to install and easy to operate. All faders have individual detent cueing. All preamplifiers are level selectable. The 4S50 also features individual monitor, headphone, and cue amplifiers.

### Model 4R50, Rack-Mount Mixer



Featuring transformer balanced inputs, the model 4R50 is designed for unique applications that require a rack mounted, four channel mixer. Such applications include TV studios, CATV, CCTV, film studios, commercial sound, remote broadcast, and dubbing facilities. One special feature of the 4R50 is an output to feed a public address amplifier.

The 4R50 console has four mixers (sealed pots with cue detents). Three channels accept two inputs (selectable high or low level) with the remaining channel accepting a single switchable input plus three high level inputs. Monitoring capabilities include a switchable VU meter, headphone amplifier, and muted cue amplifier/speaker.

### 4000 Series 12-Mixer, Vertical Attenuator, Modular Mono/Stereo



The 4000 Series meets the need for a large (up to twelve mixers), modular vertical attenuator console at a reasonable price. The 4000 Series is ideal for monaural or stereo multi-source applications requiring dual channel capability. The console can accommodate up to twelve active mixer channels. Each channel is comprised of a self-contained, plug-in module with individual shielding. Modules are available for microphone/line level input (with or without programmable muting), or remote line/network applications. 3½" VU meters provide continuous visual monitoring. Prefader cueing and intercom functions are standard. Module extender and mono matrix output options are also available.

# **B/E** TAPE CARTRIDGE EQUIPMENT

## Single Deck Cartridge Machines



### Series 9000 Phase Trak 90

The new Phase Trak 90 is a cartridge machine unlike any other in the industry today. It features an automatic, non-encoding phase correction system that con-

tinually monitors and corrects any phase errors between the right and left channel playback audio. Any cartridge will undergo automatic phase correction when played through the Phase Trak 90 regardless of what machine was used to produce the cartridge originally. In addition, the Phase Trak 90 offers superb audio performance, automatic audio muting, an FSK decoder and much more.

## Multiple Deck Cartridge Machines

### Model 5400C Three Deck



The 5400C is one of the most respected multi-deck cartridge machines among broadcast users. The 5400C features advanced electronics that exceed 1975 NAB standards. In addition, it offers the precision Phase Lok V head block assembly, a Non-repeat Lockout function, an innovative cartridge guidance system and heavy duty solenoids. Maintenance is a snap with plug-in/plug-out decks and PC boards.

For RECORD capability on deck three, the companion 5409C (mono) or 5410C (stereo) record amplifiers are available.

### Series 3000A



### The New Phase Lok V

The new Phase Lok V head block is at the heart of every B/E cartridge machine. Only the Phase Lok V gives you long term stability and a precise azimuth adjustment that is totally independent of height or zenith adjustments.

### Model 5300C Three Deck



Looking for a heavy duty, three deck machine for A and B sized carts? Then check the 5300C. The 5300C is rugged, full featured cart machine. Its advanced mechanical design employs an internal bulkhead for accurate deck and capstan positioning. Other features include the Phase Lok V head block, Non-repeat Lockout, 1975 NAB standard electronics, and powerful air damped solenoids.

For RECORD capability on deck three, the companion 5309C (mono) or 5310C (stereo) record amplifiers are available.

The new Series 3000A's retain the features that made their predecessors famous and add new improvements and extra features that all users are sure to appreciate. These include the addition of the Phase Lok V head block, an innovative cartridge guidance system, a more powerful air damped solenoid and flat response long life heads. Automatic/manual fast forward and all three cue tones are now standard in the Series 3000A's.

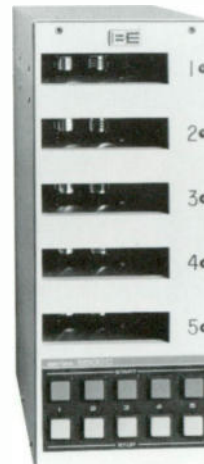
For RECORD capability on deck three, the companion 5309C (mono) or 5310C (stereo) record amplifiers are available.

### Series 2100C



The new Series 2100C cart machines are the cost-conscious workhorses of the B/E line. Along with the precision Phase Lok V head block, the 2100C's offer advanced electronics (meets or exceeds 1975 NAB standards), two standard cue tones and flat response long life heads. They are available in mono or stereo models and accept A or B size cartridges. The 2100's also include a direct drive synchronous motor, superb electronics and a quiet, low voltage DC solenoid.

### Model 5500C Five Deck



Five playback decks in one machine—that's the 5500C. The new C Series design offers handy Non-repeat Lockout function, advanced electronics (meets or exceeds 1975 NAB standards), a toroidal power supply transformer and the Phase Lok V head block. A direct drive, hysteresis motor guarantees years of dependable service. The 5500C's are available in stereo or monaural versions with a standard stop tone or all three NAB tones. The top four decks slide out for easy maintenance.

For RECORD capability on deck five, the companion 5409C (mono) or 5410C (stereo) record amplifiers are available.

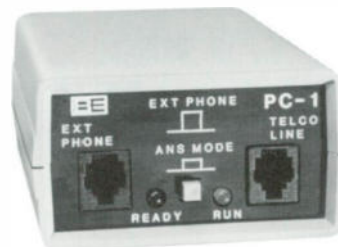
## Model DV-2 Digital Recorder/Player



Let the DV-2 solid state recorder/player introduce you to the new era of DIGITAL audio! Unlike tape cartridge machines, there are NO MOVING PARTS in the DV-2. All recordings are stored in dynamic RAM memory for instant playback at the touch of a button. Over six minutes of recording time is available. You can record one long message or as many as ninety-nine individual messages. A front panel display shows the message number and the amount of recording time remaining. Stored messages can be played sequentially or individually. Outdated messages can be selectively erased and new messages recorded at any time.

Other quality features include 50 to 6500 Hz frequency response, dual microphone or line level inputs, a front panel headphone jack with level control, full remote control capability, front panel pause control, and an input AGC.

## Model PC-1 Telephone Interface



The PC-1 telephone interface bridges the gap between your customers (or listeners) and you. Just connect it between an incoming telco line and virtually any cart machine. The PC-1 will answer the phone, play your message, hang up the phone at the end of the message, and then wait for the next incoming call. Use the PC-1 for weather forecasts, movie information, school closings, social functions—any pre-recorded message! The PC-1 includes automatic gain control circuitry and is FCC Part 68 registered.

Other quality features include 50 to 6500 Hz frequency response, dual microphone or line level inputs, a front panel headphone jack with level control, full remote control capability, front panel pause control, and an input AGC.

## Tape Cartridge Storage Racks

### (LS-200 Lazy Susan)



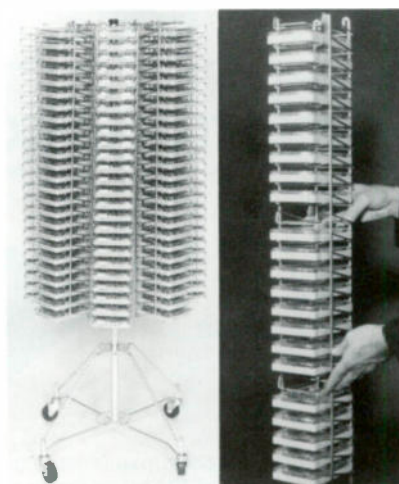
## Model TW-120 Tape Cartridge Winder

TW-120T  
(with timer)

If you use tape cartridge machines, you need the TW-120! Why limit yourself to only stock cart sizes? Get the Broadcast Electronics TW-120 and start saving money today.

With the TW-120 you'll be able to replace worn tape easily and economically. Don't tie up your conventional tape equipment to load carts. The TW-120 handles all reel sizes and runs at a fast 22½ inches per second. (Top that on your open reel decks!) Old or new cartridges can be wound smoothly and evenly to just the right length and tension.

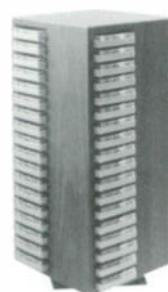
Put up to 200 carts at your fingertips with the LS-200 rotating cart rack. The LS-200 is a mobile cart rack constructed of heavy steel rods finished in zinc. Each individual RS-25 rack section is removable. The entire stand is 51¼ inches high and 20½ inches in diameter. An RS-25 rack section weighs 10 pounds. A fully assembled LS-200 weighs 60 pounds.



LS-200

RS-25 Rack Section

## (Models DM-72 and DM-200 Desk Mount Modules)



DM-72



DM-200

Rotating, four sided storage racks to enhance any studio! The DM-72 holds 72 cartridges. (22" H x 11" W x 11" D) The DM-200 provides 200 storage slots. (29.5" H x 15.75" W x 15.75" D) The DM-72 weighs 30 pounds, the DM-200 60 pounds. Both models feature an attractive walnut formica finish.

## Model TD-1B Tape Eraser



You can't afford to waste your time on a bulk tape eraser that only does half the job. That's why you should choose the TD-1B. The TD-1B is a heavy duty table top eraser for cartridges. It will handle reels up to 10.5 inches in diameter and 1 inch wide. Its durable construction is designed for punishment and includes automatic thermal overheat and transient protection.



# PROGRAM AUTOMATION EQUIPMENT

## Control 16x

Is it live, or is it automation? With the superb performance of the Control 16x, it's almost impossible to tell! The Control 16x offers full program automation at a price that will surprise you. Innovative features include an expanded video log display, complete business system interface with full two-way communications, automatic system re-sync in the event of an AC power failure, and processor resetting without re-programming. The Control 16x also includes expanded format control with "event" and "compare time" functions.

The "direct start" capability of the Control 16x makes live assist operation a breeze. The Control 16x is the easy, reliable alternative—regardless of your format.



## Econo-16

The Broadcast Electronics Econo-16 automation system is an economy version of the highly acclaimed Control 16x. The microprocessor based Econo 16 is field expandable to a full Control 16x system. This allows the Econo 16 to grow as your needs increase. The Econo 16 has many of the same features as the Control 16x including its live assist capability. The Econo 16 can handle 2000 programming events and 10 repetitive compare times.



## SAT-16

If you are considering a satellite delivered format, consider the SAT-16 first! The SAT-16 is specifically designed to handle "Direct Start" satellite formats. (All local breaks and station I.D.'s are started via the satellite downlink.) With the memory capacity of the SAT-16, you can easily enter a full twenty-four hour program schedule in one sitting. The SAT-16 system can also be expanded at any time.



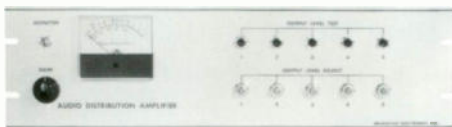
# STUDIO EQUIPMENT

## QRK-B/E Turntables



Broadcast Electronics manufactures thousands of the model 12C (three speed) and model 12C2 (two speed) turntables originally pioneered by QRK. Over 30,000 of these professional turntables are used in broadcast stations and other applications worldwide.

## Audio Distribution Amplifier



The model AD1B is professional audio distribution amplifier with five isolated audio output channels for distribution to multiple points or telco lines. All five outputs have individual front panel monitoring and level controls. The AD1B also includes bridging, matching balanced, or unbalanced inputs with VU meter monitoring. The model AD1B/T features a transformer output.

## Rek-O-Kut Tone Arms



Perfect balance, tubular precision construction, and a rugged chrome finish make the Rek-O-Kut tone arm unmatched in the industry. Available in 12" or 16" models, S-320 or S-260.

## BETMS-100/200 Turntable Preamplifier



Who says you have to sacrifice quality for economy? The BETMS 100/200 dual channel turntable preamps are perfect for mono or stereo cartridges. (The BETMS-200 features transformer output.)

## EP-1/2 'Supreme' Turntable Preamplifier



If superb sound is your highest priority, consider the EP-1/2 'Supreme'. The EP-1/2 'Supreme' offers exceptional S/N performance and excellent -70 dB channel separation. The EP-1 provides a 600 ohm transformerless balanced output. The EP-2 utilizes high quality output transformers for 150/600 ohm balanced floating outputs.



# BROADCAST ELECTRONICS INC.

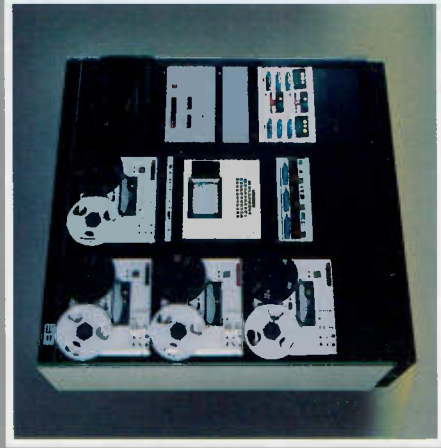
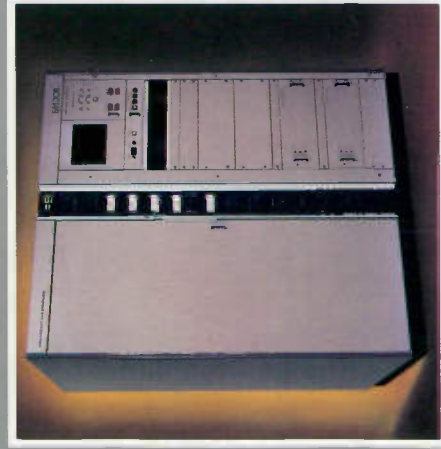
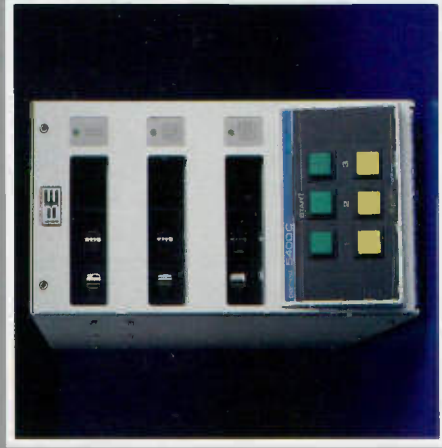
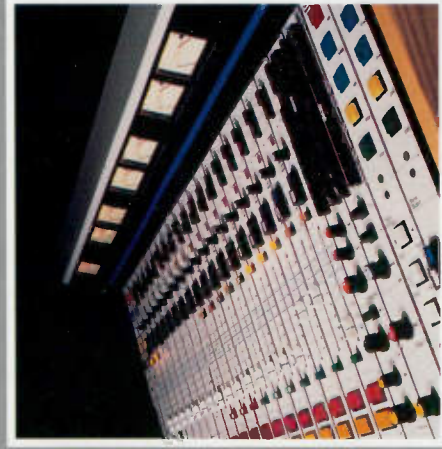
4100 N. 24th ST., P.O. BOX 3606, QUINCY, IL 62305-3606 U.S.A., TELEX: 250142, CABLE: BROADCAST, PHONE: (217) 224-9600



**BROADCAST  
ELECTRONICS INC.**

# BROADCAST EQUIPMENT CATALOG

## Condensed Edition 1990

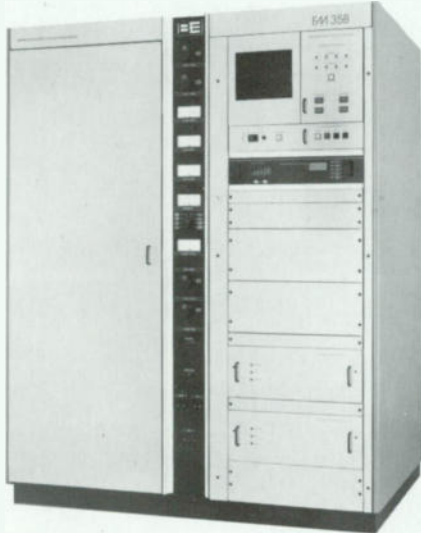




# FM TRANSMITTERS

This powerful, single-tube thirty-five thousand watt transmitter represents the standard of excellence in high power FM broadcasting. The FM35B can deliver trouble-free service with its patented folded half-wave cavity (no troublesome plate blocking capacitors or sliding contacts), automatic proportional VSWR foldback and slide-out solid state IPA's. The FM35B transmitter employs the ultra-high fidelity FX50 Exciter and the 4CX20000C tetrode tube. This tube has the largest filament and anode of any tube used in ANY 35 kW transmitter. Operates from 208 V WYE, 240 V Delta, three phase, 60 Hz or from 380/415 V, three phase, 50 Hz as specified. FCC type notified to operate above 35kW.

## Model FM35B, 35 kW



With its ultra-quiet air-cooling system, model FX50 exciter and state-of-the-art technology, the FM30B single-tube, 30 kW FM transmitter is a very popular transmitter for the 25 kW to 35 kW power range. The FM30B employs the long-life 4CX20000A tetrode tube and incorporates the patented folded half-wave cavity, digital controller, automatic proportional VSWR foldback and modular slide-out, solid state IPA's. Power source is 208 V WYE, 240 V Delta, three phase, 60 Hz or from 380/415 V, three phase, 50 Hz as specified.

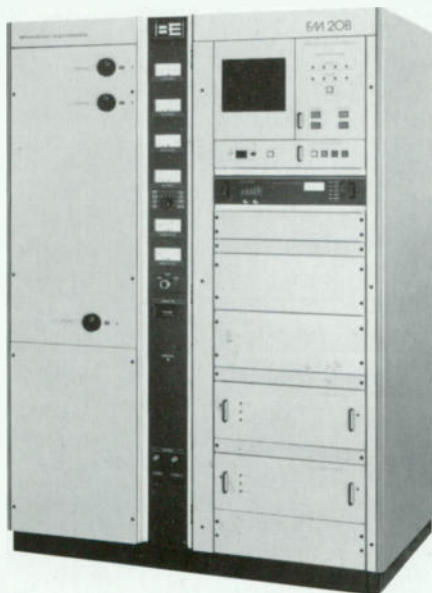
## Model FM30B, 30 kW



For the ultimate reliability in high power output, Broadcast Electronics offers three Dual Transmitter Systems. The FM70B, FM60B and FM40B offer 70 kW, 60 kW and 40 kW of dependable RF output respectively. Each dual system is comprised of two identical high power transmitters (FM35B, FM30B or FM20B), driven by a single FX50 Exciter. Three different redundancy configurations with automatic exciter and transmitter switching are also available.

The single-tube, twenty thousand watt FM20B is one of the most popular models in Broadcast Electronics' line of full-featured FM transmitters. This 20 kW FM transmitter incorporates the FX50 Exciter for the utmost in audio performance. Among the unique features of the FM20B is its patented folded half-wave output cavity, its efficient 4CX12000A single tube design, modular slide-out IPA's and Automatic Power Control with proportional VSWR foldback system. Operates from 208 V WYE, 240 V Delta, three phase, 60 Hz or from 380/415 V, three phase, 50 Hz as specified. FCC type notified to operate from 7.5 kW to 22 kW.

## Model FM20B, 20 kW



The single-tube FM10B transmitter is FCC type notified to operate from 4.95 kW to 11 kW. The FM10B incorporates the ultra-high fidelity FX50 Exciter, the reliable folded half-wave cavity, slide-out solid state IPA, automatic power control with proportional VSWR foldback (in a convenient slide-out assembly) and extensive metering. As a result of its advanced engineering, Broadcast Electronics' FM10B is the most quiet, most reliable 10 kW FM transmitter ever produced. Operates from 208 V WYE, 240 V Delta, three phase, 60 Hz or from 380/415 V, three phase, 50 Hz as specified.

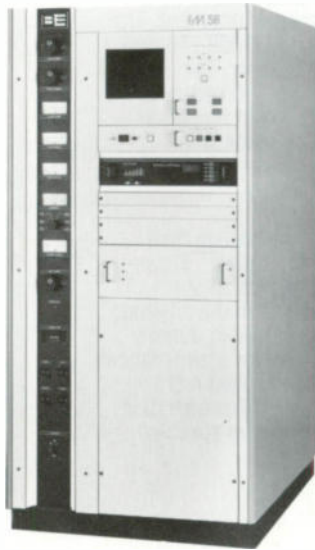
## Model FM10B, 10 kW





## Model FM5B, 5 kW

The FM5B has become a proven performer in broadcast stations worldwide. This five thousand watt transmitter (FCC type notified to operate up to 5.5 kW) utilizes B/E's FX50 Exciter and patented folded half-wave cavity. Its single tube 4CX3500A PA ensures reliability and long term operating economy. The FM5B is self-contained in a cabinet which is just 34.5" wide. With a built-in low pass filter, the FM5B is a cool operating, compact transmitter. Primary power requirements are 208/240 V, 50 or 60 Hz or 380/415 V, 50 Hz, three phase. For operation from a single phase power source, the model FM5B/S is available.



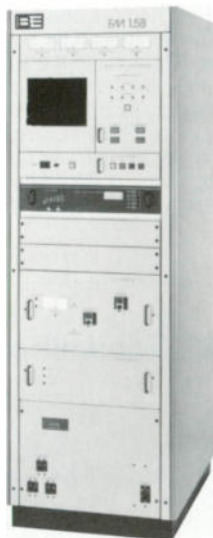
## Model FM3.5B, 3.5 kW

Utilizing the FX50 Exciter and Broadcast Electronics' patented folded half-wave cavity, the FM3.5B is conservatively rated with its single 4CX3500A output tube design. This widely used model has become a field proven, consistent performer offering a level of reliability unmatched by any other transmitter of its type. Power source is 208/240 V, single phase, 60 Hz or 50 Hz as specified. The FM3.5B transmitter is FCC type notified to operate from 1.5 kW to 3.8 kW.



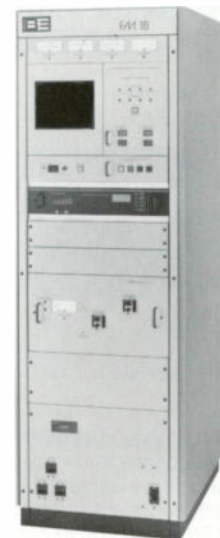
## Model FM1.5B, 1.5 kW

For a power output range of 500 watts to 1.65 kW, the FM1.5B offers powerful yet conservative performance in a small package. At just 5'10" high, this compact FM transmitter occupies only five square feet of floor space. The FM1.5B utilizes the FX50 Exciter and produces a conservative fifteen hundred watts with its single 3CX1500A7/8877 triode tube. The FM1.5B was designed for easy operation and maintenance. The entire PA stage (including the folded half-wave cavity) is contained in a slide-out drawer for instant accessibility. Operates from 208/240 V, single phase, 60 Hz or 50 Hz as specified.



## Model FM1B, 1 kW

Capable of 1100 watts output, the FM1B features a straight forward design that provides direct RF drive from the FX50 Exciter to the single-tube power amplifier stage. This practical design provides greater reliability and ease of maintenance. The FM1B uses a single Eimac 3CX1500A7 triode tube. Unlike solid state devices, this tube can withstand repeated overloads without damage. Other features include patented folded half-wave output cavity, Automatic Power Control with VSWR foldback and seven LED diagnostic indicators. Power source is 208/240 V, single phase, 60 Hz or 50 Hz as specified.





## SOLID STATE FM TRANSMITTERS

### 100, 250 and 400 Watt Solid State Transmitters



FM250B  
250 Watt FM Transmitter

Broadcast Electronics offers three low power, solid state FM transmitters to suit almost any broadcast requirement. The FM100B (100 W), FM250B (250 W) and FM300B (400 W) all employ the industry acclaimed FX50 Exciter. The FM100B and FM250B each utilize a single, solid state broadband amplifier. The FM300B uses a pair of 250 watt amplifiers (the outputs of which are isolated and combined) to produce up to 400 watts. Amplifier stages are mounted in convenient slide-out drawers for easy access.

Each solid state B/E transmitter is also available in dual transmitter or main/alternate main configurations. These include automatic power changeover systems which monitor operation and automatically switch to the alternate transmitter in the event of a malfunction. Built-in dummy loads permit easy testing of the off-air unit for maintenance purposes. All models are housed in 19" enclosed rack cabinets and include low pass output filters. For operation from 220 Vac, 60 Hz or 50 Hz power source as specified.

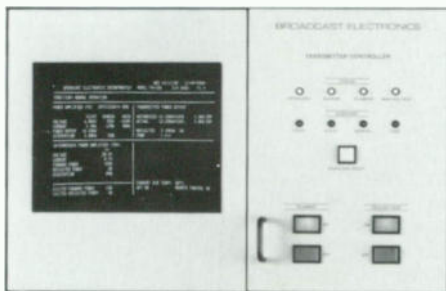


FM250B M/A  
250 Watt Main/Alternate Main  
FM Transmitter



## TRANSMITTER ACCESSORIES

### Microprocessor Video Diagnostic System (MVDS) Option

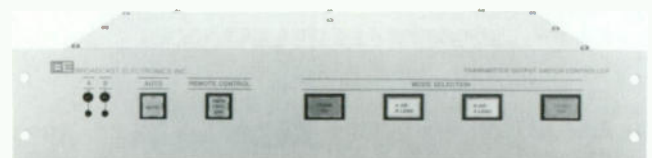


The Microprocessor Video Diagnostics System (MVDS) for Broadcast Electronics' B Series transmitters provides a visual display of all critical transmitter parameters in either tabular chart or bargraph form. This permits easy transmitter analysis and adjustment. In addition, MVDS can provide hardcopy logs on demand or at regular intervals with the addition of an inexpensive PC printer. MVDS is constantly alert for any abnormality. Its diagnostics will display the nature of a detected malfunction and its approximate location within the transmitter system. MVDS can also function as the primary transmitter controller, with the standard digital controller assuming the role of backup. This redundant capability provides a considerable enhancement to the overall reliability of the transmitter system. MVDS is available for use with all B/E "A" or "B" model FM transmitters, 1 kW and above.

### MVDS Remote Control (RC1)

The easy to use RC1 Remote Control software package allows full monitoring and control of B Series transmitters from virtually any location. Using an MS-DOS compatible computer and the appropriate hardware (e.g. modem), transmitters may be monitored and controlled via telco lines or an STL/SCA link. This program may be operated in periodic, dial-up contact or constant communication modes. The MVDS Remote Control package provides real time displays of Primary and Customer Configuration screens. Transmitter functions, such as Filament ON/OFF, High Voltage ON/OFF, RF Preset Power and Overload Reset, may be remotely controlled through a personal computer.

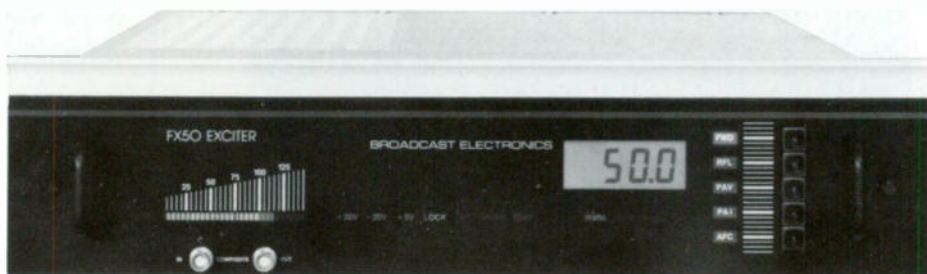
### FA2 Transmitter Output Switcher



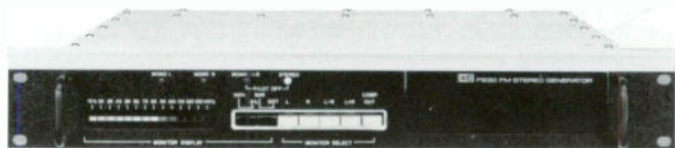
Broadcast Electronics' FA2 Transmitter Output Switcher is designed to provide the greatest amount of redundancy through automatic transmitter switching in Main/Alternate Main transmitter configurations. Mode switching is accomplished manually through operation of the illuminated front panel switches, or automatically upon detection of a failure condition.

## FX 50 Exciter

The FX50 Exciter delivers truly unmatched audio performance and is standard in all "B" series transmitters. With typical signal-to-noise ratio a remarkable 93 dB, the FX50 offers a dynamic range rivaling that of CD players. Typical harmonic and intermod distortion is less than 0.003%. The completely broadband FX50 is truly transparent to the broadcast signal. The slide-mounted FX50 is the ideal retrofit for quick and easy upgrading of any existing FM transmitter. With its 60 watt MOSFET power device, the FX50 is the perfect exciter for even the most powerful transmitter. All important operational parameters are monitored and displayed on the FX50's front panel via a digital LCD multimeter and LED status panel. For operation from 97/133 Vac or from 194/266 Vac, 50/60 Hz.



### FS30 FM Stereo Generator



Teamed up with the FX50 FM Exciter, the digital FS30 Stereo Generator provides the very best stereo performance available. Included in its advanced design are linear, delay equalized audio low pass filters for minimum overshoot without the use of clippers or other non-linear devices. Additional features include a front panel LED peak modulation display, RFI protection, composite baseband equalization and remote control capability. For operation from 97/113 Vac or from 194/266 Vac, 50/60 Hz.

### FC30 SCA Generator



The FC30 SCA Generator guarantees low FM noise and high operational stability. Distortion is minimized with its 67 kHz modulated oscillator. Other available frequencies include 39, 41, 92 and 95 kHz. Quality features include extensive RFI filtering, an LED peak modulation indicator and convenient front panel test jacks. The controlled delay muting design of the FC30 is compatible with today's SCA receivers. Operates from 97/113 Vac or from 194/266 Vac, 50/60 Hz.

## C-QUAM® AM STEREO

### AX10 AM Stereo Exciter



The highly advanced AX10 AM Stereo Exciter incorporates a second generation C-QUAM® digital design and is compatible with almost any existing AM broadcast transmitter. The AX10 offers truly superior stereo performance through the use of independent, non-interfacing left and right channel modulators in an IF modulation configuration. The AX10 is fully monaural compatible. The Broadcast Electronics AX10 also provides such standard features as independent switch selectable equalization networks (for two transmitter or dual antenna pattern operation) and remote control capability. Operates from 117 Vac or 220 Vac, 60 Hz or from 50 Hz as specified.

C-QUAM® is a registered trademark of Motorola, Inc.

### AS10 AM Stereo Modulation Monitor



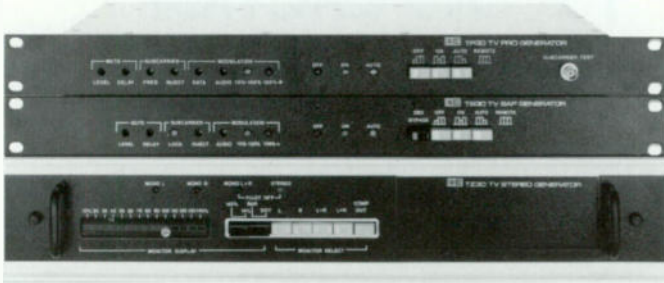
Maximum performance from any AM stereo transmission system is assured with the AS10 Modulation Monitor. The AS10 utilizes rapid response LED indicators and large, easy-to-read meters (with auto-ranging capability). Advanced design innovations include RF AGC for optimum C-QUAM® decoder performance, high stability digital pilot detection, reduced overshoot for accurate modulation level measurement and front panel audio outputs for easy transmitter alignment and proof of performance. The AS10 is compatible with any C-QUAM® AM Stereo system. For operation from 117 Vac, 50/60 Hz.

C-QUAM® is a registered trademark of Motorola, Inc.



## TV STEREO (MTS)

### TZ30 TV Stereo Generator with SAP and PRO Generators



The TZ30 is an advanced, second generation Multichannel Sound System MTS generator incorporating a digital pilot generator, digital modulator and genuine dbx® encoder card. Audio filtering of both L and R as well as L+R/L-R channels minimizes crosstalk and guarantees excellent stereo separation. For TV Stereo configuration with audio processing requirements, Broadcast Electronics offers complete packages designed to complement the TZ30. The TZ30 can be easily interfaced with the Broadcast Electronics TS30 SAP (Second Audio Program) Generator and/or the TP30 PRO (Professional Channel) Generators. These generators expand an MTS system to offer profitable audio/data subchannel capabilities. For operation from 110/120 Vac or from 220/240 Vac, 50/60 Hz.

dbx® is a registered trademark of dbx Corporation

### TZ30 Audio Processing Package



Aphex "Compellor"



Aphex "Dominator"

For those who desire a completely pre-packaged TV stereo system, Broadcast Electronics offers the TZ30/Aphex Audio Processing Package. This high performance system consists of a TZ30 TV Stereo Generator, interface card, Aphex Compellor compressor-leveler-limiter and Aphex Dominator three-band peak processor. The Compellor audio processor simultaneously delivers transparent compression, leveling and peak limiting. The Dominator fully complements the Compellor's average level processing. Both units utilize intelligent circuitry so accurate results are achieved with just a few convenient operator adjustments.



## PROGRAM AUTOMATION EQUIPMENT

### Control 16x

With the superb performance of the Control 16x, it's difficult to tell whether programming is live or automated. The Control 16x offers full program automation at a very competitive price. Innovative features include an expanded video log display, complete business system interface with full two-way communications, automatic system re-sync in the event of an AC power failure and processor resetting without reprogramming. The Control 16x also includes expanded format control with "event" and "compare time" functions. The "direct start" capability of the Control 16x is the easy, reliable alternative - regardless of the format used. Operates from 115/240 Vac, 50/60 Hz.



### Econo 16

Broadcast Electronics' Econo 16 automation system is an economy version of the highly acclaimed Control 16x. The microprocessor-based Econo 16 is field expandable to a full Control 16x system. This allows the Econo 16 to grow as a station's needs increase. The Econo 16 has many of the same features as the Control 16x, including live assist capability. The Econo 16 can handle up to 2000 distinct programming events and 10 repetitive compare times. For operation from 115/240 Vac, 50/60 Hz.



### SAT 16

For satellite delivered formats, the Sat 16 is the answer. The Sat 16 is specifically designed to handle "direct start" satellite formats, where all local breaks and station I.D.'s are initiated via the satellite downlink. With the memory capacity of the Sat 16, a full twenty-four hour program schedule can easily be entered in a single session. The Sat 16 system can also be conveniently expanded at any time. Operates from 115/240 Vac, 50/60 Hz.





Model MT90-21

With its uncompromised level of audio performance and numerous customer-preferred features, Broadcast Electronics' Mix Trak 90 is one of the finest "on-air" broadcast consoles available today. The MT90 Modular Console incorporates the versatility and flexibility of modular engineering for smooth, efficient and reliable broadcast use. Available as a 12, 18 or 21 channel mainframe, each MT90 can be fully customized by selecting from more than 14 different input and auxiliary modules. As a station grows, the Mix Trak 90 console can be easily and conveniently expanded as well.

## MIX TRAK 90™ MODULAR CONSOLE

Each Mix Trak 90 module measures a full 2" wide, resulting in a cleaner, less cluttered console arrangement and fewer on-air mistakes. Voltage-Controlled Amplifiers are used on all audio controls, including monitor and headphone gain. These VCA's extend the life of heavily used controls, reduce maintenance time and allow special operational features such as remote gain control.

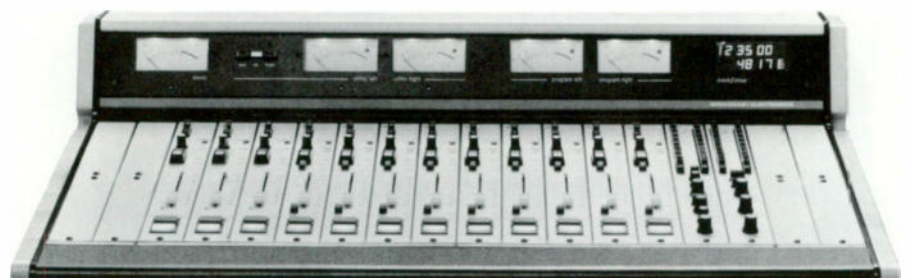
Mix Trak 90 users agree, this is one highly engineered and technically sophisticated "on-air" broadcast console. Operates from 115/230 Vac, 50/60 Hz.

### Features

- Exceptional Audio Performance
- Three Mix-Minus Busses
- Separate Music and Speech Program Busses
- Automatic Source Sequencing
- Penny & Giles Linear Faders
- Advanced Modular Design
- Total VCA Audio Control
- Independent Program and Audition Metering
- Electronically Balanced and Floating Output Busses
- Versatile Talkback System
- Monitor Dim Function
- Individual Line and Microphone Input Modules
- Silent Hall Effect Switching
- Balanced Patch Points



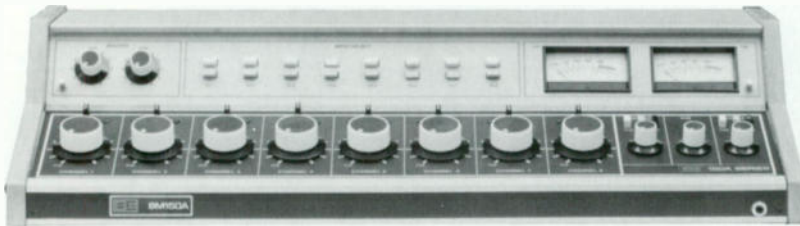
Model MT90-18



Model MT90-12



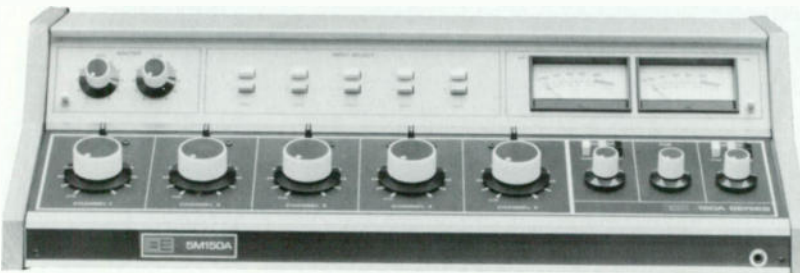
## 150A SERIES MONO/STEREO



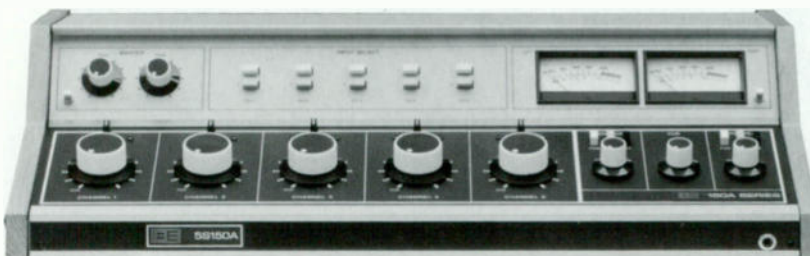
Model 8M150A



Model 8S150A



Model 5M150A



Model 5S150A

### 8 Mixer

The 8M150A (dual channel monaural) and 8S150A (stereo) consoles offer sharp styling and superior performance. The two-tone technical white/gray finish adds a touch of elegance to these popular consoles, while their advanced electronic design assures years of dependable service. Each of the eight mixing controls in the 8M150A/8S150A utilize conductive plastic attenuators for silent operation. Detent cueing is employed on each control when set to the full counterclockwise position. All plug-in preamplifiers may be pre-set for microphone or line level input service with two interlocking pushbuttons providing source selection for each channel. Separate headphones and monitor amplifiers are also included. Front panel graphics are protected by a polycarbonate laminate overlay. This tough protective surface makes it virtually impossible to scratch the panel or wear away its lettering. 115 Vac, 50/60 Hz standard; 230 Vac, 50/60 Hz optional.

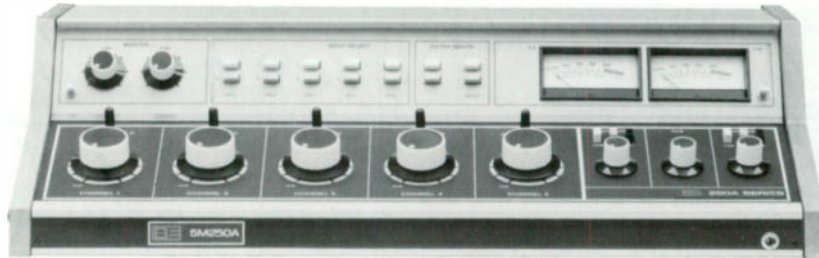
### 10 Mixer (not shown)

Elegantly styled in new two-tone technical white/gray with solid oak end bells, the ten channel 10M150A (dual channel monaural) and 10S150A (stereo) consoles are ideal for the active studio environment. Like their smaller 150A Series cousins, the 10M150A and 10S150A feature full response, low distortion and professional performance. These consoles are supplied with one relay for a speaker muting/warning light (an optional second relay is available). Stereo models also accept an optional plug-in mono matrix card. Channel key switches and telephone type with roller cams for long life and silent operation. 115 Vac, 50/60 Hz standard; 230 Vac, 50/50 Hz optional.

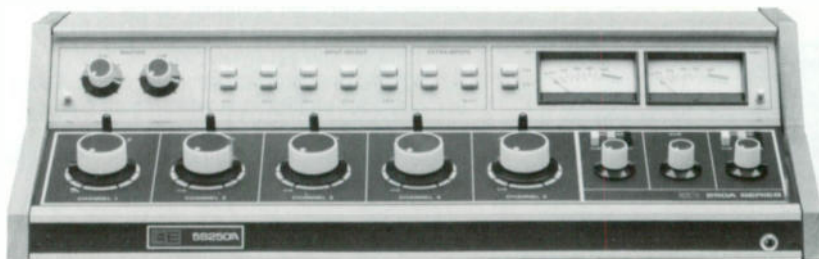
### 5 Mixer

The Model 5M150A and 5S150A consoles offer high performance, five channel capability. The 5M150A (dual channel monaural) and 5S150A (stereo) consoles employ high quality plastic attenuators for noise-free operation at an economical price. Identical plug-in preamplifier modules (pre-settable for microphone or line input) feature gold-to-gold contacts. Electronic gated FET bus selection is silent and fast. Source selection for each mixer is provided through the use of two interlocking pushbuttons. Pre-mixer cueing is easily accomplished by setting the attenuator controls to their fully detented, counterclockwise positions. Separate headphone and monitor amplifiers are also included. All of these quality features combine to make the 5M150A/5S150A consoles the perfect choice for virtually any application. B/E's two-tone technical white/gray finish and solid oak end bells enhance the elegance of these consoles. 115 Vac, 50/60 Hz standard; 230 Vac, 50/60 Hz optional.

## 250A SERIES DELUXE DUAL CHANNEL MONO/STEREO



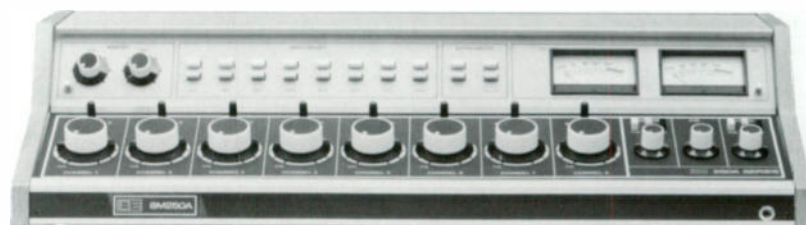
Model 5M250A



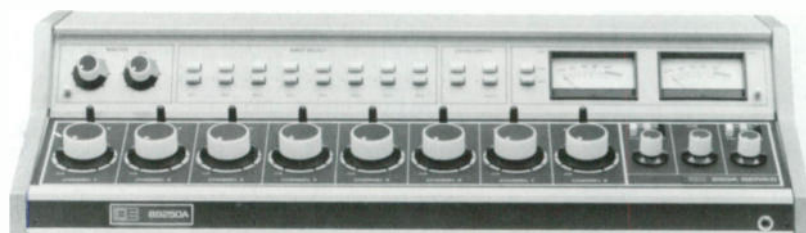
Model 5S250A

### 5 Mixer

Outstanding in both appearance and reliability, the 250A Series consoles are deluxe in every way. The five mixer 5M250A (monaural) and 5S250A (stereo) consoles offer superior performance in an attractive, two-tone technical white/gray design with solid oak end bells. Both the monaural and stereo versions feature dual channel capability. Step-type ladder attenuators are used in each channel for precise level control and trouble-free service. Channel key switches utilize telephone-type roller cams for long life and silent operation. Three muting relays are included. Series 3600 plug-in amplifiers provide superb response with low noise and distortion. The overall layout is clean and uncluttered for easy operation. A laminated polycarbonate overlay protects the front panel graphics from scratches and wear. 115 Vac, 50/60 Hz standard; 230 Vac, 50/60 Hz optional.



Model 8M250A



Model 8S250A

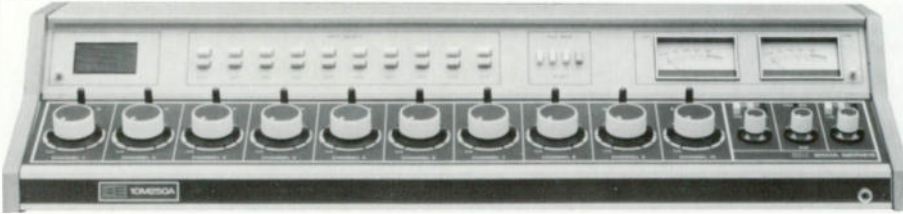
### 8 Mixer

The 8M250A (monaural) and 8S250A (stereo) consoles offer all the features included in Broadcast Electronics' 5 channel consoles, plus the added versatility of eight channel operation. Like the other 250A Series consoles, the 8M250A and 8S250A feature B/E's two-tone technical white/gray finish with solid oak end bells. Both the mono and stereo consoles are equipped with the required monitor, cue and headphone amplifiers. A sum-derived mono matrix output is optional for stereo models. As with the five channel versions, each mixing channel utilizes step-type ladder attenuators for precise level control. Channel key switches are telephone roller cam type for long life and silent operation. Series 3600 plug-in amplifiers are utilized for superior low noise, low distortion characteristics. The front panel is protected by a polycarbonate laminate overlay, virtually impervious to wear. 115 Vac, 50/60 Hz standard; 230 Vac, 50/60 Hz optional.



# AUDIO CONSOLES

## 10 MIXER SERIES 250A CONSOLES



Model 10M250A

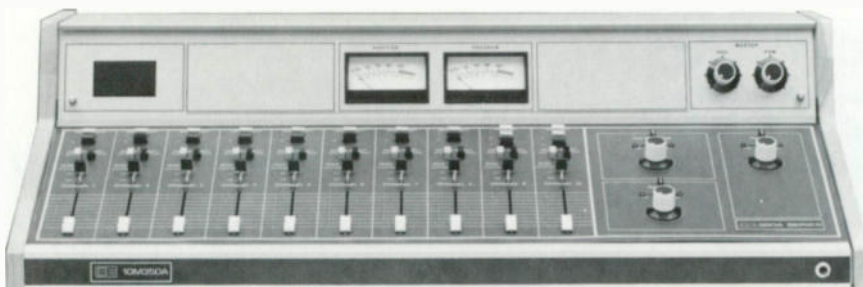


Model 10S250A

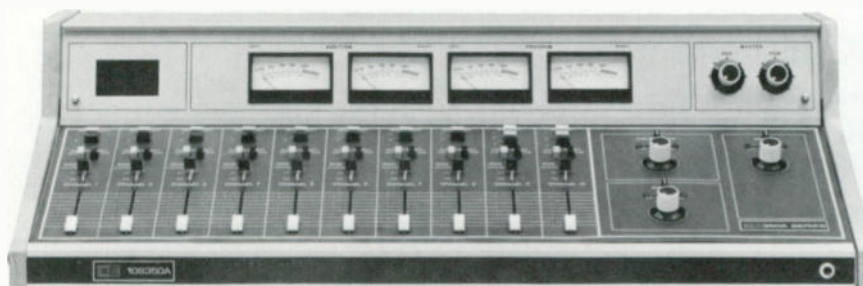
### 10 Mixer

The versatile 250A Series represents the ultimate in state-of-the-art rotary console design. Series 250A consoles feature Broadcast Electronics' attractive two-tone technical white/gray finish with solid oak end bells. The 10S250A (stereo) accommodates twenty inputs into ten mixing channels and features identical line level stereo and audition output channels with VU meter switching to either stereo pair. The mixing controls are step-type, dual-ladder attenuators. Channel selection is accomplished with silent, telephone-type cam switches. Series 3600 plug-in amplifiers are included for outstanding audio performance and easy serviceability. The 10S250A is pre-wired to accept an optional plug-in module for applications which require a summed L+R mono in addition to the stereo program outputs. A monaural model (10M250A) is also available. For operation from 115 Vac, 50/60 Hz standard; 230 Vac, 50/60 Hz optional.

## 10 MIXER VERTICAL FADER SERIES 350 CONSOLES



Model 10M350A Dual Channel Mono Outputs



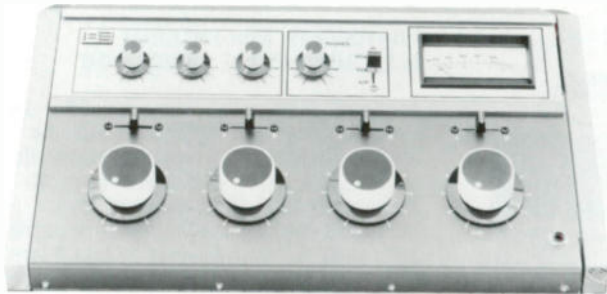
Model 10S350A Dual Channel Stereo Outputs

### 10 Mixer

Broadcast Electronics Series 350A offers full featured vertical fader consoles at an economical price. Two models are available: the 10M350A (dual channel monaural) and 10S350A (stereo). Both feature ten mixing channels (twenty-two inputs) controlled by Penny and Giles vertical precision faders. All faders include a bottom detent "drop cue" for easy cueing of each individual source. Full fidelity loudspeaker and headphone monitoring is included for output channels and cue bus audio. The 10S350A stereo console includes separate Right and Left channel VU metering for both Program and Audition buses (four meters total). The monaural 10M350A console employs two separate Audition and Program VU meters. Both models incorporate 3600 series plug-in amplifiers for superb response with low noise and distortion. Operates from 115 Vac, 50/60 Hz standard; 230 Vac, 50/60 Hz optional.



## 4 MIXER SERIES 50A CONSOLES



Model 4M50A

### Model 4M50A Monaural

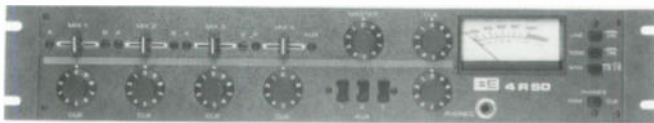
Broadcast Electronics' 4M50A is a compact four channel console ideally suited for production or on-air use. Like the larger B/E consoles, the 4M50 features the attractive technical white/gray styling with solid oak end bells. Four mixers each accept two switch selectable inputs. In addition, each preamplifier can be wired for microphone or line level input. Speaker and headphone amplifiers are included to monitor console output, cue bus audio or external audio. Each attenuator is equipped with a detent cue position feeding a built-in cue speaker, the output of which is controlled by a muting relay. Optional rack adaptors permit mounting in any EIA standard 19" rack. 115 Vac, 50/60 Hz standard; 230 Vac, 50/60 Hz optional.



Model 4S50A

### Model 4S50A Stereo

This four mixer, twelve input stereo console features quality performance at a very economical price. Broadcast Electronics' technical white/gray finish and solid oak end bells complement the Series 50A superior electronic design. The 4S50A is simple to install and easy to operate. All faders have individual detent cueing, and all preamplifiers are level selectable. The 4S50A also features individual monitor, headphone and cue amplifiers. 115 Vac, 60 Hz standard; 230 Vac, 50/60 Hz optional.



Model 4R50

### Model 4R50, Rack-Mount Mixer

Featuring transformer balanced inputs, model 4R50 is designed for unique applications which require a rack-mounted, four channel mixer. TV studios, CATV, CCTV, film studios, commercial sound, remote broadcast and dubbing facilities have found the 4R50 to be the perfect choice. The 4R50 even features a public address amplifier output. Broadcast Electronics' 4R50 console has four mixers (sealed pots with cue detents). Three channels accept two inputs (selectable high or low level) with the remaining channel accepting a single switchable input plus three high level inputs. Monitoring capabilities include a switchable VU meter, headphone amplifier and muted cue amplifier/speaker. 115 Vac, 60 Hz standard; 230 Vac, 50 Hz optional.

### Turntables 2 and 3 Speed

Broadcast Electronics has manufactured thousands of the model 12C (three speed) and model 12C2 (two speed) turntables, originally pioneered by QRK. Over 30,000 of these professional turntables are used by broadcast stations around the world. 115 Vac, 60 Hz standard; 230 Vac, 50 Hz optional.



### Tone Arms



Precision tubular construction, perfect balance and a rugged chrome finish make the Rek-O-Kut tone arm a top choice for heavy duty service. Available in 12" (Model S-320) style.

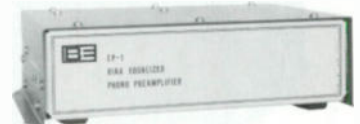
## STUDIO EQUIPMENT

### BETMS 100 and BETMS 200 Turntable Preamplifiers



BETMS 100 and BETMS 200 dual channel turntable preamps are the perfect blend of quality and economy for mono or stereo cartridges. The BETMS 200 features transformer output. Power source is 100/135 Vac, 50/60 Hz standard; 200/270 Vac, 50/60 Hz optional.

### EP1 and EP2 Turntable Preamplifiers



When superb sound is the priority, the EP Series turntable preamplifiers are the solution. The EP Series offers unmatched RFI protection, exceptional S/N performance and an excellent -70 dB channel separation. The EP1 provides a 600 ohm transformerless balanced output, while the EP2 utilizes high quality output transformers for 150/600 ohm balanced floating outputs. Operates from 115/230 Vac, 50/60 Hz.



# TAPE CARTRIDGE EQUIPMENT



Model PT90RPS  
Stereo Record/Playback

Model PT90PS  
Stereo Playback

## PHASE TRAK 90™

**CONTINUOUS, NON-ENCODED  
ELECTRONIC PHASE CORRECTION**

Broadcast Electronics' Phase Trak 90 is the most advanced cartridge machine on the market. Available in record/playback or playback only models, the PT90 exceeds the most demanding production and performance standards of today's broadcast professional. With such exclusive features as tape analysis with "learn" mode and continuous, non-encoded electronic phase correction, the Phase Trak 90 cart machine is changing the production and playback standards of the broadcast industry. Each Phase Trak 90 is manufactured for years of dependable service with a 1/2" machined aluminum deck plate. The precision, die-cast front panels are professionally styled and ergonomically designed for ease of operation. Operates from 105/132 Vac, 50/60 Hz standard or from 210/264 Vac, 50/60 Hz optional.

### Phase Lok V

Every Broadcast Electronics' cartridge machine includes the Phase Lok V head block. Only the Phase Lok V offers long term stability and precise azimuth adjustment that is totally independent of height or zenith adjustments.



## DURA TRAK 90™

**RUGGED, RELIABLE PERFORMANCE**

Each Dura Trak 90 cartridge machine delivers sparkling clean audio performance and is available in mono or stereo, record/playback or playback only configurations. There's no waiting for a cart to cue because Fast Forward is standard. Start, Stop and Fast Forward pushbuttons are Hall Effect switches for improved reliability. A superior cartridge guidance mechanism, 1/2" machined aluminum deck plate, direct-drive motor and ultra-rugged mechanical design add up to years of trouble-free service. Operates from 105/132 Vac, 60 Hz, or from 210/264 Vac, 50 Hz as specified.



Model DT90RPS  
Stereo Record/Playback

Model DT900S  
Stereo Playback

## SPLICE TRAK 90™

**SPLICE FINDER/ERASER**



Model ST90

Accurate cart preparation is essential for the optimum performance of any tape. Utilizing many of the same advanced components as B/E's Phase Trak 90 and Dura Trak 90 machines, the Splice Trak 90 makes cart preparation fast, easy and reliable. At 27.5 ips, the ST90 zips through a cart. Dual heads thoroughly and uniformly erase any NAB standard cart to a typical erasure depth of 90 dB. After erasure, the splice is automatically positioned. Virtually 100% accurate, B/E's Splice Trak 90 detects the variance in splice thickness instead of employing the less reliable optical scanning method. Operates from 117/230 Vac, 50 Hz or 60 Hz as specified.

# TAPE CARTRIDGE EQUIPMENT



## Series 2100C Record/Playback Stereo



Model 2100CRPS



Model 2100CRP

With over 10,000 in service, users everywhere recognize that the Series 2100C offers the best value in cart machines. Along with the precision Phase Lok V head block and 1/2" machined aluminum deck, each 2100C offers advanced electronics (which meet or exceed 1975 NAB standards), two standard cue tones and flat response, long life heads. The 2100C also includes a direct drive synchronous motor, superb electronics and quiet, low voltage DC solenoid. The 2100C is available in mono or stereo models, and accepts A or B size cartridges. Operates from 105/125 Vac, 50 Hz or 60 Hz or from 210/240 Vac, 50 Hz or 60 Hz as specified.

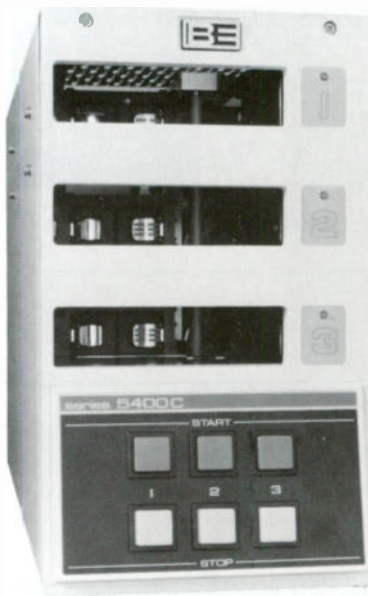
## Model 5300C Three Deck



Model 5300C

The 5300C is a rugged, heavy duty, full featured three deck machine for A and B size carts. Its advanced mechanical design incorporates 1/2" machined aluminum decks and employs an internal bulkhead for accurate deck and capstan positioning. Additional features include the Phase Lok V head block, Non-Repeat Lockout function, electronics which meet or exceed 1975 NAB standards and powerful air damped solenoids. For Record capability on deck three, the companion 5309C (mono) or 5310C (stereo) record amplifiers are available. Operates from 105/125 Vac, 60 Hz, or from 210/240 Vac, 50 Hz as specified.

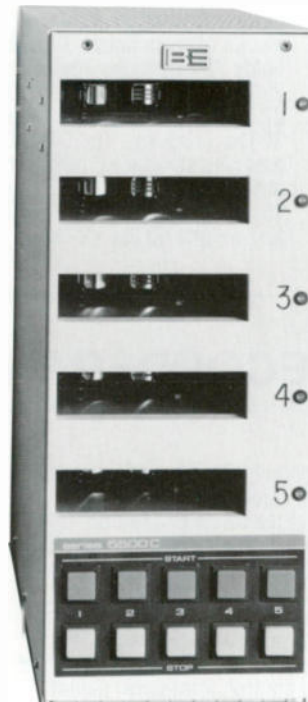
## Model 5400C Three Deck



Model 5400C

Broadcast Electronics' 5400C is one of the most respected multideck cartridge machines among broadcast users. The 5400C features advanced electronics which exceed 1975 NAB standards. In addition, it incorporates the precision Phase Lok V head block, Non-Repeat Lockout function, an innovative cartridge guidance system and heavy duty solenoids. Maintenance is a snap with plug-in decks and PC boards. For Record capability on deck three, the companion 5409C (mono) and 5410C (stereo) record amplifiers are available. For operation from 105/125 Vac, 60 Hz, or from 210/240 Vac, 50 Hz as specified.

## Model 5500C Five Deck



Model 5500C

Five playback decks in one machine — that's the 5500C. The 5500C offers handy Non-Repeat Lockout function, advanced electronics which meet or exceed 1975 NAB standards, a toroidal power supply transformer and the acclaimed Phase Lok V head block. A direct drive hysteresis motor guarantees years of dependable service. The 5500C is available in stereo or monaural versions with a standard stop tone or all three NAB tones. The top four decks slide out for convenient maintenance. For Record capability on deck five, the companion 5409C (mono) or 5410C (stereo) record preamplifiers are available. For operation from 105/125 Vac, 60 Hz or from 210/240 Vac, 50 Hz as specified.



## TAPE CARTRIDGE EQUIPMENT



### Model TD1B Tape Eraser

There's no longer any need to waste time on a bulk eraser that only does half the job. The TD1B, heavy duty, table top cartridge eraser handles reels up to 10.5 inches in diameter and 1 inch wide. Its durable construction is designed for punishment and includes automatic thermal overheat and transient protection. Operates from 115 Vac, 60 Hz or 220 Vac, 50 Hz as specified.

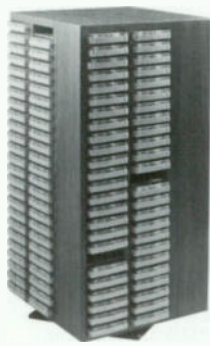
### Model PC1 Telephone Interface



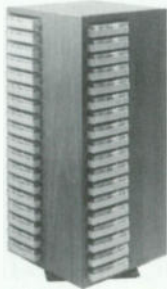
The PC1 Telephone Interface bridges the gap between listeners and on-air personnel. Connected between an incoming telco line and virtually any cart machine or B/E's DV2A, the PC1 will answer the phone, play a message, disconnect, then wait for subsequent incoming calls. The PC1 is ideal for weather

forecasts, movie and ticket information, school closings, social functions or practically any prerecorded message. Broadcast Electronics' PC1 includes automatic gain control circuitry and is FCC Part 68 registered.

### DM72 and DM200 Desk Mount Cartridge Storage Modules



DM200



DM72

Rotating, four-sided cart storage racks to enhance any studio. Both models feature an attractive walnut formica finish. The DM72 holds 72 cartridges, measures 22"H x 11"W x 11"D (55.8 cm x 27.9 cm x 27.9 cm) and weighs 30 lbs. (13.5 kg). The DM200 provides storage for 200 carts, measures 29.5"H x 15.75"W x 15.75"D (74.9 cm x 40 cm x 40 cm) and weighs 60 lbs. (27 kg).

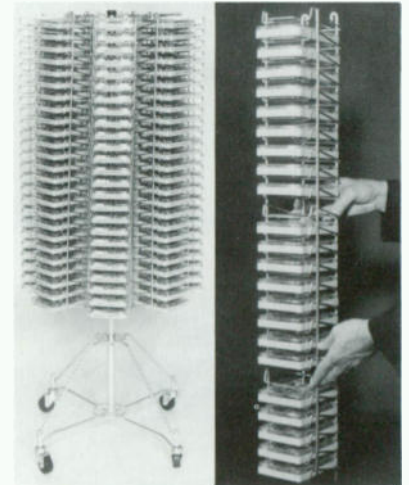
### Model TW120 Tape Cartridge Rewinder



Any station using cart machines needs the TW120. Broadcast Electronics' TW120 replaces worn tape easily and economically, without tying up conventional cart machines. The TW120 handles all reel sizes and operates at a fast 22.5 ips, winding old or new cartridges smoothly and evenly to the precise length and tension required. Operates from 117 Vac, 50/60 Hz or from 220 Vac, 50 Hz.

### LS200 Lazy Susan Cartridge Storage Racks

The LS200 rotating cart rack stores up to 200 carts within easy access. This mobile cart rack is constructed of heavy steel rods finished in zinc. Each individual RS25 rack section weighs 10 lbs. (4.5 kg) and is removable. The entire LS200 stand measures 51.25" H (130.1 cm), is 20.5" (52 cm) in diameter and weighs 60 lbs. (27 kg)



LS200

RS25 Rack Section



## DIGITAL RECORDER/PLAYBACK

Unlike tape machines, there are no moving parts in Broadcast Electronics' DV2A Digital Recorder/Playback machine. All recordings are stored in dynamic RAM memory for instant playback at the touch of a button. Over six minutes of recording time is available, to record one long message or as many as 79 individual shorter segments. A front panel display shows the message number and amount of recording time remaining. Stored messages may be played sequentially or individually. Outdated messages can be selectively erased and new messages recorded at any time. The DV2A features 50 to 6500 Hz frequency response, microphone or line level inputs, front panel headphone jack with level control, front panel pause control, input AGC and full remote control capability. Operates from 117 Vac, 60 Hz or from 220 Vac, 50 Hz as specified.

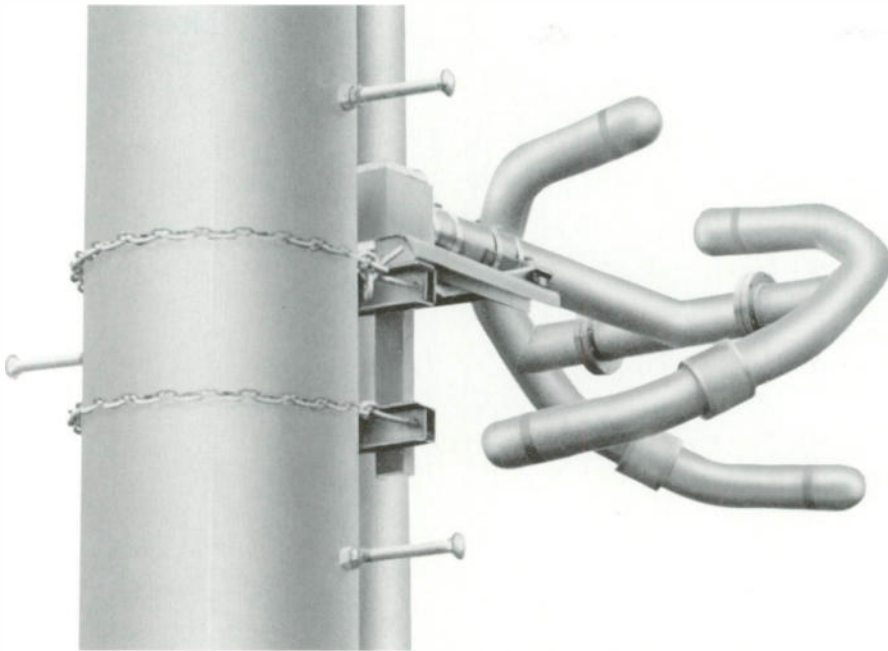
### Model DV2A Digital Recorder/Player



Model DV2A

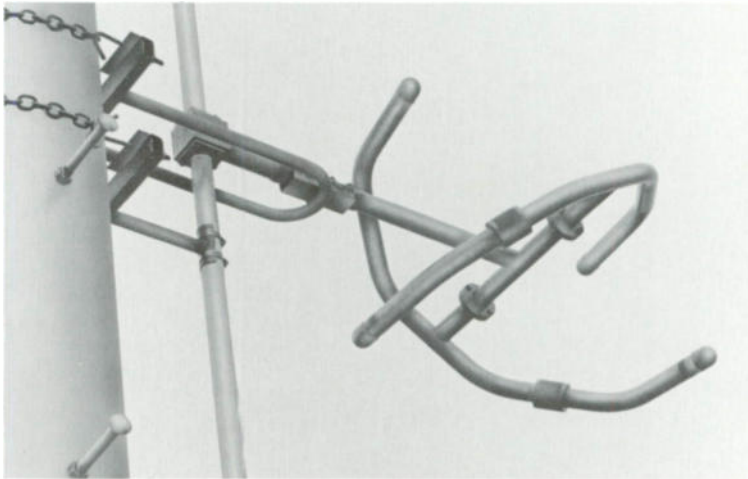
## BESP Super Power FM Antennas

The rugged construction and superb design of Broadcast Electronics' Model BESP Super Power circularly polarized FM Antenna will provide years of dependable service and performance. Because of their superior bandwidth characteristics, BESP's are ideal for common antenna, multi-station operations. BESP antennas feature brass radiating elements with each element rated from 32 to 40 kW. Broadcast Electronics offers three different BESP antennas. The "A" version is available in 3 1/8" end feed, 3 1/8" center feed or 6 1/8" center feed models for arrays of up to 16 bays. BESP "B" is available in 6 1/8" end or center feed versions for arrays of up to 12 bays. BESP "C" utilizes 6 1/8" end feed for arrays of up to 6 bays. Feed points are internal and well-shielded from weather related VSWR problems. When mounted to a pole at the top of a tower, the horizontally polarized radiation pattern is omnidirectional.



Broadcast Electronics' Model BESP Super Power, Circularly Polarized FM Antenna

## BEMP Medium Power FM Antennas

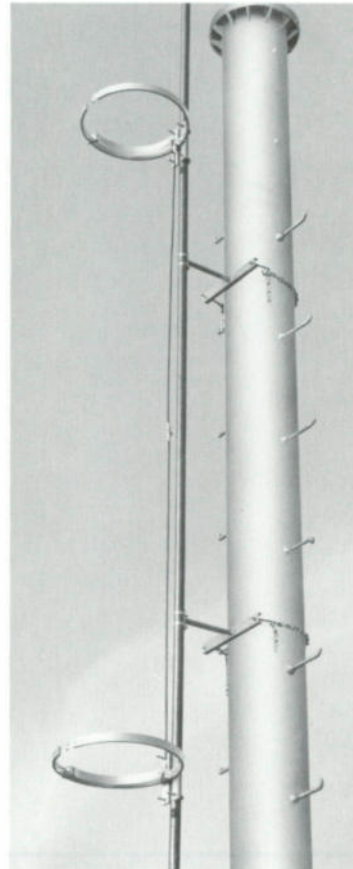


Broadcast Electronics' Model BEMP Medium Power Circularly Polarized FM Antenna

BEMP antennas are ideal for medium power applications with a power input capability conservatively rated from 9 to 12 kW. Available as end feed or center feed models, the BEMP features a broad bandwidth to minimize VSWR related signal problems. All BEMP antennas employ brass tubular construction in the radiating element and support stem. As a result, the BEMP can tolerate wind velocities of up to 150 mph. Each antenna is completely assembled and pretuned to the desired frequency prior to shipment. Deicers, radomes and pattern optimization options are available for the BESP and BEMP antennas.

## BELP Low Power FM Antennas

Broadcast Electronics' model BELP was specifically designed for low power applications from 10 to 800 watts. Horizontally polarized ring radiators assure an omnidirectional pattern in the horizontal plane. The BELP is available in 1, 2, 3 or 4 ring element configurations. In the multi-ring antennas, the vertical spacing between rings is one wavelength.



Broadcast Electronics' Model BELP Low Power Horizontally Polarized FM Antenna

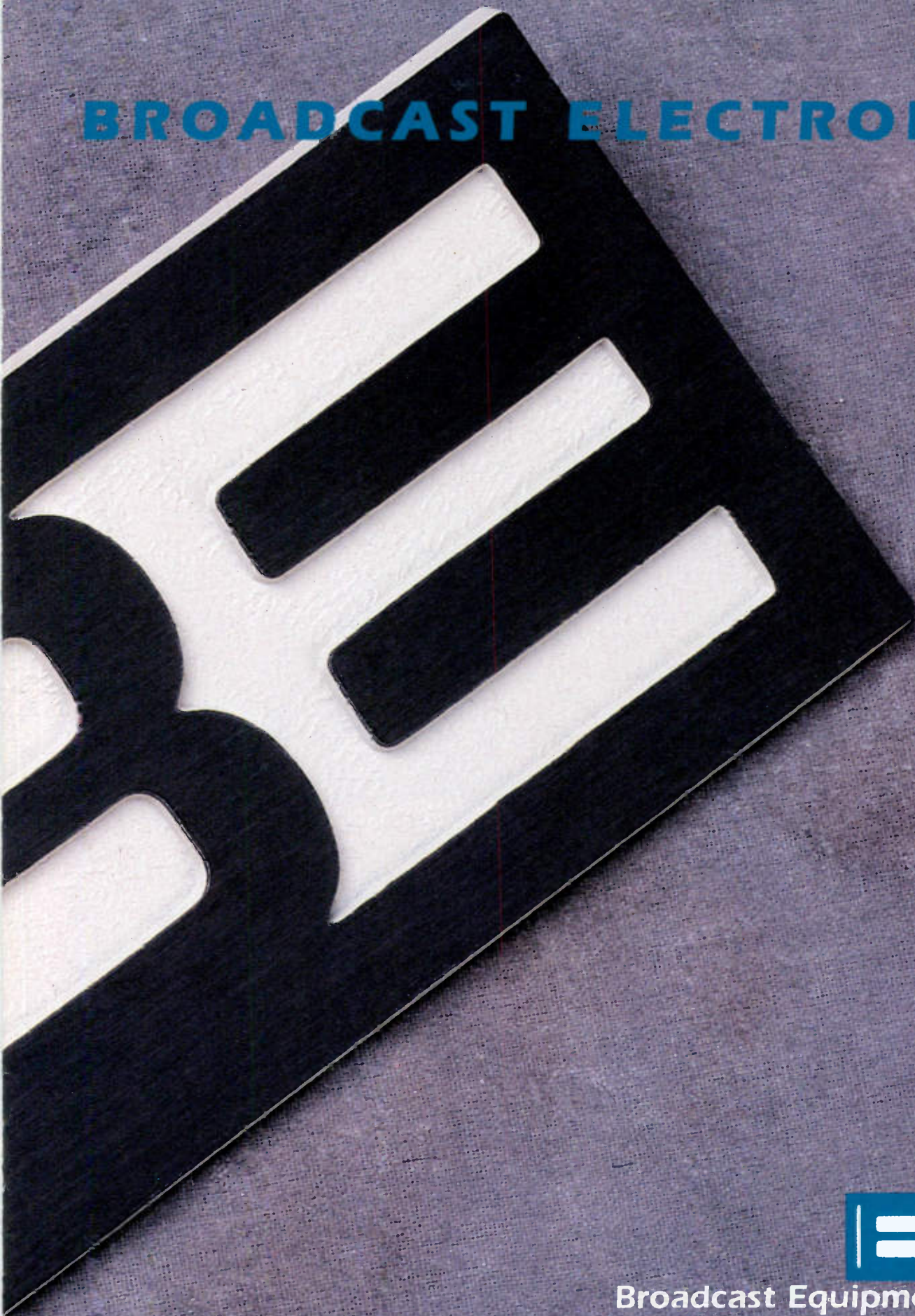
## Series 1105 FM Antennas

Series 1105 circularly polarized FM antennas are also available from Broadcast Electronics. The 1105 series meets the requirements of all Class A and most higher facilities. All brass and stainless steel construction for durability and strength. Low weight and windload parameters make the 1105 Series ideal for mounting on lightweight structures.



4100 N. 24th ST., P.O. BOX 3606, QUINCY, IL 62305-3606 U.S.A., PHONE: (217) 224-9600, TELEX: 250142, FAX: (217) 224-9607

# BROADCAST ELECTRONICS



Broadcast Equipment &  
Programming Catalog  
Condensed Edition 1994



Uncommon success is built on common ground. When we all know the goal and agree it is well-worth attaining, then we can work together as a winning team. That is the reason that Broadcast Electronics is a leader in the design, manufacture and supply of products and services for the worldwide radio broadcast industry.

We work with you to determine your needs and how best to accomplish your goals. It's the only way we operate, whether it's between customer and company representative, between design and manufacturing teams, between management and employee—even between what technology promises and how it can be applied to work for you. By sharing goals, networking knowledge and coordinating efforts, Broadcast Electronics is able to serve the worldwide radio broadcast industry more effectively. We are customer and market driven in all respects. That is why we operate as a team, joining our customers in an informal but dedicated partnership...the partnership for success.

As Broadcast Electronics evolved over the past 35 years, we have followed several cardinal rules, or basic beliefs:

**Success is Built on Service.** The Broadcast Electronics' staff of Studio, RF and Programming Specialists are totally

dedicated to providing superior service and support for our products and our customers. Our goal is to save you money, make you a leader, and keep you there competitively. It starts with pre-purchase consultation to assure optimum and cost effective systems design. Equipment selection, and our in-house or on-site training programs, equip your personnel with the technical knowledge they need to properly operate and maintain your Broadcast Electronics' equipment. Technical service and after the sale support is available to you 24 hours a day, 365 days per year. It all adds up to a dedication to your success.

**Reliability Can't be Compromised.** The deadliest sound in radio is silence. "You are off the air." At Broadcast Electronics we are committed to the highest standards of excellence in design, manufacturing, testing and after the sale support services. Our products are designed and built to that consistently high standard, never compromising reliability with cheap components, manufacturing and testing shortcuts or shoddy workmanship. We understand radio and your need for crisp, clear communications, 86,400 seconds per day, 365 days per year. You can rely on Broadcast Electronics for value—without compromise.



**Good Isn't Good Enough.** At Broadcast Electronics we stand by our products and our customers. That means conscientious engineering, assembly, manufacturing, programming and testing up front. And it means quick reaction when technical difficulties are encountered.

A case in point: When a problem developed with our new line of AM Transmitters, we tackled it immediately. By focusing the full attention of our engineering and service departments on finding a solution, the situation was quickly resolved. And in the process, we made other design improvements that resulted in a more efficient and reliable product. As a result, every AM Transmitter in the field was upgraded at no charge to our customers, whether it had experienced a problem or not.

By integrating craftsmanship, individual talents and dedication to teamwork, we deliver on our commitment to quality...because we know just being good isn't good enough.

**We Design for Tomorrow.** At Broadcast Electronics we're committed to maintaining industry leadership by developing advanced design products to meet tomorrow's radio systems' requirements today. For example, compare the features and benefits of our AudioVAULT series of Digital Audio Storage Equipment with other products available on the market today:

- Selectable sampling and compression rates (including a "no compression" option) by audio cut,
- Modular architecture providing systems for single radio station operations, to systems using advanced digital networking to support the most complex, multi-audio workstation configurations for LMA/Duopoly or group station operations,

- Use of advanced Digital Signal Processing, AES/EBU, SCSI, and Programmable gate array components that deliver audio quality specifications far above any other product, and that protects against obsolescence in today's rapidly advancing technical environment,
- User features including instantaneous playback, random-access search, satellite control, and time announce fully support your demanding mixed format environment, from Live Assist, to full station Automation.

No other competitive product offers the features set on such an advanced technical platform that will support a radio station's ever-changing needs. That's the Broadcast Electronics' philosophy that is implemented in every product we sell.

As a customer-driven company, Broadcast Electronics has adopted a philosophy that demands we measure our success through your eyes. To do this, each of us strives to meet these basic business objectives:

- To perform each of our jobs in a manner that significantly contributes to your success.
- To back every Broadcast Electronics' promise and product with an absolute commitment to quality performance.
- To lead the industry in innovative technology and products that exceed today's requirements and satisfy tomorrow's needs.
- To maintain complete customer satisfaction through service and support excellence.

At Broadcast Electronics philosophy is integrated with reality.

**Broadcast Electronics and You...  
The Partnership for Success.**





## FM TUBE TRANSMITTERS

Broadcast Electronics' line of single tube FM Transmitters represent the standard of excellence in the radio industry. With an installed base throughout the world, Broadcast Electronics' FM Transmitters have passed the test of time and have shown to be highly reliable and yield excellent performance in some of the harshest environments known to man.

From the dependable 5 kW transmitter to the powerful 35 kW models, all Broadcast Electronics single tube FM transmitters share the same level of quality engineering and features. Each model includes the low maintenance, patented folded half-wave cavity, which eliminates plate blocking and sliding contacts. Their solid state IPA's slide out for convenience and every Broadcast Electronics FM Transmitter contains the proven FX50 Exciter. Its low distortion level and reliability brings your operation up to digital quality standards and allows you to reap the benefits of new technology.

Each FM Transmitter features a high efficiency, single tube design and low noise, air cooled system for longer tube life. And as with all Broadcast Electronics products, each is backed by 24-hour factory service, 365 days a year.

### **FM 35B ■ FM 30B ■ FM 20B ■ FM 10B ■ FM 5B**

- Automatic proportional VSWR foldback
- Exclusive "Soft Start" feature
- Built in remote control interface
- Patented second harmonic suppressor and broad band input network
- Auto AC restart & power control
- Synchronous AM noise measurement port

Models FM 10B and FM 5B are available in single phase or three phase versions.



## FM SOLID STATE TRANSMITTERS

Broadcast Electronics' line of solid state FM transmitters represent the new generation of transmitters incorporating the latest in solid state RF technology. Ruggedly built for trouble free operation and long life, Broadcast Electronics Solid State Transmitters provide outstanding audio performance, efficient design and available dual configurations for ultimate reliability. And, as with all Broadcast Electronics' products, each is backed by 24-hour factory service, 365 days a year.

From 10 to 3000 watts, the series of Broadcast Electronics FM Solid State Transmitters are compact in design to allow for easy installation, or rack mount. The FM-1C and FM-500C come equipped with the industry leading FX50 Exciter and all solid state transmitters feature self-protected RF power modules.

### FM-100C ■ FM-500C ■ FM-1C

- Functional front panel controls with LCD display, status indicators and precision LED VU display
- Complete broadband RF amplifier requires no tuning or adjustment
- Minimal space requirements due to an internal low pass filter

- Broadband exciter with digitally programmed synthesizer
- Front panel replaceable RF module
- Easy to install, compact and rack mountable
- Automatic return to air after AC failure
- 2 year warranty

### FM2C and FM3C

Reliable, rugged and compact, the FM2C and FM3C solid state transmitters are the latest additions to the Broadcast Electronics' RF transmitter product line.

Both models employ the FM-100C Exciter, the standard by which all other exciters are judged. Their complete solid-state circuitry provides years of dependability, and front removable amplifiers provide a higher level of convenience.

- Redundant RF modules
- Redundant power supplies
- Front panel RF removable power supplies and modules
- Auto Restart after AC power failure
- Remote Control Interface
- Zero warm-up time
- Easy to read LED displays



# AM TRANSMITTERS

Broadcast Electronics' Solid State AM Transmitters are the latest in a series of innovative products for the worldwide broadcast industry. The AM transmitters incorporate the latest in solid state RF and switching power supply technology. All Broadcast Electronics' AM Transmitters incorporate C-Quam AM stereo, eliminating the need for costly "add-ons" and field installations and contain the patented, high efficiency Class E power modules that lower your electricity bills. These rugged modules are front panel accessible with a "plug-in" design unique to all Broadcast Electronics AM transmitters.

## **AM1 • AM 2.5 • AM 5 • AM10**

- "Star" combiner network providing uninterrupted operation, with minimal power loss and without the use of "dummy" or "bypass" modules
- Exclusive VSWR detection/foldback circuits to reduce annoying carrier interruptions from weather disturbances
- Rugged, single cabinet design and complies with IEC-215 safety requirements
- Five separate power levels to accommodate any AM station license's requirement
- Built-in output matching network

- Two sets of antenna equalization, along with mono/ stereo modes, can be switched by remote control
- The Broadcast Electronics AM5 and AM10 model transmitters are available in single phase and three phase versions

## **NEW AM 500**

Broadcast Electronics 500 watt AM 500 is the latest addition to our family of solid state AM transmitters. The AM 500 includes a built-in AM Stereo generator featuring C-QUAM AM Stereo. Plus the AM 500 can operate at five separate power levels to accommodate any station's license requirement.

The AM 500 is compact for easy installation yet is fully featured, exclusive VSWR detection and foldback circuit, and two sets of antenna equalization, which can be switched by remote control and includes remote switching of mono/stereo modes.





## R F S Y S T E M S

As today's radio industry continues to change, your needs change along with it. At Broadcast Electronics we are committed to meeting those needs. Over the past 35 years we have developed the knowledge and expertise to provide solutions to your product and systems requirements, whether they are as simple as the replacement of a cart machine or as complex as the building of a multi-station transmitter site. Our experienced staff can help design your studio or radio frequency transmission system and assist in the implementation of your plans.

Whether you are putting a new RF facility on line, changing locations, updating studios, or replacing worn out or outdated equipment, we can help you make a decision that offers the most comprehensive systems solution for your needs. Our qualified salespeople, assisted by our application engineers and technical support personnel, will review your needs and prepare a detailed proposal for your review.

Working with you, these experts will choose from the countless products available throughout the world today in order to satisfy your needs. Broadcast Electronics supplies on-site installation and training as well as providing technical support by telephone, 24 hours a day, 365 days a year.

Given the intense cost pressure in all phases of the radio industry today, you should investigate the most cost effective solution for each phase of your system. The investments you make are too important to risk less than optimum performance. The future of your station depends on the products that keep your station on the air and the systems that integrate these products.

At Broadcast Electronics we know what it takes for your system to be the best it can be, and are committed to work with you to obtain that goal.



# A M & F M T R A N S M I

## **FX50 Exciter**

The FX50 Exciter delivers unmatched audio performance and is a standard feature in most Broadcast Electronics' FM Transmitters. Ideal as a replacement for any exciter, the slide mounted FX50 can bring your existing FM transmitter up to digital quality standards. Its performance specs feature a dynamic range that rivals CD players with distortion levels so low they are literally unmeasurable.

With remarkable 93 dB signal-to-noise ratio, the FX50 can handle all the nuances of digital audio and its 60 watt MOSFET power device makes it the perfect exciter for even the most powerful transmitter. The FX50 can be operated as a stand alone 50 watt FM transmitter. N+1 option available.

## **FM-100C Exciter**

Besides being an economical solid state transmitter, the FM-100C also performs as a high quality and reliable Exciter in the new Broadcast Electronics' FM-2C and 3C Transmitters. Housed in a compact 7" rack mountable chassis, the FM-100C has slide mount rails for easy access. Front panel push buttons and a large, easy to read LCD multimeter provide display of all critical operating parameters; while LEDs provide display of operating status and overload conditions. The 100 watt MOSFET RF amplifier is fully open and short circuit protected.

## **FS30 FM Stereo Generator**

Together with the FX50 Exciter, the FS30 Stereo generator gives you the best stereo performance available, bar-none. Broadcast Electronics has included in its advanced design,

delay-equalized audio low pass filters for minimum overshoot without clippers or other non-linear circuits. There's also a front panel LED peak display, RFI protection and remote control capability. All of this in an easy to install configuration for multiplex systems.

## **FC30 SCA Generator**

Only 1.75" high, the SCA Generator fits neatly into your FM transmitter cabinet or separate rack. Its low noise characteristics are guaranteed and with its 67 kHz modulated oscillator, yield minimal distortion. The FC30 SCA Generator has RFI filtering and is DC coupled data input & AC coupled audio input. Memory logic retains operation mode during power interruption for up to one hour with automatic restart.

## **Microprocessor Video Diagnostic System (MVDS) Option with RC-1 Remote Control**

An available option in all Broadcast Electronics' FM Tube Transmitters, the MVDS gives you a visual check of all critical transmitter parameters. The MVDS displays information in either a tabular chart or bargraph format and, with the addition of a PC printer, can produce hard copy logs on demand or at regular intervals.

An easy-to-use software package, the RC1 monitors and controls most Broadcast Electronics' transmitters from just about anywhere. An MS-DOS compatible PC and modem are all you need to receive real time displays of Primary/Customer Configuration Screens. The RC1 program checks the system periodically or can be set for constant communication mode.



## T T E R A C C E S S O R I E S

### **VMC-16 Remote Control System**

With the VMC-16 Remote Control System you can continually monitor your transmitter, automation system, other remote sites or equipment using any standard dial-up phone line. You can provide control instructions through any standard touch tone telephone, and readings and data are relayed back to you by a human voice message!

The VMC-16 gives you two levels of password access to critical control functions, monitors up to eight conditions simultaneously, and can phone up to three emergency numbers. In addition, the VMC-16 monitors temperature, parameter tolerance and gives you 20 user definable input channels for status monitoring.

### **RBDS Coders**

The future is here and now. With the arrival of RBDS (Radio Broadcast Data System), FM broadcasters can now transmit digital information that allows receivers to act intelligently. Listeners with RBDS receivers will now be able to search for the best reception, be alerted for traffic reports and will be able to read station program types.

Broadcast Electronics offers RBDS coders that will allow your station to compete in this new age environment at a basic level that can later be expanded or with all the technology available with RBDS. Along with the Receiver/Decoder, these products provide an RBDS system that will put your station foremost on you customer's dial.

### **C-Quam Stereo**

#### **AX10 AM Stereo Exciter**

With Broadcast Electronics' AX10 AM Stereo Exciter, your station can broadcast true AM Stereo with richness and depth.

The AX10 Exciter is designed to produce second generation C-QUAM AM Stereo and is compatible with almost any existing AM transmitter. Superior stereo performance is offered through the AX10's use of independent, non-interfacing left and right channel digital modulators in an IF modulation configuration. The result is exceptional AM Stereo with full mono receiver compatibility.

#### **AS10 AM Stereo Modulation Monitor**

The AS10 Modulation Monitor from Broadcast Electronics assures your AM stereo transmission performs at its maximum level.

Unlike other monitors, the AS10 uses a single RF AGC system for tracking channel separation and guarantees consistent C-QUAM decoder performance. The AS10's digital pilot detector assures perfect stability and long term reliability. Available in 9 or 10 kHz channel spacing.



# S T U D I O   E Q U I P M E N T

## Audio Consoles

### Mix Trak 100 Modular Console

Of all the broadcast consoles in use today, the Mix Trak 100 from Broadcast Electronics is one of the most technically sophisticated and reliable made. Just ask any Mix Trak 100 user. This completely modular console provides the versatility to grow as your station grows while maintaining smooth and dependable on-air use. Choose a 12, 18 or 21 channel mainframe and with over 20 input auxiliary modules, you can custom build the console to match your specific needs.

- Voltage-controlled amplifiers on all audio controls
- Versatile talk-back system
- Separate music and speech program busses
- P&G Linear faders
- Independent Program & Audition Metering
- Individual Line and Microphone Input Modules
- Silent Hall Effect Switching
- Balanced Patch Points, stereo for line module, mono for microphone module
- Dual synchronous clock/timer

### Air Trak 90 Series Console

The Air Trak 90 Series studio console is simply one of the best performing and cost effective consoles on the market. And each AIR TRAK 90 is as reliable and flexible as the premium MIX TRAK 100 console from Broadcast Electronics. All controls are within easy reach for your operator with input/output selectors at the top. Each console features extensive noise filtering and Broadcast Electronics' pioneering logic hybrid technology.

- Available in 6, 8, 12, 18 or 24 channel consoles
- Stereo and mono program and audition outputs
- VCA audio controls
- Electronic switching and balancing
- Three inputs per channel
- P & G Linear fader
- Versatile talk-back system
- Dual Synchronous clock/timer
- Selectable phone mix-minus buss
- Selectable line or microphone input





# S T U D I O   E Q U I P M E N T

## **Mixers**

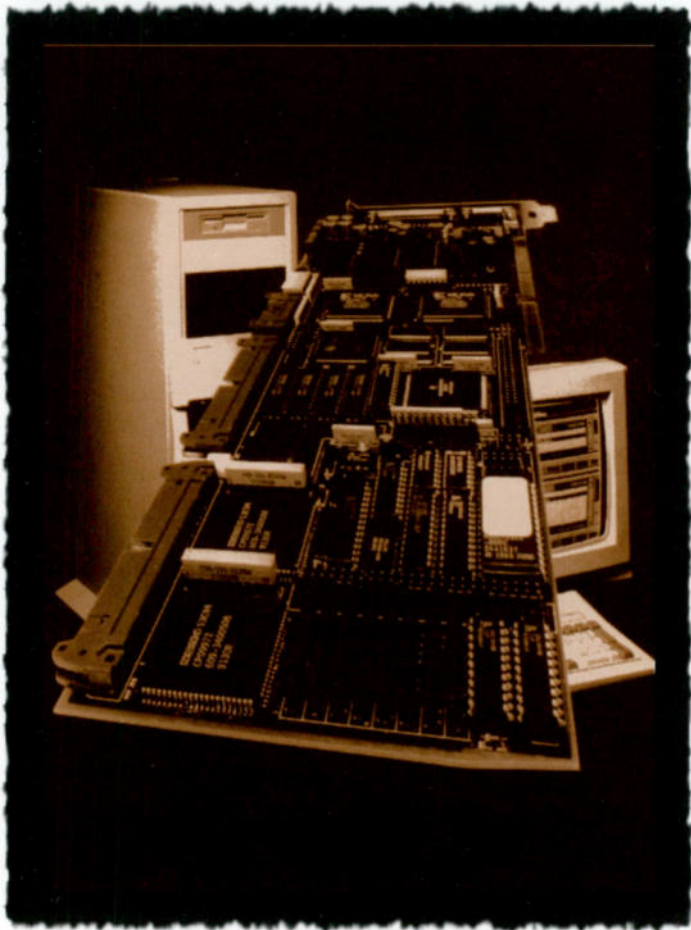
### **250A Stereo/ Mono Mixers**

The same attention to detail and quality craftsmanship found in Broadcast Electronics' transmitters is also part of our quality line of Rotary Control Studio Mixers. The 250A Stereo Mixer models come in 5, 8 and 10 dual channel consoles with advanced engineering features. All mixer controls are step-type, dual ladder attenuators and their plug-in preamp modules may be preset to accept either balanced, high-level sources, or balanced, low level microphones. Even the 250A Stereo mixer control panel is well thought out for operator ease, and is protected by a tough laminated polycarbonate overlay for durability.

Broadcast Electronics' 250A five and eight channel monaural mixers feature plug-in input preamp modules, ladder-type step attenuators (with cue detent) for long life, FET bus switching and an uncluttered, easy-to-use control panel. Every 250A Mono mixer also has four extra unwired switches to aid in your future expansion plans.

### **150A and 50A Series Mixers (Stereo and Mono Models)**

For excellent audio performance on an economical budget, the Broadcast Electronics 150A or 50A Series Mixers combine many features of the large Broadcast Electronics consoles in four, five or eight input mixer models. Stereo consoles feature two inputs per mixer, solid-state design and professional performance. Mono consoles handle the selection and level control/ mix up to eight sources, depending on the model chosen. Preamp circuitry can be preset to operate as either low-impedance mic preamps or to accommodate high-level sources. Both the 4M50A (mono) and the 4S50A (stereo) models are available with a portable option, ideal for remote broadcasts and other off-site applications.



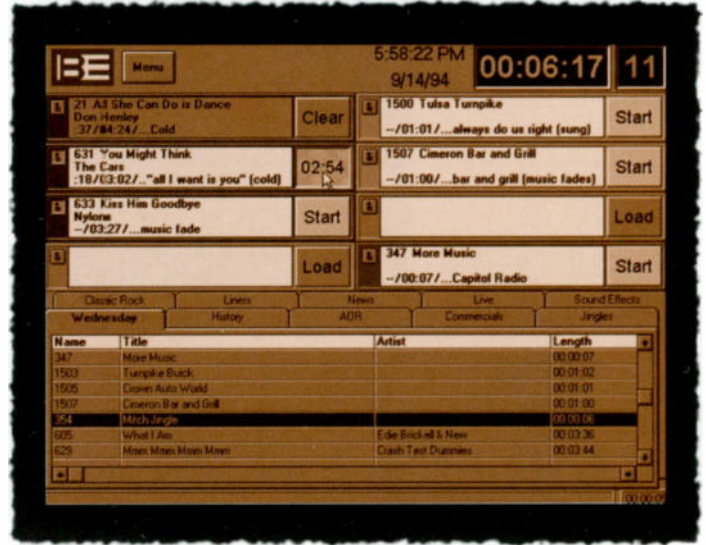
# D I G I T A L P R O D U C T S

## AudioVAULT

The AudioVAULT is a Modular Personal Computer (PC) based Digital Audio Storage System. With screens designed to resemble equipment you are already familiar with, the AudioVAULT is very user-friendly. With its multi-tasking capabilities, the AudioVAULT can run satellite programming, record new commercials, play the spot load in the on-air studio, and record the network news—all simultaneously. AudioVAULT combines the best of both worlds; the functionality of tape cartridge machines such as cut rotation and overlap as desired, with the advantages of Digital Audio; instant access, improved reliability and superior audio quality.

- MPEG-II Compression may be used on a cut-by-cut basis along with Selectable Sampling Rates. This allows optimal use of disk storage space while maintaining audio quality.
- Stand-alone operation of satellite delivered programming with complete cross fade and ducking control, is provided through AudioVAULT's internal mixer.

- Traffic and Billing logs can be imported and a log file can be sent back to Billing system for full, paperless integration. This eliminates wasted time and unnecessary mistakes associated with hand-typed logs.
- Record and Playback capabilities are tailored to each installation. Multiple users always have access to system inventory instantly and simultaneously.
- Windows™ environment allows the viewing and controlling of several "virtual cart machines" from one personal computer.
- Remote control inputs and outputs provide straightforward interconnection with other equipment such as audio consoles and automation systems.
- A variety of control devices, such as touch sensitive screen, track ball, dedicated control panel, or mouse can be used to operate the AudioVAULT.
- Integrated two-track cut-and-paste editor allows fast changes to any recorded material.



# D I G I T A L P R O D U C T S

## AudioVAULT Multi-Track Editor

Designed for advanced production capability, the AudioVAULT Multi-Track Editor is extremely powerful and has features not otherwise available in your production environment. This Windows™ based system is simple to learn and use. Over 200 systems are already in use worldwide.

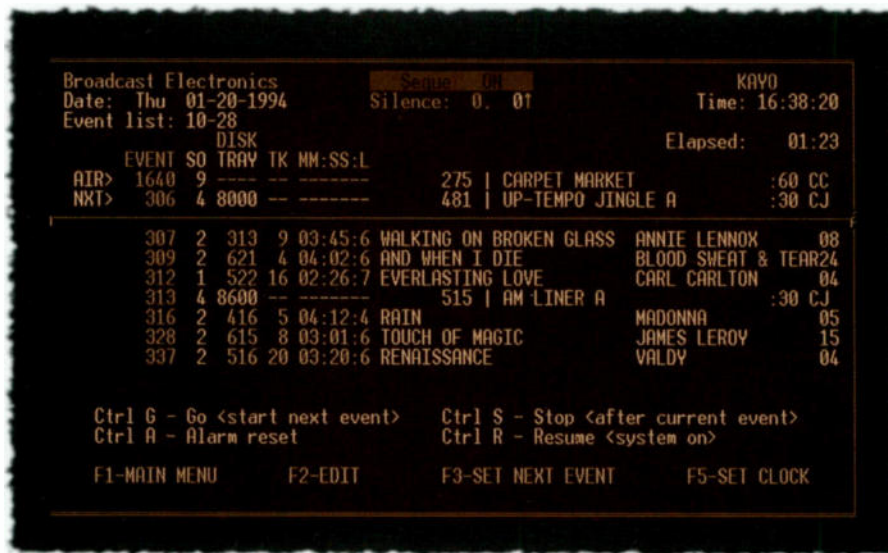
- Complete audio control including equalization, dynamic compression and expansion, noise gate, phase control, sample rate conversion, digital varispeed, and time compression-expansion.
- Real-time editing and 8x2, or 8x1 mixer.
- Full fade in, fade out control with many crossfade types, including linear, logarithmic, equal power, exponential.
- Standard digital input and output ports interconnect with AudioVAULT Digital Audio Storage Systems.
- Optional analog input/output board will allow connection to any audio equipment.

## AudioVAULT Live Interface and Music-On-Hard Drive

The combination of the AudioVAULT Live screen and music-on-hard-drive makes AudioVAULT the most flexible digital studio system yet devised. Here are some of its system's capabilities:

- Move seamlessly between live and automated operation.
- Powerful Live Studio Control: play up to sixteen events at once. Start network or phone recordings from the screen, manually or automatically.
- Music-On-Hard-Drive: instant access to all music, preview and edit capability, play-don't-play control, and much more.
- Unlimited rearrangement of songs, commercials and other events with intuitive drag-and-drop editing.
- Control everything with a touch screen, mouse, trackball, keyboard or console pushbuttons. Operate anywhere: a laptop at a remote or share control among several studios and workstations on a network.
- Unlimited "quickstart" screen buttons for jingles, sounds, record functions.
- Control other equipment, like routing switchers. AudioVAULT becomes a visual control center for your station (or stations).
- Select from several MPEG compression ratios for all audio cut by cut, including no compression at all.

Development and improvement of the AudioVAULT system is continuous. Check with Broadcast Electronics for the latest features and capabilities. Complete format specific music libraries are available for AudioVAULT from Broadcast Programming.



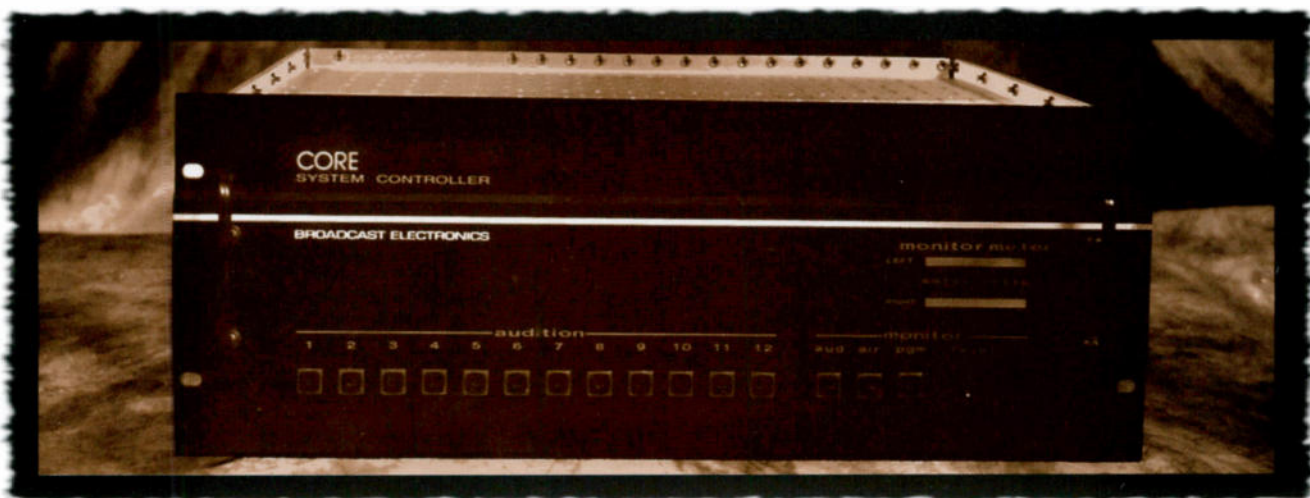
## D I G I T A L P R O D U C T S

### Format Sentry Broadcast Auto Controller

Introduced in 1985, the Format Sentry Automation Controller has been installed in hundreds of stations worldwide. The latest model, FS-12C, will control up to 108 source audio inputs. When used with inexpensive multi-CD decks, the Format Sentry provides very cost effective compact disc automation.

You receive cost effective format control, including CD's, network audio, and hard Disk Audio with the Format Sentry.

- Clear user interface, simple to program and operate
- Field proven reliability
- Interfaces with virtually all Traffic and Billing Systems
- Works with all audio sources, old and new
- Will run on almost any IBM or compatible PC
- Can be used with most Digital Audio Storage Systems
- Installation is quick and straightforward



# D I G I T A L P R O D U C T S

## CORE

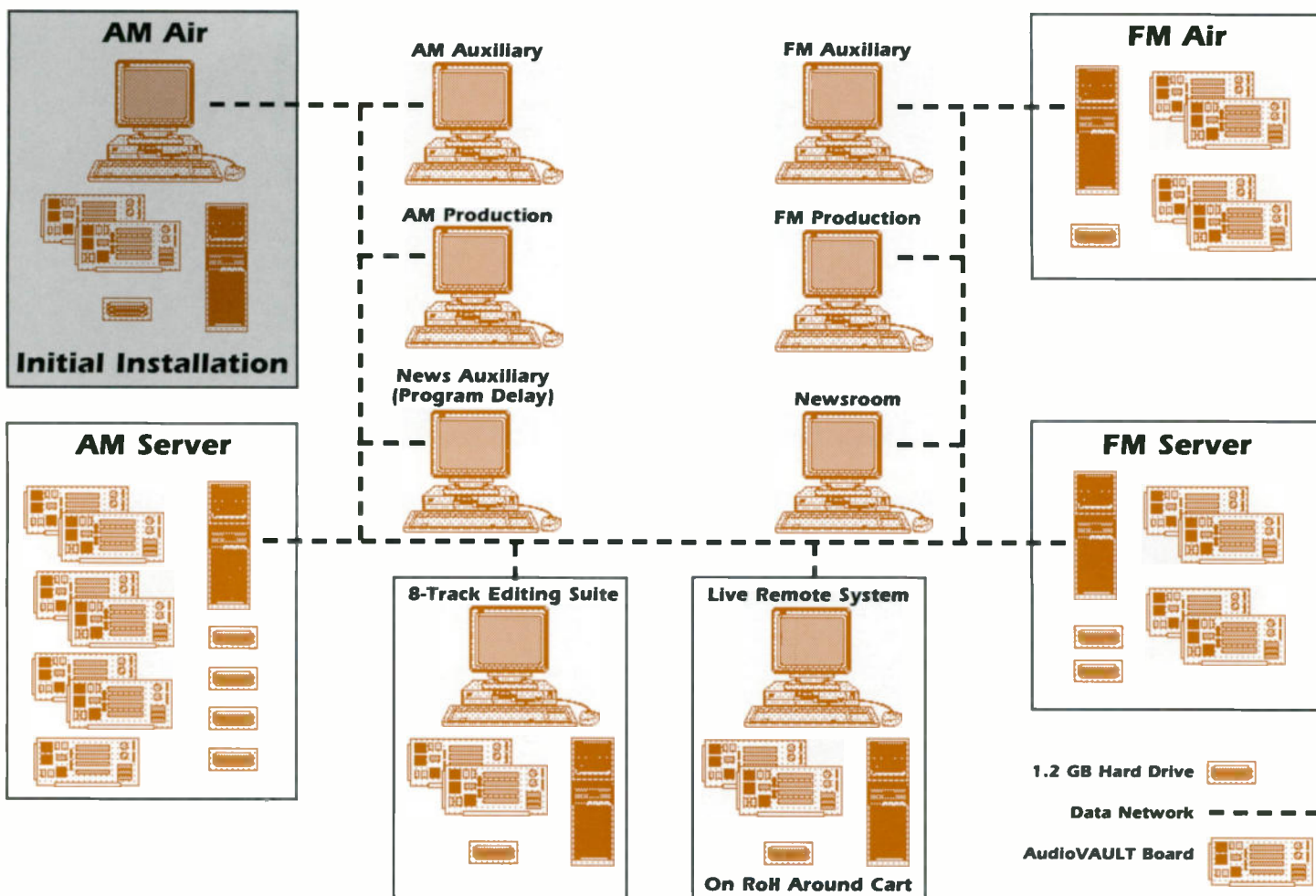
Broadcast Electronics' CORE (Computer Oriented Radio Environment) system is leading the industry with the most powerful automation controller available. CORE is designed to provide the security and processing power required for "walk-away" automation in most any market and environment.

Now you can automate without sacrificing programming quality...with CORE.

- Provides simultaneous addressability for up to 36 source inputs, each with machine and full audio control.
- Independent audio level control available for every individual cut.
- Unlimited event capability for long "walk-away" time.
- Compatible with the latest in audio source technology

and is easily adapted to future technologies, yet CORE will even run traditional sources such as SMC 250 carousels.

- Integrated computer database of all songs, commercials, jingles, liners, etc. with their complete names and descriptions—not just their ID numbers. Searching for a specific selection is simple!
- Fully compatible with the AudioVAULT Digital Storage System.
- Live-Assist operation is enhanced with features like intro countdown timers, estimated future start times, and the progress "time line" on the screen.
- Source shadowing allows back-to-back selection from all inventory in the music library, plus improved redundancy.



# D I G I T A L      S Y S T E M S

The advantages of today's digital technology are clear...improved productivity, reduced maintenance, and great audio quality. Good installations require good planning and support by experienced professionals. One of the benefits Broadcast Electronics offers is a comprehensive systems solution for your needs.

First, your specific project is discussed with qualified salespeople and applications engineers. A detailed proposal will then be presented for your review. Whether you are upgrading one room or networking your entire facility, experienced personnel will work with you to select from the largest array of digital technology products in the industry in order to properly meet your goals.

Once an order is placed, a customer service technician is assigned to your project. The various aspects of your installation are coordinated so that music scheduling, traffic and billing and day part formatting all come together as expected.

On-site installation and training are available. Certainly the best way to get up-and-running quickly, with the format sounding the way you like, is to take advantage of this service. Technical support is available by phone 24 hours a day, every day.

We at Broadcast Electronics believe that this commitment to provide the best service in the industry is a significant reason for the success of our products. Give Broadcast Electronics the opportunity to prove this to you.

For a complete programming package, consider one of the expertly programmed and fully-researched radio formats from Broadcast Programming, America's leading radio programming company. Add to that complete music libraries on compact disc to improve your station's productivity. See the programming services section for more information about Broadcast Programming, the programming division of Broadcast Electronics.



## T A P E   C A R T R I D G E   E Q U I P M E N T

### **DISC TRAK**

Broadcast Electronics' digital cart machine, DISC TRAK, employs inexpensive 3 1/2" floppy disks as removable media and is available in a single play (DC-10), single record/play (DC-10R), triple play (DC-30) or triple record/play (DC-300) deck. Its 16-bit linear technology delivers superior audio quality that matches that of CD, DAT and other digital sources.

- Available in both record/playback and playback only models
- Instant cueing up to eight separate tracks per diskette
- Playback options include single play, sequence and loop
- Auto recognition of sampling rate and stereo/mono selection
- Recognizes standard console start/stop logic commands

### **Dura Trak 90A**

The Dura Trak 90A cart machine offers sparkling audio performance at an affordable price point. Engineered to deliver long term durability, the Dura Trak 90A features a rugged direct drive DC servo motor, phase lok V headblock, standard fast forward and three cue tone sensing. Available in either a record/playback or playback only configuration, the Dura Trak 90A has a superior cartridge guidance mechanism and a 1/2" thick aluminum deck plate. Bottom line, the Dura Trak 90A is engineered to provide top quality sound and reliable operation.



## PROGRAMMING SERVICES

For over 30 years, Broadcast Electronics has been breaking new ground and engineering quality components for the radio industry's equipment needs. Our 24 hour a day customer support service, software support and training is unmatched. And the reliability of our products speaks for itself with literally hundreds of thousands of pieces in use around the world.

Now, Broadcast Electronics brings the same commitment to customer satisfaction and innovation to our newest product line—programming services. Broadcast Electronics has acquired North America's most complete and fully researched collection of proven music formats, programmed

day-to-day by top programmers/consultants at Broadcast Programming.



### BROADCAST PROGRAMMING

Broadcast Programming provides a spectrum of services to over 1,000 radio stations worldwide.



# Expertly Programmed Music Formats

The full range of music categories in fully researched formats, programmed song-by-song and delivered on AudioVAULT Hard drive, compact disc, or tape with playlists on floppy disk or paper for automation.

## COUNTRY

Today's newest stars with a contemporary feel or yesterday's classic hits in the traditional country mold - That's the diversification of the four Country formats available on compact disc from Broadcast Programming.

## ADULT CONTEMPORARY

A complete range of Adult Contemporary sounds, from today's most up-tempo AC hits to yesterday's mellow classics, are available on compact disc. Options include instrumental mixes.

## ADULT STANDARD

The music of yesteryear still sounds great today and continues to garner strong ratings. Digital Memory Music covers the period of music from the Swinging Forties to today's most melodic hits and is available on compact disc.

## LIGHT CONTEMPORARY

Four unique formats, featuring a variety of light vocals, easy listening or beautiful music, all available on compact disc.

## CHR

Digital CHR plays the biggest hits in America today! Aimed at the 18-34 demo, Digital CHR is the hottest sound around (on compact disc, of course!).

## OLDIES

Three digital formats program the all-time favorites from the rock era, be they #1 Top 40 singles or legendary album cuts...and all in perfect digital sound! The past has never sounded so good!

## CHRISTIAN

Programmed by a leading Christian consultant, our Digital AC Christian features current and recent up-tempo Adult Contemporary favorites in this innovative and uplifting format.



### Chartbreakers CD Music Service

Our CD music service, Chartbreakers<sup>SM</sup>, continues to be the most thorough and accurately programmed CD music source of its kind, including complete music libraries, recurrenents and our weekly hit service. Thousands of fully-researched titles that have never sounded better, due to our exclusive TrueSource recording process.



### BP Consulting Group

Intensive market analysis, up-to-the-minute research, weekly conference calls and the expertise of America's leading programmers/consultants are among the benefits supplied to customers of the BP Consulting Group.

## ONE COMPLETE PACKAGE OF PROGRAMMING & EQUIPMENT

Combine Broadcast Electronics' digital hardware and software, the variety of proven radio formats and services available, and our Chartbreakers<sup>SM</sup> music libraries, with our commitment to customer service, and watch your ratings go up. You can choose a complete programming package that is both affordable and flexible.



**BROADCAST ELECTRONICS, INC.**

4100 N. 24th ST., P.O. Box 3606, QUINCY, IL 62305-3606 U.S.A.

TELEX: 250142 CABLE: BROADCAST, PHONE (217) 224-9600, FAX (217) 224-9607

# BROADCAST EQUIPMENT CATALOG

## Condensed Edition 1990

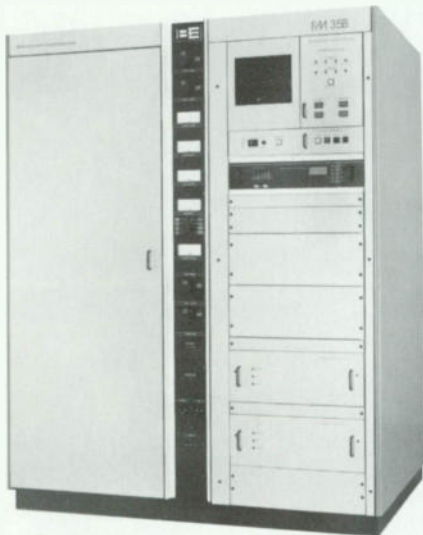




# FM TRANSMITTERS

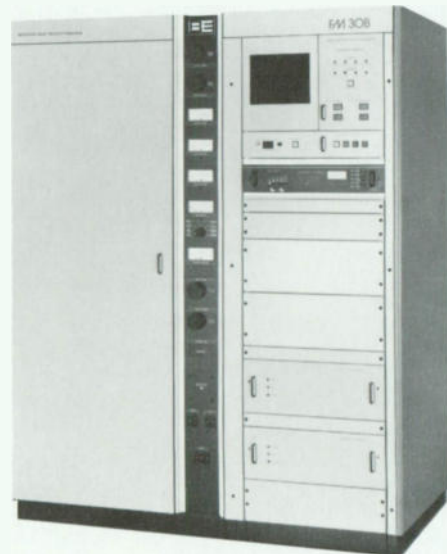
This powerful, single-tube thirty-five thousand watt transmitter represents the standard of excellence in high power FM broadcasting. The FM35B can deliver trouble-free service with its patented folded half-wave cavity (no troublesome plate blocking capacitors or sliding contacts), automatic proportional VSWR foldback and slide-out solid state IPA's. The FM35B transmitter employs the ultra-high fidelity FX50 Exciter and the 4CX20000C tetrode tube. This tube has the largest filament and anode of any tube used in ANY 35 kW transmitter. Operates from 208 V WYE, 240 V Delta, three phase, 60 Hz or from 380/415 V, three phase, 50 Hz as specified. FCC type notified to operate above 35kW.

## Model FM35B, 35 kW



## Model FM30B, 30 kW

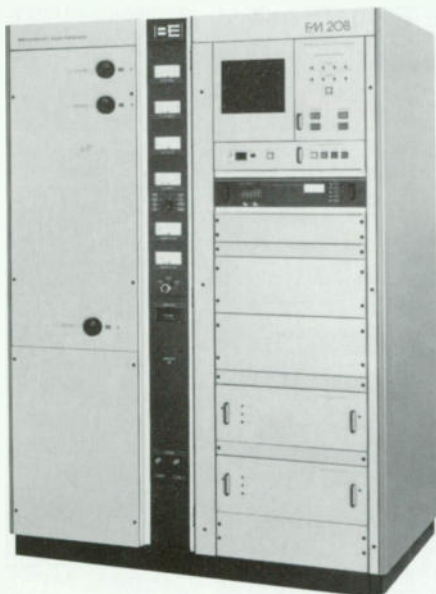
With its ultra-quiet air-cooling system, model FX50 exciter and state-of-the-art technology, the FM30B single-tube, 30 kW FM transmitter is a very popular transmitter for the 25-kW to 35 kW power range. The FM30B employs the long-life 4CX20000A tetrode tube and incorporates the patented folded half-wave cavity, digital controller, automatic proportional VSWR foldback and modular slide-out, solid state IPA's. Power source is 208 V WYE, 240 V Delta, three phase, 60 Hz or from 380/415 V, three phase, 50 Hz as specified.



For the ultimate reliability in high power output, Broadcast Electronics offers three Dual Transmitter Systems. The FM70B, FM60B and FM40B offer 70 kW, 60 kW and 40 kW of dependable RF output respectively. Each dual system is comprised of two identical high power transmitters (FM35B, FM30B or FM20B), driven by a single FX50 Exciter. Three different redundancy configurations with automatic exciter and transmitter switching are also available.

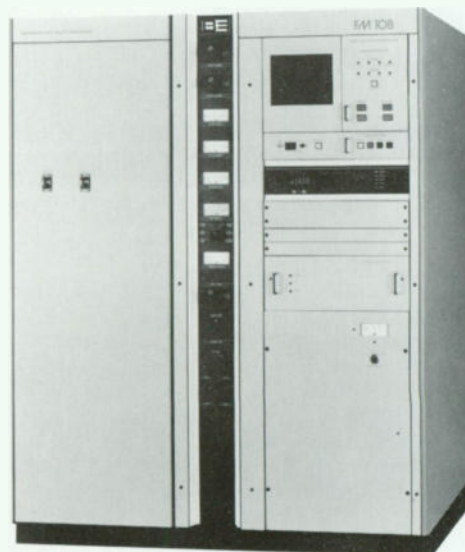
The single-tube, twenty thousand watt FM20B is one of the most popular models in Broadcast Electronics' line of full-featured FM transmitters. This 20 kW FM transmitter incorporates the FX50 Exciter for the utmost in audio performance. Among the unique features of the FM20B is its patented folded half-wave output cavity, its efficient 4CX12000A single tube design, modular slide-out IPA's and Automatic Power Control with proportional VSWR foldback system. Operates from 208 V WYE, 240 V Delta, three phase, 60 Hz or from 380/415 V, three phase, 50 Hz as specified. FCC type notified to operate from 7.5 kW to 22 kW.

## Model FM20B, 20 kW



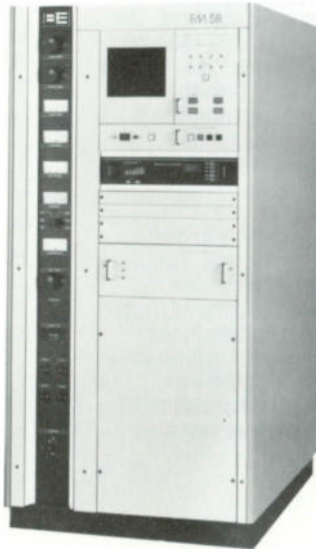
The single-tube FM10B transmitter is FCC type notified to operate from 4.95 kW to 11 kW. The FM10B incorporates the ultra-high fidelity FX50 Exciter, the reliable folded half-wave cavity, slide-out solid state IPA, automatic power control with proportional VSWR foldback (in a convenient slide-out assembly) and extensive metering. As a result of its advanced engineering, Broadcast Electronics' FM10B is the most quiet, most reliable 10 kW FM transmitter ever produced. Operates from 208 V WYE, 240 V Delta, three phase, 60 Hz or from 380/415 V, three phase, 50 Hz as specified.

## Model FM10B, 10 kW



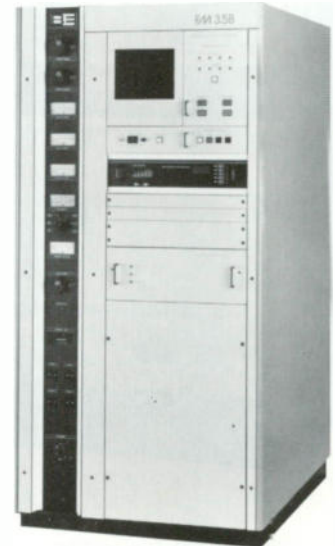
## Model FM5B, 5 kW

The FM5B has become a proven performer in broadcast stations worldwide. This five thousand watt transmitter (FCC type notified to operate up to 5.5 kW) utilizes B/E's FX50 Exciter and patented folded half-wave cavity. Its single tube 4CX3500A PA ensures reliability and long term operating economy. The FM5B is self-contained in a cabinet which is just 34.5" wide. With a built-in low pass filter, the FM5B is a cool operating, compact transmitter. Primary power requirements are 208/240 V, 50 or 60 Hz or 380/415 V, 50 Hz, three phase. For operation from a single phase power source, the model FM5B/S is available.



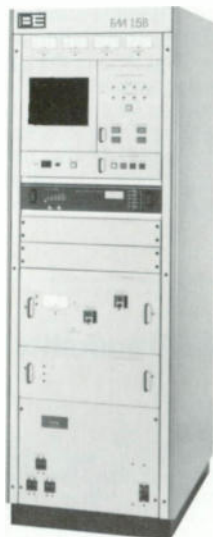
## Model FM3.5B, 3.5 kW

Utilizing the FX50 Exciter and Broadcast Electronics' patented folded half-wave cavity, the FM3.5B is conservatively rated with its single 4CX3500A output tube design. This widely used model has become a field proven, consistent performer offering a level of reliability unmatched by any other transmitter of its type. Power source is 208/240 V, single phase, 60 Hz or 50 Hz as specified. The FM3.5B transmitter is FCC type notified to operate from 1.5 kW to 3.8 kW.



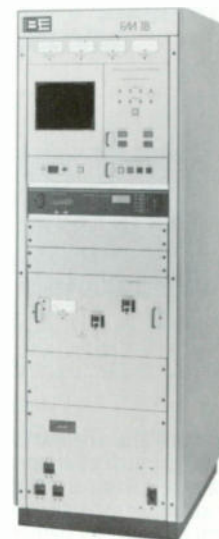
## Model FM1.5B, 1.5 kW

For a power output range of 500 watts to 1.65 kW, the FM1.5B offers powerful yet conservative performance in a small package. At just 5'10" high, this compact FM transmitter occupies only five square feet of floor space. The FM1.5B utilizes the FX50 Exciter and produces a conservative fifteen hundred watts with its single 3CX1500A7/8877 triode tube. The FM1.5B was designed for easy operation and maintenance. The entire PA stage (including the folded half-wave cavity) is contained in a slide-out drawer for instant accessibility. Operates from 208/240 V, single phase. 60 Hz or 50 Hz as specified.



## Model FM1B, 1 kW

Capable of 1100 watts output, the FM1B features a straight forward design that provides direct RF drive from the FX50 Exciter to the single-tube power amplifier stage. This practical design provides greater reliability and ease of maintenance. The FM1B uses a single Eimac 3CX1500A7 triode tube. Unlike solid state devices, this tube can withstand repeated overloads without damage. Other features include patented folded half-wave output cavity, Automatic Power Control with VSWR foldback and seven LED diagnostic indicators. Power source is 208/240 V, single phase, 60 Hz or 50 Hz as specified.





# SOLID STATE FM TRANSMITTERS

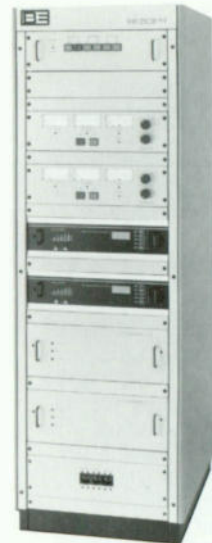
## 100, 250 and 400 Watt Solid State Transmitters



FM250B  
250 Watt FM Transmitter

Broadcast Electronics offers three low power, solid state FM transmitters to suit almost any broadcast requirement. The FM100B (100 W), FM250B (250 W) and FM300B (400 W) all employ the industry acclaimed FX50 Exciter. The FM100B and FM250B each utilize a single, solid state broadband amplifier. The FM300B uses a pair of 250 watt amplifiers (the outputs of which are isolated and combined) to produce up to 400 watts. Amplifier stages are mounted in convenient slide-out drawers for easy access.

Each solid state B/E transmitter is also available in dual transmitter or main/alternate main configurations. These include automatic power changeover systems which monitor operation and automatically switch to the alternate transmitter in the event of a malfunction. Built-in dummy loads permit easy testing of the off-air unit for maintenance purposes. All models are housed in 19" enclosed rack cabinets and include low pass output filters. For operation from 220 Vac, 60 Hz or 50 Hz power source as specified.

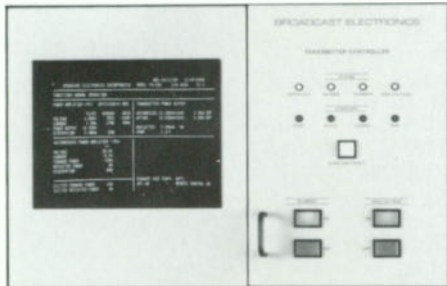


FM250B M/A  
250 Watt Main/Alternate Main  
FM Transmitter



# TRANSMITTER ACCESSORIES

## Microprocessor Video Diagnostic System (MVDS) Option

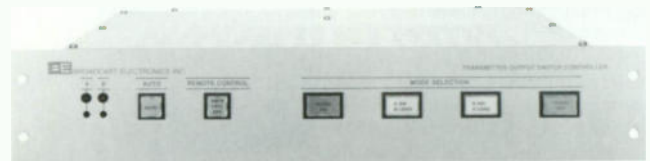


The Microprocessor Video Diagnostics System (MVDS) for Broadcast Electronics' B Series transmitters provides a visual display of all critical transmitter parameters in either tabular chart or bargraph form. This permits easy transmitter analysis and adjustment. In addition, MVDS can provide hardcopy logs on demand or at regular intervals with the addition of an inexpensive PC printer. MVDS is constantly alert for any abnormality. Its diagnostics will display the nature of a detected malfunction and its approximate location within the transmitter system. MVDS can also function as the primary transmitter controller, with the standard digital controller assuming the role of backup. This redundant capability provides a considerable enhancement to the overall reliability of the transmitter system. MVDS is available for use with all B/E "A" or "B" model FM transmitters, 1 kW and above.

## MVDS Remote Control (RC1)

The easy to use RC1 Remote Control software package allows full monitoring and control of B Series transmitters from virtually any location. Using an MS-DOS compatible computer and the appropriate hardware (e.g. modem), transmitters may be monitored and controlled via telco lines or an STL/SCA link. This program may be operated in periodic, dial-up contact or constant communication modes. The MVDS Remote Control package provides real time displays of Primary and Customer Configuration screens. Transmitter functions, such as Filament ON/OFF, High Voltage ON/OFF, RF Preset Power and Overload Reset, may be remotely controlled through a personal computer.

## FA2 Transmitter Output Switcher



Broadcast Electronics' FA2 Transmitter Output Switcher is designed to provide the greatest amount of redundancy through automatic transmitter switching in Main/Alternate Main transmitter configurations. Mode switching is accomplished manually through operation of the illuminated front panel switches, or automatically upon detection of a failure condition.

## FX 50 Exciter

The FX50 Exciter delivers truly unmatched audio performance and is standard in all "B" series transmitters. With typical signal-to-noise ratio a remarkable 93 dB, the FX50 offers a dynamic range rivaling that of CD players. Typical harmonic and intermod distortion is less than 0.003%. The completely broadband FX50 is truly transparent to the broadcast signal. The slide-mounted FX50 is the ideal retrofit for quick and easy upgrading of any existing FM transmitter. With its 60 watt MOSFET power device, the FX50 is the perfect exciter for even the most powerful transmitter. All important operational parameters are monitored and displayed on the FX50's front panel via a digital LCD multimeter and LED status panel. For operation from 97/133 Vac or from 194/266 Vac, 50/60 Hz.



### FS30 FM Stereo Generator



Teamed up with the FX50 FM Exciter, the digital FS30 Stereo Generator provides the very best stereo performance available. Included in its advanced design are linear, delay equalized audio low pass filters for minimum overshoot without the use of clippers or other non-linear devices. Additional features include a front panel LED peak modulation display, RFI protection, composite baseband equalization and remote control capability. For operation from 97/113 Vac or from 194/266 Vac, 50/60 Hz.

### FC30 SCA Generator



The FC30 SCA Generator guarantees low FM noise and high operational stability. Distortion is minimized with its 67 kHz modulated oscillator. Other available frequencies include 39, 41, 92 and 95 kHz. Quality features include extensive RFI filtering, an LED peak modulation indicator and convenient front panel test jacks. The controlled delay muting design of the FC30 is compatible with today's SCA receivers. Operates from 97/113 Vac or from 194/266 Vac, 50/60 Hz.

## C-QUAM<sup>®</sup> AM STEREO

### AX10 AM Stereo Exciter



The highly advanced AX10 AM Stereo Exciter incorporates a second generation C-QUAM<sup>®</sup> digital design and is compatible with almost any existing AM broadcast transmitter. The AX10 offers truly superior stereo performance through the use of independent, non-interfacing left and right channel modulators in an IF modulation configuration. The AX10 is fully monaural compatible. The Broadcast Electronics AX10 also provides such standard features as independent switch selectable equalization networks (for two transmitter or dual antenna pattern operation) and remote control capability. Operates from 117 Vac or 220 Vac, 60 Hz or from 50 Hz as specified.

C-QUAM<sup>®</sup> is a registered trademark of Motorola, Inc.

### AS10 AM Stereo Modulation Monitor



Maximum performance from any AM stereo transmission system is assured with the AS10 Modulation Monitor. The AS10 utilizes fast response LED indicators and large, easy-to-read meters (with auto-ranging capability). Advanced design innovations include RF AGC for optimum C-QUAM<sup>®</sup> decoder performance, high stability digital pilot detection, reduced overshoot for accurate modulation level measurement and front panel audio outputs for easy transmitter alignment and proof of performance. The AS10 is compatible with any C-QUAM<sup>®</sup> AM Stereo system. For operation from 117 Vac, 50/60 Hz.

C-QUAM<sup>®</sup> is a registered trademark of Motorola, Inc.



## TV STEREO (MTS)

### TZ30 TV Stereo Generator with SAP and PRO Generators



The TZ30 is an advanced, second generation Multichannel Sound System MTS generator incorporating a digital pilot generator, digital modulator and genuine dbx® encoder card. Audio filtering of both L and R as well as L+R/L-R channels minimizes crosstalk and guarantees excellent stereo separation. For TV Stereo configuration with audio processing requirements, Broadcast Electronics offers complete packages designed to complement the TZ30. The TZ30 can be easily interfaced with the Broadcast Electronics TS30 SAP (Second Audio Program) Generator and/or the TP30 PRO (Professional Channel) Generators. These generators expand an MTS system to offer profitable audio/data subchannel capabilities. For operation from 110/120 Vac or from 220/240 Vac, 50/60 Hz.

dbx® is a registered trademark of dbx Corporation

### TZ30 Audio Processing Package



Aphex "Compellor"



Aphex "Dominator"

For those who desire a completely pre-packaged TV stereo system, Broadcast Electronics offers the TZ30/Aphex Audio Processing Package. This high performance system consists of a TZ30 TV Stereo Generator, interface card, Aphex Compellor compressor-leveler-limiter and Aphex Dominator three-band peak processor. The Compellor audio processor simultaneously delivers transparent compression, leveling and peak limiting. The Dominator fully complements the Compellor's average level processing. Both units utilize intelligent circuitry so accurate results are achieved with just a few convenient operator adjustments.



## PROGRAM AUTOMATION EQUIPMENT

### Control 16x

With the superb performance of the Control 16x, it's difficult to tell whether programming is live or automated. The Control 16x offers full program automation at a very competitive price. Innovative features include an expanded video log display, complete business system interface with full two-way communications, automatic system re-sync in the event of an AC power failure and processor resetting without reprogramming. The Control 16x also includes expanded format control with "event" and "compare time" functions. The "direct start" capability of the Control 16x is the easy, reliable alternative - regardless of the format used. Operates from 115/240 Vac, 50/60 Hz.



### Econo 16

Broadcast Electronics' Econo 16 automation system is an economy version of the highly acclaimed Control 16x. The microprocessor-based Econo 16 is field expandable to a full Control 16x system. This allows the Econo 16 to grow as a station's needs increase. The Econo 16 has many of the same features as the Control 16x, including live assist capability. The Econo 16 can handle up to 2000 distinct programming events and 10 repetitive compare times. For operation from 115/240 Vac, 50/60 Hz.



### SAT 16

For satellite delivered formats, the Sat 16 is the answer. The Sat 16 is specifically designed to handle "direct start" satellite formats, where all local breaks and station I.D.'s are initiated via the satellite downlink. With the memory capacity of the Sat 16, a full twenty-four hour program schedule can easily be entered in a single session. The Sat 16 system can also be conveniently expanded at any time. Operates from 115/240 Vac, 50/60 Hz.







Model MT90-21

With its uncompromised level of audio performance and numerous customer-preferred features, Broadcast Electronics' Mix Trak 90 is one of the finest "on-air" broadcast consoles available today. The MT90 Modular Console incorporates the versatility and flexibility of modular engineering for smooth, efficient and reliable broadcast use. Available as a 12, 18 or 21 channel mainframe, each MT90 can be fully customized by selecting from more than 14 different Input and auxiliary modules. As a station grows, the Mix Trak 90 console can be easily and conveniently expanded as well.

## MIX TRAK 90™ MODULAR CONSOLE

Each Mix Trak 90 module measures a full 2" wide, resulting in a cleaner, less cluttered console arrangement and fewer on-air mistakes. Voltage-Controlled Amplifiers are used on all audio controls, including monitor and headphone gain. These VCA's extend the life of heavily used controls, reduce maintenance time and allow special operational features such as remote gain control.

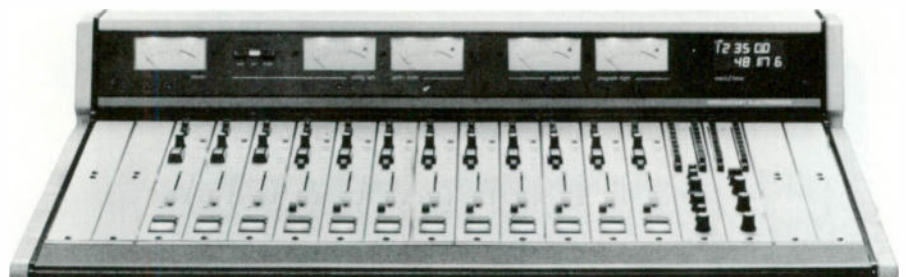
Mix Trak 90 users agree, this is one highly engineered and technically sophisticated "on-air" broadcast console. Operates from 115/230 Vac, 50/60 Hz.

### Features

- Exceptional Audio Performance
- Three Mix-Minus Busses
- Separate Music and Speech Program Busses
- Automatic Source Sequencing
- Penny & Giles Linear Faders
- Advanced Modular Design
- Total VCA Audio Control
- Independent Program and Audition Metering
- Electronically Balanced and Floating Output Busses
- Versatile Talkback System
- Monitor Dim Function
- Individual Line and Microphone Input Modules
- Silent Hall Effect Switching
- Balanced Patch Points



Model MT90-18

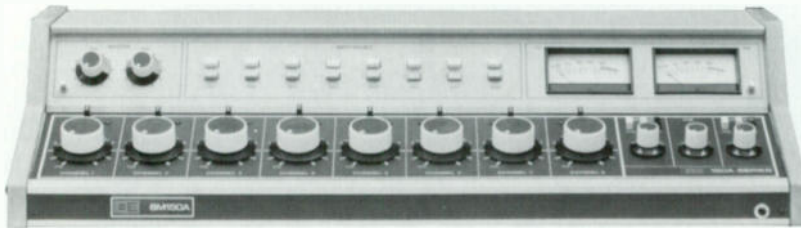


Model MT90-12



# AUDIO CONSOLES

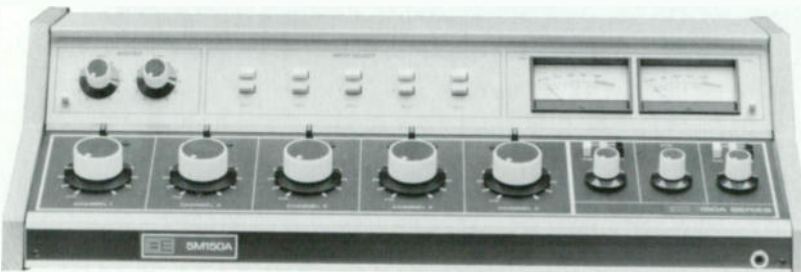
## 150A SERIES MONO/STEREO



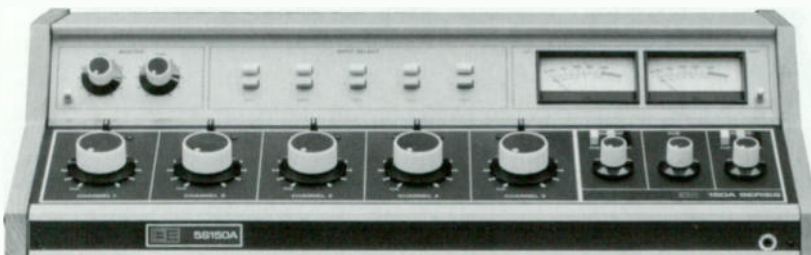
Model 8M150A



Model 8S150A



Model 5M150A



Model 5S150A

### 8 Mixer

The 8M150A (dual channel monaural) and 8S150A (stereo) consoles offer sharp styling and superior performance. The two-tone technical white/gray finish adds a touch of elegance to these popular consoles, while their advanced electronic design assures years of dependable service. Each of the eight mixing controls in the 8M150A/8S150A utilize conductive plastic attenuators for silent operation. Detent cueing is employed on each control when set to the full counterclockwise position. All plug-in preamplifiers may be pre-set for microphone or line level input service with two interlocking pushbuttons providing source selection for each channel. Separate headphones and monitor amplifiers are also included. Front panel graphics are protected by a polycarbonate laminate overlay. This tough protective surface makes it virtually impossible to scratch the panel or wear away its lettering. 115 Vac, 50/60 Hz standard; 230 Vac, 50/60 Hz optional.

### 10 Mixer (not shown)

Elegantly styled in new two-tone technical white/gray with solid oak end bells, the ten channel 10M150A (dual channel monaural) and 10S150A (stereo) consoles are ideal for the active studio environment. Like their smaller 150A Series cousins, the 10M150A and 10S150A feature full response, low distortion and professional performance. These consoles are supplied with one relay for a speaker muting/warning light (an optional second relay is available). Stereo models also accept an optional plug-in mono matrix card. Channel key switches and telephone type with roller cams for long life and silent operation. 115 Vac, 50/60 Hz standard; 230 Vac, 50/50 Hz optional.

### 5 Mixer

The Model 5M150A and 5S150A consoles offer high performance, five channel capability. The 5M150A (dual channel monaural) and 5S150A (stereo) consoles employ high quality plastic attenuators for noise-free operation at an economical price. Identical plug-in preamplifier modules (pre-settable for microphone or line input) feature gold-to-gold contacts. Electronic gated FET bus selection is silent and fast. Source selection for each mixer is provided through the use of two interlocking pushbuttons. Pre-mixer cueing is easily accomplished by setting the attenuator controls to their fully detented, counterclockwise positions. Separate headphone and monitor amplifiers are also included. All of these quality features combine to make the 5M150A/5S150A consoles the perfect choice for virtually any application. B/E's two-tone technical white/gray finish and solid oak end bells enhance the elegance of these consoles. 115 Vac, 50/60 Hz standard; 230 Vac, 50/60 Hz optional.

## 250A SERIES DELUXE DUAL CHANNEL MONO/STEREO



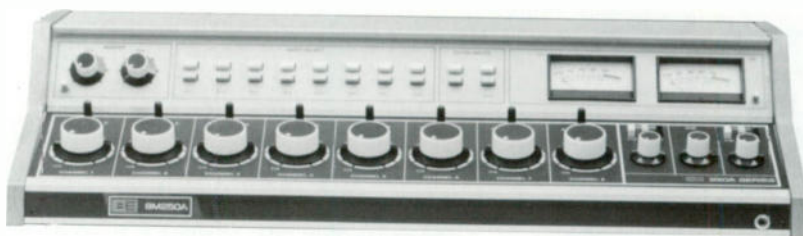
Model 5M250A



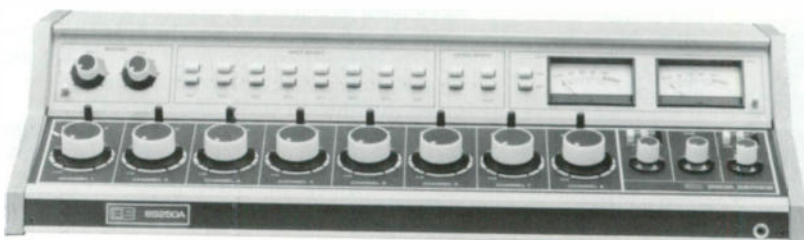
Model 5S250A

### 5 Mixer

Outstanding in both appearance and reliability, the 250A Series consoles are deluxe in every way. The five mixer 5M250A (monaural) and 5S250A (stereo) consoles offer superior performance in an attractive, two-tone technical white/gray design with solid oak end bells. Both the monaural and stereo versions feature dual channel capability. Step-type ladder attenuators are used in each channel for precise level control and trouble-free service. Channel key switches utilize telephone-type roller cams for long life and silent operation. Three muting relays are included. Series 3600 plug-in amplifiers provide superb response with low noise and distortion. The overall layout is clean and uncluttered for easy operation. A laminated polycarbonate overlay protects the front panel graphics from scratches and wear. 115 Vac, 50/60 Hz standard; 230 Vac, 50/60 Hz optional.



Model 8M250A



Model 8S250A

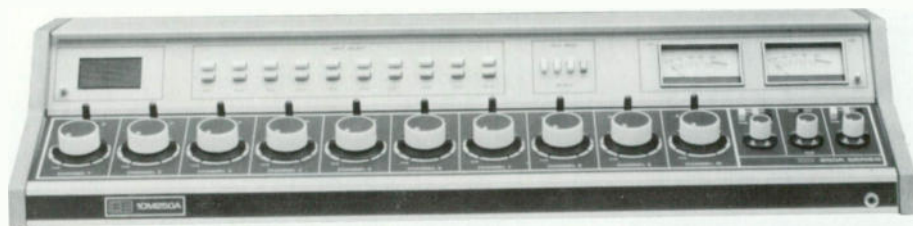
### 8 Mixer

The 8M250A (monaural) and 8S250A (stereo) consoles offer all the features included in Broadcast Electronics' 5 channel consoles, plus the added versatility of eight channel operation. Like the other 250A Series consoles, the 8M250A and 8S250A feature B/E's two-tone technical white/gray finish with solid oak end bells. Both the mono and stereo consoles are equipped with the required monitor, cue and headphone amplifiers. A sum-derived mono matrix output is optional for stereo models. As with the five channel versions, each mixing channel utilizes step-type ladder attenuators for precise level control. Channel key switches are telephone roller cam type for long life and silent operation. Series 3600 plug-in amplifiers are utilized for superior low noise, low distortion characteristics. The front panel is protected by a polycarbonate laminate overlay, virtually impervious to wear. 115 Vac, 50/60 Hz standard; 230 Vac, 50/60 Hz optional.

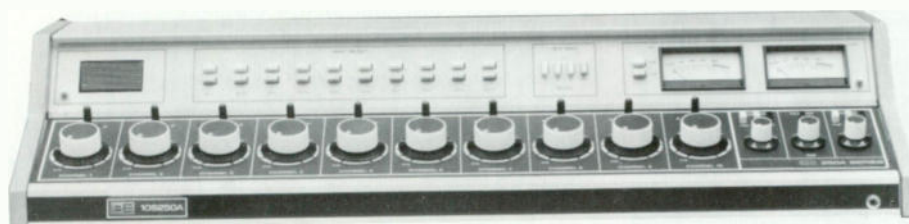


# AUDIO CONSOLES

## 10 MIXER SERIES 250A CONSOLES



Model 10M250A

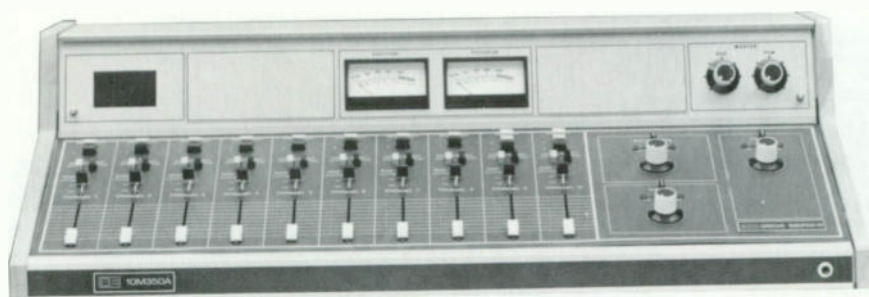


Model 10S250A

### 10 Mixer

The versatile 250A Series represents the ultimate in state-of-the-art rotary console design. Series 250A consoles feature Broadcast Electronics' attractive two-tone technical white/gray finish with solid oak end bells. The 10S250A (stereo) accommodates twenty inputs into ten mixing channels and features identical line level stereo and audition output channels with VU meter switching to either stereo pair. The mixing controls are step-type, dual-ladder attenuators. Channel selection is accomplished with silent, telephone-type cam switches. Series 3600 plug-in amplifiers are included for outstanding audio performance and easy serviceability. The 10S250A is pre-wired to accept an optional plug-in module for applications which require a summed L+R mono in addition to the stereo program outputs. A monaural model (10M250A) is also available. For operation from 115 Vac, 50/60 Hz standard; 230 Vac, 50/60 Hz optional.

## 10 MIXER VERTICAL FADER SERIES 350 CONSOLES



Model 10M350A Dual Channel Mono Outputs



Model 10S350A Dual Channel Stereo Outputs

### 10 Mixer

Broadcast Electronics Series 350A offers full featured vertical fader consoles at an economical price. Two models are available: the 10M350A (dual channel monaural) and 10S350A (stereo). Both feature ten mixing channels (twenty-two inputs) controlled by Penny and Giles vertical precision faders. All faders include a bottom detent "drop cue" for easy cueing of each individual source. Full fidelity loudspeaker and headphone monitoring is included for output channels and cue bus audio. The 10S350A stereo console includes separate Right and Left channel VU metering for both Program and Audition buses (four meters total). The monaural 10M350A console employs two separate Audition and Program VU meters. Both models incorporate 3600 series plug-in amplifiers for superb response with low noise and distortion. Operates from 115 Vac, 50/60 Hz standard; 230 Vac, 50/60 Hz optional.



## 4 MIXER SERIES 50A CONSOLES



Model 4M50A

### Model 4M50A Monaural

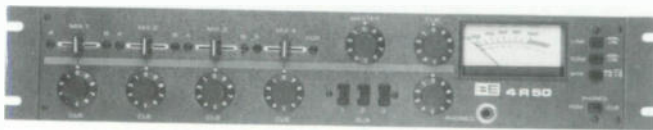
Broadcast Electronics' 4M50A is a compact four channel console ideally suited for production or on-air use. Like the larger B/E consoles, the 4M50 features the attractive technical white/gray styling with solid oak end bells. Four mixers each accept two switch selectable inputs. In addition, each preamplifier can be wired for microphone or line level input. Speaker and headphone amplifiers are included to monitor console output, cue bus audio or external audio. Each attenuator is equipped with a detent cue position feeding a built-in cue speaker, the output of which is controlled by a muting relay. Optional rack adaptors permit mounting in any EIA standard 19" rack. 115 Vac, 50/60 Hz standard; 230 Vac, 50/60 Hz optional.



Model 4S50A

### Model 4S50A Stereo

This four mixer, twelve input stereo console features quality performance at a very economical price. Broadcast Electronics' technical white/gray finish and solid oak end bells complement the Series 50A superior electronic design. The 4S50A is simple to install and easy to operate. All faders have individual detent cueing, and all preamplifiers are level selectable. The 4S50A also features individual monitor, headphone and cue amplifiers. 115 Vac, 60 Hz standard; 230 Vac, 50/60 Hz optional.



Model 4R50

### Model 4R50, Rack-Mount Mixer

Featuring transformer balanced inputs, model 4R50 is designed for unique applications which require a rack-mounted, four channel mixer. TV studios, CATV, CCTV, film studios, commercial sound, remote broadcast and dubbing facilities have found the 4R50 to be the perfect choice. The 4R50 even features a public address amplifier output. Broadcast Electronics' 4R50 console has four mixers (sealed pots with cue detents). Three channels accept two inputs (selectable high or low level) with the remaining channel accepting a single switchable input plus three high level inputs. Monitoring capabilities include a switchable VU meter, headphone amplifier and muted cue amplifier/speaker. 115 Vac, 60 Hz standard; 230 Vac, 50 Hz optional.

### Turntables 2 and 3 Speed

Broadcast Electronics has manufactured thousands of the model 12C (three speed) and model 12C2 (two speed) turntables, originally pioneered by QRK. Over 30,000 of these professional turntables are used by broadcast stations around the world. 115 Vac, 60 Hz standard; 230 Vac, 50 Hz optional.



### Tone Arms



Precision tubular construction, perfect balance and a rugged chrome finish make the Rek-O-Kut tone arm a top choice for heavy duty service. Available in 12" (Model S-320) style.

## STUDIO EQUIPMENT

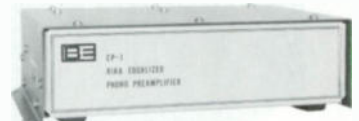


### BETMS 100 and BETMS 200 Turntable Preamplifiers



BETMS 100 and BETMS 200 dual channel turntable preamps are the perfect blend of quality and economy for mono or stereo cartridges. The BETMS 200 features transformer output. Power source is 100/135 Vac, 50/60 Hz standard; 200/270 Vac, 50/60 Hz optional.

### EP1 and EP2 Turntable Preamplifiers

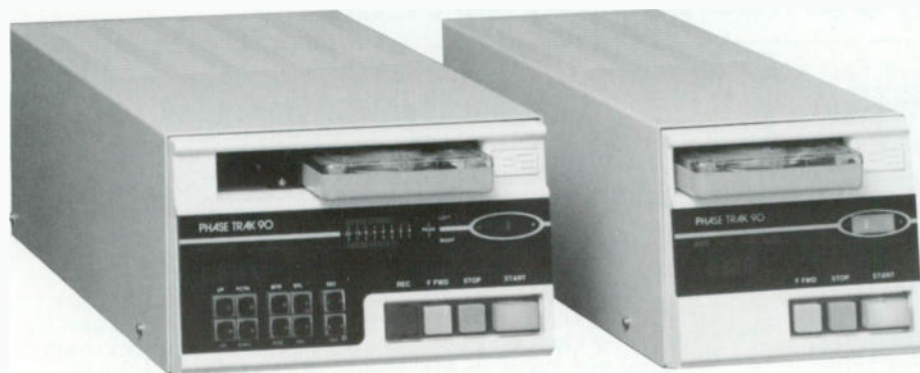


When superb sound is the priority, the EP Series turntable preamplifiers are the solution.

The EP Series offers unmatched RFI protection, exceptional S/N performance and an excellent -70 dB channel separation. The EP1 provides a 600 ohm transformerless balanced output, while the EP2 utilizes high quality output transformers for 150/600 ohm balanced floating outputs. Operates from 115/230 Vac, 50/60 Hz.



# TAPE CARTRIDGE EQUIPMENT



Model PT90RPS  
Stereo Record/Playback

Model PT90PS  
Stereo Playback

## Phase Lok V

Every Broadcast Electronics' cartridge machine includes the Phase Lok V head block. Only the Phase Lok V offers long term stability and precise azimuth adjustment that is totally independent of height or zenith adjustments.



## PHASE TRAK 90™

**CONTINUOUS, NON-ENCODED  
ELECTRONIC PHASE CORRECTION**

Broadcast Electronics' Phase Trak 90 is the most advanced cartridge machine on the market. Available in record/playback or playback only models, the PT90 exceeds the most demanding production and performance standards of today's broadcast professional. With such exclusive features as tape analysis with "learn" mode and continuous, non-encoded electronic phase correction, the Phase Trak 90 cart machine is changing the production and playback standards of the broadcast industry. Each Phase Trak 90 is manufactured for years of dependable service with a 1/2" machined aluminum deck plate. The precision, die-cast front panels are professionally styled and ergonomically designed for ease of operation. Operates from 105/132 Vac, 50/60 Hz standard or from 210/264 Vac, 50/60 Hz optional.

## DURA TRAK 90™

**RUGGED, RELIABLE PERFORMANCE**

Each Dura Trak 90 cartridge machine delivers sparkling clean audio performance and is available in mono or stereo, record/playback or playback only configurations. There's no waiting for a cart to cue because Fast Forward is standard. Start, Stop and Fast Forward pushbuttons are Hall Effect switches for improved reliability. A superior cartridge guidance mechanism, 1/2" machined aluminum deck plate, direct-drive motor and ultra-rugged mechanical design add up to years of trouble-free service. Operates from 105/132 Vac, 60 Hz, or from 210/264 Vac, 50 Hz as specified.



Model DT90RPS  
Stereo Record/Playback

Model DT900S  
Stereo Playback

## SPLICE TRAK 90™

**SPLICE FINDER/ERASER**

Accurate cart preparation is essential for the optimum performance of any tape. Utilizing many of the same advanced components as B/E's Phase Trak 90 and Dura Trak 90 machines, the Splice Trak 90 makes cart preparation fast, easy and reliable. At 27.5 ips, the ST90 zips through a cart. Dual heads thoroughly and uniformly erase any NAB standard cart to a typical erasure depth of 90 dB. After erasure, the splice is automatically positioned. Virtually 100% accurate, B/E's Splice Trak 90 detects the variance in splice thickness instead of employing the less reliable optical scanning method. Operates from 117/230 Vac, 50 Hz or 60 Hz as specified.



Model ST90

## Series 2100C Record/Playback Stereo



Model 2100CRPS



Model 2100CRP

With over 10,000 in service, users everywhere recognize that the Series 2100C offers the best value in cart machines. Along with the precision Phase Lok V head block and 1/2" machined aluminum deck, each 2100C offers advanced electronics (which meet or exceed 1975 NAB standards), two standard cue tones and flat response, long life heads. The 2100C also includes a direct drive synchronous motor, superb electronics and quiet, low voltage DC solenoid. The 2100C is available in mono or stereo models, and accepts A or B size cartridges. Operates from 105/125 Vac, 50 Hz or 60 Hz or from 210/240 Vac, 50 Hz or 60 Hz as specified.

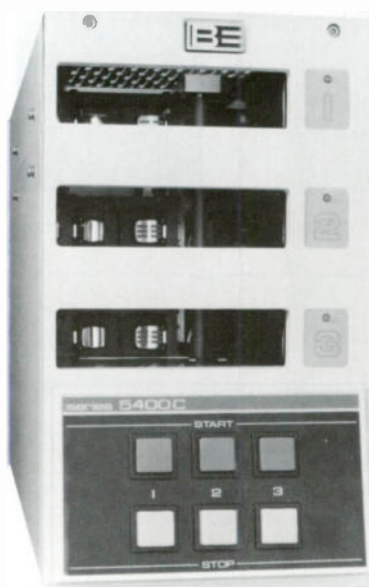
## Model 5300C Three Deck



Model 5300C

The 5300C is a rugged, heavy duty, full featured three deck machine for A and B size carts. Its advanced mechanical design incorporates 1/2" machined aluminum decks and employs an internal bulkhead for accurate deck and capstan positioning. Additional features include the Phase Lok V head block, Non-Repeat Lockout function, electronics which meet or exceed 1975 NAB standards and powerful air damped solenoids. For Record capability on deck three, the companion 5309C (mono) or 5310C (stereo) record amplifiers are available. Operates from 105/125 Vac, 60 Hz, or from 210/240 Vac, 50 Hz as specified.

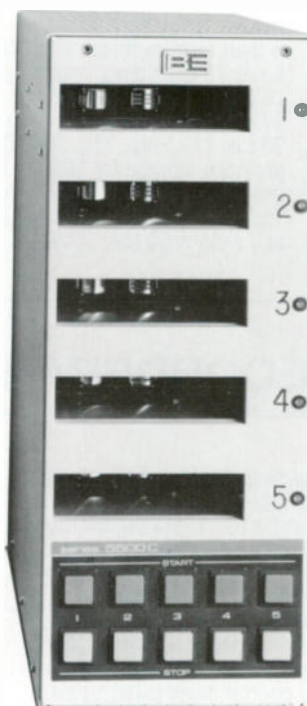
## Model 5400C Three Deck



Model 5400C

Broadcast Electronics' 5400C is one of the most respected multideck cartridge machines among broadcast users. The 5400C features advanced electronics which exceed 1975 NAB standards. In addition, it incorporates the precision Phase Lok V head block, Non-Repeat Lockout function, an innovative cartridge guidance system and heavy duty solenoids. Maintenance is a snap with plug-in decks and PC boards. For Record capability on deck three, the companion 5409C (mono) and 5410C (stereo) record amplifiers are available. For operation from 105/125 Vac, 60 Hz, or from 210/240 Vac, 50 Hz as specified.

## Model 5500C Five Deck



Model 5500C

Five playback decks in one machine — that's the 5500C. The 5500C offers handy Non-Repeat Lockout function, advanced electronics which meet or exceed 1975 NAB standards, a torodial power supply transformer and the acclaimed Phase Lok V head block. A direct drive hysteresis motor guarantees years of dependable service. The 5500C is available in stereo or monaural versions with a standard stop tone or all three NAB tones. The top four decks slide out for convenient maintenance. For Record capability on deck five, the companion 5509C (mono) or 5510C (stereo) record preamplifiers are available. For operation from 105/125 Vac, 60 Hz or from 210/240 Vac, 50 Hz as specified.



## TAPE CARTRIDGE EQUIPMENT



### Model TD1B Tape Eraser

There's no longer any need to waste time on a bulk eraser that only does half the job. The TD1B, heavy duty, table top cartridge eraser handles reels up to 10.5 inches in diameter and 1 inch wide. Its durable construction is designed for punishment and includes automatic thermal overheat and transient protection. Operates from 115 Vac, 60 Hz or 220 Vac, 50 Hz as specified.

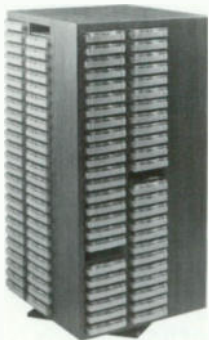
### Model PC1 Telephone Interface



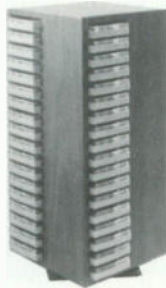
The PC1 Telephone Interface bridges the gap between listeners and on-air personnel. Connected between an incoming telco line and virtually any cart machine or B/E's DV2A, the PC1 will answer the phone, play a message, disconnect, then wait for subsequent incoming calls. The PC1 is ideal for weather

forecasts, movie and ticket information, school closings, social functions or practically any prerecorded message. Broadcast Electronics' PC1 includes automatic gain control circuitry and is FCC Part 68 registered.

### DM72 and DM200 Desk Mount Cartridge Storage Modules



DM200



DM72

Rotating, four-sided cart storage racks to enhance any studio. Both models feature an attractive walnut formica finish. The DM72 holds 72 cartridges, measures 22"H x 11"W x 11"D (55.8 cm x 27.9 cm x 27.9 cm) and weighs 30 lbs. (13.5 kg). The DM200 provides storage for 200 carts, measures 29.5"H x 15.75"W x 15.75"D (74.9 cm x 40 cm x 40 cm) and weighs 60 lbs. (27 kg).

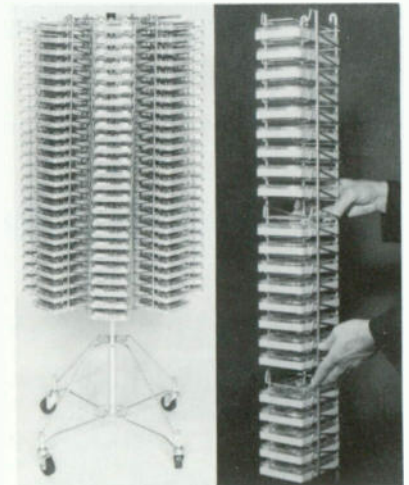
### Model TW120 Tape Cartridge Rewinder



Any station using cart machines needs the TW120. Broadcast Electronics' TW120 replaces worn tape easily and economically, without tying up conventional cart machines. The TW120 handles all reel sizes and operates at a fast 22.5 ips, winding old or new cartridges smoothly and evenly to the precise length and tension required. Operates from 117 Vac, 50/60 Hz or from 220 Vac, 50 Hz.

### LS200 Lazy Susan Cartridge Storage Racks

The LS200 rotating cart rack stores up to 200 carts within easy access. This mobile cart rack is constructed of heavy steel rods finished in zinc. Each individual RS25 rack section weighs 10 lbs. (4.5 kg) and is removable. The entire LS200 stand measures 51.25" H (130.1 cm), is 20.5" (52 cm) in diameter and weighs 60 lbs. (27 kg)



LS200

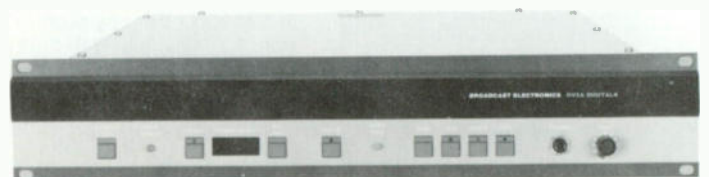
RS25 Rack Section



## DIGITAL RECORDER/PLAYBACK

Unlike tape machines, there are no moving parts in Broadcast Electronics' DV2A Digital Recorder/Playback machine. All recordings are stored in dynamic RAM memory for instant playback at the touch of a button. Over six minutes of recording time is available, to record one long message or as many as 79 individual shorter segments. A front panel display shows the message number and amount of recording time remaining. Stored messages may be played sequentially or individually. Outdated messages can be selectively erased and new messages recorded at any time. The DV2A features 50 to 6500 Hz frequency response, microphone or line level inputs, front panel headphone jack with level control, front panel pause control, input AGC and full remote control capability. Operates from 117 Vac, 60 Hz or from 220 Vac, 50 Hz as specified.

### Model DV2A Digital Recorder/Player

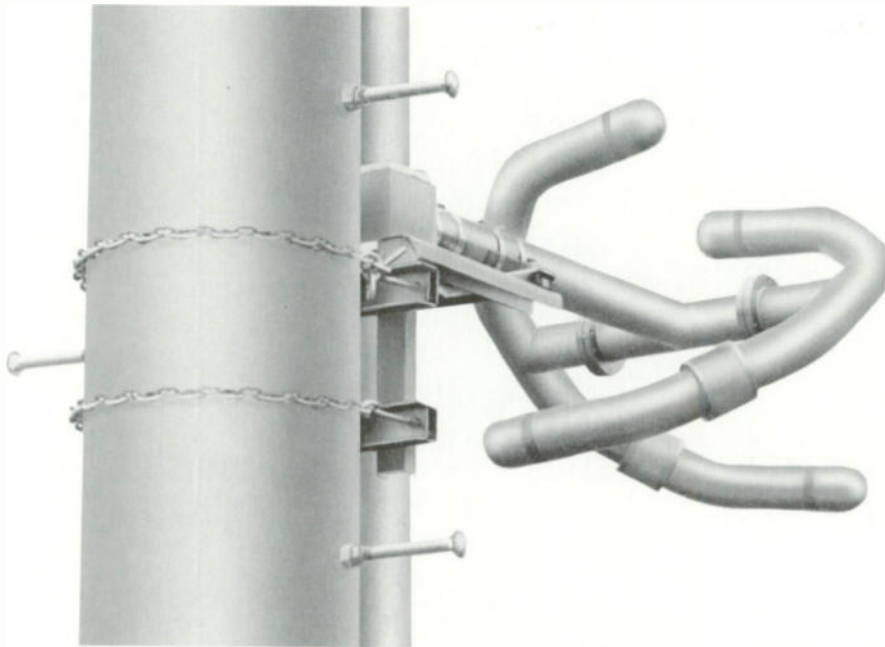


Model DV2A



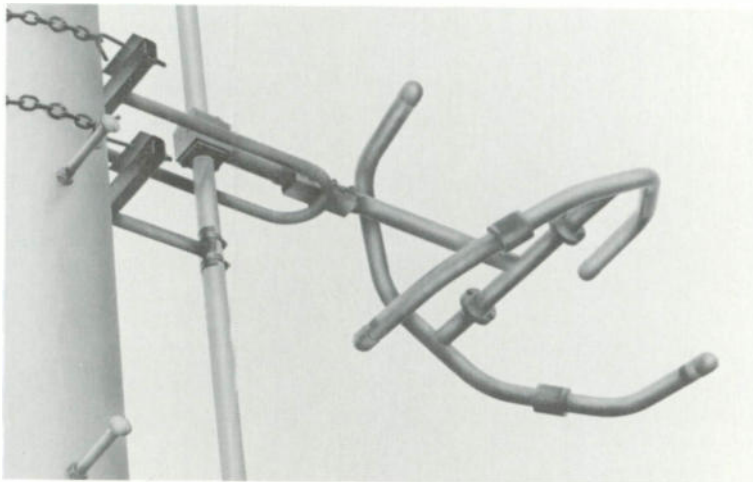
## BESP Super Power FM Antennas

The rugged construction and superb design of Broadcast Electronics' Model BESP Super Power circularly polarized FM Antenna will provide years of dependable service and performance. Because of their superior bandwidth characteristics, BESP's are ideal for common antenna, multi-station operations. BESP antennas feature brass radiating elements with each element rated from 32 to 40 kW. Broadcast Electronics offers three different BESP antennas. The "A" version is available in 3 1/8" end feed, 3 1/8" center feed or 6 1/8" center feed models for arrays of up to 16 bays. BESP "B" is available in 6 1/8" end or center feed versions for arrays of up to 12 bays. BESP "C" utilizes 6 1/8" end feed for arrays of up to 6 bays. Feed points are internal and well-shielded from weather related VSWR problems. When mounted to a pole at the top of a tower, the horizontally polarized radiation pattern is omnidirectional.



Broadcast Electronics' Model BESP Super Power, Circularly Polarized FM Antenna

## BEMP Medium Power FM Antennas

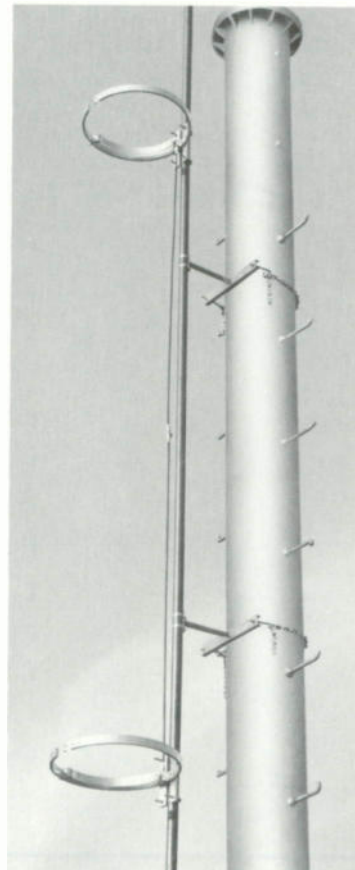


Broadcast Electronics' Model BEMP Medium Power Circularly Polarized FM Antenna

BEMP antennas are ideal for medium power applications with a power input capability conservatively rated from 9 to 12 kW. Available as end feed or center feed models, the BEMP features a broad bandwidth to minimize VSWR related signal problems. All BEMP antennas employ brass tubular construction in the radiating element and support stem. As a result, the BEMP can tolerate wind velocities of up to 150 mph. Each antenna is completely assembled and pretuned to the desired frequency prior to shipment. Deicers, radomes and pattern optimization options are available for the BESP and BEMP antennas.

## BELP Low Power FM Antennas

Broadcast Electronics' model BELP was specifically designed for low power applications from 10 to 800 watts. Horizontally polarized ring radiators assure an omnidirectional pattern in the horizontal plane. The BELP is available in 1, 2, 3 or 4 ring element configurations. In the multi-ring antennas, the vertical spacing between rings is one wavelength.



Broadcast Electronics' Model BELP Low Power Horizontally Polarized FM Antenna

## Series 1105 FM Antennas

Series 1105 circularly polarized FM antennas are also available from Broadcast Electronics. The 1105 series meets the requirements of all Class A and most higher facilities. All brass and stainless steel construction for durability and strength. Low weight and windload parameters make the 1105 Series ideal for mounting on lightweight structures.



4100 N. 24th ST., P.O. BOX 3606, QUINCY, IL 62305-3606 U.S.A., PHONE: (217) 224-9600, TELEX: 250142, FAX: (217) 224-9607