BROADCAST EQUIPMENT CATALOG 102

BE BROADCAST ELECTRONICS INC. a FILMWAYS company

BROADCAST ELECTRONICS INC.

Dear Customer,

Today at Broadcast Electronics our company is staffed with an abundance of technically trained and experienced personnel in all departments. We're specialists; and our knowledge of and attention to broadcast equipment has allowed us to design and manufacture products precisely suited to broadcasters' needs.

Today at Broadcast Electronics the emphasis is on technology—creating advanced new products, always with reliability and top quality workmanship in mind. Exciting new products like Control 16 microprocessor program automation, acclaimed by broadcast engineers and programming experts as today's most advanced system.

Linking the new BE with the Spotmaster past are twenty years of tradition providing broadcasters with an extensive selection of tape cartridge machines. In 20 years over 25,000 cart machines, including more than three thousand of the popular 3000 Series, are in worldwide use. Our list of Series 3000 users ranges from the most senior U.S. radio stations and networks, such as KDKA and NBC, to the most prestigious overseas broadcast organizations, such as the BBC.

Broadcast Electronics, Inc. is a wholly owned subsidiary of Filmways Inc., Los Angeles, California. Filmways is a diversified company with over $150 million revenues in Fiscal 1979, and is engaged in television and motion picture production and distribution, publishing, operation of recording studios, insurance and manufacturing. Included in the Filmways corporate family are such well known companies as Grosset & Dunlap, Inc., Filmways/Heider Recording, Heatter-Quigley, Inc., and Union Fidelity Corporation.

With emphasis on technology and a large investment in product development, you can look to Broadcast Electronics for many more reliable new products, engineered always with the broadcaster in mind.

Lawrence J. Cervon
President

Curtis I. Kring
Vice President Marketing

A. Hans Bott
Vice President Engineering

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Cart Machine Applications

- "On Line" audio for AM, FM, TV, CATV
- Delay machines—for continuous or network delay
- Flight simulator audio
- Weather information systems
- Announcement systems—airports, bus terminals, public buildings
- Telephone answering systems—commercial or residential
- Customer information systems
- Error-free sales presentations
- Slide projector audio and slide keying—educational, commercial
- Unmanned displays—zoos, museums, trade shows
- Theatrical sound effects systems

FEATURES

- Top Quality at an Economical Price
- Accepts A, B or C size Carts
- Two Cue Tones Standard (1 kHz and 150 Hz)
- Exclusive Mono/Stereo Switching
- Direct Drive Transport
- Modular Construction
- Quality Nortronics Heads
- New Phase Lok IV Head Assembly
- Low Voltage Air Damped Solenoid
- ½ Inch Aluminum Deck

GENERAL DESCRIPTION

Totally new, Broadcast Electronics' 2100 family of tape cartridge machines combines versatile operation, quality components and top specifications, all at an economical price. There's more value in the 2100 series than ever found before in any professional cart machine. The combination of advanced engineering design and Broadcast Electronics' cost saving production methods produces a cart machine with double value for the most quality minded users and for those who can now afford the best.

The 2100 series has numerous benefits making it just right for nearly any application: Flexibility in size of carts accepted — A, B or C; Two cue tones (1 kHz and 150 Hz) are standard; Modular construction for easy field maintenance; Top quality Nortronics heads for exceptional performance; Direct drive transport and ½ inch aluminum deck for rugged, reliable operation; New Phase Lok IV head assembly for azimuth adjustment independent of height and zenith adjustments; Exclusive Mono/Stereo switching to aid in future conversions from mono to stereo broadcasting.

BOTH STEREO AND MONAURAL MODELS — Whether for monaural or stereo, the series 2100 is a complete new line of cartridge machines. Playback only or Record/Playback are the same physical size and offered in stereo or monaural versions.

PHASE LOK IV HEAD ASSEMBLY — The head assembly features high quality Nortronics heads and the new Spotmaster Phase Lok IV head bracket. This head bracket has an azimuth adjustment which is independent of height and zenith, and provides the most precise head positioning possible. Head shielding to prevent hum pickup is extensive. The underside of the deck is covered with a steel plate. Above the head is a mu-metal shield, which has an extremely high rejection of magnetic flux. Additional shielding is provided by a steel plate located directly under the head recessed into the deck.

TAPE TRANSPORT/COOL OPERATION — The tape transport features a powerful, direct-drive hysteresis synchronous motor, a large air damped solenoid with a teflon coated plunger, and a ½ inch thick precision aluminum deck.

The 2100 series of cart machines uses Broadcast Electronics' exclusive cut away top cover design which allows an "A" size machine to accommodate A, B, & C size cartridges.

Another key feature of the 2100 design is the solenoid control circuit which applies 36 volts at the beginning of the start cycle for a fast, sure start and then drops to 18 volts. This results in safer, cooler, transient-free operation, which is usually not found in machines using 110 volt solenoids.

The overall reliability inherent in this design has been demonstrated in life cycle testing programs which have, on a number of occasions, cycled this machine through two million operations without failure.

The cartridge guidance system provides very precise positioning. The cartridge is directed down into the head by a tapered side guide and locked in place by a beryllium-copper clamp which insures positive locking regardless of variations in cartridge thickness. The tensile strength of this clamp is exceptional and it will retain this strength throughout many years of use.

MONO/STEREO SWITCHING — The model 2100 employs Broadcast Electronics' exclusive automatic mono/stereo switching. This allows mono cartridges that have been previously recorded on any other tape cartridge machine to be played on a 2100 stereo machine with program material available from the left and right outputs.

This is accomplished by automatically recording a 150 Hz cue tone along with the normal 1 kHz cue tone at the beginning of the message.

When the machine detects both tones together the left channel preamp output is substituted for the right channel preamp output. This offers full compatibility to mono users who wish to convert their operation to stereo since all previously recorded cartridges can easily be encoded with the mono control signal (150 Hz + 1 kHz tones). A front panel LED indicates when the machine is in the mono play mode.

In addition to the standard 1 kHz tone, a 150 Hz tone sensor is included in the series 2100. This sensor provides information to the mono/stereo control circuit as well as closing a pair of relay contacts for external use. When both the 1 kHz and 150 Hz tones are detected together (mono detection) the relay contacts do not close. These detectors use active RC filters which provide very precise detection.

MODEL 2100P. Mono Playback (Model 2100PS, Stereo Playback, looks identical with cover on).

MODEL 2100RP. Mono record/playback.

MODULAR CONSTRUCTION — Modular construction is used throughout the 2100 cart machine to allow simple field maintenance. The playback and record electronics are located on two individual PC boards that plug into a motherboard, which provides inter-connection, power supply and solenoid drive circuitry. The motor, solenoid, power transformer, and front and rear panels all plug into the motherboard.

Power supplies are all regulated and are thermally as well as overload protected. All logic in the 2100 series is provided by CMOS devices.

PLAYBACK CIRCUITRY — The playback amplifier consists of wideband IC operational amplifiers, advanced analog switching and differentially balanced output amplifiers. The amplifiers have an exceptionally wide equalization adjustment range to compensate for head wear, a feature which prolongs useful head life. The solid-state output amplifiers will deliver output levels up to +20 dBm before clipping thereby minimizing the potential for distortion with high level signals.

RECORD CIRCUITRY — The record circuitry has differentially balanced inputs followed by high performance IC operational amplifiers. These input circuits have extremely wide dynamic operating ranges which allow them to cleanly handle a greater range of signals than any competitive machine. This high level of signal handling ability, which is inherent throughout the design, contributes significantly to the high quality of reproduction which is characteristic of the 2100 series.

Stereo 2100 series machines can be used to record carts compatible with mono machines. A front panel LED indicates when the machine is in the mono record mode. At this time the left and right inputs are summed together and recorded on the left channel. In addition, the mono encode tone (150 Hz + 1 kHz) is recorded on the cue track.

The 150 Hz secondary cue tone and logging information can be recorded in either the record or playback mode, as full bias switching is incorporated into this machine. External inputs and outputs, and bias switching are available on the cue track.

VU meters are automatically switched between the playback and record modes.

Phase Lok IV Head Bracket

In the Phase Lok IV Head Bracket the height and zenith adjustments are not affected by azimuth adjustment. This assures extremely tight control of stereo phasing.

ORDERING INFORMATION

MODEL	STOCK NO.	DESCRIPTION
2100P	907-2110	Mono Playback; 115 V/60 Hz
2100RP	907-2111	Mono record/play; 115 V/60 Hz
2100PS	907-2112	Stereo playback; 115 V/60 Hz
2100RPS	907-2113	Stereo record/play; 115 V/60 Hz
2100P	907-2120	Mono Playback; 220 V/50 Hz
2100RP	907-2121	Mono record/play; 220 V/50 Hz
2100PS	907-2122	Stereo playback; 220 V/50 Hz
2100RPS	907-2123	Stereo record/play; 220 V/50 Hz
	907-2114	Rack Mount Shelf for EIA 19" Rack
	471-2101	Top cover for shelf above
	503-2122	Rack Shelf Filler Panel, ⅓ Rack
	503-2123	Rack Shelf Filler Panel ⅔ Rack
	919-2100	Extender, P.C. Boards

DURABILITY, ELEGANT STYLING — Nothing has been spared to make the 2100 series cartridge machine rugged, reliable and professional in every way. Front panels feature crisp, clean graphics under a laminated polycarbonate overlay. This tough protective surface makes it virtually impossible to scratch or wear the lettering away. Users will quickly appreciate the durability of the nomenclature despite constant use. This expensive process is a big improvement over ordinary silk screening.

All front panel controls have been laid out with human engineering in mind for easy, error free operation. The elegance of the 2100 series reflects the talents of professional industrial styling and Broadcast Electronics' attention to detail.

SPACE SAVING DESIGN — The space saving design of the Series 2100 permits side by side mounting of three 2100's in a 19-inch rack. Each machine is only 5.875" wide, 5.25" high and 15.5" deep.

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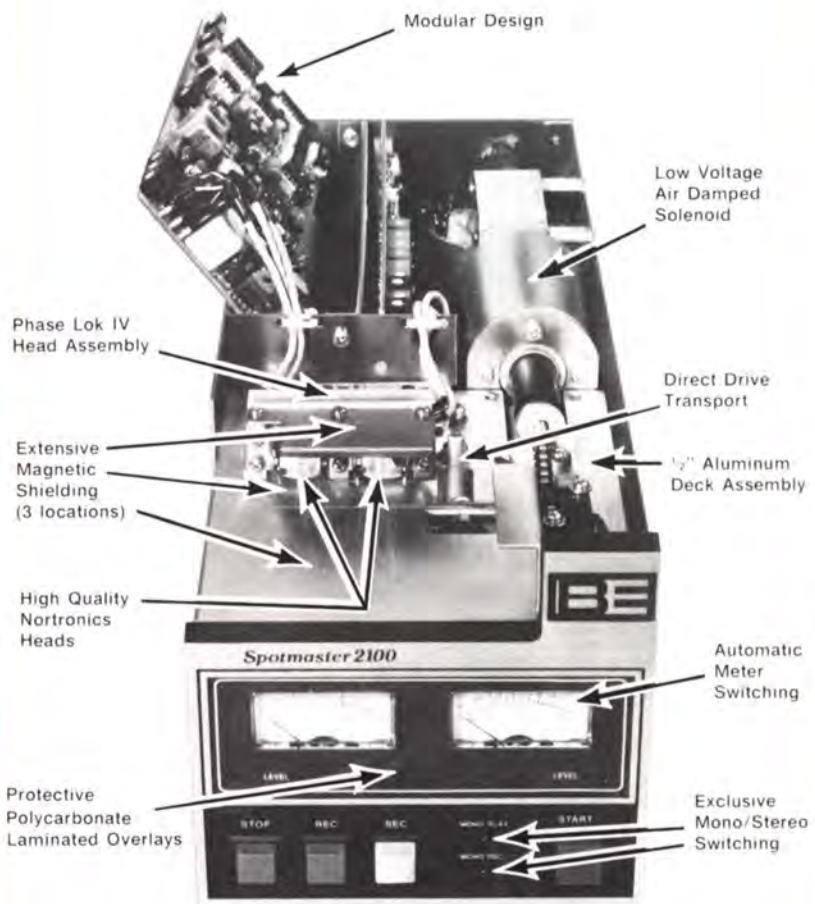
The Spotmaster® Series 2100



SPECIFICATIONS

Tape Speed:
7.5 ips (19.05 cm/s)

Timing Accuracy (at 7.5 ips):
0.1%

Wow and Flutter:
0.15% peak weighted
0.2% RMS unweighted

Noise (Reproducer):
Monophonic: 62 dB or better below reference of 400 Hz at 3% THD; 54 dB below 160 nWb/m at 1 kHz
Stereophonic: 60 dB or better below reference of 400 Hz at 3% THD; 52 dB below 160 nWb/m at 1 kHz

Distortion:
2% or less record to playback at 160 nWb/m, 1 kHz

Equalization:
NAB, IEC, CCIR as specified

Frequency Response:
±2 dB from 50 Hz to 15 kHz exclusive of head contour effect

Crosstalk (magnetic head limited):
Cue channel to program channel, monophonic
150 Hz: 50 dB or better
1000 Hz: 55 dB or better

Input Impedance (Record Models):
78 Kohms, balanced, bridging.

Input Levels:
18 to −20 dBm (100 mV to 7.7 V)

Audio Output:
Balanced, maximum adjustable level +8 dBm into 600 ohm load from 160 nWb/m at 1 kHz

Peak Output Level:
+20 dBm before clipping

Bias Oscillator Frequency:
100 kHz

Cue Signals:
Relay contact closure for external control (150 Hz). External cue input/output available for other control functions

Ambient Operating Temperature:
0° to 55° C (32° to 132° F)

Power Requirements:
105 to 130 V or 210 to 230 V, 50 or 60 Hz, as specified

Power Consumption:
40 W continuous

Mounting:
Desk top standard. Adaptors for rack mounting optional

External Connectors:
Mating plugs furnished

Dimensions:
5.25" H, 5.875" W, 15.5" D
13.3 cm H, 14.9 cm W, 39.4 cm D
(Add 0.375" to height for rubber feet)

Weight (packed); all models
28 lbs. (12.7 kg)

MODEL 3200 RPS STEREO RECORD/PLAYBACK with automatic fast forward and all cue tones.

PHASE LOK III HEAD BRACKET
In the Phase Lok III head bracket height and zenith adjustments are not affected by azimuth adjustment. This assures extremely tight control of stereo phasing.

FEATURES

- A Professional Quality Monaural Or Stereo Cart Machine
- Direct Drive Motor, Air Damped Solenoid
- Automatic or Manual Fast Forward Option
- Phase Lok III Head Bracket
- Low Voltage Solenoid Switching
- Long Life Nortronics Duracore® Heads

GENERAL DESCRIPTION

Series 3000 machines have all the standard features: a direct-drive hysteresis synchronous motor, an air damped solenoid with excellent reserve capability, and a ½-inch thick machined aluminum deck. In addition, these machines are loaded with Spotmaster exclusives: the Phase Lok III head bracket; low voltage solenoid switching; advanced integrated circuit/solid-state design with exceptionally wide dynamic operating ranges; long life Nortronics Duracore® heads; and an outstanding set of performance specifications.

PHASE LOK III HEAD BRACKET — Phase Lok III by Spotmaster improves stereo phase performance. This unique head bracket has an azimuth adjustment which is totally independent of height and zenith and offers the most precise head positioning possible. All stereo playback models are also equipped with a dummy head to insure correct stereo tracking.

SOLENOID CONTROL CIRCUIT — A key feature of the Spotmaster design is the solenoid control circuit. This is a low-voltage, current regulated source which is applied through a solid-state switch. With this circuit, solenoid operation is not affected by ac line variations, heat dissipation is reduced, and the combination of low voltage and solid-state switching significantly enhances reliability. A further benefit is the elimination of a potential source of noise that is present with high level ac switching.

The overall reliability inherent in this design has been demonstrated in life cycle testing programs which have, on a number of occasions, cycled this machine through two million operations without failure.

CARTRIDGE GUIDANCE SYSTEM — The cartridge guidance system provides very precise positioning. The cartridge is directed down into the head by a tapered side guide and locked in place by a beryllium clamp which insures positive locking regardless of variations in cartridge thickness. The tensile strength of this clamp is exceptional and it will retain this strength throughout many years of use.

RECORD CIRCUITRY — The record circuitry has balanced inputs followed by high performance IC operational amplifiers. These input circuits have extremely wide dynamic operating ranges which allow them to cleanly handle a greater range of signals than any competitive machine. This high level of signal handling ability, which is inherent throughout the design, contributes significantly to the high quality of reproduction which is characteristic of the 3000 Series.

PLAYBACK CIRCUIT — The playback amplifier consists of wideband IC operational amplifiers, FET muting circuits, and output amplifiers with wide dynamic ranges. The amplifiers have an exceptionally wide adjustment range for compensating for head wear, a feature which prolongs useful head life. The solid-state output amplifiers will deliver output levels of up to +20 dBm before clipping, thereby minimizing the potential for distortion with high level signals.

*MODEL 3100P

*MODEL 3200RP

*MODEL 3300P

*Shown with all options

AVAILABLE MODELS

Series 3000 is a family of tape cartridge machines with the industry's widest choice of models and options. This series offers the Broadcaster an exceptional degree of flexibility in customizing a record/playback system for a particular studio.

Model 3100 Slim Line is a space saving design for playback of A size cartridges. It is available in mono and stereo. 3100's are only 5⅞" wide and three units can mount side-by-side in 19" of rack space.

Model 3200 is a full feature machine available with complete record/playback capability for A and B cartridges, yet it is only 8¾" wide. Two machines can fit into 19-inches of rack space. It is available in mono and stereo, record/playback and playback only.

Model 3300 is available to handle A, B and C-size cartridges. It is available in record/playback and playback only for both mono and stereo.

AVAILABLE OPTIONS

Secondary and Tertiary Cue Tones — Options include front panel indicator switches, oscillators (record models) and detectors for 150 Hz and 8 kHz tones; contact closures are provided for external control.

Manual Fast Forward — Spring loaded front panel switch, when pressed advances the tape at 3x normal speed to next cue tone.

Automatic/Manual Fast Forward (includes secondary and tertiary cue tones) — In automatic operation machine detects end-of-message (150 Hz) cue tone and automatically advances at 3x normal speed to next cue tone (audio is muted during advance). Manual Operation, as described above, is included in this option.

Remote Control Unit — Five models available: offers duplication of essential front panel functions.

Other Options — Microphone input; 220V 50 Hz power; IEC, CCIR equalization, rack mounting; 3¾ ips tape speed.

SPECIFICATIONS

Tape Speed:
7.5 ips (19.05 cm/s.)

Timing Accuracy (at 7.5 ips):
0.1%

Fast-Forward Tape Speed (optional):
22.5 ips (57 cm/s).

Tape Start/Stop Time:
0.1 second maximum.

Wow and Flutter:
0.15% peak weighted
0.2% RMS unweighted.

Noise (Reproducer):
Monophonic: 62 dB or better below reference of 400 Hz at 3% THD; 54 dB below 160 n Wb/m at 1 kHz.
Stereophonic: 60 dB or better below reference of 400 Hz at 3% THD; 52 dB below 160 n Wb/m at 1 kHz.

Distortion:
2% or less record to playback at 160 n Wb/m at 1 kHz.

Equalization:
NAB, IEC, CCIR as specified.

Frequency Response:
±2 dB from 50 Hz to 15 kHz exclusive of head contour effect.

Crosstalk (magnetic head limited):
Cue channel to program channel, monophonic
150 Hz:—50 dB or better
1000 Hz:—55 dB or better
8000 Hz:—50 dB or better
Stereo, crosstalk between program channels; better than 50 dB, 50 Hz to 15 kHz.

Input Impedance (Recorder):
Microphone (optional): 150 ohms (transformer) balanced floating.
Line: 50 k ohms (transformer) balanced floating.

Input Levels:
Microphone (optional): −70 to −24 dBm
Line: −24 to +20 dBm (50 mV to 7.7 V).

Audio Output:
Maximum adjustable level +8 dBm from 160 n Wb/m at 1 kHz; 600 ohms (transformer) balanced.

Peak Output Level:
+20 dBm before clipping.

Cue Signals:
Relay contact closure for exteral control (150 Hz, 8 kHz). External cue/input/output available at remote control for other control functions.

Ambient Operating Temperature:
0° to 55° C (32° to 132° F).

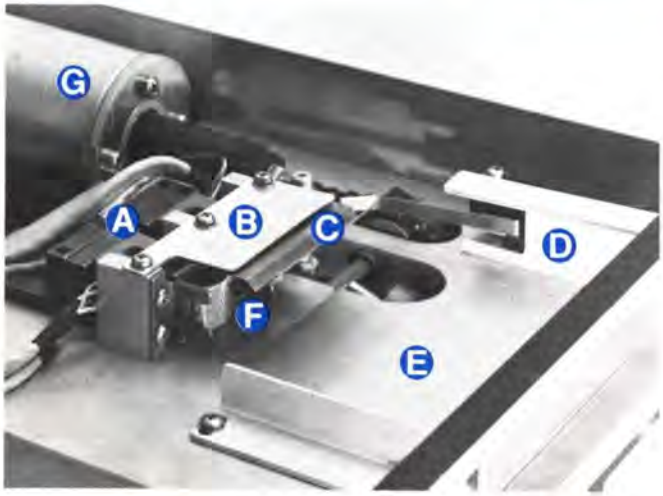
Power Requirements:
105 to 125V/210 to 230V; 50 or 60 Hz. 45 to 50 W maximum.

Mounting:
Desk top standard. Adaptors for rack mounting optional.

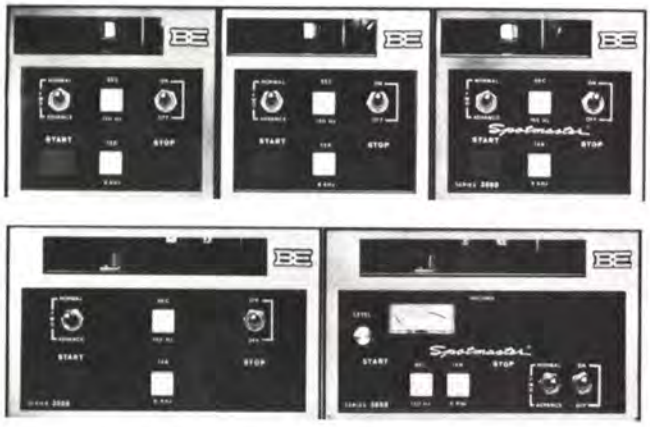
External Connectors:
Mating plugs furnished.

Dimensions:
3100: 5¼" H, 5⅞" W, 15½" D (13.3 × 14.9 × 39.4 cm)
3200: 5¼" H, 8¾" W, 15½" D (13.3 × 22 × 39.4 cm)
3300: 5¼" H, 11¾" W, 15½" D (13.3 × 29.8 × 39.4 cm)
(Add ⅜" to height for rubber feet.)

Weight (packed):
3100: 28 lbs. (12.7 kg)
3200: 33 lbs. (15.0 kg)
3300: 37 lbs. (16.8 kg).



THE TAPE TRANSPORT



RACK MOUNT CONFIGURATIONS

The Spotmaster design puts a lot of capability into a minimum amount of space. The arrangements above, which occupy 10½ inches of vertical rack space, provide playback capability for five A size cartridges and two B size cartridges. A record capability is provided in the Model 3200 with the meter. These units can be either stereo or mono.

REAR PANEL

This is the rear view of a Model 3200RPS (stereo, record/playback). The mating connectors and allen wrenches for head adjustments are furnished with all units and the headphone monitor jack (J6) is standard with all units.

HIGHLIGHTS OF THE SERIES 3000 TAPE TRANSPORT — includes **A** Phase Lok III Head Bracket; **B** mu-metal magnetic shield; **C** high-tensile beryllium clamp for locking the cartridge in place; **D** tapered side guide which directs the cartridge down into the head; **E** a precision one-half inch thick aluminum deck; **F** under-the-head magnetic shielding provided by a mu-metal plate which is recessed into the deck for optimum cartridge seating; and **G** a large air damped solenoid with exceptionally reliable chain linkage. Not visible in the picture is the plate on the underside of the deck which provides additional head shielding.

ORDERING INFORMATION

MODEL	STOCK NO.	DESCRIPTION
3100P	906-3100	Mono, Playback Only, A Size Cartridges
3100PS	906-3101	Stereo, Playback Only, A Size Cartridges
3200P	906-3200	Mono, Playback Only, A & B Size Cartridges
3200RP	906-3201	Mono, Record/Playback, A & B Size Cartridges
3200PS	906-3202	Stereo, Playback Only, A & B Size Cartridges
3200RPS	906-3203	Stereo, Record/Playback, A & B Size Cartridges
3200RP/DL	906-3204	Mono, Delay Programmer, A & B Size Cartridges
3300P	906-3300	Mono, Playback Only, A, B, & C Size Cartridges
3300RP	906-3301	Mono, Record/Playback, A, B, & C Size Cartridges
3300PS	906-3302	Stereo, Playback Only, A, B, & C Size Cartridges
3300RPS	906-3303	Stereo, Record/Playback, A, B, & C Size Cartridges
3300RP/DL	906-3304	Mono, Delay Programmer, A, B & C Size Cartridges

FACTORY INSTALLED OPTIONS

906-3000	Q Trip I & II (150 Hz and 8 kHz), Playback Only Models
906-3001	Q Trip I & II (150 Hz and 8 kHz), Record/Playback Models
906-3002	Adjustment of Equalization to IEC/CCIR Specifications
906-3003	Microphone Input Option, Mono Record/Playback Models
906-3004	Microphone Input Option, Stereo Record/Playback Models
906-3005	Manual Fast Forward, All Models, without Q Trip I & II
906-3006	Automatic and Manual Fast Forward, Playback Only Models with Q Trip I and II (150 Hz and 8 kHz)
906-3007	Automatic and Manual Fast Forward, Record/Playback Models with Q Trip I and II (150 Hz and 8 kHz)
906-3008	Additional cost for 117 VAC/50 Hz; or 220 VAC/240 VAC/50 Hz
906-3009	Additional cost for alternate 3.75 IPS tape speed

ACCESSORIES

906-3013	Rack Mount Shelf for EIA 19" Rack
471-0098	Top Cover for 906-3013 Shelf
503-0022	Rack Shelf Filler Panel, ⅓ Rack
503-0023	Rack Shelf Filler Panel, ½ Rack
919-1504	Extender, P.C. Boards
970-0003	Transistor/IC kit for 3200P/RP
906-3016	3000 Remote Control Panel, START for 5 Units
906-3019	3000 Remote Control Panel, Single Record/Playback Model
906-3020	Remote Control Panel, Single Playback (with cue tones)
906-3021	Remote Control Panel, Single Playback (without cue tones)
906-3028	Remote Control Panel with start/stop and fast forward switches for 5 Series 3000 machines

Model 3400 RPS

FEATURES

- Rack mounts without additional accessories
- Handles A, B and C sized carts
- Same performance specifications as 3000 series carts
- Full range of options available

RACK MOUNTING MODEL — The Model 3400 has all the features of the standard 3000 Series cartridge machine, but is designed into a rack mountable assembly with no shelf or filler panels necessary. The 3400 handles A, B, and C size carts and comes standard as a rack mount unit, for use in any 19-inch rack. It can also be used for desk top operation when equipped with an optional cover.

AVAILABLE MODELS — The 3400 is available in both monaural and stereo models, and in record and record/playback configurations. All of the series 3000 options are available for the 3400 series.

PHASE LOK III HEAD BRACKET — Phase Lok III by Spotmaster improves stereo phase performance. This unique head bracket has an azimuth adjustment which is totally independent of height and zenith and offers the most precise head positioning possible. All stereo playback models are also equipped with a dummy head to insure correct stereo tracking.

SOLENOID CONTROL CIRCUIT — A key feature of the Spotmaster design is the solenoid control circuit. This is a low-voltage, current regulated source which is applied through a solid-state switch. With this circuit, solenoid operation is not affected by ac line variations, heat dissipation is reduced, and the combination of low voltage and solid-state switching significantly enhances reliability. A further benefit is the elimination of a potential source of noise that is present with high level ac switching.

CARTRIDGE GUIDANCE SYSTEM — The cartridge guidance system provides very precise positioning. The cartridge is directed down into the head by a tapered side guide and locked in place by a beryllium clamp which insures positive locking regardless of variations in cartridge thickness. The tensile strength of this clamp is exceptional and it will retain this strength throughout many years of use. All three cartridge sizes—A, B, and C—may be used in the 3400.

RECORD CIRCUITRY — The record circuitry has balanced inputs followed by high performance IC operational amplifiers. These input circuits have extremely wide dynamic operating ranges which allow them to cleanly handle a greater range of signals than any competitive machine. This high level of signal handling ability, which is inherent throughout the design, contributes significantly to the high quality of reproduction which is characteristic of the 3000 Series.

PLAYBACK CIRCUIT — The playback amplifier consists of wideband IC operational amplifiers, FET muting circuits, and output amplifiers with wide dynamic range. The amplifiers have an exceptionally wide adjustment range for compensating for head wear, a feature which prolongs useful head life. The solid-state output amplifiers will deliver output levels of up to +20 dBm before clipping, thereby minimizing the potential for distortion with high level signals.

ORDERING INFORMATION

MODEL	STOCK NO.	DESCRIPTION
3400P	906-3400	Mono, Playback only, rack mount
3400PS	906-3401	Stereo, Playback only, rack mount
3400RP	906-3402	Mono, Record/Playback, rack mount
3400RPS	906-3403	Stereo, Record/Playback, rack mount
	906-3413	Cover for desk mounting 3400 machine

NOTE: SEE PAGE 8 FOR SERIES 3000 OPTIONS

SPECIFICATIONS

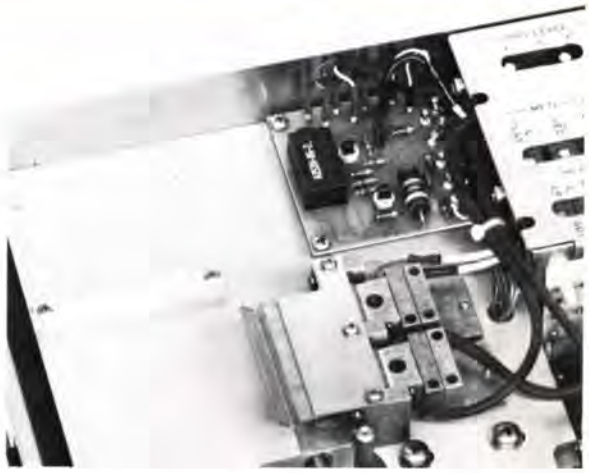
Identical to the 3000 series specifications on page 7 except:

Dimensions:
5.25" H, 17" W, 15.5" D (13.34 x 43.13 x 39.37 CM)

Weight:
(packed: 42 lbs. (19.0 Kg)

Delay Machines
Models 3200 RP/DL, 3300 RP/DL

3200 RP/DL. Monaural record/playback/delay cartridge machine.



3200 RP/DL deck assembly, showing relay P.C. board which controls delay function.

FEATURES

- Talk show or network program delay
- Solid-state logic switching with full remote capability
- Two models available
- Operate in "Delay" or "Normal" record/play mode
- Standard NAB cartridges used
- Same top performance specifications as Spotmaster® 3000 machines

GENERAL DESCRIPTION

The versatile Broadcast Electronics Delay cartridge machines handle a variety of functions—continuous delay, network delay, normal recording and normal playback—yet with the same top performance specifications as the rest of the Spotmaster 3000 Series cartridge machines.

YOUR CHOICE OF TWO MODELS — Two monaural models are available: the 3200 RP/DL, which handles A and B size NAB cartridges; and the 3300 RP/DL, which accepts A, B and C size carts. The same standard NAB carts used in your other cart machines can be used in the 3200/3300 Delay machines in both the Delay and Normal record/playback modes of operation.

TALK SHOW APPLICATIONS — These Delay machines take the worry out of live telephone talk shows and interviews. When in the Delay mode, the tape crosses the erase/record head where it is erased and the live material recorded. The tape then moves through a full cycle of the cartridge before reaching the playback head.

The time span of the delay is determined by the length of the cartridge. A six second delay, for example, gives ample time to edit words or comments inappropriate for on air broadcast use, thus protecting you from libel suits, FCC actions or unhappy advertisers.

NETWORK PROGRAM DELAY — Another convenient application of BE's Delay machines is automatically recording network programs, up to 30 minutes in length, for playback at a later time.

The network cue tone or automation system timer generates a command for the Delay machine to start. It simultaneously erases any old program material still on the tape and records the network program, recueing itself after one complete cycle. The machine is then ready to automatically play back the newly recorded program material at the proper time.

After the tape has played, the machine is once again ready for the erase/record and playback cycle, without the tape cartridge having ever been removed from the machine. This entire process can be done manually if no automation or timing device is used with the Delay machine.

In the Normal record/play mode, standard cue tones are recorded in the normal manner. However, in the Delay mode, the cue track is neither recorded nor erased, so the original cue tone placed on the cart is not disturbed.

NORMAL RECORD/PLAYBACK OPERATION — The 3200 RP/DL and 3300 RP/DL cart machines incorporate BE's exclusive push-button controlled, solid-state logic switching, with full remote capability.

Whenever a cart has been recued after recording a message in the Delay mode, the Delay machine automatically switches to the Normal record/play mode. The machine is then ready for standard recorder/reproducer usage.

Options available for the 3200/3300 Delay machines include a 150Hz cue tone, manual fast forward and automatic fast forward.

See pages 7 and 8 for specifications and ordering information.

FEATURES

- Plug-In Decks
- Direct Drive Motor With New Ultra-Stable Capstan Positioning
- Plays A and B Size Cartridges
- Stereo Or Mono Operation
- Companion Recording Amplifier
- Long Life, Nortronics Duracore® Heads
- Save Space With Three Machines In One

MODEL 5310 RECORD UNIT

MODEL 5300B

GENERAL DESCRIPTION

THE MODEL 5300B is the most advanced multi-deck cartridge machine on the market. It is a top-of-the-line professional machine which features: solid-state/integrated circuit design, a direct-drive hysteresis synchronous motor, air damped solenoid, a one-half inch thick machined aluminum deck, and long life Nortronics' Duracore' heads.

Features unique to this multi-deck design are plug-in decks, computer ribbon cabling, rear panel LED service aids, and run lights adjacent to each deck.

NEW MECHANICAL DESIGN — The Model 5300B has a new internal mechanical design which insures stable and accurate deck and capstan positioning. The motor mounting and the top capstan bearing mounting are mechanically supported by a sturdy aluminum bulkhead insuring consistent mechanical alignment independent of front panel reference.

ADVANCED ELECTRONICS — This machine has all the latest Spotmaster features: ultra-reliable, low-voltage solenoid switching, wide dynamic operating ranges, Phase Lok III head bracket, accurate cartridge positioning and modular design. All stereo models are equipped with a dummy head to insure correct stereo tracking.

The solenoid control circuit utilizes solid-state switching and a regulated low-voltage supply. With this circuit, solenoid operation is smooth, heat dissipation is reduced, and the combination of low voltage and solid-state switching significantly enhances reliability and safety.

A characteristic of this machine is exceptionally wide dynamic operating ranges which contribute to high quality reproduction. The companion recorder input circuits and the 5300B output circuits will accept and deliver, without introducing distortion, a greater range of signals than any competitive machine. Balanced transformer output with FET switching permits parallelling of machines.

ADDITIONAL FEATURES — The 5300B is available in four basic models as shown under Ordering Information. The secondary and tertiary cue tones are made available by changing a PC card. Thus, a unit originally purchased with only the primary (1 kHz) cue tone can be field modified by simply replacing the PC card.

The recorder amplifier is available in either mono or stereo. Each unit has the standard 1 kHz cue tone. Secondary (8 kHz) and tertiary (150 Hz) tones are available for the recorder as an option.

The standard recorder has two input circuits: a high-level 50K ohm balanced transformer and a low level microphone input. The recorder amplifier has an automatic meter switching capability. During recording the meter indicates the record level and in playback the meter indicates the playback level on deck number 3.

RECORDING AMPLIFIER

The optional recording amplifier (mono Model 5309 or stereo Model 5310) is available for recording on deck #3 independent of the other two decks. Thus, the 5300 can operate as three separate machines; a record/playback deck and two playback only decks.

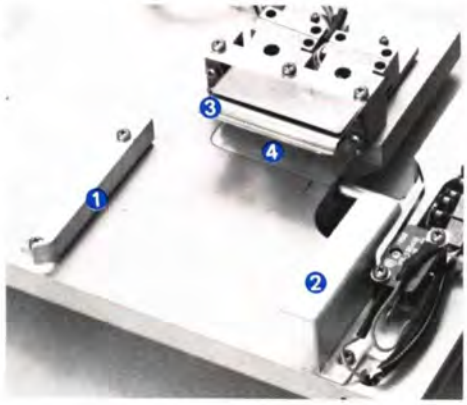
UNIQUE CARTRIDGE GUIDANCE SYSTEM

A simple yet extremely effective system for positive and accurate cartridge positioning.

The left side guide **1** is straight forward. The guide on the right **2** has a tapered overlap which directs the cartridge down into the head.

Directly above the head a high-tensile beryllium clamp **3** locks the cartridge into place. The tension provided by this clamp insures positive locking regardless of variations in cartridge machines.

Even the head shielding **4** located under the head is recessed into the deck to provide a perfectly flat surface for optimum cartridge seating.



PHASE LOK III HEAD BRACKET

For optimum adjustment of stereo phasing, these machines have the Phase Lok III Head Bracket. The Phase Lok III head bracket has an azimuth adjustment which is completely independent of the height and zenith adjustments.

AUDIO SWITCHER

Provides a single balanced output. Switchers can be tied together to provide a single balanced output from up to three 5300B machines. Selects last deck started and mutes other decks. If a wrong deck is started, pressing another start button will immediately mute the first deck and put the newly started deck on the output. The first deck started will continue to run, and will re-cue itself.

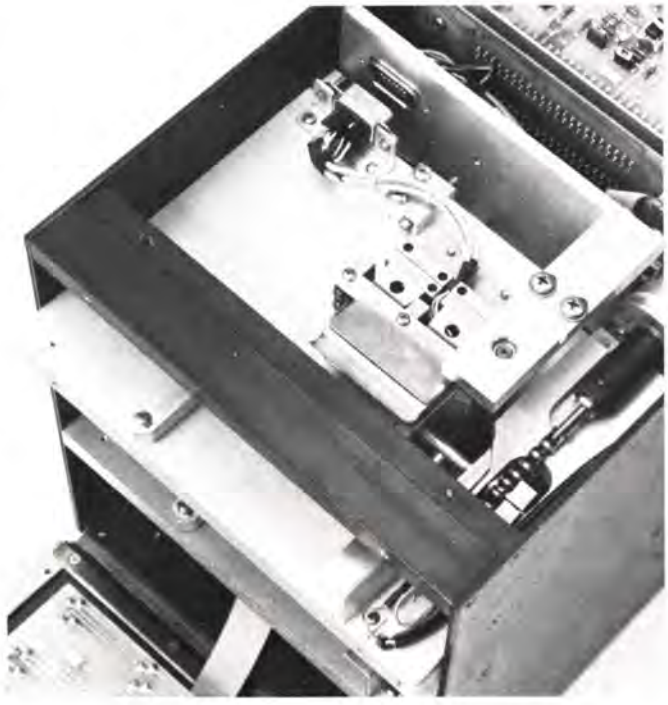
LED STATUS LAMPS

Servicing the equipment at the rear panel is simplified by LED lamps located on the pc cards. These provide a visible indication of the function being performed by the machine.

REMOVABLE DECKS

Removing a Spotmaster deck couldn't be easier. The front panel is hinged, the decks pull out, and all electrical connections are made through a connector that is a part of the deck.

This photograph shows the top bearing support and aluminum bulkhead which provides the mechanical reference for the motor and the decks.



Electronics for the decks are on individual plug-in pc cards. Also shown above are the mating connectors which are supplied with the machine. The record connector is in place (above the fuse holder) behind a protective shield.

SPECIFICATIONS

Tape Speed:
7.5 ips (19.05 cm/s.)

Timing Accuracy (at 7.5 ips):
0.1%

Tape Start/Stop Time:
0.1 second maximum.

Wow and Flutter:
0.15% peak weighted, 0.2% RMS unweighted.

Noise (Reproducer):
Monophonic: 62 dB or better below reference of 400 Hz at 3% THD; 54 dB below 160 n Wb/m at 1 kHz.
Stereophonic: 60 dB or better below reference of 400 Hz at 3% THD; 52 dB below 160 n Wb/m at 1 kHz.

Distortion:
2% or less record-to-playback at 160 n Wb/m at 1 kHz.

Equalization:
NAB, IEC, CCIR as specified.

Frequency Response:
±2 dB from 50 Hz to 15 kHz exclusive of head contour effect.

Crosstalk (magnetic head limited):
50 dB.

Audio Output:
Maximum adjustable level +8 dBm from 160 n Wb/m at 1 kHz; 600 ohms (transformer) balanced.

Peak Output Level:
+20 dBm before clipping

Cartridge Size:
A and B.

Cue Signals:
Relay contact closure for external control (150 Hz, 8 kHz). External cue input/output available at remote control for other control functions.

Ambient Operating Temperature:
0° to 55°C (32° to 132°F).

Power Requirements:
105 to 125V or 210 to 230 V 60 Hz.
105 to 125 V or 210 to 230 V 50 Hz (optional).
120 watts maximum.

Mounting:
Desk top standard. Adaptors for rack mounting optional.

Dimensions:
10⅝" H × 8⅝" W × 13⅜" D (27 × 22 × 34 cm).

Weight (packed):
43 lbs. (19.5 kg).

RECORDER AMPLIFIER

Input Impedance:
Microphone: 150 ohms, (transformer) balanced floating.
Line: 50K ohms (transformer) balanced floating.

Input Levels:
Microphone: −70 to −24 dBm
Line: −24 to +20 dBm (50 mV to 7.7 V)

Power Requirements:
105 to 125 V/210 to 230 V; 50 or 60 Hz

Dimensions:
5¼" H × 8⅝" W × 13½" D (13.3 × 22 × 34 cm)

Weight:
16 lbs. (7.25 kg.)

ORDERING INFORMATION

MODEL	STOCK NO.	DESCRIPTION
5301B	906-5301B	Mono Playback (A & B Size)
5302B	906-5302B	Mono Playback (A & B Size) with Cue Tones
5303B	906-5303B	Stereo Playback (A & B Size)
5304B	906-5304B	Stereo Playback (A & B Size) with Cue Tones

ACCESSORIES (FOR 5300B SERIES)

SW5E	904-5000	Audio Switcher for 3 Decker
	906-5309	Recorder, Mono for 3 Decker, without Q Trip Option
	906-5310	Recorder, Stereo for 3 Decker, without Q Trip Option
	906-5311A	Secondary (150 Hz) and Tertiary (8 kHz) Q Trips for Mono Recorder
	906-5311B	Secondary (150 Hz) and Tertiary (8 kHz) Q Trips for Stereo Recorder
	906-5306	Rack Mount (1) Unit, 3 Decker
	906-5307	Rack Mount (2) Units, 3 Decker
	906-5508	Additional Cost for 220V/50 Hz Power Source
	919-1806	Extender PC Board
	927-0047	Remote Control Panel for 5300 A/B Series
	927-0048	Remote Control Panel for 5300 A/B Series with Companion Record Amplifier

FEATURES

- Five Decks In One Space-Saving Package
- Direct Drive Motor
- Low Voltage Solenoid Switching
- Independent Electronics For Each Deck

GENERAL DESCRIPTION

Model 5500 Spotmaster 5-deck machine incorporates the latest Spotmaster design features: solid-state/integrated circuit design, dependable direct-drive hysteresis synchronous motor, solid-state, low-voltage solenoid switching, and the unique Phase Lok III head bracket. It is available for monaural or stereo and for NAB or IEC/CCIR equalization.

MECHANICAL DESIGN — Mechanical and structural innovations include the use of a hinged front panel which folds down to provide complete access to the decks. The top four decks slide out independently for adjustment and routine cleaning. Each deck is a solid piece of machined aluminum designed to insure consistent alignment between the tape cartridge and the PHASE-LOK III head bracket.

The electronic circuits are constructed on printed circuit cards and are accessible from the rear panel of the unit. Front panel controls are connected to this package using modern ribbon cable eliminating bulky multiple wire harnesses.

OPTIONS — A choice of options allows the broadcaster to customize his unit to his specific needs in mono or stereo, with or without cue tones. The cue tone option package includes the 150 Hz and 8 kHz sensors for sequential

switching or other cueing assignments in addition to the 1 kHz stop tone provided on each machine.

REMOTE CONTROL/AUDIO SWITCHER — Accessories include a complete remote control duplication of front panel functions and the 904-5001 audio switcher.

RECORDING AMPLIFIER — A companion recording amplifier, (mono Model 5309A or stereo Model 5310A) is available for recording on deck #5 independent of the other four decks.

SPECIFICATIONS

Tape Speed:
7.5 ips (19.05 cm/s).

Timing Accuracy (at 7.5 ips):
0.1%

Tape Start/Stop Time:
0.1 second maximum.

Wow and Flutter:
0.15% peak weighted, 0.2% RMS unweighted.

Noise (Reproducer):
Monophonic: 62 dB or better below reference of 400 Hz at 3% THD; 54 dB below 160 n Wb/m at 1 kHz.
Stereophonic: 60 dB or better below reference of 400 Hz at 3% THD; 52 dB below 160 n Wb/m at 1 kHz.

Distortion:
2% or less record to playback at 160 n Wb/m at 1 kHz.

Equalization:
NAB, IEC, CCIR as specified.

Frequency Response:
±2 dB from 50 Hz to 15 kHz exclusive of head contour effect.

Crosstalk (magnetic head limited):
50 dB.

Audio Output:
Maximum adjustable level +8 dBm from 160 n Wb/m at 1 kHz; 600 ohms (transformer) balanced.

Peak Output Level:
+20 dBm before clipping

Cartridge Size:
Size A.

Cue Signals:
Relay contact closure for external control (150 Hz, 8 kHz). External cue input/output available at remote control for other control functions.

Ambient Operating Temperature:
0° to 55°C (32° to 132°F).

Power Requirements:
105 to 125 V or 210 to 230 V, 60 Hz; 105 to 125V or 210 to 230 V; 50 Hz (Optional). 120 watts maximum.

Mounting:
Desk top standard. Adaptors for rack mounting optional.

Dimensions:
14¾" H × 5¾" W × 17" D (37.5 × 14.6 × 43.2 cm)

Weight (Packed):
52 lbs. (23.6 kg).

ORDERING INFORMATION

MODEL	STOCK NO.	DESCRIPTION
5501	906-5501	Mono Playback
5502	906-5502	Mono Playback with cue tones
5503	906-5503	Stereo Playback
5504	906-5504	Stereo Playback with cue tones
	906-5508	50 Hz Power Conversion
	906-5309A	Recorder, Mono for 5500 Series
	906-5310A	Recorder, Stereo for 5500 Series
	906-5311	Secondary & Tertiary Q Trips

TAPE CARTRIDGE EQUIPMENT

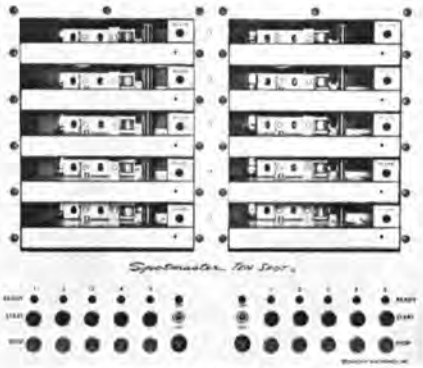
a FILMWAYS company

Multi-Deck Machine
Model 605C and 610CR

FEATURES

- Compact Design For Playback Of 5 Or 10 "A" And "B" Size Cartridges
- Complete Range Of Accessories: Switcher, Recorder, Remote Control
- Independent Deck Electronics

Model 605C



Model 610CR

GENERAL DESCRIPTION

Model 605C (Five-Spot) and 610CR (Ten-Spot) multiple deck cartridge units are used for manual operation or may be incorporated into small programmed automation systems.

Each deck is capable of independent operation and each deck is independently removable. The motor with capstan drive and power supply is common to all decks. Pressure roller force and cartridge indexing adjustments may be made from the front without removing the deck. Outputs are separately adjustable.

Both the Model 605C and 610CR are available with transformer output or with emitter follower output. The 605C can be supplied for desk mounting housed in an attractive formica cabinet, or, for rack mounting. The 610CR is supplied for rack mounting.

CUE TONES — Each deck has one or, optionally, two cue tones as required. A third cue tone can be supplied as an external unit.

AUTOMATIC SWITCHER* —Plug-in facilities are provided on the rear panel for use with the Model SW-5B Audio Switcher. This unit, which has a balanced transformer output, automatically connects one program at a time to the program line and mutes non-active channels.

REMOTE CONTROL* —Remote control circuitry is provided for use when the equipment is installed at a location other than the operating position. The Model BE-106 remote control and sequencer (next event) indicator unit may be used to provide the remote control function.

RECORDING MODULE* —Removing playback deck #5 and inserting the optional MRM-600A recording module provides this system with record capability on deck #4.

SPECIFICATIONS

Equalization:
NAB standard.

Frequency Response:
±2 dB, 50 Hz - 12 kHz.

Distortion:
2% or less at normal recording level.

Noise:
−45 dB, ref. 160 n Wb/m.

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

Tape Speed:
7.5 ips (3.75 ips available).

Output Level:
Adjustable to +4 dBm at 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 at 7.5 ips using NAB-type A&B cartridges.

Capacity:
605C: 5 type A or B cartridges; 610: 10 type A or B.

Power Supply:
Transistor, filtered, zener regulated.

Power Requirements:
108 - 125VAC, 60 Hz.; (115V/50 Hz, or 220V/50 Hz optional). 75 watts - 605, 150 watts -610

Dimensions:
605: 9-13/16" W × 14" D × 15¾" H
610: 19" W × 15" D × 15¾" H

Mounting:
605: Walnut Formica Cabinet (Model 605C).
605: In 19" rack panel with cartridge storage cubicle (Model 605CR).
610: 19" rack (Model 610CR).

Weight:
605: 44 lbs.
610: 89 lbs.

*Optional

See price list for ordering information.

OPTIONAL ACCESSORIES

SW-5B AUDIO SWITCHER — Provides a single transformer balanced output automatically muting non-active channels. Switches any of five audio channels to program line.

MRM-600A RECORDING MODULE — Remove one playback deck, insert MRM-600A for instant conversion to record capability.

BE-106 REMOTE CONTROL — Illuminated Start/Stop switches plus "electronic bookmark" sequence indicator.

FEATURES

- Five Available Models, Including Mono and Stereo Units
- Two Cue Tones Are Standard
- Plug-In Record and Audition Modules For Mono Units
- Advanced Solid-State Integrated Circuit Design
- Economical Price
- Broad Application
- Excellent Performance And Value

Model 2000RP
Mono Record/Playback

GENERAL DESCRIPTION

ECONOMICAL PRICE — Series 2000 machines are economy priced yet they contain many of the features and performance characteristics of the higher priced Spotmaster designs. Among these features are solid-state control switching, integrated circuit amplifiers, active cue tone filters and a wide selection of models.

AVAILABLE MODELS — These machines are available in mono and stereo, playback and record/playback configurations. All units accept A and B size cartridges and when used in a table-top situation they will also accept the wider C size cartridges.

ADVANCED ELECTRONICS — Series 2000 is an up-to-date design featuring the latest in solid-state/integrated circuit techniques. The electrical performance of these machines is better than competitive designs and compares favorably with our top-of-the-line 3000 and 4000 Series. The audio output is a balanced 600 ohm transformer and the output level is continuously adjustable to +8 dBm with clipping occurring at +16 dBm. Noise and distortion characteristics are very good; better than 54 dB down and 2% respectively. The power supply is fully regulated and protected. FET muting is incorporated in all stereo units.

AUDITION MODULE — A well accepted feature of the mono unit is a front panel plug-in audition module which provides a convenient way of listening to tapes prior to their use. This module has a small speaker and a 5 watt amplifier for driving a large external speaker. A record module can also be used in the same place and a mono unit can be used for both record and audition purposes by simply switching these modules.

RECORD AMPLIFIER — The record amplifier has both high and low-level inputs which are selected by jumper changes on the circuit board. Both inputs have exceptionally wide dynamic operating ranges and can accept a wide range of signals without introducing distortion or clipping.

CUE TONES — The 1 kHz and 150 Hz cue tones are standard in all Series 2000 machines. As an option the 150 Hz tone can be 8 kHz.

MECHANICAL CONSTRUCTION — Series 2000 machines use an indirect drive hysteresis synchronous motor, the micro-adjust head bracket with Nortronic heads, a thick steel deck with additional support brackets, automatic pressure roller engagement and mechanical release. These mechanical features are evolutions of Spotmaster designs which have been proven in thousands of machines in use throughout the world. Their reliability and performance are well established.

WORLD WIDE USAGE — Several thousand Series 2000 cartridge machines are in use worldwide. Performance is excellent in monaural or stereo modes and with 60 Hz or 50 Hz power source.

MONAURAL MODELS

Model 2000P Mono Playback

Model 2000PA Mono Playback/Audition

STEREO MODELS

Model 2000PS Stereo Playback

Model 2000RPS Stereo Record/Playback

SPECIFICATIONS

Tape Speed:
7.5 ips (19.05 cm/s).

Timing Accuracy (at 7.5 ips):
0.2%

Tape Start/Stop Time:
80 milliseconds maximum.

Wow and Flutter:
0.2% RMS (unweighted), 0.15% peak (unweighted).

Noise (Reproducer):
Monophonic: 62 dB or better below *reference of 400 Hz at 3% THD; 54 dB* below 160 n Wb/m at 1 kHz.
Stereophonic: 60 dB or better below reference of 400 Hz at 3% THD; 52 dB below 160 n Wb/m at 1 kHz.

Distortion:
2% or less at +16 dBm output.

Equalization:
NAB, IEC, CCIR as specified.

Frequency Response:
±2 dB from 50 to 15 kHz exclusive of head contour effect.

Crosstalk (magnetic head limited):
50 dB.

Audio Output:
Maximum adjustable level +8 dBm from 160 n Wb/m at 1 kHz; 600 ohms (transformer) balanced.

Peak Output Level:
+16 dBm before clipping.

Drive:
Hysteresis synchronous, indirect.

Recorder Input Levels:
Microphone: −70 to −25 dBm.
Line: −32 to +18 dBm.

Cue Tones:
1 kHz and 150 Hz are standard.

Remote Control:
24-pin connector, Stop, Start, TELCO telephone answering accessory and 150 Hz cue tone logic ground with 40 ma capability.

Power Requirements:
105 to 125V/210 to 230V; 60 Hz.
105 to 125V/210 to 230V; 50 Hz (optional).

Power Consumption:
45 Watts.

Dimensions:
5⅝″ H, 8½″ W, 12″ D (14.3 × 21.6 × 30.5 cm).

Weight (packed):
20 lbs. (9.0 kg).

ORDERING INFORMATION

MODEL	STOCK NO.	DESCRIPTION
2000P	906-2000	Series 2000, Monaural Playback, Compact Unit
2000RP	906-2001	Series 2000, Monaural Record/Playback Compact Unit complete with Factory Installed Record Module and Head
2000PA	906-2002	Series 2000, Monaural Playback/Audition Compact Unit complete with Factory Installed Audition Amplifier Module
2000PS	906-2020	Series 2000, Stereo Playback, Compact Unit
2000RPS	906-2021	Series 2000, Stereo Record/Playback Compact Unit complete with Factory Installed Record Module and Head

FEATURES

- Worldwide Favorite
- Complete Range Of Models At Moderate Prices
- 500 D Features Auto-Matic Record Cancel, Built-In Mike Pre-Amp And Full Auxiliary Cue Tone Options
- Handles A, B or C Cartridges

SPOTMASTER MODEL 500D MONO RECORD/PLAYBACK

GENERAL DESCRIPTION

The value and the wide acceptance of the 500 Series is evidenced by the continuing high demand for these machines. Many years after their introduction, they still remain the traditional favorite of many broadcasters. Reasons for their continuing popularity include low initial cost, simplicity of operation, proven reliability, and low ongoing maintenance costs.

500 Series machines feature the Micro-Adjust precision head bracket, modular construction, self-cancelling record pre-set, separate record and playback heads and transformer output.

CHOICE OF MODELS — The 500 Series is available in mono playback and record/playback, in desk top or rack mounting units. A record/playback/delay unit is also available. The rack mounting units are self-contained and require no external adapters.

DIAGNOSTIC METERING — All record units have built-in diagnostic metering for monitoring the cue tone and bias levels as well as the record levels.

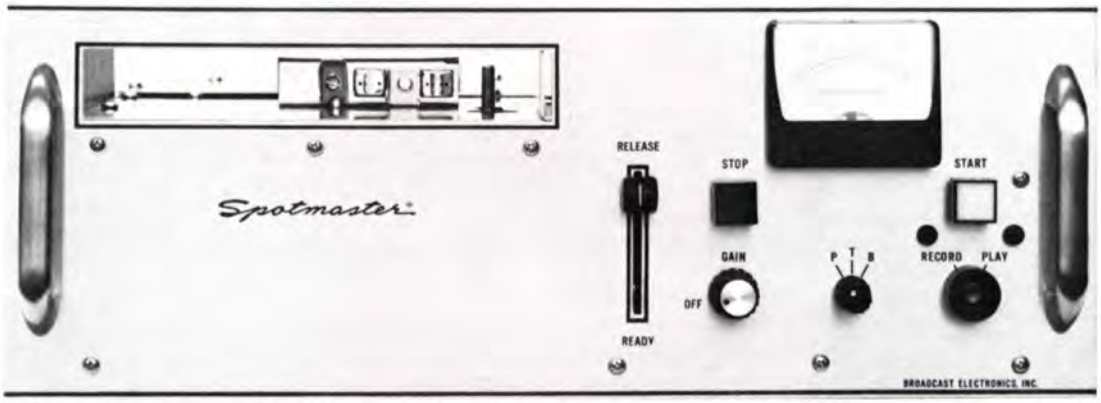
ALL CARTRIDGE SIZES — These machines accept A, B and C size cartridges. One machine can handle all your cartridge requirements.

RACK MOUNT MODELS — These are self-contained units with their own heavy-duty chassis slides for installation in a standard 19-inch equipment rack.

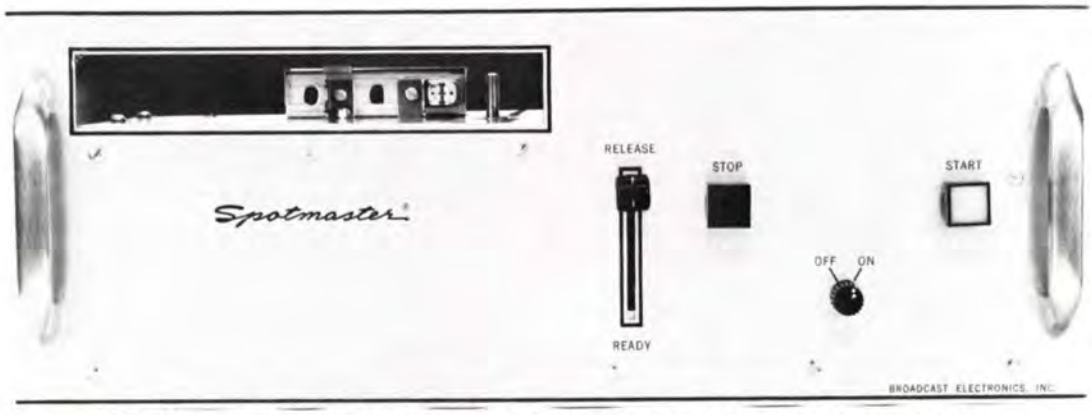
MICROPHONE PREAMPLIFIER — This is standard in mono record/playback desk top units and is available as an option in all other record units.

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.

505 D Monaural Playback. Desk mount unit, plays back A, B and C size cartridges. Companion to the Spotmaster Model 500D Record/Playback



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



505 DR. Rack Mount Mono Playback Unit. Accepts A, B, or C size cartridges.

ORDERING INFORMATION

MODEL	STOCK NO.	DESCRIPTION
500D	900-0500	Monaural Record/Playback Unit, Compact
500DR	901-0500	Monaural Record/Playback Unit, Rack Mounting with Slides
505D	900-0505	Monaural Playback Unit, Compact
505DR	901-0505	Monaural Playback, Rack Mounting with Slides
500D/DL	900-0502	Delay, Record/Playback Unit, Compact

SPECIFICATIONS

Tape Speed:
7.5 ips (19.05 cm/s.)

Timing Accuracy (at 7.5 ips):
0.1%

Tape Start/Stop Time:
0.1 second maximum.

Wow and Flutter:
0.15% peak weighted.
0.2% rms unweighted.

Noise (Reproducer):
52 dB below 160 n Wb/m @ 1 kHz.

Distortion:
2% or less record to playback at 160 n Wb/m at 1 kHz.

Equalization:
NAB, IEC, CCIR as specified.

Frequency Response:
±2 dB from 50 Hz to 12 kHz exclusive of head contour effect.

Crosstalk (magnetic head limited):
50 dB.

Recorder Input (Line):
0.1 Volt minimum.

Recorder Input (Mike):
0.25 Volts (−64 dBm) minimum.

Audio Output:
+4 dBm (600 ohm transformer); peak output +14 dBm.

Cue Tones:
1000 Hz standard;
150 Hz optional;
8 kHz optional.

Power Requirements:
105 to 125 VAC, 60 Hz, 50 watts.
115 to 220 VAC, 50 Hz optional.

Motor Drive:
Hysteresis synchronous, indirect.

Size (500 and 505 desk-top units):
10¼"W × 12¾"D × 6⅝"H
(26 ×32.4 × 16.9 cm).

Size (rack-mount units):
18"W × 16"D × 7"H
(45.7 × 40.6 × 17.8 cm).

Weight (packed):
Model 500: 22 lbs. (9.9 kg)
Model 505: 19 lbs. (8.6 kg)
Model 500 DR: 28 lbs. (13.0 kg)
Model 505 DR: 28 lbs. (13.0 kg)

FEATURES

- Simulation And Training Systems
- Sound Effects And Display Audio
- Low-Budget Automation Systems
- Automated Telephone Answering Systems

DESCRIPTION

Cartridge machines are extremely flexible and economical devices for implementing any system in which pre-recorded audio information is made available to a listening audience.

Broadcast Electronics has a unique capability in designing and implementing such systems. The Spotmaster product line is the most comprehensive of its type. With the widest range of accessories including programmable sequencers, switchers, multi-deck machines, and telephone answering equipment, this equipment can be used to implement an endless variety of systems.

SIMULATION AND TRAINING SYSTEMS — Spotmaster type cartridge equipment has, for many years, been used to provide programmable audio commands in sophisticated aircraft simulation systems for pilot training.

SOUND EFFECTS AND DISPLAY AUDIO — Amusement parks, museums, and displays can centralize all audio sources in a single or several multiple cartridge machines. Separate outputs from each deck can be routed to individual areas and controlled separately. Or the deck outputs may be combined into a single output. The auxiliary cue tones are used to sequence separate cartridges into a single unified program. The single cartridges are easily changed to vary the program. The auxiliary cue tones may also be used to control associated slide projectors or other devices.

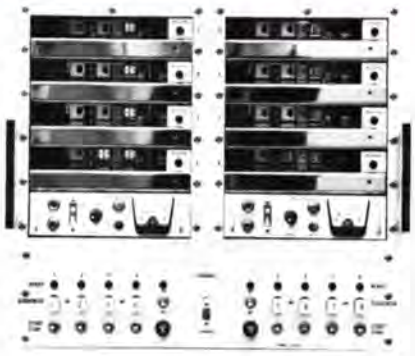
PILOT WEATHER INFORMATION SYSTEM — weather conditions at 15 airports are available to the caller.

LOW BUDGET AUTOMATION SYSTEMS — Spotmaster cart machines and accessories, including reel-to-reel recorders, can be used to provide a complete format of commercials, station breaks, music, etc., for many hours of air time with limited or no operator intervention. Thus the small station can achieve many of the benefits of automation without the large investment required for a full scale system.

AUTOMATED TELEPHONE ANSWERING SYSTEMS — Cart machines and automatic telephone answering equipment can be used for information desemination systems. Weather information, news bulletins, political statements, or any similar data which can be expressed in a pre-recorded message can be made available to any caller. The messages can be quickly up-dated when necessary and provision can also be made for recording incoming messages from the caller.

Prices and ordering information available on request.

MODEL 610CX AUTOMATIC AUDIO SYSTEM



The **SPOTMASTER 610CX** is an example of a basic self-contained system which can be used to fulfill many applications. The system consists of six playback and two record/playback channels plus a programmable sequencer. This unit can provide up to two hours of programmable audio. 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 in any desired sequence.

Prices and ordering information available on request.

SPECIFICATIONS

Frequency Response:
±3 dB, 50 Hz - 12 kHz, ±5 dB, 50 Hz - 15 kHz

Output Level:
+4 dBm, ±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, 15¾" high

Weight:
95 pounds

TELCO 80/91 Series

- **Provides Automatic Answering And Message Recording**
- **Models Available For All Spotmaster Machines**

TELCO 80 - (904-0080) — Record/Play Telephone Answering Interface System for use with Spotmaster Cartridge Machine Series 400/500/605/610

TELCO 91 - (904-0091) — Record/Play Telephone Answering Interface System for use With Spotmaster Cartridge Machine Series 3000/4000

Spotmaster Telco 80 or Telco 91 are interface devices installed between cartridge machines and the telephone company coupler to provide automatic answering and message recording. All Spotmaster cart machines may be adapted for use with Telco equipment.

AUTOMATIC PLAY — In this position the play machine will automatically answer the call at the end of the first full ringing cycle and give out the prerecorded message to the caller. The phone line is released when message recues.

MANUAL PLAY — This is used in conjunction with a telephone handset. The phone can be answered by an operator, the caller can tell operator what message he/she wants to hear. The operator inserts cartridge, pushes manual play and the prerecorded message will play. The operator can stay on line or hang up the phone and be ready for the next call. The phone line is held by the TELCO even if the handset is replaced in the cradle, until the message recues.

AUTOMATIC RECORD — In this position the record machine will automatically answer the call at the end of the first full ring and record the incoming message. The machine will continue to record until the caller hangs up. RDL recorder connector is equipped with a silence sensor which will release the phone line after 15 seconds of silence.

MANUAL RECORD — This is used in conjunction with the telephone handset. The phone can be answered by an operator. When the caller is ready, the operator can insert cartridge and push manual record and the caller's message will be recorded. The phone line is held by the TELCO, even if the handset is replaced in the cradle, until the message recues.

TELCO 80

TELCO 91

AUTOMATIC PLAY AND RECORD — In this position the play machine will automatically seize the phone line at the end of the first full ring and give a prerecorded announcement to the caller. At the end of the recorded announcement a 150 Hz (Q1) prerecorded tone will start the recorder and record the caller's reply. The sequence can be ended in several ways: If the calling party hangs up before the end of the sequence, the recorder connector will release the phone line. At this time, the recorder, if running, will be stopped, but the play unit will be allowed to recue.

SPECIFICATIONS

Dimensions:
10 1/8" wide × 2 3/4" high × 8 5/8" deep.

Weight:
8 lbs. (3.6 kg)

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 80/91.

See price list for ordering information.

TELCO III, IV, V and VI Series

- **Provides Automatic Response To Incoming Calls**
- **Interfaces Between Spotmaster® Cartridge Machine And Bell Recorder Coupler**

The Telco III, IV, V & VI are interface devices which provide automatic answer only capability. 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 are available for automatic or combined manual/automatic operation. **See price list for ordering information.**

TC-4 COUNTER — Registers the number of incoming calls to the Spotmaster unit. Counter installs under tape deck lid.

AUDIO SWITCHERS

Audio switchers are used with multiple cart machines or multiple deck machines to provide a single balanced output. The switcher selects the last deck started and mutes the other decks. If a wrong deck is started, pressing another start button will immediately mute the first deck and put the newly started deck on the output. The first deck started will continue to run, and will re-cue itself.

Model SW5E Switcher

Model SW5B Switcher

ORDERING INFORMATION

MODEL	STOCK NO.	DESCRIPTION
SW5B	904-0005	605/610 Audio Switcher switches any of five audio channels to program line (two required for 610)
SW5C	904-0012	500 Series Audio Switcher for up to five units
SW5D	904-0009	2000 Series Audio Switcher for up to five units
SW5E	904-5000	5300A/B Audio Switcher for three decks. Switchers can be tied together to provide a single balanced output from up to three 5300 A/B machines.
SW5F	904-5001	5500 Audio Switcher for five decks.

REMOTE CONTROL UNITS

Units are available for remote control of practically all Spotmaster cartridge machines.

BE102 — Start/Stop Function for three 500 machines.

SERIES 3000 REMOTE CONTROL PANEL for record/playback unit with cue tones and fast forward option.

BE106 — 5 start/stop functions and sequence indicator for Model 605.

SERIES 5300 REMOTE CONTROL PANEL for use with 5300 A/B Series with companion record amplifier.

SERIES 3000 REMOTE CONTROL PANEL with start/stop and fast forward switches for 5 Series 3000 machines.

ORDERING INFORMATION

MODEL	STOCK NO.	DESCRIPTION
BE-102	904-0102	500 Series, Remote Control, 3 start/stop functions w/15 ft. cable.
BE-106	904-0106	605 Remote Control, 5 start/stop functions and sequencing indicator, illuminated buttons w/15 ft. cable.
3000	906-3016	3000 Remote Control Panel, START for 5 Units
3000	906-3019	3000 Remote Control Panel, Single Record/Playback Model
3000	906-3020	3000 Remote Control Panel, Single Playback (with cue tones)
3000	906-3021	3000 Remote Control Panel, Single Playback (without cue tones)
3000	906-3028	3000 Remote Control Panel, START/STOP and FAST FORWARD for 5 Units
4000	906-4015	4000 Remote Control Panel, START for 5 Units
4000	906-4016	4000 Remote Control Panel, Single Record/Playback Model
5300	927-0047	5300 A/B Series Remote Control Panel
5300	927-0048	Remote Control Panel for 5300 A/B Series with companion record amplifier

Tape Cartridge Accessories

TW-200
(With Timer)

TI-50

200-3T

TD1A

R-25015 Demagnetizer

Recording Tape

Fidelipac
Cartridges

TW-100 TAPE CARTRIDGE WINDER — The SPOTMASTER Tape Cartridge Winder is a rugged, dependable and field tested tape cartridge winder which fills a need in every station using cartridge equipment. It is no longer necessary to limit your cartridge operation by using only stock sizes or to tie up your conventional tape equipment to load tape cartridges. The SPOTMASTER Winder will handle all reel sizes and runs at 22½" per second. Worn tape in old cartridges is easily replaced. New or old cartridges may be wound to any length. Tape Timer installed, optional. Model TW-200 includes timer.

SPECIFICATIONS

Size:
10" W × 20" L × 6¾" H.

Weight:
9½ lbs.

Power Requirements:
117 V ac, 50/60 Hz, 30 watts.

Winding Speed:
22½ IPS.

Drive Motor:
4 pole induction.

Take Up Reel:
Up to 7¼" dia.

Capacity:
Handles supply reel up to 3600' 1 mil lubricated tape.

TI-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.

TAPE ERASERS MODEL 200-3T AND MODEL TD1A — Handy bulk erasers essential for cartridge users to assure clean, noiseless tape. Model 200-3T handheld, easy to use with 6-foot cord and pushbutton thumb switch. Model TD1A 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.

HEAD DEMAGNETIZER R-25015 — Indispensable for proper head maintenance to insure maximum frequency response, low tape noise...Special finished pole piece will not damage head surface...High impact molded epoxy case...117 VAC-50/60 Hz.

LUBRICATED TAPE — World-renowned Scotch Recording Tape specifically recommended by Spotmaster for tape cartridge use...A heavy-duty tape featuring a special lubricated surface for cleaner, longer tape life... 1800 feet/7-inch reel or 3600 feet/NAB Hub.

Also available is the Formula-17 tape from Capital Magnetics.

FIDELIPAC CARTRIDGES — Series 300 ("A" size), 600 ("B" size), 1200 ("C" size) available empty or in assorted preloaded sizes. Custom winding provided. Complete stock of cartridge replacement parts.

Series 350 Cartridges are for use in stereo machines with inadequate tape guidance. The cartridge is adjustable for added precision.

The Master Cart series is for those broadcasters who seek maximum stereo performance.

Hot Tape (High Output Transfer Tape) is available in all Fidelipac cartridges listed above. See price list for complete listing of models, times, etc.

SPLICE DETECTOR SF-101-B — The SF-101-B utilizes the latest in opto-electronics to detect a splice in a tape cartridge. An audible tone alerts the operator when the splice is found (tone on/off switch is provided). Upon detection it stops the cartridge reel rotation immediately to position the splice beyond the recording point on the tape. Sensitivity may be adjusted to detect tape kinks, flaws, etc.

SPECIFICATIONS

Cartridge Size: A
Speed of Operation: 25 to 30 ips
*Power Requirements: 115V, 60 Hz, 85 watts
Weight (packed): 10 lbs.
Dimensions: 7" W × 5" H × 9½" D

*Supplied with step-down transformer for 220V, 50/60 Hz operation.

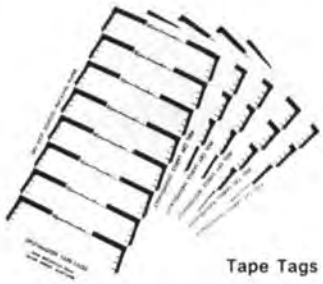
SF-101-B

MODEL A-2 AND AA-3 AUDIOPAK BROADCAST TAPE CARTRIDGES — Designed to meet all NAB specifications for the type "A" continuous loop tape cartridge, Audiopak Model A-2 offers quality, reliability, and consistently high performance. Available empty or loaded with Formula 17 lubricated tape from 20 seconds to 10.5 minutes playtime.

The Audiopak AA-3 stereo phase cartridges meet or exceed NAB specifications and have a superior dynamic range due to a new high output/low noise tape formulation. Available in "A" size from 10 seconds to 10.5 minutes playtime.


A-2

TAPE TAGS — Handy self-adhesive labels especially die-cut and color-coded for cartridge cataloging... and are easy to remove...Room for three typewritten lines...Sheets of 8 tags each...Eight distinctive colors.


Tape Tags

TAPE SPLICER — Model R26038 is ideal for cartridge splicing...Two-position cutting assembly cuts tape on 45° bias then shifts for "Gibson-Girl" trim...Comes complete with tape...Extra splicing tape, too, in two convenient sizes.


R-26038

BE-903 CLEANING FLUID — Our exclusive special blend was developed to meet stringent broadcaster requirements...Quickly dissolves accumulated tape oxides... Will not harm heads or rubber parts...Safe to use...16 and 32 oz. cans.


Cleaning Fluid

TEST TAPES — Several types of test tapes are available including those made by Fidelipac, Standard Test Lab (STL) and Magnetic Radio Lab (MRL). Refer to price list for make and model.

See Price List for Ordering Information for all Tape Cartridge Accessories.


350STL

Cartridge Storage Racks

LS-200

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 heavy steel rod finished bright zinc. Each individual RS-25 section is removable. 51¼" high, 20½" diameter.

MODULAR UNITS

DESK MOUNT MODULES — Rotating racks present four-sided storage in attractive Walnut Formica. DM-72 holds 72 cartridges, measures only 22" H x 11" W x 11" D. DM-200 provides 200 storage slots. 29½" H x 15¾" W x 15¾" D.

DM-40 WALNUT WOODGRAIN FINISHED CABINET — Lazy Susan designed for tabletop operation; holds 40 "A" cartridges. 9½" W x 8" D x 11⅞" H. Weight 6½ lbs.

DM-20 WALNUT WOODGRAIN FINISHED CABINET — Holds 20 "A" cartridges. Units may be stacked; 9½" W x 4" D x 10⅞" H. Weight 3¼ lbs.

RM-100 WALL MOUNT RACK — Holds 100 "A" size cartridges in minimum space. Walnut Formica trim. 2' H x 2' W x 4⅜" D.

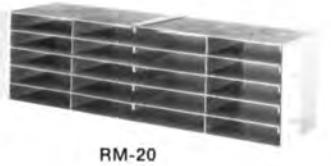
RM-20 is designed for standard 19" rack installation. Put vacant rack space to good use. Holds 20 "A" size cartridges in only 5¼" vertical space. Made of aluminum.

DM-72

DM-200

DM-40

DM-20



RM-20

RM-100

Audio Console Applications

RADIO BROADCAST—With 15 different models from which to choose, one of Broadcast Electronics' monaural or stereo audio consoles is just right for use in any radio station, whether AM, FM or Short Wave.

TELEVISION BROADCAST—Wherever audio consoles are used in a television station, BE fills the need...from on-air audio control to production of commercials, PSA's and news.

REMOTE/MOBILE BROADCAST—BE consoles provide outstanding performance in remote broadcast situations such as news and sports coverage. Several portable models are available which are ideal for transporting and operating at out-of-the-way locations. Or incorporate a BE console into a mobile van for timely, convenient remote broadcasts.

PRODUCTION AND RECORDING STUDIOS—Production and recording studios appreciate the professional results obtained with Broadcast Electronics consoles when producing music, radio and TV commercials, and everything in-between.

CATV—Control all CATV audio, from on-line to production, with a Broadcast Electronics audio console.

DISCO—Several of BE's smaller consoles are easy-to-operate, yet flexible and rugged enough for use in Discos and Clubs...and at prices you won't mind paying.

BE AUDIO CONSOLES
a FILMWAYS company

5 & 8 Mixer, Dual Channel, Mono
Model 5M150
Model 8M150

FEATURES

- Elegant Styling
- Plug-In Amplifiers
- .05% IM and THD Distortion
- ±.5 dB, 30 Hz - 20 kHz Response
- High Or Low Level Input
- 8 Watt Monitor Amp
- Durable Front Panel

5M150

8M150

GENERAL DESCRIPTION

CLEAN AUDIO — State of the art technology and newly designed audio circuitry give the new Broadcast Electronics 150 Series consoles unequaled audio performance.

FIVE OR EIGHT MIXER MODELS — The Broadcast Electronics 150 Series dual-channel consoles are available in either five- or eight-input mixer models. They are human engineered for error free production or on air use.

NEW, ELEGANT, DURABLE STYLING — A totally new styling adds durability and enhances the attractiveness of the 150-series consoles. The front panel features crisp, clean graphics under a laminated polycarbonate overlay. This tough protective surface makes it virtually impossible to scratch or wear the lettering away. The front panel should look as clean and fresh after years of normal usage as it did the day it was purchased!

SELECTABLE MICROPHONE/LINE LEVEL INPUTS — Identical plug-in preamplifier modules are used in each mixing channel. These modules can be preset to operate either as low-impedance microphone preamplifiers or to accommodate high-level sources. This feature affords complete flexibility in mixing assignments to meet existing operating requirements or to readily adapt to future changes.

TWO INPUTS PER MIXER — Interlocked, pushbutton selection of two sources per mixer is provided.

FET BUS SELECTION — The preamplifier module circuitry includes modern FET output bus selection, permitting silent channel bus assignment of the mixer preamp output. Dry-contact mechanical switching of low-level audio bus signals is eliminated.

SPEAKER MUTING — The 150 Series consoles are supplied with one speaker muting/warning light relay, with a second as an option. The consoles are prewired for relay operation in conjunction with Mixer #1 and #2. Muting assignment is easily field-modified for other mixer assignments or extensions.

DUAL OUTPUT CHANNELS AND VU METERING — The output channels are identical in performance. Each plug-in line amplifier module delivers 600 ohm, transformer-isolated, balanced output at a +8 dBm level. Illuminated 3½" VU meters afford continuous visual monitoring of the individual channel outputs. Contact fingers on all plug-in modules are gold-plated.

COMPLETE SYSTEM MONITORING — Monitoring at levels up to 8 watts, rms, affords an aural check of the program or audition channels.

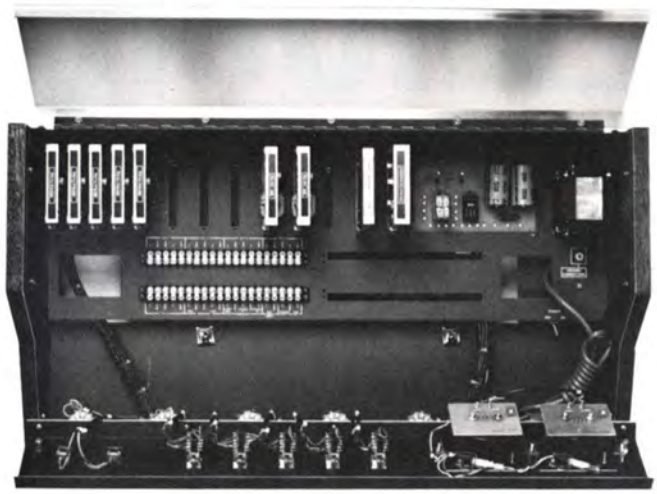
Headphone monitoring of program, audition or cue busses, selectable by pushbutton operation, is standard. A front panel jack and headphone gain control permit monitoring up to a 1.0 watt level with 8 ohm headphones.

Each input source may be previewed through the internal cue amplifier/speaker fed from detented cue switch closures actuated at the extreme CCW mixer knob position.

GENERAL DESCRIPTION, (Cont.)

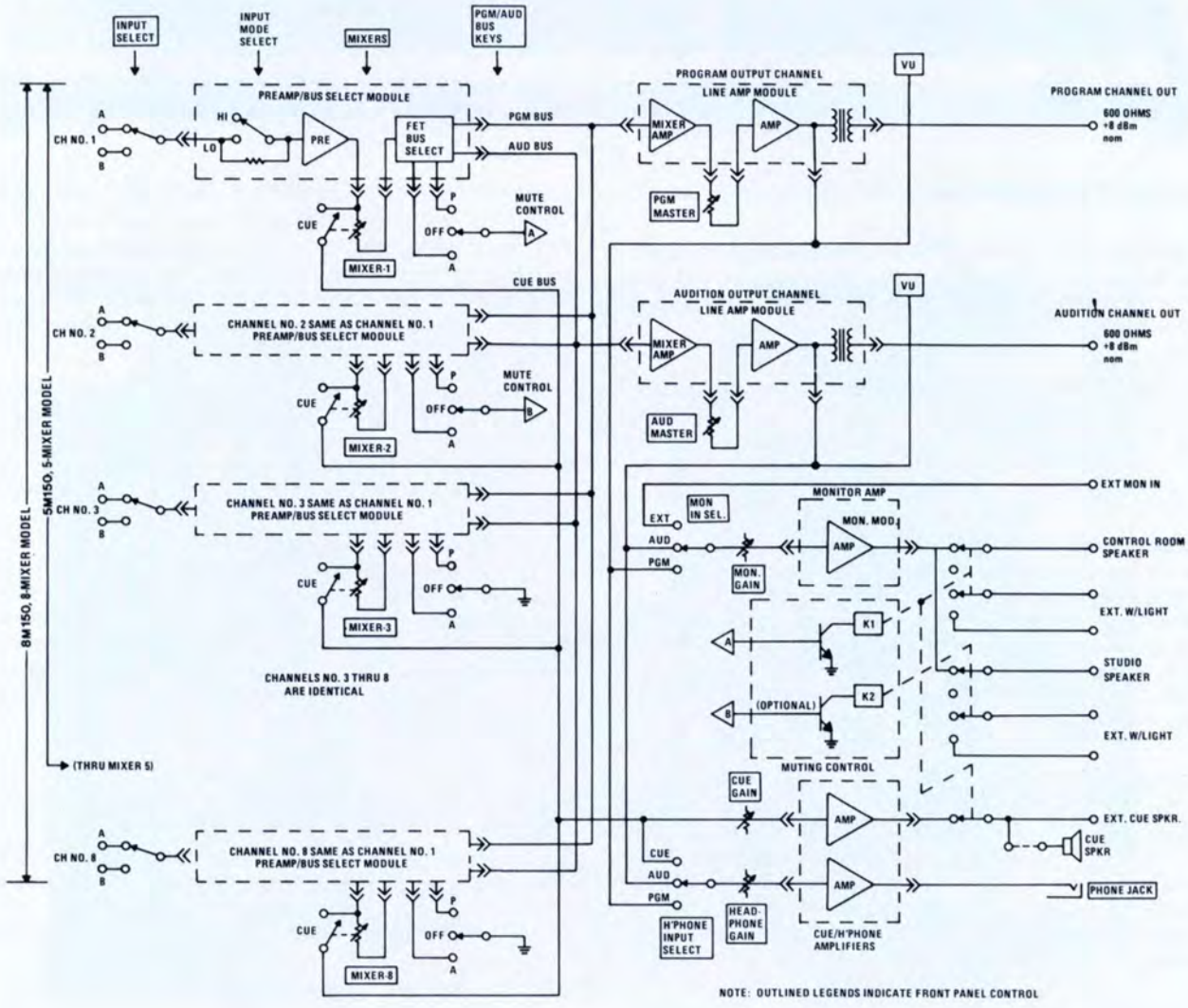
NEAT-APPEARING SIMPLE INSTALLATION — All external wiring is made to clearly labeled screw-type barrier strips, eliminating unattractive exposed cables. Cable access is through openings in the base of the console housing. These features insure simple, neat-appearing installation.

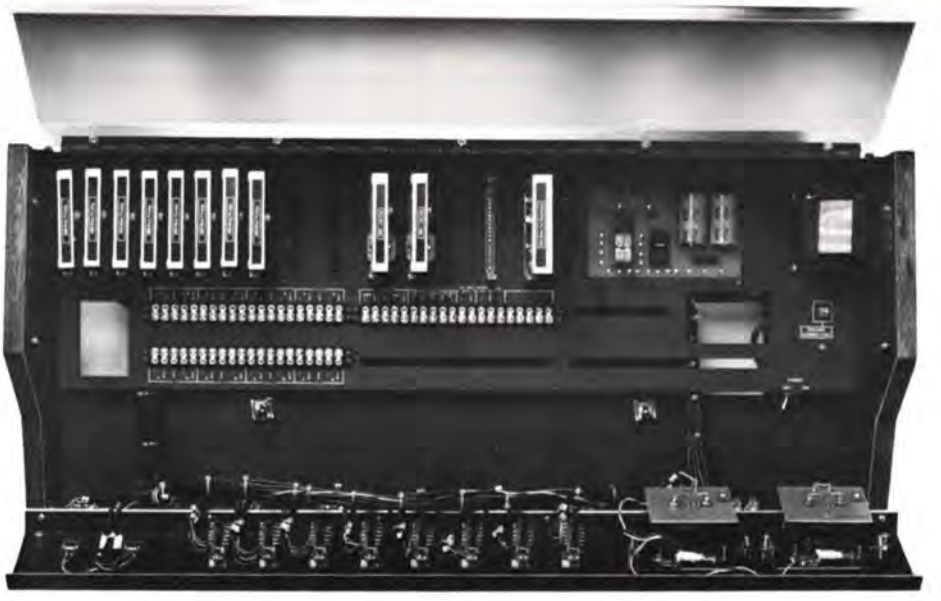
HIGHLY RELIABLE, FUNCTIONAL OPERATION — The 150 Series consoles provide reliable, long-term operation, plus attention to human engineering factors for ease of operation and maintenance. They are further enhanced by elegant, yet functional modern styling, and insure the 150 Series console user of a highly-professional, yet economically-practical audio console.



MODEL 5M150
Internal view shows complete access to controls, switches, modules and terminal blocks.

BLOCK DIAGRAM





Model 8M150 with top lid and front panel open. Note neat cabling and clear access to all components and modules for maintenance. Includes preamp for each mixer, 2 line amps, 1 monitor amp and 1 cue/headphone amp.

ORDERING INFORMATION

MODEL	STOCK NO.	DESCRIPTION
5M150	938-0531	5-Mixer Monophonic Console, sealed Pots, Dual Channel
8M150	938-0831	8-Mixer Monophonic Console, sealed Pots, Dual Channel
	838-0200	Additional Cost for 230 VAC/50 Hz Power Source
	270-0007	Second Muting Relay For 5M150 and 8M150

SPECIFICATIONS

PROGRAM AND AUDITION CHANNELS

Inputs:
5M150: 10 into 5 mixers
8M150: 16 into 8 mixers

Input Impedances (Selectable)/Levels:
Low Mode: 150 ohms, −65 dBm min. −38 dBm max.
High Mode: 54 K ohms, bal., bridging; −20 dBm min. +20 dBm max.

Frequency Response:
±0.5 dB, 30 Hz to 20 kHz

Distortion:
.05% or less IM & THD at +18 dBm output, 30 Hz to 20 kHz.

Signal-to-Noise Ratio:
70 dB below +18 dBm output with −50 dBm into any low level input. 20 kHz Bandwidth.

Output Impedance/Level:
600 ohms balanced, +8 dBm for zero-VU meter reading; +18 dBm max.

Overall Gain:
105 dB.

MONITOR CHANNEL

Inputs:
Program/Audition/External. Pushbutton selectable.

Frequency Response:
±0.75 dB, 50 Hz to 20 kHz.

Distortion:
0.75% or less, 30 Hz to 20 kHz, @ rated rms output and load.

Output Power/Impedance:
8 watts rms into 8 ohm load.

CUE AND HEADPHONE AMPLIFIERS:

1.0 watt rms. Internal cue speaker. Front panel headphone jack and pushbutton program/audition/cue bus selection.

MUTING:

One muting relay standard. Second relay optional. Standard relay mutes monitor and cue speakers when Mixer 1 activated. Includes terminated contact closure (1A, 125Vac) for warning light operation.

POWER REQUIREMENTS:

115Vac, 50/60 Hz (230Vac, 50/60 Hz optional) 50 watt max.

DIMENSIONS:

5M150: 29″ W, 15.75″ D, 8.25″ H (73.7 × 40 × 20.9 cm).
8M150: 33″ W, 15.75″ D, 8.25″ H (83.8 × 40 × 20.9 cm).

WEIGHT (packed):

5M150: 49 lbs. (22.3 kg.)
8M150: 55 lbs. (25 kg.)

BE AUDIO CONSOLES
a FILMWAYS company

5 & 8 Mixer, Stereo
Model 5S150
Model 8S150

FEATURES

- Elegant Styling
- Modular, Plug-In Electronics
- Preset High/Low Input Sensitivity
- Cue Switches, All Mixers
- Mono Mixdown And Dual Channel Options
- .05% IM And THD Distortion
- ±.5 dB, 30 Hz - 20 kHz Response
- Durable Front Panel

MODEL 5S150

MODEL 8S150

GENERAL DESCRIPTION

CLEAN AUDIO — State of the art technology and newly designed audio circuitry give the new Broadcast Electronics 150 Series Consoles unequaled audio performance.

FIVE- AND EIGHT-MIXER MODELS — The Broadcast Electronics 150 Series Stereo Consoles are available in 5-mixer and 8-mixer configurations. Two inputs per mixer, at either microphone or line input levels, are pushbutton selectable. They are human engineered for error free production or on air use.

NEW ELEGANT, DURABLE STYLING — A totally new styling adds durability and enhances the attractiveness of the 150-series consoles. The front panel features crisp, clean graphics under a laminated polycarbonate overlay. This tough protective surface makes it virtually impossible to scratch or wear the lettering away. The front panel should look as clean and fresh after years of normal usage as it did the day it was purchased!

PROGRAMMABLE MONO/STEREO, HIGH/LOW LEVEL INPUTS — Identical modules are used in each stereo mixer input channel. Modules may be preset for mono/stereo and (or) high/low level to permit the user to gear individual mixing channel operation functions precisely to his programming requirements.

+18 dBM LEFT AND RIGHT CHANNEL OUTPUT CAPABILITY — Left and right channel plug-in line amplifier modules deliver +18 dBm balanced stereo outputs, visually-monitored on dual 3½" illuminated VU meters. Adequate "headroom" is insured by the +18 dBm output capability of the line amplifiers.

CONTACT-FREE FET BUS SELECTION — Electronic bus switching, using gated FET techniques, insures fast and silent operation. Switching is effected by simple, remote application of dc control voltages to the FET circuitry, eliminating mechanical contact closures from low-level audio bus paths.

STEREO MONITOR/HEADPHONE AND SUMMED L + R CUE AMPLIFIERS — Stereo monitoring of program and audition channels, or an external source, is pushbutton selected and fed to stereo monitor amplifiers. Stereo headphone amplifier outputs, with pushbutton input selection of program, audition and cue busses, appear on a front panel jack. Through a summed L+R cue bus signal any input may be previewed through the built-in cue amplifier speaker system.

LONG-LIFE, LOW-NOISE MIXING CONTROLS — Dual potentiometers of sealed, high-reliability, long-life design are used for mixing controls. Dual cue switches, actuated in a detented CCW control position, produce a summed L&R cue bus signal source.

GENERAL DESCRIPTION (Cont.)

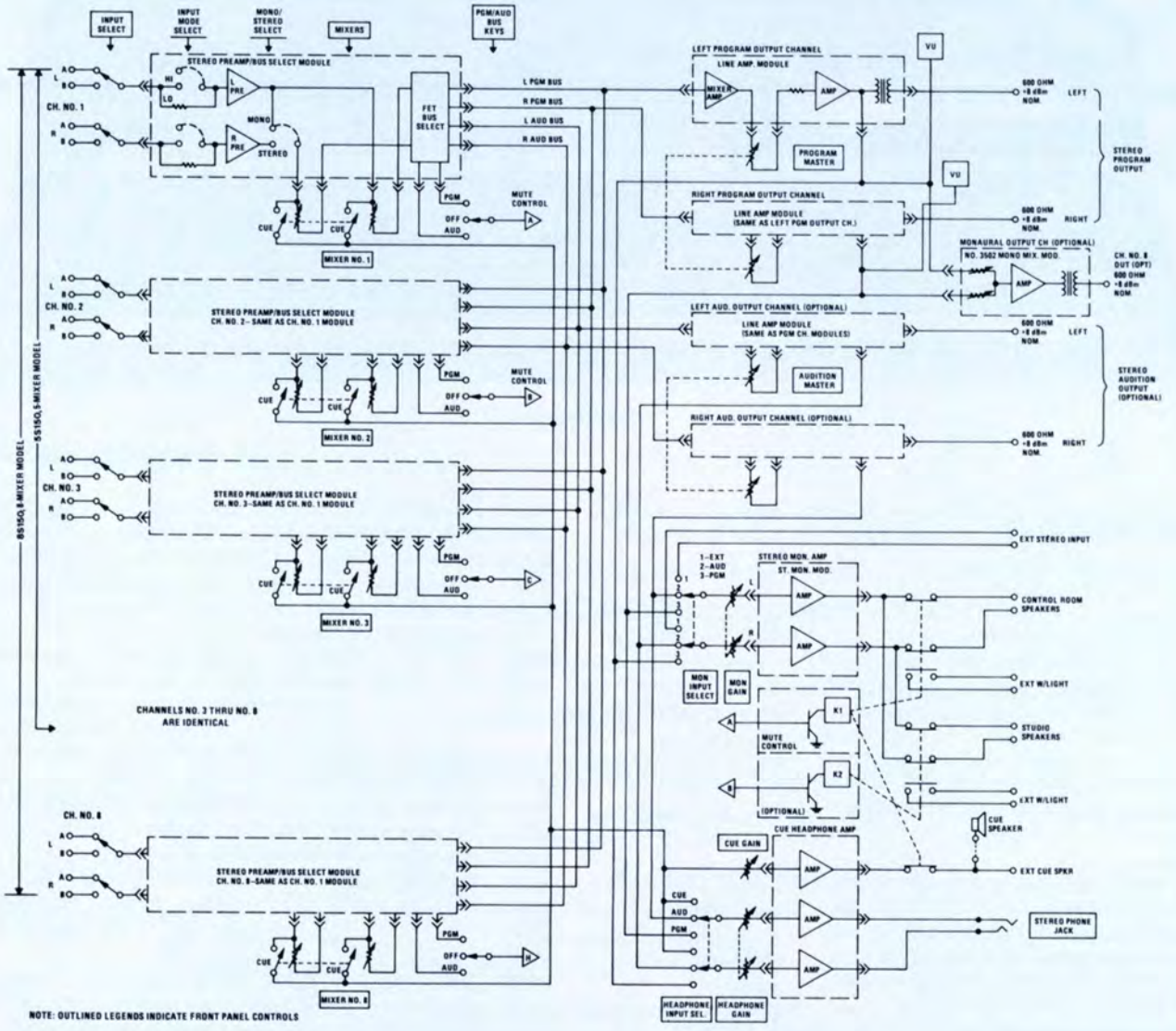
SIMPLE MUTING LOGIC — Muting of monitor and cue speakers is by transistor-switched relay operation, initiated by the Mixer #1 channel-select key switch. The consoles are prewired for a second optional relay. The relays include terminated contact closures for operation of external warning lights.

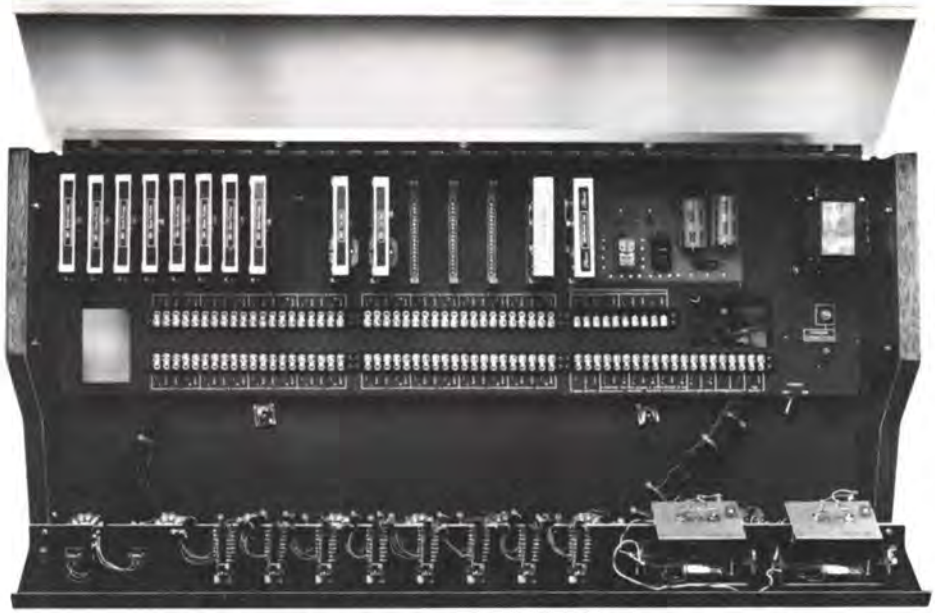
CLEAN, STRAIGHTFORWARD INSTALLATION — External connections are made to labeled screw-type barrier strips located in the cabinet bottom with adjacent cable access openings. This permits an installation completely free from unattractive exposed cables.

MONO MIXDOWN/LINE LEVEL AUDITION OPTIONS — The consoles are prewired to accept optional plug-in modules for line-level monaural or stereo audition outputs where either of these additional operating functions are required. An optional mono program output is also available for simultaneous mono/stereo broadcasting.

SUPERB STEREO SYSTEM — The 150 Series Stereo Consoles satisfy the demand for reasonably-priced, professional control equipment, tailored to meet the widely varying requirements of today's stereo broadcaster.

BLOCK DIAGRAM





MODEL 8S150 Internal View. As neat inside as outside. Easy to install and maintain. Supplied with stereo preamp for each mixer, 2 line amps, 1 monitor amp and one cue/headphone amp. Mono matrix is optional.

ORDERING INFORMATION

MODEL	STOCK NO.	DESCRIPTION
5S150	938-0530	5-Mixer Stereophonic Console, sealed Pots
8S150	938-0830	8-Mixer Stereophonic Console, sealed Pots
	838-0200	Additional Cost for 230 VAC/50 Hz Power Source
	918-3602	Mono Matrix Card for 5S150 and 8S150
	918-3604	Line Amplifier for Stereo Audition Channel 5S150 and 8S150 (2 Required)
	270-0007	Second Muting Relay for 5S150 and 8S150

SPECIFICATIONS

PROGRAM AND AUDITION (OPTIONAL) CHANNELS

Stereo Inputs:
5S150: 10 into 5 mixers
8S150: 16 into 8 mixers

Input Impedances/Levels (Selectable):
Low Mode: 150 ohms balanced. −65 dBm min., −38 dBm max.
High Mode: 54K ohms balanced, bridging. −20 dBm min., +20 dBm, max.

Frequency Response:
±0.5 dB, 30 Hz - 20 kHz.

Distortion:
.05% or less IM & THD at +18 dBm output, 30 Hz - 20 kHz.

Signal-to-Noise:
Noise (unweighted), 70 dB below +18 dBm output with −50 dBm signal into any low-level input. 20 kHz Bandwidth.

Output Impedance/Level:
600 ohms balanced. +8 dBm for zero-VU meter reading. +18 dBm output capability.

Overall Gain:
105 dB.

Monaural Output (Optional):
Same performance specifications as program/audition output channels. Mix ratio adjustable, ±6 dB.

STEREO MONITOR CHANNELS

Stereo Inputs:
Pushbutton selectable, program/audition/external.

Frequency Response:
±0.75 dB, 50 Hz - 20 kHz.

Distortion:
0.75% or less, 30 Hz - 20 kHz at 1.5 watts rms into 8 ohm loads.

Output Power/Impedance:
1.5 watts rms per channel into 8 ohm loads.

STEREO HEADPHONE AMPLIFIERS:

1.0 watts rms per channel into front panel phone jack. Program, audition and cue pushbutton input select.

CUE AMPLIFIER:
1.0 watts rms into built-in 8 ohm speaker. Input is summed L + R signal.

MUTING:
One muting relay standard. Mutes monitor and cue speakers when Mixer No. 1 activated. Prewired for second optional relay. Relays have terminated contact closures (1A at 125 Vac) for warning light operation.

POWER REQUIREMENTS:
115 Vac. 50/60 Hz (230 Vac. 50/60 Hz optional) 85 watts max.

DIMENSIONS:
5S150: 29" W. 15.75" D. 8.25" H (73.7 × 40 × 20.9 cm)
8S150: 33" W. 15.75" D. 8.25" H (83.8 × 40 × 20.9 cm)

Weight (packed):
5S150: 54 lbs. (24.5 kg).
8S150: 55 lbs. (25 kg).

BE AUDIO CONSOLES
a FILMWAYS company

Deluxe 5 and 8 Mixer, Dual Channel, Mono
Model 5M250
Model 8M250

FEATURES

- Elegant Styling
- Step Type Ladder Attenuators
- Telephone Type Channel Key Switches
- Modular, Plug-In Electronics
- Cue Switches, All Mixers
- High/Low Level Input Selection
- Durable Front Panel

MODEL 5M250

MODEL 8M250

GENERAL DESCRIPTION

FLEXIBILITY — Complete flexibility in mixing channel function is a unique feature of the Broadcast Electronics 250 Series, five- and eight-mixer dual-channel monaural consoles. All plug-in input preamplifier modules are identical. They may be preset to accept either balanced, high-level sources or balanced, low-level microphones. Mixing channel assignments may be geared precisely to individual programming requirements with pushbutton preselection of two inputs per mixer.

NEW ATTRACTIVE, DURABLE STYLING — A totally new styling adds durability and enhances the attractiveness of the 250-series consoles. The front panel features crisp, clean graphics under a laminated polycarbonate overlay. This tough protective surface makes it virtually impossible to scratch or wear the lettering away. The front panel should look as clean and fresh after years of normal usage as it did the day it was purchased!

LADDER ATTENUATORS AND TELEPHONE TYPE SWITCHES — Mixing step-type ladder attenuators, quiet, telephone-type bus select key switches, and contact-free, FET bus selection contribute to the consoles' high-grade performance.

DUAL CHANNEL DESIGN — A 600 ohm balanced audition channel is equal in performance to the program channel.

HUMAN ENGINEERED — The uncluttered control panel arrangement affords convenient, error-free operation. Input pushbutton switches are logically grouped for mixer input preselection; program, audition or external source inputs to the monitor amplifier; and program, audition and cue bus inputs to the headphone amplifier. Masters, plus monitor, headphone and cue gain controls are panel mounted. Illuminated, 3½" VU meters continuously display both program and audition channel output levels.

PLUG-IN ELECTRONICS — All active circuitry, other than the power supply/relay assembly, is on plug-in modules with gold-plated contact fingers to insure long-term socket mating reliability.

FOUR EXTRA INPUTS ON 8-MIXER MODEL — The model 8M250 has four extra unwired switches to aid the broadcaster with any future expansion plans.

GENERAL DESCRIPTION (Cont.)

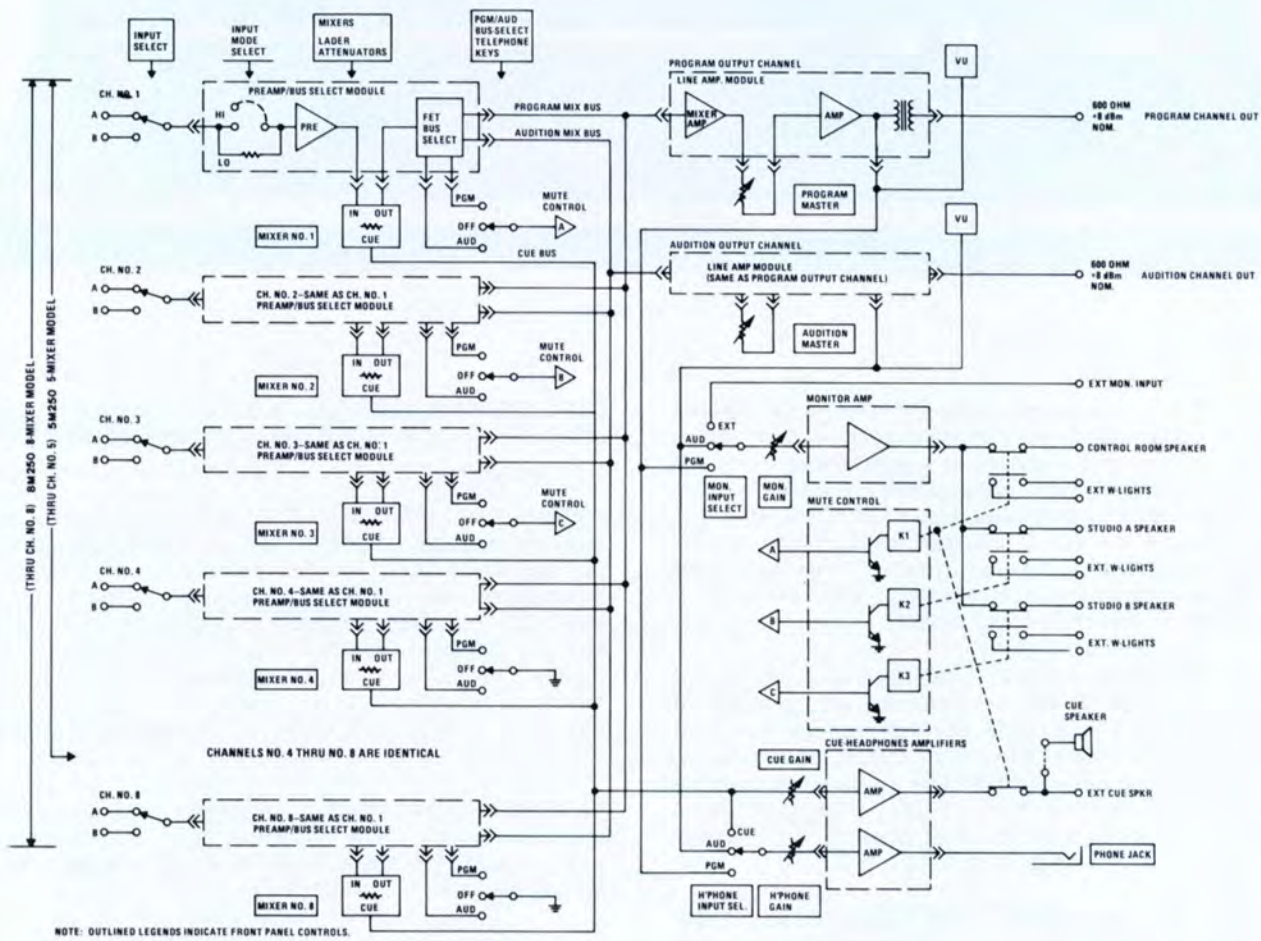
NEAT AND SIMPLE INSTALLATION — Completely free from exposed wiring, incoming cables are connected to internal, labeled, screw-type barrier strips with cable access through the base of the cabinet. An outstandingly neat installation results.

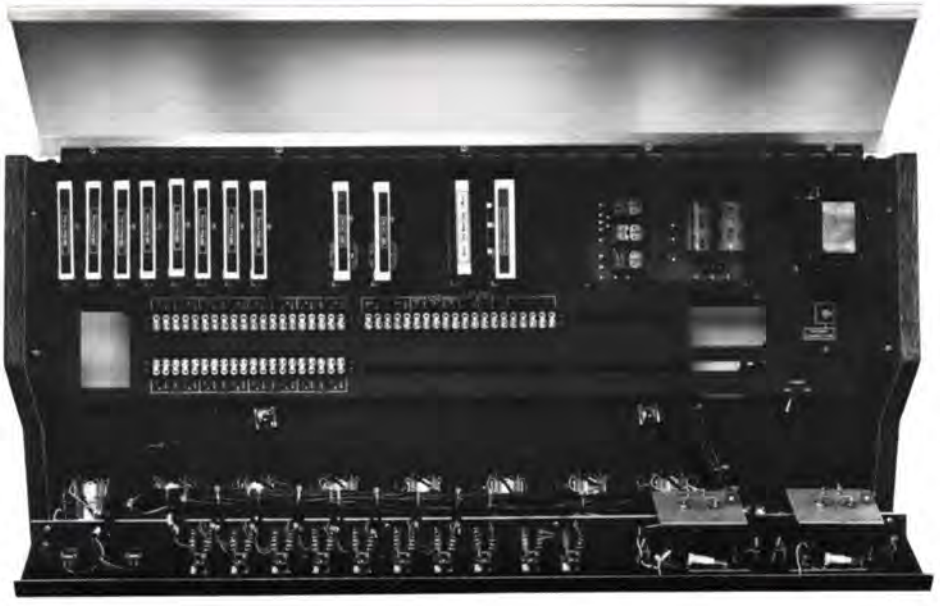
FULL MONITORING — An 8-watt monitor amplifier and individual 1-watt headphone and cue amplifiers afford complete operational and preview monitoring capability. Three muting relays equipped with terminated warning light contacts (1A @ 125 Vac) are controlled by channel activation of the first three mixer channel select keys. Muting logic is straightforward and readily field modified for alternative or expanded muting assignments.

FET BUS SELECTION — Output channel bus selection is controlled electronically by remote FET dc switching, eliminating mechanical contact closures from the low-level audio bus switching system.

SUPERB PERFORMANCE — Guaranteed electrical specifications and logically-positioned operating controls, complemented by attractive modern styling, make the Broadcast Electronics 250 Series Consoles the clear choice to satisfy the most demanding operating requirements.

BLOCK DIAGRAM





MODEL 8M250 Inside view, shows the same close attention to detail as the "human-engineered" front panel. Installation, service and maintenance are a pleasure!

ORDERING INFORMATION

MODEL	STOCK NO.	DESCRIPTION
5M250	938-0541	5-mixer, step attenuators and telephone type channel keys. Dual mono output channels. Supplied with 3 muting relays. Includes preamp for each mixer channel; 2 line amp, 1 monitor amp, and 1 cue/headphone amp
8M250	938-0841	8-mixer, step attenuators and telephone type channel keys. Dual mono output channels. Supplied with 3 muting relays. Includes preamp for each mixer channel; 2 line amp, 1 monitor amp, and 1 cue/headphone amp
	838-0200	230 Vac, 50/60 Hz power conversion.

SPECIFICATIONS

PROGRAM AND AUDITION CHANNELS

Inputs:
5M250: 10 into 5 mixers
8M250: 16 into 8 mixers (8-mixer model has 4 extra unwired inputs)

Input Impedances/Levels (Selectable):
Low Mode: 150 ohms, balanced. −65 dBm min., −38 dBm max.
High Mode: 54K ohms balanced bridging. −20 dBm min., +20 dBm, max.

Frequency Response:
±0.5 dB, 30 Hz - 20 kHz.

Distortion:
.05% or less IM & THD at +18 dBm output, 30 Hz - 20 kHz.

Signal-to-Noise:
Noise (unweighted), 70 dB below +18 dBm output with −50 dBm signal into any low-level input. 20 kHz bandwidth.

Output Impedance/Level:
600 ohms balanced. +8 dBm for zero-VU meter reading, +18 dBm output capability.

Overall Gain:
105 dB.

MONITOR CHANNEL

Inputs:
Pushbutton Selectable; Program/Audition/External.

Frequency Response:
±0.75 dB, 50 Hz - 20 kHz.

Distortion:
0.75% or less, 30 Hz - 20 kHz at 8 watts rms into 8 ohm load.

Output Power/Impedance:
8 watts rms into 8 ohms load.

CUE AND HEADPHONE AMPLIFIERS:

1.0 watt rms into 8 ohms loads. Internal cue speaker. Front panel headphone jack and program/audition/cue pushbutton selection.

VU Meters:
2 Meters; Audition & Program.

MUTING:
Three relays provided. Prewired for monitor/cue muting through Mixer No. 1. Relays No. 2 and No. 3 controlled by Mixers No. 2 and No. 3 respectively. Other combinations by simple field strapping. Relays have terminated 1A, 125 Vac warning light contacts.

POWER REQUIREMENTS:
115 Vac, 50/60 Hz (230 Vac, 50/60 Hz optional). 70 watts maximum.

DIMENSIONS:
5M250: 29" W, 15.75" D, 8.25" H (73.7 × 40 × 20.9 cm)
8M250: 33" W, 15.75" D, 8.25" H (83.8 × 40 × 20.9 cm)

Weight (packed):
5M250: 55 lbs. (25 kg).
8M250: 60 lbs. (27.3 kg).

BE AUDIO CONSOLES
a FILMWAYS company

Deluxe 5 and 8 Mixer, Dual Channel, Stereo
Model 5S250
Model 8S250

FEATURES

- Elegant Styling
- Ladder Step Attenuators
- Modular Plug-In Electronics
- Contact-Free Bus Selection
- Telephone-Type Channel Keys
- Four Line-Level Outputs
- Mono Mix-Down Option
- Durable Front Panel

MODEL 5S250

MODEL 8S250

GENERAL DESCRIPTION

THE COMPLETE STEREO CONSOLE — The Broadcast Electronics 250 Series Dual Stereo Consoles, available with either five or eight input mixing channels feature identical line-level output stereo program and audition channels, with VU meter switching to either stereo channel pair. Mixing controls are maintainable, step-type dual ladder attenuators. Quiet-operating, telephone-type channel select switches are used.

NEW ELEGANT, DURABLE STYLING — A totally new styling adds durability and enhances the attractiveness of the 250-series consoles. The front panel features crisp, clean graphics under a laminated polycarbonate overlay. This tough protective surface makes it virtually impossible to scratch or wear the lettering away. The front panel should look as clean and fresh after years of normal usage as it did the day it was purchased!

MONO- MIX-DOWN OPTION — For applications requiring a summed L+R mono signal in addition to the stereo program outputs, the consoles are prewired to accept an optional plug-in module for this purpose.

INTEGRAL HIGH/LOW LEVEL AND MONO/STEREO MODE SELECTION — Identical stereo preamplifier modules are used in all mixing channels. Modules may be pre-programmed for mono or stereo operation; and for either low impedance microphone, or line-level input service. The user can thus assign mixing channel functions to meet current operating requirements and can readily change them to satisfy future combinations, without obsolescence.

DUAL CHANNEL DESIGN — A 600 ohm balanced audition channel is equal in performance to the program channel.

STEREO MONITOR AND HEADPHONE AMPLIFIERS — High-quality control room and studio stereo monitoring of program, audition or an external input is afforded by 8-watt per channel monitor amplifier modules. Terminated in a front panel jack, headphone monitoring at up to a 1-watt level, of stereo program and audition channels, plus a summed L+R cue bus signal, insures full aural access to critical portions of the console system.

PREFADER PREVIEW, ALL INPUTS — A built-in cue amplifier-speaker system is fed from a summed-stereo bus. Bus signals are applied by dual cue switches on each mixer control, actuated in the detented closed-fader position.

FOUR EXTRA INPUTS ON 8-MIXER MODEL — The Model 8S250 has four extra unwired switches to aid the broadcaster with any future expansion plans.

GENERAL DESCRIPTION (Cont.)

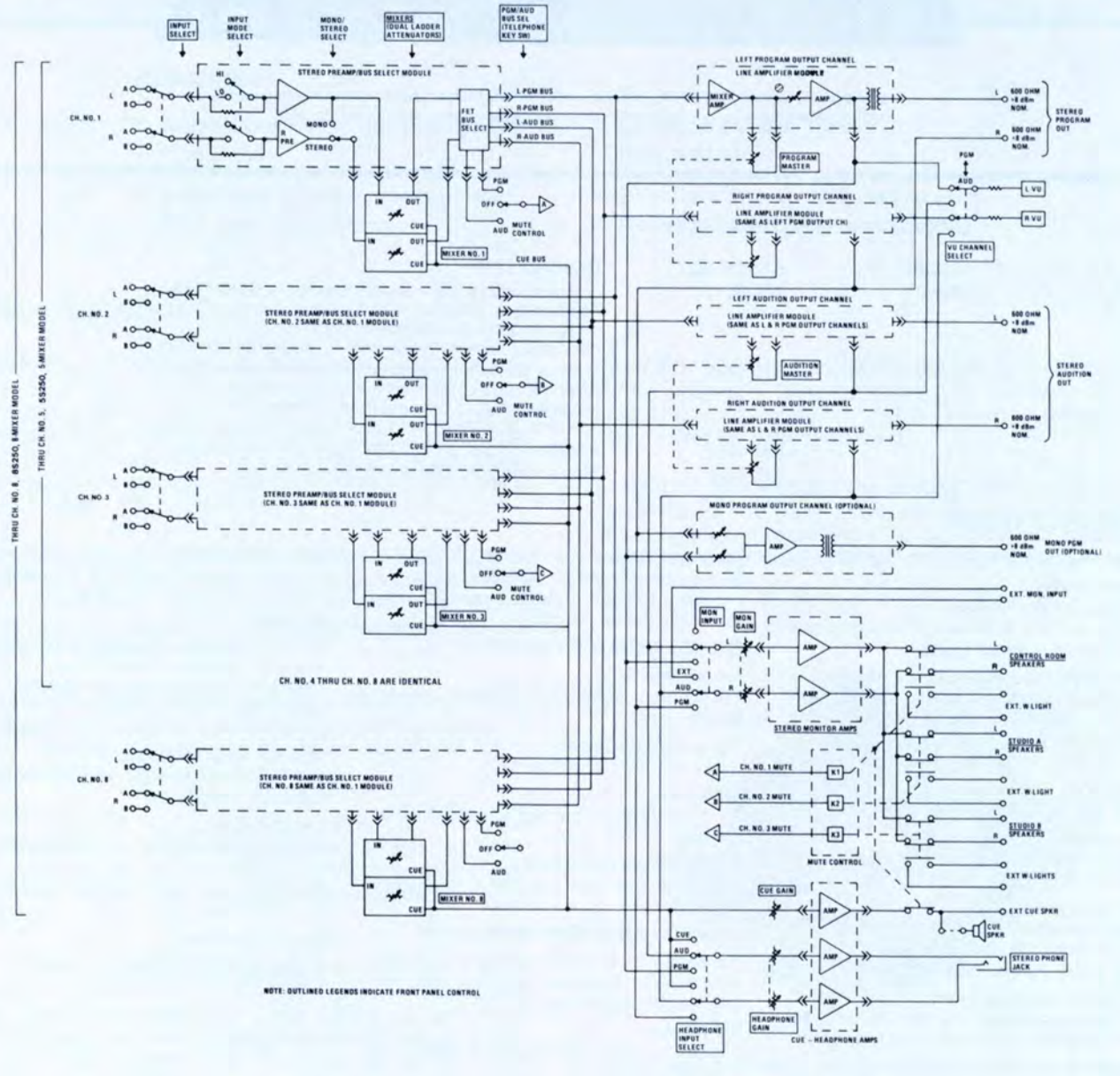
NO EXPOSED EXTERNAL CABLING — With labeled, screw-type barrier strips and adjacent cable access openings, the 250-Series Consoles are a pleasure to install. The completed installation is free from exposed incoming wires and cables, with a truly professional appearance.

HUMAN ENGINEERED FOR LONG-TERM SERVICE — Special attention has been focused on control and switch locations to insure minimum error and maximum operating ease. The 250 Series Consoles are the choice of today's discerning stereo broadcaster. They perform . . . they produce the sound that satisfies the most demanding stereo programming.

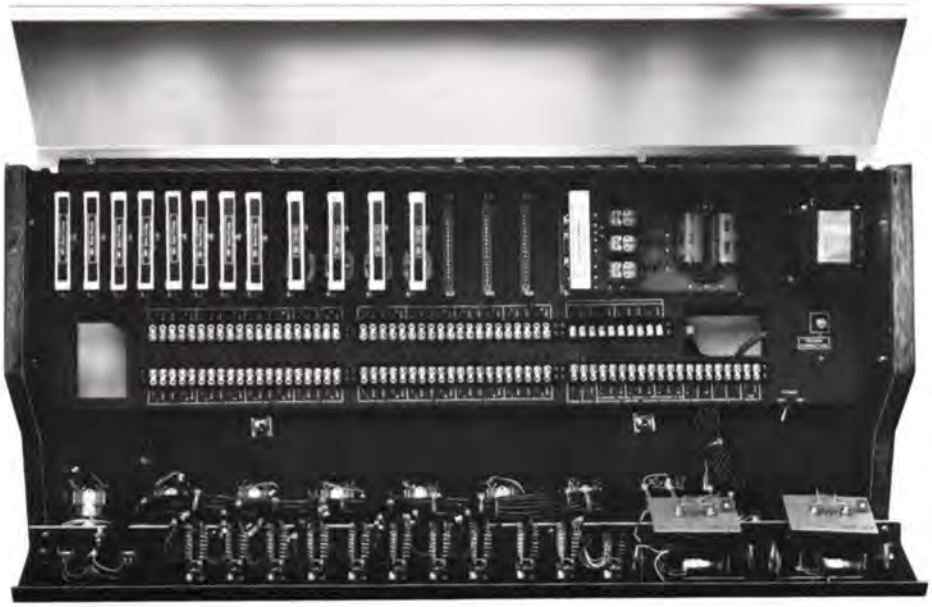
ADVANCED, FET, ELECTRONIC BUS SELECTION — Initiated by remote dc voltage, fast-acting, low-noise selection of mixing busses is accomplished by gated-FET, contact-free switching, with no mechanical closures in the relatively low-level audio bus paths.

MUTING — Three muting relays are supplied, each with terminated contact closures for external warning light operation. The relay circuit is wired for individual operation in conjunction with the first three mixers, however the muting logic is simple and accessible for other, or expanded, relay interlock arrangements.

BLOCK DIAGRAM



Model 5S250
Model 8S250



Internal View, **MODEL 8S250**. Shows ready access to terminal boards for installation, and to attenuators, switches, modules and all components for service and maintenance.

ORDERING INFORMATION

MODEL	STOCK NO.	DESCRIPTION
5S250	938-0540	5-Mixer Deluxe Stereophonic Console, Step Type Attenuators, supplied with 3 muting relays. Includes preamp (stereo) for each mixer; 4 line amp, 2 monitor amp, and 1 cue/headphone amp
8S250	938-0840	8-Mixer Deluxe Stereophonic Console, Step Type Attenuators, supplied with 3 muting relays. Includes preamp (stereo) for each mixer; 4 line amp, 2 monitor amp, and 1 cue/headphone amp
	838-0200	Additional Cost for 230 VAC/50 Hz Power Source
	918-3602	Mono Matrix Module for 5S250 and 8S250

SPECIFICATIONS

PROGRAM AND AUDITION CHANNELS

Stereo Inputs:
5S250: 10 into 5 mixers
8S250: 16 into 8 mixers (8-mixer model has 4 extra unwired inputs)

Input Impedances/Levels (Selectable):
Low Mode: 150 ohms balanced. −65 dBm min., −38 dBm max.
High Mode: 54K ohms balanced, bridging. −20 dBm min., +20 dBm, max.

Frequency Response:
±0.5 dB, 30 Hz - 20 kHz.

Distortion:
.05% or less IM & THD at +18 dBm output, 30 Hz - 20 kHz.

Signal-to-Noise:
Noise (unweighted), 70 dB below +18 dBm output with −50 dBm signal into any low-level input. 20 kHz Bandwidth.

Output Impedance/Level:
600 ohms balanced. +8 dBm for zero-VU meter reading. +18 dBm output capability.

Overall Gain:
105 dB.

Monaural Output (Optional):
Same performance specifications as program/audition output channels. Mix ratio adjustable, ±6 dB.

STEREO MONITOR CHANNELS

Stereo Inputs:
Pushbutton selectable, program/audition/external.

Frequency Response:
±0.75 dB, 50 Hz - 20 kHz.

Distortion:
0.75% or less, 30 Hz - 20 kHz at 1.5 watts rms into 8 ohm loads.

Output Power/Impedance:
1.5 watts rms per channel into 8 ohm loads.

STEREO HEADPHONE AMPLIFIERS:

1.0 watts rms per channel into front panel phone jack. Program, audition and cue pushbutton input select.

VU Meters:
2 meters: L & R switchable to Audition and Program.

CUE AMPLIFIER:
1.0 watts rms into built-in 8 ohm speaker. Input is summed L+R signal.

MUTING:
One muting relay standard. Mutes monitor and cue speakers when Mixer No. 1 activated. Prewired for second optional relay. Relays have terminated contact closures (1A at 125 Vac) for warning light operation.

POWER REQUIREMENTS:
115 Vac, 50/60 Hz (230 Vac, 50/60 Hz optional) 85 watts max.

DIMENSIONS:
5S250: 29" W, 15.75" D, 8.25" H (73.7 × 40 × 20.9 cm)
8S250: 33" W, 15.75" D, 8.25" H (83.8 × 40 × 20.9 cm)

Weight (packed):
5S250: 55 lbs. (25 kg).
8S250: 60 lbs. (27.3 kg).

4-Mixer, Mono
Model 4M50

FEATURES

- **Selectable Hi/Lo Sensitivity, All Channels**
- **Individual Monitor, Headphone And Cue Amplifiers**
- **Straightforward, Neat Installation**
- **Excellent For On-Air, Newsroom, Remote And Production Use**

GENERAL DESCRIPTION

COMPACT, PROFESSIONAL PERFORMANCE — Incorporating modern solid-state technology, the Broadcast Electronics Model 4M50 4-Mixer Monaural Console affords professional performance at reasonable cost. Compact, yet uncluttered, the 4M50, with two inputs per mixer, can handle the selection and level control/mix of up to eight sources.

MICROPHONE OR LINE LEVEL INPUT SELECTION — Flexibility is a feature. Each mixing channel uses identical input preamplifier circuitry which can be prewired for either low-impedance microphone service or for use with high-level input equipment.

COMPLETE MONITORING AND CUE CAPABILITY — Individual monitor, headphone and cue amplifiers with front panel input and level control insure aural monitoring capability of all critical functions.

RUGGED, LOW-NOISE MIXER CONTROLS — Sealed, high-reliability potentiometers are used for mixing. These are of special design, intended for applications where continual use is required. All mixers are equipped with cue switches.

MONITOR/CUE SPEAKER MUTING — Monitor amplifier output and the built-in cue loudspeaker are automatically muted whenever Mixer #1 is used. Muting assignment to other mixing channels is easily effected by strapping. Terminated relay contacts (1A, 125 Vac) for warning light operation are included.

EASY TO INSTALL. NO EXPOSED CABLE — All incoming cables connect to labelled screw-type barrier strips with adjacent access openings in the bottom of the cabinet. This eliminates exposed wiring.

EFFICIENT, PROFESSIONAL OPERATION — High quality performance and clean functional operation highlight the ideal console for production, on-air, newsroom or remote broadcast purposes — or for educational and industrial applications.

Hinged top cover and front panel give full access to the barrier strips for installation, and all control switches and components for maintenance.

ORDERING INFORMATION

MODEL	STOCK NO.	DESCRIPTION
4M50	938-0450	Mono Four 4-Mixer Monophonic Console
4M50R	938-0451	Mono Four Rack Mount 4-Mixer Monophonic Console
	838-0201	230 Vac 50/60 Hz Power Conversion

SPECIFICATIONS

PROGRAM CHANNEL

Inputs:
Two per mixer, total: 8

Input Impedances/Levels (Strappable):
Low Mode: 150 ohms balanced. −65 dBm nom., −45 dBm max.
High Mode: 20K ohms balanced bridging. −20 dBm nom., 0 dBm max.

Frequency Response/Distortion:
±2.0 dB/0.5%, 30 Hz - 20 kHz.

Signal-to-Noise:
65 dB (unweighted) below +8 dBm output. −50 dBm signal to any low-level input.

Overall Gain:
90 dB minimum.

Output Impedance/Level:
600 ohm balanced. +8 dBm for zero-VU meter reading. +16 dBm max.

MONITOR AMPLIFIER

Frequency Response:
±2.0 dB, 40 Hz - 20 kHz.

Distortion:
.75% or less, 40 Hz - 20 kHz at rated output and load.

Output Power/Impedance:
1.5 watts rms into 8 ohms load.

HEADPHONE AMPLIFIER:

1.0 watt rms into 8 ohms load. Front panel jack. Program/cue/external input.

CUE AMPLIFIER:

1.0 watt rms into built-in 4 ohm speaker.

MUTING:

Assignable by strapping to any channel input combination.

POWER REQUIREMENTS:

115 Vac, 50/60 Hz (230 Vac, 50/60 Hz optional) 40 watts max.

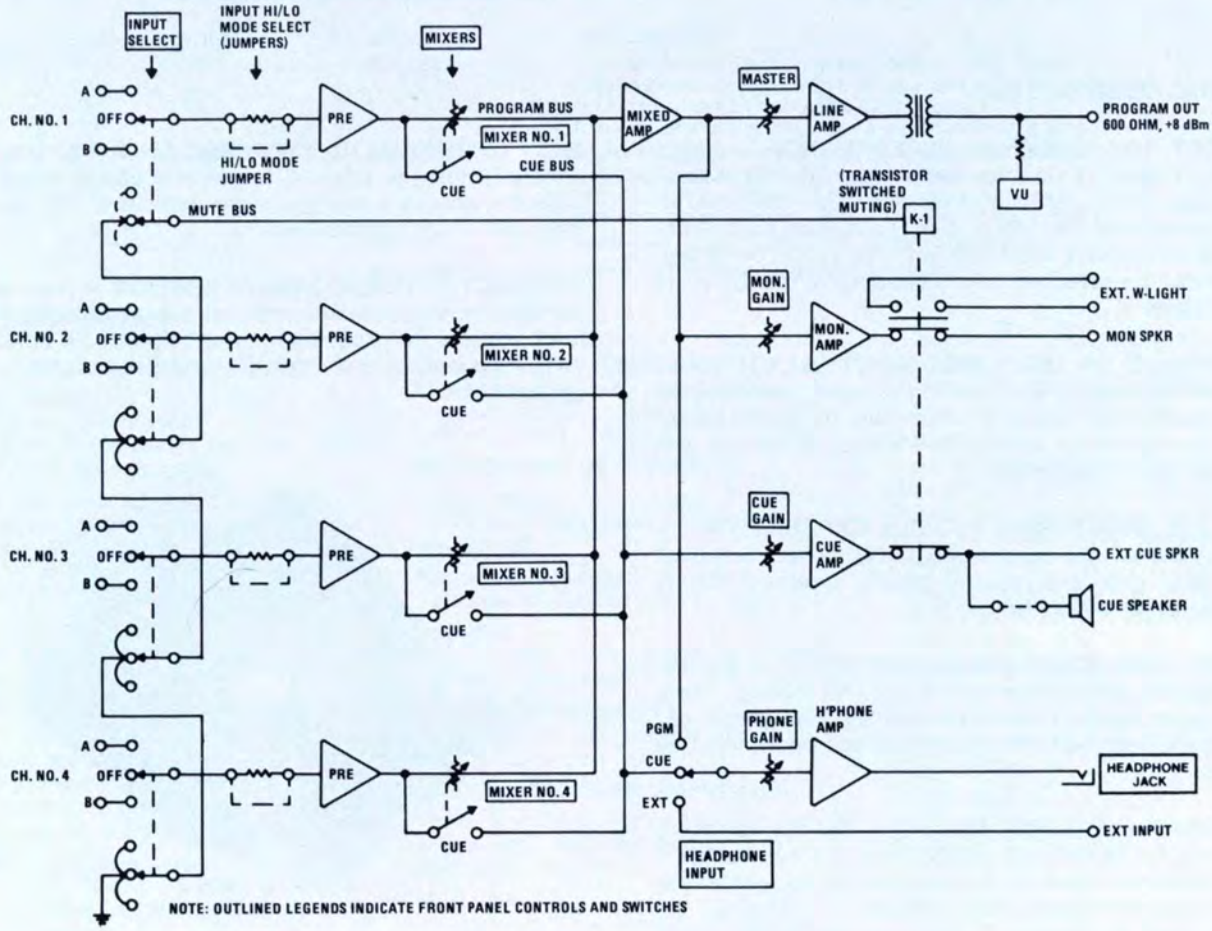
DIMENSIONS:

18″ W, 13″ D, 7.5″ H (45.8 × 33 × 19.1 cm)

SHIPPING WEIGHT:

23 lbs. (10.4 kg).

BLOCK DIAGRAM



4-Mixer, Stereo Four
Model 4S50

FEATURES

- High/Low Input Sensitivity Selection
- Cue Switches, All Mixers
- Individual Monitor, Cue, Headphone Amplifiers
- Excellent Performance-Reasonable Cost
- 12 Stereo Inputs; 4 Mixers
- Ideal For Stereo Production, Discotheque Or On Air

GENERAL DESCRIPTION

ACCOMMODATES 12 STEREO INPUT SOURCES — The Broadcast Electronics 4S50 four-mixer stereo console features quality stereo performance at a practical price. This versatile console allows preselection of eight stereo input sources with intermix and level control of four of these simultaneously.

INPUT SELECTION — Two Stereo inputs, either high or low level, can be accommodated by each of the first three channels. Channel four can be preselected to a single high or low level stereo input or to one of five high level remote/utility stereo inputs. Unique window indicator push-button switches are used for channel on/off functions as well as input selection.

DUAL VU METERS AND STEREO MONITORING — Visual monitoring of left and right channel outputs is by 3½" VU meters. Aural monitoring at 3 watt rms level, per channel for operating position and studio loudspeakers, plus stereo headphone .5 watt per channel amplifier outputs, terminated in a front panel jack, insure close surveillance of program quality. In addition to stereo program channel information, an external stereo source and mono cue bus material may be monitored by headphones.

CUE-SWITCHES ON ALL FADERS — The high reliability, low-noise sealed dual potentiometers used for mixer level control are fitted with cue switches so that each source can be previewed through the self-contained cue amplifier speaker system.

MUTING LOGIC — Monitor and cue speakers are relay-muted through contact closures on the mixer A-B input select key switches. Normally wired for muting in conjunction with Mixer #1 operation, other assignments are readily made in the field by strapping.

IDEAL FOR STEREO PRODUCTION OR ON-AIR USE — The stereo performance characteristics of the 4S50 are excellent and make it an ideal tool in the production of stereo taped material, or where a modest, yet flexible control room/studio operation is involved, totally suited for on-air stereo FM broadcast use.

ORDERING INFORMATION

MODEL	STOCK NO.	DESCRIPTION
4S50	938-0452	Stereo Four 4-Mixer Stereo Console
4S50R	938-0453	Rack Mount Stereo Four 4-Mixer Stereophonic Console
	838-0201	230 Vac 50/60 Hz Power Conversion

SPECIFICATIONS

STEREO PROGRAM CHANNELS

Stereo Inputs:
Two per mixing channels 1-3. Ch 4:6. Total 12.

Input Impedances/Levels:
Low Mode: 150 ohms balanced. −65 dBm, nominal, −38 dBm max.
High Mode: 20K ohms balanced bridging. −20 dBm, nom., +20 dBm max.
Above modes preset by internal strapping.

Frequency Response:
±.5 dB, 30 Hz - 20 kHz.

Distortion:
.1% THD and .15 IM, 30 Hz - 20 kHz at +18 dBm output.

Signal-to-Noise:
70 dB (unweighted) below +18 dBm out with −50 dBm low level input signal, 20 kHz bandwidth.

Output Impedance/Level:
600 ohms balanced. +8 dBm for zero-VU meter readings. +16 dBm max.

STEREO MONITOR AMPLIFIERS

Frequency Response:
±1.0 dB, 30 Hz - 20 kHz.

Distortion:
.3% THD and IM, 30 Hz - 20 kHz at 3.0 watts rms per channel into nominal ohm load.

Output Power/Impedance:
3.0 watts rms per channel into 8 ohm loads.

STEREO HEADPHONE AMPLIFIERS:

.5 watt rms per channel into front panel jack. Program/cue inputs.

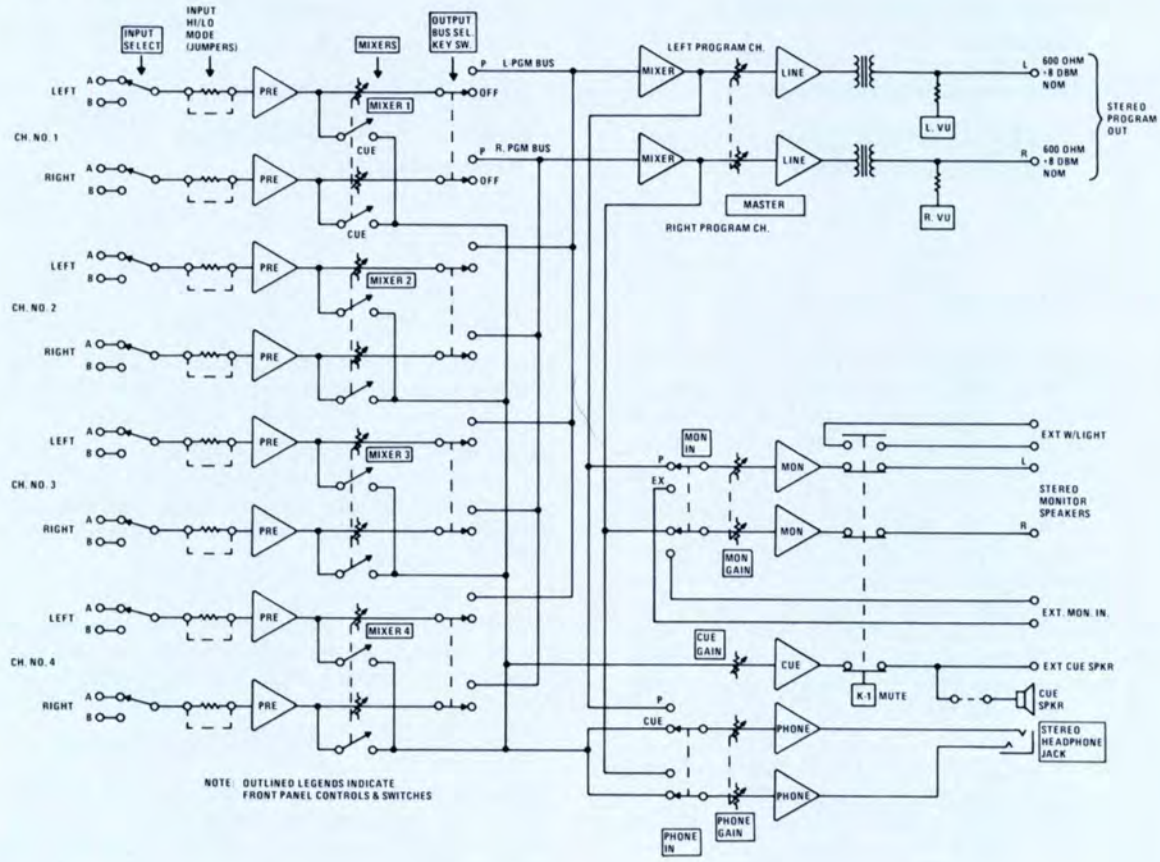
MUTING:
As wired, monitor and cue speakers muted by Mixer 1 A-B input select switch. Assignable, by strapping, to any channel input. Muting relay includes 1A, 125 Vac warning light contacts.

POWER REQUIREMENTS:
115 Vac, 60 Hz (230 Vac, 50/60 Hz optional) 50 watts maximum.

DIMENSIONS:
18″ W, 13″ D, 7.5″ H (45.8 × 33 × 19.1 cm).

WEIGHT (PACKED):
24 lbs. (10.8 kg).

BLOCK DIAGRAM



BE AUDIO CONSOLES
a FILMWAYS company

4-Mixer, Rack Mount, Versa Console
Model 4V50

FEATURES

- Transformer Balanced Inputs
- Cue Switches, All Mixers
- For Broadcast, A/V, CCTV And CATV
- Switchable Microphone/High Level Inputs
- Integral Tone Generator

GENERAL DESCRIPTION

BROADCAST, A/V, CCTV AND CATV APPLICATIONS — The Broadcast Electronics 4V50 rack-mount, four-mixer "Versa-Console" brings, in a self-contained, compact package, operating versatility usually expected only in larger, desk-top units. The "Versa-Console" is useful for production and semi-permanent broadcast remote originations. Its multi-input flexibility makes it a valuable tool as the aural complement in audio/visual systems for industrial and educational training purposes or for CATV studio origination.

ACCOMMODATES WIDE CHOICE OF INPUT SOURCES — The first three mixing channels are identical, accepting either low-impedance microphone or high-level inputs through rear panel preset switching. Two inputs may be selected for each mixer by adjacent switch operation. Mixer 4 has additional high-level input capability. It will accept one low-level input or three pushbutton-selected high-level inputs. Thus, a total of ten sources may be selected for up to four simultaneous "mixes."

SEALED MIXER CONTROLS WITH CUE SWITCHING — Mixers are long-life sealed potentiometers, each equipped with cue switches. This permits preview of input sources through the built-in cue amplifier and speaker. The latter is automatically muted whenever input 1A is activated.

1 kHz TONE GENERATOR — An internal tone generator facilitates quick and accurate output level adjustment.

HEADPHONE MONITORING/EXTERNAL AMPLIFIER FEED — Either program output or cue bus information may be monitored through the headphone amplifier with front panel jack output. Program material appears on a rear panel high-impedance output terminal for feeding external PA or monitoring equipment.

DESIGNED FOR SIMPLE INSTALLATION — External wiring connections are made to labelled rear-panel screw-type barrier strips or for program output and ground, to binding posts.

COMPACT, COMPLETE, CONTROL CENTER — Astoundingly versatile for its size, the "Versa-Console" is an outstanding unit where selection and mixing of many inputs of either microphone-level or line-level nature are involved.

4-Mixer, Rack Mount, Versa Console

ORDERING INFORMATION

MODEL	STOCK NO.	DESCRIPTION
4V50	938-2000	4-Mixer Mono Console, Rack Mount
	838-0201	230 Vac 50/60 Hz Power Conversion

SPECIFICATIONS

INPUTS:
Mixers No. 1, 2 and 3—two per mixer; high or low level.
Mixer No. 4—one, high or low level, plus three pushbutton-selectable high-level inputs. Tone generator—internal level set.

INPUT IMPEDANCES/LEVELS (SWITCHABLE - REAR PANEL):
Low Level Mode: 150 ohms bal. −50 dBm nom., −38 dBm max.
High Level Mode: 20K ohms bal. bridging. −20 dBm nom., +10 dBm max.

OUTPUTS

Program:
600 ohms balanced. +4/+8 dBm switchable for zero-VU meter reading. +18 dBm max.

Cue:
1.0 watt rms to internal speaker. FET muted.

Headphone:
1.0 watt rms to front panel jack. Program/cue input select.

PA:
10k ohms unbalanced. 0.45V @ +8 dBm program out level. Adjustable. Rear panel phono jack.

FREQUENCY RESPONSE (PROGRAM & PA OUTPUTS):
±1.5 dB, 30 Hz - 20 kHz (Reference: 1 kHz)

DISTORTION: (PROGRAM CHANNEL):
0.5% or less, 30 Hz - 20 kHz, +8 dBm output.

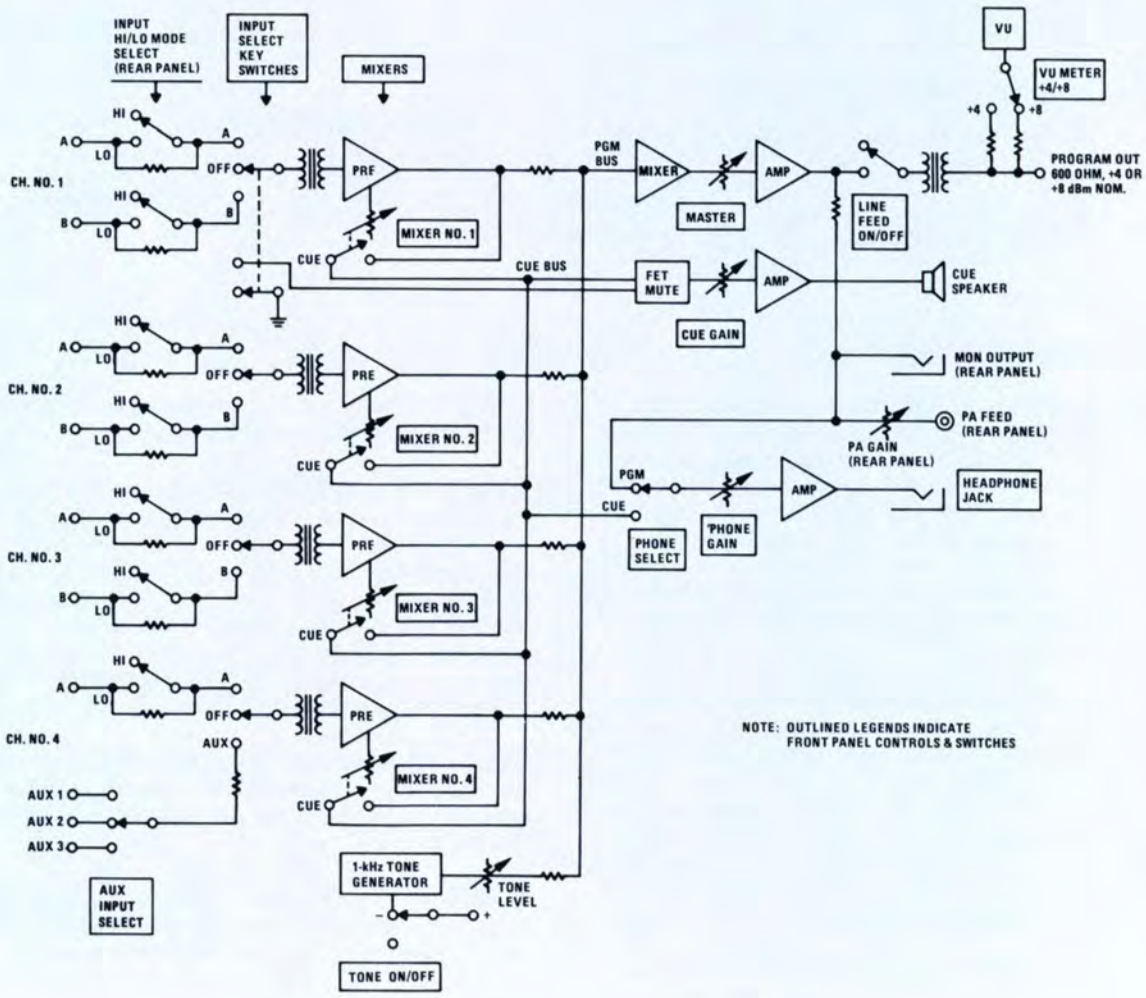
SIGNAL-TO-NOISE (unweighted):
60 dB below +8 dBm out with −50 dBm signal to any low-level input.

POWER REQUIREMENTS:
115 Vac, 50/60 Hz, 11 watts max.

DIMENSIONS:
19″ W, 10″ D, 3.5″ H (48.3 × 25.4 × 8.9 cm). EIA Std 19″ rack mtg.

SHIPPING WEIGHT:
14 lbs. (6.4 kg).

BLOCK DIAGRAM



BE AUDIO CONSOLES
a FILMWAYS company

10-Mixer, Vertical Fader, Dual Channel
Models 10S350 Stereo, 10M350 Mono

MODEL 10S350 STEREO

FEATURES

- 22 Inputs To 10 Slide Faders
- Modular Plug-In Electronics
- Dual Channel Output
- Elegant Styling
- Mono Or Stereo Models
- Contact-Free, FET Bus Selection
- Economical Price
- Durable Front Panel

GENERAL DESCRIPTION

REASONABLY-PRICED, SLIDE-FADER CONSOLE — To satisfy the increasing demand for multichannel vertical-fader flexibility, Broadcast Electronics offers in standard monaural or stereophonic configurations, at prices competitive with rotary-mixer models, the 10-channel 10M350 mono and 10S350 stereo dual-channel output consoles.

NEW ATTRACTIVE, DURABLE STYLING — A totally new styling adds durability and enhances the attractiveness of the 350 series consoles. The front panel features crisp, clean graphics under a laminated polycarbonate overlay. This tough protective surface makes it virtually impossible to scratch or wear the lettering away. The front panel should look as clean and fresh after years of normal usage as it did the day it was purchased!

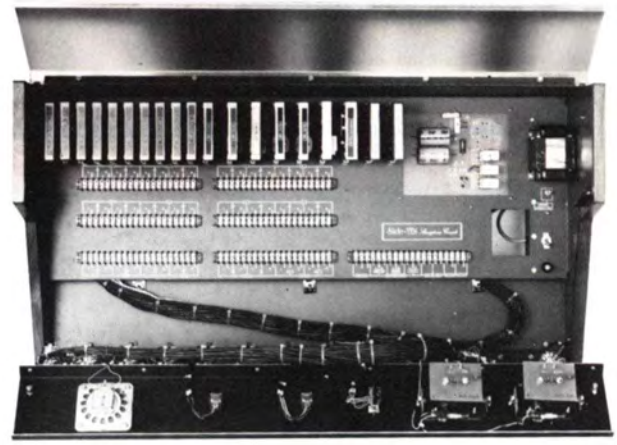
COMPLETE INPUT FLEXIBILITY — Using the widely-accepted universal modular input preamplifier technique pioneered in BE rotary-mixer console models, the new consoles feature integral module presetting to permit individual input channel use for either low impedance microphone or line-level input service. The stereo model also features mono/stereo selection. Mixers #1 through #8 accept two inputs per mixer; and #9 and #10, three each. Input preselection is by interlocked pushbuttons. Mixer outputs, by advanced, contact-free FET switching, may be fed separately or simultaneously to the dual output channels.

PRE-FADER PREVIEW — Multichannel consoles involving many inputs generally require presetting of the input channel fader positions. Cue switches operate independently of fader position. A lever switch, in an "operation mode select" function, determines program, cue or off assignments.

DUAL CHANNEL OUTPUT — The mono and stereo models feature dual line-level output channels; two for mono, four for stereo; with VU meter switching for level monitoring. Standard +8 dBm output levels, with +18 dBm capability to insure adequate "headroom," produce "zero-VU" meter readings. An additional monaural line-level output is a plug-in module option for the 10S350.

FULL SYSTEM MONITORING — 8-watt full-fidelity loudspeaker monitoring of all output channels, plus the convenience of 1-watt level mono or stereo headphone monitoring of the output channels and mono cue bus information assures maintenance of system quality.

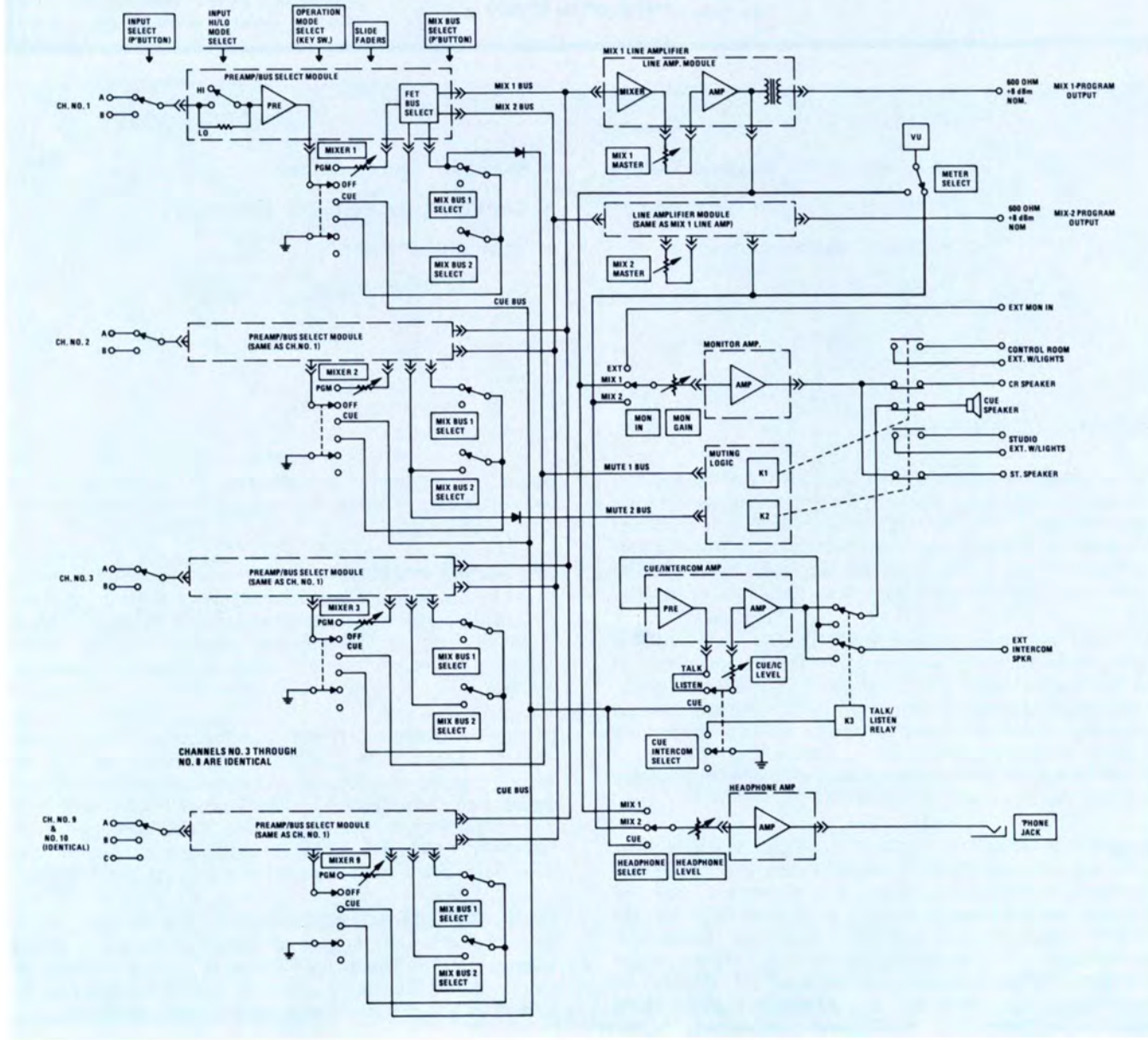
10-Mixer, Vertical Fader, Dual Channel



Internal view of Model 10S350 shows ready access to terminal boards for installation, and to attenuators, switches, modules and all components for easy maintenance. Note full complement of plug-in amplifiers.

BLOCK DIAGRAM — MODEL 10M350 MONO

(10S350 Stereo: Basic System Essentially Identical, with Individual Left- and Right-Channel Capability)



GENERAL DESCRIPTION (Cont.)

CUE/INTERCOM SYSTEM — In addition to conventional inbuilt loudspeaker monitoring of cue bus inputs, the integral 1-watt cue amplifier performs a two-way intercom function. With the addition of a small speaker in the studio, control room/studio intercommunication, controlled at the console position, is possible. The loudspeakers act as microphone transducers in the "talk" mode.

MULTICHANNEL MUTING — Speaker muting is normally assigned to Mixers 1 and 2. By diode matrixing this is readily modified or extended to other mixing channels. Contacts for external warning light operation are included on each relay.

IDEAL FOR SOPHISTICATED, MULTIMIX APPLICATIONS — Where simultaneous mixing and level control in excess of the two mixers at a time limitation of rotary fader consoles is a necessity, the multichannel mixing capability afforded by the exciting new BE 10-input, vertical-attenuator models at their surprisingly low prices, fill the void. Sophisticated styling in an easy-to-operate, human-engineered package make the standard "350 Series" consoles the obvious choice for complex "on-air," production, or TV studio use.

ORDERING INFORMATION

MODEL	STOCK NO.	DESCRIPTION
10M350	938-1051	**10-mixer, slide-fader, dual-channel monaural console. Supplied with 10 preamps; 2 line amps; 1 monitor amp; 1 cue amp; 1 headphone amp**
10S350	938-1050	**10-mixer, slide-fader, dual-channel stereo console Supplied with 10 stereo preamps; 4 line amp; 2 monitor amp; 1 cue amp; 1 headphone amp**
3502	918-3502	**Mono matrix module, 10S350**
	838-0200	**230Vac Power Conversion**

SPECIFICATIONS

PROGRAM CHANNELS
(Mono: 2; Stereo: 4)

Inputs:
Two per mixer. Channels 1-8; Three per mixer, Channels 9 and 10. Total: 22.

Input Impedances/Levels (Switchable):
Low Mode: 150 ohms balanced. −65 dBm nominal. −38 dBm maximum.
High Mode: 54K ohms Balanced Bridging. −20 dBm nominal. +20 dBm maximum.

Mono/Stereo Select (10S350)
In-phase stereo outputs from mono source.

Frequency Response:
±0.5 dB, 30 Hz - 20 kHz.

Distortion:
.05% IM & THD, 30 Hz - 20 kHz at +18 dBm output.

Signal-to-Noise (unweighted):
70 dB below +18 dBm output. −50 dBm input, 20 kHz bandwidth.

Output Impedance/Level:
600 ohms balanced +8 dBm for zero-VU meter deflection. +18 dBm capability.

MONAURAL OUTPUT CHANNEL
(Optional, 10S350)
Same performance specification as program channels.

Inputs:
Pushbutton select. Program output channels and an external source.

Frequency Response:
±0.75 dB, 50 Hz - 20 kHz.

Distortion:
0.75% or less, 30 Hz - 20 kHz at rated output and load.

Output Power/Load:
8 watts rms per channel, 8 ohm load.

VU Meters:
10M350: 2 meters; Mix 1 & Mix 2
10S350: 2 meters: L & R switchable to mix 1 or 2

HEADPHONE AMPLIFIER
(Mono: one; Stereo: two)
1-watt rms per channel. Pushbutton selection of output channels and cue bus.

CUE/INTERCOM AMPLIFIER
1-watt rms mono output to built-in speaker. Input mono (or summed L+R, 10S350). Front panel intercom talk/listen/cue switching.

MUTING:
Two relays standard. As wired, Relay 1 mutes monitor/cue speakers with Mixer 1 operation; Mixer 2 controls Relay 2. Other combinations, field-assignable. Relays include 1A/125Vac contacts for external warning-light operation.

POWER REQUIREMENTS:
115Vac, 50/60 Hz (230Vac operation, optional).
10M350: 75W; 10S350; 110W.

DIMENSIONS:
36" W, 10.75" H, 19" D (91.4 × 27.3 × 48.2 cm).

WEIGHTS (Packed):
10M350: 80 lbs. (36.4 kg).
10S350: 85 lbs. (38.6 kg).

12-Mixer, Vertical Fader, Dual Channel
Models ML-4000 Mono, SL-4100 Stereo

Model SL-4100 shown with eight mic/line mixing channels, two mic/line mixing channels with muting and two remote input channels.

FEATURES

- Vertical Faders
- Completely-Shielded Input Modules
- Low-Noise Reed Relay Bus Selection
- 12-Input Channel Capability
- Dual-Channel Output, Mono Or Stereo
- Modular Plug-In Electronics
- Transformer Balanced Inputs

GENERAL DESCRIPTION

VERTICAL-FADER, MULTI-MIX FLEXIBILITY — The Broadcast Electronics 4000-Series modular, dual-channel consoles, available in monaural or stereophonic models, afford the discriminating AM, FM or TV broadcaster a quality vertical-fader console at reasonable cost. These consoles fill the need for operating situations where a large number of input sources must be simultaneously mixed and controlled.

THREE MIXING-CHANNEL MODULE TYPES — The consoles accommodate up to 12 input modules of three different functions. The first type houses the components and electronics with provision for pushbutton selection of two sources and output feed to two mix busses. Preset switching establishes channel use for either low-impedance microphone or line-level inputs. The stereo model also includes mono/stereo switching whereby in-phase stereo outputs are produced from a monaural source.

The second type module is essentially identical to the first with the added feature of DIP-switch programmable muting-logic control of up to 16 different combinations of input/mix bus alignments.

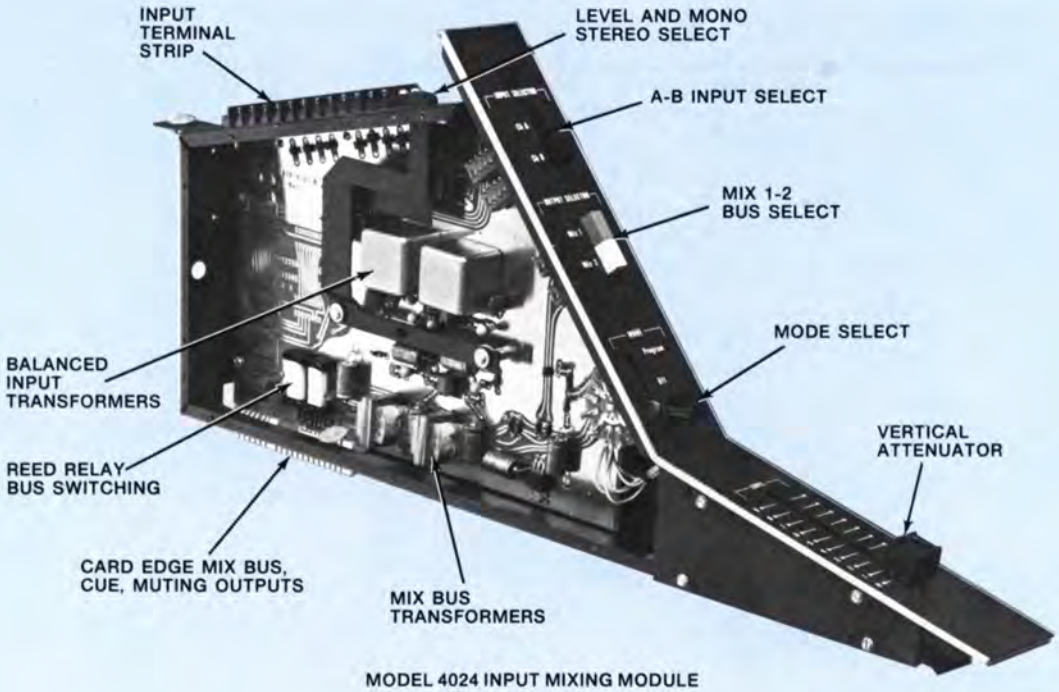
The third accommodates three selectable 600Ω balanced remote line or network inputs (two stereo, one mono in the stereo model) with provision for program cue feed or intercom facilities to the remote origination location. The remote feed module is used in conjunction with a standard, unmuted input module and this combination occupies two module spaces.

INDEPENDENT CUE SWITCHING — When a large number of mixing channels are involved it is general practice to predetermine individual channel-fader positions. "End-of-travel" cue switch activation defeats this objective. The 4000-Series consoles feature individual prefader preview switching by utilization of a key-type "operation mode select" switch with program/off/cue indexing.

SEPARATE, OR SIMULTANEOUS MIX-BUS SELECTION — All mix busses are balanced and by color-coded pushbutton selection, the output of each mixing-channel module may be fed to either of two mix busses, or to both.

VU METERING, ALL OUTPUT CHANNELS — Each program output channel operates at a nominal +8 dBm output level with a minimum of 10 dB headroom reserve. Individual 3½" illuminated VU meters assure continuous visual monitoring of all program channels. The monaural model has two meters; the stereo model, four.

The stereo model is prewired to accept two optional mono mixdown modules where a "summed L+R" line-level, monaural output of Mix 1 and/or Mix 2 is desired for simulcast operation.



MODEL 4024 INPUT MIXING MODULE

GENERAL DESCRIPTION (Cont.)

FULL-FIDELITY MONITORING — Key-switch input selection of the program channels and an external source to the input of an 8-watt rms monitor amplifier (two provided in stereo model) produces excellent reproduction of the programming, appropriately muted at the operating position and in the various studios.

HEADPHONE MONITORING WITH PROGRAM-CUE OVERRIDE — Terminated in a front panel jack, headphone monitoring of either mono or stereo program outputs and mono cue bus information is accomplished at up to a 1-watt rms output level.

Program-cue "override" capability is a unique feature. In the cue mode, panel level controls permit intermix of program and cue signal to satisfy individual operating preferences.

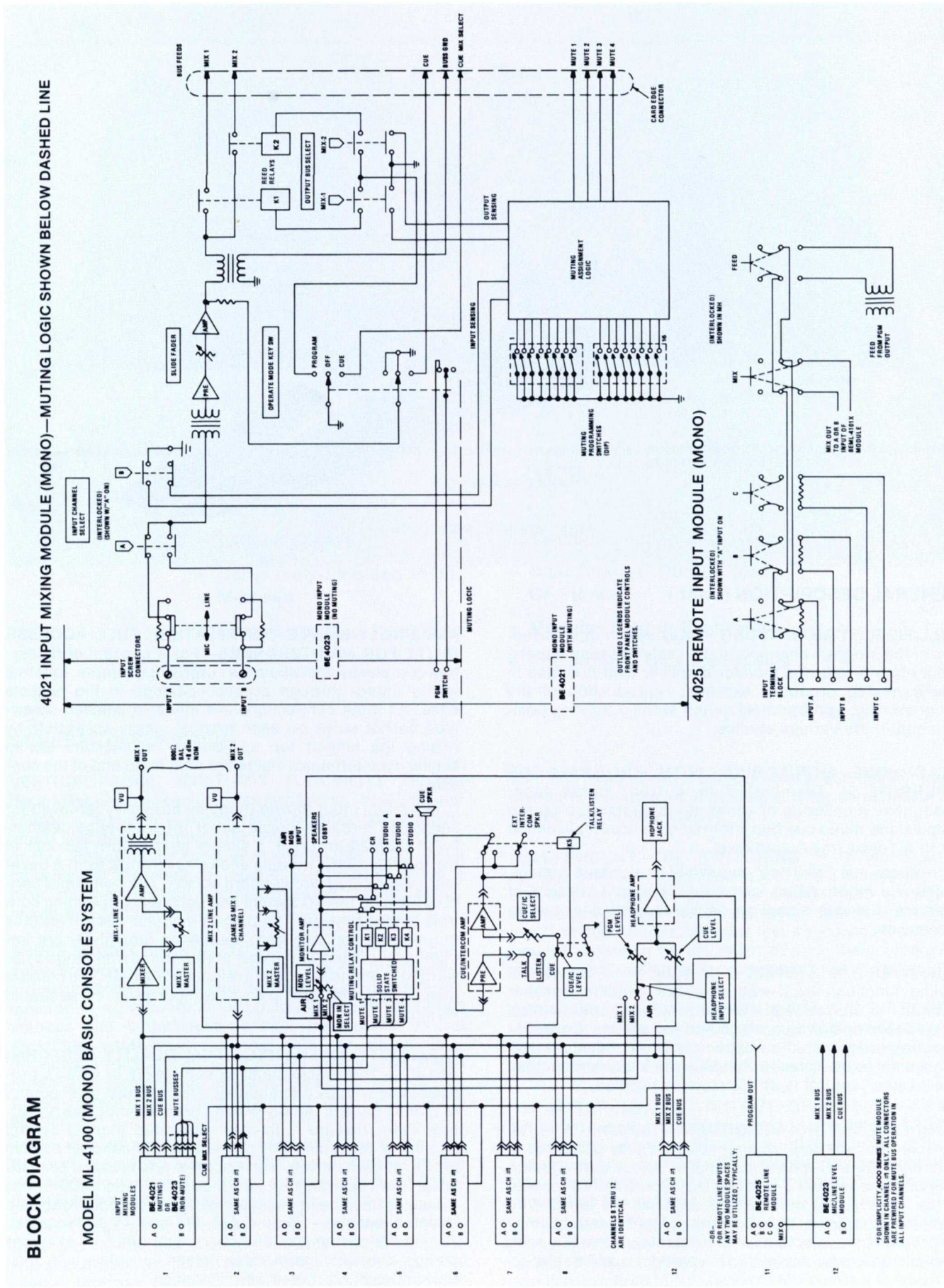
CUE/INTERCOM SYSTEM — In addition to the normal cueing function, the 1-watt rms cue amplifier-speaker system is utilized for two-way intercommunication between the operating position and two studios. Small PM speakers in each studio with simple two-conductor interconnection to the console complete the intercom function. "Talk-listen" control is at the console position.

COMPLETE MUTING-ASSIGNMENT FLEXIBILITY — The consoles include four muting relays. Relay actuation is controlled by a C-mos quad and/or select gate system, programmed by dual 8-position DIP-type switches located in the input mixing module. The switches are labelled so that any combination of A-B inputs or Mix 1-2 outputs may be programmed to actuate a specific relay. Normally-open contacts on each relay are terminated for slave operation of external warning-light relays.

AMAZINGLY-SIMPLE INSTALLATION, FULL ACCESSIBILITY FOR MAINTENANCE — For a console of its system complexity, installation is surprisingly simple. External wiring enters through access openings in the console base. All input connections are made to labelled screw-type barrier strips on each module, easily accessible by raising the hinged top lid. Output connections are to similar-type terminals inside the right hand end of the console.

Individual input mixing modules are easily removed for servicing. Pressure-locked under the front-edge, leather-finish padded arm rest, a simple quarter-turn fastener at the top rear of the module allows its removal from a base-mounted printed circuit board socket. The right hand panel containing the VU meters and secondary operating controls hinges forward. The plug-in modular electronics (line output, monitor, cue and headphone amplifiers) are immediately behind this panel area and may be hinged upward for complete access to all system wiring. The console may be mounted tight to a wall without impairing access to wiring.

FLEXIBILITY, OPERATING EASE, QUALITY PERFORMANCE — The ever-increasing complexity of today's programming with its demands for simultaneous level control of many inputs is rapidly placing greater emphasis on vertical fader designs with their expanded manual control capability. Most consoles of this type are either of custom design at prohibitively high prices or are intended primarily for the recording or film industries. The 4000-Series Consoles have been designed by experienced, broadcast-oriented people — for the AM, FM and TV broadcaster. They perform the multi-functions you need — at prices competitive with many rotary-mixer consoles, with their basic "two-hand, two-mixer" limitation.



ORDERING INFORMATION

MODEL	STOCK NO.	DESCRIPTION
ML-4000	938-4000	Monaural dual-channel console chassis with provision for accepting up to 12 input modules.
SL-4100	938-4100	Stereo dual-channel console chassis with provision for accepting up to 12 input modules.
4021	980-4021	Mono Input Mixing Module, with muting logic.
4023	980-4023	Mono Input Mixing Module, less muting logic.
4025	980-4025	Mono Remote Input Module (feeds mono Input Mixing Module).
4022	980-4022	Stereo Input Mixing Module, with muting logic.
4024	980-4024	Stereo Input Mixing Module, less muting logic.
4026	980-4026	Stereo Remote Input Module (feeds stereo Input Mixing Module).
3602	918-3602	Mono mix-down module for stereo (4100) units.
	828-0200	230 VAC Power Option (either model).
	980-4008	Module filler panel (for unused module space).

Note: Mono mix-down module—When used, two modules required (one for MIX-1, one for MIX-2). Mix-down module is necessary to use feed function of remote modules in SL-4100 Console.

SPECIFICATIONS

PROGRAM CHANNELS
(Mono: two; Stereo: four)

Input Mixing Channels:
12 module spaces provided. Remote input capability requires two spaces: one for remote feed module; one for associated standard input module. Blank face plates are installed on any open module spaces.

Input Impedances/Levels (Preamp Modules):
Low Mode: 150 ohms balanced, −70 dBm nominal; −30 dBm maximum.
High Mode: 36K ohms balanced, bridging, +20 dBm, nom., +20 dBm maximum.

Input Impedances/Levels (Remote Feed Modules):
600 ohms balanced, −20 dBm, nom., +20 dBm max.

Mono/Stereo Select (SL-4100):
In-phase stereo outputs from monaural source.

Frequency Response:
±0.5 dB, 30 Hz - 20 kHz.

Distortion:
0.5% or less, 30 Hz - 20 kHz at +8 dBm output.

Signal-to-Noise (unweighted):
70 dB or greater below +8 dBm output, with −50 dBm input signal.

Output Impedance/Level:
600 ohms balanced, +8 dBm nominal; +18 dBm maximum.

MONAURAL OUTPUT CHANNEL
(Optional, SL-4100):
Same performance as program channels.

MONITOR CHANNEL
(Mono: one; Stereo: two)

Inputs:
Mix 1, Mix 2, External; key-switch selectable.

Frequency Response:
±0.75 dB, 50 Hz - 20 kHz.

Distortion:
0.75% or less, 30 Hz - 20 kHz at rated output and load.

Output Power/Load:
8 watts rms per channel, 8 ohm load.

HEADPHONE AMPLIFIER
(Mono: one; Stereo: two)
1 watt rms per channel. Pgm 1/Pgm2/Cue key-switch input selection. Program and cue levels can be intermixed in cue position. Front panel jack.

CUE/INTERCOM AMPLIFIER:
1-watt rms mono output to panel speaker. Inputs mono or summed L+R in stereo model. Front panel Cue/Talk/Listen and studio intercom select by key switching.

MUTING:
Four relays standard. Programmable assignment of any input/output bus combination. Relays include N. O. contacts terminated for external warning light operation.

POWER REQUIREMENTS:
115Vac, 50/60 Hz (230Vac optional).
ML-4000, 110W; SL-4100, 130W max.

DIMENSIONS:
43.5" W, 11" H, 27.5" D (110.5 × 27.9 × 69.9 cm)

WEIGHTS (Packed):
ML-4000/SL-4100 — 200 lb. with 10 modules, 215 lb. with 12 modules.

MODEL SL-4100 with top and right-hand front panels open. Input cabling readily terminated on input module top barrier strips. Output barrier strips at lower right. System plug-in electronic modules and secondary front panel controls and switches readily accessible. Installation eliminates all exposed cabling.

BE AUDIO CONSOLES
a FILMWAYS company

150/250/350 Series Consoles
Condensed Specifications

PROGRAM/AUDITION CHANNELS	MODELS 10M350 (Mono) 10S350 (Stereo)	MODELS 150 & 250 SERIES MONO & STEREO
MIXING CHANNELS	10 Vertical	5M/S-150/250: 5-mixers 8M/S-150/250: 8-mixers
Type Attenuation	Conductive Plastic Slide Control	150 Series: sealed potentiometers w/cue position 250 Series: step-type ladders w/cue position.
Inputs per Mixer	Channels 1-8, 2 ea. Channels 9 & 10, 3 ea. Total Inputs: 22	150 Series: 2 each mixer 250 Series: 2 each mixer, plus 4 unwired
VU Meters	10M350: 2 meters; Mix 1 & Mix 2 10S350: 2 meters; L & R switchable to mix 1 or mix 2	150/250 Series Mono: 2 meters; Audition and Program 150 Series Stereo: 2 meters; L & R 250 Series Stereo: 2 meters; L & R switchable to Audition and Program
Plug-in Amplifiers	10M350: 10 preamps; 2 line amps; 1 monitor amp; 1 cue amp; 1 headphone amp 10S350: 10 stereo preamps; 4 line amp; 2 monitor amp; 1 cue amp; 1 headphone amp	150/250 Series Mono: preamp for each mixer channel; 2 line amp, 1 monitor amp, and 1 cue/headphone amp 150 Series Stereo: preamp (stereo) for each mixer; 2 line amp, 1 monitor amp, and 1 cue/headphone amp 250 Series Stereo: preamp (stereo) for each mixer; 4 line amp, 2 monitor amp, and 1 cue/headphone amp
Mono Matrix	10S350: Mono Matrix Module 918-3602 Optional	150/250 Series Stereo: Mono Matrix Module 918-3602 Optional
Input Impedances & Levels	Microphone Mode: 150 ohms balanced, −65 dBm minimum to −38 dBm max. High Level Mode: 54kohms balanced bridging, −20 dBm minimum to +20 dBm max.	Microphone Mode: 150 ohms balanced, −65 dBm minimum to −38 dBm max. High Level Mode: 54kohms balanced bridging, −20 dBm minimum to +20 dBm max.
Frequency Response	±0.5 dB, 30 Hz-20 kHz	±0.5 dB, 30 Hz-20 kHz
Distortion	.05% IM and THD 30 Hz-20 kHz, at +18 dBm output	.05% IM and THD 30 Hz-20 kHz, at +18 dBm output
S/N Ratio	70 dB below +18 dBm output with −50 dBm input, 20 kHz Bandwidth	70 dB below +18 dBm output with −50 dBm input, 20 kHz Bandwidth
Output Impedance/Levels	600 ohms balanced. +8 dBm for zero VU meter reading. +18 dBm capability.	600 ohms balanced. +8 dBm for zero VU meter reading. +18 dBm capability.
MONITOR AMP		
Frequency Response	±0.75 dB, 50 Hz - 20 kHz (1 kHz reference)	±0.75 dB, 50 Hz - 20 kHz (1 kHz reference)
Distortion	0.75% or less, 30 Hz - 20 kHz @ rated rms output and load	0.75% or less, 30 Hz - 20 kHz @ rated rms output and load
Output Impedance/Power	8 watts rms per channel/8 ohm load	150 Mono, 250 Mono & Stereo: 8 W rms, 8 ohms 150 Stereo: 1.5 W rms, per channel, 8 ohms
HEADPHONE AMP	1.0 W rms per channel. Front panel jack and input select switching	1.0 W rms per channel. Front panel jack and input select switching
CUE AMP	1.0 W rms to integral cue speaker. Also functions as intercom amplifier	1.0 W rms to built-in cue speaker
MUTING RELAYS	2 relays standard. Assigned to Mixers 1 & 2. Other combinations readily field modified.	150 Series, 1 relay std. Second optional; 250 Series, 3 relays standard.
DIMENSIONS	36"W, 10.75"H, 19"D	5M150: 29"W, 15.75"D, 8.25"H, 49 lbs. 5S150: 29"W, 15.75"D, 8.25"H, 54 lbs. 8M/S-150: 33"W, 15.75"D, 8.25"H, 55 lbs. 5M/S-250: 29"W, 15.75"D, 8.25"H, 55 lbs. 8M/S-250: 33"W, 15.75"D, 8.25"H, 60 lbs.
SHIPPING WEIGHTS (PACKED)	10M350: 80 lbs. 10S350: 85 lbs.	
POWER REQUIREMENTS	105-125V, 50/60 Hz (210-230V, 50/60 Hz optional)	105-125V, 50/60 Hz (210-230V, 50-60 Hz optional)

FEATURES

- Advanced Microprocessor Control With Unique Dual Processor Concept
- Intelligent Two-Way Communications Between Operator And System
- 3000 Program Events And 11 Functions For Optimum Programming Creativity
- Advanced Compare Time Capability With 500 Event Capacity
- Flexible Operation—Adapts To Any Format
- Superior Technical Performance
- Field Proven Reliability

GENERAL DESCRIPTION

Control 16 is a versatile management tool for effective program control. This unique program control system has the ability to smoothly handle even the most difficult program assignments. Formats such as **All News**, **Religious**, and **Voice Track** are carried out to perfection without any compromising. The precision of Control 16 produces a technically consistent on-air sound that is hard to match by live programming. The features described herein—many of them exclusive to Control 16—show how this new generation system can improve your station's programming.

VERSATILE PROGRAMMING — All three popular methods of station programming can effectively be carried out...**Sequential** (when using cartridge music), **Main/Sub** (when using syndicated reel-to-reel music formats), and **Time Insertion** (when programming a loose format). You decide which method best serves your needs. All three are standard.

EASY SOURCE SUBSTITUTION — Any source can be substituted for any other source! Source substitution avoids having to reprogram the memory should a source machine ever become defective. Simply substitute some other source to play in place of the defective source!

AUTOMATIC MEMORY SEARCH — Let Control 16 do the work. Any commercial announcement can be quickly searched out for deletion or reprogramming. The memory can be automatically searched for any source or any specific source and shelf.

INSTANT DISPLAY OF ABORTED EVENTS — Aborted events are instantly displayed with an English description of exactly what happened, where and why. There are 8 conditions that will cause an aborted event and each is fully displayed on the CRT:

- Source Power Off
- Silence Sense
- Power Failure
- Source Card Out
- Machine Error
- Disabled
- Source Not Ready
- Repeated Source

UNIQUE SPECIAL EVENT INSERTION — Two Special Event Insertions can be preprogrammed and inserted into the normal program sequence either manually or by time. Either Special Event Insertion can consist of a single event or a cluster of events. The exclusive cluster capability provides for a bulletin open/report/spot/report/bulletin close to be easily sandwiched into the normal program sequence without reprogramming. The insertion can also be reinserted as often as necessary without having to reprogram each time.

CONVENIENT VOICE TRACK AND TIME ANNOUNCE DISABLE — Both the Voice Track and Time Announce Decks, if used, are automatically disabled following a power failure, to avoid playing the wrong voice cut or time announcement on the air.

DATA ERROR SENSING — The operator instantly knows when invalid data is being programmed. The word **Invalid** appears on the **CRT** and the keyboard sounds one pleasing beep. Programming a source to play back-to-back without the back-to-back function will cause a **Repeat Source** error.

Control 16's Data Error Sensing makes it virtually impossible to enter erroneous event or time data from the keyboard.

FLEXIBLE "GO TO" COMMAND — Control 16's unique "**Go To**" Command allows storing any number of program formats for later use. They can be easily called up at any time by the "**Go To**" command. No jump table or hard wiring of sub memory to restrict your programming creativity.

SELF-CORRECTING DIGITAL CLOCK — The crystal reference digital clock samples line frequency over a long period of time and feeds slight corrections back to the crystal, producing a highly stable time reference which has self-correcting capability. This self-correcting feature ends periodic clock resetting.

UNIVERSAL SOURCE CARD — A universal source card provides interchangeability between reel-to-reel and cartridge sources. This universal source card includes all components regardless of application and features:

- 25 Hz sensing for reel-to-reel sources
- Voice track update
- On-Air tally signal
- End of tape (reel-to-reel) alerting circuit
- Extend or defeat option of the system silence sensor
- 8 **LED** status indicators for diagnostics

UNIQUE DUAL PROCESSOR CONCEPT — Control 16's unique dual processor concept provides for limited **automatic** operation during emergency conditions. Should the main processor ever fail, the keyboard can be plugged directly into the Audio Control and up to 64 events programmed.

SIMPLE AUTOMATIC RESTART — Control 16 automatically restarts following a main AC power failure. If power is off less than 2 minutes, the next source is called on automatically.

SEVEN DAY COMPARE TIME MEMORY — Control 16 has an advanced design seven day compare time memory with a capacity for storing 500 time entries with 18 functions for programming the long weekends.

FIVE EXCLUSIVE VIDEO DISPLAYS — For making intelligent programming decisions quickly and easily.

- **Program Display** for monitoring on-air programming, and entering, editing, or reviewing other program events and compare times.
- **Assignment Display** for making initial system assignments such as Time Announce, Back Time/Dead Roll, Voice Track, etc.
- **Log Display** for reviewing the last 10 lines of program logging data.
- **Events Display** for reviewing the sequence of any 96 program events.
- **Compare Time Display** for reviewing the chronological order of any 72 compare times.

Up to three additional keyboards (left) can be added by simply plugging them in. Any number of low cost monitors (right) can be daisy-chained up to a maximum distance of 500 feet from the master CRT.

LIGHTWEIGHT, PORTABLE KEYBOARD

- Can be located up to 175 ft. from system.
- Engineered for logical and easy operation.
- Only 39 key switches in all-20 Mode Keys, 16 Data Keys and 3 Control Keys.
- Operator Error Sensing for assisting the operator in learning keyboard operation.
- LED display for next-to-run event, reviewing events, setting the digital clock, or making assignments.
- Three-way Electronic Lock prevents unauthorized access to the memory.

ANNOUNCER ASSIST REMOTE CONTROL — Control 16's portable keyboard puts the announcer in full command of music, commercials and other program material stored in the automation system. Any number of events can be set to segue automatically, giving the announcer time for other duties during periods of live programming. All events from the system, even during live programming, are automatically logged.

BATTERY-BACKED POWER SUPPLY — The power supply used in Control 16 features heavy duty components for a high degree of reliability. Includes battery backup for memory retention during power failure.

CONVENIENT CUSTOMER PANEL — For easy access to system inputs/outputs. Includes:

- Ten watt stereo monitor amps for clean, crisp audio.
- Four relay circuits for remote alerting of **Next Source Not Ready, Logger Failure, Transmitter System Off The Air,** and **Aborted Event.**
- Stereo and Mono Mix outputs at 600 ohms balanced.

MICROPROCESSOR AUDIO CONTROL — One of Control 16's new-generation microprocessors is located in the audio control. It makes decisions for proper program execution and checks system status for alerting the operator. Other features include:

- Full system audio monitoring with left and right meters. Pushbutton selector switches for monitoring **Program, Off-Air, Cue,** and **External.** Each can also be monitored in the SUM/NULL mode.
- Front panel digital display of on-air source and shelf.
- Front panel indication of the EOM (End of Message) from the on-air source.
- Front panel alarm indicator and reset switch.
- Self-correcting 12/24 hour digital clock with one pulse per second output for external use.
- Dual Program Bus with adjustable level reduction for voice-over.
- Dual Silence Sensing of system's audio and of the off-air audio.
- FSK logging decoder with 10 line data buffer.
- Easy access to switches, and level controls located on back of swing-out front panel.
- Capacity for 16 sources, including a dedicated 600 ohm balanced input for network. Source capacity can be expanded to 32 or 47 sources.

NEW GENERATION MAIN PROCESSOR — Control 16's main processor includes one of the system's two identical high-performance microprocessor boards. This microprocessor checks entries for error; communicates with peripheral computer or printer for automatic memory loading or printing; stores your program format and commercial load as entered from the keyboard; and sorts compare times into chronological order. Other features include:

- 3000 event Program Memory expandable to 10,000 events. Standard memory is capable of storing advance programming for several days. Any one of 11 functions can be programmed with each event for creative programming.
- Seven day, Compare Time Memory for storing 500 compare times. Repetitive daily and hourly entries greatly expand the compare time capacity. Any one of **18** functions can be programmed with each compare time for versatile time control.
- Plug-in circuit boards located in slide-out chassis for easy access.
- Includes port for memory loading and printing, or for external business system.

ORDERING INFORMATION

See price list for all ordering and pricing information

Two-Rack
Econo-Control 16
System

Keyboard

FEATURES

- Microprocessor based system at economical price
- Field expandable to full Control 16
- Perfect for "live assist" programming
- 2000 program events, 10 repetitive compare times
- Full data error sensing
- Completely interchangeable universal source cards
- Same superior technical performance as full Control 16

The Econo-Control 16 is an economy version of Broadcast Electronics' highly successful, top of the line Control 16. Many of Control 16's unequaled features such as simplicity of operation and superior technical performance are retained in this new smaller program controller. Econo-Control 16 meets the broadcaster's demand for a small control system with a modest degree of sophistication.

WHAT'S THE DIFFERENCE?— Putting it quite simply, Econo-Control 16 does not use a CRT video monitor. It does, however, include the same portable lightweight Keyboard and the unique Audio Control unit as the full Control 16. This design concept makes Econo-Control 16 the only small microprocessor controller that can be expanded to include all the features of the top of the line video monitor systems.

Should your later needs require full two way communication, simply plug in the CRT video monitor and associated electronics to expand your Econo-Control 16 to include all the features of the full Control 16. Since the same Keyboard is used, the time required for operator retraining is minimized when expanding later.

HOW ABOUT LIVE ASSIST? — Econo-Control 16 fits in quite nicely with "live assist" programming. From the portable keyboard, the on-air announcer has easy access to all sources in the system. He can "random select" pre-recorded commercials and music to be played on the air at his discretion, thus allowing the announcer more time for creative live programming.

All pre-recorded material played on the air can be logged in full English with our optional "InteLog" automatic program logging. This feature also relieves the announcer of the mundane task of manually keeping the log.

The announcer has full control of the audio playback sources (start, automatic, manual, fade, etc.) from the keyboard. This lightweight (only 9 lbs.) portable Keyboard is engineered especially for the live assist operation. It can be located up to 175 feet from the Audio Control unit. The large, conveniently located start switch provides easy operation without the need for visual contact.

Econo-Control 16 is a valuable tool for automatically selecting commercial announcements to be played during live sport events or telephone talk shows. Program only a few events ahead or a full 2000 events ahead and start each at the desired moment.

WHAT DOES ECONO-CONTROL 16 OFFER? — Econo-Control 16 is an advanced microprocessor controller that offers many operational features usually found only in the more expensive top of the line program controllers. Here is what you get with Broadcast Electronics' Econo-Control 16:

2000 PROGRAM EVENTS — You can use SEQUENTIAL, MAIN FORMAT/SUB FORMAT, or TIME INSERTION programming, with 2000 events standard. All 3 methods are included to provide the flexibility needed to meet your changing needs.

11 EVENT FUNCTIONS — Each event can be programmed with a function along with source and shelf data for positive program control. Functions include:

LINK — to link events together to prevent interruption by time update.

MULTI-START — for smoothly playing time announcements over music.

BACK-TO-BACK — for playing the same reel-to-reel source without stopping between selections.

STOP — to take manual control.

RETURN — for inserting commercials into a repetitive format.

PREROLL — for updating the voice track.

RELAY — for firing optional relays for switching on or off devices external to your system.

UPDATE — the event which the memory will go to when a time jump command takes place.

PLAY — tells the system to play this event normally.

AVAIL — leaves this event blank and available for later use.

GO TO — commands the memory to go to a specific event in memory.

BUILT-IN SELF CORRECTING CLOCK AND COMPARE TIME MEMORY — This crystal reference digital clock has many advanced self correcting features. The time memory has capacity for storing 10 entries which repeat on an hourly basis. Any one of 13 functions can be programmed with each time entry.

When the real time clock coincides with a time entry, the system will execute the function. Functions include: STOP, RETURN, PREROLL, RELAY (with optional relay panel), START, JUMP, FADE & START, FADE & STOP, DEAD ROLL START, DEAD ROLL LIMIT, NETWORK EOM, SPECIAL EVENT 1 INSERTION and SPECIAL EVENT 2 INSERTION.

DATA ERROR SENSING — The operator instantly knows when invalid data is being programmed by a pleasant sounding beep emitted from the Keyboard. Programming a nonexistent source or shelf will be sensed immediately and cause automatic reset for accepting valid data.

Programming a source to play back-to-back without the Back-to-Back function will cause a repeated source error. This feature prevents the common mistake of programming two commercial announcements back-to-back from the same random access machine.

Econo-Control 16's DATA ERROR SENSING makes it virtually impossible to enter erroneous event or time data which would otherwise disrupt your on-air sound.

UNIVERSAL SOURCE CARD — Econo-Control 16's source cards are truly universal. Only one type is used for all sources—reel-to-reel sources, single deck cartridge sources, random access sources, etc., and each is fully interchangeable with the other source cards. Each universal source card features:

- 25Hz sensing for reel-to-reel sources
- Voice track update control
- On-air tally signal
- End-of-tape (reel-to-reel tape) alerting signal
- System Silence Sense **extend** or **defeat**
- 8 LED diagnostic indicators

SIMPLE SPECIAL EVENT INSERTION — News bulletins or last minute program changes can be easily inserted into the normal program sequence either manually or by time. Two "Special Event Insertions" can be pre-programmed and inserted and reinserted in the program sequence as often as you like without having to reprogram each time. With the Econo-Control 16, you are never locked in or prevented from making last minute changes.

UNIQUE ASSIGNMENT TABLE — The unique assignment table means sources no longer have to be hard wired and dedicated to specific use such as Time Announce, Back Time/Dead Roll, or Voice Track. You simply assign, via the keyboard, the sources you want to use for Time Announce, etc., in the assignment table. Should you later decide to use these source playbacks for news, weather, sounders, voicers, etc., you only need to change the assignment table and not the source wiring.

FULL AUTOMATIC RESTART — Econo-Control 16 has the intelligence to automatically restart itself following a main AC power failure. Furthermore, if the source which was on the air when the power failure occurred was a single deck cartridge machine or reel to reel machine, it will be automatically recued off-the-air when power returns.

DIAGNOSTIC PRINTOUT OF ABORTED EVENTS (with optional printer) — Aborted events are instantly printed with an English description of exactly what occurred. There are 8 conditions that will cause an aborted event:

- Source Power Off
- Source Card Out
- Power Failure
- Machine Error
- (Source) Disabled
- Source Not Ready
- Repeated Source
- Silence Sense

Say, for example, the log printout reads:
02:05:02P 0005 PLAY 01-00 ***SOURCE POWER OFF***

From the description you can tell that source number 01 did not play at event 0005 when called upon at two seconds after 2:05 P.M., because the source power was not on.

TO EXPAND YOUR ECONO-CONTROL 16 — The Econo-Control 16 is especially attractive to those broadcasters whose present needs do not justify the capabilities of the full Control 16, but who may want to expand to the full Control 16 at a later date.

If you decide to expand, simply add the CRT video monitor and Main Processor chassis to have all the benefits of the full Control 16. (See pages 53-55)

ORDERING INFORMATION

See price list for all ordering and pricing information

TECHNICAL SPECIFICATIONS: CONTROL 16 AND ECONO-CONTROL 16

Program Output:	+8 dBm stereo balanced 600 ohms
Headroom:	+12 dB
Frequency Response:	±1 dB from 40 Hz to 20 kHz with reference of 1 kHz at +8 dBm output and including 25 Hz filters
Total Harmonic Distortion:	Less than .5% at +18 dBm output from 40 Hz to 20 kHz
Signal To Noise:	70 dB or more below +8 dBm output. (Not including source noise)
Stereo Separation:	55 dB or more below +8 dBm output from 40 Hz to 20 kHz
Cue to Program Separation:	70 dB or greater for "0" dBm input to source
25 Hz Filters Attenuation:	55 dB or more (typically 60 dB) at 25 Hz below reference output of 1 kHz at +8 dBm
Mono Mix Program Output (L+R):	"0" dBm mono balanced 600 ohms following 25 Hz filters
Headroom Mono Mix:	+12 dB
Source Audio Input:	"0" dBm at 600 ohms unbalanced for +8 dBm output
Network Audio Input:	"0" to −25 dBm (adjustable) mono 600 ohms balanced
Off-Air Audio Input (To Off-Air Silence Sensor and Monitor Panel):	"0" dBm stereo 600 ohms balanced
External Audio Input (To Monitor Panel):	"0" dBm stereo 600 ohms balanced
Monitor Amp Output:	Stereo, 10 watts RMS/channel at less than .5% distortion
Remote On-Air Tally (from each source card):	Open collector 60 ma max.
Clock reference output for external use:	One PPS contact closure or TTL output

REMOTE ALERTING OF SYSTEM STATUS

1. **Remote End of Tape Alerting** (from each source card) is open collector 60 ma max.
2. **Next to Run Source Not Ready** is a contact closure with automatic reset when source becomes ready.
3. **Aborted Event** is a contact closure when an event is aborted for any one of 8 reasons: **Source Power Off, Source Card Out, Source Was Not Ready, Silence Sense, Machine Error, Repeated Same Source, Source Disabled, and System Power Failure.**
4. **Logger Failure** is a contact closure when log printer loses power or interconnect cable is disconnected with automatic reset when printer conditions are normal.
5. **Transmitter System Off The Air** is a contact closure when the **Off-Air Silence Sensor** detects silence from the off-air monitor. Has automatic reset feature when audio returns.

Features

- Electronic tab setting
- 32-line buffer memory
- Automatic error detection
- Full editing capability
- Automatic printout of encoding instructions
- Exclusive "Message Restore"
- Fast, reliable microprocessor encoding

```
    02:05:39P 0008 PLAY    03-00 ***SOURCE CARD OUT***
    02:05:39P ---- PLAY    02-00 EMERGENCY FILL
    02:08:34P 0011 PLAY    02-00 ***REPEATED SOURCE***
    02:08:34P 0506 LINK    06-01   SIRLOIN STOCKADE #2        :30  CA
    02:09:03P 0507 LINK    05-34   COKE "GOLDSBORO"           :30  CA
    02:09:33P 0508 LINK    06-16   CONTROL 16                 :15  CA
    02:09:50P 0014 PLAY    11-00 ID/JINGLE BILL ROBINSON     :09
    02:09:59P 0016 PLAY    03-00 ***MACHINE ERROR***
    02:09:59P 0018 PLAY    01-00
    02:12:50P 0511 LINK    06-28   FORD DEALERS               :60  CA
    02:13:24P                      XMTR SYSTEM "OFF" THE AIR
@02:13:50P 0512 LINK    05-19   SUNBEAM BREAD #3           :30  CA
@02:14:22P 0513 LINK    06-13   WESTERN AUTO               :30  CA
@02:14:51P 0020 PLAY    13-00 ***DISABLED***
@02:14:51P 0021 PLAY    03-00
    02:15:29P                      XMTR SYSTEM "ON" THE AIR
    02:18:46P 0022 PLAY    99-00
    02:18:46P 0023 MLT ST  02-00
SS  02:19:05P                      POWER FAILURE
    02:19:21P 0024 PLAY    13-00 ***DISABLED***
    02:19:21P ---- PLAY    01-00 EMERGENCY FILL
    02:22:53P 0022 PLAY    99-00 ***DISABLED***
    02:22:53P 0023 MLT ST  02-00
SE  02:25:17P ---- PLAY    11-00
    02:25:28P 0024 PLAY    13-00
    02:25:35P 0025 PLAY    03-00
SE  02:29:12P 2900 PLAY    11-00 ID/JINGLE BILL ROBINSON     :09
SE  02:29:23P 2901 PLAY    05-34   COKE "GOLDSBORO"           :30  CA
SE  02:29:53P 2902 PLAY    99-00
```

Log printout for InteLog includes diagnostic codes and diagnostic descriptions to indicate abnormal program execution.

General Description

Broadcast Electronics' high speed InteLog represents the first real advance in operational convenience and printout of diagnostic messages in English logging since the early 1970's. It is designed for use with Broadcast Electronics "intelligent" automatic program control systems—Control 16 and Econo-Control 16—and is another example of BE's solid, reliable and advanced-design automation products.

ENCODING

InteLog's encoder is microprocessor controlled, and includes many unique features for fast, reliable encoding of cartridges with logging data. The typical encoding setup includes a data terminal, a cartridge recorder and the InteLog encoder.

Electronic Tab Setting - The Electronic Tab Setting feature is just like the tab stops on a typewriter, for ease in preparing your messages for neat, columnized printout...just like your manually kept log.

InteLog further simplifies the encoding process by printing step-by-step instructions guiding the operator through the encoding procedure. This two-way communication between the encoder and operator makes InteLog a truly "intelligent" logging system.

Full Editing Capability - Messages stored in memory can be fully edited, not only for minor errors such as spelling, but also to add or delete several words at a time. Messages can therefore be changed without re-entering the entire message.

Exclusive Automatic Error Detection - InteLog automatically compares the message being encoded on the tape with the message as stored in memory, and upon completion of the encoding process, tells the operator if there are any mistakes. This saves the operator time in verifying the encoded messages.

Message Restore - When updating a client's commercial, there is no need to re-type the logging message into the memory. With InteLog simply play the old commercial on the encoder cart machine, storing in memory the logging message on that cart. Next erase the cart. Then the new commercial is recorded on the cart and the old logging message encoded back onto the cart from memory.

32-Line Buffer Memory - InteLog's encoder memory provides convenient storage of 32 single line messages, or any combination of multiple line messages up to a total of 32 lines. This capacity allows the storing of a complete log heading in many cases. Several messages may also be entered for systematic encoding.

InteLog's encoder includes a five-position transfer switch for switching the data terminal used for encoding to other uses such as printing information from Control 16's memory. This provides a hard copy printout of any selective group of events for convenient review. Control 16's time entries used for time updates can also be printed out for review.

DECODING

InteLog provides an FCC acceptable log, complete with log heading, space for the operator to sign on and off, and exact start time for each event, along with the event and source number. It also prints six diagnostic codes and nine diagnostic descriptions indicating abnormal program operation.

The six diagnostic codes tell you if an on-air event did not play to completion, and the reason why. For instance, the designation "FO" means the event was **Faded OFF** the air; "@" means this event played while the transmitter system was off the air.

The nine diagnostic descriptions tell you if an event did not go on the air as scheduled, and the reason it did not play. They are:

SOURCE POWER OFF, SOURCE NOT READY, DISABLED, SOURCE CARD OUT, REPEATED SOURCE, MACHINE ERROR, XMTR SYSTEM OFF THE AIR, XMTR SYSTEM ON THE AIR, POWER FAILURE.

Ordering Information

See Price List for all ordering and pricing information.

FEATURES

- Available in one-, two-, three- and four-bay configurations
- Identical to Control 16 automation racks for attractive, uniform installations
- Pleasing blue and black color scheme
- Louvered back door, top plate, side panels, cowlings and front mounting channels standard

Single Bay, Front

Single Bay, Rear

DESCRIPTION

B.E. Series 4000 rack cabinets provide a convenient means for arranging equipment and at the same time give a neat appearance to the surrounding facility. They are especially desirable when used in a radio station containing a B.E. Control 16 or Econo-Control 16 program automation system, since the same racks are used in those products. This gives an attractive, uniform appearance to the installation.

These heavy duty rack cabinets can be ordered in one-, two-, three- and four-bay configurations, depending on your current and future needs. Each rack cabinet, whether a single or multiple bay model, comes with the following standard components: louvered back door(s), top plate(s), side panels, cowling(s), and front mounting channels. Door locks, rear mounting channels, plugmolds and blank panels can be ordered as options if needed.

The rack frames are black, with light blue side panels, top panels and doors. Trim strips and cowlings are brushed aluminum with black inserts.

All BE supplied Series 4000 rack cabinets undergo a modern prefinishing and painting process to assure a top quality finish. The units are sanded, phospatized, painted, bake cured, and then carefully inspected before being shipped. A quality product in all ways, BE Series 4000 rack cabinets are a pleasing addition to any facility with rack-mountable equipment.

Two bay
rack cabinet

Three bay
rack cabinet

Four bay
rack cabinet

ORDERING INFORMATION

STOCK NO.	DESCRIPTION
840-4001	ONE RACK BAY with louvered back door, top plate, side panels, cowlings and front mounting channels. Dimensions 69-¾" high, 23-¼" wide and 25" deep. 35 rack units per rack. Unwired rack. Weight (packed): 222 lb.
840-4000	ONE RACK BAY, same as above except less side panels. Weight (packed): 148 lb.
840-4002	TWO RACK BAY with louvered back doors, top plates, side panels, cowlings, and front mounting channels. Dimensions 69-¾" high, 45-¼" wide and 25" deep. 35 rack units per rack. Unwired rack. Weight (packed): 346 lb.
840-4003	THREE RACK BAY with louvered back doors, top plates, side panels, cowlings and front mounting channels. Dimensions 69-¾" high, 67-¼" wide and 25" deep. 35 rack units per rack. Unwired rack. Weight (packed): 494 lb.
840-4004	FOUR RACK BAY with louvered back doors, top plates, side panels, cowlings and front mounting channels. Dimensions 69-¾" high, 89-¼" wide and 25" deep. 35 rack units per rack. Unwired rack. Weight (packed): 642 lb.
840-4005	Optional LOCKING flush handle for the above racks (H365L-L1-V for left hinged door), one per rack.
840-4006	Pair of "L" type rear mounting channels. (One pair required per rack) MXL-61
840-4007	3' Plugmold with 6 AC outlets. PM-36-6
840-4008	5' Plugmold with 10 AC outlets. PM-60-10
506-0175	1¾" Blank Panel - Black, 1 rack unit
506-0350	3½" Blank Panel - Black, 2 rack units
506-0525	5¼" Blank Panel - Black, 3 rack units
506-0700	7" Blank Panel - Black, 4 rack units
506-0875	8¾" Blank Panel - Black, 5 rack units

AM Compressor/Limiter
Model AM-400

FEATURES

- Symmetrical Or Asymmetrical Processing
- Adjustable Compression Release Time
- 1-Microsecond Attack Time
- +20 dBm Output Capability

GENERAL DESCRIPTION

MAINTAINS HIGH AVERAGE MODULATION, PROTECTS AGAINST OVERMODULATION — Designed for smooth, noise-free control of AM transmitter peak modulation, the Broadcast Electronics AM-400 Compressor/Limiter amplifier insures the AM broadcaster against overmodulation while automatically maintaining average modulation at optimum levels.

125% POSITIVE, 100% NEGATIVE OR EQUAL 100% POSITIVE/NEGATIVE PROCESSING — The AM-400 may be operated in a symmetrical mode, producing equal positive and negative output peaks, or alternatively in an asymmetrical mode which produces positive peaks at a 25% higher amplitude than the negative peaks.

THREE-MODE OPERATION — The AM-400 may be operated in three basic modes: a) Compression and limiting, b) compression only, or c) as a fixed-gain, conventional line amplifier. This switching, as well as the symmetrical/asymmetrical operation, plus power on/off switching are on the rear chassis apron.

TAMPER-PROOF INSTALLATION — Front panel, screwdriver access control of input and output line levels; compression release time; and selection of +4 or +10 dBm output level and relative gain metering permit presetting of all operating functions and parameters, free from subsequent inadvertent misadjustment or tampering.

QUALITY CONSTRUCTION AND PERFORMANCE — Packaged for rack-mounting in 3½" of space, the compact AM-400 unit contains all of the sophisticated electronic circuitry, with high quality components mounted on a readily-accessible, single printed circuit board. The AM-400 is subtly-styled to blend with other rack-mounted equipment.

Long-term reliability combined with guaranteed, broadcast-grade professional specifications give the AM broadcaster excellent audio signal processing capability at moderate cost.

SPECIFICATIONS

Input Impedance:
600 ohms, transformer balanced.

Input Level:
−20 dBm to +20 dBm for +20 dBm output.

Frequency Response:
±1 dB, 30 Hz - 15 kHz (1 kHz reference).

Distortion:
0.5% or less, 30 Hz - 15 kHz at +20 dBm output.

Signal-to-Noise (unweighted):
60 dB below +20 dBm output with −20 dBm input.

Output Impedance:
600 ohms, balanced.

Output Level:
Adjustable, +20 dBm maximum. VU meter switchable for "zero VU" deflection at +4 dBm and +10 dBm nominal output.

Compression Ratio:
30 to 1 max.

Compression Release Time:
Adjustable, 5 to 40 seconds for 20 dB release.

Limiter Attack Time:
1.0 microsecond.

Controls/Switches:
Front Panel: Input Level, Output Level, Compression Release Time, Meter Switch (+4 dBm, +10 dBm, relative gain reduction).
Rear Panel: Symmetrical/Asymmetrical Modes; Compress/Limit, Compress Only, Test Modes; Power On/Off Switches.

Power Requirements:
105 to 125 Vac, 50/60 Hz, 10 watts
210 to 230 Vac, 50/60 Hz optional

Dimensions:
19" Wide, 3.5" High, 5" Deep (48.3 × 8.9 × 12.7 cm)
EIA Std. Rack Mtg.

Weight (packed):
9 lbs. (4.9 kg).

ORDERING INFORMATION

MODEL	STOCK NO.	DESCRIPTION
AM-400	837-4001	AM Compressor/Limiter

AM-500
AM Compressor/Limiter/Expander

FEATURES

- Overmodulation Protection
- Symmetrical Or Asymmetrical Modes
- Advanced Audio Processing Techniques

GENERAL DESCRIPTION

ADVANCED AUDIO PROCESSING—SYMMETRICAL OR ASYMMETRICAL OUTPUT — The Broadcast Electronics AM-500 utilizes advanced audio processing technology to produce an output of controllable, overall dynamic range that complies precisely with individual AM broadcast station programming ojectives. Simultaneously, short-duration program peaks are restricted so as to minimize the possibility of overmodulation. The AM-500 may be operated in either a symmetrical (100% positive, 100% negative) or an asymmetrical (125% positive, 100% negative) output mode.

THREE MODE OPERATION — The AM-500 may be operated in three basic modes: 1) Compression, limiting and expansion, 2) compression only, or 3) as a fixed gain, conventional line amplifier. This switching, as well as the symmetrical/asymmetrical operation, plus power on/off switching, is on the rear chassis apron.

AUDIO GATING FOR OPTIMUM LOW NOISE OPERATION — Since extended periods of relatively low-level program material, or its total absence, would cause the comparator to sense a need for an extremely high degree of expansion, with a resultant increase in hiss, hum or background noise, this condition is avoided by audio gating circuitry which holds the processor gain constant for a maximum 17-second period, then automatically reverts to the processor's fixed gain point. Whenever higher-level programming resumes, normal operation continues instantly.

OVERMODULATION PROTECTION — Protection against high-amplitude program peaks of short-duration is by means of a peak clipper. Only those peak signals which occur prior to peak level detection, generally a single cycle, will be clipped. Subsequent cycles will not, since the peak level detector rapidly senses these as a "compress command" to the comparator which, in turn, reduces overall gain.

EASY, STRAIGHTFORWARD "SET-UP" — Installation and set-up is simple. Input and output controls are adjusted, consistent with input source level and transmitter audio input requirements to produce the desired degree of either symmetrical or asymmetrical maximum modulation. A convenient test/operate switch is incorporated. In the test position, the AM-500 operates as a conventional line amplifier for conducting proof-of-performance measurements.

SPECIFICATIONS

Input Impedance:
600 ohms, transformer balanced.

Input Level:
−20 dBm to +20 dBm for +20 dBm output.

Frequency Response:
±1 dB, 30 Hz to 15 kHz (1 kHz reference).

Distortion:
0.5% or less, 30 Hz - 15 kHz at +20 dBm output.

Signal-to-Noise (unweighted):
60 dB below +20 dBm output with −20 dBm input.

Output Level:
+20 dBm max. (adjustable).

Output Impedance:
600 ohms balanced.

Maximum Overall Gain:
60 dB (full expansion).

Maximum Expansion:
20 dB.

Maximum Compression:
30 dB.

Compression Ratio:
30 to 1 max.

Compression Release Time:
Adjustable, 5 to 40 seconds for 20 dB release.

Limiter Attack Time:
1.0 usec.

Limiting Modes:
Symmetrical (equal positive and negative) or asymmetrical (positive 25% greater than negative) peak limiting.

Controls/Switches:
Front Panel: Input level, output level, compression release time.
Rear Panel: Symmetrical/Asymmetrical modes; compress/limit/expand, compress only, test; power on/off.

Indicators/Meters:
(Front Panel) gain reduction meter indicates nominal gain, and relative compression or expansion; audio presence and power line presence indicators.

Power Requirements:
105 to 125 VAC, 50/60 Hz, 11 watts; 210 to 230 VAC, 50/60 Hz, optional.

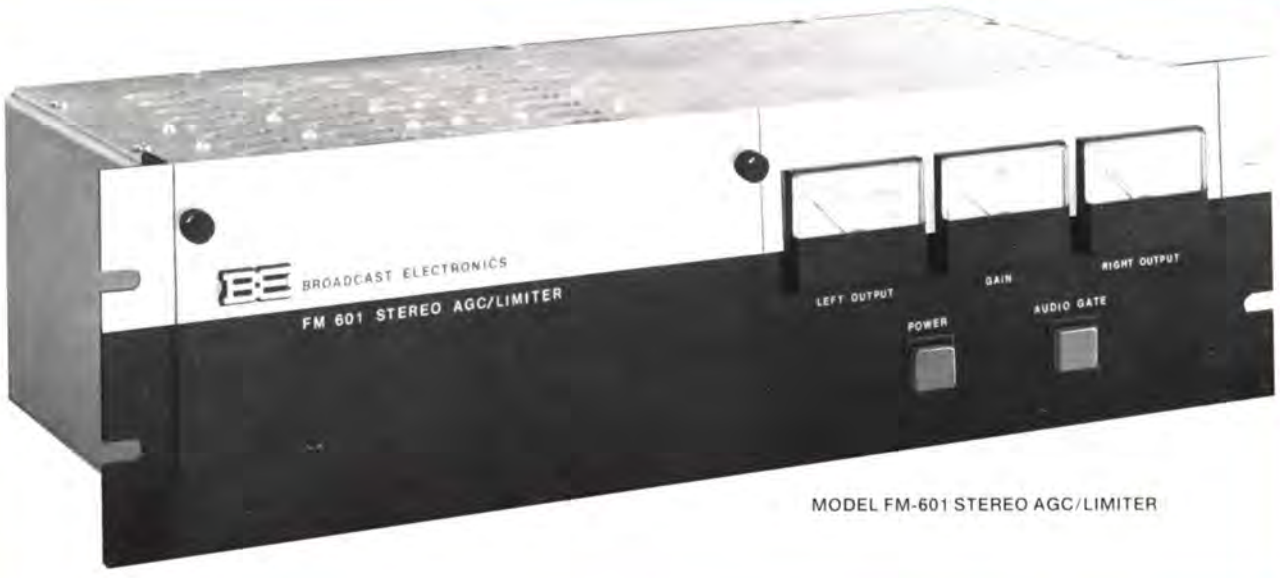
Dimensions:
19" W × 3.5" H × 9" D (48.3 × 8.9 × 22.9 cm.)

Weight (packed):
9 lbs. (4.1 kg.).

ORDERING INFORMATION

MODEL	STOCK NO.	DESCRIPTION
AM-500	837-0500	AM Compressor/Limiter/Expander

FM AGC/Limiters
Model FM-601 Stereo
Model FM-600 Mono



MODEL FM-601 STEREO AGC/LIMITER

FEATURES

- Independent Compression/ Expansion Control
- Advanced Audio Gating
- Single 5¼" Rack Package
- Mono and Stereo Models
- Modular, Front Access Plug-In Electronics
- Dolby-B Compatible

GENERAL DESCRIPTION

OVERMODULATION PROTECTION, PLUS FULL PROCESSING CONTROL — The Broadcast Electronics FM-600 monaural, and FM-601 stereo AGC/Limiter amplifiers allow the FM broadcaster to modulate his transmitter at the highest permissible level and to precisely control the amounts of signal compression and expansion in order to maintain a desired station "sound." These amplifiers, unlike many audio processors, do not produce an uncontrollable "sound" of their own. Instead, they permit the broadcaster to smoothly establish the sound he wishes to produce . . . whether it be "the loudest sound in town" or the gentle "tailoring" of classical music with wide dynamic range. And this is accomplished with no "thumps", extraneous noise or distortion.

AUDIO GATING—SMOOTH COMPRESSION AND EXPANSION CONTROL — Innovative audio-gating techniques which sample incoming program material, automatically apply signal processing only when needed.

This gated operation mode allows 50 dB of automatic level control. Individual controls establish compression over a 0 to 30 dB range and expansion, if desired, from 0 to 20 dB. These control adjustments have no effect on maximum peak output levels nor on limiter attack time. In their full-on positions output is at nearly-constant amplitude. Thus a combination of control settings, precisely suited to individual station program material, is easily established.

SIMPLE SET-UP AND OPERATING MODE SELECTION — Set-up controls and operating mode switches are mounted on plug-in modules accessible behind the hinged front panel. Mode switch functions include selection of: (a) 75-microsecond pre-emphasis; (b) 25-microsecond pre-emphasis (for Dolby-B compatibility); (c) flat-frequency response; (d) test (unit operates as conventional line amplifier. Convenient for proof-of-performance measurements); (e) full gated expansion/compression; and (f) limiting only. All mode switching may be controlled remotely by switch closures to ground.

AUTOMATIC STEREO BALANCE — Precise stereo balance is insured by matched, ultra-linear, temperature-compensated voltage-controlled amplifiers.

COMPACT, SINGLE 5¼" RACK-MOUNTED PACKAGING — The amplifiers replace, in a single 5¼" rack-mount package, separate interconnected AGC and limiting amplifiers. This is done without crowding and with front access to all electronics, which are on six labelled plug-in cards. Output levels plus compression and expansion are fully metered.

EASY SET-UP, AUTOMATIC BY-PASS — Set-up is straightforward, requiring adjustment only of input and output level, compression, expansion and expansion return rate controls. Typical of the consideration given to practical operating situations is built-in, automatic, bypass switching in the event of power interruption and fully-regulated, self-protected power supplies.

SPECIFICATIONS

Input Impedance:
600 ohm, transformer balanced.

Input Level:
20 dBm to + 26 dBm for + 20 dBm output (20 dBm input yields + 20 dBm output with zero compression or expansion.

Frequency Response:
± 0.5 dB, 20 Hz - 20 kHz (1 kHz reference).

Distortion:
0.5% or less, 20 Hz - 20 kHz at + 20 dBm output.

Signal-to-Noise:
70 dB or greater below + 20 dBm output with 20 dBm input.

Output Impedance:
600 ohm, transformer balanced.

Output Level:
Adjustable, + 20 dBm maximum.

Overall Gain:
60 dB with full expansion.

Compression Range:
0 to 30 dB.

Expansion Range:
0 to 20 dB.

Expansion Recovery Rate:
Adjustable, 5 to 40 seconds for 20 dB expansion.

Average/Peak Ratio:
Adjustable, 35 dB minimum, 1 dB maximum.

Limiter Attack Time:
5 microseconds or less for 10 dB of limiting.

Equalization:
Normal Mode: 75 microseconds, 25 microseconds, or flat response (50/25 usec or flat optional).
Test or Limit Only Modes: Flat response.

Operating Temperature Range:
0° to 55°C.

Power Requirements:
105 to 125 or 210 to 230 Vac (switchable). 50/60 Hz, 30 watts.

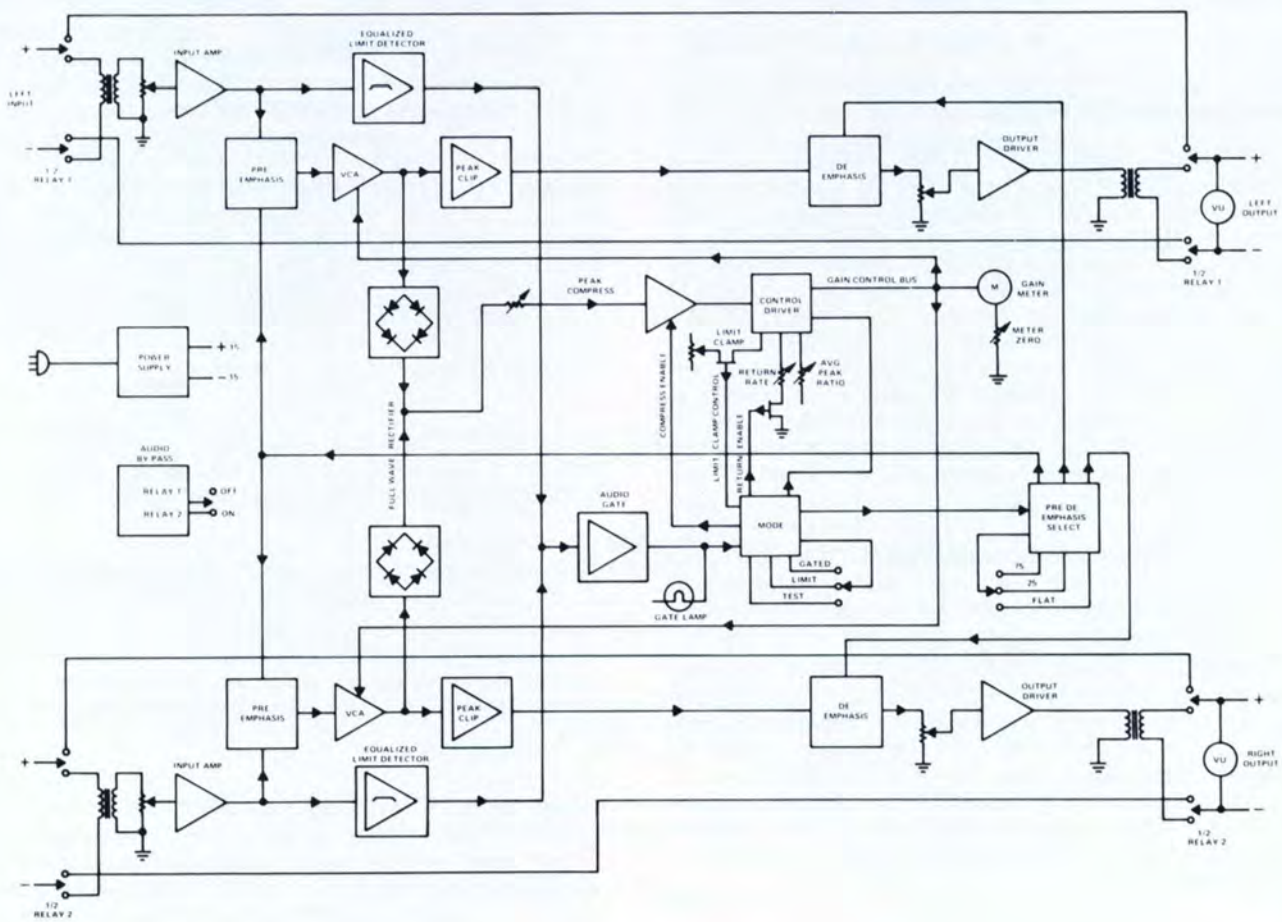
Dimensions:
19" Wide, 5.25" High, 10" Deep (48.3 × 13.3 × 25.4 cm)
EIA Std. Rack Mounting.

Weight (packed):
16 lbs. (7.2 kg).

ORDERING INFORMATION

MODEL	STOCK NO.	DESCRIPTION
FM-600	837-0600	Mono FM AGC/Limiter w/mating 24-pin female conn.
FM-601	837-0601	Stereo FM AGC/Limiter w/mating 24-pin female conn.

BLOCK DIAGRAM — MODEL FM-601 STEREO AGC/LIMITER



AD-1B
Audio Distribution Amplifier

GENERAL DESCRIPTION

The AD1B Audio Distribution Amplifier distributes an audio input to multiple points within a studio system or to telephone lines. Facilities for visual and aural monitoring of the incoming signal are provided on the front panel by means of a VU meter and a headphone monitor jack. The meter and headphone jack also monitor the output from each channel. Locking-type controls are provided for adjusting each output channel.

Five highly isolated output channels are provided on the basic AD1B. Frequency response is essentially flat from 40 to 20,000 Hz. Distortion is well below 1% at rated output and peak overload handling capacity is in excess of 12 dB. Noise is better than 60 dB below rated output with 60 dB isolation between channels.

FIVE CHANNEL EXTENDER — The AD1B-X Extender is designed to expand the number of output channels provided by the basic AD1B unit if more than five output channels are needed. Each AD1B-X Extender provides five additional output channels and up to four Extenders may be added to each basic AD1B unit. Metering and audio monitoring are automatically provided to the AD1B-X Extenders by strapping between the basic AD1B unit and the AD1B-X Extenders.

INPUT AND OUTPUT IMPEDANCE — Both the AD1B and AD1B-X standard units are shipped with 600 ohm unbalanced emitter follower outputs for operation into 600 ohm or higher load impedances. If ordered with balanced transformer outputs, units are shipped with transformers connected for operation into 600 ohm or higher load impedances. Transformers may be reconnected for operation into 150 ohm load impedances, if desired.

Input transformers are standard on all units. Input circuitry may be operated either bridging or matching, balanced or unbalanced.

See price list for ordering information.

SPECIFICATIONS

AD1B (BASIC UNIT)

Input Impedance:
600 ohms matching, 10 k ohms bridging.

Output Load Impedance:
Emitter-Follower—600 ohms or higher. Optional transformer output 600/150 ohm.

Maximum Input Level:
+30 dBm.

Minimum Input Level:
−26 dBm matching, −10 dBm bridging.

Output Level Per Channel:
+4 dBm (+14 dBm max.).

Gain:
30 dB (matching), 14 dB (bridging).

Frequency Response:
±1 dB 30-15,000, ±2 dB 20-20,000 Hz.

Distortion:
Less than 1%.

Noise:
65 dB or better below rated output.

Channel Separation:
60 dB @ 400 Hz.

Maximum Ambient Temperature:
55°C.

Power:
115V, 50/60 Hz, 50 watts or optional 220V, 50/60 Hz, 50 watts.

Dimensions:
19" W × 5¼" H × 7⅛" D.

Weight:
9½ lbs.

Mounting:
19" rack.

AD1B-X (5 CHANNEL EXTENDER):

Input Impedance:
1200 ohms, unbalanced.

Input Level:
+5 dBm.

Gain:
Unity.

Output Level Per Channel:
+4 dBm.

Power:
115V, 50/60 Hz, 40 watts or optional 220V, 50/60 Hz, 40 watts.

Dimensions:
19" W × 5¼" H × 7⅛" D.

Weight:
8 lbs.

BEM-10 MONITOR AMPLIFIER

GENERAL DESCRIPTION

The BEM-10 is a conservatively rated wide power-bandwidth 10-15 watt rms audio amplifier. It is designed for system sound applications requiring one microphone and one program source. As many as twenty speakers (tapped ½ watt) may be driven from the 25 or 70.7 volt balanced output, or a single four-ohm speaker system may be driven to a full 15 watts rms from the unbalanced output. The BEM-10 features a fully electronic page mute system.

See price list for ordering information.

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:
25K ohm unbalanced; or 600 ohms balanced.

Mic Input:
150 ohms balanced (internal transformer). Screw Terminals.

Power Requirements:
115VAC, 50/60 Hz, 30 watts.

Turntable Preamplifier
BETMS-100/200

FEATURES

- Five Operating Modes
- Phase Reversal Capability
- +8 dBm Output
- Monaural Or Stereo

GENERAL DESCRIPTION

The Broadcast Electronics Turntable Preamplifier models BETMS-100 and BETMS-200 have been designed for today's professional studios. Employing the latest integrated circuit techniques, these preamplifiers provide accurate reproduction, outstanding reliability, and versatile operation.

OPERATING MODES — Both the BETMS-100 and BETMS-200 are dual channel units for use with monophonic or stereophonic phono cartridges. Either model operates in five modes:

1. As a single stereo preamplifier with stereo in/stereo out.
2. As a dual monophonic unit with two mono in/two mono out.
3. As a single monophonic preamp with one mono in/one mono out.
4. As a stereo to mono converter with stereo in/one composite mono out.
5. As a dual stereo to mono converter with stereo in/two composite mono out.

This operational versatility means the BETMS preamplifier is never obsolete. It also provides a true composite mono signal mixed from a stereo pick-up required for many records.

HIGH PERFORMANCE STANDARD — The BETMS does not sacrifice performance. Specifications are conservatively rated at the intended operating figures to truly reflect the unit's performance. As an example, the BETMS is rated for +8 dBm output with a 5 millivolt input signal, the output level of today's high compliance stereophonic phono cartridges. Noise, cross talk, and distortion are all specified from this operating condition.

PHASE REVERSAL FEATURE — The right channel phase reversal capability simplifies installation in stereo facilities. In monophonic facilities this feature permits correction of improperly mixed records.

INTEGRATED CIRCUIT DESIGN — The integrated circuitry of the BETMS provides trouble-free operation for the life of the unit. This circuitry also provides stable operation which ensures rated operation without field adjustment.

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:
5mV for +8 dBm output, at 1 kHz, full output.

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

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

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

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

Frequency Response:
±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.

Rear Panel Connections:
Right input, Left input, Right output, Left output, Ground terminal, 3-wire Power Cord.

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

Dimensions:
9.5" W × 6.5" D × 3" H (24.1×16.5×7.62 cm).

Weight:
3.5 lbs. (1.6 kg).

ORDERING INFORMATION

MODEL	STOCK NO.	DESCRIPTION
BETMS-100	827-0100	Monaural/Stereo Equalized Pre-amplifier (less transformer output) with phase reversal feature
BETMS-200	827-0200	Monaural/Stereo Equalized Pre-amplifier (w/ transformer output) with phase reversal feature
	827-0220	220 VAC/50 Hz Power Conversion Installed

FEATURES

- Two- and three-speed models
- Heavy duty synchronous motor
- Solid cast aluminum chassis
- Rugged, maintenance free operation
- Only three moving parts
- Heavy duty aluminum platter
- Easy cueing

GENERAL DESCRIPTION

The Cue-Master 3-speed and the Studio-Pro 2-speed are professional quality turntables designed and manufactured to the highest standards of the broadcast industry.

OPERATING FEATURES—These include no slip starting, a smooth responsive speed control lever which allows speed change while the platter is in motion and easier, more positive cueing (when the lever is in neutral, the platter spins freely for hard to cue records). The drive system is a neoprene idler wheel transmitting power direct from the stepped capstan on the motor shaft to the inside platter rim.

QUALITY DESIGN—A heavy duty synchronous motor, a solid cast aluminum chassis, a heavy duty aluminum platter and the use of oilite bronze bearings throughout insure quiet operation and a long maintenance-free life. Each turntable has only three moving parts.

PLATTER OFFSET—Permits more compact turntable arrangement. Permits free movement of tone arms when units are installed side-by-side.

CUE-MASTER SPECIFICATIONS

Weight of entire unit ..... 16 pounds
Weight of platter ..... 5½ pounds
Chassis dimensions ..... 15½ by 15½ inches
Depth requirements below chassis ..... 6½ inches

The unit is powered by a heavy duty synchronous motor. Operating voltage 115V, 60 Hz. Also available for 220V, 50 Hz.

Three speeds—33, 45, 78 RPM.

Acceleration is extremely fast, average results are 1/16 revolution of platter at 33 RPM's...1/10 revolution at 45...1/2 revolution at 78.

Chassis adaptable to any 12" tone arm.

Wow and flutter, less than 3/10 of 1%

Rumble (both vertical and lateral) minus 36 dB down from standard NAB level.

Standard color is BE blue with red felt platter cover. Special felt colors to match studio decor available on special order at slight additional cost.

STUDIO PRO SPECIFICATIONS

Weight of entire unit ..... 20 pounds
Weight of platter ..... 6½ pounds
Chassis dimensions ..... 15½ by 15½ inches
Depth requirement below chassis ..... 7½ inches

Unit is powered by a heavy duty synchronous motor. Operating voltage 115V, 60 Hz. Also available for 220V, 50 Hz.

2 Speeds—45 & 33 RPM's.

Detachable tone arm mounting plate adaptable to any 12" tone arm.

Acceleration, extremely fast, average results 1/16 revolution of platter at 33 RPM's, 1/10 revolution at 45 RPM's.

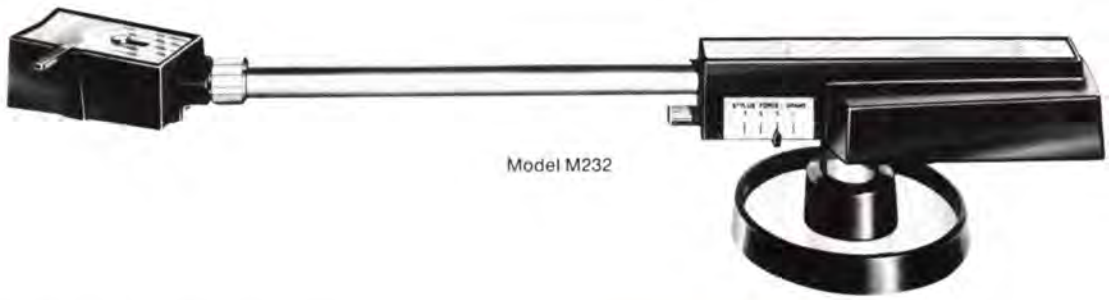
Wow and flutter—less than 2/10 of 1%

Rumble (both vertical and lateral) minus 38 dB down from standard NAB level assures the finest sound reproduction.

Standard color is BE blue with red felt platter cover. Special felt colors to match studio decor available on special order at slight additional cost.

ORDERING INFORMATION

MODEL	STOCK NO.	DESCRIPTION
	821-0001	SPOTMASTER Studio Pro-B 12" direct drive 2 speed turntable (33-1/3, 45) w/hys. syn. motor
	821-0007	SPOTMASTER CueMaster 12" direct-drive 3 speed turntable
	821-0010	Additional cost for Power Conversion to 50 Hz
SP 33B	821-0040	Replacement Felt for Spotmaster Turntables (Red)
SP 5B	821-0045	Idler Wheel for Spotmaster Turntables
SP-24B	821-0060	Synchronous Motor, 60 Hz, with Capstan
	821-0050	Synchronous Motor, 50 Hz, with Capstan



Model M232

SHURE TONE ARMS AND CARTRIDGES

Model M232/M236. High quality, rugged, simple arm for tracking at 1½ grams or higher. Full range of adjustments for static and dynamic balance, cartridge overhang, arm height, etc. Direct reading tracking force scale. Twist-to-lock head accommodates any stereo or mono cartridge. A real "workhorse" that takes abuse. Simple mounting through a single hole from the top of the table; plug-in cable. Model M232 is for 12" turntables; Model M236 for 16" turntables. Weight: 232, 1 lb.; 236, 1.125 lb.

ORDERING INFORMATION

MODEL	STOCK NO.	DESCRIPTION
M232	821-4232	SHURE MODEL M232, 12" tone arm
M236	821-4236	SHURE MODEL M236, 16" tone arm
SC35C	821-4350	SHURE SC35C, Professional Broadcast Cartridge
SS35C	821-4352	SHURE SS35C, Spherical Stylus for SC35C
3009-III		SHURE SME Tone Arm, 3009 Series III
V15-IV		SHURE CARTRIDGE for SME Tone Arm
VN45HE		SHURE Replacement Stylus for V15-IV Cartridge
M44-7	821-4470	SHURE M44-7, Stereo Broadcast Cartridge with N44-7 Spherical .7 mil stylus
N44-7	821-4471	SHURE N44-7, Replacement Stylus for M44-7
N44-3	821-4472	SHURE N44-3, Replacement 78 RPM Stylus for M44 Cartridge

Model ATP-12T

AUDIO-TECHNICA ATP SERIES

The ATP-12T and ATP-16T turntable tone arms have many outstanding features: Fit wide range of turntable heights and base thicknesses; Sealed horizontal and vertical ball bearing pivots; Accurate, built-in VTF gauge, no accessory gauge needed; Precise equilateral leveling base; Decoupled counterweight shaft for arm resonance control; Low resistance, anti-corrosion, gold-plated connectors throughout; Simplified installation...plug-in head shell with color-coded wiring, 4 cartridge mounting positions; Handy arm lift and tone arm rest provided; Pre-wired, color-coded, low capacity cable with ground lug; Set screws provided to lock all critical adjustments, if desired.

ORDERING INFORMATION

MODEL	STOCK NO.	DESCRIPTION
ATP-12T	821-0011	Audio-Technica 12" Tone Arm
ATP-16T	821-0012	Audio-Technica 16" Tone Arm
ATP-1	821-0013	Audio-Technica dual magnetic cartridge w/spherical diamond stylus
ATP-N1	821-0014	Replacement stylus for ATP-1
ATP-2	821-0015	Audio-Technica dual magnetic cartridge w/elliptical diamond stylus
ATP-N2	821-0016	Replacement stylus for ATP-2
ATP-3	821-0017	Audio-Technica dual magnetic cartridge w/nude elliptical diamond stylus
ATP-N3	821-0018	Replacement stylus for ATP-3

MICRO-TRAK TONE ARMS

The Micro-Trak 303 and 306 tone arms provide the low mass necessary for high compliance performance and also provide the strength necessary for 24 hour a day, on-line operation.

Features such as the impregnated wood body, laminated for high strength, the plug-in memory balancing head, sapphire jewel bearings for virtually frictionless vertical rotation, the fluid anti-skate mechanism, and the overall rugged simplicity of design make the models 303 and 306 an excellent choice in tone arms. Weight: 303, 1 lb.; 306, 1.25 lb.

ORDERING INFORMATION

MODEL	STOCK NO.	DESCRIPTION
303	821-0303	12" Micro-Trak Arm
306	821-0306	16" Micro-Trak Arm

STANTON TURNTABLE CARTRIDGES

ORDERING INFORMATION

MODEL	STOCK NO.	DESCRIPTION
500AA	821-5002	Stanton Cartridge, .5 mil stylus
500AL	821-5000	Stanton Cartridge, .7 mil (extra heavy duty) stylus
681A	821-6810	Stanton Cartridge, Calibration standard, .7 mil stylus
681EE	821-6812	Stanton Cartridge, .2 x .7 mil elliptical stylus
D5107A	821-5003	Stylus for 500A Cartridge
D5105AA	821-5004	Stylus for 500AA Cartridge
D5107AL	821-5001	Stylus for 500AL Cartridge
D6807A	821-6811	Stylus for 681A Cartridge
D6800EE	821-6813	Stylus for 681EE Cartridge
D5127	821-6815	78 RPM Stylus for 500 Series Cartridge
D6827	821-6817	78 RPM Stylus for 600 Series Cartridge

NOTE: Other models of tone arms, turntable cartridges and accessories available.

Single Turntable Cabinet

Dual Turntable Cabinet

Desk Top Section Mounted on Cabinets

FEATURES

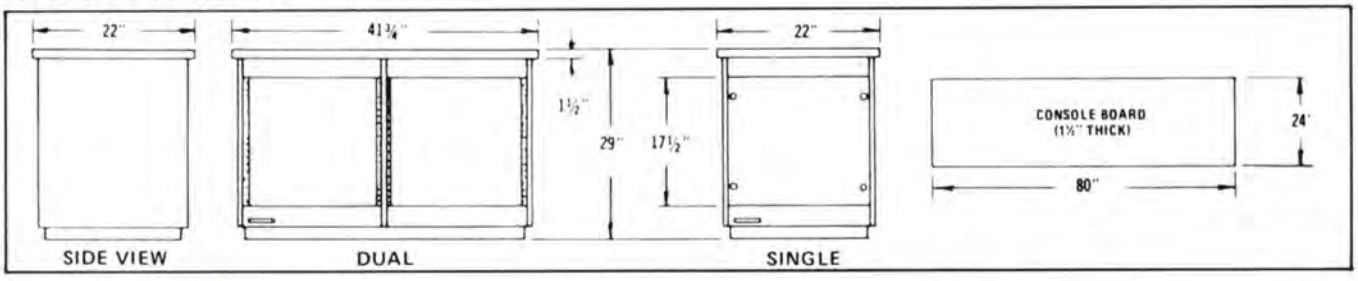
- **Modular Design For Complete Flexibility**
- **Single And Dual Turntable Cabinets**
- **Desk Top Section Mounts On Cabinets Or Metal Legs**

DESCRIPTION

A new look is offered in this 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.)

OUTLINE DIMENSIONS



SPECIFICATIONS

Dual Turntable Cabinet

Size:
41-¾" wide × 22" deep × 29" high

Finish:
"Summer Pecan" wood grain formica on vertical surfaces, French Blue formica on cabinet top. (Special colors available on order at extra cost.)

Construction:
Panels fabricated from high density particle board ¾" thick (front and rear closure panels ⅝" thick) with formica press bonded using urea type heat activated adhesive.

Panel Space:
Two 17-½" high panel openings front and rear to accommodate standard 19" 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

Size:
22" wide × 22" deep × 29" high

Finish:
"Summer Pecan" wood grain formica on vertical surfaces, French Blue formica on cabinet top. (Special colors available on order at extra cost.)

Construction:
Panels fabricated from high density partical board ¾" thick (front and rear closure panels ⅝" 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

Size:
80" wide × 24" deep × 1-½" high; 100 lbs.

Finish:
French Blue formica

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

Height Mounted:
(On cabinets or legs) 32"

ORDERING INFORMATION

STOCK NO.	DESCRIPTION
833-0001	Single Turntable Floor Cabinet (22"W × 22"D × 29"H)
833-0002	Dual Section Floor Cabinet (42"W × 22"D × 29"H)
833-0003	Console Desk Top (80"W × 24"D × 1½"H)
833-0101	Leg, chrome, tapered, adjustable to 32", (4 req'd. for free-standing console section)
833-0103	Spacer block to mount desk top to floor cabinet, includes hardware.

Note: Other models of control room furniture available.

Quartzmatic Studio Clock

FEATURES

- Large 12" diameter face (glass lens protected) with 1-½" numerals, red sweep second hand
- Precision accuracy ±1 minute in one year
- Powered by 2" batteries for 1 year battery life
- White or tan face with charcoal numerals in woodhue case 2-⅞" deep × 14-⅛" diameter

Combines quartz crystal technology with sophisticated electronic circuitry to create one of the world's most accurate clocks.

ORDERING INFORMATION

MODEL	STOCK NO.	DESCRIPTION
BECL-100	835-0100	Quartzmatic, white face
BECL-200	835-0100A	Quartzmatic, tan face

Warning Light

- Horizontal or vertical formats
- Unique design—readily adaptable to any office/studio decor

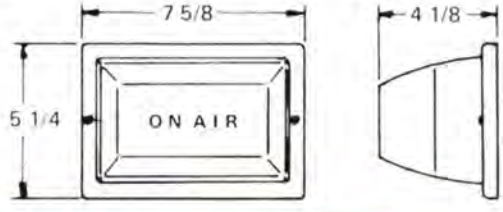
English

Spanish

The STUDIO WARNING LIGHT is designed to mount to a flush wall or ceiling surface in a vertical or horizontal plane. The silkscreened globe housing fastens to a steel mounting plate. Ideally suited for control rooms, studios and above restricted entrances to live studios. Supplied complete with 25 watt red bulb and "Attention-Getter" flasher. Rated at 120V, 100 watts; UL approved. Available in Spanish, Portuguese or other languages. Also, special lettering available.

ORDERING INFORMATION

STOCK NO.	DESCRIPTION
835-0001	ON-AIR Light, Vertical Format
835-0002	ON-AIR Light, Horizontal Format
835-0003	AUDITION Light, Vertical Format
835-0004	AUDITION Light, Horizontal Format
835-0006	En Aire Light, Vertical Format
835-0009	En Aire Light, Horizontal Format
835-0007	Rehearsal Light, Vertical Format
835-0008	Rehearsal Light, Horizontal Format
835-0005	Record Light, Vertical Format
835-0010	Record Light, Horizontal Format



Digital Cue Clock

The Cue Clock is a digital timing unit with a capacity of 99 minutes and 59 seconds count down or count to time. Thumbwheel switches let you select the preset time while a separate selector indicates count up or count down.

Four push-button selectable inputs let you choose the source of the remote signal used to start the clock. Once started, the digital timer displays the count down or to the preset time. When the CUE light illuminates, a signal is sent to the 18 pin connector on the rear panel for use as a triggering signal to any external circuit function.

The Cue Clock's versatility makes it an ideal tool for many time related tasks including record intro's for Disc Jockeys, time delay or delayed start of program material

and as a standard electronic stop watch for timing commercials or announcements.

Simple, rugged construction, integrated circuits, self-contained power supply and no relays make this unit a dependable part of any system.

SPECIFICATIONS

Max. Time:
99 min. 59 sec.

Freq. Std.:
120 VAC/60 Hz Line

Controls:
Count Up/Count Down
Start
Stop
Set
Remote Start Selector
Thumbwheel Sw. Array to Program Start/Stop Info.

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

Outputs:
1 Hz Clock Pulse
60 Hz Clock Pulse
Equipment Start Signal
Equipment Stop Signal
+18 VDC
+5 VDC
GRD
Remote "SET" Indicator Signal
Remote "CUE" Indicator Signal

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.

Circuitry:
Solid State
NO RELAYS

Size:
9½" Deep × 4½" High × 10" Wide

Weight:
6½ lbs.

ORDERING INFORMATION

STOCK NO.	DESCRIPTION
829-1000	Digital Cue Clock

ELECTRO-VOICE MICROPHONES

RE10: Similar in design and construction to RE15, but for applications with slightly less rigid performance tolerances. Response: 90 - 13 kHz. Impedance: Lo-Z. Output: −56 dB. Weight: 6 oz. (170 g).

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. Weight: 6 oz. (170 g).

DO54: Excellent professional recording, broadcast, and sound reinforcement — including band, orchestra, piano, vocal music, and speech with outstanding uniformity between microphones of the same model. Frequency response: 50 to 15,000 Hz. Dynamic element: −58 dB output. Weight: 6.5 oz. (184 g).

RE15: Highest quality professional super cardioid. Most uniform polar pattern at all frequencies ever offered in a cardioid microphone. Integral bass compensation switch. Cable and mounting clamp furnished. Response: 80 to 15,000 Hz. Impedance: Lo-Z. Output level: −56 dB. Finish: Fawn beige Micomatte. Weight: 6 oz. (170 g).

RE85: Quiet Lavalier — extremely free from friction or shock noise. Internal element suspended in compliant rubber. Response in chest-lavalier position: 90 to 10,000 Hz. Output: −61 dB. Omnidirectional. Lo-Z. 30' cable. Finish: Non-reflecting champagne. Length, 2-⅝". Dia., 15/16". Neck cord assembly, tie clasp assembly, belt clip, and zipper pouch furnished. Weight: 8 oz. (229 g).

649B: Smallest dynamic lavalier only 2-¼" L., ¾" dia. Response is carefully tailored to compensate for lavalier acoustic conditions so resulting signal perfectly matches signal from other microphones. Response: 70 to 10,000 Hz. Impedance: 150 ohms. Output level: −61 dB. 30' cable. Finish: Non-reflecting gray. With neck cord, belt clip, mounting clamp, and suede pouch. Weight: 1.1 oz. (31 g).

NOTE: Other Electro-voice models available.


RE10


635A


DO54


RE15


RE85


649B

SHURE MICROPHONES

SM7: The SM7 features a wide-range, very smooth frequency response, with graphic response-tailoring switches that allow the user to select four different microphone response curves: (1) extremely flat response; (2) low-frequency roll-off; (3) mid-frequency boost; and (4) a combination of both low-frequency roll-off and mid-frequency boost. Weight: 1 lb., 11 oz. (764 g).

SM61: Combines outstanding noise isolation with a small, lightweight, handsome design especially for hand held applications in which mechanical shock, wind and cable noises must be controlled. A built-in shock mount reduces cable handling and mechanically induced noise to a negligible minimum. Model A57D Swivel Adapter included. Frequency Response: 50 to 14,000 Hz. Weight: 5.6 oz. (159 g).

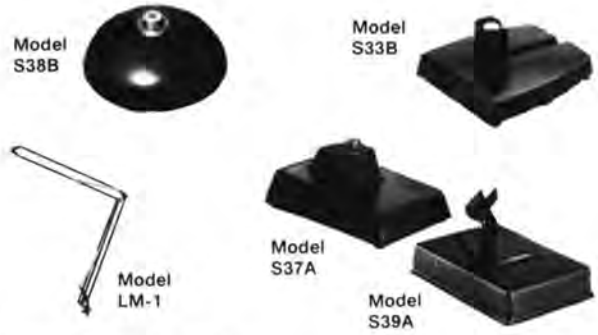
SM81: The Shure SM81 cardioid condenser microphone is exceptionally well-suited to the critical requirements of professional broadcast, recording and motion picture usage and is highly reliable for field use. Features include wide range (20Hz to 20kHz Flat Frequency Response); Precise cardioid polar pattern; Low noise level (16dBA); ultra-low distortion over the entire audio spectrum; and rugged, heavy-wall steel construction. Weight: 8 oz. (230 g).

NOTE: Other Shure models available.


SM7


SM61


SM81



MICROPHONE STANDS

ATLAS MODEL SB-100W. Mobile boom stand. Boom length 110". Adjustable vertical height from 61.5" to 92.5". Rugged cast steel base is equipped with swivel casters and 4" diameter wheels. Cable hangers provided for guiding mike cable. Weight: 47 lbs.

ATLAS MODEL SB-36. Professional boom stand. Boom length 62". Adjustable vertical height from 48" to 72". With cable hangers for guiding mike cable. Weight: 36 lbs.

ATLAS MODEL SB-36W. Same as Model SB-36 but with rubber casters for mobility. Weight: 40 lbs.

ATLAS FLEXIBLE GOOSENECK. Attach to any Atlas stand or adaptor. ⅝"- 27 male and female threads. Chrome finish. GN-6, 6" long. GN-13, 13" long. GN-19, 19" long.

ATLAS MODEL MS-4. Special height stand, adjusts from standard to extra low heights for seated performers or children. Height: 25"-65". Weight: 11 lbs.

LUXO MIKE ARMS

MODEL LM-1. For mikes weighing up to 1 lb. Two extension arms for 41" length. Weight: 2.5 lb.

MODEL LM-3. For mikes weighing up to 1 lb. Three extension arms for 56" length. Weight: 2.5 lb.


M67


M68

SHURE MICROPHONE MIXERS

M67. For recording, studio or remote broadcasting amplification. Provides 4 balanced mike inputs, one line input. Headphone monitor jack, illuminated VU. AC or battery power. Noiseless, automatic switchover to battery if AC fails. Frequency response: 20 - 20,000 Hz ±2 dB. Noise: −125 dBV. Distortion: less than 1%. Weight: 4 lbs., 7 oz.

M68 SERIES. Separate volume controls for each input, plus a master control for gain of all inputs. Frequency response: 30 - 20,000 Hz. Noise: −70 dB.

MODEL M68. Male Cannon XLR-3-14 type input connections.

MODEL M68P. Phone jack microphone inputs for high impedance microphones.

MODEL M68FC. Female Cannon XLR-3-13 type input connections.

MODEL M68RM. Provides adjustable reverberation to simulate large concert hall, etc.

SHURE DESK STANDS

MODEL S33B MODERN DESK STAND. Black finish. For use with Microphone Models 330, 415, 430, 533, 545, 546, 548, 556S, 566, 571, 576, 578, 579, 580, 585, and 588. Weight: 2.5 lb.

MODEL S37A MODERN DESK STAND. Non-reflective, textured gray finish. For use with all microphones with swivel connector assemblies. Weight: 1.5 lb.

MODEL S38B ROUND STAND. Black finish. For use with Models 245, 275, 415, 430, 515, 533, 545, 546, 548, 565, 566, 575, 579, 580, 585, and 588 series. Weight: .625 lb.

MODEL S39A VIBRATION-ISOLATION STAND. For all applications where vibration is a problem. Fits all Shure microphones. Weight: 2.125 lb.


PM3S


PF3S

ADC AUDIO CONNECTORS

PM3S. Male Plug 3-Pin Connector with small grommet. Accepts up to .220" diameter cable.

PM3 (XLR-3-11C). Male Plug 3-Pin Connector with standard grommet. Accepts .220" to .270" diameter cable.

PF3S. Female Plug Connector with small grommet. Accepts up to .220" diameter cable. This plug features three contacts and a positive latch lock.

PF3 (XLR-3-12C). Female Plug with standard grommet. Accepts .220" to .270" diameter cable. This plug features three contacts and a positive latch lock.

RM3 (XLR-3-32). Receptacle Shell, Male 3-Pin Connector. Two mounting holes accept #4 screws. (Mounting hardware not supplied.)

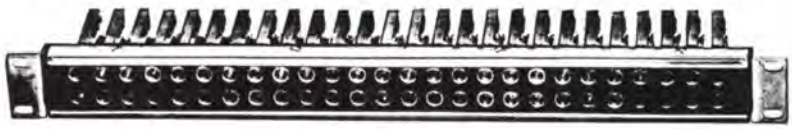
CM3 (XLR-3-14). Receptacle Shell, Male 3-Pin Connector. Three mounting holes accept #4 screws. (Mounting hardware not supplied.)

RF3 (XLR-3-31). Receptacle Shell, Female Connector. This receptacle features three contacts and a positive latch lock. Two mounting holes accept #4 screws. (Mounting hardware not supplied.)

CF3 (XLR-3-13). Receptacle Shell, Female Connector. Features three contacts and a positive latch lock. Three mounting holes accept #4 screws. (Mounting hardware not supplied.)

Single Jack Panel

Double Jack Panel



ADC JACK PANELS

Molded of solid phenolic, reinforced with steel to provide maximum rigidity and strength. Jacks are spaced to permit use of any standard double plug with 5/8" spacing. Mounting brackets furnished with each panel.

Specifications
Panel: Molded, thermoset plastic per Mil-M-14F, Type CFG, black.

PJ-343 (PJ-33 Equipped with PJ-318 Jacks). Single Panel. Holds 24 jacks — requires 1¾" panel space. Mounts on 19" rack. Weight 5 lb.

PJ-341 (PJ-31 Equipped with PJ-318 Jacks). Double Panel. Holds 48 jacks — requires 1¾" panel space. Mounts on 19" rack. Weight: 8 lb.

PJ-393 (PJ-33 Equipped with PJ-339 Jacks). Single Panel. Holds 24 jacks — requires 1¾" panel space. Mounts in 19" rack. Weight: 6 lb.

PJ-391 (PJ-31 Equipped with PJ-339 Jacks). Double Panel. Holds 48 jacks — requires 2⅛" panel space. Mounts in 19" rack. Weight: 9 lb.

ADC PATCH CORDS

Length	Cord w/ PJ-1 Plugs
1 foot	PJ-11
2 feet	PJ-12
3 feet	PJ-13
4 feet	PJ-14
6 feet	PJ-16

TWO CONDUCTOR SHIELDED, DOUBLE PLUG CORD ASSEMBLIES

Two tinsel wire conductors plus a braided shield. Overall jacket braided nylon. Black nylon standard. Double PJ-1 plug on each end of cord.

THREE CONDUCTOR SHIELDED, SINGLE PLUG CORD ASSEMBLIES

Two tinsel wire conductors plus a braided shield. Overall jacket braided nylon. Black nylon standard. Single PJ-2 plug on each end of cord.

Length	Cord w/ PJ-2 Plugs
1 foot	PJ-71
2 feet	PJ-72
3 feet	PJ-73
4 feet	PJ-74
6 feet	PJ-76

ADC PLUGS TWO & THREE CONDUCTOR

PJ-1 — Equivalent WE-241. Two conductor. Heavy duty die cast frame. Black phenolic shell. Has self-aligning plug sleeves on 5/8" centers for use with all standard jack panels. Double jack.

PJ-1

PJ-2 — Equivalent WE-291A. Three conductor. Cone shaped tip prevents momentary tip/ring shorting of jack during insertion. Mates w/all 3 conductor jacks, single jack.

PJ-2

ADC JACKS TWO & THREE CONDUCTOR

PJ-318 — Equivalent WE-218A. Two conductor. Coin silver contacts welded to nickel silver springs. High grade phenolic insulation.

PJ-339 — Equivalent WE-239A. Three conductor. Coin silver contacts welded to nickel silver springs. High grade phenolic insulation.

PJ-318

ADC MOLDED TERMINAL BLOCKS

Catalog No.	No. Rows	No. Terminals	Height
PJ-102	2	40	2.250
PJ-103	3	60	2.593
PJ-104	4	80	2.937
PJ-106	6	120	3.625
PJ-108	8	160	4.312

The ADC 20-Pin Terminal Blocks are molded of durable, black, thermoset plastic per Military specifications MIL-F-14F. Terminals are brass with a tin alloy plating for lasting solderability. The PJ-101 series blocks have terminals graduated in length for ease of wiring. All Terminal Blocks are numbered along the top row for easy terminal identification.

MICROPHONE AND AUDIO WIRE

MODEL NO.	STOCK NO.	DESCRIPTION
8412	829-4200	Microphone cable, 2 conductor, stranded, 20 AWG braided shield, cotton wrap, heavy rubber jacket, 500 ft. roll. Weight 25 lb.
8428	829-4201	Microphone cable, 2 conductor, stranded, 18 AWG braided shield, heavy duty neoprene jacketed, 500 ft. roll. Weight 35 lb.
8437	829-4202	Audio Wire, 2 conductor, solid, 22 AWG w/drain wire and braided shield, black vinyl jacket, 500 ft. roll. Weight 14 lb.
8450	829-4203	Audio wire, 2 conductor, solid, 22 AWG w/drain wire, foil shield, vinyl jacket, 500 ft. roll. Weight 12 lb.
8451	829-4204	Audio wire, 2 conductor, miniature, 22 AWG, stranded, w/drain wire, foil shield, vinyl jacket, 500 ft. roll. Weight 14 lb.

Sentry V

EVS-13B

MC8A

MC12A

THINLINE WALL BAFFLES — Attractive, wider, but a third thinner wall baffles with heavy-duty PA-quality speaker installed and wired; screw terminals. Top, sides and bottom covered in heavy wood-grained vinyl; specify blond or walnut. Cane grille. Front angle 10°. Impedance: 8 ohms.

WITH 8" HIGH PERFORMANCE SPEAKER — Rated 10 watts. 6.0 oz. ceramic magnet. Size: 12-¼" wide × 4-⅜" deep × 9-¾" high.
Argos No. WB-408CS — With speaker.
Argos No. WB-408CST — With 70.7 volt transformer.

WITH 12" SPEAKER — Rated 15 watts; 10 oz. ceramic magnet. Size: 16-¼" wide × 6-¼" deep × 14" high.
Argos No. WB-212CS — With speaker.
Argos No. WB-212CSV — Same, but with L-pad.
Argos No. WB-212CST — With 70.7 volt transformer.
Argos No. WB-212CSVT — Speaker, volume control and 70.7 volt transformer included.
Argos No. WB-212C — Baffle only; for speaker 12"D.

Headphones

HD 430 — An exclusive design advance with adjustable suspension strap for custom fit and comfort...and unique ear cushions which separate the ear from contact with the pad, yet permit a total open-air environment. Frequency range: 16 - 20,000 Hz. Distortion: less than 0.5%. Impedance: 600 ohms per channel. Weight 7 oz.

HD 420 — Unbelievable combination of comfort and sound. Frequency range: 18 - 20,000 Hz. Harmonic Distortion: Less than 1%. Impedance: Less than 600 ohms per channel. Weight: 4 oz.

HD 424 DELUXE — Frequency Range: 15 - 20,000 Hz. Distortion at 1,000 Hz; less than 1% at a sound pressure level of 126 dB. Impedance: 2000 ohms per channel.

HD 414 — Frequency Range: 20 - 20,000 Hz. Distortion at 1000 Hz; less than 1% at a sound pressure level of 126 dB. Impedance: 2000 ohms per channel. Weight: 5 oz.

HD 400 — Frequency Range: 20 - 18,000 Hz. Impedance: 600 ohms per channel. Weight: 5 oz.

NOTE: Other models of headphones available.

SENTRY V TWO-WAY MONITOR SYSTEM — A new loudspeaker system designed to replace Sentry IA and IIA. The Thiele-tuned low-frequency section permits a reduction in overall size of more than 30% and extends low-frequency performance more than 15 Hz relative to the Sentry IA and IIA. The low-frequency section is driven by a new 10-inch direct cone radiator installed in a vented enclosure. Frequency Response: 32 - 18,000 Hz when using the SEQ equalizer; 45 - 18,000 without equalizer. Impedance: 6 ohms, nom.; 4 ohms. min. Power Handling Capacity: 30 watts. Size: 28 - ½" high × 20" wide × 11-¾" deep. Weight: 52 lbs.

EVS-13B, 8" 2-WAY — Acoustic suspension system delivers outstanding bass for a system of diminutive size. A two-way design with separate 2-½ inch tweeter divides the audible spectrum, further reducing distortion and improving high-frequency dispersion. Continuously variable level control for tweeter. The enclosure is constructed of high-density panels permanently laminated to a quality vinyl covering. Response: 50 - 18,000 Hz. Crossover Frequency: 1500 Hz. Impedance: 8 Ohms. Power Handling Capacity: 70 Watts peak. Dimensions: 10" × 19"; 8½" deep.

MODEL MCA 8" LOUDSPEAKER — Radax™ design provides extended highs and wider dispersion. Frequency Response: 50 - 13,000 Hz. Resonance: 75 Hz nom. Crossover: Mechanical, at 6000 Hz. Impedance: 8 ohms. Program Capacity: 24 watts peak. Size: 8-¼" dia. × 3-$^{1}/_{16}$" deep behind panel; fits 7" baffle opening. Shipping Weight: 5 lbs.

MODEL MC12A 12" LOUDSPEAKER — Disperses crisp, clear highs and powerful bass, yet is shallow enough for wall mounting. Frequency Response: 40 - 14,000 Hz. Resonance: 60 Hz nom. Program Capacity: 40 watts peak. Impedance: 8 ohms. Size: 12-¼" dia. × 3½" deep behind panel; fits 11" baffle opening. Shipping Weight: 6 lbs.

NOTE: Other models of speakers available.

Thinline Baffles

HD 430

HD 420

HD 424

HD 414

D-150A

DC-300A

D-75

POWER AMPLIFIERS

MODEL D-150A STEREO POWER AMPLIFIER — Single or dual channel. Extremely low harmonic and intermodulation distortion with very low noise. Capable of a 50-volt balanced line output in mono mode. Output completely protected against shorted, mismatched or open loads. Cabinet optional. Packed weight: 29 lb. Power source: 120-240V, 50-400 Hz.

MODEL DC-300A STEREO POWER AMPLIFIER — Single or dual channel. Capable of 70-volt balanced line output in mono mode. Extremely low harmonic and I.M. distortion with very low noise. Output completely protected against shorted, mismatched or open loads. Cabinet optional. Packed weight: 55 lb. Power source: 120-256V, 50-400 Hz.

MODEL D-75 STEREO POWER AMPLIFIER — Extremely compact; fits into only 1¾" of rack space. Amplifier is invulnerable to short or open circuits, mismatch and RF energy. Power Output: 35 Watts RMS per channel at 8 ohms. Frequency Response: ±0.1 dB, 20 - 20,000 Hz at 1 Watt into 8 ohms (stereo). Harmonic Distortion: Below 0.05%, 20 - 20,000 Hz. Cabinet optional. Packed weight: 15 lb. Power source: 100-240V, 50-400 Hz.

ESE DIGITAL TIMERS

ES 142/144 DIGITAL CLOCK/THERMOMETERS — ES 142 (12 hr.) and ES 144 (24 hr.) are MOS, solid state digital clock/thermometers. Display simultaneously: 6 digits of time (hours, minutes, seconds) and 3 digits of temperature (−50°F to +150°F or −45°C to +66°C) in planar, gas discharge displays. 55" high. Attractive aluminum case with top and sides simulated walnut. Temperature sensor on 25 ft. cable included; attaches to rear-mounted connector. Dimensions: 2½"H × 10"W × 6"D. Electrical: 12 W max. 117 VAC, 60 Hz. (220 V. 50 Hz optional.) Weight: 3.5 Lb.

ES142/144

ES 302 TIMER — Elapsed time indicator and can count both down and up. The ES 302 user can preset times with lever-wheel type switches. Dimensions: ES 302: 2½"H × 10"W × 6"D. Case: Etched anodized aluminum w/simulated walnut sides and top. Electrical: 117 VAC, 60 Hz, 7 W max. (220 V, 50 Hz optional.) Weight: 3.5 lb.

ES302

ES 510 SIXTY MINUTE TIMER — A four digit, sixty minute timer (59 - 59) with start, stop and reset controls (single pole, momentary push-button). Runs continuously unless stopped or reset. If stopped, display will hold time reading and when restarted will continue with next count from last displayed figure. Reset returns display to all zeros. Can reset while running or stopped. Dimensions: 2-½"H × 6"W × 5-⅝"D. Case: Etched Aluminum. Electrical: 117 VAC, 60 Hz, 10 W max. (220 V, 50 Hz optional.) Weight: 3.5 lb.

ES510

OTARI MX-5050-B

OTARI Mark II-2

MX-5050-B. This compact 1¼", two channel recorder has all the proven features of the pace-setting MX-5050, such as front adjustable bias and record EQ, selective reproduce, edit and cue, test oscillator, plus: TTL/IC logic for noise free punch-in and punch-out; Three speeds in field selectable speed pairs of 15/7½ or 7½/3¾ ips; 24 dBm headroom, 28 dBm output; Dc capstan servo standard, with ± 7% speed control in record and reproduce; Peak reading LED's plus standard VU meter; and return to zero memory feature for production use.

All input and output connectors are three-pin XLR. Wow and Flutter: (NAB weighted) less than 0.06% at 7½ ips. Frequency response: (overall record/playback) ± 2 dB, 30Hz to 23kHz measured at 15 ips at 0VU, + 4 dBm. Distortion: less than 0.7% at 1000Hz at 250 nWb/m. 117/220/240 volts, 50/60Hz. Output: + 28 dBm at 600 ohms balanced. Vinyl covered wooden cabinet standard. Portable case, floor console, or rack mounting adaptor optional. Weight: 53 lbs. (cabinet), 62 lbs. (portable case). Specifications at other tape speeds available on request.

MX-5050-BF. This recorder/reproducer is the same basic machine as the Model MX-5050-B but in a one-channel full track recorder/reproducer configuration with two-channel half-track reproduce capability.

MX-5050-QXD. A quarter-inch four-channel recorder with full professional performance and production features. Perfect for the small broadcast station, studio, educational or AV facility, and for serious audiophiles. The MX-5050-QXD features: exceptional signal-to-noise and crosstalk; front panel edit and adjustable cue; punch-in and punch-out record without clicks or pops; motion sensing control logic to prevent tape damage; 600 ohm output, variable or fixed level; plug-in boards and head assembly; test and cue oscillator; 15 and 7½ ips tape speeds.

The transport and electronics are contained in separate cases to provide maximum versatility in mounting and installation. Vinyl covered wood cases are standard. Optional front and rear covers, rack mounting adaptors and a floor console with wheels are available as options. Weight: transport: 64 lbs; electronics: 33 lbs. (See Mark II Series for ½ inch, 4 channel machine.)

MX-5050-8D. This compact eight channel, half-inch recorder brings the benefits of multi-channel recording to small studios at an affordable price. Separate transport and electronics provide maximum installation flexibility. 15 and 7½ ips tape speeds. Variable speed (± 7%) Dc capstan servo standard. Selective reproduce on all eight channels. Vinyl covered wood case standard. Rack mounting kit and floor console optional.

OTHER OTARI TAPE RECORDERS AND ACCESSORIES AVAILABLE.

Mark II Series. The Mark II series of compact professional recorders includes two versions — Mark II - 2, two channel, quarter-inch tape; and Mark II - 4, four channel, half-inch tape for production. In addition, the two channel version has an extra reproduce head for quarter-track stereo tapes. The main features of the Mark II series include: plug-in head assemblies; 7½ and 15 ips tape speeds; separate transport and electronics for convenient table top, console or floor console mounting; Dc servo standard with ± 7% pitch control. The Mark II-2 is supplied as table top console: Mark II-4 is supplied in two vinyl-covered wood cases. Full range of options and accessories available.

ORDERING INFORMATION

MODEL	STOCK NO.	DESCRIPTION
MX-5050-BF	822-5050	Mono one-channel full-track recorder / reproducer with two-channel half-track reproduce capability. Dc capstan servo. Three speeds in speed pairs of 15/7½ or 7½/3¾ ips, field selectable. 600 ohm balanced output. Vinyl covered wood cabinet.
MX-5050-B	822-5056	Stereo two-channel half-track recorder / reproducer with quarter-track reproduce capability. Dc capstan servo. Three speeds in speed pairs of 15/7½ or 7½/3¾ ips, field selectable. 600 ohm balanced output. Vinyl covered wood cabinet.
MX-5050-QXD	822-5051	Four-channel, quarter-track, quarter-inch tape recorder / reproducer. 15/7½ ips. Dc capstan-servo system. 600 ohm unbalanced output. Two black vinyl-covered wood cabinets.
MX-5050-8D	822-5053	Eight-channel, half-inch tape recorder / reproducer. 15/7½ ips. 600 ohm unbalanced output. Two vinyl-covered wood cabinets.
Mark II-2	822-5055	Two-channel, quarter-inch tape recorder / reproducer. 15/7½ ips. Dc capstan-servo system. 600 ohm balanced output. Table top console.
Mark II-4	822-5057	Four-channel, half-inch tape recorder / reproducer. 15/7½ ips. Dc capstan-servo system. 600 ohm balanced output. Two vinyl-covered wood cabinets.
ARS-1000-DC	822-5058	Two speed (7½/3¾ ips), two-channel reproducer. 25 Hz sensor. Variable time delay. 19-inch rack mounting. For automation systems and other reproduce-only applications.
DP-4050-OCF	822-5059	8: 1 in-cassette duplicator. Open reel master (for 7½ or 3¾ ips originals) with six cassette slaves.
DP-4050-CCF	822-5060	8: 1 in-cassette duplicator with cassette master and five slaves.

REVOX MODEL B 77

The Revox B 77 is built to provide superb performance tomorrow as well as today—and for many years to come.

The new B 77 incorporates a number of new features, including full logic tape transport control, coupled with tape-motion sensing, which enables the user to select any transport function without fear of tape damage. All operating modes, including pause, are actuated by feather-touch, contactless Triac switches. In addition, the electronics have been completely redesigned to give increased headroom (18 dB above 0 VU) to accommodate today's new generation of tapes, with a margin to allow for even hotter tapes yet to come.

The B 77 also features new larger VU meters with LED peak overload indicators, high-torque spooling motors, toggle switches for record pre-selection, and a new erase head for a full 75 dB of erasure.

For the broadcaster or serious audiophile, the B 77 offers easier access for exact editing of the tape, plus a built-in splicing block with self-sharpening cutter. The optional remote control duplicates all front-panel functions, with the added feature of a locking pause button. A variable speed control unit is also available as a user plug-in option, featuring both coarse and fine speed adjustments.

SPECIFICATIONS

Tape transport mechanism: 3-motor tape drive; 2 AC driven spooling motors; 1 AC driven capstan motor, electronically regulated.

Tape speeds: 3.75 ips and 7.5 ips, electronic change-over.

Wow and flutter: At 7.5 ips less than 0.08%.

Frequency response (measured via tape, at −20 VU): at 3.75 ips 30 Hz... 16 kHz +2/−3 dB; at 7.5 ips 50 Hz... 15 kHz ±1.5 dB.

Signal to noise ratio: Half track at 3.75 ips better than 63 dB; at 7.5 ips better than 66 dB.

Crosstalk (at 1000 Hz): Stereophonic - better than 45 dB.

Weight: 37 lb.

Revox Model B 77

ORDERING INFORMATION

MODEL	STOCK NO.	DESCRIPTION
14102	822-4102	Revox B 77 10½" Recorder/Playback, 3.75-7.5 ips, mounted in walnut plastic case. Stereo half track
14302	822-4302	Same as Model 14102, except in metal cage for rack mount
14106	822-4106	Revox B 77 10½" recorder/playback, 7½ - 15 IPS, mounted in walnut plastic case, Stereo half track
14306	822-4306	Same as Model 14106, except in metal cage for rack mount
14143	822-4143	Revox B 77 10½" recorder/playback,7½ - 15 IPS, with self sync
14342	822-4342	Same as Model 14143 except in metal cage for rack mount
14112	822-4112	Revox B 77 10½" recorder/playback, 3.75 - 7.5 IPS, mounted in walnut case, Stereo half track, with self sync
14312	822-4312	Same as Model 14112 except in metal cage for rack mount

NOTE: Other models of tape recorders available

UHER TAPE RECORDERS

UHER 4000 Report IC (Mono) — This is the world-famous battery-operated, portable hi-fi open-reel tape recorder (DIN 45 500), of proven excellence even under extremely adverse operating conditions. Has rugged, reliable construction. Frequency response 35-20,000 Hz. Wow and flutter 0.2%. The machine is equipped with longlife Recovac tape head (triple life). 2-track mono operation. Compact housing of diecast aluminum. Metal knob and aluminum piano-key controls. 4 tape speeds. Tape tension regulation, IC power stage, index counter. Power supply may be from A. C. mains as well as from single-cell, car or rechargeable battery. Weight: 8 lb. Carrying case for mobile use available.

UHER 4200 Report Stereo IC — With separate level controls and peak-reading record level meter for each channel, this is the perfect portable machine for high-quality stereo recording. Its performance also makes it ideal to add to hi-fi sound systems. The UHER 4200 Report is equipped for half-track operation.

Enthusiastic film-makers will be interested to learn that this machine may also be used for film dubbing. Weight: 8.4 lb. Carrying case for mobile use available.

ORDERING INFORMATION

MODEL	DESCRIPTION
4000 IC	UHER Report 4000 IC, 2-track mono.
4200 IC	UHER Report 4200 IC, half-track stereo.

NOTE: Other models of tape recorders available.

PROFESSIONAL STUDIO EQUIPMENT BY TECHNICS

Direct Drive Turntables Without Tone Arm

SP-10MK11

SP-10MKII. • 33⅓, 45 and 78 RPM Speeds • Full speed at 33⅓ in 0.25 second (25° rotation) • Brake to standstill in 0.3 sec. (30° rotation) at 33⅓ • Quartz controlled phase-locked servo circuit for ±0.002% speed stability (±0.036 second in 30-minute segment) • Start-up torque: 6 kg/cm • Wow flutter: 0.025% WRMS • Rumble: 50 db (DIN A); 70 db (DIN B) • Brushless DC motor • Weight 21 lb.

SH-10B-3

SH-10B-3. • Base for SP-10MKII • Includes dust cover

SP-15

SP-15. • 33⅓, 45 and 78 RPM speeds • Full speed at 33⅓ in 0.4 second • Brake to standstill in 0.4 second at 33⅓ • Quartz controlled phase - locked servo circuit for ± 0.002% speed stability • Quartz synthesizer pitch adjustment up to ± 9.9% deviation from norm. • Digital speed readout • Wow and flutter 0.025% WRMS • Rumble -78dB DIN B • Weight 14 lb.

SH-15 B2/15B3

SH-15 B2/15B3. • Base for SP-15 • B2 finished in simulated rose wood veneer • B3 finished in black • Includes dust cover

Direct Drive Turntable Without Tone Arm

SP-25

SP-25. • 33⅓ and 45 RPM • Quartz synthesizer control governs platter speed in 33⅓ and 45 RPM, and in pitch altered modes within ± 6% of standard speeds • High torque • Electronic braking system stops platter quickly • Wow and flutter 0.025% WRMS • Rumble 78 DIN B • Weight 11 lbs.

SH-15 B2/15B3

SH-15 B2/15B3. • Base for SP-25 • B2 finished in simulated rose wood veneer • B3 finished in black • Includes dust cover

Direct Drive Turntable With Tone Arm

SL-1200MK2

SL-1200MK2. • 33⅓ and 45 RPM • Designed especially for disco installations • Slider control provides up to ± 8% speed increase or decrease • High torque for stability of platter speed • Pop-up light illuminates surface of disc in low light environment • High sensitivity, low mass, Gimbal suspension tone arm • Extensive anti-feedback features • Wow and flutter 0.025% WRMS • Rumble -78 dB DIN B • Weight 25 lbs.

Professional Hi-Fidelity Speakers

SB-7070

SB-7070. • Linear-phase, 4-way, tube vented speaker system • Phase compensated crossover network • High efficiency • 13¾" woofer • 6¼" mid-low driver • 4" mid-high driver • 1" dome tweeter • 8-ohm impedance • 180 watts music power • Response 30-32,000 Hz • Simulated wood cabinet

SB-6060

SB-6060. • Linear Phase, 3-way, tube vented speaker system • Phase compensated crossover network • High efficiency • 12" woofer • 4" midrange unit • 1" soft dome tweeter • 150 watts music power • Response 32-32,000 Hz • 8-ohm impedance • Simulated wood cabinet

NOTE: Other models of Technics turntables, speakers and accessories available.

AT-51 AUDIO TEST SYSTEM — Consists of AG-51 Audio Generator and AA-51 Audio Analyzer. Measures harmonic distortion, intermodulation distortion, voltage, dB, signal + noise/noise ratio, wow and flutter, stereo phasing, and differential gain in stereo channels. Features transformerless stereo outputs (balanced or unbalanced), source resistance of 150 or 600 ohms, automatic signal leveling, precision step attenuators, RFI shielding, automatic "set level" and "balance" circuits, scope display of distortion products and output level monitor. Weight: 24 lb. Power source: 117 V (230 V optional), 50 or 60 Hz as specified.

MODEL 210 AUDIO OSCILLATOR — A source for low distortion signals from 10 to 100,000 cycles. Frequency response is ±1 dB over entire range when connected to 600 ohm load, referenced at 5 KC. Other specifications are: calibration: ±2% over entire range; power output: up to 10 V into 600 ohms; waveform distortion: less than .2% at 5 volts output from 50-20,000 ips. Weight: 11 lbs.

MODEL 410 DISTORTION METER — Measures audio distortion, noise level, audio gain or loss in dB and ac voltages. Distortion ranges provided are: 1% full scale, 3%, 10%, 30% and 100%. Calibration is in 1 dB steps from 0 dB to −15 dB. Attenuator provides additional ranges from −60 dB to +50 dB in 10 dB steps. Weight: 12 lbs.

Model 210 Audio Oscillator

Model 410 Distortion Meter

MODEL 1760 AM/FM AUDIO STEP GENERATOR — Nine precise crystal-controlled frequencies instantly available for use in proof of performance measurements. Frequencies may be stepped manually or automatically, making possible one-man line checks. Features very low distortion, precision output attenuator and front panel output jack. The Model 1760 AM/FM provides frequencies extending to 15 kHz for FM checks, and may be limited to 7.5 kHz for AM checks. Weight: 10 lb. Power source: 117 V, 60 Hz (220 V, 50 Hz optional).

TWO TONE EBS GENERATOR — Provides two tone attenuation signals (853 Hz and 960 Hz) for the Emergency Broadcast System. Tones are generated by digital division and filtering of two highly stable crystal oscillators. The 960 Hz tone is divided and gated to give an accurate 22.5 second timing interval. Accuracy is better than 0.5 Hz and distortion is less than 5%. Features include compact 1-¾" panel height, positive action reed relay switching, heavy rf shielding for use at transmitter sites, and individual level controls. Available units: a. Two-tone encoder; b. Matching decoder; c. Encoder and decoder. Weight: 10 lb. Power source: 117 V, 60 Hz (220 V, 50 Hz optional).

MODEL 65-390 WOW & FLUTTER METER — This compact, lightweight, solid-state portable test instrument is indispensable for accurately measuring the wow and flutter components in all types of recording and playback devices, such as cartridge, reel-to-reel and cassette recorders, VTR's, and turntables. Single meter readout indicates the deviation from true speed of a device within a 5% range by the use of a precision zero-center drift meter. Features an internal 3,150 Hz reference oscillator, self-contained switchable weighting filter and a standard phone output jack for oscilloscope connection. All metal interlocked construction assures immunity to EMI and RFI. Weight: 4 lb. Power source: 110 V or 220 V, 50 or 60 Hz.

Marti STL Equipment

STL-8F Transmitter

R-200/950 Receiver

STL-8F Transmitter — The Marti STL-8F, one of a series of two models designed to meet the exacting requirements of aural links, is ideal for the FM broadcaster requiring either mono or stereo operation. All solid-state, the unit has a direct FM modulator, a field-proven varactor final, solid-state ovens and high-accuracy crystals providing a frequency stability of ±0.0005%. The 8-watt system operates in the 942- to 960-MHz range. Automatic switchover circuits are provided for a standby transmitter and RF sensing is built in for "out of status" alarm indication. Two of these units may easily be strapped together for stereo operation. The transmitter is available in either vertical (½-rack width) or horizontal (full rack width) configurations. Weight: Vertical, 15.5 lb.; Horizontal, 20 lb.

R200/950F Receiver — The Marti R200/950 series of receivers is the companion line for the STL-8 transmitters. The R200/950F model, designed for FM reception, is all solid-state with plug-in modular construction. A solid-state oven and high accuracy crystal provides frequency stability of ±0.0005%. Automatic switchover circuitry for a standby receiver is provided. Audio output is 600 ohms balanced with a maximum level of 18 dB mW. Multiplex output provides for subcarrier and/or remote control signals. Like the transmitters, both vertical and horizontal configurations are available. Weight: Vertical, 9 lb.; Horizontal, 16 lb.

NOTE: Other Marti equipment available. See price list for pricing information.

Marti Remote Pickup Equipment

RPT-40 Transmitter — The Marti RPT-40 Remote Pickup Transmitter is designed for continuous duty in the field. Its all solid-state construction features a direct FM modulator, four audio mixing channels with individual level controls, built-in compressor/limiter for modulation control, and taut band circuit meter. Designed to operate in the 150- to 172-MHz range, the RPT-40 has a maximum output of 40 watts, frequency stability of ±0.0005%, and capability to operate from either 115/230 volts ac or 13.6 volts dc. Weight: 20 lb.

RPT-25 Transmitter — The RPT-25 is similar in appearance to, and has many of the features of, the RPT-40. The RPT-25 is designed to operate in the 450- to 470-MHz spectrum. Output power is 25 watts, maximum. The unit is compatible with unattended automatic relay devices. Weight: 20 lb.

R-30/150 Receiver — The rack-mounted R-30/150 Receiver mates with the RPT-40 Transmitter. An IF crystal filter provides maximum selectivity: 6 dB at ±17.5 kHz with a 10.7/F30 filter module (optional filters are available). Audio output is 600 ohms at a +10-dB mW level. Weight: 16 lb.

PCL-505 Transmitter

PCL-505 Receiver

Moseley STL Equipment

PCL-505 and PCL-505/C — This STL provides a high-quality audio channel between a broadcast studio and a remote transmitter site. Alternatively, it provides for studio-to-studio, intercity, network, and similar program audio feeds. Design is for continuous service in accordance with FCC requirements and licensing in most other countries. True direct FM offers superior sound and flat frequency response over a wider range with low distortion. Frequency range is 148 to 174 MHz, 215 to 240 MHz, 300 to 330 MHz, 450 to 470 MHz, and 890 to 960 MHz. Modulation capability is one program and two subcarrier channels.

PCL-101 System — This transmitter and companion receiver are designed to meet requirements of international AM broadcasting. The transmitter employs direct FM and maximum power output is 15 watts. It is available in 150, 220, 300, 450 or 950 MHz. Other frequencies in the 148- to 470-MHz spectrum are available on special order. For use in the United States, the PCL-101 is available for operation in the 950-MHz band only.

Moseley Remote Pickup Equipment

RPL-3/4 Remote Pickup Links — Compactness and portability characterize the Moseley Associates RPL Series of remote pickup links. The RPL-3 is designed for 148- to 174-MHz operation; the RPL-4, 450-to 470-MHz. Each consists of a transmitter and receiver. The transmitters feature all solid-state circuitry, 3-channel audio mixer, built-in power supplies (either 120/240 volts ac or 13.5 dc), built-in peak audio limiter, 15 watts maximum output, and full metering functions of all important parameters. The companion receivers occupy only 1¾ inches of standard 19-inch rack space. System specifications are: audio response—±1.5 dB, 30 Hz to 10 kHz; distortion—less than 1.3%; signal-to-noise ratio—55 dB below 100%. Weight: Transmitter, 16 lb.; Receiver, 10 lb.

NOTE: Other Moseley equipment available. See price list for pricing information.

HOW TO ORDER (Domestic U.S.A.)

ORDERING PROCEDURE:
All sales are made in accordance with Broadcast Electronics, Inc. Terms and Conditions of Sale. No order shall be binding upon Broadcast Electronics, Inc. until accepted by the company in writing at its home office in Quincy, Illinois. Please order by model, stock number and description as they appear in the price schedule. Orders placed by telephone should be confirmed in writing and must be clearly marked "confirming" or we cannot assume liability for duplicate shipments.

PRICES:
Broadcast Electronics, Inc. endeavors to keep published price lists current; however, prices listed herein are subject to change without prior notice.

F.O.B.:
Prices for "ship to" destinations in the USA are FOB Quincy, Illinois, or point of shipment. No applicable federal, state or local taxes are included. All transportation costs are the obligation of the buyer, unless otherwise stated. Shipments will be made with transportation costs collect.

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(3) OPEN ACCOUNT—Orders are accepted from customers with whom we have an established credit line or whose D&B rating is acceptable to Broadcast Electronics, Inc. Open account billing requires payment in full within 30 days of shipment. A down payment of 25% is mandatory for automation system orders and may be required on large orders.
(4) FINANCE PLAN—On major purchases, time financing of the balance after a 25% down payment may be available. Lease plans may be available. Contact Broadcast Electronics, Inc. Sales Department for details.

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RETURN, REPAIR OR EXCHANGES:
Do not return any merchandise without our written approval and Return Authorization. We will provide special shipping instructions and a code number that will assure proper handling and prompt issuance of credit. Please furnish complete details as to circumstances and reasons when requesting return of merchandise. Custom built equipment or merchandise specially ordered for you is not returnable. Where return of unused merchandise is at the request of, or for the convenience of the customer, a restocking fee of 15% will be charged. No unused merchandise will be accepted for return later than 30 days after shipment. All returned merchandise must be sent freight prepaid and properly insured by the customer. When writing to Broadcast Electronics, Inc. about your order, it will be helpful if you specify the Broadcast Electronics, Inc. factory order number or invoice number.

SHIPPING METHOD:
Unless specifically stated by the buyer, we will exercise our judgment as to method of shipment. A full range of shipping services is available. All goods are either insured or declared for full value and the cost thereof is included as part of shipping charges. Purchaser assumes all responsibility for and risk of loss of, or damage to equipment upon shipment from Broadcast Electronics, Inc. shipping point(s). Should you receive merchandise damaged in shipment, it is your responsibility to file a damage claim immediately with the delivering carrier.

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Broadcast Electronics, Inc. has supported its products with factory technical service since 1959. In addition to a technically qualified Customer Service Department at its factory, a coast to coast network of "Spotmaster Parts & Repair Depots" are available to assist you. Technical assistance is available by letter or telephone or telegram. For equipment requiring repair or overhaul, arrangements must be made with the Customer Service Department for Return Authorization prior to shipping.

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Broadcast Electronics, Inc. reserves the right without advance notice to make engineering and production changes including substitution of vendor sources for components which may modify the design or specifications of its products, provided said modifications will not materially affect the performance of the product.

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In no event is Broadcast Electronics, Inc. liable for consequential damage from late or non delivery, or malfunction or failure of its products.

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- **Equipped to serve you with *Spotmaster*® parts and repairs — both in and out of warranty**
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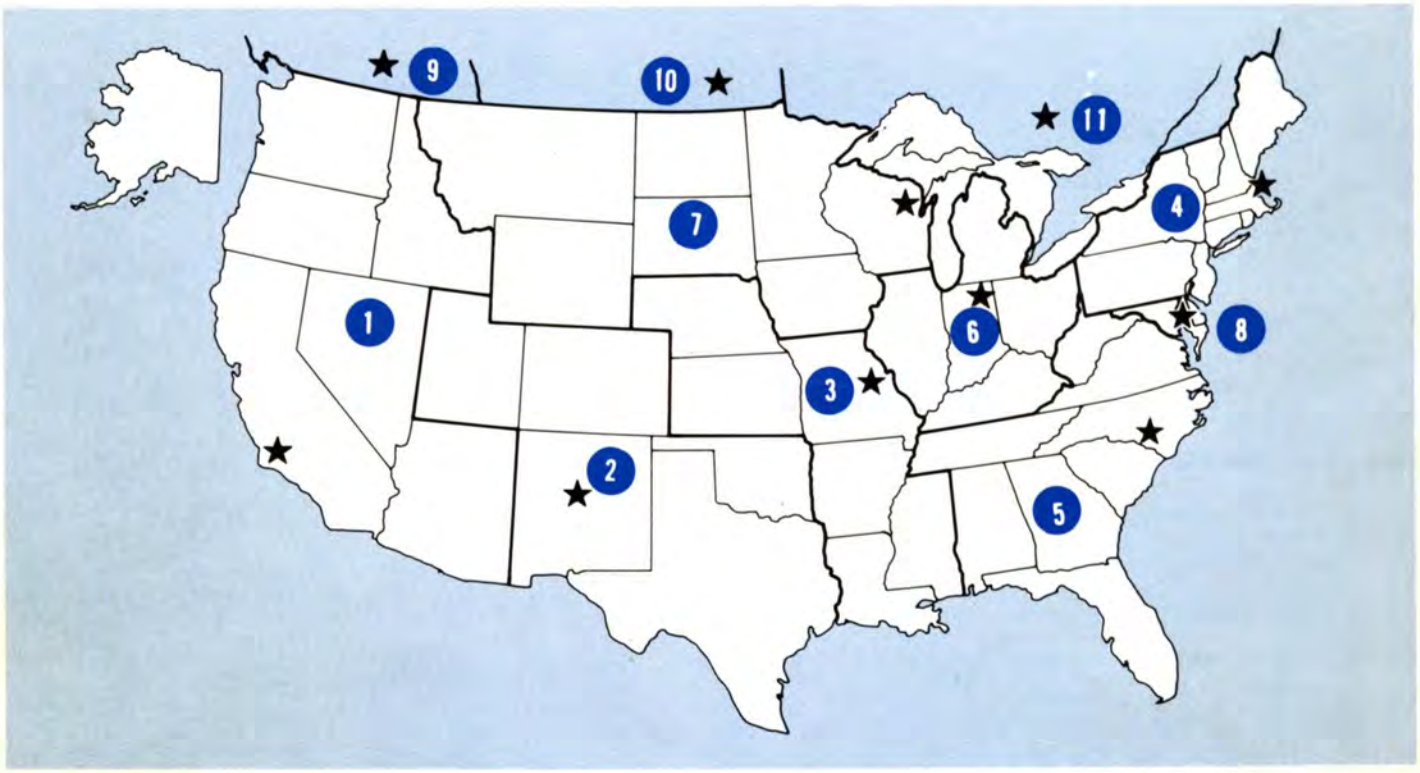

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