AUDIO CONSOLES
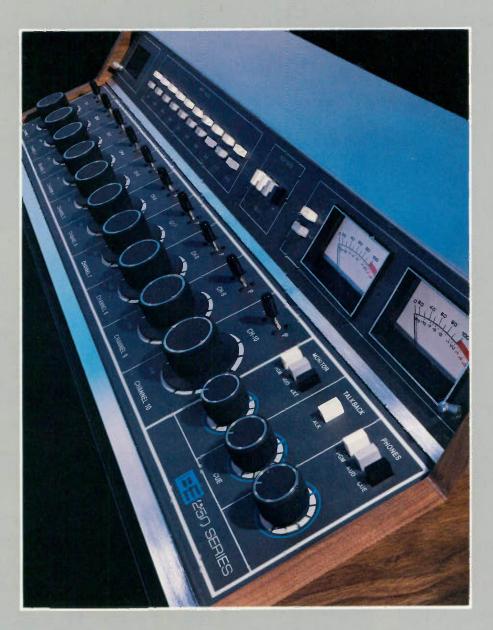
For demanding control room or production use . . .

Deluxe Dual-Channel Series 250 Consoles

Series 250 consoles are deluxe in every way. The attractive styling and extra features have made the 250 Series the broadcaster's favorite rotary fader consoles. They are guaranteed to provide exceptional perform-ance for the most demanding control room or production use.

All Series 250 consoles feature ladder type maintainable step attenuators with cue detent position; silent telephone type, roller-cam design key switches for channel selection and contact-free electronic bus assignments.

Each mixer has two-input pushbutton pre-selection. Amplifiers are of the field proven Series 3600 modular, plug-in design. The plug-in preamplifiers have microphone or high level input capability for each mixing channel. There are separate monitor, headphone and cue channels. Mono/stereo mode switching is optional on the stereo models. Front panel graphics are under a laminated polycarbonate overlay for years of durability. There is no silk screening to rub off nor paint to wear away.

FEATURES

- **Ladder Step Attenuators**
- **Modular Plug-In Electronics**
- **Contact-Free Bus Selection**
- **Telephone-Type Roller Cam Design Channel Key Switches**
- **Durable Front Panel Graphics**

10-MIXER MODELS

DUAL-CHANNEL STEREO

- **Twenty Stereo Inputs**
- **Talk-Back Capability**
- **Four Line-Level Outputs**
- **Mono Mix-Down Option**

Model 10S250

DUAL-CHANNEL MONO

- **Twenty Mono Inputs**
- **Two Line-Level Outputs**
- **Talk-Back Capability**

Model 10M250

8-MIXER MODELS

Model 8S250

DUAL-CHANNEL STEREO

- Sixteen Stereo Inputs
- Four Line-Level Outputs
- Mono Mix-Down Option
- Four Unwired Extra Inputs

Model 8M250

DUAL-CHANNEL MONO

- Sixteen Mono Inputs
- Two Line-Level Outputs
- Four Unwired Extra Inputs

5-MIXER MODELS

Model 5S250

DUAL-CHANNEL STEREO

- Ten Stereo Inputs
- Four Line-Level Outputs
- Mono Mix-Down Option
- Four Unwired Extra Inputs

Model 5M250

DUAL-CHANNEL MONO

- Ten Mono Inputs
- Two Line-Level Outputs
- Four Unwired Extra Inputs

Series 150 Consoles — Versatility Plus . . .

Mixing controls are of sealed potentiometer, high-reliability, long-life design, each equipped with cue bus switches. The 150 Series features contact-free FET bus selection and field-proven 3600 Series plug-in modular electronics. Each mixing channel accommodates two pushbutton-selected inputs, and may be preset for either microphone or high-level service. Mono/stereo mode switching optional on stereo models. Monitor, headphone and cue amplifiers ensure full-monitoring capability. All stereo models include prewired sockets to accept plug-in modules for dual-channel operation and mono mixdown options. Professional performance at a reasonable price ensures the broadcaster of a console tailored to his needs. Front panel graphics are under a laminated polycarbonate overlay for maximum durability.

FEATURES

- .05% IM And THD Distortion
- +0, −1 dB, 30 Hz-20 kHz Response
- Durable Front Panel
- Modular, Plug-In Electronics
- Preset High/Low Input Sensitivity
- Cue Switches, All Mixers

8-MIXER STEREO

(dual-channel and/or mono outputs optional utilizing plug-in modules to prewired sockets.)

Model 8S150

8-MIXER DUAL-CHANNEL MONO

Model 8M150

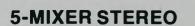## 5-MIXER STEREO

(dual-channel and/or mono outputs optional utilizing plug-in modules to prewired sockets.)

Model 5S150

5-MIXER DUAL-CHANNEL MONO

Model 5M150

at a reasonable price

10-MIXER STEREO • MODEL 10S150
10-MIXER DUAL-CHANNEL MONO • MODEL 10M150

NEW!
10 MIXERS

These new consoles fulfill the need for economically priced 10-mixer equipment. Similar in styling and features to the deluxe 250 Series, the 10M150 and 10S150 utilize conductive plastic attenuators but maintain the same heavy duty telephone type channel-select key switches and the same plug-in amplifiers as in the 250 Series. The stereo 10S150 accommodates optional dual-channel and mono mix-down functions. The result is price economy, extensive operational flexibility and superb audio performance.

Series 350 Consoles

10-MIXER, VERTICAL FADER, DUAL-CHANNEL MONO/ STEREO MODELS

The 350 Series consoles feature 22 inputs into 10 mixing channels. Available in either mono or stereo models, they are ideal for multiple-mix applications. Mixers #1 through #8 accept two inputs per mixer; Mixers #9 and #10, three each. Input preselection is by interlocked pushbutton switching. Mixer outputs, routed through advanced, contact-free electronic switching, may be fed separately or simultaneously to the dual output channels. Attractive front panel graphics are protected by a laminated polycarbonate overlay for maximum durability.

Integral module presetting permits individual input channel use for either microphone or line level input service. The stereo model features mono/stereo mode selection.

Dual-Channel, Mono Outputs—Model 10M350

Dual-Channel, Stereo Outputs—Model 10S350

FEATURES

- **22 Inputs To 10 Slide Faders**
- **Modular Plug-In Electronics**
- **Dual-Channel Output**
- **Mono Or Stereo Models**
- **Contact-Free, FET Bus Selection**

Series 50 Consoles • 4-Mixer, Mono/Stereo/Rack Mount

4-MIXER, MONO • MODEL 4M50

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. 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. Individual monitor, headphone and cue amplifiers with front panel input and level control insure aural monitoring capability of all critical functions. High quality performance and clean functional operation highlight the ideal console for production, on-air newsroom or remote broadcast purposes.

4-MIXER, STEREO • MODEL 4S50

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. 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. The high reliability, low-noise sealed dual potentiometers used for mixer level control are fitted with cue switches.

NEW! 4-MIXER RACK MOUNT • MODEL 4R50

The Broadcast Electronics 4R50 rack-mount, four-mixer Console brings, in a self-contained, compact package, operating versatility usually expected only in larger, desk-top units. 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." 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. An internal tone generator facilitates quick and accurate output level adjustment. 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.

Ordering Information

MODEL	STOCK NO.	DESCRIPTION

50 SERIES MONO AND STEREO CONSOLES

MODEL	STOCK NO.	DESCRIPTION
4M50	938-0450	MONO FOUR 4-Mixer Monophonic Console
4M50R	938-0451	MONO FOUR Rack Mount 4-Mixer Monophonic Console
4M50P	901-0450-020	MONO FOUR 4-Mixer Monophonic Console with XLR Plug-in Connectors
4S50	938-0452	STEREO FOUR 4-Mixer Stereophonic Console
4S50R	938-0453	STEREO FOUR Rack Mount 4-Mixer Stereophonic Console
4S50P	901-0451-020	STEREO FOUR 4-Mixer Stereophonic Console with XLR Plug-in Connectors
	838-0201	230 Vac/50 Hz Power Source, 4M50 Series
	838-0202	230 Vac/50 Hz Power Source, 4S50 Series
4R50	901-2000-000	4-Mixer Mono Console, Rack Mount, 115 Vac/60 Hz
4R50	901-2000-300	4-Mixer Mono Console, Rack Mount, 220 Vac/50 Hz

*150 SERIES MONO AND STEREO CONSOLES

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
10M150	901-1030-000	10-Mixer Monophonic Console, Sealed Pots, Dual Channel
5S150	938-0530	5-Mixer Stereophonic Console, Sealed Pots
8S150	938-0830	8-Mixer Stereophonic Console, Sealed Pots
10S150	901-1031-000	10-Mixer Stereophonic Console, Sealed Pots

OPTIONS AND ACCESSORIES

	STOCK NO.	DESCRIPTION
	918-3604	Line Amplifier For Stereo Audition Channel 5S150, 8S150 and 10S150. (2 required) For dual channel operation.
	918-3602	Mono Matrix PC Board for 5S150, 8S150 and 10S150
	270-0007	Second Muting Relay for any Series 150 Console
	838-0200	Additional Cost For 230 Vac/50 Hz Power Source
		*Supplied With One Muting Relay

*250 SERIES MONO AND STEREO CONSOLES

MODEL	STOCK NO.	DESCRIPTION
5M250	938-0541	5-Mixer, Deluxe Monophonic Console, Step type Attenuators, Dual-Channel
8M250	938-0841	8-Mixer, Deluxe Monophonic Console, Step type Attenuators, Dual-Channel
10M250	938-1041	10-Mixer, Deluxe Monophonic Console, Step type Attenuators, Dual-Channel
5S250	938-0540	5-Mixer, Deluxe Stereophonic Console, Step type Attenuators, Dual-Channel
8S250	938-0840	8-Mixer, Deluxe Stereophonic Console, Step type Attenuators, Dual-Channel
10S250	938-1040	10-Mixer, Deluxe Stereophonic Console, Step type Attenuators, Dual-Channel

OPTIONS AND ACCESSORIES

	STOCK NO.	DESCRIPTION
	918-3602	Mono Matrix PC Board For 5S250, 8S250 and 10S250
	838-0200	Additional cost for 230 Vac/50 Hz Power Source
		*Supplied With 3 Muting Relays

350 SERIES SLIDER MIXER AUDIO CONSOLES

MODEL	STOCK NO.	DESCRIPTION
10M350	938-1051	10-Mixer, Slider-Fader, Dual-Channel, Monophonic Console
10S350	938-1050	10-Mixer, Slider-Fader, Dual-Channel, Stereophonic Console

OPTIONS AND ACCESSORIES

	STOCK NO.	DESCRIPTION
	918-3602	Mono Matrix PC Board For 10S350
	838-0200	Additional Cost For 230 Vac/50 Hz Power Source

Condensed Specifications

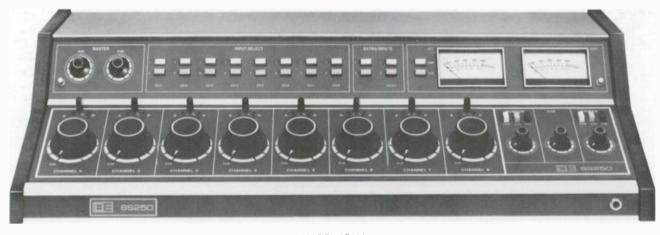|	MODELS 10M350 (Mono) 10S350 (Stereo)	MODELS 150 & 250 SERIES MONO & STEREO
PROGRAM/AUDITION CHANNELS **Mixers**	10 Vertical	5M/S-150/250: 5-mixers 8M/S-150/250: 8-mixers 10M/S-150/250: 10-mixers
Type Attenuators	Conductive Plastic Slide Control	150 Series: sealed potentiometers w/cue position 250 Series: 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 (5 & 8 M/S)
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	Mono Matrix Module 918-3602 Optional (All stereo models)	
Input Impedances & Levels	Microphone Mode: 150 ohms balanced, −65 dBm minimum to −38 dBm max. High Level Mode: 54k ohms balanced bridging, −20 dBm minimum to +20 dBm max.	
Frequency Response	+0, −1 dB, 30 Hz - 20 kHz	
Distortion	.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	
Output Impedance/Levels	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)	
Distortion	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, 10S150, 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.	
CUE AMP	1.0 W rms to integral cue speaker. Also functions as intercom amplifier.	1.0 W rms to built-in cue speaker. Functions as intercom amplifier (All 10-mixer models)
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 **SHIPPING WEIGHTS (PACKED)**	36"W, 10.75"H, 19"D 10M350: 80 lbs. 10S350: 85 lbs.	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. 10M/S-250: 39"W, 15.75"D, 8.25"H, 69 lbs. 10M/S-150: 39"W, 15.75"D, 8.25"H, 65 lbs.
POWER REQUIREMENTS	105-125V, 50/60 Hz (210-230V, 50/60 Hz optional)	

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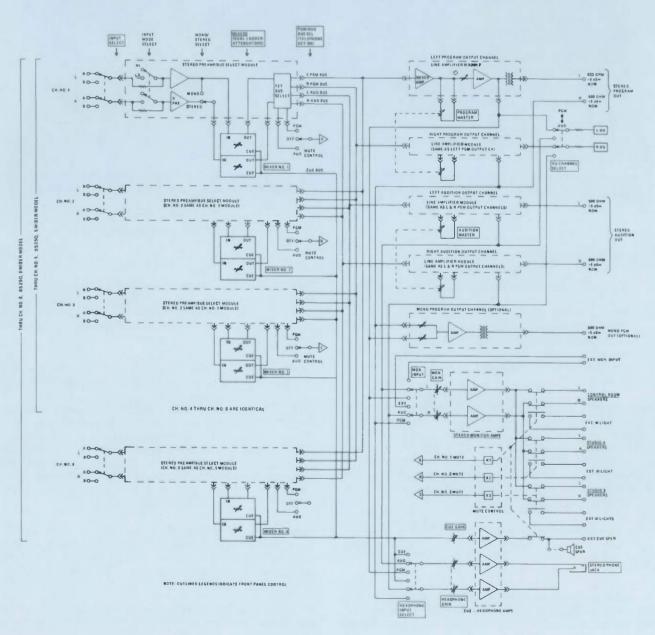
FOUR EXTRA INPUTS ON 8-MIXER MODEL — The Model 8S250 has four extra unwired switches to aid the broadcaster with any future expansion plans.

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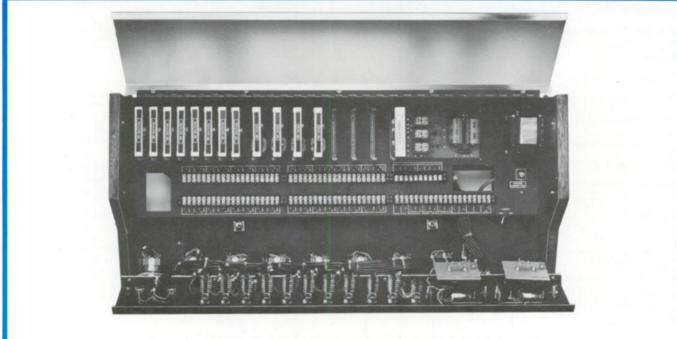
HUMAN ENGINEERED FOR LONG-TERM SERVICE — Special attention has been focused on control and switch locations to insure minimum error and maximum operating ease. The 250 Series Consoles are the choice of today's discerning stereo broadcaster. They perform . . . they produce the sound that satisfies the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

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 SHIPPING WEIGHTS (PACKED)	36″W, 10.75″H, 19″D 10M350: 80 lbs. 10S350: 85 lbs.	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.
POWER REQUIREMENTS	105-125V, 50/60 Hz (210-230V, 50/60 Hz optional)	105-125V, 50/60 Hz (210-230V, 50-60 Hz optional)

SERIES 50 CONSOLE SPECIFICATIONS

IBE

MODEL 4M50 SPECIFICATIONS

PROGRAM CHANNEL

Inputs:
Two per mixer, total: 8.

Input Impedance/Levels (Strappable):
Low Mode: 150 ohms balanced. −62 dBm nom., −45 dBm max.
High Mode: 20K ohms balanced bridging: −20 dB nom., 0 dBm max.

Frequency Response/Distortion:
+0, −2.0 dB/0.5%, 30 Hz - 20 kHz.

Signal-to-Noise:
60 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:
±0.75 dB, 40 Hz - 20 kHz.

Distortion:
0.75% or less, 40 Hz - 20 kHz at rated output and load.

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

HEADPHONE AMPLIFIER:
0.9 watt rms into 8 ohm load. Front panel jack. Program/cue/external input.

CUE AMPLIFIER:
1.0 watt rms into built-in 8 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).

MODEL 4S50 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:
+0, −1 dB, 30 Hz - 20 kHz.

Distortion:
0.1% THD, 0.15% IMD, 60 Hz:7 kHz, 4:1 SMPTE.

Signal-to-Noise:
70 dB (unweighted) below +16 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:
±0.75 dB, 30 Hz - 20 kHz.

Distortion:
0.3% THD and IM, 30 Hz - 20 kHz at 3.0 watts rms per channel into nominal 8 ohm load.

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

STEREO HEADPHONE AMPLIFIERS:
0.5 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).

MODEL 4R50 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 (SWITCH-ABLE - REAR PANEL):
Low Level Mode: 150 ohms bal. −50 dBm nom., −38 dBm max.
High Level Mode: 20K ohm bal. bridging −10 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):
+0, −2 dB, 30 Hz - 20 kHz (Reference: 1 kHz).

DISTORTION: (PROGRAM CHANNEL):
THD: 0.3% or less, 30 Hz - 20 kHz, +8 dBm output.
IMD: 0.05% (4:1, 60 Hz/7 kHz).

SIGNAL-TO-NOISE RATIO:
70 dB below +18 dBm output with a 0 dBm level signal to any high level input (75 dB A-weighted).
65 dB below +18 dBm output with a −50 dBm signal to any low-level input (68 dB A-weighted).

POWER REQUIREMENTS:
115 Vac, 60 Hz; or 230 Vac, 50 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).

At Broadcast Electronics, styling complements audio performance and long term durability. The elegant contemporary lines are highlighted by chrome accented control knobs and attenuator dials.

B/E Consoles satisfy, technically and tastefully, the most stringent control room and production demands.

BE BROADCAST ELECTRONICS INC

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

B181 CP 6.5K 784

BE AUDIO CONSOLES

FEATURES

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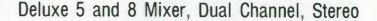
DUAL CHANNEL DESIGN — A 600 ohm balanced audition channel is equal in performance to the program channel.

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 — The consoles have four extra unwired switches to aid the broadcaster with any future expansion plans.
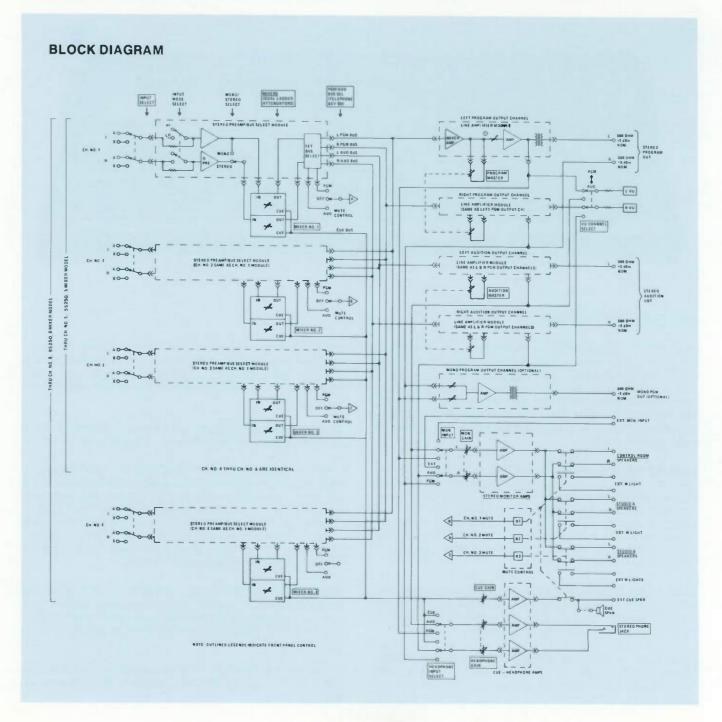
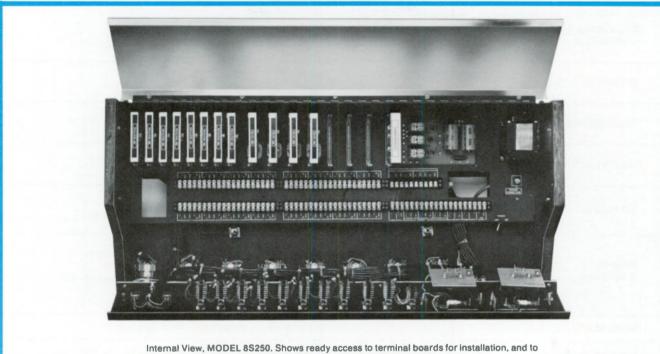## GENERAL DESCRIPTION (Cont.)

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

BE

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 (Each 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, −1 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, −1 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:
8 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:
Two 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:

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) 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).

IBE Condensed Specifications — Series 250 Consoles

PROGRAM/AUDITION CHANNELS	MODELS 250 SERIES MONO & STEREO
MIXING CHANNELS	5M/S-250: 5-mixers 8M/S-250: 8-mixers 10M/S-250: 10-mixers
Type Attenuation	Step-type ladders w/cue position
Inputs per Mixer	10M/S 250: 2 each mixer 5M/S 250: 2 each mixer, plus 4 unwired 8M/S 250: 2 each mixer, plus 4 unwired
VU Meters	Mono: 2 meters; Audition and Program Stereo: 2 meters; L & R switchable to Audition and Program
Plug-in Amplifiers	Mono: preamp for each mixer channel; 2 line amp, 1 monitor amp, and 1 cue/head phone amp Stereo: preamp (stereo) for each mixer; 4 line amp, 2 monitor amp, and 1 cue/headphone amp
Mono Matrix	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: 54k ohms balanced bridging, −20 dBm minimum to +20 dBm max.
Frequency Response	+0, −1 dB, 50 Hz - 20 kHz (1 kHz reference)
Distortion	.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
Output Impedance/Levels	600 ohms balanced. +8 dBm for zero VU meter reading. +18 dBm capability.
MONITOR AMP Frequency Response	+0, −1 or less, 30 Hz - 20 kHz @ rated rms output and load
Distortion	0.75% or less, 30 Hz - 20 kHz @ rated rms output and load
Output Impedance/Power	Mono & Stereo: 8 W rms, 8 ohms
HEADPHONE AMP	1.0 W rms per channel. Front panel jack and input select switching
CUE AMP	1.0 W rms to built-in cue speaker
MUTING RELAYS	3 relays standard
DIMENSIONS SHIPPING WEIGHTS (PACKED)	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. 10M/S-250: 39"W, 15.75"D, 8.25"H, 69 lbs.
POWER REQUIREMENTS	105-125V, 50/60 Hz (210-230V, 50-60 Hz optional)

IBE BROADCAST ELECTRONICS INC

AUDIO CONSOLES

10 ROTARY - MIXER MODELS — 150 AND 250 SERIES

**DELUXE
10-MIXER
DUAL-CHANNEL
STEREO**
(with mono-channel
option)
Model 10S250

**DELUXE
10-MIXER
DUAL-CHANNEL
MONO
Model 10M250**

10 MIXING CHANNELS. Ladder-type, maintainable step attenuators. Quiet, contactless FET bus selection. 20 inputs. Monitor, cue and headphone amplifiers. Low level balanced microphone or line level input selection. Field-proven 3600 Series, plug-in modular electronics. Multi-channel muting. Talkback capability. Superb audio performance.

Front panel graphics are under a laminated polycarbonate overlay for maximum durability. Stylized control knobs.

Elegant appearance.

BE **BROADCAST ELECTRONICS INC.**

Elegant Series 150 and 250 Consoles
For demanding control room or proc

The Deluxe 250 Series Rotary-Mixer Consoles. Featuring ladder-type maintainable step attenuators with cue bus switching, telephone-type channel keys and contact-free FET bus selection. Separate monitor, headphone and cue channels. Field proven 3600 Series modular plug-in electronics. Two-input pushbutton preselection and microphone or high level capability for each mixing channel. Mono/stereo mode switching optional on stereo models. Front panel graphics are under a laminated polycarbonate overlay for maximum durability.

**DELUXE
8-MIXER
DUAL-CHANNEL
STEREO**

(with mono-channel option)

Model 8S250

**DELUXE
5-MIXER
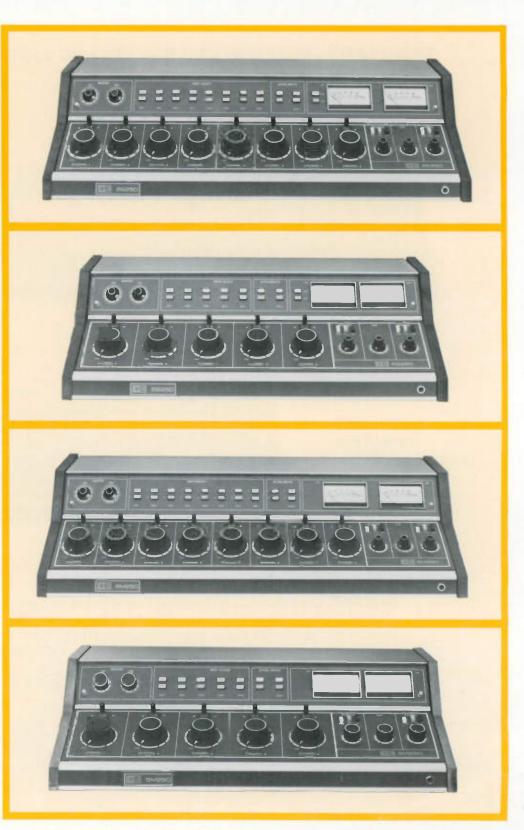DUAL-CHANNEL
STEREO**

(with mono-channel option)

Model 5S250

**DELUXE
8-MIXER
DUAL-CHANNEL
MONO**

Model 8M250

**DELUXE
5-MIXER
DUAL-CHANNEL
MONO**

Model 5M250

luction use . . .

The 150 Series Rotary Mixer Consoles. Mixing controls are of sealed potentiometer, high-reliability, long-life design, each equipped with cue bus switches. The 150 Series features contact-free FET bus selection and field-proven 3600 Series plug-in modular electronics. Each mixing channel accommodates two pushbutton-selected inputs, and may be preset for either microphone or high-level service. Mono/stereo mode switching optional on stereo models. Monitor, headphone and cue amplifiers ensure full-monitoring capability. Professional performance at a reasonable price ensures the broadcaster of a console tailored to his needs. Front panel graphics are under a laminated polycarbonate overlay for maximum durability.

8-MIXER STEREO

(dual-channel and/or mono outputs optional)

Model 8S150

5-MIXER STEREO

(dual-channel and/or mono outputs optional)

Model 5S150

8-MIXER DUAL-CHANNEL MONO

Model 8M150

5-MIXER DUAL-CHANNEL MONO

Model 5M150

Condensed Specifications

	150 SERIES - MONO & STEREO	250 SERIES - MONO & STEREO
PROGRAM/AUDITION CHANNELS: Mixing Channels	5M/S, 5 mixers; 8M/S, 8 mixers	5M/S, 5 mixers; 8M/S, 8 mixers; 10M/S, 10 mixers
Attenuator Type	Sealed potentiometers w/cue position	Step-type attenuators w/cue position
Inputs per Mixer	Two each mixer	10M/S, two each mixer; 5 & 8M/S two each mixer, plus four unwired.
VU Meters	Mono: (2) Audition and Program Stereo: (2) Left and Right	Mono: (2) Audition and Program Stereo: (2) Left and Right switchable to Audition and Program
Plug-in Amplifiers	Mono: Preamp for each mixing Channel, (2) line amp, (1) monitor amp, (1) cue/headphone amp.	
	Stereo: Stereo preamp for each mixer, (2) line amp, (1) monitor amp and (1) cue/headphone amplifier	Stereo: Stereo preamp for each mixer, (4) line amp, (2) monitor amp and (1) cue/headphone amp
Mono Matrix (stereo models)	Optional Mono Matrix Module (P/N 918-3602)	
Input Impedances & Levels	Microphone Mode: 150 ohms, balanced, -65 dBm minimum to -38 dBm maximum. High Level Mode: 54K ohms balanced bridging, -20 dBm min. to -20 dBm max.	
Frequency Response	±0.5 dB, 30 Hertz to 20 kiloHertz	
Distortion	0.05% intermodulation & total harmonic distortion, 30 Hz - 20 kHz @ -18 dBm output	
S/N Ratio	70 dB below +18 dBm output with -50 dBm input, 20 kHz bandwidth	
Output Impedances/Levels	600 ohms balanced. +8 dBm for zero VU meter reading. -18 dBM capability.	
MONITOR AMPLIFIER Frequency Response	±0.75 dB, 50 Hertz to 20 kiloHertz (1 kiloHertz reference).	
Distortion	0.75% or less, 30 Hz - 20 kHz @ rated rms output and load.	
Output Power/Impedance	Mono: 8W rms; 8 ohms Stereo: 1.5 W rms per channel; 8 ohms	8 Watts, rms, 8 ohms
HEADPHONE AMPLIFIER	1.0 W rms per channel. Front panel jack and input select switching	
CUE AMPLIFIER	1.0 W rms to built-in cue speaker, 10 M/S 250 only: 2-studio talkback capability in addition to cue functions (w/accessory studio intercom 45 ohm speaker).	
MUTING RELAYS	One relay standard; second, optional	Three relays standard
DIMENSIONS	5 M/S: 29" W × 15.75" D × 8.25" H 8 M/S: 33" W × 15.75" D × 8.25" H	5 M/S: 29" W × 15.75" D × 8.25" H 8 M/S: 33" W × 15.75" D × 8.25" H 10 M/S: 39" W × 15.75" D × 8.25" H
SHIPPING WEIGHTS: (LBS)	5 M: (49); 5 S: (54); 8 M: (55); 8 S: (55)	5 M/S: (55); 8 M/S: (60); 10 M/S: (70)
POWER REQUIREMENTS	105-125 Vac, 50/60 Hz (210-250 Vac, 50-60 Hz optional)	

MODEL CLA-40A

Compressor-Limiter Amplifier

- SWITCHABLE SYMMETRICAL OR ASYMMETRICAL PEAK LIMITING
- SWITCHABLE PRE-EMPHASIZED OR FLAT RESPONSE — AM/FM
- 40 dB DYNAMIC RANGE
- SOLID STATE, PLUG-IN MODULAR CONSTRUCTION

The CLA-40A has applications in AM or FM installations. This Compressor-Limiter Amplifier combines both compression and limiting functions. Switchable control systems for Symmetrical (FM) or Asymmetrical (AM) Peak Limiting; pre-emphasized or flat audio response; and Compress/Limit, Compress only or Compress/Limit off provide complete equipment flexibility. Strap (2) CLA-40A for stereo applications.

SPECIFICATIONS

Input and Output Impedances:	600 ohms balanced or unbalanced.
Input Level:	-20 to +15 dBm.
Maximum Output Level:	+20 dBm RMS
Frequency Response:	50 Hz to 15 kHz flat within 0.5 dB in AM or FM mode.
Maximum Gain:	40 dB.
Noise Level:	-66 dB ref. +10 dBm output.
Distortion:	Less than 1% THD at all compression levels.
Compression Ratio:	Better than 10:1.
Automatic Gain Control Range:	40 dB dynamic.
Metering:	Gain reduction, output level +4 VU, +10 VU.
AM-FM Operation:	Both. Standard 75 microsecond pre-emphasis/ de-emphasis used in FM operation.
Physical Dimensions:	3½" x 19" rack panel.
Power Requirements:	120/240 volts 50-60 Hz, 10 watts.
Weight:	6 lbs.

Suggested List Price - $445.00

MIX TRAK 90

MODULAR CONSOLE

The new MIX TRAK 90 from Broadcast Electronics will totally change your ideas about on-air modular consoles!

Unlike other consoles that try to be all things for all applications, the MIX TRAK 90 is intended strictly for on-air use. With a broad range of modules and other options, the MIX TRAK 90 gives you the ability to create the exact console configuration that is ideal for your station. Simply begin with a 12 or 18 channel mainframe and equip it with the type and number of modules that you desire. Later, as your needs change, you can expand your MIX TRAK 90 by adding more modules.

The audio performance of the MIX TRAK 90 is nothing less than superb. Typical Signal to Noise is better than 85 dB below nominal output level with Total Harmonic Distortion (THD) at less than .05%.

MIX TRAK 90 Modules

Line Input: Reliable Penny & Giles faders, VCA gain control, silent Hall Effect switching and much more.

Microphone Input: Includes many of the Line Input module features and adds a handy "PAN" control.

Control Room Monitor: Complete headphone (with split cue) and control room monitor control with convenient monitor "dim" function.

Studio Monitor: Ideal control for as many as two auxiliary studios with individual "talkback" functions.

Clock/Timer: Hours, minutes and seconds clock and count-up timer in dual display. Timer can be set to auto-start with any module ON command. **Timer Control** module can also be added for full-featured timer function control.

Studio Remote: Remote switching panel providing several control functions for operators in auxiliary studios.

Tape/Cartridge Remote Control: Expanded machine control for the console operator. (Perfect control for reel-to-reel decks or cart machines).

FSK Decoder: FSK decoding for cart machines or other sources with FSK data output tracks.

Input Expander: Provides 8 extra inputs for any Line Input module.

Monaural Output: Sums either the Program or Audition stereo busses to monaural output. Phase indicator and phase reversal switch included.

MIX TRAK 90 Options

Source Sequencer: Allows DJ to "program" several source events to activate in sequential order at the touch of a single switch. Entire commercial clusters can play automatically with virtually no human intervention.

Peak Program Metering: Enhanced metering for easy monitoring of program audio level peaks.

LED Bargraph Metering: 3½" stereo or dual LED bargraph metering.

Redundant Power Supply: Standby power supply for the MIX TRAK 90. An automatic switching panel is also available to provide instant switching from the primary to the redundant power supply in the event of a primary power supply failure.

Ordering Information: Contact Broadcast Electronics

MIX TRAK 90 TECHNICAL SPECIFICATIONS

Overall Console Specifications*

(Mic or Line input to Program or Audition output)

Input Headroom: Better than 25 dB above nominal.

Total Harmonic Distortion: Less than .05%, 20 Hx. to 20 kHz. Nominal input and output levels.

SMPTE Intermodulation Distortion: Less than 0.05%, 60 Hz to 7 kHz. 4:1 amplitude ratio. Nominal input and output levels.

Crosstalk: (Program to Audition, Audition to Program. Aux bus 1, 2 or 3 into Program, Aux bus 1, 2 or 3 into Audition). Better than 80 dB from 20 Hz to 20 kHz, any input module position to selected output, all inputs on. Measured below 0 dBu nominal output.

Separation: (Program left into Program right, Program right into Program left. Audition left into Audition right, Audition right into Audition left.) Better than 70 dB from 20 Hz to 20 kHz, any input module position. Measured below 0 dBu nominal output, +4 dBu nominal input on "Line Input" module.

Stereo Gain Matching: Within 0.5 dB, any fader position.

Frequency Response: +0 dB, −0.5 dB 20 Hz to 20 kHz, 1 kHz reference.

Gain In Hand: 12 dB.

Nominal Output Level: 0 dBu to +8 dBu adjustable.

Output Impedance: Less than 100 ohms balanced and floating. 50 ohms single ended.

Maximum Output Level: +28 dBu into high impedance load. +26 dBu, +26 dBm into 600 ohm load. +20 dBu, +28 dBm into 150 ohm load.

Output Noise: Better than 85 dB below 0 dBu output level, all inputs off.

Load Impedance: 150 ohms minimum.

Patch Points: (each module) Output Level: −5 dBu nominal. Gain: 0 dB. Output Impedance: 600 ohms balanced, 300 ohms single ended. Input Impedance: 20,000 ohms minimum. Maximum Output Level: +24 dBu unloaded, +18 dBu loaded. Maximum Input Level: +24 dBu.

Power Requirements: 115/230 Vac, 50/60 Hz, 400 watts maximum.

Dimensions: (12 channel) Depth: 25", Width: 38¼", Depth Below Table: 5", Height Above Table: 8½". (18 channel) Depth: 25", Width: 50¼", Depth Below Table: 5", Height Above Table: 8½".

Microphone Input Module Specifications

Vernier Gain Range: +/−20 dB, single front panel control for both channels.

Nominal Input Levels: −60 to −30 dBu.

Equivalent Input Noise: −128 dBu with 150 ohm source. 20 Hz to 20 kHz bandwidth, RMS meter response, no weighting.

Input Impedance: Greater than 1500 ohms.

Line Input Module Specifications

Vernier Gain Range: +/− 5 dB from nominal, individual control for each channel.

Nominal Input Levels: −10, −5, 0, +4, +8 dBu.

Equivalent Input Noise: Better than 80 dB below nominal input level, 20 Hz to 20 kHz bandwidth with 600 ohm source impedance. RMS meter response, no weighting.

Input Impedance: Greater than 10,000 ohms bridging.

*All measurements referenced to Program and Audition signal paths in a 12 channel fully mainframe with a single module active. Noise measurements made over a 20 Hz to 20 kHz bandwidth with a true RMS responding meter and no weighting filters.
Note: 0 dBu = 0 dBm into 600 ohms.

MIX TRAK 90
MODULAR ON AIR CONSOLE

CONSOLE MAINFRAMES

Model No./ Part No.	Description	Qty	Price	Total Price
MT90-12 901-9012	12 input mixer mainframe with 4 VU meters (2 program & 2 utility) & 8 accessory module slots.		$5,500	
MT90-18 901-9018	18 input mixer mainframe with 6 VU meters (2 program, 2 audition & 2 utility) & 8 accessory module slots.		$6,500	
	*Mainframe includes: (2) stereo line output cards for program and audition busses, (1) control room monitor/ headphone module, (1) cue speaker and cue/headphone amplifier card, (1) power supply (115/230v, 50/60Hz) with phantom power, (1) installation connector kit, (1) module extender cable kit (2 -40 pin and 1 -50 pin), (1) basic spare parts kit, and (1) operation/service manual.			
		MAINFRAME TOTAL		

INPUT MODULES (17")

951-0014	Mic Input Module - mono (17")		$ 575	
951-0016	Mic Input Transformer Option		$ 95	
951-0015	Line Input Module - stereo (17")		$ 590	
911-0019	Remote Control Card (for use with either mic module or line module)		$ 75	
911-0020	Source Remote Control Card (for use with line module)		$ 90	
		INPUT MODULES TOTAL		

ACCESSORY MODULES (17" and 8-1/2")

951-0027	Control Room Monitor/Headphone Module (spare) (17")		$ 550	
951-0028	Studio/Talkback Monitor Module for two studios (17")		$ 525	
951-0024	Mono Output Module (8-1/2") NOTE: Add VU meter.		$ 250	
951-0017	Tape (reel to reel) Source Remote Switch Module (8-1/2")		$ 200	
951-0019	Cart Source Remote Switch Module (8-1/2")		$ 200	
951-0018	Input Expander Module - 8 in x 1 out, stereo or mono (8-1/2")		$ 275	
951-0020	FSK Decoder Module (8-1/2")		$ 250	
951-0035	Timer Control Module (8-1/2")		$ 200	
951-0021	Blank Module (8-1/2")		$ 25	
951-0022	Blank Module (17")		$ 30	
		ACCESSORY MODULES TOTAL		

ACCESSORIES & SPARES

951-0030	Clock/Timer (meter bridge mount)		$ 595	
971-0025	VU Meter Kit (meter bridge mount) (spare or mono output)		$ 150	
951-0034	PPM Meter and Driver Board (meter bridge mount)		$ 260	

ACCESSORIES & SPARES (continued)

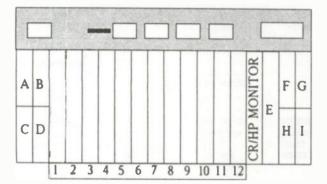|			
951-0029	LED Bargraph Meter (meter bridge mount in VU meter space)		$ 290
911-0016	Stereo Line Output Card (mounts internal)		$ 290
	NOTE: Two included with mainframe for program and audition busses. Can accept 2 additional: one for mono buss and aux buss 3, and one card for aux busses 1 and 2.		
901-0023	Studio Remote Panel (to be located in remote studio) (8-1/2" x 2")		$ 200
951-0006	Power Supply (rack mount 19" W x 7-1/4" H) with phantom power included.		$ 500
951-0032	Power Supply Automatic Switcher Panel for redundant power supply.		$ 200
941-0016	40 Pin Extender Cable Assembly (spare)		$ 40
941-0017	50 Pin Extender Cable Assembly (spare)		$ 60
911-0065	Cue/Headphone Amplifier Card (mounts internal) (spare)		$ 175
911-0062	Summing Amplifier Card (mounts internal) (spare)		$ 150
951-0036	Relay On Air Warning Light (mounts external of console)		$ 50
971-0024	Spare Parts Kit		$ 375
951-0038	Mounting Adapter, Two 8 1/2" Modules for 17" Space		$ 20
911-0064	Power Supply PC Board With Phantom Power (spare)		$ 200
		ACCESSORIES TOTAL	

PRE-FABRICATED WIRING

941-0018	10 feet of 3 conductor (red,black with twisted shield) 22 guage audio cable (Belden 8451) wired with female AMP pins on one end for easy insertion into AMP "MR" series connectors and unterminated on the other end.		$ 5
941-0019	Same as above except 20 feet.		$ 7
941-0020	10 feet of 20 conductor 22 guage control cable (Belden 9431) wired with female AMP pins on on one end for easy insertion into AMP "MR" series connectors and unterminated on the other end.		$ 20
941-0021	Same as above except 20 feet.		$ 30
		WIRING TOTAL	

PRICE SUMMARY

Mainframe Total	
Input Modules Total	
Accessory Modules Total	
Accessories & Spares Total	
Wiring Total	
TOTAL PRICE	

Payment Terms: _____
Payment Basis: _____
Estimated Shipment from Factory: _____
The prices and delivery quoted are valid for a period
of _____ days from date.
Estimated Gross Weight: _____ lbs. _____ kilos
Estimated Total Volume: _____ cu.ft._____ cu. meters

BROADCAST ELECTRONICS INC.

Submitted By: _____

Title: _____

PURCHASER'S ACCEPTANCE

The BROADCAST ELECTRONICS, INC. terms and conditions
of sale are a part of this order and upon acceptance
hereof shall be binding upon purchaser and seller.

Please enter our order as above:

Purchasers Name: _____

By (signature) _____

Title_____ Date:_____

CONFIGURING YOUR NEW MIX TRAK 90 ON AIR CONSOLE.

OPTIONAL MONO METER	UTILITY METERS	PROGRAM METERS	OPTIONAL CLOCK/TIMER
YES	VU	VU	VU	YES
NO	PPM	PPM	PPM	NO
	DUAL BARGRAPH	DUAL BARGRAPH	DUAL BARGRAPH	

OPTIONAL MONO METER	UTILITY METERS	PROGRAM METERS	AUDITION METERS	OPTIONAL CLOCK/TIMER
YES	VU	VU	VU	VU	YES
NO	PPM	PPM	PPM	PPM	NO
	DUAL BARGRAPH	DUAL BARGRAPH	DUAL BARGRAPH	DUAL BARGRAPH	

OPTIONAL OUTPUT AMPS FOR EITHER MAINFRAME	
AUX BUSSES 1 & 2	YES
	NO
MONO OUT & AUX BUSS 3	YES
	NO

A B C D | 1 2 3 4 5 6 7 8 9 10 11 12 | CR/HP MONITOR | E | F G H I

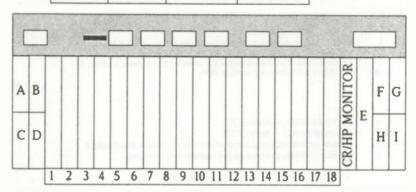A B C D | 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 | CR/HP MONITOR | E | F G H I

INPUT MIXER MODULE POSITIONS

Check your configuration (by "x" ing out desired module)
for each input mixer position.

POSITION

1	MIC	LINE	BLANK	REM CARD	S REM CARD
2	MIC	LINE	BLANK	REM CARD	S REM CARD
3	MIC	LINE	BLANK	REM CARD	S REM CARD
4	MIC	LINE	BLANK	REM CARD	S REM CARD
5	MIC	LINE	BLANK	REM CARD	S REM CARD
6	MIC	LINE	BLANK	REM CARD	S REM CARD
7	MIC	LINE	BLANK	REM CARD	S REM CARD
8	MIC	LINE	BLANK	REM CARD	S REM CARD
9	MIC	LINE	BLANK	REM CARD	S REM CARD
10	MIC	LINE	BLANK	REM CARD	S REM CARD
11	MIC	LINE	BLANK	REM CARD	S REM CARD
12	MIC	LINE	BLANK	REM CARD	S REM CARD
13	MIC	LINE	BLANK	REM CARD	S REM CARD
14	MIC	LINE	BLANK	REM CARD	S REM CARD
15	MIC	LINE	BLANK	REM CARD	S REM CARD
16	MIC	LINE	BLANK	REM CARD	S REM CARD
17	MIC	LINE	BLANK	REM CARD	S REM CARD
18	MIC	LINE	BLANK	REM CARD	S REM CARD

ACCESSORY MODULE POSITIONS

Indicate your configuration (by "x" ing out desired location
A thru I) for each accessory module being ordered.

MODULE DESCRIPTION   POSSIBLE LOCATION

Mono Output Module	A	B	C	D	F	G	H	I		SPARE
Tape Source (Reel to Reel) Remote	A	B	C	D	F	G	H	I		SPARE
Cart Source Remote	A	B	C	D	F	G	H	I		SPARE
Input Expander	A	B	C	D	F	G	H	I		SPARE
FSK Data Decoder	A	B	C	D	F	G	H	I		SPARE
Timer Control	A	B	C	D	F	G	H	I		SPARE
Blank 8-1/2"	A	B	C	D	F	G	H	I		SPARE
Studio/Talkback Monitor									E	SPARE

MIX TRAK 90 AUDIO CONSOLE PACKAGE EXAMPLES

Model No./ Part No.	Description	12 MIXER PACKAGE			18 MIXER PACKAGE		
		QTY.	UNIT PRICE	TOTAL PRICE	QTY.	UNIT PRICE	TOTAL PRICE
MT90−12 901−9012	12 input mixer mainframe with 4 VU meters (2 program & 2 utility) & 8 accessory module slots	1	@$5,500.00	$5,500.00			
MT90−18 901−9018	18 input mixer mainframe with 6 VU meters (2 program, 2 utility, & 2 audition) & 8 accessory module slots				1	@$6,500.00	$6,500.00
	MAINFRAME TOTAL			$5,500.00			$6,500.00
951−0014	Mic input module − mono (17")	2	@$575.00	$1,150.00	4	@$575.00	$2,300.00
951−0015	Line input module − stereo (17")	8	590.00	4,720.00	12	590.00	7,080.00
911−0019	Remote control card (for use with either mic module or line module)	1	75.00	75.00	2	75.00	150.00
911−0020	Source remote control module (for use with line module)	5	90.00	450.00	10	90.00	900.00
	INPUT MODULES TOTAL			$6,395.00			$10,430.00
951−0028	Studio/talkback monitor module for 2 studios (17")	1	@$525.00	$525.00	1	@$525.00	$525.00
951−0024	Mono output module (8 − 1/2") Note: add VU meter	1	250.00	250.00	1	250.00	250.00
951−0017	Tape (reel to reel) source remote switch module (8 − 1/2")	1	200.00	200.00	1	200.00	200.00
951−0019	Cart source remote switch module (8 − 1/2")	1	200.00	200.00	2	200.00	400.00
951−0018	Input expander module − 8 in x 1 out, stereo or mono (8 − 1/2")	2	275.00	550.00	2	275.00	550.00
951−0020	FSK decoder module (8 − 1/2")	1	250.00	250.00	1	250.00	250.00
951−0035	Timer control module (8 − 1/2")	1	200.00	200.00	1	200.00	200.00
951−0021	Blank module (8 − 1/2")	1	25.00	25.00	0	25.00	-0-
951−0022	Blank module (17")	2	30.00	60.00	2	30.00	60.00
	ACCESSORY MODULES TOTAL			$2,260.00			$2,435.00
951−0030	Clock/timer (meter bridge mount)	1	@$595.00	$595.00	1	@$595.00	$595.00
971−0025	VU meter kit (meter bridge mount) (spare or mono output)	1	150.00	150.00	1	150.00	150.00
911−0016	Stereo line output card (mounts internal) NOTE: two included with mainframe for program and audition busses. Can accept 2 additional: one for mono buss and aux buss 3 , and one card for aux busses 1 & 2	2	290.00	580.00	2	290.00	580.00
901−0023	Studio remote panel (to be located in remote studio)	1	200.00	200.00	2	200.00	400.00
951−0036	Relay on air warning light (mounts external of console)	2	50.00	100.00	4	50.00	200.00
	ACCESSORIES TOTAL			$1,625.00			$1,925.00

PRICE SUMMARY

Mainframe Total		$5,500.00	$6,500.00
Input Modules Total		6,395.00	10,430.00
Accessory Modules Total		2,260.00	2,435.00
Accessories & Spares Total		1,625.00	1,925.00
TOTAL PRICE		$15,780.00	$21,290.00

139-176

Spotmaster®

CLE-FM SOUND BRITENER

The SPOTMASTER® CLE/FM is specifically designed for you – the FM broadcaster. It's simple and effective – only two controls are used to set dynamic range and low level signal expansion rate. It tailors audio for *your* station's programming. It prevents pilot tones and sub-carriers from interfering with program materials. It operates with DOLBY B to provide compression, peak limiting, or straight line amplification. It's ideal for your station – mono or stereo.

- **IMPROVES YOUR SIGNAL COVERAGE AND RECAPTURES LOST FM MOTORISTS.**
- **STRENGTHENS YOUR TALK POWER AND MUSIC POWER — AT A MODEST COST.**
- **IMPROVES SIGNAL QUALITY AND COVERAGE.**
- **UNIQUE SIGNAL PROCESSING PROVIDES AUTOMATIC LEVEL CONTROL AND MAXIMUM TRANSMITTER MODULATION WITH PROTECTION AGAINST OVER MODULATION.**
- **NO COMPROMISES IN DESIGN OR PACKAGING — BOTH STEREO CHANNELS IN ONE PACKAGE.**

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

The high frequency pre-emphasis employed in the FM transmitter is of concern. If processing with flat response is employed, average level must be kept quite low to prevent overmodulation at high frequencies. To prevent this, the CLE-FM employs a pre-emphasis circuit during processing. A complementary de-emphasis network is employed at the output.

The FM SOUND BRITENER keeps the audio signal clean at all times. Gating is employed on the input to prevent amplification of noise with no signal.

For all its sophisticated audio processing, the CLE-FM is designed for easy, straightforward set-up and adjustment. Two controls are employed to adjust the operating characteristics of the unit. The unique AVERAGE/PEAK RATIO control sets the dynamic range desired from a tight 1 dB to a loose 35 dB. The RETURN RATE determines the speed with which low level signals are expanded. In combination these two controls permit tailoring the FM SOUND BRITENER operation for the exact sound required for the individual station's programming.

Three modes of operation are switch selectable. NORMAL operation with complete gated compression/limiting/expansion; LIMIT only in which the unit functions as a peak limiter with equalized response; and TEST in which the unit functions only as an amplifier.

Additionally, the CLE-FM permits the user to select different pre-emphasis time constants. Units are equipped for 75/25 microsecond (U.S. standard) or 50/25 microsecond (European standard) as well as flat response. The equalization switching, as well as the other three modes of operation are remote controllable.

The FM SOUND BRITENER comes equipped for operation with the DOLBY B FM encoder. With the 25 microsecond equalization the CLE-FM may be used ahead of the DOLBY B encoder to provide compression. In the LIMIT ONLY mode, the CLE-FM may be used as a peak limiter between the DOLBY B and the transmitter. This is particularly recommended if the DOLBY encoder is operated at the studios to feed the remote transmitter. Alternately the CLE-FM may be placed in the TEST mode as a straight line amplifier when DOLBY encoding is employed. When the encoder is not in use, the CLE-FM is operated in the NORMAL mode to provide level control for the transmitter. Remote control is possible to allow simple switching of the FM SOUND BRITENER. No level changes are required when switching the CLE-FM from one operating mode to another.

SPECIFICATIONS

Input: 600 ohms, transformer balanced

Input Sensitivity:
Maximum: +26 dBm for +20 dBm output
Minimum:
−20 dBm for +20 dBm output
−20 dBm input yields +20 dBm output with 0 compression/expansion

Maximum Overall Gain: 64 dB (full expansion)

Output: 600 ohms, transformer balanced

Output Level: Maximum +22 dBm

Maximum Expansion: 20 dB

Maximum Compression: 30 dB before clipping

Average/Peak Ratio:
Adjustable from minimum 35 dB to maximum 1 dB

Frequency Response: ±0.5 dB, 20 Hz to 20 KHz

Equalization:
Test and Limit Only: Flat
Normal:
75 microsecond, 25 microsecond, or flat; optional
50 microsecond, 25 microsecond, or flat

Expansion (Return) Rate:
Adjustable from 20 seconds to 5 seconds for 20 dB expansion

Distortion:
Less than 0.5% total harmonic before clipping

Noise:
Minimum 70 dB below +8 dBm output with −10 dBm input

Controls:
Average/Peak Ratio: Dynamic control
Expansion (Return) Rate: Variable gain increase rate
Mode:
Select NORMAL (full gated compress/limit/expand), LIMIT ONLY, or TEST (amplify only) operation
Equalization:
Select flat or desired pre-emphasis/de-emphasis curve. Switching may be remote controlled
Input Level:
Separate controls for left and right channels
Output Level:
Separate controls for left and right channels
Power On/Off

Indicators:
Relative Gain:
Meter indicates expansion, compression, or amplification only
Output Level:
Separate meters indicate left and right channel output level
Audio:
Indicates presence of audio input above the threshold of the gating circuit
Power

Mounting: Standard EIA 19" rack

Dimensions: 19" W x 5¼" H x 10" D

MODEL TT-22

Equalized Turntable Preamplifier

- STEREO OR MONO
- MODULAR DESIGNED; SELF-CONTAINED POWER SUPPLY
- TABLE TOP OR MOUNTABLE IN TURNTABLE CABINET
- READILY ACCESSIBLE FRONT PANEL CONTROLS
- CAST ALUMINUM PANEL; RFI SHIELDED

The *Spotmaster* all solid state, modular designed stereo equalized turntable preamplifier is completely self-contained. The unit may be used for table-top operation, or mounted in a turntable cabinet. Readily accessible front panel controls include left/right level control, switchable rumble and scratch filters, stereo/mono selector, power switch with indicator.

SPECIFICATIONS

Output Level:	Switchable -10, 0, +8 dBm (rear panel).
Output Impedance:	Nominal 600 ohm. Optionally supplied with 150/600 ohm transformer.
Signal-to-Noise:	Better than -60 dB @ +8 dBm output.
Frequency Response:	± 2 db 30-15K Hz (RIAA) NAB.
Distortion:	Less than 0.5% @ +8 dBm.
Channel Separation:	Better than 50 dB.
Output Terminals:	Barrier terminal strips (rear panel).
Input Level:	Selectable for 5 or 10 mv sensitivity.
Input Impedance:	47K.
Input Terminals:	Standard phono jacks (rear panel).
Power Supply:	Self-contained, regulated; 70 to 135 VAC, 50/60 Hz.
Size:	2½" H x 5½" W x 8" D.
Headphone Jack:	Available at rear panel
Rumble and Scratch:	Switchable (front panel) (can be remoted).

SUGGESTED PRICING		
TT-22-ST	Stereo Preamp with transformer output	$225.00
TT-22-S	Stereo Preamp, less transformer output	$187.50
TT-22-MT	Mono Preamp with transformer output	$140.00
TT-22-M	Mono Preamp less transformer	$121.50
Transformer		$ 19.00

FEATURES

- **Ten Mixing Channels**
- **Twenty Stereo Inputs**
- **Ladder Step Attenuators**
- **Modular Plug-In Electronics**
- **Contact-Free Bus Selection**

- **Telephone-Type Channel Key Switches**
- **Talk-Back Capability**
- **Four Line-Level Outputs**
- **Mono Mix-Down Option**
- **Durable Front Panel Graphics**

GENERAL DESCRIPTION

TEN MIXER STEREO CONSOLE — The Broadcast Electronics' Model 10S250 stereo console accommodates twenty inputs into ten mixing channels. The console features 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.

ELEGANT STYLING, DURABLE GRAPHICS — The front panel of the 10S250 console features crisp, clean graphics under a laminated polycarbonate overlay. This tough protective surface makes it virtually impossible to scratch or to wear the lettering away. The front panel will 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 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 — 600-ohm balanced audition channels are equal in performance to the program channels.

TALK-BACK CAPABILITY — The 10S250 console provides a push-button selectable talk-back capability for two studios and one non-muted location such as a station lobby.

STEREO MONITOR AND HEADPHONE AMPLIFIERS — High-quality control room and studio stereo monitoring of program, audition, or an external input is afforded by two 8-watt monitor amplifier modules. Headphone monitoring 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. A front panel jack is provided for monitoring purposes.
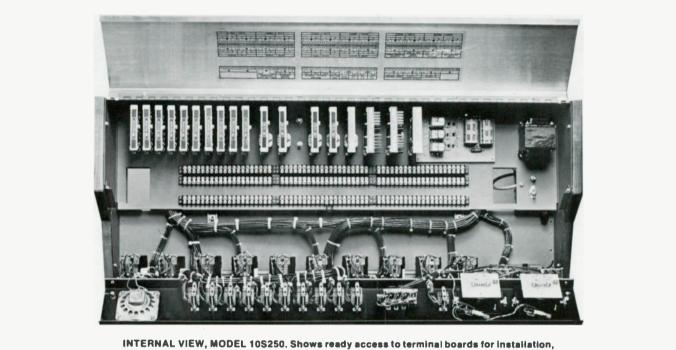
PREFADER PREVIEW, ALL INPUTS — A built-in cue amplifier-speaker system is fed from a summed L + R cue bus. Bus signals are applied by cue switches on each mixer control, actuated in the detented closed-fader position.

NO EXPOSED EXTERNAL CABLING — With labeled, screw-type barrier strips and adjacent cable access openings, the Series 250 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 contact-free FET switching, with no mechanical closures in the 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.

INTERNAL VIEW, MODEL 10S250. 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
10S250	938-1040	10 Mixer Deluxe Stereophonic Console, Step Type Attenuators, supplied with three muting relays. Includes preamp (stereo) for each mixer; four line amps, two monitor amps, and one cue/headphone amp
	838-0200	Additional Cost for 230 Vac/50 Hz Power Source

SPECIFICATIONS

PROGRAM AND AUDITION CHANNELS

Stereo Inputs:
20 into 10 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, −1 dB, 30 Hz - 20 kHz.

Distortion:
0.05% 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 L & R):
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 8 watts rms into 8 ohm load.

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

STEREO HEADPHONE AMPLIFIERS:
1.0 watt rms per channel into front panel phone jack. Program, audition and cue pushbutton input select.

VU METERS:
Two meters: L & R switchable to Audition and Program.

CUE AMPLIFIER:
1.0 watt rms into built-in 8 ohm speaker. Input is summed L + R signal. Functions as intercom amplifier.

MUTING:
Three muting relays standard. Mutes monitor and cue speakers when Mixer No. 1, 2 or 3 activated. 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:
39"W, 15.75"D, 8.25"H (88.9 × 40 × 20.9 cm)

WEIGHT (PACKED):
69 lbs. (31.3 kg.)

DV-2

DIGITAL VOICE RECORDER/REPRODUCER

BROADCAST ELECTRONICS INC.

BE® DV-2 *Digitalk*

FEATURES

- **Completely solid state - no moving parts**
- **Over six minutes of available recording time**
- **Extended 20 to 6500 Hz frequency response**
- **Multiple message recording capability**
- **Informative Time/Selection display**
- **Choice of message repeat or sequential play**
- **Random Message Access capability**
- **Internal battery backup (batteries not included)**

- **Instant advance to next message for auditioning or editing**
- **Record audio input indicator**
- **EOM (End Of Message) signaling**
- **Full featured remote control capability**
- **Balanced audio inputs and outputs with XLR connectors**
- **Dynafex® Noise Reduction System**
- **Selectable AGC for wide range of input levels**

The DV-2 "Digitalk" from Broadcast Electronics is the first unit of its kind to offer digital voice recording and reproduction capability in a broadcast quality design.

The reliability of the DV-2 is nothing short of phenomenal. Unlike cart machines, there are no moving parts in the DV-2. All recordings are stored digitally in random access memory. The large memory capacity of the DV-2 allows up to six minutes and twenty-nine seconds of total recording time. One long messsage or several short messages can be stored and accessed at will.

Multiple Message Recording: Up to ninety-nine individual messages can be recorded within the six minute and twenty-nine second memory capacity of the DV-2. All stored messages can be re-played sequentially or individually by pressing the front panel STOP button until the desired message number appears in the Time/Selection display. Outdated messages can be selectively replaced with new messages at any time. The DV-2 also features a battery backup system (batteries not included) to maintain message memory in the event of a momentary (up to 10 minute) power failure. A larger battery backup system may be utilized through connections provided on the DV-2's rear panel barrier strip.

Instant Random Access: With the addition of a simple interface (or by means of computer control), any DV-2 message can be played in any desired order. For example, a program automation system could utilize this capability for random access of jingles, ID's, or commercials. A broadcast station employing a satellite programming service could also use this random access function to play ID's or "liners" whenever a control signal is received on the satellite downlink. With the appropriate computer control and software, the DV-2 could even be used in sophisticated "message assembly" applications such as time and temperature announcements.

Time/Selection Display: This easy to read LED display clearly indicates the selection status and available memory of the DV-2. If the DV-2 is in the Record or Start modes, the selection number of the current message is shown. If the DV-2 is in the Stop mode, the selection index number of the next available

message is indicated. While in the Stop mode, the operator can also check the amount of memory remaining by simply pressing the switch marked "REM TIME". The amount of free memory is then displayed in minutes and seconds.

Advanced Technology: The DV-2 utilizes 256K dynamic RAM chips as the foundation of its versatile digital memory. The latest data compaction techniques are used to make the most efficient use of the available storage. In addition, the playback audio is processed through the innovative Dynafex® noise reduction system to enhance the broadcast quality of the output signal.
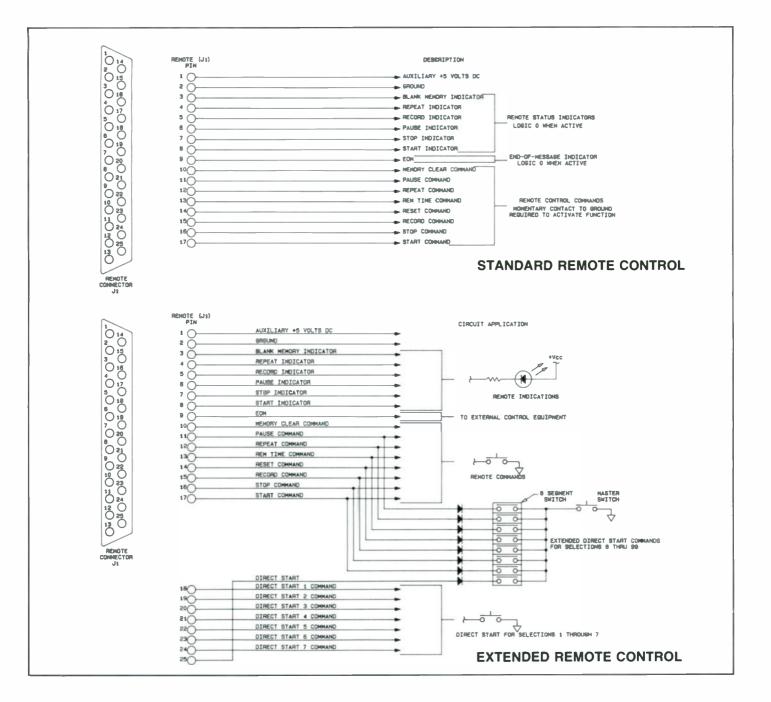
Dual Input Level: The DV-2 can accommodate virtually any source with its switchable microphone or line level input. By selecting the microphone input, the operator can record directly onto the DV-2. With the line level input selected, messages can be recorded and edited on other equipment (such as a tape recorder/player) and loaded into the DV-2's memory. A front panel indicator flashes during recording to indicate the presence of audio at the input. The AGC can also be switched in or out as needed to accommodate varying input levels.

Headphone Output: For quick monitoring checks, the DV-2 features a front panel headphone output jack with level control.

Pause: In the DV-2 the pause control is front panel mounted. It permits the operator to stop at any point during record or playback and re-start instantaneously.

EOM Output: The EOM (End Of Message) output is provided for signaling to outside devices such as automation controllers, computerized systems or even another DV-2. This unique feature allows the DV-2 to emit a signal when a message playback cycle has been completed. The DV-2 generates the EOM signal at the end of each message. The EOM signal will also be generated if the DV-2 is manually stopped while playing a message.

Input AGC: The DV-2's automatic gain control makes recording easy by ensuring a proper input level regardless of variations over the usable range.
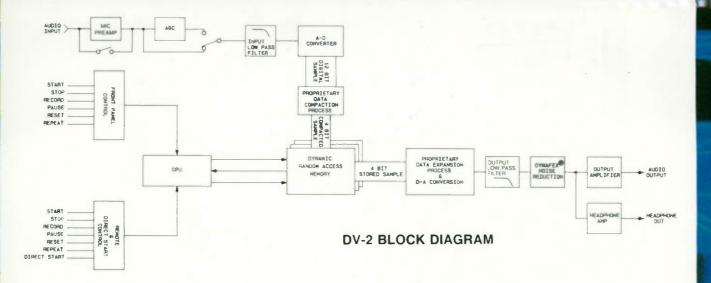
STANDARD REMOTE CONTROL

REMOTE (J1) PIN	DESCRIPTION	
1	AUXILIARY +5 VOLTS DC	
2	GROUND	
3	BLANK MEMORY INDICATOR	
4	REPEAT INDICATOR	
5	RECORD INDICATOR	REMOTE STATUS INDICATORS
6	PAUSE INDICATOR	LOGIC 0 WHEN ACTIVE
7	STOP INDICATOR	
8	START INDICATOR	
9	EOM	END-OF-MESSAGE INDICATOR LOGIC 0 WHEN ACTIVE
10	MEMORY CLEAR COMMAND	
11	PAUSE COMMAND	
12	REPEAT COMMAND	
13	REM TIME COMMAND	REMOTE CONTROL COMMANDS MOMENTARY CONTACT TO GROUND REQUIRED TO ACTIVATE FUNCTION
14	RESET COMMAND	
15	RECORD COMMAND	
16	STOP COMMAND	
17	START COMMAND	

EXTENDED REMOTE CONTROL

APPLICATIONS

The applications for the Broadcast Electronics DV-2 "Digitalk" are limited only by your imagination! Here are just a few . . .

- Capture and Time Shifting of Network Audio Feeds
- Call-In Information Services (Concerts, sports, etc.)
- Company/Employee Information Services
- Cable Systems—Announcements & Schedules
- Park Information
- Weather Information
- Production Sound Effects
- Call-In Stock/Investment Information

- Airports—Announcements & Information
- Theme Parks—Exhibits and Animation Audio
- Airlines—Flight & Weather Announcements
- Time and Temperature Information
- Call-in Medical Information
- Road Information
- Simulator Sound Effects

DV-2 BLOCK DIAGRAM

SPECIFICATIONS

Playback Time:
Six minutes and twenty-nine seconds

***Frequency Response:**
20 to 6500 Hz, +1/−4 dB
using pink noise

***Distortion:**
Less than 1.5% at 400 Hz, +8 dBm output
level into 600 ohms resistive load, record
to playback

Signal to Noise Ratio:
56 dB below +8 dBm into 600 ohms

Audio Input:
Mic level −55 to −25 dBv with AGC
Line level −15 to +20 dBv with AGC
−0 to +20 dBv without AGC

Input Impedance:
Balanced 20K ohm bridging. Adaptable to
other input impedance requirements.

Input Connectors:
Standard three-pin XLR

Output Connectors:
Standard three-pin XLR

Audio Output Level:
+8 dBm nominal into 600 ohms. Maximum
output +18 dBm (50 Hz to 6500 Hz)

Power Requirements:
117 VAC or 230 VAC, 50 or 60 Hz

Internal Battery Backup:
(Batteries not included)
6 "D" cells will provide approximately
10 minutes of memory retention.

Operating Temperature:
0 to 55 degrees Centigrade

Storage Temperature
−65 to +55 degrees Centigrade

Relative Humidity:
Up to 95%, non-condensing

Dimensions:
19" standard rack width
3.5 inches high
18.75 inches deep

Remote Control:
All front panel functions fully
remote controllable

Mounting:
Fits in a standard 19" EIA rack

Weight:
16 lbs. 5 oz. (unpacked)

* The proprietary data compaction process used in the DV-2 is optimized for complex, dynamic program material.
Distortion and frequency response measurements taken using traditional single-frequency sine wave tones are not
representative of the overall performance of the DV-2.

ORDERING INFORMATION

Model	Stock No.	Description
DV-2	900-1000	Solid state digital rec/play

RP 2.5K 287

MODEL 5M11 MONO

- ● FET SWITCHING
- ● SOLID-STATE PLUG-IN CIRCUITRY
- ● LO/HI LEVEL PREAMP IN EACH CHANNEL
- ● INTERNAL POWER SUPPLY
- ● THREE MUTING RELAYS

5 Channel Audio Console

Spotmaster is introducing a quality audio console for the budget conscious operator. The Model 5M11 has provisions for eleven low or high level inputs into five mixers with preamplifiers in each channel. Daven (or equiv.) ladder attenuators are provided. Identical program and audition output channels provide dual console capability in a 5-channel console. Electronic switching (FET) of input channels to program and audition buses is a design standard. All active circuitry is on plug-in boards, terminating on a master board to which all input and output connections are made.

SPECIFICATIONS

Input:
　Low level (mic)
　　−60 dBm into 150 ohm (nom.) balanced.
　High level
　　−20 dBm into 600 ohm (nom.) balanced.
　Switching
　　11 inputs into 5 fades - Ch. 1 - 4 each have 2 inputs.
　　Ch. 5 has 1 direct input and 2 remote.

Output:
　Program
　　+8 dBm into 600 ohm (nom.) balanced. Clipping level in excess of +18 dBm.
　Audition
　　+8 dBm, etc.
　Monitor
　　10 watts into 8 ohms, unbalanced.
　Cue
　　0.5 watts into 30 ohms, unbalanced, internal speaker provided.
　Headphone
　　8 ohms (nom.).

Frequency Response:
　Program & Audition
　　±1.5 db, 20 Hz to 20 kHz.
　Monitor
　　±2 db, 50 Hz to 20 kHz.

Distortion:
　Program & Audition
　　0.5% or less @ +8 dBm output. Clipping level over +18 dBm.
　Monitor
　　1% or less at rated output.

Signal-to-Noise:
　65 db below +8 dBm output, referenced to −50 dBm input.

Muting:
　Monitor
　　Channels 1, 2 and 3; separate outputs.
　Cue
　　Channel 1, both internal and external speakers.

Finish:
　Spotmaster blue, matte black, and wood grain side panels.

Power:
　115/230 VAC, 50/60 Hz., 60 watts.

Dimensions:
　25½" long x 14" high x 14" wide.

MODEL 5S11 STEREO

5 Channel Audio Console

- FET SWITCHING

- MONO MIXDOWN OUTPUT

- ACCEPTS 11 STEREO INPUTS

- INDIVIDUAL PROGRAM, AUDITION, MONITOR, MIXDOWN, CUE AND HEADPHONE AMPLIFIERS PROVIDED

- SELF-CONTAINED POWER SUPPLY

The *Spotmaster* Model 5S11 Stereo Audio Console is a full-stereo 5-mixer control console. All input channels are provided with preamplifiers adaptable to either low or high level inputs. Solid-state (FET) electronic switching is utilized in switching of input channels to program and audition buses. High quality ladder attenuators (Daven or equiv.) are provided on all input channels. Special stereo amplifier is included for headphone monitoring.

SPECIFICATIONS

Input:
Low level (mic.)
−60 dBm into 150 ohm (nom.) balanced.
High level
−20 dBm into 600 ohm (nom.) balanced.
Switching
11 inputs into 5 mixers. Ch. 1 - 4 have (2) stereo inputs, Ch. 5 has 3.

Output:
Program
+8 dBm into 600 ohms, balanced. Clipping level in excess of +18 dBm.
Audition
+8 dBm into 600 ohms, balanced. Clipping level in excess of +18 dBm.
Monitor
10 watts into 8 ohms, unbalanced.
Cue
0.5 watts into 30 ohms, unbalanced; internal speaker provided.
Headphone
8 ohms, switchable to Program, Audition or Cue.

Frequency Response:
Program & Audition
±1.5 db, 20 Hz to 20 kHz.

Monitor
±2 db, 50 Hz to 20 kHz.

Distortion:
Program & Audition
0.5% or less @ +8 dBm output.
Monitor
1% or less @ rated output.

Signal-to-Noise:
65 db below +8 dBm output referenced to −50 dBm input.

Muting:
Monitor
Channels 1, 2 and 3; separate outputs.
Cue
Channel 1, both internal and external speakers.

Finish:
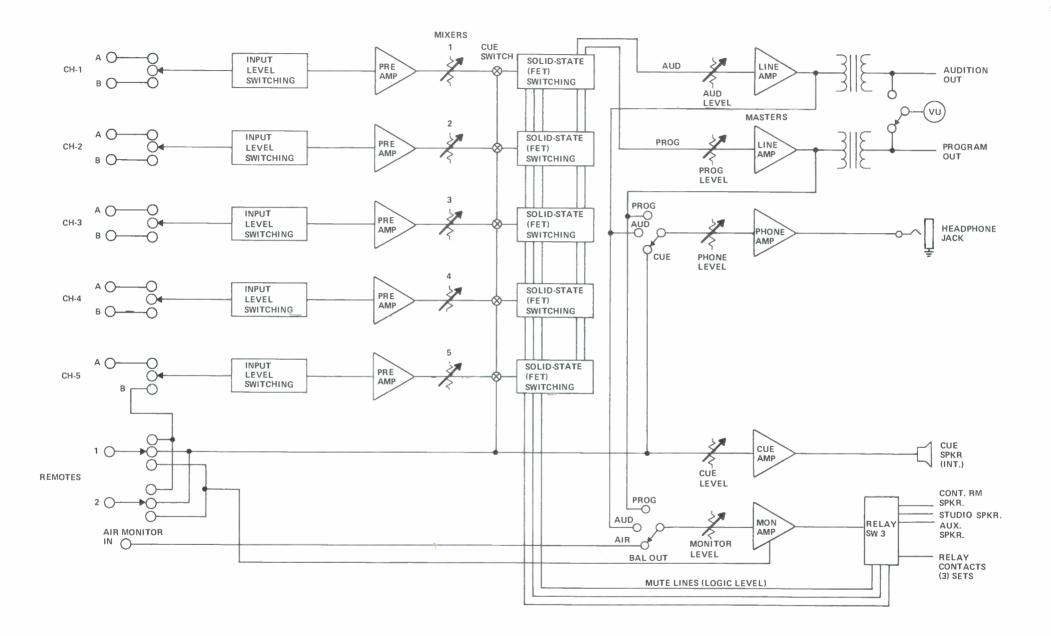*Spotmaster* blue, matte black and wood grain side panels.

Power:
115/230 VAC, 50/60 Hz, 90 watts.

Dimensions:
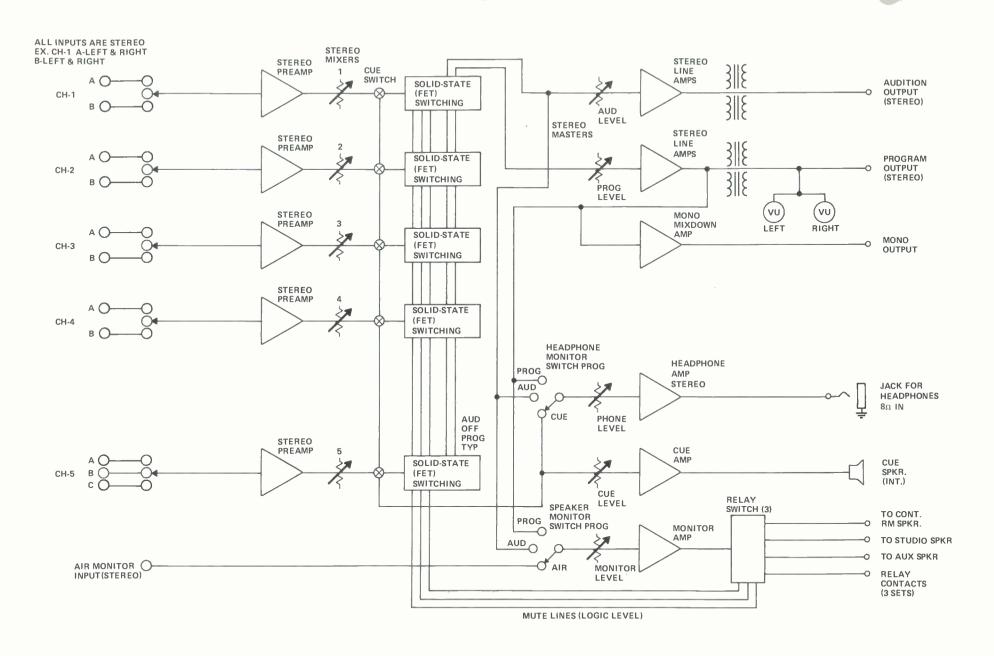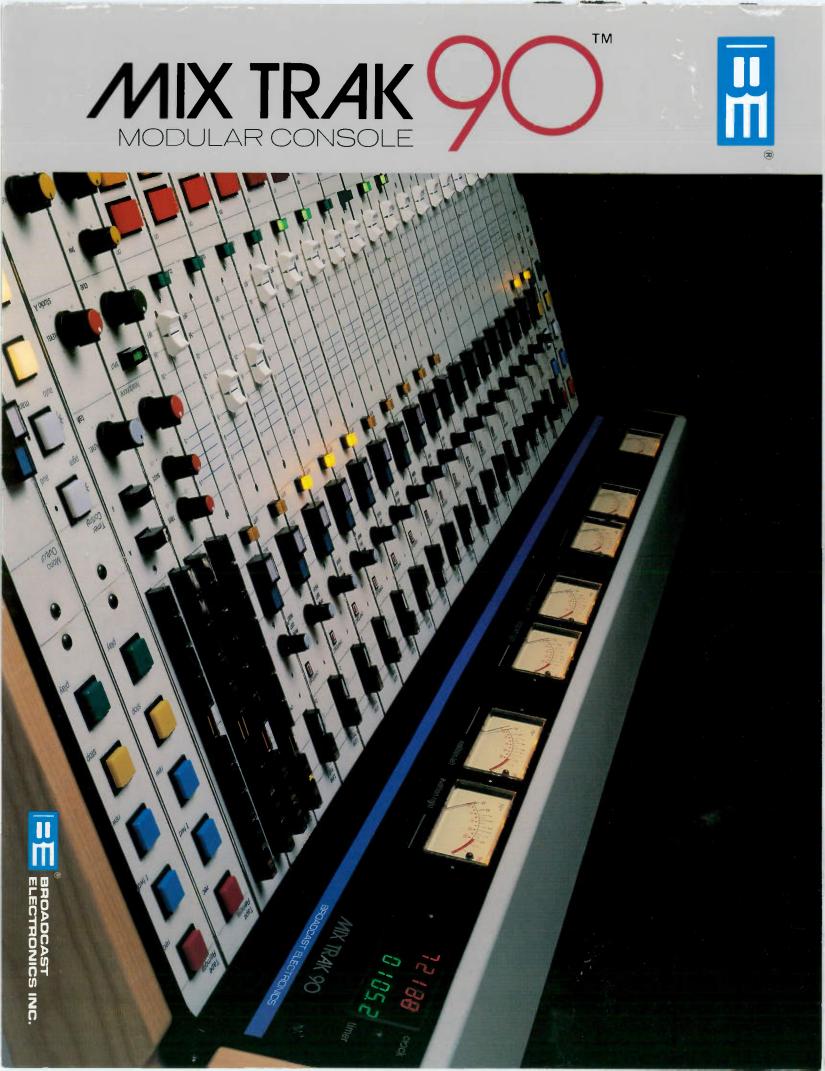25½" long x 14" high x 14" wide.

BROADCAST ELECTRONICS, INC.
— A FILMWAYS COMPANY —

5-CHANNEL MONO AUDIO CONSOLE   Model 5M11

5-CHANNEL STEREO AUDIO CONSOLE   Model 5S11

MIX TRAK 90™
MODULAR CONSOLE

The Mix Trak 90 from Broadcast Electronics, manufacturers of studio equipment for more than 30 years, was designed *for* radio by people who *know* radio. This modular console provides the versatility and flexibility to grow with a station's operation.

The MT-90, available in a 12, 18 or 21 channel mainframe, is designed for smooth and efficient use. With over 17 Input and Auxiliary modules to choose from, you can custom build the console with the exact type and number of modules required to meet your specific needs.

Ease of Operation

The entire console has been designed for efficient broadcast operation. The board is attractively laid out with easy to reach controls. All modules are 2″ wide providing a cleaner, less cluttered console with all controls easily reached by the operator. This, and the input and output selectors mounted at the rear of the module will result in fewer on-air mistakes.

Functional Layout

Controls used regularly by the operator are located at the bottom of the module while input and output selectors are near the top for easy viewing. Back-lit and flag type switches make it easy to determine module status.

But don't let the simple, uncluttered design fool you. The Mix Trak 90 is a highly engineered unit packed with features not available in other consoles.

Features

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

The clean, uncluttered appearance of the Mix Trak 90 enhances your studio operation.

VCA Audio Control

While most competitive consoles use VCA's (Voltage Controlled Amplifiers) for just audio mixing, B/E includes VCA's on all audio controls including the monitor and headphone gains. This extends the life of these heavily used controls and reduces maintenance time on the board. Extensive noise filtering is used around the VCA's so the controls remain fully functional even if they become worn and scratchy.

Using VCA's in the mixing channels allows additional remote control functions. By designating one Microphone Input Module as the master, you can connect other mic pots by using the voltage control output on the master fader. Up to 4 mic channels can be dedicated to a single fader.

Automatic Source Sequencing

One of the most unique and advanced features is a source sequencing capability. The operator is able to preprogram commercial or music blocks allowing more time to prepare for a live program or to do production work.

The operator "arms" the various source input modules whether it's a cart machine, reel to reel, a compact disc player or a solid state device. To start the sequence, the operator presses the "on" switch of the first module in the sequence. The EOM of each source triggers the next event. The console will sequence left to right, automatically skip over any sources not armed or ready to go and wrap around to start again.

Independent Metering

The meter bridge on the Mix Trak 90 console features four, 3½" wide, standard VU meters on the 12 channel and six on the 18 and 21 channel mainframe. In the 18 channel and larger mainframe each of these meters is independent, including the program and audition meters. You can monitor and control several functions at one time, while still monitoring the main program output.

Push-button switches on the meter bridge allow you to select the input to the utility meters, including on-air, auxiliary, audition or headphone. All meters include an LED overload indicator.

All Electronically Balanced

All inputs and outputs, including patch points, are fully balanced to eliminate problems of distortion and noise caused by transformers. Transformerless input and output amplifiers improve your audio signal with less phase shift, lower distortion and a wider frequency response. The output busses also are fully floating allowing you to ground either side without losing output level.

Separate Speech and Music Program Busses

By separating the speech and music program busses, you are able to process your mic and other program material separately to tailor your station's sound to your listeners. This feature allows for individual equalization or processing of mic and music busses.

Three Auxiliary Busses

If you have regular on-air call-in shows, the Mix Trak 90 features three auxiliary busses that can be configured for mix-minus.
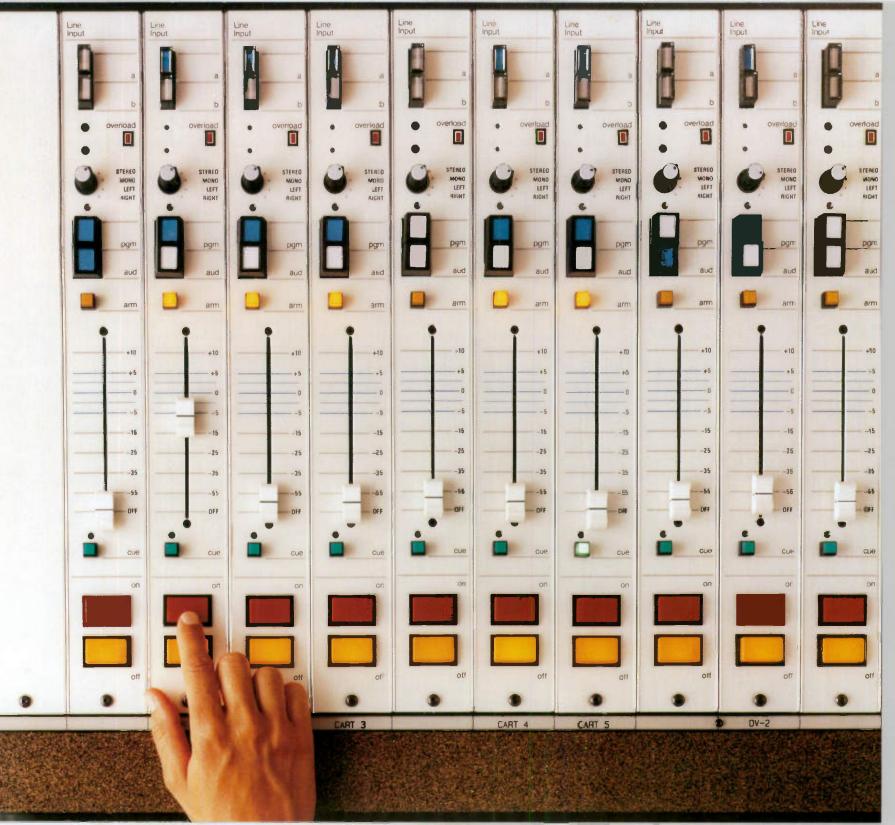
The engineer assigns these auxiliary busses on each module using internal programmable jumpers. Placing these controls inside the console eliminates possible operator error in setting up a mix-minus for a call-in show by making it all automatic.

Versatile Talkback System

This system is ideal for stations with two separate studios. The program microphones located in these studios can double as a talkback to the main control room.

Monitor "Dim" Function

This feature allows the operator to easily listen to the cue audio without having to lower the volume of the control room monitor. The monitor has two preset levels - normal and a dim level. Whenever a module is placed in cue the monitor automatically dims. The amount of level reduction is adjustable.

Automatic Source Sequencing allows your operator to preprogram an entire music or commercial block.

Input Modules

All of the necessary features and controls needed for smooth, efficient broadcast operations are incorporated in the design of the Mix Trak 90. The front panel of each module remains uncluttered for ease of operation.

The front panel controls for Line and Mic Input Modules share some of the same control features, including:

- Dual Inputs per module with break before make switching.

- Input Overload Indicators to warn the operator if the input level is approaching clipping.

- Buss Assignment Switches to select the program or audition mode. All other busses are assigned by the engineer with programmable jumpers on the PC board. This facilitates mistake free operation of the console.

- Penny & Giles 3000 Series™ Vertical Faders with VCA's for smooth, precision, quiet adjustments of the audio level. Each fader is equipped with a detent "drop cue" and over 4" of throw, allowing for smooth, repeatable operation. The "cue" position on the fader control can be used to enable an optional "Fader Start" mode, which activates the module when the fader is taken out of "cue".

- Silent Hall Effect On/Off Switches.

- Flexible ribbon extender cables are provided for all plug-in modules and boards to facilitate maintenance.

Mic Input Module Controls

- Switchable Pan Pot for positioning the microphone output between the left and right channels.

- A call status indicator alerts the board operator if the studio "Talk" switch is pressed.

- Front panel gain trim.

Line Input Module Controls

- Input Mode Selector with four input positions to handle virtually any program source. Allows for operation with Stereo or Mono Sources, Left or Right Only Inputs.

- "Arm" Switch for selecting a program source to be included in a commercial or music sequence block.

- Cue Status Indicator.

- Individual left and right gain balance controls.

Input Module Boards

The sophisticated design of the Mix Trak 90 is demonstrated by the PC boards of the various input modules. Each board features:

- Insulation Displacement Connectors so replacement of switches, pots or transformers can be easily accomplished.

- Programmable Jumpers with gold-to-gold connections to facilitate buss selection, input level ranges and cue logic functions.

- All circuit boards are solder masked and silk screened.

- Voltage Control Amplifiers on all audio controls.

- Modules can be removed or inserted while the power is "on" without damaging the module or the mainframe.

- Four-sided, gas tight, gold connectors are used to assure firm and positive contact between the modules and the motherboard.
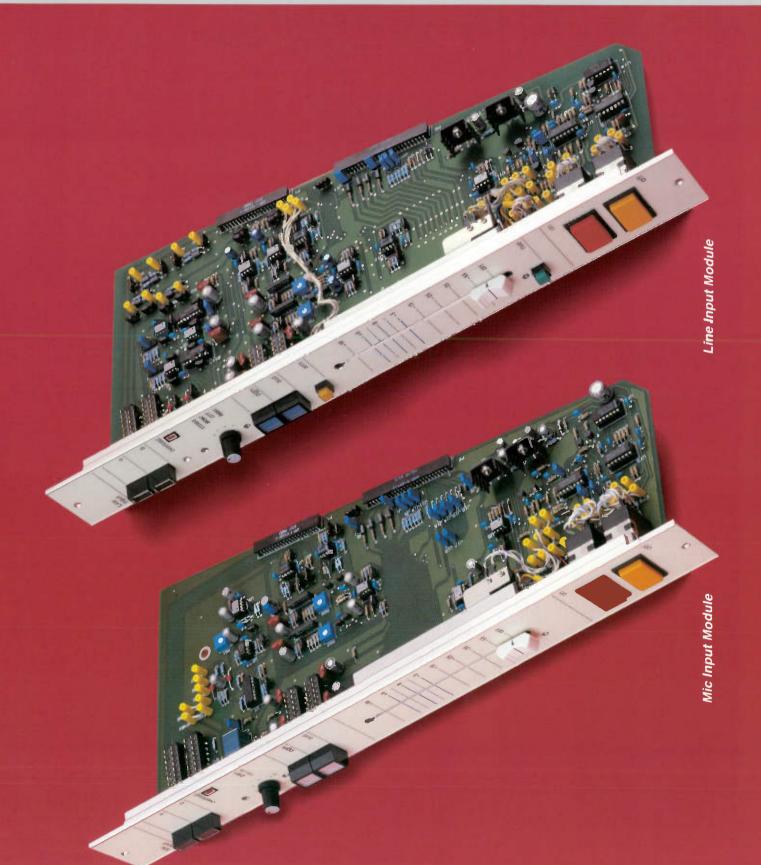
Input Module Options

The Mic Input Transformer Option, which features Jensen® transformers, is required whenever phantom-powered mics are used.

A Remote Control Card for either the Mic or Line Input module allows on-air talent to remotely turn the module "on" or "off".

Source Remote Control Cards are used with the Line Input modules to activate the Source Sequencing feature and for starting source equipment from the console.

Each Mic and Line Input Module features Penny & Giles Vertical Faders with total VCA Audio Control and silent Hall Effect switches.

Line Input Module

Mic Input Module

Control Room Monitor

This module, standard with the console, allows the operator to monitor different sources through the headphones and the control room speakers. Other consoles tie their headphone and control room monitors together.

Two banks of color-coded ten position switches are provided to select the input source to be monitored. The volume controls for the headphones and the speakers are color-coded to match the switches.

Since most Jock's prefer to run their show with headphones, a "split cue" function is provided. When cuing a program source with "split cue" selected, the stereo audio is combined and fed into the left earphone while the cue audio is fed into the right earphone. A cue level control is provided.

Studio Monitor

The operator is able to send internal program audio from console busses or external inputs to your remote studios, selecting the audio source from two rows of 10 interlocking switches, one for Studio A and the other for Studio B. Level Controls are color-coded for both studios. This module also controls the Talkback System.

Input Expander Module

Input expander modules are available if your station operation requires additional input capacity. These half-height modules allow you to assign up to eight seldom-used sources, such as remote, EBS or Network, into a single Line Input module.

Mono Output Module

Mono Output Modules are available for most consoles. But what happens if the mono signal going to the AM transmitter is not in phase? The operator may be listening to the monitor system in stereo and would not be aware of the problem.

The Mono Output Module has a built-in phase detector. If an out-of-phase condition occurs a red LED indicator lights up. A phase reversal switch on the module, when pushed, corrects your mono signal. This module analyzes inconsistent phasing problems in stereo source material. The operator can listen to both "in phase" and "out of phase" information.

Remote Switching Modules

Half-height modules are available for reel-to-reel and cart machine sources. Five color-coded push-button switches on these modules control the record, playback and other functions of these machines. These modules provide direct access to the machines from the console, providing expanded control for the on-air operator.

FSK Decoder Module

This module accepts a stream of NAB standard FSK data from any line input module and decodes the data. The output on this module can drive a serial printer or a video display. Automatic FSK data input selection is provided by a Source Remote Control Card option.

Timer Control Module

A separate module expands the capability of your clock/timer by providing both an automatic and a manual timer. These timers share the same display with an auto/manual selector switch. The automatic timer, assigned to a program or audition buss, will start, stop and reset after each source.

When the manual timer is running, it displays minutes and seconds. When you stop it, tenths of a second are displayed. Each timer continues to operate regardless of how the other is being used.

Clock/Timer

The clock displays hours, minutes and seconds and can be synchronized to the network audio. It automatically corrects itself every hour when it detects audio activity.

An easy to read "count up" timer automatically resets every time a source, assigned to the same buss, is started. The timer can be controlled manually using the Timer Control Module.

Clock/Timer

The Mix Trak 90 offers more than 17 auxiliary modules from which to custom build your console.

Control Room Monitor

Studio Monitor

Mono Output

Cart Remote

Timer Control

Input Expander

Tape Remote

FSK Decoder

Stereo/Mono Line Output Cards

Additional outputs can be added with stereo line output cards used for either stereo or mono outputs.

Studio Remote Panel

This panel provides studio personnel with microphone on/off switches, a cough button, a talkback feature to the control room and a monitor level control. It can be mounted in a remote studio, giving you or the host more flexibility and control from the studio.

Meter Options

Peak Program Meters (PPM) and LED meters are available to replace the standard "VU" meters.

Power Supply

The power supply for the consoles is remotely located in a 19" rack mountable unit. It also provides phantom power for use with condensor mics.

An optional Automatic Switcher Panel assures uninterrupted operations. If one power supply fails, the load is automatically transferred to the other.

Cue/Headphone Amplifier Card

This amplifier card is standard with the console mainframe. It provides the audio power to the on-board cue speaker and/or headphones.

Relay On-Air Warning Light

Mounted externally to control the studio warning lights.

Installation Convenience

The Mix Trak 90 also was designed with the station engineer in mind. All installation wiring can be done on a bench. Input and output connections are made using positive locking, AMP "MR" series connectors with pre-wired female plugs available to facilitate installation.
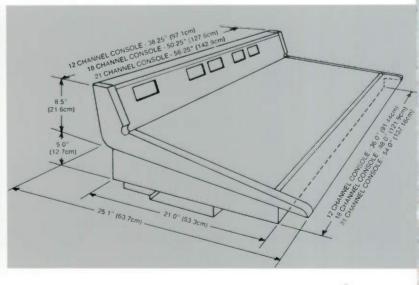
A fold down door, located on the bottom of the console, is clearly labeled with all the information you need to wire the board. Identification numbers have been screened adjacent to each connector on the bottom panel of the console.

A comprehensive installation kit is supplied with your console. This kit includes all mating connectors, a connector tool and a professionally detailed installation manual.

Stereo Line Output Card

Studio Remote Panel

Overall Console Specifications*

(Mic or Line input to Program or Audition output)

Input Headroom: Better than 25 dB above nominal.

Total Harmonic Distortion: Less than .05%, 20 Hz to 20 kHz. Nominal input and output levels.

SMPTE Intermodulation Distortion: Less than 0.05%, 60 Hz to 7kHz, 4:1 amplitude ratio. Nominal input and output levels.

Crosstalk: (Program to Audition, Audition to Program. Aux bus 1, 2 or 3 into Program, Aux bus 1, 2 or 3 into Audition.) Better than 80 dB from 20 Hz to 20 kHz, any input module position to selected output. Measured below 0 dBu nominal output.

Separation: (Program left into Program right, Program right into Program left. Audition left into Audition right, Audition right into Audition left.) Better than 70 dB from 20 Hz to 20 kHz, any input module position. Measured below 0 dBu nominal output.

Stereo Gain Matching: Within 0.5 dB, any fader position.

Frequency Response: +0 dB, −0.25 dB 20 Hz to 20 kHz, 1 kHz reference.

Gain in Hand: At least 10 dB.

Nominal Output Level: 0 dBu to +8 dBu adjustable.

Output Impedance: Less than 100 ohms balanced and floating. 50 ohms single ended.

Maximum Output Level:
+28 dBu into high impedance load.
+26 dBu, + 26 dBm into 600 ohm load.
+20 dBu, +28 dBm into 150 ohm load.

Signal to Noise: Better than 90 dB below 0 dBu output level, all input modules installed and off.

Load Impedance: 150 ohms minimum.

Patch Points: (each module)
Output Level: −5 dBu nominal
Maximum Output Level: +24 dBu unloaded,
+18 dBu loaded
Output Impedance: 600 ohms balanced,
300 ohms single ended
Maximum Input Level: +24 dBu
Input Impedance: 20,000 ohms minimum
Gain: 0 dB

Power Requirements: 115/230 Vac, 50/60 Hz, 400 watts maximum.

Dimensions:

(12 channel) Width: 25″
Length: 38¼″
Depth Below Table: 5″
Height Above Table: 8½″

(18 channel) Width: 25″
Length: 50¼″
Depth Below Table: 5″
Height Above Table: 8½″

(21 channel) Width: 23″
Length: 56¼″
Depth Below Table: 5″
Height Above Table: 8½″

Microphone Input Module Specifications

Vernier Gain Range: ±10 dB, single front panel control for both channels.

Nominal Input Levels: −60 to −30 dBu.

Equivalent Input Noise: −128 dBu with 150 ohm source. 20 Hz to 20 kHz bandwidth, unweighted.

Input Impedance: Greater than 1500 ohms.

Line Input Module Specifications

Vernier Gain Range: ±5 dB from nominal, individual control for each channel.

Nominal Input Levels: −10, −5, 0, +4, +8 dBu.

Signal to Noise: Better than 85 dB below nominal input level, 20 Hz to 20 kHz bandwidth with 600 ohm source impedance, unweighted.

Input Impedance: Greater than 10,000 ohms (electronically balanced bridging).

Ordering Information

MT90-12	901-9012-001	12 input mixer mainframe with 4 VU meters (2 program & 2 utility) and 8 accessory module slots.
MT90-18	901-9018-001	18 input mixer mainframe with 6 VU meters (2 program, 2 utility & 2 audition) and 8 accessory module slots.
MT90-21	901-9021-001	21 input mixer mainframe with 6 VU meters (2 program, 2 utility & 2 audition), 2 LED meters and 8 accessory module slots.

*All measurements referenced to Program and Audition signal paths in a 12 channel fully loaded mainframe with a single module active. System noise measurements made over a 20 Hz to 20 kHz bandwidth with no weighting filters, all inputs off. Note: 0 dBu = 0 dBm into 600 ohms.

Note: Prewired harnesses terminated on the console are available in specified lengths.

B/E provides 24 hour sales and service.

Attractive styling and easy to use features enhance your station's operation.

Published specifications are subject to change without notice. Due to varying measurement techniques, care should be observed when comparing the specifications of different manufacturers. For assistance in clarifying or interpreting product specifications, contact Broadcast Electronics headquarters in Quincy, Illinois.

"From the People Who Know Radio"