

THE FEATURES LIST ON AND ON . . .
In addition to the GOLD MEDALIST features already listed, 5 VU meters are standard, providing full visibility of all critical output levels! In addition, there is an optional quartz or line synchronous clock, a 6-digit up/down timer (all with front panel set controls), and an ESE master clock readout.

A 6-watt cue amplifier with an efficient 5-inch speaker and 10 oz. magnet provides cue level and quality to satisfy the diverse needs of station talent. An input "U" pad is provided on the input terminal punch blocks with charted values for +24 to -30 dB level adjustment in 1 dB steps. This provides for easy adjustment of incoming levels.

Choice of three Penny & Giles attenuator modules as described on the back cover. Modules plug directly into mainframe wiring and may be field interchanged . . . even while the console is in operation.

COLOR CODED SWITCHES

The input channel ON and OFF switches are illuminated with high intensity green (ON) and yellow (OFF) LEDs for long reliable life. Program (red) and Audition (blue) switches for the 12 input channels have a mechanical flag which shows only when the switches are engaged; they are also in red and blue in the phone and monitor selector banks. The sum or mono switches are

black, with the balance light gray, except for the fader cue switch with an orange mechanical flag.

RELIABILITY DESIGNED IN

One of the most important criteria in the development of the GOLD MEDALIST was that of reliability. A heavy duty power supply with plenty of reserve capacity combines with components having power and voltage ratings above normal requirements to assure optimum reliability and long life.

Quick connect AMP barrel terminals for input and output connectors are gas-tight and selected for reliability as well as convenience for the installer. Top line components such as DBX[®] VCAs, Penny & Giles attenuators and Schadow switches contribute undisputed reliability and performance to the Gold Medalist's long list of credentials.

A REPUTATION TO LIVE UP TO

The GOLD MEDALIST is the most sophisticated console of the MEDALIST family, a line that within two years, achieved a leadership position in the stock on-air console market. (More than 300 Medalist consoles are in operation to date!)

Ideal for AM and FM on-air and production applications, the GOLD MEDALIST offers microphone capability on all input channels. This feature makes the

GOLD MEDALIST a popular choice for small TV as well as radio operations. Other applications include cable TV, post-production facilities, and sound distribution systems.

MONITOR AMPLIFIER

Strong personal preferences for specific types of speakers and power levels led to the use of optional external monitor power amplifiers. An added advantage of this approach is the elimination of heavy peak current demands by internal amplifiers on the console power supply and grounding system which cause crosstalk problems. A stereo monitor amplifier driver is provided at line level which can drive nearly any type of power amplifier. The output of the external amplifier is then fed into the relay/power panel for muting up to three locations.

MORE FEATURES, BETTER SOUND, EXCEPTIONAL PRICE . . .

As a matter of fact, the GOLD MEDALIST provides features previously found only in much higher priced modular boards! And, in the tradition of all Harris audio consoles, the GOLD MEDALIST is a skillful blend of engineering advances. You get uncompromising performance and user-friendly design all wrapped up in a functional yet cost efficient package. Planning on updating your facility? Go for the Gold, the GOLD MEDALIST by Harris.

SPECIFICATIONS

OUTPUT CHANNELS:

Stereo PROGRAM and AUDITION, plus mono SUM channel with +8 VU output level (+4 VU and 0 VU field adjustable).

INPUT CHANNELS:

12 total. Stereo line level or mono mic level with pan-pot for left/right imaging.

INPUT CIRCUITS:

36 total. Three-position source selector in each of the twelve input channels with the first position in each group capable of mic input for up to 12 total. The second and third positions are for line level sources as well as the first, if not used for mic (with mic preamp), such as cart machines, R-R machines and turntables. This console contains *no* program cue or talkback facilities.

STANDARD AMPLIFIER COMPLEMENT:

2 microphone preamps, 3 stereo program line amplifiers, stereo headphone amplifier, stereo monitor driver (to optional external speaker power amplifier), and mono/sum cue amplifier with built in speaker.

OUTPUT CIRCUITS:

2 stereo plus mono/sum program line level outputs, stereo monitor driver @ .25 volt nominal output (10V maximum, external power amplifier required), stereo headphone feed for external power amplifier (if more than 2 watts/channel internal headphone amplifier is desired).

INPUT IMPEDANCES:

MICROPHONE: 5K ohms or better, balanced.
CART MACHINES, ETC.: 8K ohms or better, balanced.
EXT 1, EXT 2: 8K ohms or better, balanced.
NETWORK: 620 ohms terminated, balanced.

SOURCE IMPEDANCES:

MICROPHONE: 150/250 ohms
CART MACHINES, ETC.: 150/600 ohms
EXT 1, EXT 2: 150/600 ohms
NETWORK: 600 ohms

OUTPUT IMPEDANCES:

PGM, AUD, MONO: 200 ohms, resistive.
MONITOR FEED: 50 ohms maximum, resistive.
EXTERNAL PHONE FEED: 50 ohms maximum, resistive.

LOAD IMPEDANCES:

PGM, AUD, MONO: 150/600 ohms
MONITOR FEED: 1K ohms or greater.
HEADPHONES: 8 ohms or greater.
EXTERNAL PHONE AMPLIFIER FEED: 1K ohms or greater.

GAIN:

MIC TO LINE: 94 dB ±2 dB with controls @ minimum attenuation.
TAPE TO LINE: 30 dB ±2 dB with controls @ minimum attenuation.
*May be changed with circuit value changes.

FREQUENCY RESPONSE:

MIC TO LINE: +0, -0.5 dB, 20 Hz to 20 kHz
TAPE TO LINE: +0, -0.25 dB, 20 Hz to 20 kHz
BANDPASS: -3 dB @ 3 Hz and 100 kHz

TOTAL HARMONIC & IM DISTORTION:

PGM, AUD, MONO: 0.05% maximum, 20 Hz to 20 kHz @ 8 dBm output. 0.1% maximum, 20 Hz to 20 kHz @ 18 dBm output. Clipping level: +24 dBm/600 ohms, or higher.

SIGNAL TO NOISE:

MIC TO LINE: 77 dB (or better) below +18 dBm output with -50 dBv input level, for typical proof measurements; -127 dBv (or better) equivalent input noise with 20 Hz to 20 kHz bandpass and normal control settings.
TAPE TO LINE: 95 dB (or better) below +18 dBm output with +14 dBv input level and normal control settings.
MONITOR & PHONE FEED: Approx. same as TAPE TO LINE.

CUE AMPLIFIER OUTPUT:

6 watts with complex wave into 8 ohm speaker.

HEADPHONE AMPLIFIER:

2 watts per channel with complex wave into 8 ohm phones, 7 volts RMS into phones of 600 ohms or greater.

POWER REQUIREMENTS:

125 watts max. 100-125/200-250V, 50/60 Hz.

SIZE:

MAINFRAME: 610 mm (24 in.) deep x 279 mm (11 in.) high. Width: 1241 mm (49 in.)
POWER TRANSFORMER/FUSE ASSEMBLY: 330 mm (13 in.) deep x 133 mm (5 1/4 in.) high x 438 mm (19 in.) wide. (with 25 ft. interconnected cable, plugs on each end).

NET WEIGHT:

Medalist Au — 41 kg (90 lbs.) including transformer/fuse assembly.
DOMESTIC PACK: 52 kg (115 lbs.)
EXPORT PACK: 69 kg (152 lbs.)

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE.

ORDERING INFORMATION

Medalist-Au console, with three stereo program amplifiers, two mic preamplifiers, less channel attenuators	994-8942-001
Medalist 4-digit, 100-minute up/down timer with 4" LED display and 6 controls	436-0248-000
Medalist 6-digit, 12-hour Quartz Clock with 4" LED display and 3 controls	436-0272-000
Medalist 6-digit, 12 hour line synch, clock with 4 LED display and 3 controls	436-0249-000
Medalist 6-digit, remote display for ESE master clocks with serial time code	436-0250-000
Additional microphone preamps	994-8775-001
Penny & Giles linear attenuator with cue position	994-8948-001
Penny & Giles linear attenuator with cue and 4-position pre-selector	994-8941-001
Penny & Giles linear attenuator	994-8762-001
Blank attenuator module (use when less than full complement of attenuator modules specified)	994-8826-001
Crown D-75 Power Amplifier, Dual 35W/Channel	740-0927-000
Symetrix A-220 Power Amplifier, Dual 20W/Channel	740-0849-000

specifications in your station environment for unexcelled signal quality in your market.

• VERY HIGH RFI IMMUNITY IN AM/FM RF FIELDS
The GOLD MEDALIST operates satisfactorily in AM fields of up to 5 volts/meter and in FM fields, with an AM noise figure of at least -50 dB, of over 150 volts/meter.

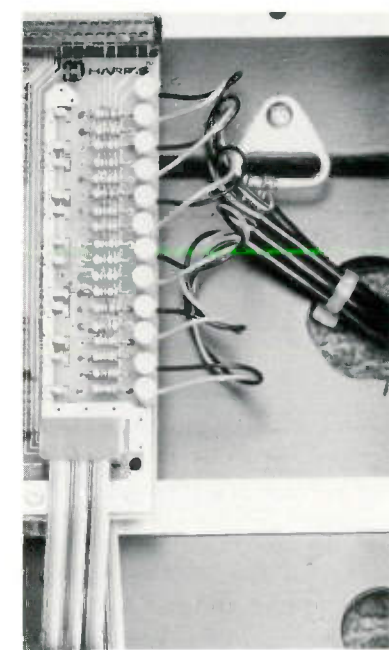
• SUPERIOR PUNCH BLOCKS FOR QUICK INSTALLATION
Insulation displacement type terminals, with proven long term reliability for 22 AWG stranded audio wire, are provided in a convenient punch block arrangement for input connectors.

• MULTIPLE INPUT SELECTORS ON PHONES AND MONITOR
Interlocking 6-station push button switches provide input selection for the headphone and monitor amplifiers, including PGM, AUD, MONO, NET, CUE, EXT-1 and EXT-2 signals.

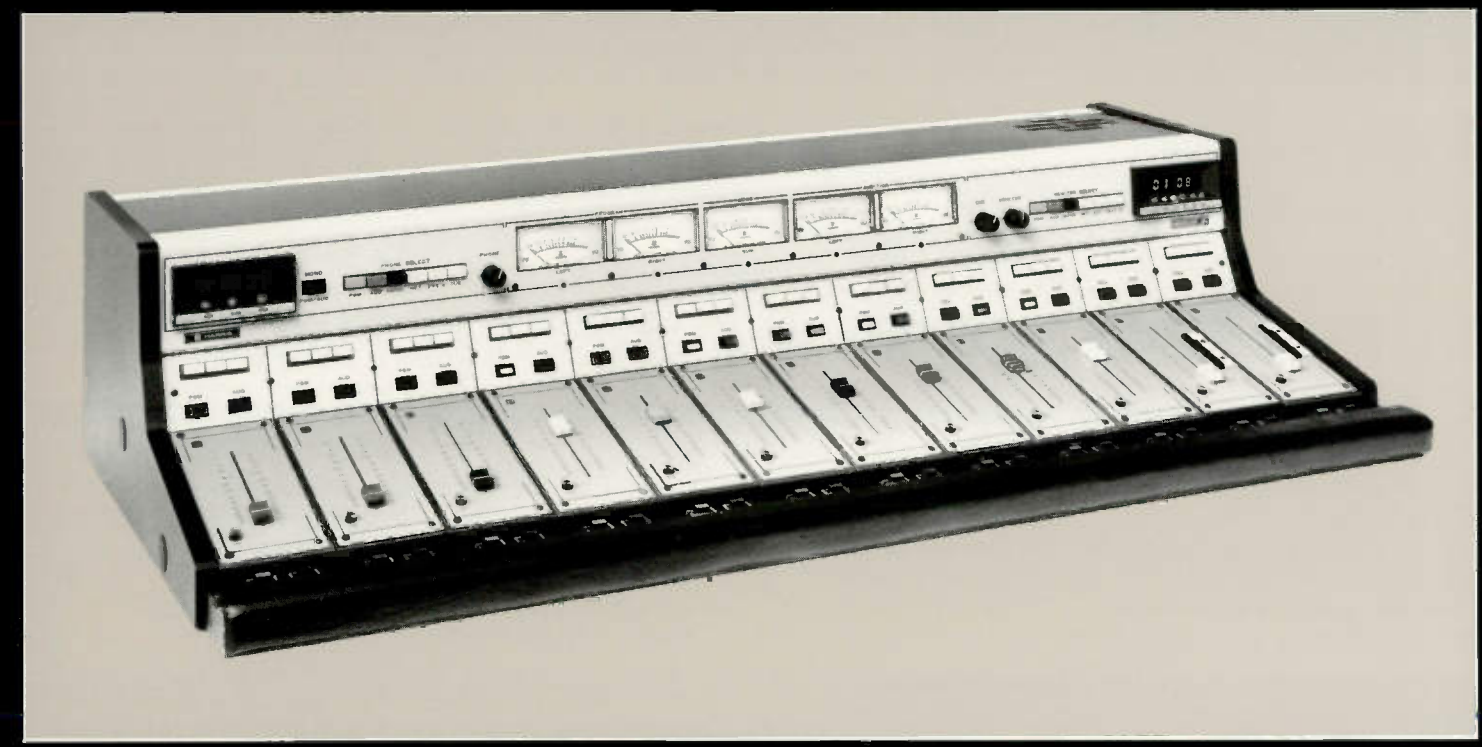
• DYNAMIC RANGE EXCEEDS THAT OF DIGITAL AUDIO SOURCES
The GOLD MEDALIST has at least 10 dB more dynamic range than 16-bit digital audio sources, while many competitive boards have 20 dB less due to poor S/N ratios and low output clipping level.

• COMFORTABLE PADDED ARMREST, RECESSED TROUGH
The channel ON/source START and OFF/STOP switches are protected from accidental operation in the recessed trough area, between the padded arm rest and attenuator module panels.

Line level sources connect to the punch blocks located under the fader modules, one per input channel. The input level adjustment pads are located adjacent to the input terminals. These boards are easily removed for changing values.

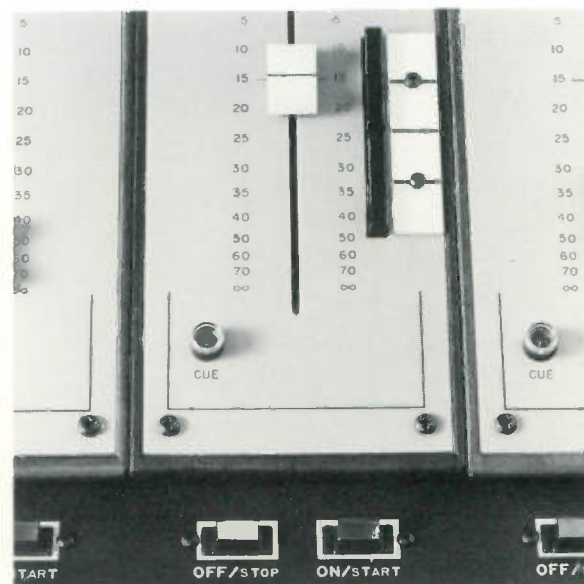


HARRIS GOLD MEDALIST™ 12 Channel Dual Stereo Audio Console



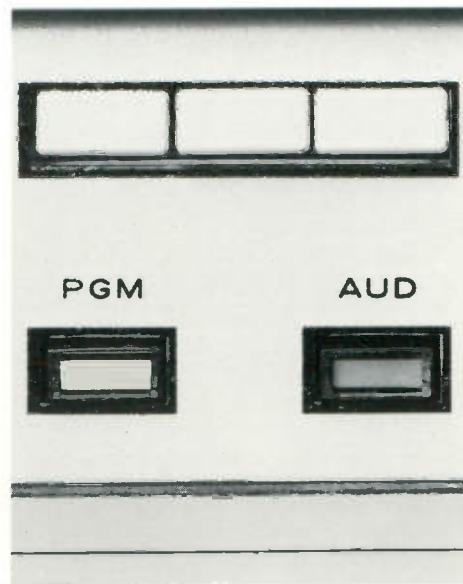
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P. O. BOX 4290, QUINCY, ILLINOIS 62305-4290 U.S.A. 217/222-8200



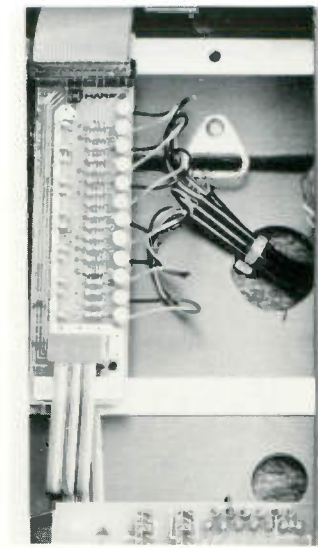


Illuminated ON and OFF switch on each input channel. Choice of three types of attenuator modules:

1. P&G Linear with CUE position and CUE switch.
2. P&G Linear with 4-position preselector switch.
3. P&G Linear with CUE switch (only).



Three input selectors plus PROGRAM and AUDITION routing switches on each input channel; through mounted ON and OFF switches turn input channels on/off, plus start/stop commands to remote sources.



Input channels may be turned on/off and associated sources given start/stop commands from remote switching/logic commands; interconnection terminals are accessible under the attenuator modules as shown above.

HARRIS GOLD MEDALIST AUDIO CONSOLE

The only one in its price range with all these features!

36 INPUTS WITH LOGIC CONTROLLED SWITCHING

Input Channel ON and OFF switches control source machines through the individual input selector switches, providing START and STOP control of up to 3 sources per input channel.

UP TO 72 SOURCES INTO 12 INPUT CHANNELS

Optional fader modules, with 4-position pre-selector feeding into one input selector on each channel, expands total input capacity to 6 sources per input channel.

END-OF-MESSAGE CONTROLLED CHANNEL-OFF SWITCHING

Connect sources with EOM's to input channel-off control terminals to turn the channel off with the EOM commands which eliminates unwanted noise and extraneous signals from the program output channel.

TRANSFORMERLESS INPUT/OUTPUT FOR BEST SOUND QUALITY

Active balanced I/O circuits in the GOLD MEDALIST eliminate audio transformer generated total harmonic, transient intermod and dynamic distortions found in many other boards.

DC CONTROL FROM P&G FADERS DRIVE VOLTAGE CONTROLLED AMPLIFIERS

Low DC voltage from the fader drives a noise-

integrated active audio slope generator, which drives the VCA's in the signal path for extended noise-free operation.

CONDUCTIVE PLASTIC PHONE, CUE AND MONITOR CONTROLS

Heavy duty gain controls, secured to the front panel with threaded bushings, are provided with ribbon cables to isolate them from the associated PC boards.

STEREO TRACKING WITHIN 0.25 dB ON INPUT CHANNEL FADERS

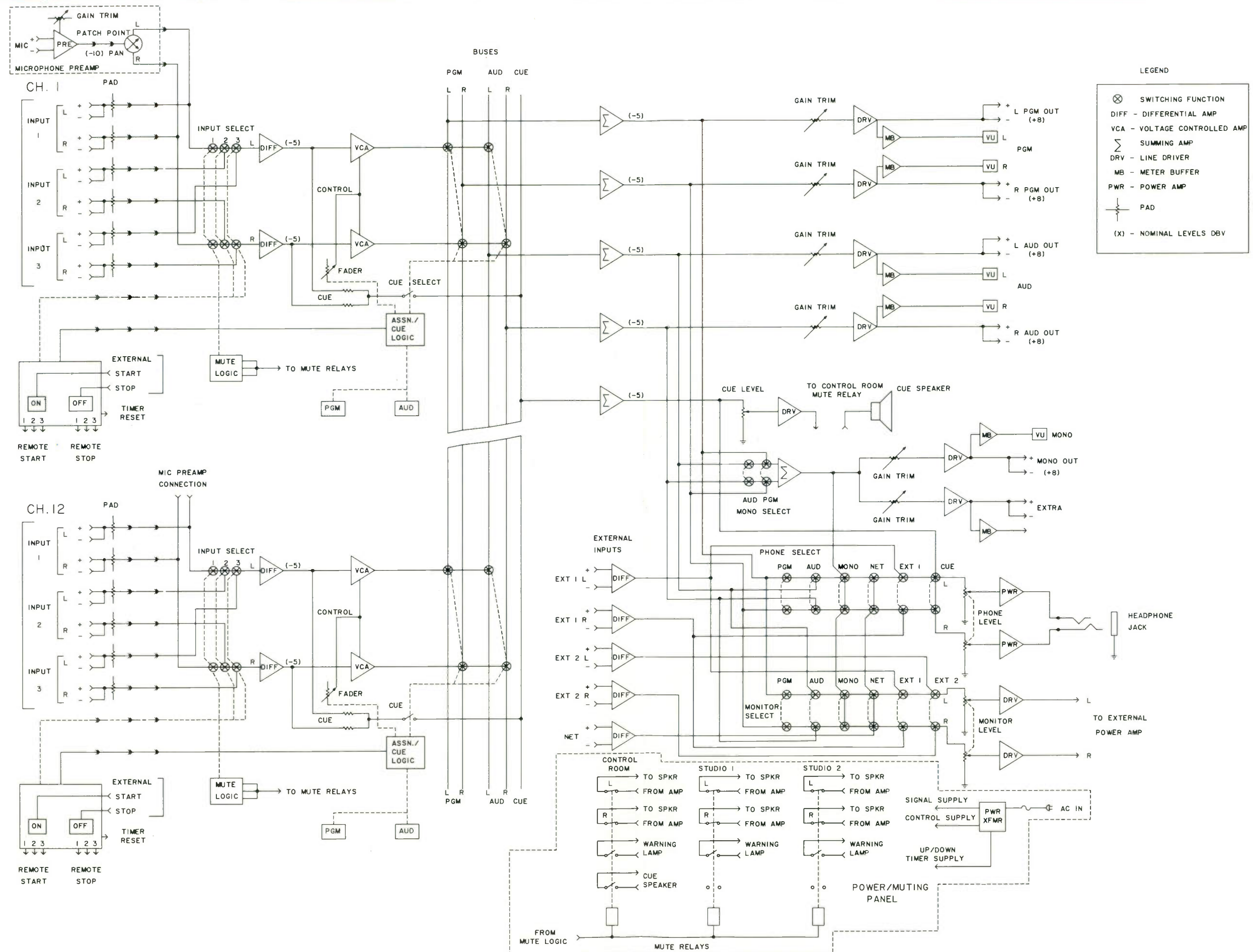
Nearly perfect stereo tracking within 0.1 dB over much of the attenuator range is provided in program circuits by close tolerance VCA's driven with common left/right control voltages.

0.05% DISTORTION, +0.0/-0.25 dB RESPONSE, 20 Hz to 20 kHz

Sufficient margin is provided in the GOLD MEDALIST circuits to allow these stringent ratings to be met in less than ideal environments found in many stations.

77 dB S/N on MIC, 95 dB S/N on M-L INPUTS, 20 Hz to 20 kHz

Factory mic channel noise requirements of more than 79 dB S/N provides margin to meet the rated



circuits. And the best in human engineering is evident in the choice and location of front panel components.

RELIABILITY

A heavy duty power supply with plenty of reserve capacity is included in the Medalist console. The components in the supply have power and voltage ratings well above nominal requirements to assure optimum reliability and long life. Burned-in ICs, selected and screened for important operating parameters, are used for high reliability and stability in the various signal paths.

Top line components such as the DBX™ VCAs, Penny and Giles attenuators and Schadow switches provide unquestioned reliability and performance in their respective areas of the console. Even the quick connect AMP Barrel Terminals for the input and output connections are gas tight and were selected for reliability as well as for convenience.

YOU SPECIFY THE STYLE OF PLUG-IN ATTENUATORS

You may select either rotary or linear Penny and Giles or alternate, lower cost attenuators with 100 millimeter (four inch) throw in your Harris Medalist audio console. In either configuration, the plug-in, interchangeable attenuator modules offer operating ease and new dimensions of service convenience. The modules plug directly into the mainframe wiring, and may be interchanged in the field, even while the console is in operation. Attenuator modules may be selectively intermixed—rotary with linear—for special emphasis on dedicated input channels.

TRANSPARENT PERFORMANCE

Active transformerless balanced input and output circuits give the Medalist virtually transparent performance rarely matched in competitive consoles of any size. The frequency response is very flat, with no transformers to cause rolloff or sharp rise in distortion within the audio passband.

Total harmonic, transient intermod and dynamic distortions are well below the point of significance in any program chain. At least 25 dB of headroom is provided in all circuits, depending on the selected output operating level. Uniformly low noise content is achieved by selection of the best components, careful layout and optimum circuit values. Crosstalk and switching transients are kept at an acceptably low level.

AMPLIFIER COMPLEMENT

Two microphone preamps with plug-in connections are provided as standard equipment. A pan pot on the output of the preamps sets the desired left/right stereo mix. Additionally, two stereo

program amplifiers are included for the Program and Audition line outputs. Other amplifiers provided are: A stereo headphone amplifier capable of driving either low or high impedance phones; a line level stereo amplifier to drive the optional external monitor speaker amplifier; and a powerful cue amplifier with built-in speaker.

Optional microphone preamps may be connected into the additional input channels. A third stereo program amplifier may also be added, with one section for the MONO/SUM output line and the other section to feed program cue back down the remote lines.

SWITCHING PHILOSOPHY

All front panel switching on the Harris Medalist audio console is effected through high quality pushbutton switches. Large, rectangular buttons aid comfortable, positive operation. The buttons are color coded: Red for PGM, blue for AUD, and black for the MONO/SUM switches. This coding is carried out in all switch groups for the channel keys, headphone selectors, monitor selectors, VU meter selectors and the MONO/SUM input selector in the Medalist Series.

All other selector switch buttons are light gray, except for the CUE switch, which has a round button with a mechanical flag to show when it is engaged. The PGM and AUD switches above each input attenuator are alternate ON/OFF action. This allows the input channels to feed either of the PGM and AUD output circuits, or both simultaneously.

Each input channel on Harris Medalist audio consoles has a three position source selector switch bank. The first position of these switch groups is capable of microphone input level with the

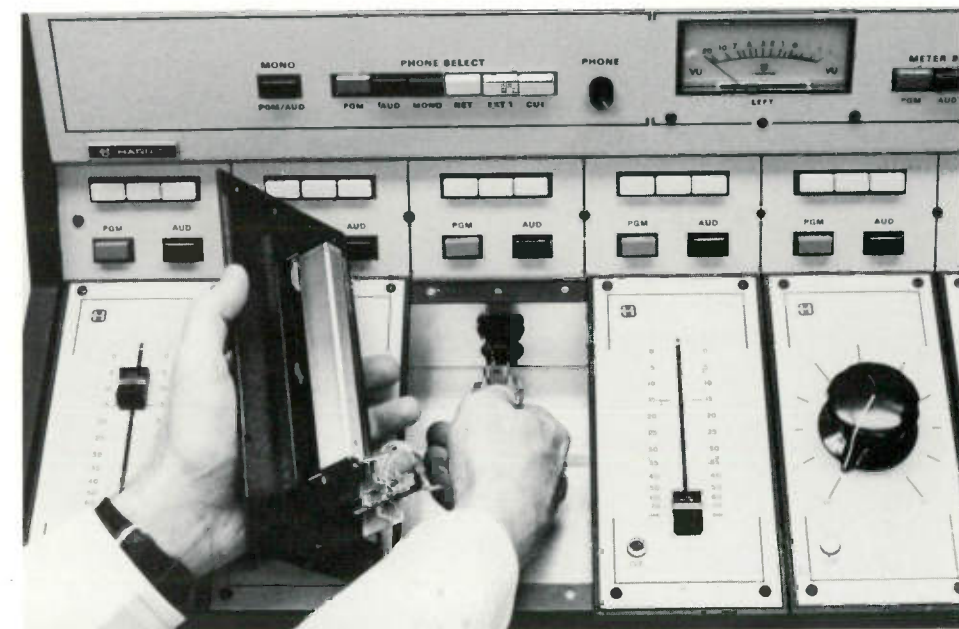
addition of optional plug-in microphone preamps. The other positions are for medium level sources. The second and third positions on the last two input channels are for use with remote lines. They can feed program cue back down the remote lines with the optional plug-in program amplifier installed.

The headphone input selector bank includes six positions: Stereo PGM, AUD, MONO, NET, EXT-1 and CUE. The monitor input selector group also includes six positions: Stereo PGM, AUD, MONO, NET, EXT-1 and EXT-2. This multiplicity of input selection is typically found only on large modular boards. The MON/SUM input selector is an alternate action switch. The source signal is derived from the stereo PGM circuit in the IN position, and from the stereo AUD circuit in the OUT position.

Each input attenuator panel contains a CUE pushbutton switch at the lower left of the attenuator knob. This pre-fader switch connects the input signal to that channel to the CUE bus, regardless of the position of the attenuator knob. There are mounting provisions for optional START/STOP switches on the lower front of the cabinet to control source equipment or for other signaling functions. Both momentary and alternate action types are available from Harris.

MEETING IMPORTANT CRITERIA

In the tradition of all Harris audio consoles, the Medalist is a skillful blend of engineering advances, no-compromise performance, and user-friendly design—all wrapped in a functional, cost competitive package. This innovative audio console merits serious consideration in present or future plans to update your facility.



Plug-in attenuator modules may be changed in the field, even while the console is in operation. The Medalist is available with rotary or linear attenuators, or with the two intermixed, as shown above.

SPECIFICATIONS

OUTPUT CHANNELS:

Stereo PROGRAM and AUDITION, plus optional mono SUM channel with +8 VU output level (+4 VU and 0 VU field adjustable).

INPUT CHANNELS:

12 total on the Medalist-12, 10 on the Medalist-10 and 8 on the Medalist-8. Stereo line level, or mono mic level with pan-pot for left/right imaging.

INPUT CIRCUITS:

Medalist-12, 36 total; Medalist-10, 30 total; Medalist-8, 24 total. Has three-position source selector in each input channel with the first position of each group capable of mic input for up to 8 mics in the Medalist-8, 10 in the Medalist-10 and 12 in the Medalist-12. The second and third positions on the last two input channels of each console are capable of remote line operation, with program cue feed down the line before being switched into the console. All others are for line level sources such as cart machines, reel-reel and turntables.

STANDARD AMPLIFIER COMPLEMENT:

2 microphone preamps, 2 stereo program line amplifiers, (3 on Medalist-12) stereo headphone amplifier, stereo monitor driver (to optional external speaker power amplifier), and mono/sum cue amplifier with built in speaker.

OUTPUT CIRCUITS:

2 stereo plus optional (on Medalist-8 and Medalist-10) mono/sum program line level outputs, stereo monitor driver @ .25 volt nominal output (10V maximum, external power amplifier required), stereo headphone feed for external power amplifier (if more than 2 watts/channel internal headphone amplifier is desired).

INPUT IMPEDANCES:

MICROPHONE: 5K ohms or better, balanced
CART MACHINES, ETC.: 8K ohms or better, balanced
EXT 1, EXT 2: 8K ohms or better, balanced
NETWORK: 620 ohms terminated, balanced

SOURCE IMPEDANCES:

MICROPHONE: 150/250 ohms
CART MACHINES, ETC.: 150/600 ohms
EXT 1, EXT 2: 150/600 ohms
NETWORK: 600 ohms

OUTPUT IMPEDANCES:

PGM, AUD, MONO: 20 ohms, resistive
MONITOR FEED: 50 ohms maximum, resistive
PROGRAM CUE TO REMOTE LINES: Approx. 2K ohms, resistive
EXTERNAL PHONE FEED: 50 ohms maximum, resistive

LOAD IMPEDANCES:

PGM, AUD, MONO: 150/600 ohms
MONITOR FEED: 1K ohms or greater

PROGRAM CUE TO REMOTE LINES: Approx. 2K ohms, resistive
EXTERNAL PHONE FEED: 1K ohms or greater

GAIN:

MIC TO LINE: 94 dB ±2 dB* with controls @ minimum attenuation
TAPE TO LINE: 30 dB ±2 dB* with controls @ minimum attenuation
*May be changed with circuit value changes

FREQUENCY RESPONSE:

MIC TO LINE: +0, -0.5 dB, 20 Hz to 20 kHz
TAPE TO LINE: +0, -0.25 dB, 20 Hz to 20 kHz
BANDPASS: -3 dB @ 3 Hz and 100 kHz

TOTAL HARMONIC & IM DISTORTION:

PGM, AUD, MONO: 0.05% maximum, 20 Hz to 20 kHz @ 8 dBm output
0.1% maximum, 20 Hz to 20 kHz @ +18 dBm output
Clipping Level: +26 dBm/600 ohms, or higher

SIGNAL TO NOISE:

MIC TO LINE: 77 dB (or better) below +18 dBm output with -50 dBv input level, for typical proof measurements; -127 dBv (or better) equivalent input noise with 20 Hz to 20 kHz bandpass and normal control settings
TAPE TO LINE: 95 dB (or better) below +18 dBm output with +14 dBv input level and normal control settings
MONITOR & PHONE FEED: Approx. same as TAPE TO LINE

CUE AMPLIFIER OUTPUT:

6 watts with complex wave into 8 ohm speaker

HEADPHONE AMPLIFIER:

2 watts per channel with complex wave into 8 ohm phones, 7 volts RMS into phones of 600 ohms or greater.

POWER REQUIREMENTS:

125 watts max. for Medalist-12; 100 watts max. for Medalist-10; 80 watts max. for Medalist-8; 100-125/200-250V, 50/60Hz.

SIZE:

MAINFRAME: 513 mm (20 in.) deep x 278 mm (11 in.) high
Width: Medalist-12 — 1241 mm (49 in.)
Medalist-10 — 1038 mm (41 in.)
Medalist-8 — 835 mm (33 in.)

POWER TRANSFORMER/FUSE ASSEMBLY: 152 mm (6 in.) deep x 133 mm (5 1/4 in.) high (with 25 ft. interconnecting cable, plugs on each end).

WEIGHT:

	NET	DOMESTIC	EXPORT
Medalist-12	36 kg (80 lbs.)	43 kg (95 lbs.)	60 kg (132 lbs.)
Medalist-10	31 kg (69 lbs.)	37 kg (82 lbs.)	52 kg (115 lbs.)
Medalist-8	27 kg (60 lbs.)	33 kg (72 lbs.)	46 kg (102 lbs.)

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

ORDERING INFORMATION

Medalist-12 console, with three stereo program amplifiers, two mic preamplifiers, less input channel attenuators	994-8835-001
Medalist-12 Nose Cone for remote start switches	992-6659-001
Medalist-12 4-digit, 100-minute up/down timer with 4" LED display and 3 controls	436-0248-000
Medalist-12 6-digit, 12 hour quartz clock with 4" LED display and 3 controls	436-0272-000
Medalist-12 6-digit, 12 hour line synch. clock with 4" LED display and 3 controls	436-0249-000
Medalist-12 6-digit, remote display for ESE master clocks with serial time code	436-0250-000
Medalist-10 console, with two stereo program amplifiers, two mic preamplifiers, less input channel attenuators	994-8758-000
Medalist-10 Nose Cone for remote start switches	992-6658-001
Medalist-8 console, with two stereo program amplifiers, two mic preamplifiers, less input channel attenuators	994-8759-001
Medalist-8 Nose Cone for remote start switches	992-6657-001
Stereo program amplifier for Mono/Sum and remote program cue optional for Medalist-10, Medalist-8	994-8776-001
Additional microphone preamps	994-8775-001
Penny & Giles linear attenuators with 4-position stereo preselector switch	994-8941-001
Penny & Giles linear attenuators with cue position and cue switch	994-8948-001
Penny & Giles linear attenuators with cue switch only	994-8762-001
Control Room Mic Switching Module with P&G Linear Attenuator	994-8910-001
Penny & Giles rotary attenuators	994-8763-001
Control Room Mic Switching Module with P&G Rotary Attenuator	994-8911-001
Alps linear attenuator	994-8812-001
Control Room Mic Switching Module with ALPS Linear Attenuator	994-8912-001
A & B rotary attenuator	994-8811-001
Control Room Mic Switching Module with A-B Rotary Attenuator	994-8913-001
Blank attenuator module (use when less than full complement of attenuator modules specified)	994-8826-001
Crown D-75 Dual 35W/channel power amplifier	740-0927-000
Symetrix A-220 Power Amplifier, Dual 20W/Channel	740-0849-000
Remote start switch, momentary action	604-1039-000
Remote start switch, alternate action	604-1040-000

HARRIS CORPORATION BROADCAST DIVISION
P. O. BOX 4290, QUINCY, ILLINOIS 62305-4290 U.S.A. 217/222-8200

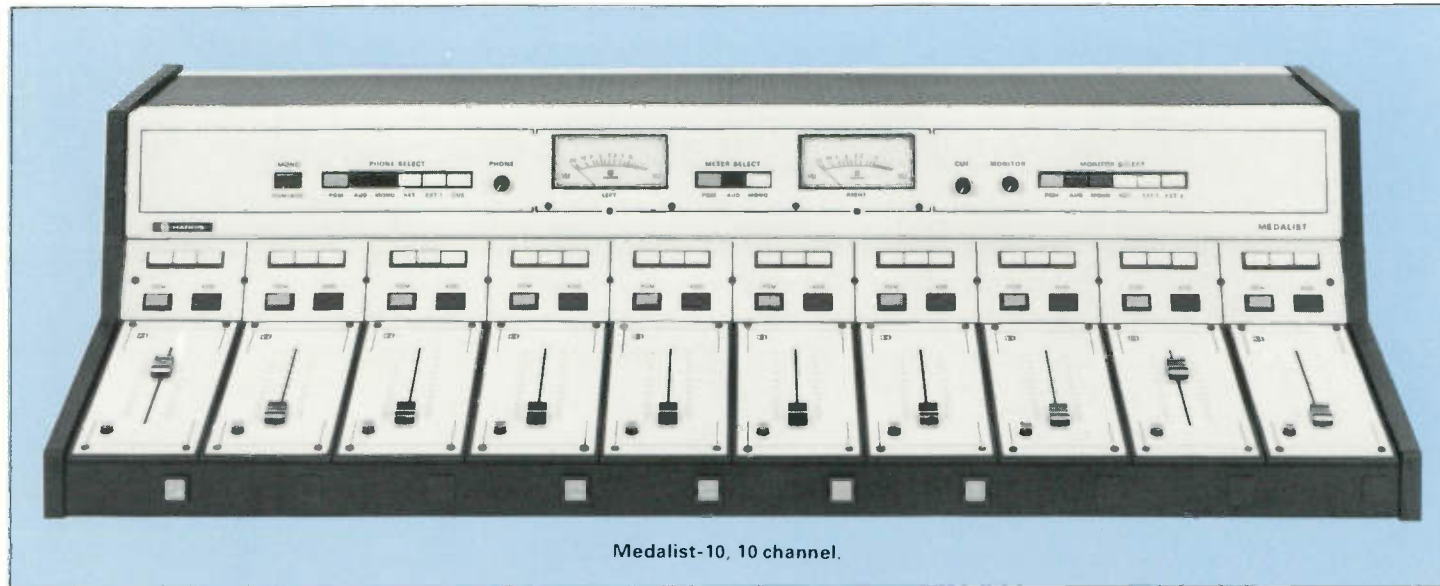


HARRIS MEDALIST™ 8, 10 or 12 Channel
Dual Stereo Audio Consoles



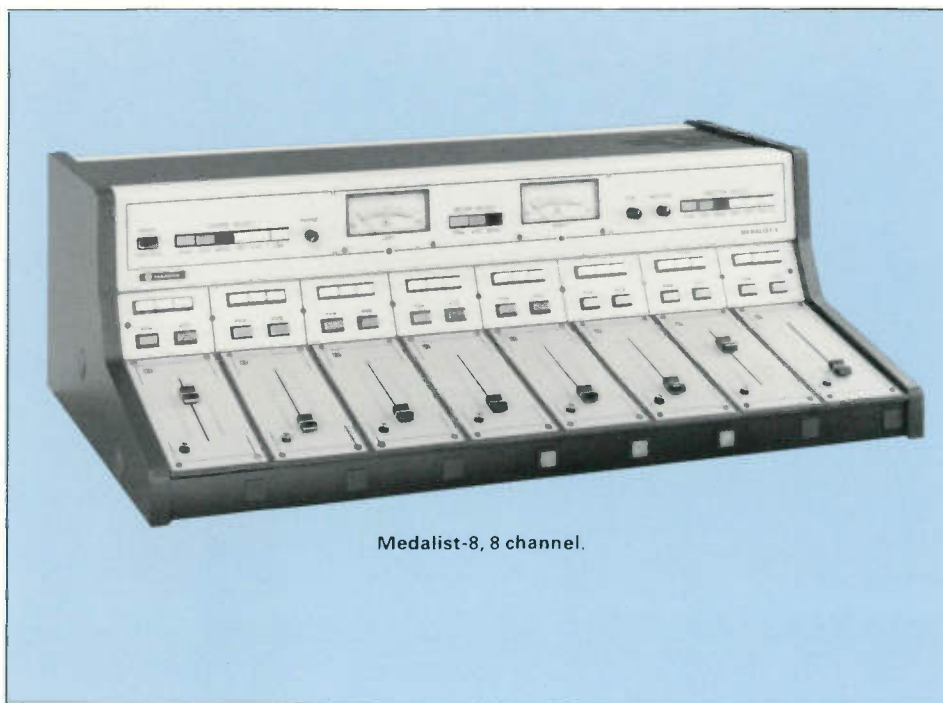
HARRIS MEDALIST AUDIO CONSOLE —

Exceptional value in a series that more than meets your expectations



Medalist-10, 10 channel.

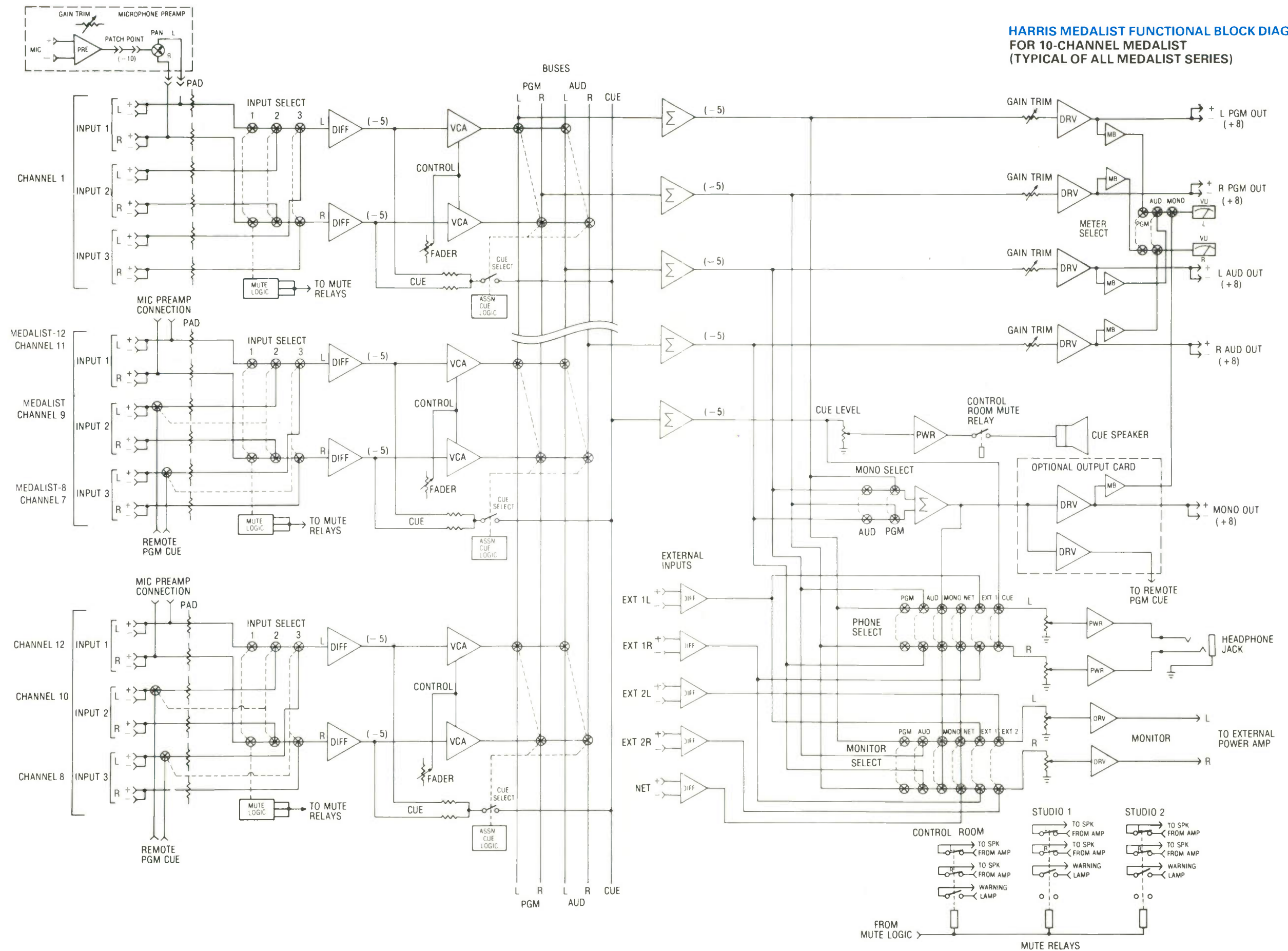
- Plug-in, interchangeable attenuator modules provide quick replacement, even with unskilled personnel
- Choice of rotary or linear attenuators for the best performance by your operating staff
- Mic input available on any channel to provide individual station configuration of console channel assignments
- Up to 3 sources into each input channel to eliminate patch panels and external switching panels
- Virtually transparent performance assures the best possible signal quality and listener satisfaction
- 25 dB minimum headroom in all circuits provides excellent station sound, even with the VU meters pinned
- Excellent RFI/EMI immunity assures noise-free signal of your programming, without interference from nearby stations
- Ideal for stereo on-air and production applications where you want the cleanest signal in the area



Medalist-8, 8 channel.

The Harris Medalist Series of dual stereo audio consoles is ideal for AM and FM on-air and production applications. The Harris Medalist-12 offers facilities for up to 36 sources into 12 input channels. It provides full visibility of all output signal levels via five dedicated meters for Program, Audition, and Mono/Sum. It also has mounting provisions for one or two up/down counters, real time clock or master clock readouts. The Medalist-10 allows facilities for up to 30 sources into 10 input channels. The Medalist-8 has the capability for 24 sources into 8 input channels.

Microphone capability on all input channels makes the Medalist audio console an attractive choice for small TV operations. Other applications include Cable TV, post-production facilities and sound distribution systems. Features typically found only in more expensive modular audio consoles are standard in the Harris Medalist. Multiple input selectors are provided for headphone and monitor



HARRIS MEDALIST FUNCTIONAL BLOCK DIAGRAM FOR 10-CHANNEL MEDALIST (TYPICAL OF ALL MEDALIST SERIES)

circuits. And the best in human engineering is evident in the choice and location of front panel components.

RELIABILITY

A heavy duty power supply with plenty of reserve capacity is included in the Medalist console. The components in the supply have power and voltage ratings well above nominal requirements to assure optimum reliability and long life. Burned-in ICs, selected and screened for important operating parameters, are used for high reliability and stability in the various signal paths.

Top line components such as the DBX[®] VCAs, Penny and Giles attenuators and Schadow switches provide unquestioned reliability and performance in their respective areas of the console. Even the quick connect AMP Barrel Terminals for the input and output connections are gas tight and were selected for reliability as well as for convenience.

YOU SPECIFY THE STYLE OF PLUG-IN ATTENUATORS

You may select either rotary or linear Penny and Giles or alternate, lower cost attenuators with 100 millimeter (four inch) throw in your Harris Medalist audio console. In either configuration, the plug-in, interchangeable attenuator modules offer operating ease and new dimensions of service convenience. The modules plug directly into the mainframe wiring, and may be interchanged in the field, even while the console is in operation. Attenuator modules may be selectively intermixed—rotary with linear—for special emphasis on dedicated input channels.

TRANSPARENT PERFORMANCE

Active transformerless balanced input and output circuits give the Medalist virtually transparent performance rarely matched in competitive consoles of any size. The frequency response is very flat, with no transformers to cause rolloff or sharp rise in distortion within the audio passband.

Total harmonic, transient intermod and dynamic distortions are well below the point of significance in any program chain. At least 25 dB of headroom is provided in all circuits, depending on the selected output operating level. Uniformly low noise content is achieved by selection of the best components, careful layout and optimum circuit values. Crosstalk and switching transients are kept at an acceptably low level.

AMPLIFIER COMPLEMENT

Two microphone preamps with plug-in connections are provided as standard equipment. A pan pot on the output of the preamps sets the desired left/right stereo mix. Additionally, two stereo

program amplifiers are included for the Program and Audition line outputs. Other amplifiers provided are: A stereo headphone amplifier capable of driving either low or high impedance phones; a line level stereo amplifier to drive the optional external monitor speaker amplifier; and a powerful cue amplifier with built-in speaker.

Optional microphone preamps may be connected into the additional input channels. A third stereo program amplifier may also be added, with one section for the MONO/SUM output line and the other section to feed program cue back down the remote lines.

SWITCHING PHILOSOPHY

All front panel switching on the Harris Medalist audio console is effected through high quality pushbutton switches. Large, rectangular buttons aid comfortable, positive operation. The buttons are color coded: Red for PGM, blue for AUD, and black for the MONO/SUM switches. This coding is carried out in all switch groups for the channel keys, headphone selectors, monitor selectors, VU meter selectors and the MONO/SUM input selector in the Medalist Series.

All other selector switch buttons are light gray, except for the CUE switch, which has a round button with a mechanical flag to show when it is engaged. The PGM and AUD switches above each input attenuator are alternate ON/OFF action. This allows the input channels to feed either of the PGM and AUD output circuits, or both simultaneously.

Each input channel on Harris Medalist audio consoles has a three position source selector switch bank. The first position of these switch groups is capable of microphone input level with the

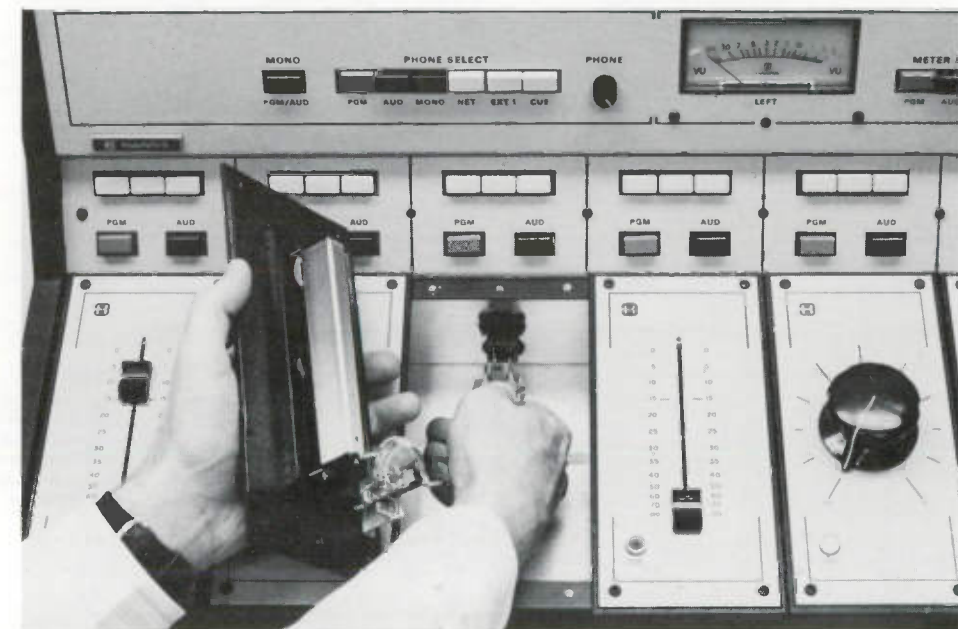
addition of optional plug-in microphone preamps. The other positions are for medium level sources. The second and third positions on the last two input channels are for use with remote lines. They can feed program cue back down the remote lines with the optional plug-in program amplifier installed.

The headphone input selector bank includes six positions: Stereo PGM, AUD, MONO, NET, EXT-1 and CUE. The monitor input selector group also includes six positions: Stereo PGM, AUD, MONO, NET, EXT-1 and EXT-2. This multiplicity of input selection is typically found only on large modular boards. The MON/SUM input selector is an alternate action switch. The source signal is derived from the stereo PGM circuit in the IN position, and from the stereo AUD circuit in the OUT position.

Each input attenuator panel contains a CUE pushbutton switch at the lower left of the attenuator knob. This pre-fader switch connects the input signal to that channel to the CUE bus, regardless of the position of the attenuator knob. There are mounting provisions for optional START/STOP switches on the lower front of the cabinet to control source equipment or for other signaling functions. Both momentary and alternate action types are available from Harris.

MEETING IMPORTANT CRITERIA

In the tradition of all Harris audio consoles, the Medalist is a skillful blend of engineering advances, no-compromise performance, and user-friendly design—all wrapped in a functional, cost competitive package. This innovative audio console merits serious consideration in present or future plans to update your facility.



Plug-in attenuator modules may be changed in the field, even while the console is in operation. The Medalist is available with rotary or linear attenuators, or with the two intermixed, as shown above.

SPECIFICATIONS

OUTPUT CHANNELS:

Stereo PROGRAM and AUDITION, plus optional mono SUM channel with +8 VU output level (+4 VU and 0 VU field adjustable).

INPUT CHANNELS:

12 total on the Medalist-12, 10 on the Medalist-10 and 8 on the Medalist-8. Stereo line level, or mono mic level with pan-pot for left/right imaging.

INPUT CIRCUITS:

Medalist-12, 36 total; Medalist-10, 30 total; Medalist-8, 24 total. Has three-position source selector in each input channel with the first position of each group capable of mic input for up to 8 mics in the Medalist-8, 10 in the Medalist-10 and 12 in the Medalist-12. The second and third positions on the last two input channels of each console are capable of remote line operation, with program cue feed down the line before being switched into the console. All others are for line level sources such as cart machines, reel-reel and turntables.

STANDARD AMPLIFIER COMPLEMENT:

2 microphone preamps, 2 stereo program line amplifiers, stereo headphone amplifier, stereo monitor driver (to optional external speaker power amplifier), and mono/sum cue amplifier with built in speaker.

OUTPUT CIRCUITS:

2 stereo plus optional mono/sum program line level outputs, stereo driver @ .25 volt nominal output (10V maximum, external power amplifier required), stereo headphone feed for external power amplifier (if more than 2 watts/channel internal headphone amplifier is desired).

INPUT IMPEDANCES:

MICROPHONE: 5K ohms or better, balanced
CART MACHINES, ETC.: 8K ohms or better, balanced
EXT 1, EXT 2: 8K ohms or better, balanced
NETWORK: 620 ohms terminated, balanced

SOURCE IMPEDANCES:

MICROPHONE: 150/250 ohms
CART MACHINES, ETC.: 150/600 ohms
EXT 1, EXT 2: 150/600 ohms
NETWORK: 600 ohms

OUTPUT IMPEDANCES:

PGM, AUD, MONO: 20 ohms, resistive
MONITOR FEED: 50 ohms maximum, resistive
PROGRAM CUE TO REMOTE LINES: Approx. 2K ohms, resistive
EXTERNAL PHONE FEED: 50 ohms maximum, resistive

LOAD IMPEDANCES:

PGM, AUD, MONO: 150/600 ohms
MONITOR FEED: 1K ohms or greater
PROGRAM CUE TO REMOTE LINES: Approx. 2K ohms, resistive
EXTERNAL PHONE FEED: 1K ohms or greater

GAIN:

MIC TO LINE: 94 dB ± 2 dB* with controls @ minimum attenuation
TAPE TO LINE: 30 dB ± 2 dB* with controls @ minimum attenuation
*May be changed with circuit value changes

FREQUENCY RESPONSE:

MIC TO LINE: +0, -0.5 dB, 20 Hz to 20 kHz
TAPE TO LINE: +0, -0.25 dB, 20 Hz to 20 kHz
BANDPASS: -3 dB @ 3 Hz and 100 kHz

TOTAL HARMONIC & IM DISTORTION:

PGM, AUD, MONO: 0.05% maximum, 20 Hz to 20 kHz @ 8 dBm output
0.1% maximum, 20 Hz to 20 kHz @ +18 dBm output
Clipping Level: +26 dBm/600 ohms, or higher

SIGNAL TO NOISE:

MIC TO LINE: 77 dB (or better) below +18 dBm output with -50 dBv input level, for typical proof measurements; -127 dBv (or better) equivalent input noise with 20 Hz to 20 kHz bandpass and normal control settings
TAPE TO LINE: 95 dB (or better) below +18 dBm output with +14 dBv input level and normal control settings
MONITOR & PHONE FEED: Approx. same as TAPE TO LINE

CUE AMPLIFIER OUTPUT:

6 watts with complex wave into 8 ohm speaker

HEADPHONE AMPLIFIER:

2 watts per channel with complex wave into 8 ohm phones, 7 volts RMS into phones of 600 ohms or greater.

POWER REQUIREMENTS:

125 watts max. for Medalist-12; 100 watts max. for Medalist-10; 80 watts max. for Medalist-8.

SIZE:

MAINFRAME: 513 mm (20 in.) deep x 278 mm (11 in.) high.
Width: Medalist-12 — 1241 mm (49 in.)
Medalist-10 — 1038 mm (41 in.)
Medalist-8 — 835 mm (33 in.)

POWER TRANSFORMER/FUSE ASSEMBLY: 152 mm (6 in.) deep x 133 mm (5 1/4 in.) high (with 25 ft. interconnecting cable, plugs on each end).

WEIGHT:

Medalist-12 — 36 kg (80 lbs.)
Medalist-10 — 31 kg (69 lbs.)
Medalist-8 — 27 kg (60 lbs.)

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

ORDERING INFORMATION

Medalist-12 console, with two stereo program amplifiers, two mic preamplifiers, less input channel attenuators	994-8835-001
Medalist-12 4-digit, 100-minute up/down timer with .3" LED display and 3 controls	436-0248-000
Medalist-12 6-digit, 12 hour line synchronizer clock with .3" LED display and 3 controls	436-0249-000
Medalist-12 6-digit, remote display for ESE master clocks with serial time code	436-0250-000
Medalist-10 console, with two stereo program amplifiers, two mic preamplifiers, less input channel attenuators	994-8758-000
Medalist-8 console, with two stereo program amplifiers, two mic preamplifiers, less input channel attenuators	994-8759-001
Stereo program amplifier for Mono/Sum and remote program cue	994-8776-001
Additional microphone preamps	994-8775-001
Penny & Giles linear attenuators*	994-8762-001
Penny & Giles rotary attenuators*	994-8763-001
Alternate linear attenuator*	994-8812-001
Alternate rotary attenuator*	994-8811-001
Blank attenuator module (use when less than full complement of attenuator modules specified)	994-8826-001
Remote start switch, momentary action	992-6281-001
Remote start switch, alternate action	992-6282-001
BGW-75 dual monitor power amplifier	740-0606-000

*May be intermixed; order up to 10 total

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P. O. BOX 4290, QUINCY, ILLINOIS 62305-4290 U.S.A. 217/222-8200

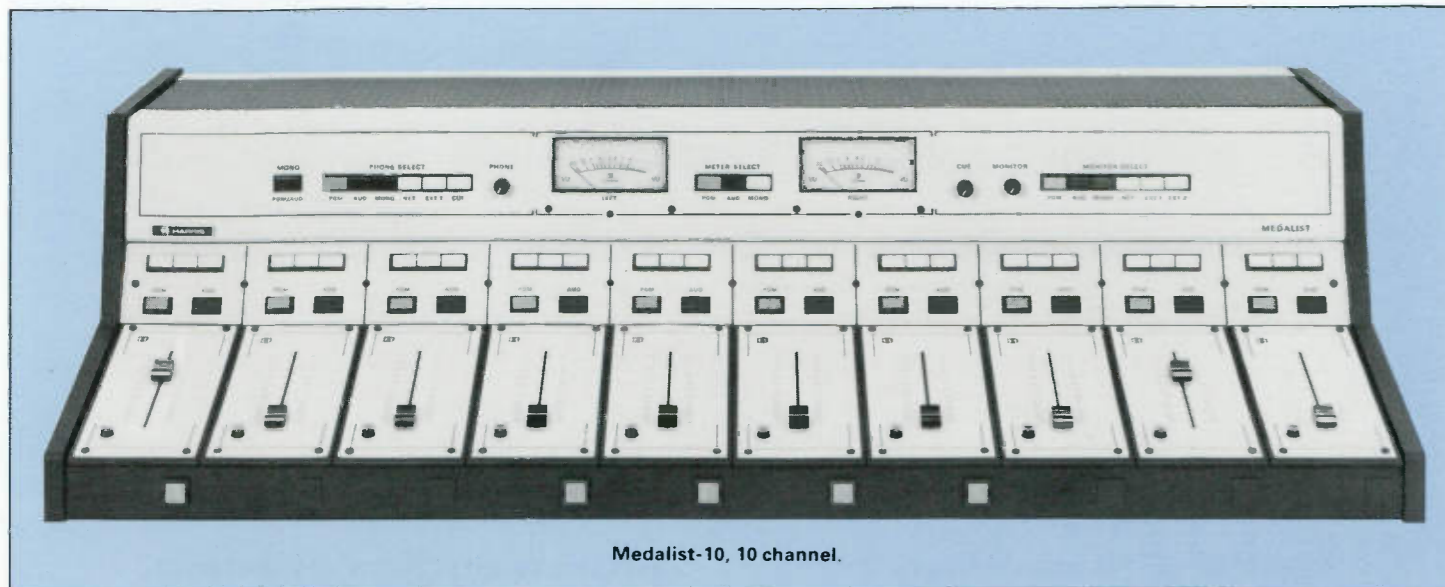
MEDALIST™ 8, 10 or 12 channel dual stereo audio consoles



Medalist-12, 12 channel.

HARRIS MEDALIST AUDIO CONSOLE —

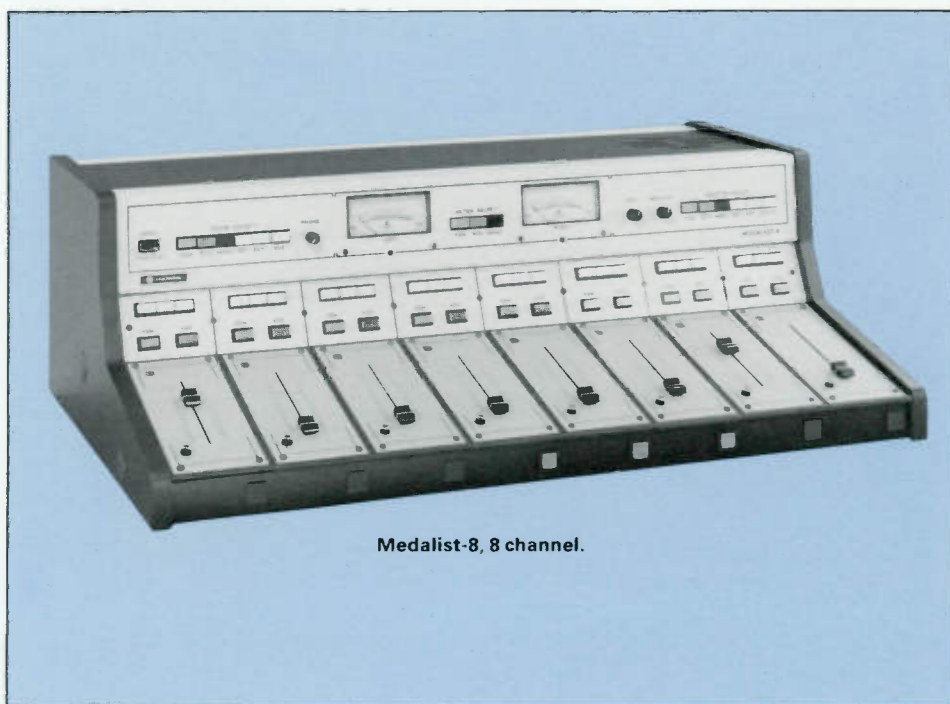
Exceptional value in a series that more than meets your expectations



Medalist-10, 10 channel.

- Plug-in, interchangeable attenuator modules provide quick replacement, even with unskilled personnel
- Choice of rotary or linear attenuators for the best performance by your operating staff
- Mic input available on any channel to provide individual station configuration of console channel assignments
- Up to 3 sources into each input channel to eliminate patch panels and external switching panels

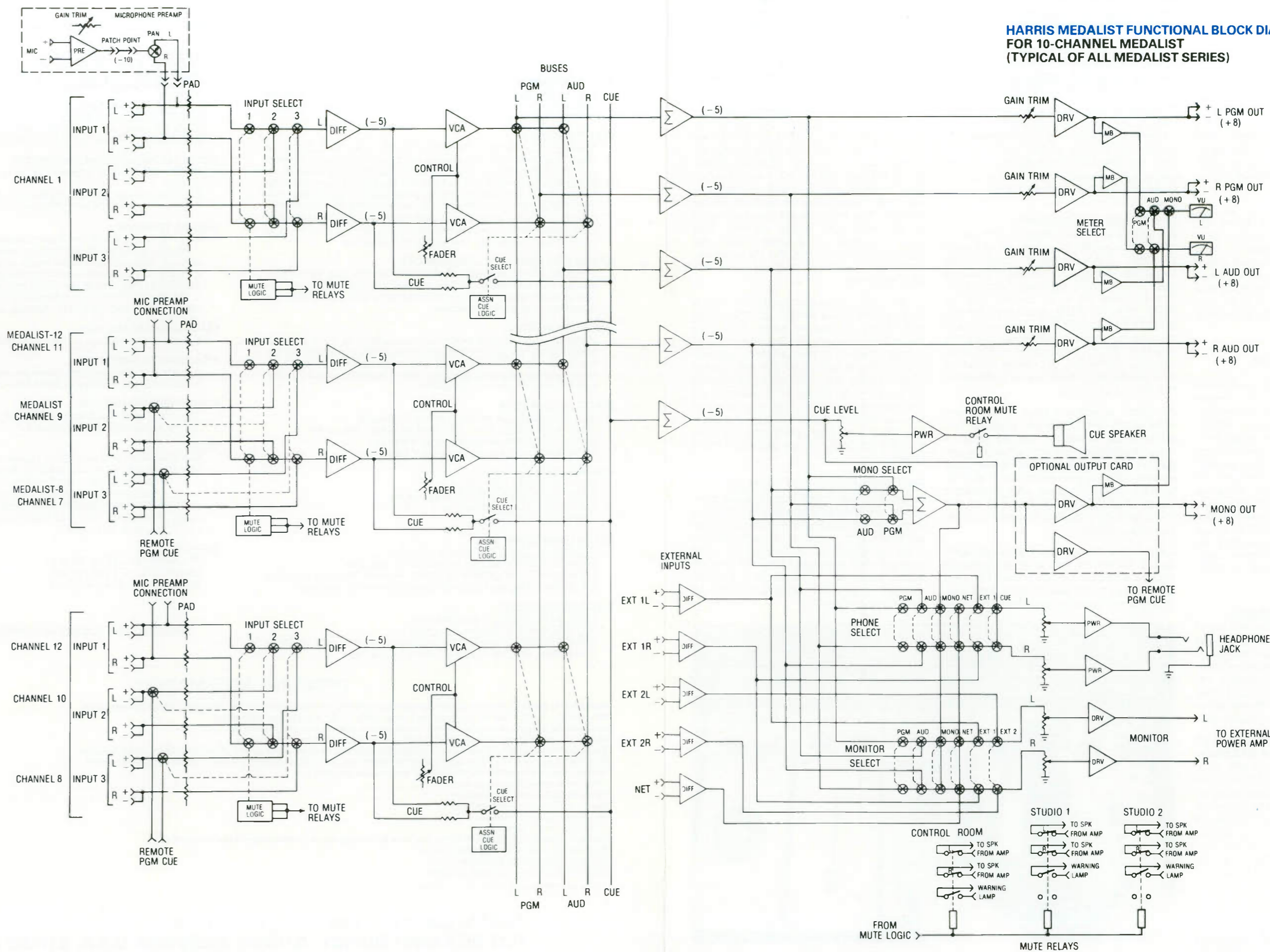
- Virtually transparent performance assures the best possible signal quality and listener satisfaction
- 25 dB minimum headroom in all circuits provides excellent station sound, even with the VU meters pinned
- Excellent RFI/EMI immunity assures noise-free signal of your programming, without interference from nearby stations
- Ideal for stereo on-air and production applications where you want the cleanest signal in the area



Medalist-8, 8 channel.

The Harris Medalist Series of dual stereo audio consoles is ideal for AM and FM on-air and production applications. The Harris Medalist-12 offers facilities for up to 36 sources into 12 input channels. It provides full visibility of all output signal levels via five dedicated meters for Program, Audition, and Mono/Sum. It also has mounting provisions for one or two up/down counters, synchronous clock or master clock readouts. The Medalist-10 allows facilities for up to 30 sources into 10 input channels. The Medalist-8 has the capability for 24 sources into 8 input channels.

Microphone capability on all input channels makes the Medalist audio console an attractive choice for small TV operations. Other applications include Cable TV, post-production facilities and sound distribution systems. Features typically found only in more expensive modular audio consoles are standard in the Harris Medalist. Multiple input selectors are provided for headphone and monitor



HARRIS MEDALIST FUNCTIONAL BLOCK DIAGRAM FOR 10-CHANNEL MEDALIST (TYPICAL OF ALL MEDALIST SERIES)

THE FEATURES LIST ON AND ON . . .
In addition to the GOLD MEDALIST features already listed, 5 VU meters are standard, providing full visibility of all critical output levels! In addition, there is an optional quartz or line synchronous clock, a 6-digit up/down timer (all with front panel set controls), and an ESE master clock readout.

A 6-watt cue amplifier with an efficient 5-inch speaker and 10 oz. magnet provides cue level and quality to satisfy the diverse needs of station talent. An input "U" pad is provided on the input terminal punch blocks with charted values for +24 to -30 dB level adjustment in 1 dB steps. This provides for easy adjustment of incoming levels.

Choice of three Penny & Giles attenuator modules as described on the back cover. Modules plug directly into mainframe wiring and may be field interchanged . . . even while the console is in operation.

COLOR CODED SWITCHES

The input channel ON and OFF switches are illuminated with high intensity green (ON) and yellow (OFF) LEDs for long reliable life. Program (red) and Audition (blue) switches for the 12 input channels have a mechanical flag which shows only when the switches are engaged; they are also in red and blue in the phone and monitor selector banks. The sum or mono switches are

black, with the balance light gray, except for the fader cue switch with an orange mechanical flag.

RELIABILITY DESIGNED IN

One of the most important criteria in the development of the GOLD MEDALIST was that of reliability. A heavy duty power supply with plenty of reserve capacity combines with components having power and voltage ratings above normal requirements to assure optimum reliability and long life.

Quick connect AMP barrel terminals for input and output connectors are gas-tight and selected for reliability as well as convenience for the installer. Top line components such as DBXTM VCAs, Penny & Giles attenuators and Schadow switches contribute undisputed reliability and performance to the Gold Medalist's long list of credentials.

A REPUTATION TO LIVE UP TO

The GOLD MEDALIST is the most sophisticated console of the MEDALIST family, a line that within two years, achieved a leadership position in the stock on-air console market. (More than 300 Medalist consoles are in operation to date!)

Ideal for AM and FM on-air and production applications, the GOLD MEDALIST offers microphone capability on all input channels. This feature makes the

GOLD MEDALIST a popular choice for small TV as well as radio operations. Other applications include cable TV, post-production facilities, and sound distribution systems.

MONITOR AMPLIFIER

Strong personal preferences for specific types of speakers and power levels led to the use of optional external monitor power amplifiers. An added advantage of this approach is the elimination of heavy peak current demands by internal amplifiers on the console power supply and grounding system which cause crosstalk problems. A stereo monitor amplifier driver is provided at line level which can drive nearly any type of power amplifier. The output of the external amplifier is then fed into the relay/power panel for muting up to three locations.

MORE FEATURES, BETTER SOUND, EXCEPTIONAL PRICE . . .

As a matter of fact, the GOLD MEDALIST provides features previously found only in much higher priced modular boards! And, in the tradition of all Harris audio consoles, the GOLD MEDALIST is a skillful blend of engineering advances. You get uncompromising performance and user-friendly design all wrapped up in a functional yet cost efficient package. Planning on updating your facility: Go for the Gold, the GOLD MEDALIST by Harris.

SPECIFICATIONS

OUTPUT CHANNELS:

Stereo PROGRAM and AUDITION, plus mono SUM channel with +8 VU output level (+4 VU and 0 VU field adjustable).

INPUT CHANNELS:

12 total. Stereo line level or mono mic level with pan-pot for left/right imaging.

INPUT CIRCUITS:

36 total. Three-position source selector in each of the twelve input channels with the first position in each group capable of mic input for up to 12 total. The second and third positions are for line level sources as well as the first, if not used for mic (with mic preamp), such as cart machines, R-R machines and turntables. This console contains *no* program cue or talkback facilities.

STANDARD AMPLIFIER COMPLEMENT:

2 microphone preamps, 3 stereo program line amplifiers, stereo headphone amplifier, stereo monitor driver (to optional external speaker power amplifier), and mono/sum cue amplifier with built in speaker.

OUTPUT CIRCUITS:

2 stereo plus mono/sum program line level outputs, stereo monitor driver @ .25 volt nominal output (10V maximum, external power amplifier required), stereo headphone feed for external power amplifier (if more than 2 watts/channel internal headphone amplifier is desired).

INPUT IMPEDANCES:

MICROPHONE: 5K ohms or better, balanced.
CART MACHINES, ETC.: 8K ohms or better, balanced.
EXT 1, EXT 2: 8K ohms or better, balanced.
NETWORK: 620 ohms terminated, balanced.

SOURCE IMPEDANCES:

MICROPHONE: 150/250 ohms
CART MACHINES, ETC.: 150/600 ohms
EXT 1, EXT 2: 150/600 ohms
NETWORK: 600 ohms

OUTPUT IMPEDANCES:

PGM, AUD, MONO: 200 ohms, resistive.
MONITOR FEED: 50 ohms maximum, resistive.
EXTERNAL PHONE FEED: 50 ohms maximum, resistive.

LOAD IMPEDANCES:

PGM, AUD, MONO: 150/600 ohms
MONITOR FEED: 1K ohms or greater.
HEADPHONES: 8 ohms or greater.
EXTERNAL PHONE AMPLIFIER FEED: 1K ohms or greater.

GAIN:

MIC TO LINE: 94 dB ±2 dB with controls @ minimum attenuation.
TAPE TO LINE: 30 dB ±2 dB with controls @ minimum attenuation.
*May be changed with circuit value changes.

FREQUENCY RESPONSE:

MIC TO LINE: +0, -0.5 dB, 20 Hz to 20 kHz
TAPE TO LINE: +0, -0.25 dB, 20 Hz to 20 kHz
BANDPASS: -3 dB @ 3 Hz and 100 kHz

TOTAL HARMONIC & IM DISTORTION:

PGM, AUD, MONO: 0.05% maximum, 20 Hz to 20 kHz @ 8 dBm output. 0.1% maximum, 20 Hz to 20 kHz @ 18 dBm output. Clipping level: +24 dBm/600 ohms, or higher.

SIGNAL TO NOISE:

MIC TO LINE: 77 dB (or better) below +18 dBm output with -50 dBv input level, for typical proof measurements; -127 dBv (or better) equivalent input noise with 20 Hz to 20 kHz bandpass and normal control settings.
TAPE TO LINE: 95 dB (or better) below +18 dBm output with +14 dBv input level and normal control settings.
MONITOR & PHONE FEED: Approx. same as TAPE TO LINE.

CUE AMPLIFIER OUTPUT:

6 watts with complex wave into 8 ohm speaker.

HEADPHONE AMPLIFIER:

2 watts per channel with complex wave into 8 ohm phones, 7 volts RMS into phones of 600 ohms or greater.

POWER REQUIREMENTS:

125 watts max. 100-125/200-250V, 50/60 Hz.

SIZE:

MAINFRAME: 610 mm (24 in.) deep x 279 mm (11 in.) high. Width: 1241 mm (49 in.)
POWER TRANSFORMER/FUSE ASSEMBLY: 330 mm (13 in.) deep x 133 mm (5 1/4 in.) high x 438 mm (19 in.) wide. (with 25 ft. interconnected cable, plugs on each end).

NET WEIGHT:

Medalist Au — 41 kg (90 lbs.) including transformer/fuse assembly.
DOMESTIC PACK: 52 kg (115 lbs.)
EXPORT PACK: 69 kg (152 lbs.)

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE.

ORDERING INFORMATION

Medalist-Au console, with three stereo program amplifiers, two mic preamplifiers, less channel attenuators	994-8942-001
Medalist 4-digit, 100-minute up/down timer with .4" LED display and 6 controls	436-0248-000
Medalist 6-digit, 12-hour Quartz Clock with .4" LED display and 3 controls	436-0272-000
Medalist 6-digit, 12 hour line synch, clock with 4 LED display and 3 controls	436-0249-000
Medalist 6-digit, remote display for ESE master clocks with serial time code	436-0250-000
Additional microphone preamps	994-8775-001
Penny & Giles linear attenuator with cue position	994-8948-001
Penny & Giles linear attenuator with cue and 4-position pre-selector	994-8941-001
Penny & Giles linear attenuator	994-8762-001
Blank attenuator module (use when less than full complement of attenuator modules specified)	994-8826-001
Crown D-75 Dual Power Amplifier	740-0927-000

HARRIS CORPORATION STUDIO DIVISION
P. O. BOX 4290, QUINCY, ILLINOIS 62305-4290 U.S.A. 217/222-8200



GOLD MEDALIST
12 Channel Dual Stereo Audio Console



specifications in your station environment for unexcelled signal quality in your market.

- **VERY HIGH RFI IMMUNITY IN AM/FM RF FIELDS**
The GOLD MEDALIST operates satisfactorily in AM fields of up to 5 volts/meter and in FM fields, with an AM noise figure of at least -50 dB, of over 150 volts/meter.

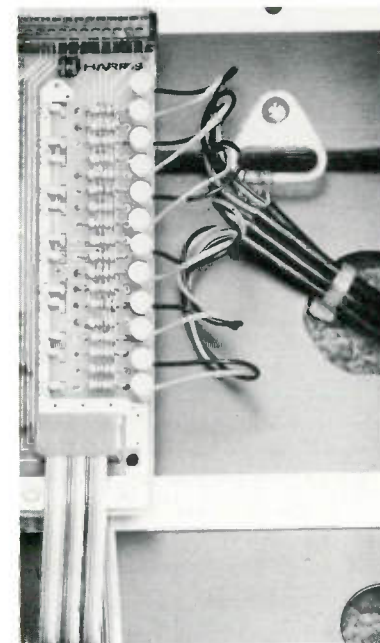
- **SUPERIOR PUNCH BLOCKS FOR QUICK INSTALLATION**
Insulation displacement type terminals, with proven long term reliability for 22 AWG stranded audio wire, are provided in a convenient punch block arrangement for input connectors.

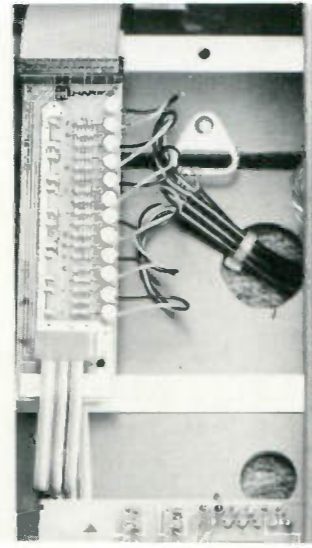
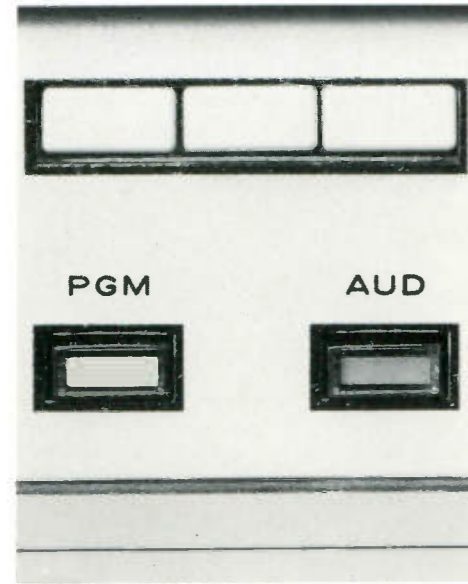
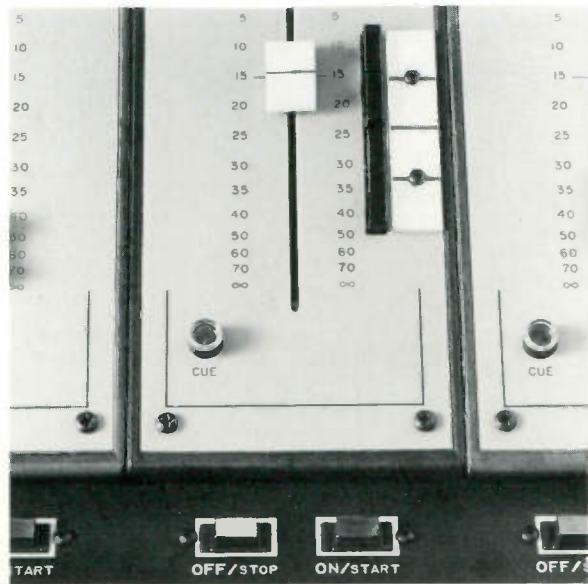
- **MULTIPLE INPUT SELECTORS ON PHONES AND MONITOR**
Interlocking 6-station push button switches provide input selection for the headphone and monitor amplifiers, including PGM, AUD, MONO, NET, CUE, EXT-1 and EXT-2 signals.

- **DYNAMIC RANGE EXCEEDS THAT OF DIGITAL AUDIO SOURCES**
The GOLD MEDALIST has at least 10 dB more dynamic range than 16-bit digital audio sources, while many competitive boards have 20 dB less due to poor S/N ratios and low output clipping level.

- **COMFORTABLE PADDED ARMREST, RECESSED TROUGH**
The channel ON/source START and OFF/STOP switches are protected from accidental operation in the recessed trough area, between the padded arm rest and attenuator module panels.

Line level sources connect to the punch blocks located under the fader modules, one per input channel. The input level adjustment pads are located adjacent to the input terminals. These boards are easily removed for changing values.





Illuminated ON and OFF switch on each input channel. Choice of three types of attenuator modules:
 1. P&G Linear with CUE position and CUE switch.
 2. P&G Linear with 4-position preselector switch.
 3. P&G Linear with CUE switch (only).

Three input selectors plus PROGRAM and AUDITION routing switches on each input channel; through mounted ON and OFF switches turn input channels on/off, plus start/stop commands to remote sources.

Input channels may be turned on/off and associated sources given start/stop commands from remote switching/logic commands; interconnection terminals are accessible under the attenuator modules as shown above.

HARRIS GOLD MEDALIST AUDIO CONSOLE

The only one in its price range with all these features!

36 INPUTS WITH LOGIC CONTROLLED SWITCHING

Input Channel ON and OFF switches control source machines through the individual input selector switches, providing START and STOP control of up to 3 sources per input channel.

UP TO 72 SOURCES INTO 12 INPUT CHANNELS

Optional fader modules, with 4-position pre-selector feeding into one input selector on each channel, expands total input capacity to 6 sources per input channel.

END-OF-MESSAGE CONTROLLED CHANNEL-OFF SWITCHING

Connect sources with EOM's to input channel-off control terminals to turn the channel off with the EOM commands which eliminates unwanted noise and extraneous signals from the program output channel.

TRANSFORMERLESS INPUT/OUTPUT FOR BEST SOUND QUALITY

Active balanced I/O circuits in the GOLD MEDALIST eliminate audio transformer generated total harmonic, transient intermod and dynamic distortions found in many other boards.

DC CONTROL FROM P&G FADERS DRIVE VOLTAGE CONTROLLED AMPLIFIERS

Low DC voltage from the fader drives a noise-

integrated active audio slope generator, which drives the VCA's in the signal path for extended noise-free operation.

CONDUCTIVE PLASTIC PHONE, CUE AND MONITOR CONTROLS

Heavy duty gain controls, secured to the front panel with threaded bushings, are provided with ribbon cables to isolate them from the associated PC boards.

STEREO TRACKING WITHIN 0.25 dB ON INPUT CHANNEL FADERS

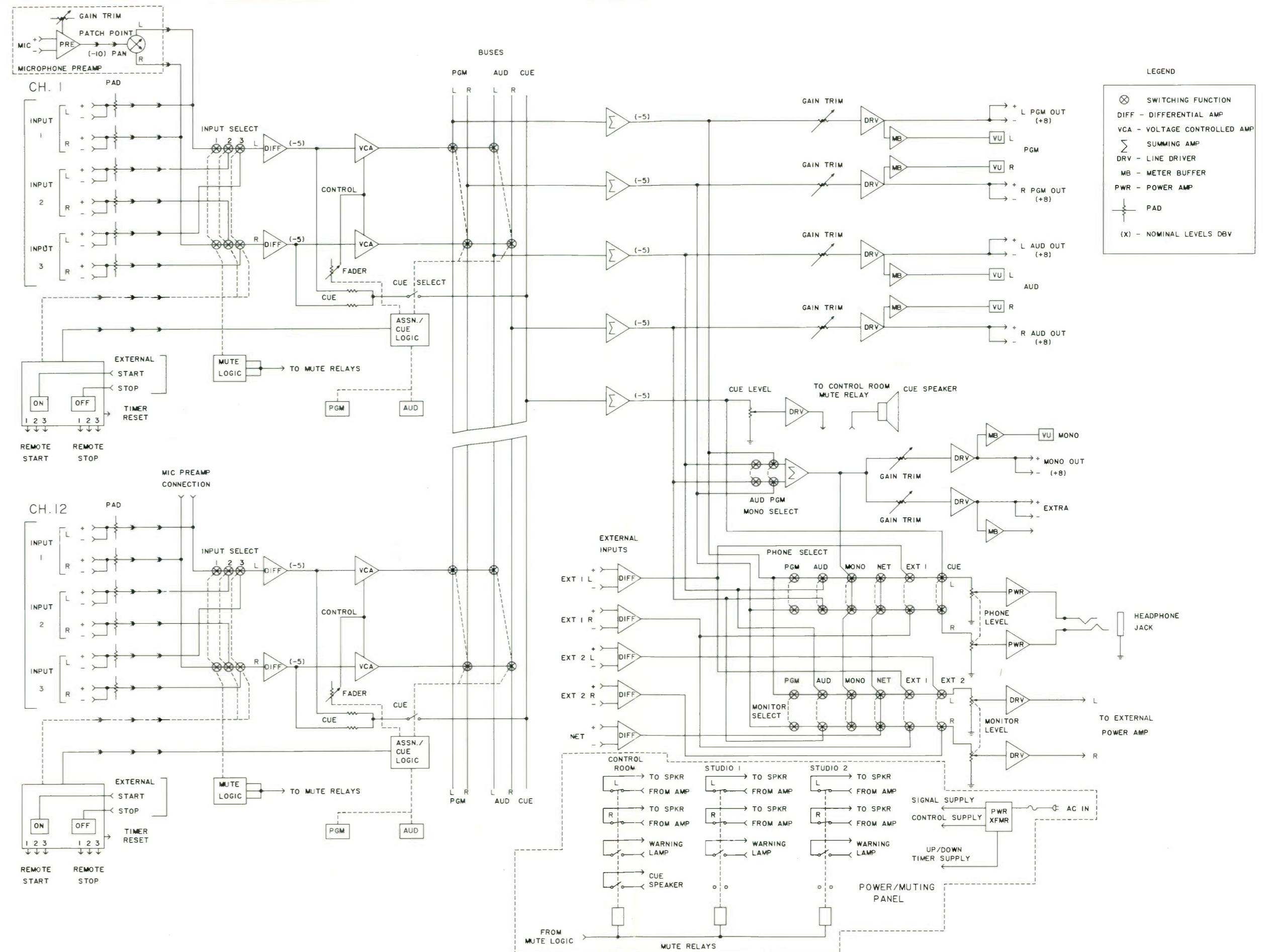
Nearly perfect stereo tracking within 0.1 dB over much of the attenuator range is provided in program circuits by close tolerance VCA's driven with common left/right control voltages.

0.05% DISTORTION, +0.0/-0.25 dB RESPONSE, 20 Hz to 20 kHz

Sufficient margin is provided in the GOLD MEDALIST circuits to allow these stringent ratings to be met in less than ideal environments found in many stations.

77 dB S/N on MIC, 95 dB S/N on M-L INPUTS, 20 Hz to 20 kHz

Factory mic channel noise requirements of more than 79 dB S/N provides margin to meet the rated



 HARRIS



MEDALIST-12

PHASE FIXER ATBC

994-8904 Encoder (2 Typical), ea. ----- 875.00
 994-8903 Decoder (Common-Point) ----- 5,475.00

ULTI-MATE 91 AGC AMP

994-8871 Ulti-Mate 91TM Mono ----- 1,250.00
 994-8975 Ulti-Mate 91 Stereo Pair ----- 2,450.00

AUDIO CONSOLES

994-8942 MEDALIST-Au ----- 8,590.00
 994-8948 P&G Fader/Cue Pos & Switch ---- 125.00
 994-8941 P&G Fader/Cue Pos/4-Pos Sw ---- 265.00
 994-8762 P&G Fader/Cue Sw (only) ----- 105.00
 436-0248 ESE 4-Digit Timer/6 Controls -- 267.00
 436-0272 ESE 6-Digit Quartz Clock ----- 256.00
 436-0249 ESE 6-Digit Line Sync Clock --- 196.00
 994-8835 MEDALIST-12 ----- 6,490.00
 992-6659 M-12 Nose Cone Ass'y ----- 135.00
 994-8758 MEDALIST-10 ----- 5,200.00
 992-6658 M-10 Nose Cone Ass'y ----- 125.00
 994-8759 MEDALIST-8 ----- 4,310.00
 992-6657 M-8 Nose Cone Ass'y ----- 115.00
 604-1043 Momentary Start Sw-Nose Cone -- 15.00
 604-1042 Alternate Start Sw-Nose Cone -- 15.00
 604-1039 Momentary Start Sw-Console ----- 15.00
 604-1040 Alternate Start Sw-Console ----- 15.00
 994-8910 P&G LIN/Control Room Switch --- 225.00
 994-8763 P&G ROTARY FADER MODULE ----- 105.00
 994-8911 P&G ROT/Control Room Switch --- 225.00
 994-8912 ALP LINEAR FADER MODULE ----- 50.00
 994-8912 ALP LIN/Control Room Switch --- 170.00
 994-8811 A-B ROTARY FADER MODULE ----- 50.00
 994-8913 A-B ROT/Control Room Switch --- 170.00
 994-8775 Optional Mic Preamp ----- 150.00
 994-8776 Optional PGM Amplifier ----- 125.00
 990-1031 Rec. Semiconductor Kit ----- 154.65
 740-0849 Symetrix A-220 Pwr Amp ----- 289.00
 740-0927 Crown D-75 Pwr Amp ----- 499.00
 740-0928 Crown D-150A Pwr Amp ----- 729.00

OTHER AUDIO PRODUCTS

994-8200 MSP-90 AM Limiter ----- 1,225.00
 994-8357 MSP-90 Mono TRI-BAND AGC ----- 1,110.00
 994-8358 MSP-90 Stereo TRI-BAND AGC --- 2,150.00
 994-8932 MSG-96 SCA Generator ----- 990.00
 740-0865 CRL FM-4 Stereo System ----- 6,200.00
 740-0864 CRL FM-2 Stereo System ----- 3,500.00
 740-0863 CRL FM-2 Mono System ----- 2,800.00
 740-0862 CRL AM-4 Stereo System ----- 6,400.00
 740-0768 CRL AM-4 Mono System ----- 3,450.00
 740-0861 CRL AM-2 Stereo System ----- 3,700.00
 740-0860 CRL AM-2 Mono System ----- 2,100.00
 740-0859 CRL PMC-300A (AM LIMITER) ----- 1,050.00
 740-0769 CRL SMP-800 (FM LIMITER) ----- 1,750.00
 740-0856 CRL APP-400 (Mono AGC Amp) ---- 1,050.00
 740-0857 CRL SPP-800 (Stereo AGC Amp) -- 1,750.00
 740-0858 CRL SEP-400B 4-Band Processor - 1,350.00
 740-0804 CRL SMP-900 AM Matrix Proc ----- 1,950.00
 740-0675 8100A/1 Stereo Optimod-FM ----- 4,395.00
 740-0798 8100A/XT 6-Band Limiter ----- 2,295.00
 740-0799 Pkg of 8100A/1 + 8100A/XT ----- 6,595.00
 740-0688 8100A/ST Studio Chassis ----- 795.00
 740-0604 9100A/1 Mono Optimod-AM ----- 4,395.00
 740-0605 9100A/2 Stereo Optimod-FM ----- 5,295.00

723-0367 Technics SP-10MKII Turntable -- 1,100.00
 723-0368 SH10B3 Base for SP-10MKII ----- 520.00
 723-0385 Technics SP-15 Turntable ----- 700.00
 723-0386 Technics SP-25 Turntable ----- 400.00
 723-0388 SH15B3 Base for SP-15, SP-25 -- 280.00
 723-0423 ATP-12 Tone Arm ----- 175.00
 723-0268 Micro-Trak 30S Tone Arm ----- 129.50
 723-0434 680AL Cartridge/.7 Spherical -- 51.00
 723-0421 680EL Cartridge/4x.7 Ellipt. - 56.00
 723-0236 Shure M44-7 Cartridge ----- 50.00

730-2521 PR99-MKII Stereo R/P R-R ----- 2,250.00
 730-2149 PR99-MKI Stereo P-B R-R ----- 1,449.00
 730-2071 ARS-1000-DC Stereo P-B R-R ---- 1,595.00
 730-2029 ARS-1000-DS Stereo P-B R-R ---- 1,535.00
 730-2304 MX-5050B-II Stereo R/P R-R ----- 2,295.00
 730-2305 MX-5050BF-II Mono R/P R-R ----- 2,350.00
 730-2307 MX-5050-MARK III-2 R/P R-R ---- 2,795.00
 730-2308 MX-5050-MARK III-4 R/P R-R ---- 3,895.00
 730-2309 MX-5050-MARK III-B R/P R-R ---- 5,295.00

730-2416 ITC 99B-PM Mono P-B C-T ----- 2,340.00
 730-2418 ITC 99B-PS Stereo P-B C-T ----- 2,585.00
 730-2420 ITC 99B-RPM Mono R/P C-T ----- 4,425.00
 730-2143 ITC 99B-RPME Mono R/P C-T ----- 5,000.00
 730-2422 ITC 99B-RPS Stereo R/P C-T --- 5,025.00
 730-2028 ITC 99B-RPSE Stereo R/P C-T --- 5,595.00
 730-2295 ITC Delta-1 Mono P-B C-T ----- 1,800.00
 730-2296 ITC Delta-1 Stereo P-B C-T ---- 1,960.00
 730-2297 ITC Delta-2 Mono P-B C-T ----- 2,260.00
 730-2298 ITC Delta-2 Stereo P-B C-T ----- 2,470.00
 730-2299 ITC Delta-3 Mono P-B C-T ----- 3,800.00
 730-2300 ITC Delta-3 Stereo P-B C-T ----- 4,200.00
 730-2437 ITC D-4/D-1 Mono R/P C-T ----- 2,935.00
 730-2438 ITC D-4/D-1 Stereo R/P C-T ----- 3,265.00
 730-2441 ITC D-4/D-2 Mono R/P C-T ----- 3,395.00
 730-2442 ITC D-4/D-2 Stereo R/P C-T ---- 3,775.00
 730-2445 ITC D-4/D-3 Mono R/P C-T ----- 4,935.00
 730-2446 ITC D-4/D-3 Stereo R/P C-T --- 5,505.00
 730-2213 ITC URM-1 Rack Mount ----- 105.00
 730-2303 ITC 1/3 Width Filler Panel --- 15.00
 730-2214 ITC 1/2 Width Filler Panel --- 18.00

730-2508 CTR111 Fidelipac Mono P-B C-T - 1,900.00
 730-2510 CTR112 - Stereo P-B C-T ----- 2,060.00
 730-2512 CTR123 Mono R/P C-T ----- 3,135.00
 730-2514 CTR124 Stereo R/P C-T ----- 3,465.00
 730-2516 RM-1 Rack Mount ----- 100.00
 730-2517 FP-1 1/3 Width Filler Panel --- 15.00
 730-2518 FP-2 1/2 Width Filler Panel --- 18.00
 730-2519 FP-3 2/3 Width Filler Panel --- 20.00
 730-2520 TE-1 Test Extender Board ----- 25.00

730-2253 S11 Audi-Cord Mono P-B C-T ---- 1,029.00
 730-2381 S11R Mono P-B C-T, Rack ----- 1,029.00
 730-2255 S16 Stereo P-B C-T, Desk ----- 1,119.00
 730-2383 S16R Stereo P-B C-T, Rack ----- 1,119.00
 730-2257 S21 Mono R/P C-T, Desk ----- 1,799.00
 730-2385 S21R Mono R/P C-T, Rack ----- 1,799.00
 730-2259 S26 Stereo R/P C-T, Desk ----- 1,989.00
 730-2387 S26R Stereo R/P C-T, Rack ----- 1,989.00
 730-2261 S32 Mono Net Delay R/P, Desk -- 1,889.00
 730-2389 S32R Mono Net Delay R/P, Rack -- 1,889.00
 730-2424 TDS-1 Mono Twin P-B, Desk ----- 1,499.00
 730-2425 TDS-1R Mono Twin P-B, Rack ----- 1,499.00
 730-2428 TDS-6 Stereo Twin P-B, Desk --- 1,679.00
 730-2429 TDS-6R Stereo Twin P-B, Rack --- 1,679.00

PROGRAM AUTOMATION

994-0051 9001 Control Rack ----- 18,900.00
 994-0052 9002 Control Rack ----- 22,500.00
 994-0053 9003 Control Rack ----- 27,900.00
 994-0063 Logging Package ----- 2,360.00
 994-0037 Source Expansion ----- 3,295.00
 992-5465 Memory Expansion ----- 695.00
 994-8348 Additional CRT Console ----- 2,795.00
 992-5113 Studio Remote Control ----- 325.00
 994-0054 RAK-90 AutoRak Cabinet ----- 595.00
 731-1110 Sony 9" Monitor ----- 345.00

994-0044 Go-Cart II Mono 24-Tray/IE --- 5,140.00
 994-0045 Go-Cart II Stereo 24-Tray/IE - 5,340.00
 994-8386 Go-Cart II Mono 42-Tray/IE --- 9,790.00
 994-8387 Go-Cart II Stereo 42-Tray/IE - 9,990.00
 994-8388 Go-Cart II Mono 78-Tray/IE --- 10,580.00
 994-8389 Go-Cart II Stereo 78-Tray/IE - 10,780.00
 994-8391 InstaCart Mono 48-Tray/IE ---- 17,330.00
 994-8392 InstaCart Stereo 48-Tray/IE -- 20,480.00
 994-8888 ITC Delta-1 Mono P-B C-T/IE --- 2,465.00
 994-8889 ITC Delta-3 Mono P-B C-T/IE -- 5,390.00
 994-8890 2) D-2 Time Announce/IE ----- 5,640.00
 994-8886 ITC Delta-1 Stereo P-B/IE --- 2,625.00
 994-8887 ITC Delta-3 Stereo P-B/IE --- 5,890.00
 994-8390-002 Otari ARS-1000 R-R/IE --- 2,230.00
 994-8390-005 Revox PR99 with AutoCue -- 2,455.00

MORE AUDIO PRODUCTS

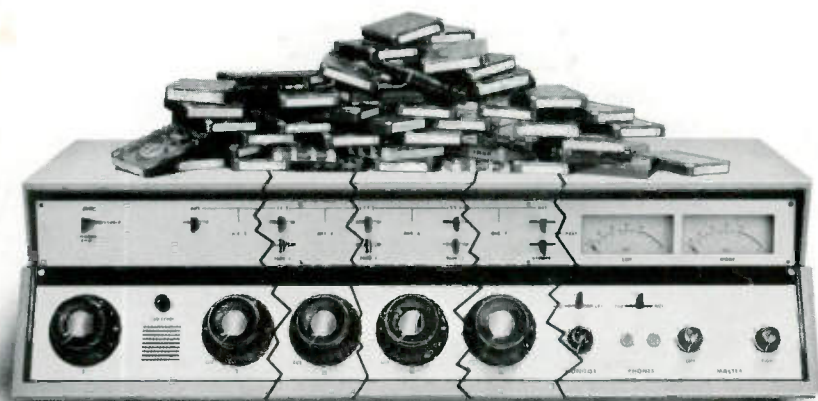
730-2527 E10 Mono P-B C-T, Desk 1-T ---- 819.00
 730-2531 E11 Mono P-B C-T, Desk 3-T ---- 849.00
 730-2535 E20 Mono R/P C-T, Desk 1-T ---- 1,379.00
 730-2539 E21 Mono R/P C-T, Desk 3-T ---- 1,419.00
 730-2543 E30 Mono 3-D P-B C-T, Desk 1-T 2,429.00
 730-2547 E31 Mono 3-D P-B C-T, Desk 3-T 2,519.00
 730-2551 E50 Mono 2-D R/P C-T, Desk 1-T 2,219.00
 730-2555 E51 Mono 2-D R/P C-T, Desk 3-T 2,279.00
 730-2559 E15 Stereo P-B C-T, Desk 1-T -- 889.00
 730-2563 E16 Stereo P-B C-T, Desk 3-T -- 919.00
 730-2567 E25 Stereo R/P C-T, Desk 1-T -- 1,619.00
 730-2571 E26 Stereo R/P C-T, Desk 3-T -- 1,659.00
 730 2575 E35 Audi-Cord Stereo P-B, 1-T - 2,629.00
 730-2579 E36 Stereo 3-D P-B, Desk 3-T -- 2,719.00
 730-2583 E55 Stereo 2-D R/P, Desk 1-T -- 2,539.00
 730-2587 E56 Stereo 2-D R/P, Desk 3-T -- 2,599.00
 730-2591 E56-1 St/Mono R/P, Desk 3-T --- 2,449.00

722-0099 Sentry 100A Speaker ----- 249.00
 722-0127 Sentry 100EL Speaker ----- 499.00
 722-0124 JBL SLT-1 Miniature Speaker --- 120.00
 722-0116 JBL 4401 Speaker, per pair --- 378.00
 722-0090 JBL 4301 Speaker, each ----- 243.00
 722-0105/0106 JBL 4312 Speaker ----- 432.00
 722-0117/0118 JBL 4411 Speaker ----- 570.00

DISPLAY ITEMS

Technics SB-R100 Speakers, per pair ---- 260.00
 Technics EPA-250 Turntable Tone Arm --- 450.00
 QSC Model 1080 Power Amplifier ----- 438.00
 Studer A725 Digital Audio CD Player ---- 1,550.00
 Audio Digital TC-4 Digital Delay ----- 1,645.00
 JBL 6230 75W/Channel Dual Power Amp --- 618.00
 994-8915 PX-91 Phono Preamplifier ----- 395.00

Act by
Sept. 30, 1986
for special savings!!



Make-goods? Or make profits?

Your audio console. Is it giving you the capability and quality you need to make profits? Or is it giving you the headaches that come with make-goods and hidden maintenance costs?

If your station is limited by a console that's too small or too old—one that's stretched beyond its capacity to perform—chances are good it's eating into your profits.

During Harris' Gold Medalist Audio Console Special now through Sept. 30, 1986, it's the perfect time to make a change!

Order by Sept. 30, 1986 and you'll get a 10.99% price discount. And, if you order by

Sept. 7, you'll receive the discount *and* your choice of a Sennheiser MD 421 U microphone; a Harris PX-91 Mastering Quality Phono Preamplifier, *or* an extra Early Bird Special!

With the Gold Medalist, you'll get superior audio performance, 12 channels and 36 inputs with logic controlled switching, remote start-stop capabilities, and other features usually limited to consoles in the \$20,000-plus price range for about half the price!

To take advantage of this special—your ticket to Harris quality at extra savings—complete the form on the back and return it today!



FOR YOUR INFORMATION,
OUR NAME IS
HARRIS

Gold Medalist Audio Console Order Form

Use this form to order your Harris Gold Medalist Audio Console! If you would like help completing it, phone Harris at 217/222-8200, extension 3456, or contact your Harris District Sales Manager.

(If you do **not** have a power amplifier, choose one of the following:)

Harris Medalist-Au 12-Channel Dual Stereo Audio Console, <i>less attenuators</i> , less monitor power amplifier (see list below) with 2 Mic Preamps, 3 Stereo Program Amps, Head-phone Amp, Cue Amp/Speaker, Monitor Line Level Drive Amplifier, Self-Contained Power Supply, Power Transformer/Relay/Fuse Panel, 100-125/200-250 Volts, 50/60 Hz, 125 Watts Maximum	8,590.00	_____
Medalist 4-Digit, 100-Minute Up/Down Timer with .4" LED Display and 6 Control Switches	267.00	_____
Medalist 6-Digit, 12-Hour Quartz Clock with .4" LED Display and 3 Control Switches	269.00	_____
Medalist 6-Digit Remote Display for ESE Master Clock with Serial Time Code	174.00	_____
Penny & Giles Linear Attenuator with Cue Position, plus Cue Switch (Use up to 11, plus a Penny & Giles Linear Attenuator with Cue Switch (only) and plug-in Connector (listed below)	125.00	_____
Penny & Giles Linear Attenuator with Cue Position, Cue Switch, plus Four-Position Stereo Input Selector Switch	265.00	_____
Penny & Giles Linear Attenuator with Cue Switch (only) and plug-in Connector	105.00	_____
Penny & Giles Rotary Attenuator Module, plug-in Connector	105.00	_____
Alps Conductive Plastic Linear Attenuator Module, plug-in Connector	50.00	_____
Allen Brady Rotary Attenuator Module, plug-in Connector	50.00	_____
Optional Mic Preamp, used for Additional Mic Channels	150.00	_____

Symetrix A-220 Dual Power Amplifier, 20 Watts per Channel into 8 ohms or 4 ohms, 117V, 60 Hz **ONLY** 315.00 _____

QSC Model 1080 Dual Power Amplifier, 35 Watts per Channel @ 8 ohms, 50 Watts per Channel @ 4 ohms, 117V, 60 Hz **ONLY** 399.00 _____

BGW-85 Dual Power Amplifier, 35 Watts per Channel @ 8 ohms, 45 Watts per Channel @ 4 ohms, 117V, 50/60 Hz **ONLY** 449.00 _____

Crown D-75 Dual Power Amplifier, 35 Watts per Channel at 8 ohms, 100/120/200/220/240V, 50-400 Hz 524.00 _____

A. ADD LINE ITEMS FOR TOTAL REGULAR COST: \$ _____

B. LINE A - TIMES .1099 (10.99%) DISCOUNT: \$ _____

C. LINE A - MINUS LINE B, FOR YOUR SPECIAL GOLD MEDALIST CONSOLE PRICING: \$ _____

For orders postmarked by September 7, 1986, choose one of the following: (please circle)

Sennheiser MD 421 U Microphone

PX-91 Mastering Quality Phono Preamp

Extra Early Bird Special (Phone 217/222-8200, extension 3456)

Name _____

Title _____

Station _____ Phone _____
Area Code/Number

Shipping Address _____

City _____

State _____ Zip _____

Best time to phone (please circle): M T W TH F
AM PM

PLACE
STAMP
HERE

Gold Medalist Audio Console Special
Harris Corporation, Broadcast Division
P. O. Box 4290
Quincy, Illinois 62305-4290



HARRIS
COMMUNICATION AND
INFORMATION PROCESSING

MICRO MAC™

MODULAR AUDIO CONSOLE



Digitally Controlled With Protected Memory

A MAJOR BREAKTHROUGH IN AUDIO CONSOLE DESIGN . . .

Harris MICRO MAC™

- **SELECTABLE 1-16 INPUT CHANNELS**
2 sources per input channel
Source start/stop switching of selected A or B source
- **SELECTABLE 1-4 OUTPUT CHANNELS**
Stereo Program, Stereo Audition, Stereo Auxiliary & Mono Sum
- **3 ASSIGNABLE SUBMASTER CHANNELS**
- **TROUBLE-FREE LINEAR ATTENUATORS**
No routine maintenance required
Complete immunity to coffee, smoke, ashes, dust and dirt
No change in attenuation or noise with operation or time
Stereo tracking within 0.5 dB over entire attenuator range
- **PEAK READING and/or VU METERS**
- **KEYBOARD ENTRY OF MANY FUNCTIONS**

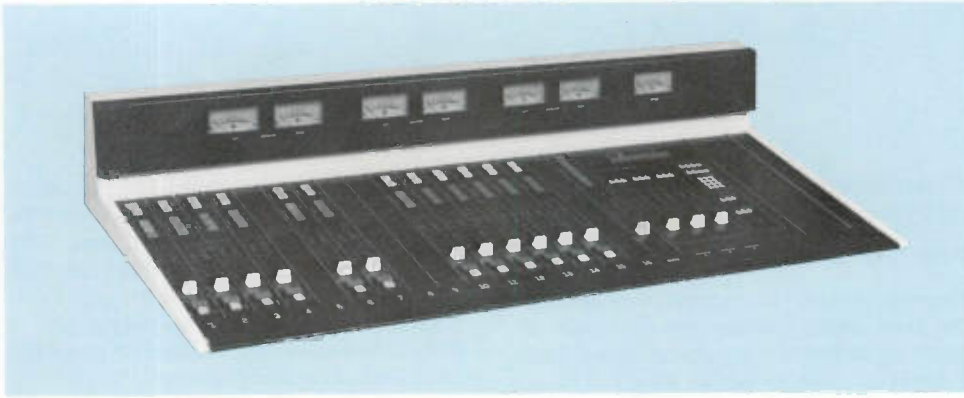
The Harris MICRO MAC™ Modular Audio Console incorporates a "start from scratch" philosophy that makes it unique. The first broadcast audio console with digital microprocessor memory is also the first offering automatic logging in a live operation. With microprocessor control and revolutionary linear attenuators, the MICRO MAC represents a major breakthrough in audio console design. Most control room errors are eliminated in routine board operation. User memory is protected from brown-outs and power interruptions. And user convenience is paramount, with virtually all switch assignments, attenuator positions and other control parameters digitally scanned continuously and updated per operator command.

Numerous software controlled functions make the MICRO MAC a bigger board than its size would indicate. Some of these include speaker muting assignment of control room and up to five studios; cart machine replay lockout and override; stop-delay of reel-to-reel machines; and a choice of latching or non-latching start/stop switching of up to 32 source machines! The MICRO MAC's modular design accepts 1 to 16 input modules of 3 different types for the ultimate in audio performance and flexibility.

PROGRAMMABLE ATTRIBUTES

By entering user commands in the MICRO MAC memory, or enabling routines already stored there, many programmable attributes may be used to enhance operation. They include:

- Muting assignment of speakers in the control room and up to five studios by keyboard entered numeric characters
- Choice of latching or non-latching start/stop switching for up to 32 sources
- Enabling Up Timer to restart each time a channel is activated to time segments or to utilize pre-timed segments
- Enter elapsed time in Down Timer to show remaining time allotted for certain events or segments
- Stop delay for Reel-to-Reel machines for accurate cueing of next selection on program tapes



ORDERING INFORMATION

Control Console Main Frame (order 1)	994-8571-001
*These items supplied with Main Frame	
Up/Down Timer*	992-5832-001
Submaster/Keyboard/Monitor Module*	992-5831-001
System Interconnect Cable*	992-5901-001
Operational Program*	992-5902-001
Input Control Module (order 1-16)	994-8563-001
Mono Control Module (order 0-1)	
Contains 994-8577-001 Mono Switcher Board	994-8564-001
Intercom Module (order 0-1)	
Contains 994-8593-001 Intercom Driver Board	994-8566-001
12/24 Hour Real Time Clock (order 0-1)	994-8560-001
Standard VU Meter (order 0-7)	994-8561-001
VU/Peak Level Meter (order 0-7)	994-8562-001
Digital Power Supply* - rack mounted	994-8598-001
Input Card Cage* - rack mounted	
Holds 16 plug-in Input Boards plus Summing Board	994-8572-001
Summing Board*	992-5848-001
Mono Mic Input Board (order 0-16)	994-8556-001
Stereo Low-Level Input Board (order 0-16)	994-8555-001
Stereo Medium-Level Input Board (order 0-16)	994-8554-001
Output Card Cage* - rack mounted	
Holds following plug-in boards & power supply	994-8573-001
Submaster VCA Boards* (3)	992-5853-001
Analog Power Supply Chassis*	992-5854-001
Hi-Level Output Amplifier Board (order 1-7)	
2 each for stereo, 1 for mono line outputs	994-8579-001
Monitor Selector Board (order 0-2)	994-8578-001
External Effects/Processing Interface (order 0-3)	994-8576-001
DMI Interface Card Cage (order 0-1) - rack mounted	
Holds the following plug-in boards	994-8574-001
Dual Machine Interface Card (order 0-16)	
1 for each input channel with remote control of 1 or 2 source machines	994-8568-001
Machine Interface Logging Board (order 0-1)	
1 required for logging a live operation	994-8569-001
Muting/Intercom Driver (order 0-1) - rack mounted	994-8575-001
Console Main Frame Extender Card (order 0-1)	939-5776-002
Input Card Cage Extender Card (order 0-1)	939-0209-001
Summing Board Extender Card (order 0-1)	939-5776-093
Output Card Cage Extender Card (order 0-1)	939-5776-087
DMI Card Cage Extender Card (order 0-1)	939-0209-001
Blank Main Frame Module (order 0-N)	
2 required in extreme right unassigned area, plus 1 each for unused input channels and intercom position	994-8621-001

HARRIS CORPORATION Broadcast Products Division
 P. O. Box 4290, Quincy, Illinois 62301 U.S.A. 217/222-8200

- Operating warning and play command lockout to cart machines to prevent back-to-back playing of same cart
- Accurate and convenient setting of 12/24 hour Real Time Clock
- Automatic logging of a live operation with serial ASCII data output connection to external log printer, showing:
 - Start time of each new event (change or restart of source)
 - Input channel number (1-1 through 16-2, 32 total)
 - Clear text identification/information from encoded source tapes, if provided by station operation

INPUT MODULES

Each input module contains a 2-position input selector switch with transferred status and logic control to the selected source. This effectively doubles source capacity of the console when all 16 input channels are installed to a total of 32 miscellaneous sources. The input control modules may use an associated Mono Microphone Input Board, Stereo Low-Level Input Board, or

Stereo Medium-Level Input Board, depending on the type of source connected into it.

ASSIGNABLE SUBMASTER BUSES

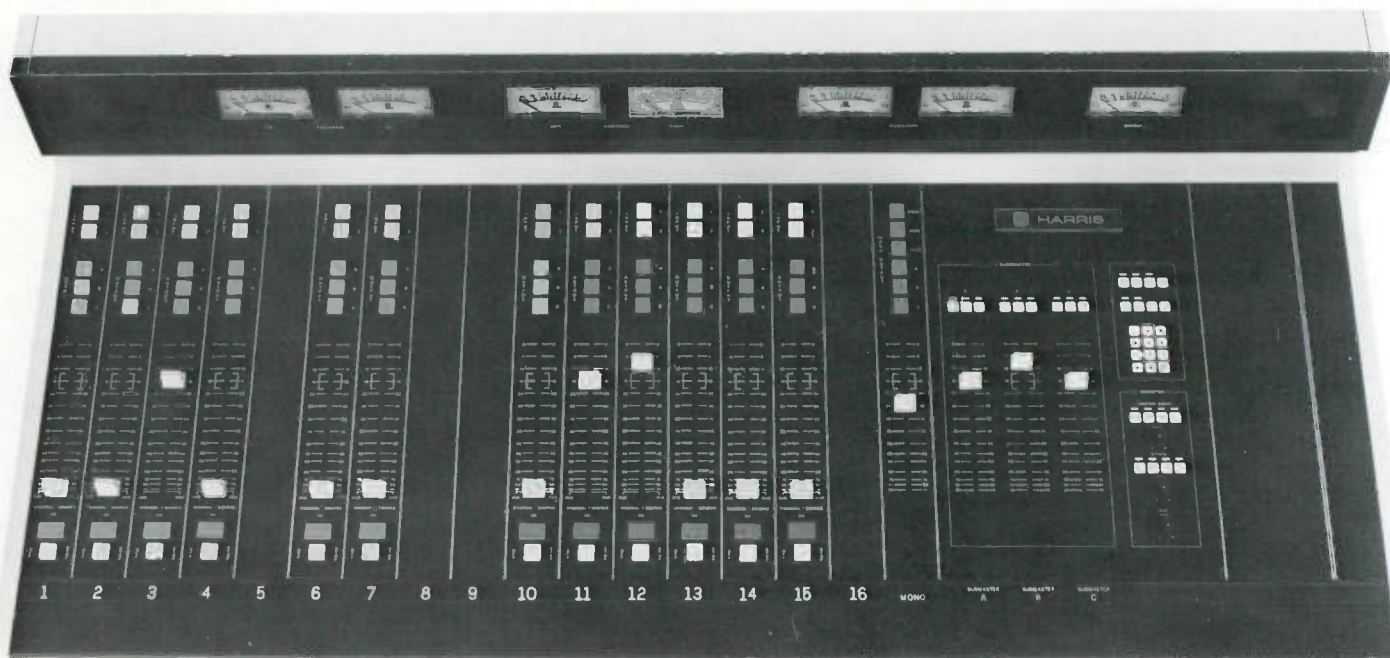
Three submaster buss assignment switches on each input module are provided for grouping of the various source types. Each submaster channel allows insertion of external effects or processing units such as an audio processor, filter, equalizer, effects, or reverberation, for signal enhancement. The level is controlled by the A, B, or C Submaster linear attenuator; output may be directed to PGM, AUD, AUX and/or MONO output lines. The result is a far more effective, flexible system than could be obtained with plug-in effects/limiter/EQ modules.

LINEAR ATTENUATOR

An exclusive design in a digitally scanned attenuator provides trouble-free perform-

ance with no routine maintenance. Its digital output signal, designating the position of the actuator, is converted to an analog VCA control voltage, which operates true VCA (voltage controlled amplifier) gain elements. There is only one moving part, a mechanical assembly. Its position is sensed by sealed LEDs and detectors.

Complete immunity to poor environmental conditions is facilitated by this design. Coffee spills, cigarette smoke and ashes, airborne dust and dirt—agents that degrade operation of the best conductive plastic attenuators—are not a factor on the MICRO MAC. In those extreme situations, excessive build-ups may be simply wiped off attenuator elements, restoring them to new operating condition. And attenuator life is virtually unlimited. Stereo tracking within 0.5 dB over the full attenuator range is another important feature of the MICRO MAC linear attenuator. Compare this with any other attenuator, such as the dual step type or dual conductive plastic, with their staggered steps and wide tolerance audio taper curves.



Unparalleled Flexibility, Unexcelled Performance

INPUT CHANNEL ON/OFF

Illuminated, color-coded switches at the bottom of the input channel panel turn the channel on and off. In addition, they may be used to start and stop external sources through the optional dual machine interface cards. Actual switching circuits for the source machines are opto-isolated to prevent any chance of switching transients being induced into the console program circuits.

INPUT CHANNELS

All three types use true instrumentation amplifiers as active (transformerless) balanced inputs for practically transparent operation. Amplifier input impedance is approximately 10K ohms, so the input impedance of the channel is determined by the loading resistor, if used.

The Mono Mic and Stereo Lo-Level Input Channel Boards have at least 30 dB of headroom. They can accept -30 dBm, or even more, with a nominal -60 dBm input gain setting. A P-C mounted DIP (Dual In-line Package) switch provides gain trim or adjustment in 10 dB steps, from -70 to -40 dBm nominal input levels. The Medium Level Input Channels also have 30 dB of headroom. They are designed for a nominal input level of -20 dBm and have a DIP switch gain adjustment in 10 dB steps to accommodate a -30 to +10 dBm input level.

VU/PEAK METER

From 1 to 7 meters may be selected as a combination VU and Peak Reading meter, or VU meter only. The VU meter meets all ASA specifications, and is driven with an isolation/buffer amplifier to prevent meter diode generated distortion in the program circuits. The Peak Reading meter has 11 LEDs mounted across the top of the meter scale. They are calibrated +5, +7, and so on, @ 2 dB per division, up to +23 dBm - plus

OL (overload calibrated for +30 dBm output of program amplifiers). The VU meter has a precision calibration to adjust for an amplifier output of 0 VU, +4 VU or +8 VU with the meter reading zero. Thus, the output level of the MICRO MAC's program lines may be set to the desired point for the system. The peak reading LED portion of the meter is extremely fast in operation in its factory configuration. It can easily be modified to approximate the DIN PPM (Peak Program Meter) meter characteristics.

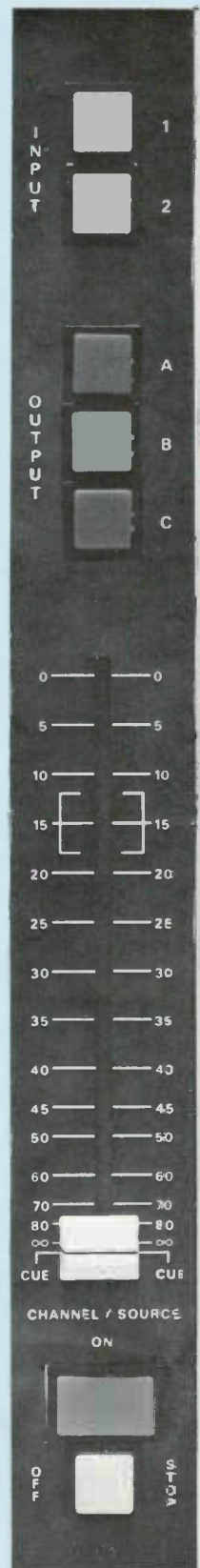
OUTPUT CHANNELS

Stereo Program, Stereo Audition, Stereo Auxiliary and Mono/Sum channels may be added to the console by adding up to 7 Output Amplifiers (3 pairs for stereo plus mono) and VU or VU/PEAK meters. The Output Amplifiers have active (transformerless) balanced outputs with extremely high slew rates, making them practically transparent. Output capability is at least +30 dBm into a 600 ohm load, providing from 22 dB to 30 dB of headroom with the output level adjusted for +8 VU to 0 VU. The MONO output channel can be fed a compatible or sum signal from the stereo PGM, AUD, AUX, Submaster A, Submaster B and/or Submaster C channels. This provides complete flexibility seldom found in other consoles.

SUBMASTER/KEYBOARD/ MONITOR MODULE

Selector switches above the submaster faders connect them to the PGM, AUD and AUX output channels, individually or collectively. All submaster feeds are buffered so that multiple feeds cause no crosstalk between channels. The Control Room and Studio Monitor sections each have input selectors for PGM, AUD, AUX and EXT feeds. Monitor section output is approximately 1 volt for driving external speaker amplifiers.

The Keyboard/Edit section contains switches labelled SET CLOCK, UP TIMER, DOWN TIMER, START/STOP, EDIT, ENTER, ADVANCE and CLEAR. An additional 12-button key pad provides for numeric entry of user instructions in the console memory.



Harris MICRO MAC input module with linear attenuator actuator.

MICRO MAC SPECIFICATIONS

OPERATING MODE: Stereo in up to 3 output channels, plus mono/sum.

MIXING CHANNELS: Optional, from 1 to 16 mono mic, low-level stereo or medium-level stereo channels that can be assigned to desired sources.

INPUT CIRCUITS: From 2 to 32, depending on number of input modules in the console.

OUTPUT CIRCUITS: Total 7: Stereo Program, Stereo Audition, Stereo Auxiliary, Mono/Sum, Stereo Studio Monitor, Stereo Control Room Monitor, and Cue Amplifier.

SOURCE IMPEDANCES:

Microphones: 150/250 ohms, balanced.

Stereo low-level: 150/250/600 ohms, balanced.

Stereo medium-level: 150/250/600 ohms, balanced.

GAIN

MIC CHANNEL: 92 dB nominal with 0 VU output level, 100 dB nominal with +8 VU output level.

LOW-LEVEL INPUT CHANNEL: 92 dB nominal with 0 VU output level, 100 dB nominal with +8 VU output level.

HIGH-LEVEL INPUT CHANNEL: 52 dB nominal with 0 VU output level, 60 dB nominal with +8 VU output level.

FREQUENCY RESPONSE: ± 0.25 dB maximum from 20 Hz to 20 kHz in all program and monitor circuits.

DISTORTION

THD (HARMONIC): Less than 0.1% from 20 Hz to 20 kHz below the +30 dBm overload indicator point in all program input/output channels and monitor circuits.

IMD (INTERMOD): Less than 0.1% with SMPTE 4:1 mix below the +30 dBm peak equivalent level in all program input/output channels and monitor circuits.

NOISE

MIC CHANNEL: -125 dBv equivalent input noise, 20 Hz to 20 kHz bandwidth unweighted, with -50 dBv input level into one active input channel.

LOW-LEVEL INPUT CHANNEL: -125 dBm equivalent input noise, 20 Hz to 20 kHz bandwidth unweighted, with -50 dBm input level into one active input channel.

HIGH-LEVEL INPUT CHANNEL: -90 dBm equivalent input noise, 20 Hz to 20 kHz bandwidth unweighted, with -10 dBm input level into one active input channel.

POWER: 117/234 volts, $\pm 10\%$, 50/60 Hz, 350 watts maximum.

SIZE

MAIN FRAME: 1308 mm (51.5 in.) width, 584 mm (23 in.) depth, 194 mm (7.65 in.) projection above and 102 mm (4 in.) below table top surface, with 1276 mm (50.25 in.) by 527 mm (20.75 in.) cutout in table top.

INPUT CARD CAGE: 311 mm (12.25 in.) height, 483 mm (19 in.) width, 356 mm (14 in.) overall depth.

OUTPUT CARD CAGE: Same as Input Card Cage.

DIGITAL POWER SUPPLY: 133 mm (5.25 in.) height, 483 mm (19 in.) width, 279 mm (11 in.) overall depth.

DUAL MACHINE CARD CAGE: 267 mm (10.5 in.) height, 483 mm (19 in.) width, 356 mm (14 in.) overall depth.

MUTING/INTERCOM DRIVER UNIT: 178 mm (7 in.) height, 483 mm (19 in.) width, 102 mm (4 in.) overall depth.

NET WEIGHT: 298 kg (135 pounds) for Main Frame, 220 kg (100 pounds) for other 5 units listed above.

DOMESTIC PACKED WEIGHT: 596 kg (270 pounds) for Main Frame, 440 kg (200 pounds) for other 5 units listed above.

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE



HARRIS

COMMUNICATIONS AND
INFORMATION HANDLING

MONO 5

Solid-State 5-Channel Audio Control Console

- Thirteen inputs into five mixing channels
- Compact size saves control room space
- Quiet "push-on/push-off" input switches
- Extensive use of integrated circuits
- All solid state...silicon transistors
- Great versatility at a modest price

Harris' Mono 5 is a solid-state audio control console that provides a high degree of flexibility through the use of thirteen inputs into five monaural mixing channels. Although compact in size, and economical in price, the Mono 5 offers facilities and performance specifications comparable to many larger, more expensive consoles.





In medium and smaller size AM and monaural FM stations, the Mono 5 is ideal as a main console. In larger stations, the Mono 5 will find application as a production console, or may be used for independent programming from a second facility.

VERSATILE INPUT SWITCHING:

Thirteen inputs can be switched into the five mixing channels in a manner to satisfy most programming requirements. These inputs can include four microphones, three turntables, three cartridge reproducers, one reel-to-reel reproducer, one network and one auxiliary source. The thirteen front panel input switches are of the "push-on/push-off" type for quiet control room operation. There are isolation transformers on all program inputs and outputs.

MICROPHONE CHANNELS (1 & 2):

These two channels are equipped with low-noise preamplifiers for use with low-impedance, broadcast-type microphones. Each of the channels may select from two different input signals by use of front panel switches.

MEDIUM LEVEL CHANNELS (3, 4 & 5): These three channels are designed for medium level inputs and may be used with turntables, cartridge tape machines, or reel-to-reel machines. Remote, network or auxiliary sources may be assigned to any of the nine medium level inputs.

PROGRAM, AUDITION AND CUE SELECTION:

Any of the five mixing channels may be switched to the Program Channel or Audition to permit independent monitoring or recording of incoming sources without disturbing programming. Channels 3, 4 and 5 also have cue positions, which provide signal to the amplified cue system. This signal can be monitored by an internal speaker or external headphones. Switching is by telephone-grade lever-type keys that provide maximum durability and reliability.

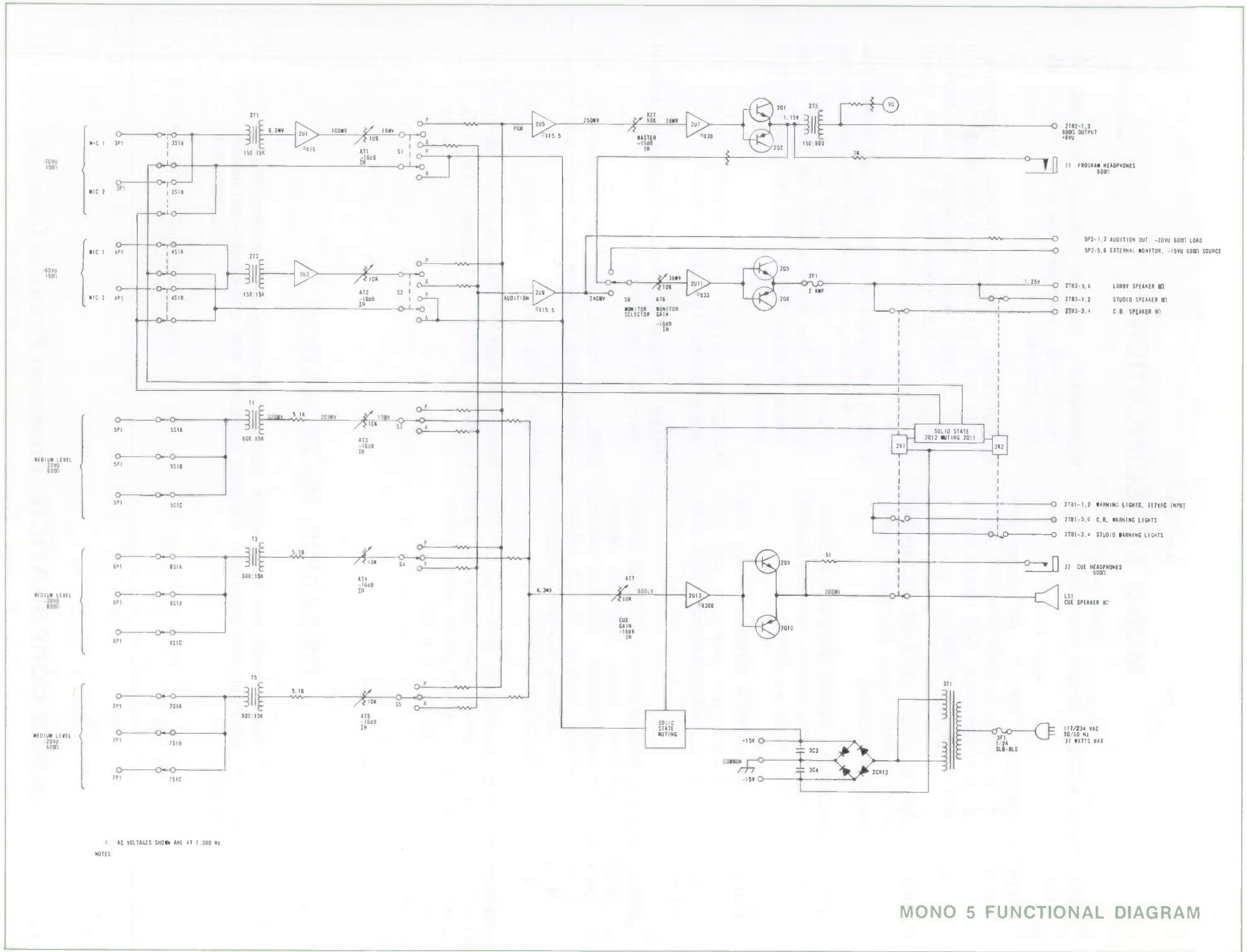
PROGRAM CHANNEL: The program channel consists of a summing type booster amplifier, audio output amplifier, VU meter, and a master gain control. The master gain control, an internal adjust-

ment, is preset at the factory to provide 16 dB of reserve gain for the console, and is the optimum setting for providing adequate operating margins of signal-to-noise and "headroom". The 4-inch illuminated VU meter is a standard volume indicator, and is used in conjunction with the mixing channel attenuators to establish a reference of "0" VU, which is equivalent to an output level of +8 dBm.

ADDITIONAL FACILITIES:

A three-position monitor selector switches the monitoring amplifier input to (1) program circuit, (2) terminals for an external source, and (3) audition circuit. Front panel controls also include monitor gain and cue gain, and conventional high impedance cue and program headset jacks are provided.

A protective system of warning lights and speaker muting is included in the Mono 5 to prevent acoustic feedback and broadcasting of a cue signal when live microphones are nearby.



1 AC VOLTAGES SHOWN ARE AT 1,000 HZ.
NOTES:

MONO 5 FUNCTIONAL DIAGRAM

MONO 5 SPECIFICATIONS

OPERATING MODE: Single channel, monophonic.

MIXING CHANNELS: Total-5. Two microphone channels, three medium level (turntable, tape, remote, network) channels. Cue positions on medium level channel switches.

INPUT CIRCUITS: Total-13. Four microphone inputs, nine medium level (turntable, tape, remote, network) inputs.

OUTPUT CIRCUITS: Total-5. Program, audition, two muted monitor for control room and studio, one unmuted monitor for lobby.

AMPLIFIERS AND POWER SUPPLY: Two pre-amplifiers, one program, one cue and one monitor amplifier. Self-contained power supply.

IMPEDANCES: Microphones: 150/600 ohms, balanced. Medium level: 150/600 ohms, balanced. Program output: 150/600 ohms, balanced. Audition output: 1,400 ohms. Monitor outputs: 8 ohms nominal. Audition and monitor outputs are unbalanced.

GAIN: Microphone input to line output: 100 dB, ± 3 dB. Medium level input to line output: 60 dB, ± 3 dB. Medium level input to monitor output: 80 dB, ± 4 dB.

RESPONSE: Program circuits: ± 1 dB, 30-15,000 Hz. Monitor circuits: ± 1.5 dB, 30-15,000 Hz.

DISTORTION: Program circuits: 0.5% maximum @ +8 dBm; 1.0% maximum @ +18 dBm output level, 30-15,000 Hz. Monitor circuits: 3.0% maximum @ 6 watts output level (lobby output only).

NOISE: Program circuits: at least 70 dB below +18 dBm output with -50 dB input to mic channels or -10 dBm input to medium level channels. Monitor circuits: at least 70 dB below 6 watts output level with same input levels.

POWER: 117/234 volts, $\pm 10\%$, 50/60 Hz, single phase, 37 watts maximum.

FINISH: Beige-gray Pebble-Tex cabinet, natural aluminum front panel.

SIZE: 30 inches long, 8½ inches high, 17½ inches deep (76.2 cm x 21.6 cm x 44.5 cm).

WEIGHT: 41 pounds (18.6 kg).

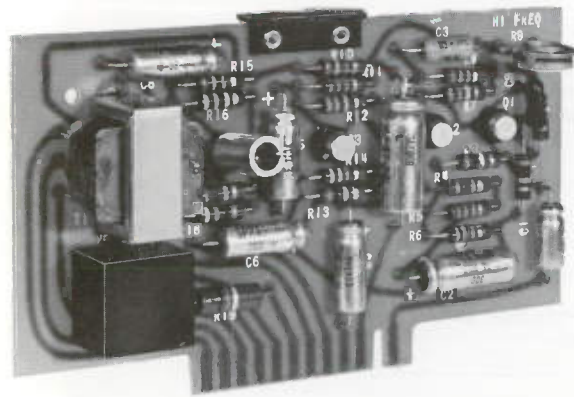
SHIPPING DATA: Packed weight, domestic, 51 pounds; export, 101 pounds (45.8 kg).

ORDERING INFORMATION

Mono 5, five-channel monaural audio console, complete with preamplifiers, program amplifier, cue amplifier, monitor amplifier, and self-contained power supply..... 994-7699-001

HARRIS CORPORATION Broadcast Products Division
123 Hampshire Street, Quincy, Illinois 62301

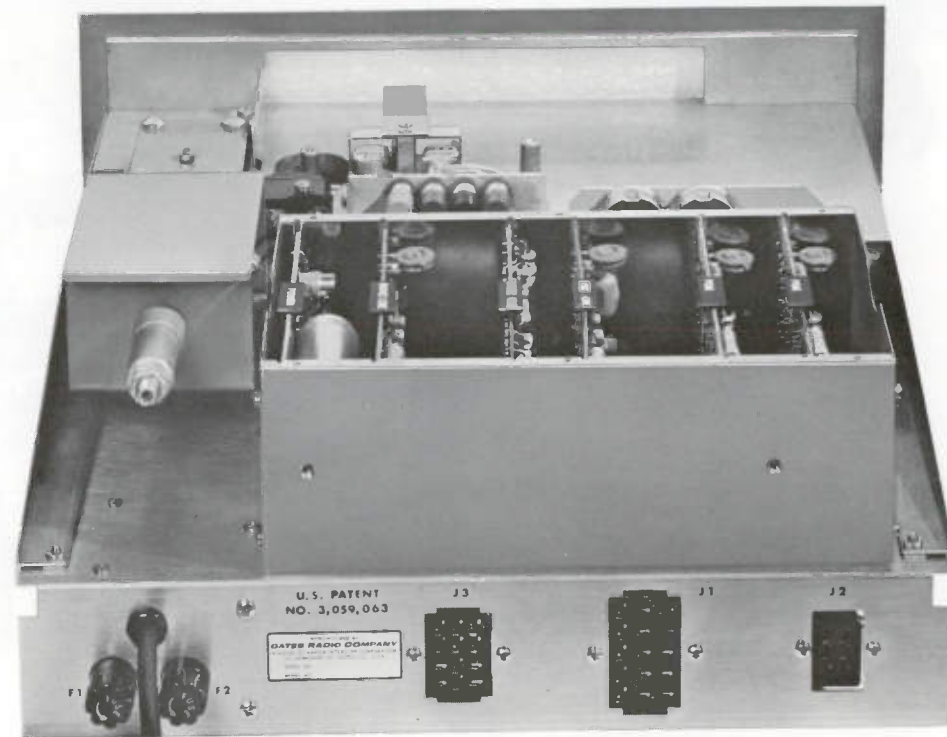
PRECISION MODULAR CONSTRUCTION



FULLY REGULATED POWER SUPPLY

A regulated supply is used to power all circuit modules assuring correct operating parameters for peak efficiency and reliable trouble-free operation at all times.

Separate distribution points provide isolation between cueing circuits and program circuits.



Plug-in circuit boards offer the finest in advanced solid state engineering adding years of useable life to electronic components and circuitry. The construction used in the Criterion 80 series, provides for modifications as may be required to make the Criterion 80 series compatible with almost any make

of existing cartridge equipment. Circuit boards are used throughout for easy component access, should maintenance be required. Electronics are all of plug-in design, including relays, circuit boards, all audio and switching leads, even to the lighted front panel switch assemblies.

RECORDING UNITS

The basic Criterion 80 series recording amplifier is a solid state, primary cue device for use in association with any monophonic Criterion 80 playback. The recording amplifier is also available in stereo, with second and third tone options in mono or stereo at additional cost. The basic desk mount design is adap-

table to rack mounting with optional rack adapters. Top-surface mounting of all components and the special construction used in the Criterion 80 recording amplifier provides for extremely easy maintenance when required.

CRITERION 80

SPECIFICATIONS

PLAYBACK UNIT

POWER SOURCE:
105-125 volts, 60 Hz or 50 Hz.

POWER REQUIREMENTS:
70 watts maximum.

SYSTEM FREQUENCY RESPONSE:
±2 dB 50 to 15,000 Hz.

NOISE:
45 dB (Stereo), 48 dB (Mono) below NAB Std. Ref., 52 dB (Stereo), 55 dB (Mono) below tape signal reference of 400 Hz, 3% THD.

DISTORTION:
Record to playback, less than 3% at 6 dB above NAB Std. Ref.

EQUALIZATION:
NAB Standard Response.

AMBIENT TEMPERATURE:
55° C, maximum.

AUDIO OUTPUT:
600 ohms, balanced, 0 dBm nominal, +10 dBm maximum.

CUE SIGNALS:
NAB Standard Cue signals.

REMOTE CONTROL:
All Control Functions.

HEAD ASSEMBLY:
Laminated Hyperbolic heads in Micro-Set assembly.

TAPE SPEED:
7½ inches per second.

TAPE DRIVE SYSTEM:
Direct Capstan Drive, sealed ball bearings.

FLUTTER AND WOW:
0.2% or less

TIMING ACCURACY:
0.1% or better.

TAPE START AND STOP TIME:
Less than 0.1 second.

TAPE PULLING FORCE:
3 pounds.

DIMENSIONS AND WEIGHT:
Desk top cabinet, 6" high, 13½" wide, 14" deep. With rack adapter, 7" high, 19" wide. Net weight, 30 lbs.

RECORDING AMPLIFIER

POWER SOURCE:
From playback unit.

AMBIENT TEMPERATURE:
55° C maximum.

AUDIO INPUT:
600 ohms balanced line, input levels from -20 to +10 dBm, matching; +10 to +40 dBm bridging (20 K).

REMOTE CONTROL:
All functions and lamp indications.

BIAS OSCILLATOR:
Push-pull, 80 kHz.

DIMENSIONS AND WEIGHT:
Desk top cabinet, 4" high, 13¼" wide, 12½" deep. With rack adapter, 5¼" high, 19" wide. Net weight, 12 lbs.

ORDERING INFORMATION

HOW TO ORDER: Order basic single tone unit. For playback units, order second and third tone sensors as accessories. If ordering record/playback combination, also order cue oscillator. For rack mounting, order rack adapter/s.

RECORD/PLAYBACK COMBINATIONS

MPD-811 Matched playback and record amplifier, monaural, 1000 Hz cue, desk mount, 60 Hz 994-6729-001 11

As above, except 50 Hz 994-6733-001

MPD-821 Matched playback and record amplifier, stereo, 1000 Hz cue, desk mount, 60 Hz 994-6731-001 1,560

PLAYBACK UNITS

CPD-811 Playback unit only, monaural, 1000 Hz cue, desk mount, 60 Hz 994-6701-002 7,90

As above, except 50 Hz 994-6703-002

CPD-821 Playback unit only, stereo, 1000 Hz cue, desk mount, 60 Hz 994-6702-002 1,975

As above, except 50 Hz 994-6704-002

ACCESSORIES

QS-150 150 Hz cue sensor assembly, plugs into basic playback unit for conversion to two tone 900-0154-001 30

QS-8 8000 Hz cue sensor assembly, plugs into basic playback unit for addition of third tone 900-0155-001 40

TO-23 150 Hz and 8000 Hz cue oscillator assembly, plugs into record amplifier for conversion to three tone 900-0165-001 105

Rack Adapter-Playback, adapts any Criterion 80 desk mount playback unit for 19" rack mounting 994-6790-001 8

Rack Adapter-Record Amplifier, adapts any Criterion 80 desk mount record amplifier for 19" rack mounting 994-6791-001 5

AMS-4A Automatic switcher, mono (2 for stereo), four inputs to one output 900-0024-001 160

RC-T-8 Remote control with elapsed time indicator. May be used with all Criterion models. Complete record control, 60 Hz 900-0266-001 150

RC-T-8 As above, except 50 Hz 900-0266-002

RC-RA-8 Remote control box, may be used with all Criterion models. Complete record control of one unit 900-0267-001 65

RC-P4-8 Remote control box, may be used with all Criterion models. For playback control (START only) of up to four units 900-0268-001 65

CP-2.5M-970



123 HAMPSHIRE ST. - QUINCY, ILLINOIS - 62301 - U.S.A.

ADV. 276A

HARRIS
INTERTYPE
CORPORATION

GATES
A DIVISION OF HARRIS-INTERTYPE

TAPE CARTRIDGE SYSTEM



CRITERION 80

TAPE CARTRIDGE SYSTEM

Now, from the originators of the cartridge tape system for broadcasting comes the ultimate in cartridge unit design . . . the Criterion 80 series, with built-in, performance-proven features. From sleek slide-out chassis and plug-in electronics to better timing, better wow and flutter, and dependable direct capstan drive for split-second timing accuracy, the Criterion 80 represents over ten years of actual experience in the design, engineering and manufacturing of broadcast tape cartridge equipment. Consequently, the Criterion 80 series offers all of the many features most desired by broadcasters, plus superlative workmanship which assures long and dependable service.

The Criterion 80 has design improvements for still more efficient operation not found in its predeces-

sors. Backed up by the rugged deck and tape drive assembly for which it is famous, the Criterion 80 in addition has the latest in silicon transistors, plug-in printed circuit boards, and independent gain controls for the cue amplifiers.

The individual Criterion 80 circuits have been RFI proofed to make them impervious to strong RF fields. The printed circuit boards, however, are easily accessible for quick maintenance.

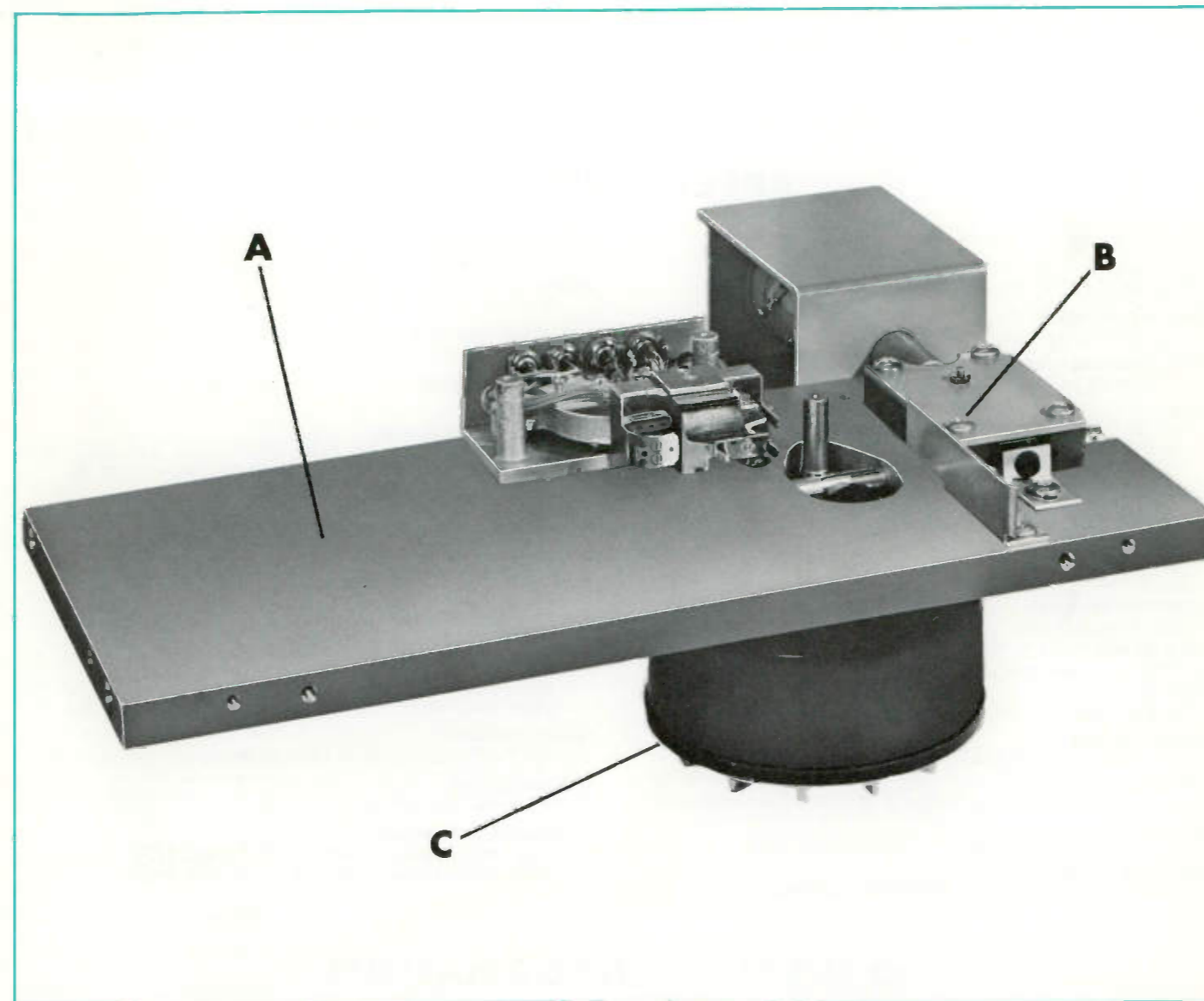
Other Criterion 80 advancements include output gain controls accessible from the front panel, automatic audio muting and transient suppression, and a +10 dBm output capability. All external cables have latching connectors for a more dependable installation.

MODELS AND TYPES



The Criterion 80 series is available in playback and record/playback combination models, in monaural or stereo. Basic desk-mount design may be adapted to rack mounting with optional rack adapters. The primary 1 kHz cue tone is standard. Second and third

tone operation is optional at additional cost on both monophonic and stereophonic models. All versions of the Criterion 80 playback series meet National Association of Broadcasters specifications and offer features such as 24 volt dc external function switching for safety in remote controlled applications.



RUGGED DECK ASSEMBLY

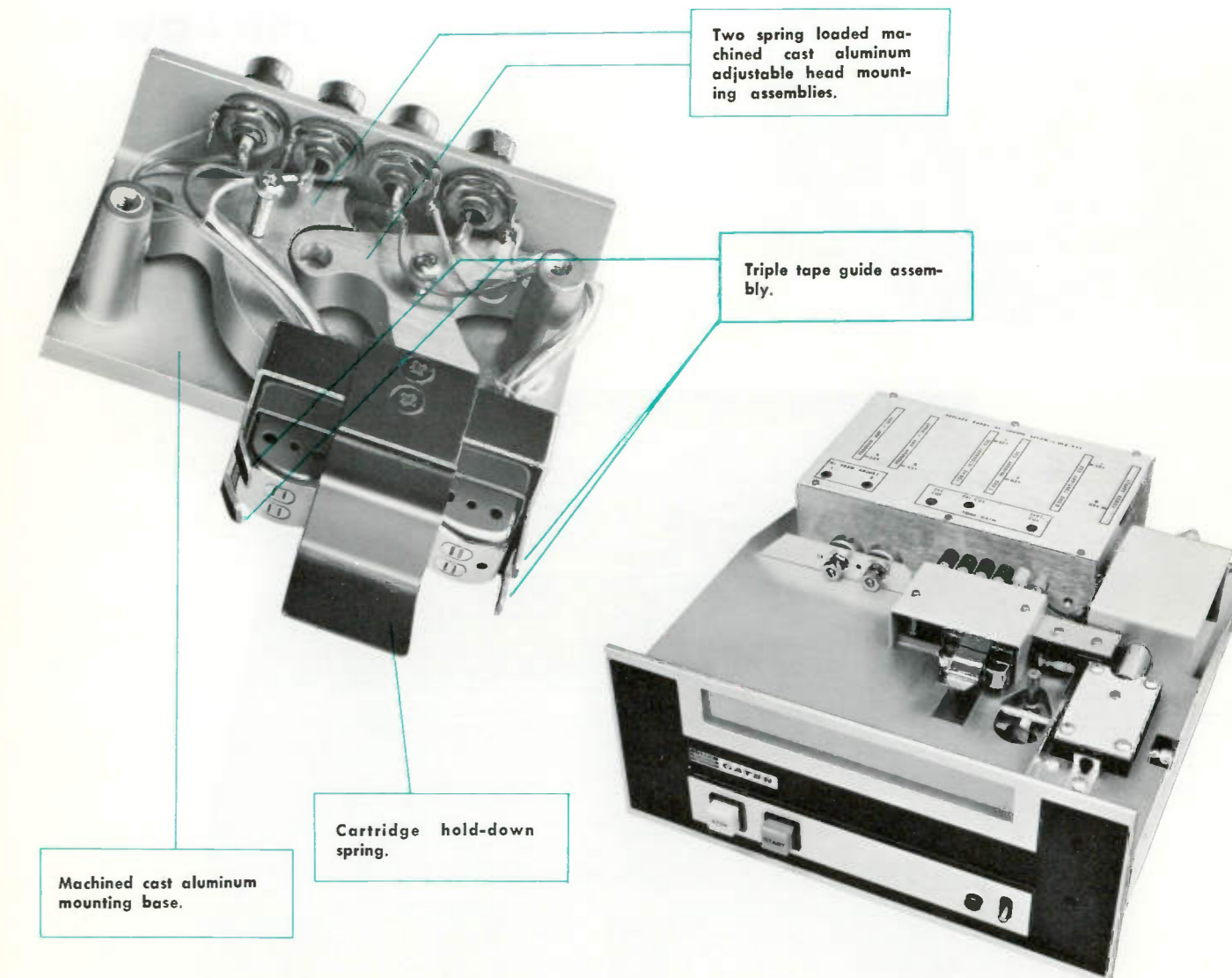
(A) PRECISION MECHANICAL CONSTRUCTION: Major reasons for the excellence of the Criterion 80 units are: outstanding engineering, and the quality of the tape deck motor mechanism, head assembly, and control solenoid. The entire assembly is built upon a heavy-duty, precision-machined aluminum casting, which assists in providing proper cartridge alignment on the exclusive Micro-Set head assembly and is also the rugged integral mounting base for the other tape transport components.

(B) QUIET, STUDIO OPERATION: Improved solenoid action and computer-type relays reduce operating noise and contribute to the quiet mic-side operation of the unit. The fully proven automatic

pinch-roller engagement makes actual studio operation easy, fool proof and noise free. Full motor shielding keeps signal-to-noise ratio low.

(C) POSITIVE DRIVE ACTION: The heart of the Criterion 80 series playback unit is the heavy duty tape transport with its hysteresis synchronous positive speed direct capstan drive motor. The Criterion 80 tape transport offers speed accuracy to within 0.2%; comparable to the finest reel-to-reel machines. Sealed instrument-type ball bearings are used to keep transport wow and flutter to less than 0.2% rms. Three pounds of tape pulling force developed by the Criterion 80 transport virtually eliminates timing errors, regardless of cartridge size or tape length.

PRECISION MICRO-SET HEAD ASSEMBLY



Two spring loaded machined cast aluminum adjustable head mounting assemblies.

Triple tape guide assembly.

Cartridge hold-down spring.

Machined cast aluminum mounting base.

The assembly serves two purposes: (A) To provide convenient and positive positioning of any rear-mount head used on Criterion 80 Equipment by screw-driver adjustment and (B) To positively guide the tape as it passes the heads.

The machined cast aluminum base is the "core" of the entire assembly. It provides the base for positive mechanical mounting and adjustment of all components of the entire Micro-Set head assembly.

The cast head mounting assemblies are aligned to the front-to-rear axis of each head for positive vertical height positioning. A single adjusting screw provides positive azimuth alignment to micro-inch tolerances.

Three tape guides are integrated as one in-line assembly which is attached to the mounting base by

screws. The positioning of the guide assembly is referenced from the tape transport deck in accordance with NAB standards for cartridge tape machines and assures proper tape height from the deck. Constant output quality, especially in audio response from cartridge to cartridge, is provided by the triple guide for positioning of the tape on the head.

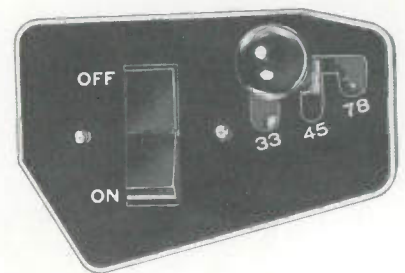
The cartridge hold-down spring is directly attached to the mounting base by screws. Its position on the cartridge is not affected while making adjustments. An assembly cover provides added shielding. Improved laminated heads selected for the Criterion 80 series playback unit are high quality metal-face heads providing for long wear and low oxide accumulation. The special design provides improved high frequency response, usually exceeding the rated specifications.

***PROFESSIONAL
TURNTABLES
AND
ACCESSORIES***

**HARRIS
INTERTYPE
CORPORATION**

GATES

Professional Transcription Turntables



This cut-away illustration of a Gates turntable shows the fine machining and workmanship in the equipment. Oilite bearings are used at all bearing points, including the large center spindle bearing. Speed shift linkages are through monoball self-aligning bearings for smooth, silent, trouble-free operation. There are no belts, planetary drives or gear trains to wear.

Shift speeds to 78, 45 or 33 $\frac{1}{3}$ rpm by simply moving shift lever to the desired index point. Then touch the mercury-type switch to either start or stop. Complete one-hand operation leaves the other hand free for cueing or control boards.

PRECISION ENGINEERED

Recent advances in recording techniques, as well as stereo requirements, now place stronger demands on today's reproducing equipment. To meet these improved performance standards, Gates offers two outstanding turntables (one 16-inch model, one 12-inch model), designed to reduce rumble to an all-time low, without the sacrifice of quick cue.

The heart of Gates turntable design is a drive hub, which is part of the turntable platter—and about one-half the radius of a 45 rpm disc. A single idler wheel for all speeds is floating and self-aligning—and a 600 rpm hysteresis synchronous motor with 3-speed pulley, engages the idler wheel to the inner hub.

The combination of lower motor speed (one-third that of other models) and a drive located inside the playing surface, results in remarkably low rumble.

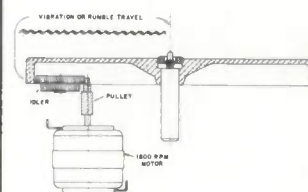
Speed change is exact and functionally correct. All three speeds shift across a single indexed plate. A mercury-type start/stop switch illuminates when on. The smooth felt platter surface offers slip-cueing if desired. A captive pop-up spindle is provided for 45 rpm discs.

Every Gates turntable is totally hand-assembled, micrometer checked under rigid quality-control standards and then individually tested in our laboratory for wow, flutter, and speed consistency.

As Gates turntables are precision machined devices they are not the lowest in initial cost, but are far less expensive on the basis of per-hour cost.

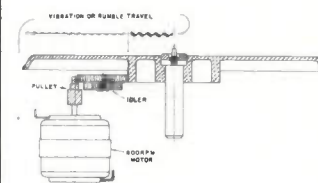
DRIVE DESIGN PRINCIPLE

OLD METHOD



Rim drive turntables, as the word implies, drive against the outer rim of the platter. Vibration, commonly called rumble, is returned to the center spindle, or bearing, across the entire playing surface of the platter. This type of drive usually requires an 1800 rpm motor for proper speed ratios. The greater the motor speed, the greater the vibration. Also, higher motor speeds raise the audio frequency of this vibration or rumble.

GATES METHOD



In both the 12- and 16-inch Gates turntables, the drive is against a solid inner hub, away from the usable playing surface of the platter. Likewise, any minute vibration or rumble is pushing against the center bearing instead of pulling away as in outer rim drive turntables. With this exclusive drive system, a 600 rpm hysteresis synchronous motor is used. Lower motor speed assures lower vibration or rumble. The lower speed substantially drops the audio frequency of this much-lower motor vibration so that nearly all of the rumble is in the sub-audible spectrum.

Professional Transcription Turntables—16-Inch



MODEL CB-500

Gates CB-500 is the most widely used 16-inch turntable in the broadcasting industry. Designed for continuous 24-hour commercial service, this turntable is ruggedly constructed to meet the strain of any control room operation, while maintaining its excellent quality of performance.

Time proven features include heavy machined aluminum platter, rubber-shock-mounted cast aluminum chassis, oilite hub bearing, self-centering neoprene idler wheel, monoball self-aligning speed shift bearings, and a functional speed selector mechanism. (Order pickup arm separately.)

SPECIFICATIONS

CHASSIS SIZE: 21¼" x 21¼" x 1⅝".

MOTOR HANG BELOW BOTTOM OF CHASSIS: 4⅞".

CONSTRUCTION: Both platter and base of machined aluminum.

FINISH: Beige-gray with escutcheon in black and turntable platter cover in heavy gray felt.

PLATTER SIZE: 17".

STROBOSCOPE: Built-in on platter for all three speeds.

CENTER SPINDLE: Spring-locking type, snaps up for 45 rpm hub, locks down for smaller-spindle records.

CENTER BEARING: 1" diameter hardened steel, rotates in oilite bearing.

MOTOR: Hysteresis synchronous, single phase, 600 rpm, with 40°C temperature rise.

CUEING: At 33⅓ rpm, ½ turn. At 45 rpm, ¼ turn. At 78 rpm, 1¼ turn.

NOISE OR RUMBLE: At 33⅓ rpm, rated -45 dB. At 45 rpm, rated -40 dB. At 78 rpm, rated -35 dB.

WOW: Rated 0.1% at 33⅓ rpm, capable .08%.

FLUTTER: Rated 0.07% at 33⅓ rpm, capable .05%.

MOTOR START: Rocker-type illuminated mercury switch.

IDLER WHEEL: Special shear action neoprene, self-aligning.

SPEED CHANGE: To 33⅓, 45, or 78 rpm by single indexed lever control.

POWER: 117 volts, 60 Hz, 35 watts. (50 Hz available, see below.)

WEIGHT: Net: 34 lbs. Packed: domestic, 45 lbs.; export, 70 lbs. Cubage: 6 cubic feet.

ORDERING INFORMATION

CB-500 16-inch transcription turntable, chassis only, for 60 Hz.....994-5739-003

CB-500A 16-inch transcription turntable, chassis only, for 50 Hz.....994-5739-004

Professional Transcription Turntables—12-Inch



MODEL CB-77

Gates CB-77 is a professional 12-inch transcription turntable, with the same unique design principles as its companion 16-inch model. In the 12-inch CB-77 chassis will be found the same inner hub drive system, the same convenient speed change system, the same illuminated rocker arm on-off switch, etc. The only difference is the reduced size, affording broad-

casts a more compact turntable arrangement for today's busy control room, where space is at a premium.

The chassis is ready for you to attach the pickup arm of your choice (order separately), and is designed for 33 $\frac{1}{3}$, 45 and 78 rpm speeds.

SPECIFICATIONS

CHASSIS SIZE: 16" x 16" x 1 $\frac{5}{8}$ ". Motor hang below bottom of chassis: 5 $\frac{3}{4}$ ".

CONSTRUCTION: Platter and base of machined aluminum.

FINISH: Beige-gray with escutcheon in black and turntable platter cover in heavy gray felt.

PLATTER SIZE: 13 $\frac{3}{8}$ ".

STROBOSCOPE: Built-in for all 3 speeds.

CENTER BEARING: 1" diameter hardened steel, rotates in oilite bearing.

CENTER SPINDLE: Spring-locking type snaps up for 45 rpm, locks down for smaller spindle records.

MOTOR: Hysteresis synchronous, single phase, 600 rpm, with 40°C temperature rise.

CUEING: At 33 $\frac{1}{3}$ rpm, $\frac{1}{8}$ turn. At 45 rpm, $\frac{1}{4}$ turn. At 78 rpm, 1 turn.

NOISE OR RUMBLE: At 33 $\frac{1}{3}$ rpm, rated -45 dB. At 45 rpm, rated -40 dB. At 78 rpm, rated -35 dB. (Meets or exceeds NAB specifications for stereophonic reproduction.)

WOW: 0.1% maximum, capable .08%.

FLUTTER: .07% maximum, capable .05%.

MOTOR START: Rocker-type illuminated mercury switch.

IDLER WHEEL: Special shear action neoprene, self-aligning.

SPEED CHANGE: To 33 $\frac{1}{3}$, 45 or 78 rpm by single indexed lever control.

POWER: 117 volt, 60 Hz, 35 watts. (50 Hz model available, see below.)

WEIGHT: Net: 30 lbs. Packed: domestic, 40 lbs.; export, 65 lbs. Cubage: 3.6 cubic feet.

ORDERING INFORMATION

CB-77 12-inch transcription turntable, chassis only, 60 Hz.....994-5798-005 *\$199.50*
CB-77A 12-inch transcription turntable, chassis only, 50 Hz.....994-5798-006

Turtable System Components



16-INCH SYSTEM COMPONENTS

To make up a 16-inch turntable system, the following components are recommended:

MONOPHONIC SYSTEM

CB-500 turntable, 60 Hz (50 Hz available).....994-5739-003
 Gray 208-S 16" viscous damped tone arm.....723-0099 \$67
 or
 Gray 306 16" Micro-Trak tone arm.....723-0269 \$250
 Shure M-44-7 stereo dynetic cartridge w/.0007" diamond stylus 723-0236
 M-6244 equalized turntable preamplifier, transistorized.....994-6244
 NOTE: If Gray 208-SG tone arm is desired (723-0153), a General Electric VR-II turn-around cartridge should be used (723-0017).

STEREOPHONIC SYSTEM

CB-500 turntable, 60 Hz (50 Hz available).....994-5739-003
 Gray 208-S 16" viscous damped tone arm.....723-0099
 or
 Gray 306 16" Micro-Trak tone arm.....723-0269
 Shure M-44-7 stereo dynetic cartridge w/.0007" diamond stylus 723-0236
 M-6442 equalized turntable preamplifier, transistorized, stereophonic.....994-6442
 NOTE: To order cabinet, see below.

12-INCH SYSTEM COMPONENTS

The following components are recommended to make up your 12-inch turntable system.

MONOPHONIC SYSTEM

CB-77 turntable, 60 Hz (50 Hz available).....994-5798-005 \$67
 Gray 206-S 12" tone arm.....723-0259
 or
 Gray 303 12" Micro-Trak tone arm.....723-0268 \$72.50
 Shure M-44-7 stereo dynetic cartridge w/.0007" diamond stylus 723-0236 \$19.95
 M-6244 equalized turntable preamplifier, transistorized.....994-6244 \$130
 NOTE: If Gray 206-SG 12" tone arm is desired (catalog number 723-0250), order General Electric VR-II turn-around cartridge (catalog number 723-0017).

STEREOPHONIC SYSTEM

CB-77 turntable, 60 Hz (50 Hz available).....994-5798-005
 Gray 206-S 12-inch tone arm.....723-0259
 or
 Gray 303 12" Micro-Trak tone arm.....723-0268
 Shure M-44-7 stereo dynetic cartridge w/.0007" diamond stylus 723-0236
 M-6442 equalized turntable preamplifier, transistorized, stereophonic.....994-6442
 NOTE: To order cabinet, see below.



DUAL TURNTABLE CABINET

Beautifully styled, and dimensioned to accommodate either 12- or 16-inch Gates turntables.

Dual turntable cabinet.....994-6449
 \$310

SINGLE TURNTABLE CABINET

Fits any decor. Accommodates either 12-inch or 16-inch Gates turntable.

Single turntable cabinet.....994-6448
 \$175

Transcription Tone Arms and Pickups



12" AND 16" MICRO-TRAK TONE ARMS

Especially designed for stereo, this durable arm will track distortion-free at micro-pressures of 1/10 gram. A new material never before used in a tone arm, wood impregnated with epoxy resins, was selected for this arm to achieve the extremely low tracking force and very low resonance characteristics. Sapphire bearings floating in a unique elastomer ring isolate the tone arm from its mounting and produce a tone arm with virtually no vertical friction.

Available for 12" and 16" turntables, this Gray arm will accept any broadcast type stereo cartridge.

Gray 303 Micro-Trak 12" tone arm	723-0268
Gray 306 Micro-Trak 16" tone arm	723-0269



12" AND 16" TONE ARMS

Models 206-S and 208-S viscous damped tone arms come with slide and modular weights for mounting single play stereo or monophonic cartridges. Designed specifically for the GE turn-around cartridges, the models 206-SG and 208-SG have a slot cut out in the front of the arm to clear the stem of the GE cartridge, and are specially balanced for this cartridge. Accessory weights are also available.

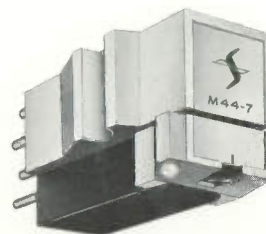
Gray 206-S, 12" viscous damped tone arm	723-0259
Gray 206-SG, 12" viscous damped tone arm for turnaround cartridge	723-0250
Gray 208-S, 16" viscous damped tone arm	723-0099
Gray 208-SG, 16" viscous damped tone arm for turnaround cartridge	723-0153

MONOPHONIC PICKUP CARTRIDGES

Proven, rugged broadcast transcription cartridges for monophonic recordings. Response 20 to 20,000 Hz with output of 12 mV at 10 CM per second at 1000 Hz. Tracking force 4 grams. Replaceable clip-in styli for a wide range of recordings. Use high impedance type with M-6244 equalized pre-amplifier, low impedance with Gray 602-C passive equalizer.

GE TYPE VR-II PICKUP

High Impedance Cartridge with single stylus	
4G-040 Sapphire, 0.0025"	723-0013
4G-041 Sapphire, 0.001"	723-0014
4G-061 Diamond, 0.001"	723-0016
4G-063 Diamond, 0.0025"	723-0015
High Impedance Triple Play with Styli (turnaround cartridge)	
4G-050 Sapphire 0.001"; sapphire 0.0025"	723-0017
4G-052 Diamond 0.001"; sapphire 0.0025"	723-0018
4G-053 Diamond 0.001"; diamond 0.0025"	723-0019
Low Impedance Cartridges with Single Stylus	
4GS-07D Diamond .0007"	723-0272
4GS-02D Diamond 0.0025"	723-0020
4GS-07S Sapphire .0007"	723-0273
4GS-02S Sapphire 0.0025"	723-0026
Low Impedance with Triple Play Stylus	
4GD-07D02D Dual diamond .0007" and 0.0025"	723-0290
4GD-07S02S dual sapphire .0007" and 0.0025"	723-0291
Clip-in Styli for VR-II Cartridges	
4G-02S Sapphire 0.0025"	723-0045
4G-01D Diamond 0.001"	723-0041
4G-02D Diamond 0.0025"	723-0042
RPJ-01D Diamond 0.001"	723-0035
RPJ-02D Diamond 0.0025"	723-0036
RPJ-01S Sapphire 0.001"	723-0038
RPJ-02S Sapphire 0.0025"	723-0039
Single Tip Replacement Styli for RPX-040, 041, 061, 063	
RPJ-005 Sapphire 0.001"	723-0033
RPJ-006 Sapphire 0.0025"	723-0034
RPJ-004 Diamond 0.001"	723-0032
RPJ-002 Diamond 0.0025"	723-0030



STEREOPHONIC PICKUP CARTRIDGE

Model M44-7 stereo dynetic cartridge is recommended for faithful reproduction of stereophonic recordings with the M-6442 stereo preamplifier. It offers superior stereo separation, smoother response, and is designed to complement the 15° effective cutting angle now being used on stereo recordings. The easily changed styli may be interchanged for various types of recordings.

SPECIFICATIONS

FREQUENCY RESPONSE: 20 to 20,000 Hz.
 CHANNEL SEPARATION: More than 25 dB at 1000 Hz.
 OUTPUT: 9 millivolts per channel at 1000 Hz at 5 cm/sec.
 LOAD IMPEDANCE: 47,000 ohms per channel.
 TRACKING: 1.5 to 3 grams.
 STYLUS: Features "no scratch" retractable design.
 INDUCTANCE: 680 millihenries.
 D. C. RESISTANCE: 650 ohms.
 MOUNTING: Standard 1/2" mounting center.
 WEIGHT: 7 grams net.

ORDERING INFORMATION

Shure M44-7 stereo Dynetic Cartridge with 0.0007" diamond stylus	723-0236
Replacement Stylus N-44-7 0.0007" diamond	723-0237

Transistorized Turntable Preamplifiers



MONOPHONIC

Single-channel monophonic preamplifier designed for use in broadcasting, recording, and general sound requirements where low distortion and exacting frequency response characteristics are demanded. Featuring self-contained power supply and transformer output, the preamplifier includes two-position equalizer with escutcheon and knob for RIAA/NAB or roll off equalization. The input impedance of 47,000 ohms makes the M-6244 compatible with virtually all magnetic cartridges (including stereo).

SPECIFICATIONS

INPUT: 47,000 ohms.

OUTPUT: Adjustable from -22 dBm to -12 dBm with 12 mV input.

RESPONSE: Within ± 1 dB of RIAA/NAB standard curve. Additional high-frequency, roll-off filter position provided.

DISTORTION: Less than 0.5% at normal levels (-22 dBm to -12 dBm output). Less than 1.0% at 10 dB overload (above 12 mV input).

NOISE: 68 dB or lower, below -12 dBm output (with 12 mV input).

LOAD IMPEDANCE: 600 ohms or 150 ohms, balanced or unbalanced.

MAXIMUM OPERATING AMBIENT TEMPERATURE: +60°C (+140°F).

POWER: 115 volts, 50/60 Hz, 1 watt.

MOUNTING: Two holes for mounting to Gates turntable or inside of any cabinet. May be mounted in any position.

SIZE: 2 $\frac{1}{8}$ " wide, 8 $\frac{5}{8}$ " long, 2 $\frac{3}{8}$ " high.

WEIGHT AND CUBAGE: Net weight, 1 $\frac{1}{4}$ lbs. Packed weight, 8 lbs. Cubage, 1 cubic foot.

ORDERING INFORMATION

Monophonic transistor equalized turntable preamplifier 994-6244

130

STEREOPHONIC

Designed for superior performance in stereophonic transcription systems, the M-6442 offers these features: Three-position response selector switch for flat, RIAA/NAB, and roll off equalization; plus a two-position switch to provide a monophonic output from stereo discs, important in many AM/FM and special library situations. Fully shielded, and completely self-contained, including power supply. The M-6442 input impedance of 47,000 ohms makes it compatible with virtually all magnetic stereo cartridges.



SPECIFICATIONS

INPUT: 47,000 ohms.

OUTPUT LEVEL: Adjustable from -22 dBm to -12 dBm, from 8 mV input.

RESPONSE: Within ± 1 dB of RIAA/NAB standard curve. Additional high frequency roll off and flat response position switch selected.

DISTORTION: Less than 0.5% at normal level (-22 dBm to -12 dBm output). Less than 1.0% at 10 dB overload (above 8 mV input).

NOISE: 60 dB or lower, with -63 dBm input (-123 dBm relative input noise).

LOAD IMPEDANCE: 600 ohms or 150 ohms, balanced or unbalanced.

MAXIMUM OPERATING AMBIENT TEMPERATURE: +60°C (+140°F).

POWER: 117 volts, 50/60 Hz, 1 watt.

MOUNTING: Two holes for mounting with Gates turntable or inside of any cabinet. May be mounted in any position.

SIZE: 3" wide, 9 $\frac{1}{2}$ " long, 5" high.

WEIGHT AND CUBAGE: Net weight, 2 lbs. Packed weight, 8 lbs. Cubage, 1 cubic foot.

ORDERING INFORMATION

Stereophonic transistor equalized turntable preamplifier 994-6442

225

**HOME OFFICE AND
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123 Hampshire Street
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Phone: 829-7006, Area 309

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Phone: 666-4333, Area 713

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1945 South Figueroa
Phone: 747-7129, Area 213

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730 Federal Building
1522 K Street, N.W.
Phone: 223-5508, Area 202

EXPORT SALES

ROCKE INTERNATIONAL CORPORATION
13 East 40th Street
New York, New York 10016
Phone: 689-0200, Area 212
Cables: ARLAB

CANADIAN SALES

GATES RADIO COMPANY (CANADA)
Division of Harris-Intertype (Canada) Ltd.
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212 Brunswick Boulevard
Pointe-Claire, Quebec, Canada
Phone: 695-3751, Area 514

Toronto Office
19 Lesmill Road
Don Mills, Ontario, Canada
Phone: 447-7234, Area 416



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