

The UREI 1650 and 1680 Broadcast Consoles



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- Six all-new on-air boards
- Choice of 5-mixer or 8-mixer units
- Choice of Penny & Giles, Shallco or conductive plastic attenuators
- +24 dBm output into 600-ohm load
- Better than 90 dB signal to noise ratio
- Built-in monitor, headphone and cue amplifiers
- Built-in cueing loudspeaker
- Competitively priced

The UREI 1650 and 1680 Series Broadcast Consoles are an all-new line of six on-the-air boards with the features most requested by engineers and consultants and with full UREI quality, yet priced within the budget of the small-market station.

These new consoles offer a choice of five or eight mixers and a choice of attenuator types as well. There is ample provision for customization to fit individual station requirements, but no accessories are required to put them on the air—each board is ready to operate as supplied from the factory.

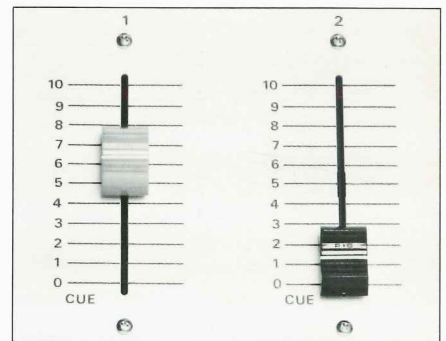
High Output, Low Distortion, Low Noise

The Series 1650 and 1680 Consoles have unusually high output capability: +24 dBm into 600 ohm loads, so that today's dynamic program material can be safely handled without clipping. An overload indicator LED is located between the VU meters, and its threshold can be internally adjusted to alert the operator that a downstream device, such as an STL, may be clipping.

These new consoles are also unusually quiet: the signal to noise ratio of the microphone channel, from input to console output, is better than 74 dB with -50 dBm input and +4 dBm output, or better than 90 dB referenced to maximum output. Distortion is extremely low, as well. At the full output level of +24 dBm into 600 ohms, the THD of both Program and Audition channels is less than 0.25% over the range of 30 Hz to 15 kHz; at normal +4 or +8 dBm operating level, the THD is typically less than 0.02%.

Inputs, Outputs, Switches and Pots

Three different types of attenuators are available to fit individual station requirements and budgets. Models 1651 (5-mixer) and 1681 (8-mixer) are fitted with smooth, reliable rotary conductive plastic attenuators. Models 1652 and 1682 utilize Shallco precision stepped rotary attenuators, which have been field-proven for many years. Models 1653 and 1683 feature the latest



Penny & Giles straight-line attenuators which are internally protected against contaminants. Replacement attenuators are, of course, available in case of need.

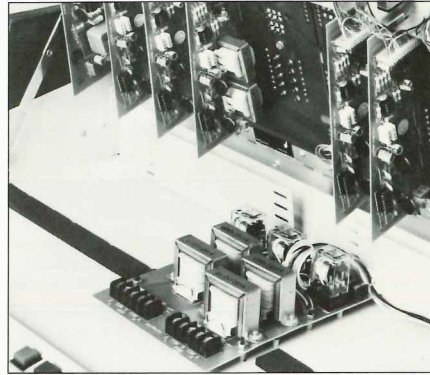




Each mixer position has two inputs selectable with a rocker switch. In addition, two banks of four pushbutton switches may be connected to any mixer input for use with additional sources such as remote or network feeds. For maximum reliability and long life, all audio switch contacts are gold filled.

All channel On/Off switching is performed by reliable, noise-free FET switches activated by illuminated push buttons. These push buttons have extra switch contacts which may be used for activating cartridge machines, turntables or similar equipment.

The 1650 Series consoles are supplied with one monaural, transformer isolated microphone input preamplifier and four stereo line input preamplifiers; the 1680 Series units come with one microphone preamplifier and



seven line preamplifiers. All preamplifiers are interchangeable in all positions, so that additional microphone preamplifiers may be substituted and installed in any mixer position.

The console line inputs can accept nominal +4 dB or +8 dB professional sources, and internal gain trims on each line input amplifier allow connection of audio equipment with nominal output levels of -10dB without upsetting the overall gain structure of the console. The line inputs feature active balanced inputs which, unlike other so-called "balanced" differential inputs, are AC-referenced to ground. Optional line input transformers are available if required.

The Program and Audition outputs are identical, including output transformers, and a front panel transfer switch allows the exchange of Program and Audition outputs in the unlikely event of a program amplifier failure.

Monitors and Mutes

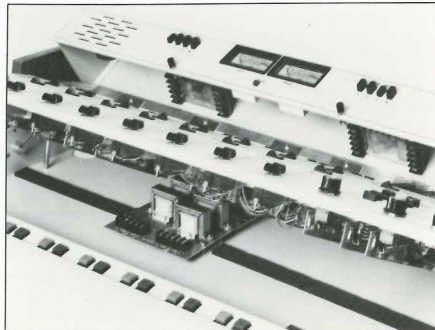
Monitoring the audio with the new UREI consoles is simple, yet flexible. A four-position push-button selector connects Program,



Audition, Air or an external input to an internal 8 W stereo power amplifier. A line level output is available for a larger external amplifier. Another four-position selector sends Program, Audition, Air or Cue to an internal 1 W amplifier and two stereo phone jacks, one on either end of the console front edge, so that operator personal preferences can be accommodated. A cue loudspeaker with its own 1 W amplifier is built in and is automatically muted whenever Mute Buss 1 is activated; an external cue speaker may be used if desired. Two illuminated VU meters can be switched between Program and Audition outputs and may be internally adjusted to read 0 VU from -6 to $+14$ dBm.

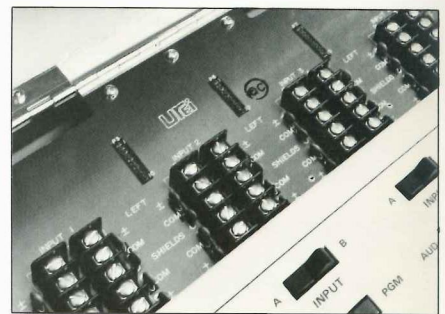
The new UREI consoles have extraordinary mute flexibility. There are three independent muting busses, and each mixer position may be configured to operate any or all of the busses. Each of the busses may drive one of the three mute relays, and each of these relays has a spare SPDT contact for activating exter-

nal low-current indicator lamps or relays. Mute Buss 1 electrically mutes the cue amplifier and speaker, but does not affect the cue feed in the headphone output.



Installation and Maintenance

Installation of the new UREI consoles is quick and easy, thanks to barrier strips with clear, easy to read designations, internal troughs for convenient cable routing and mechanical tie points adjacent to the wire entry holes. No special tools are required. RF interference problems are minimal, thanks to "buss in a box" internal construction—all sensitive runs are in shielded housings and extensive use of ground planes on the circuit boards keep RF out of the audio.



To add that finishing touch, an optional plexiglass copy stand fits over the meter housing to eliminate the need for do-it-yourself carpentry.

The Series 1650 and 1680 consoles are designed to last and to keep looking good as well. Highest quality electronic components, heavy-duty fiberglass circuit boards, and extensive testing of individual subassemblies as well as complete systems assure that the UREI consoles, like all other UREI products, will work when they are first powered up and will continue to work for thousands of hours. Heavy steel and aluminum construction will stand up to hard use, and durable finish with plastic overlays allow marks on the console surface to be easily cleaned. Maintenance is quick and easy, as well. Both the meter box and the front panel are hinged to allow rapid access to



all interior circuitry, and silk-screened circuit boards allow quick component identification. All integrated circuits are socketed, and a spares kit is available for convenience.

High-Quality Phono Preamplifier

The UREI Model 1101 Stereo Phono Preamplifier, an all-new accessory for the Series 1650 and 1680 Broadcast Consoles, is optionally available. This top-quality preamp takes its power from the console and is designed for mounting at the turntable, to avoid problems with hum and RF pickup from long, unbalanced Hi-Z phono wiring. The Model

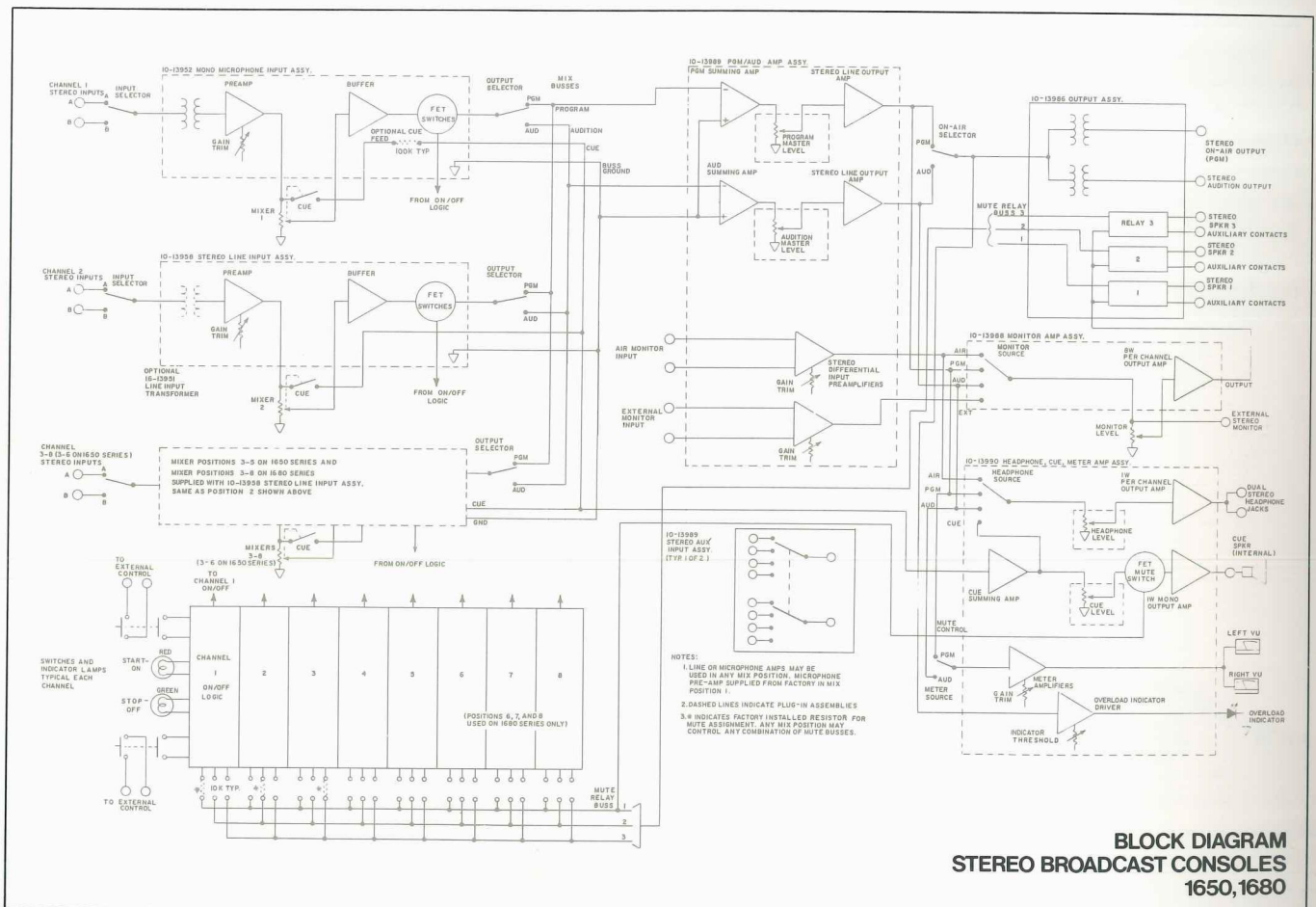
1101's frequency response is within ± 0.5 dB of RIAA/NAB/IEC specifications, and includes the latest recommended infrasonic



rolloff. To accommodate individual differences in phono cartridges, trimmers are provided to adjust the response up to ± 5 dB at 50 Hz and 10 kHz. The 1101 is quiet, too: noise is 70 dB below a 10 mV input at 1 kHz (15.7 kHz noise bandwidth).

UREI Broadcast Consoles—The Modern Ones

The UREI Series 1650 and 1680 Broadcast Consoles are a fresh answer to the operational requirements of the broadcaster of the 1980's—a top-quality, reliable, flexible and affordable line of on-the-air boards which will provide outstanding service for many years.



Specifications

Models 1651 & 1681 feature rotary conductive plastic attenuators; Models 1652 & 1682 feature Shallco precision rotary attenuators; Models 1653 & 1683 feature Penny & Giles straight line attenuators.		
	1650 Series	1680 Series
Mixers	5	8
Inputs per Mixer	2	2
	(plus two 4-position input selector banks assignable to any input position)	
Preamplifiers Supplied		
Microphone	1 (monaural)	1 (monaural)
Line	4 (stereo)	7 (stereo)
	(mic and line preamplifiers are interchangeable)	
Input Impedance		
Microphone	Bridging for 150 ohm source, transformer isolated, symmetrical, floating, 10k ohm balanced, 5k ohm unbalanced differential amplifier; input transformer optional.	
Line		
Outputs:		
Program	+24 dBm into 600 ohm load, transformer isolated, symmetrical, floating. Identical to Program Outputs.	
Audition	8 W/channel into 8 ohm load.	
Monitor	1 W/channel into 4 ohm load.	
Headphone	1 W into 8 ohms; built-in cue speaker.	
Cue		
Frequency Response		
Program & Audition	±1 dB, 20 Hz—20 kHz.	
Distortion		
Program & Audition	$<0.25\%$ THD, 30 Hz—15 kHz @ +24 dBm; Typically $<0.02\%$ @ +4 dBm.	
Gain		
Mic In to Pgm Out	Nominal 54 dB with input mixer at -15 and master at 2 o'clock; Maximum gain 79 dB ±1 dB.	
Line In to Pgm Out	Nominal unity gain with input mixer at -15 and master at 2 o'clock; Internal trim allows gain increase of up to 20 dB; Maximum gain 45 dB ±1 dB.	
Signal to Noise Ratio		
Program & Audition	Better than 70 dB below +4 dBm output with -50 dBm microphone input; equivalent input noise better than -124 dBm, 15.7 kHz noise bandwidth.	
Monitor	4-position pushbutton selector of Program, Audition, Air and Auxiliary inputs; Air and Auxiliary inputs are 10k ohm balanced or 5k ohm unbalanced impedance with internal gain trims	
Headphone	4-position pushbutton selector of Program, Audition, Air and Cue inputs; 2 stereo 6.3 mm (1/4 in.) phone jacks on front edge of console.	
Muting	3 independent muting busses; each mixer position may be independently assigned to any or all of the busses; each buss may drive one of the 3 mute relays. Cue output is electronically muted from Mute Buss 1. Each of the 3 relays has an extra SPDT contact for activation of external indicator lights or relays.	
Meters	2 (left and right); switchable between Program and Audition outputs; sensitivity control in meter amplifier allows 0 VU to correspond to +4 or +8 dBm; backlit with long-life lamps operated at decreased voltage for extended service.	
Output Transfer Switch	Allows immediate interchange of Program and Audition outputs in case of program amplifier failure.	

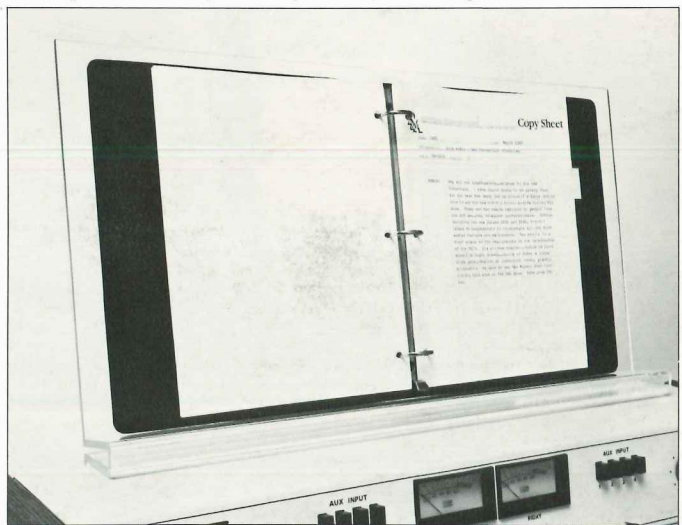
Overload Indicator	LED on meter panel; flashes to indicate short duration peak signals which may not be indicated on VU meters but which may cause clipping of downstream devices such as STLs; threshold level internally adjustable.	
Power Supply	Provides ±18 V DC for low-level audio circuits, ±14 V DC for power amplifier circuits, -26 V DC for logic; regulated ±18 V DC available on terminal strip for powering accessory Model 1101 Phono Preamplifiers.	
Power Requirements	120 V AC; approx. 1.5 m (5 ft) captive 3-wire U-ground power cord.	
Dimensions (HxWxD)	Series 1650 178 x 737 x 381 mm (7 x 29 x 15 in)	Series 1680 178 x 838 x 381 mm (7 x 33 x 15 in)

Optional Accessories:

Model 1101 Stereo Phono Preamplifier

Input Impedance	47 k ohms.
Output Impedance	100 ohms.
Frequency Response	Within ±0.5 dB of RIAA/NAB/IEC specification, with recommended infrasonic rolloff.
Controls	
Lo Frequency Trim	±5 dB @ 50 Hz.
Hi Frequency Trim	±5 dB @ 10 kHz.
Signal to Noise Ratio	70 dB below 10 mV input @ 1 kHz, 15.7 kHz noise bandwidth.
Required Power	±18 V DC, 15 mA regulated, supplied by console.
Dimensions	39 x 144 x 135 mm (1-1/2 x 5-21/32 x 5-5/16 in).
Part No. 10-13952	Monaural Microphone Preamplifier, Plug-in.
Part No. 10-13958	Stereo Line Preamplifier, Plug-in.
Part No. 16-13951	Line Input Transformer.
Part No. 10-13959	Copy Stand, Plexiglass.
Part No. 10-13960	Spares Kit.
Part No. 10-13961	Rotary Conductive Plastic Attenuator, replacement for Models 1651 and 1681.
Part No. 10-13962	Shallco Precision Rotary Attenuator, replacement for Models 1652 and 1682.
Part No. 10-13963	Penny & Giles Straight Line Attenuator, replacement for Models 1653 and 1683.

These specifications are preliminary and subject to change without notice.



Copy Stand, Plexiglass.