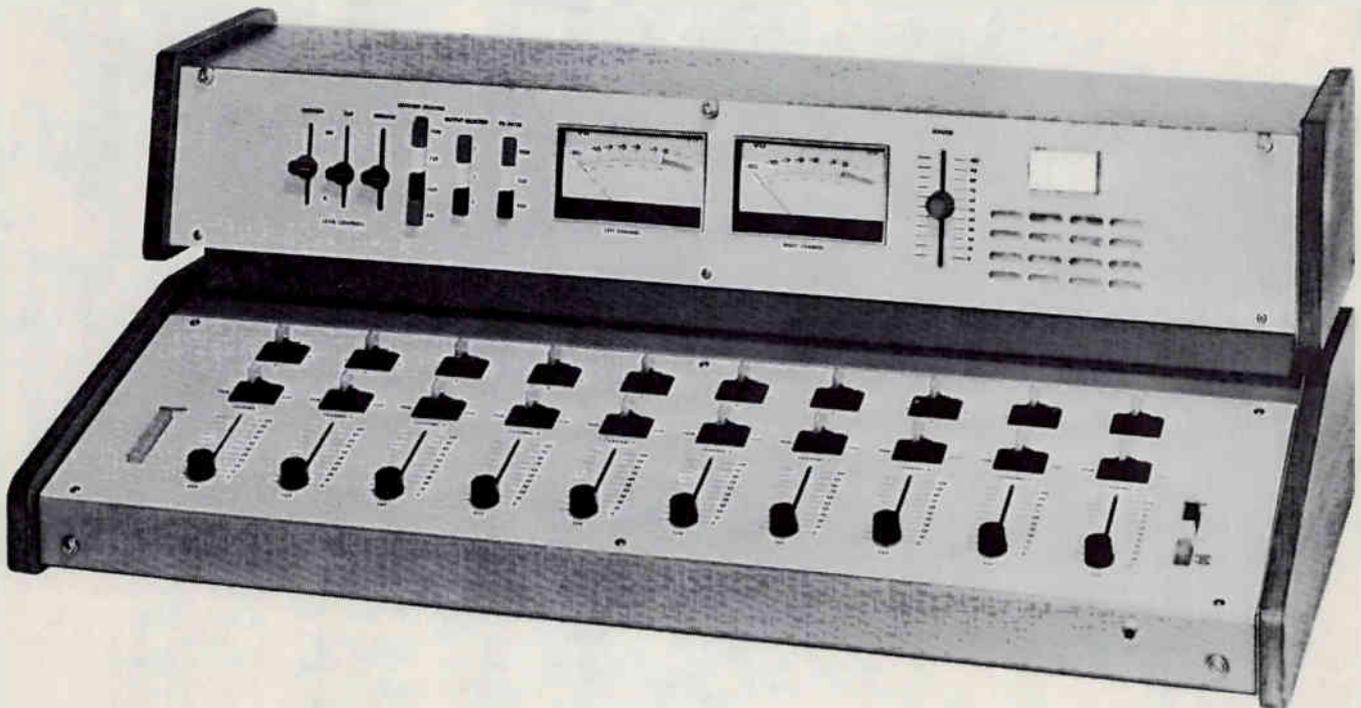


# "Futura"

## 10 CHANNEL AUDIO CONSOLE



### FEATURES

- Modern Slide Attenuators For Ease of Multiple Mixing (Stereo, Mono)
- Totally Self Contained, No External Power Supply or External Modules (Stereo, Mono)
- Built In Muting Relays (Stereo, Mono)
- Substantial "Head Room" - Distortion Free Operation at +20 dbm Output (Stereo, Mono)
- 30 Inputs - Switchable to 10 Faders (Mono)
- 20 Inputs - Switchable to 10 Faders (Stereo)
- Response  $\pm .5$  dbm 30 Hz - 20 KHz On Both Audition and Program Lines (Stereo, Mono)
- Distortion - Less than 0.3% @  $\pm 8$  dbm Output (Stereo, Mono)
- Plug-In Modules Permit Replacement and Interchange in Seconds (Stereo, Mono)
- Monitor Amplifier With 10 Watts Output - response  $\pm 0.5$  db - Distortion Less Than .5% (Stereo, Mono)
- Cue Position In All Channels (Stereo, Mono)
- 100% Solid State (Stereo, Mono)
- Standard Unit Supplied with 10 Interchangeable Low Level and High Level Input Cards as Requested (Mono)
- Standard Unit Supplied with 20 Interchangeable Low Level and High Level Input Cards as Requested (Stereo)
- Cross Talk Between Channels, Better Than -65 db (Stereo)
- Switchable Stereo Meter (Stereo)

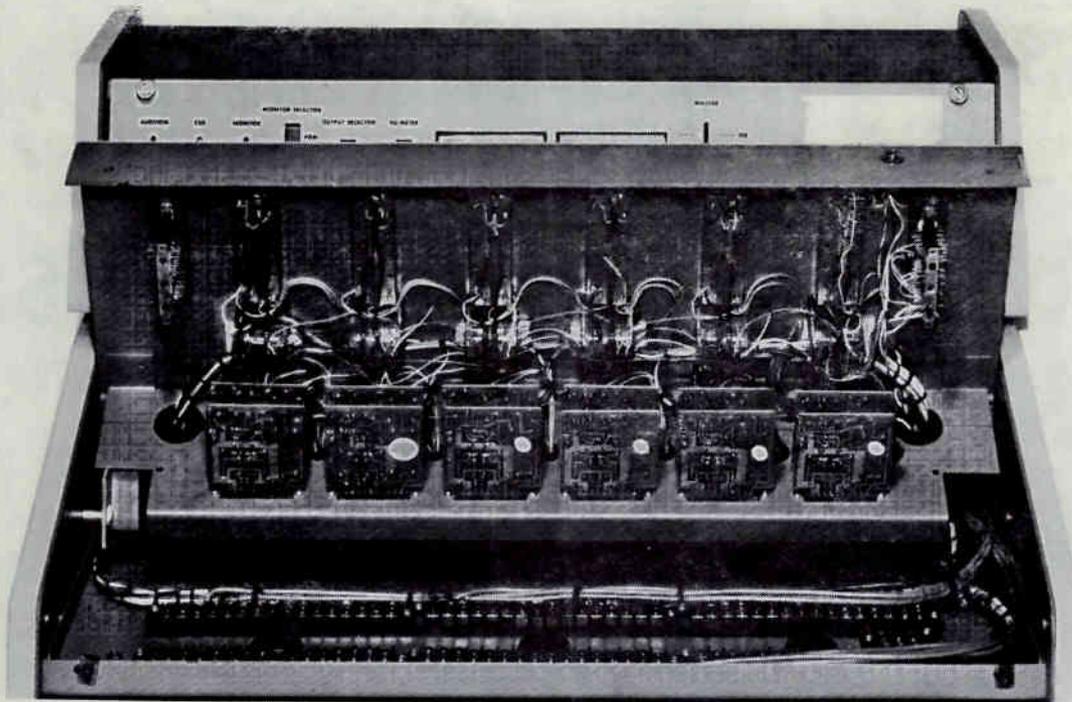
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## ELECTRONICS PRODUCTS, INC.

1568 NORTH SIERRA VISTA, FRESNO, CALIF. 93703 • PHONE: 209 251-4213

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**Futura 10A Front Panel Tilted Up**

## DESCRIPTION

**MODERN SLIDE ATTENUATORS** — The Futura 10 utilizes slide attenuators for all mixing and master controls. These units have been tested under the most severe conditions and have proven to be reliable and rugged. All units used are with linear tapers and are normally operated in their mid positions. Thus, their settings can be determined and established in a matter of seconds.

**TOTALLY SELF CONTAINED** — The Futura 10 is self contained in one cabinet. The inclusion of the power supply within the cabinet permits the operator to install the equipment in a relatively short time and also eliminates problems associated with the older console designs of external amplifiers and power supplies.

**"PLUG IN" ELECTRONIC MODULES** — All the electronics of the Futura 10 are constructed on plug in printed circuit boards. This permits ease of installation, speed in trouble shooting and flexibility in converting from "low level" to "high level" inputs.

**FULL ACCESSIBILITY** — The Futura 10 has two hinged front panels and removable back plates that permit access to all parts.

**SUBSTANTIAL "HEAD ROOM"** — The normal operating output level of the console is +8 dbm across 600 ohms. Yet, distortion free operating will occur to +20 dbm output levels.

**30 AUDIO INPUTS** — Each mixing channel of the Futura 10 contains 3 inputs. Thus, 30 inputs are normally prewired to the console.

**IDENTICAL AUDITION AND PROGRAM CHANNELS** — The Futura 10 contains identical program and audition channels each terminated with 600 ohm balanced transformers. This fact, together with the facility of a switchable "VU" meter, achieves a "dual function" audio console.

**INDEPENDENT CUE CHANNEL WITH FRONT PANEL SPEAKER** — The Futura 10 contains an independent "Cue" channel. The output of each mixing preamplifier may be switched to the "Cue" channel whose output is a front panel speaker. This permits the operator to set up aurally, the preposition of an audio source.

**SUBSTANTIAL MONITOR AMPLIFIER** — 10 watts of distortion free RMS power is available across 8 ohms from the Futura 10 to monitor the audition, program, cue or external sources.

**PLUG IN MUTING RELAYS** — The Futura 10 is supplied with 3 plug in relays with facilities for adding 3 additional units. Thus, it is possible to mute monitor speaker associated with 6 mixing channels of the console.

**BROADCAST FREQUENCY RESPONSE, NOISE AND DISTORTION** — The QRK Futura 10 has performance characteristics that far exceed the FCC performance standards. Distortion of both channels are normally 0.3% at all audio frequencies between 30 and 20,000 cycles at full audio output (+8 dbm). Response is within  $\pm 1$  db. Noise output of the console, with program controls set to achieve +8 dbm with -50 dbm input to the console is -70 db.

**INTERCHANGEABLE LOW LEVEL AND HIGH LEVEL PRE AMPS** — The Futura 10 has provisions for accepting a combination of 10 low level and high level preamplifier cards. Thus, an operator may convert a channel from "Low to High" level by simply changing cards. Low level cards can accept input levels of -65 dbm to -40 dbm. High level cards are designed for accepting the outputs of tape, turntable preamps and cartridge machines (-20 dbm to +10 dbm).

**20 STEREO AUDIO INPUTS** — Four mixing channels of the Futura 10 contains 3 inputs, two mixing channels contain 2 inputs while one stereo input is normally prewired to each of the remaining 4 channels of the console.



Futura 10S Front Panel Tilted Down

## TECHNICAL SPECIFICATIONS

<b>NO. OF MIXING CHANNELS</b>	<b>10</b>	<b>10</b>
<b>NO. OF AUDIO INPUTS</b>	<b>30</b>	<b>20</b>
<b>NO. OF OUTPUTS</b>	(1) Program Output (1) Audition Output (1) Cue Output (6) Monitor Outputs	(1) Program Output (1) Audition Output (1) Cue Output (mono) (6) Monitor Outputs
<b>NO. OF PLUG IN AMPLIFIERS</b>	(4) Low Level Pre-amplifiers (interchangeable with HI Level) (6) High Level Pre-amplifiers (interchangeable with Low Level) (3) Booster Amplifiers (3) Line Amplifiers (1) Monitor Amplifier	(6) Low Level Pre-amplifiers (interchangeable with HI Level) (14) High Level Pre-amplifiers (interchangeable with Low Level) (5) Booster Amplifiers (5) Line Amplifiers (2) Monitor Amplifier

### RESPONSE AND DISTORTION

Program and Audition Channels:  
 $\pm 1$  db, 30 to 20,000 cycles, maximum distortion 0.5%  
 (0.3% typical) @ +8 dbm output

Cue and Monitor Amplifier:  
 $\pm 1$  db, 30 to 15,000 cycles, maximum distortion 1.0%  
 (0.5% typical)

### INPUT IMPEDANCE

150/600 ohms balanced

### OUTPUT IMPEDANCE

Audition and Program 600 ohms balanced  
 Monitor 8 ohms unbalanced

### NOISE

-70 db below +8 dbm output when fed with -50 dbm  
 Input in microphone channel.

### INPUT LEVELS

Low Level -60 to -40 dbm  
 High Level -20 to +10 dbm

### OUTPUT LEVEL

Program and Audition +8 dbm (normal)  
 +20 dbm (Maximum)  
 Cue Amplifier (mono) 0.1 watts  
 Monitor Amplifier (stereo) 10.0 watts across 8 ohms

### GAIN

Low Level to Program out 100 db  
 High Level to Program out 60 db

### CROSSTALK BETWEEN AUDITION AND PROGRAM CHANNELS

-60 db

### TALKBACK

Facilities to talk back to (2) remotes

### METERING

Switchable between Program, Audition & Cue Channels

### ATTENUATORS

Modern slide faders with dust sealers.

### MUTING

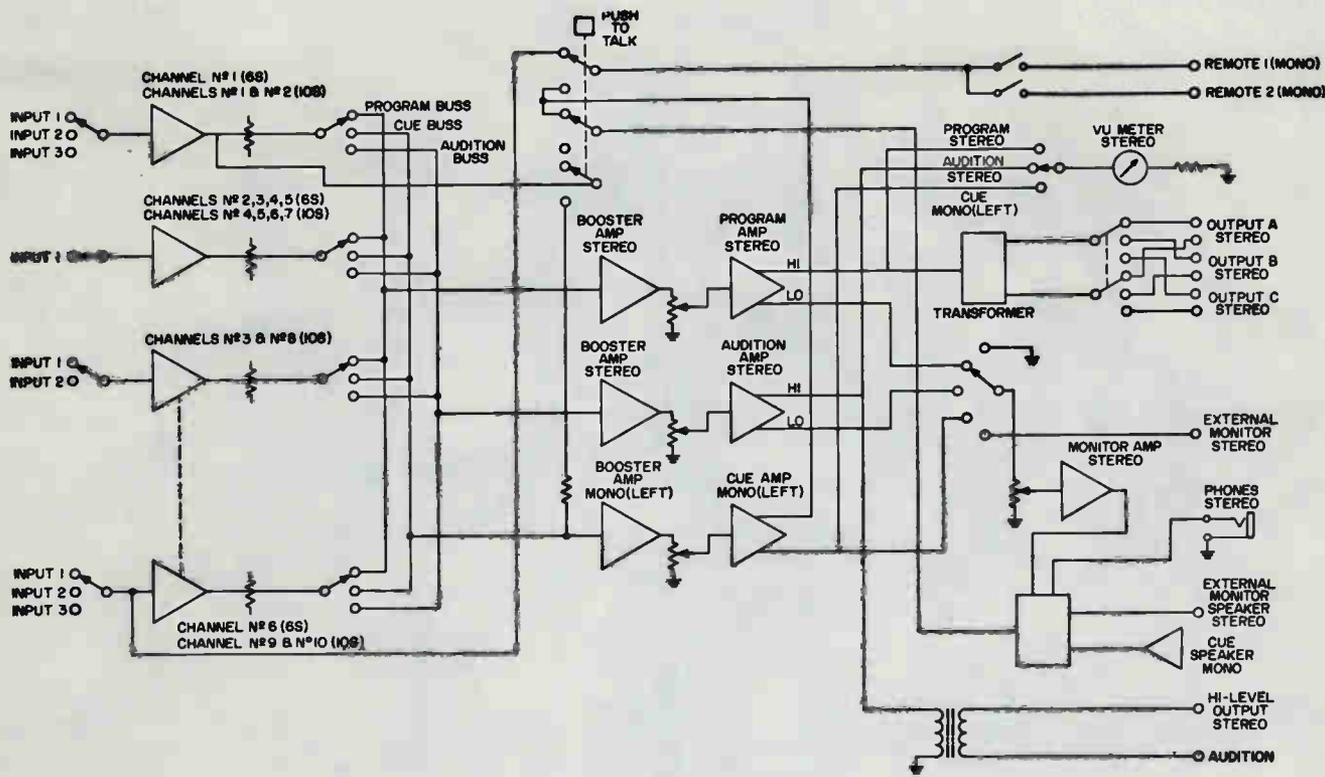
Supplied with 3 plug in relays which can be used to control any 3 of 6 channels. With optional relays - all channels can be muted.

### POWER

117 Volts as shipped - 50/60 cycle (220 volts optional)  
 Power Consumption 45 watts maximum

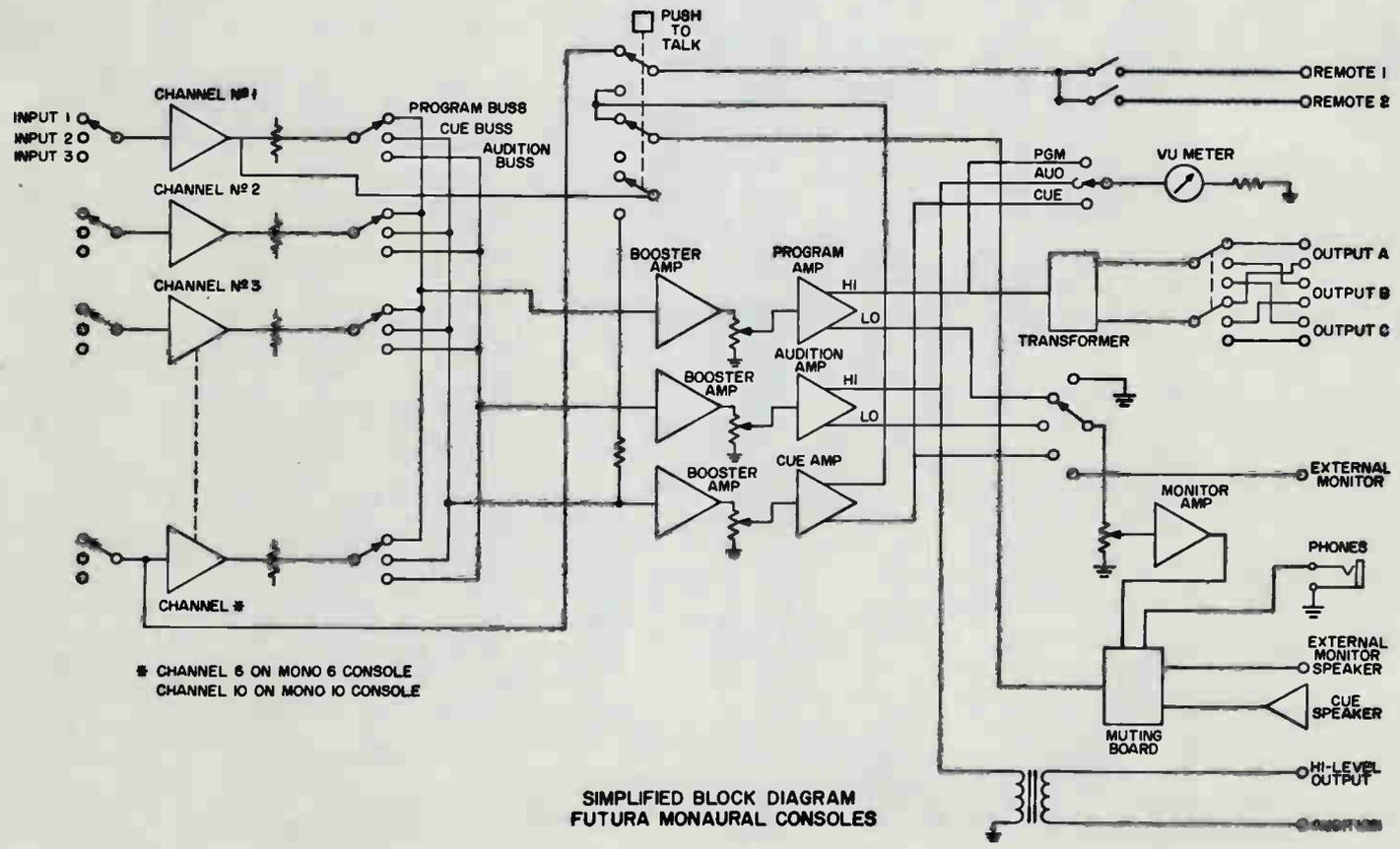
### MECHANICAL

Cubage 16 Cu. Ft. packed (48" x 25" x 23")  
 Width 36½" Height 13¼" Depth 18"  
 Net 97 lbs. Gross 106 lbs.



SIMPLIFIED BLOCK DIAGRAM  
GCA/GRK FUTURA STEREO CONSOLES  
MODEL 6S & MODEL 10S

B20,159



\* CHANNEL 6 ON MONO 6 CONSOLE  
CHANNEL 10 ON MONO 10 CONSOLE

SIMPLIFIED BLOCK DIAGRAM  
FUTURA MONAURAL CONSOLES

B20,155

# QRK -5

## 5 CHANNEL MONAURAL AUDIO CONSOLE



### FEATURES

- Altec Faders with Removeable Covers for Cleaning
- Totally Self Contained, No External Power Supply or External Modules.
- Built In Muting Relay.
- Substantial "Head Room" - Distortion Free Operation at +18 dbm Output.
- 14 Inputs - Switchable to 5 Faders.
- Response  $\pm 1.5$  dbm 10 Hz - 20 KHz.
- Distortion - Less than 0.5% @ +8 dbm Output.
- Plug-in Modules Permit Replacement and Interchange in Seconds.
- Monitor Amplifier With 10 Watts Output.
- Cue Position In All Faders.
- 100% Solid State.
- Standard Unit Supplied with one (1) Pre-amp Module and four (4) Balanced Transformers. Additional Plug-in Pre-amps Available at Optional Price.



**ELECTRONIC PRODUCTS, INC.**

1568 NORTH SIERRA VISTA, FRESNO, CALIF. 93703 • Phone: 209-251-4213

*A Subsidiary of CCA Electronics Corp. Gloucester City, New Jersey 08030*

## DESCRIPTION

### TOTALLY SELF CONTAINED

The QRK-5, Mono Console is completely self contained. All of its components are mounted within a handsome, modern, metal cabinet. No external modules are required.

### REASONABLE CAPACITY

The QRK-5 has facilities for handling fourteen audio inputs and mixing five into the single output stage. A description of each of the mixing channels follows:

#### CHANNEL NO. 1

This channel has facilities for switching either of two low level inputs to the plug-in preamplifier supplied as standard with the QRK-5. The output of this preamplifier is used to feed an Altec attenuator which in turn drives the master attenuator. The Altec fader has a "cue" switch which is operated when the control is turned to its maximum counter clockwise position. The input switch of the channel, in its center position, disconnects both inputs to the preamplifier. This channel is normally used for microphone inputs.

#### CHANNEL NO. 2, NO. 3 & NO. 4

These channels have the same switching input facilities as channel 1, however they are normally supplied with plug-in transformers for accepting high level audio signals such as those present from a tape machine or equalized turntable preamplifier. They can be converted to low level channels by simply exchanging the transformer plug-in module with a preamplifier module. This entire procedure can be accomplished in seconds. Preamplifiers are available at an optional cost.

#### CHANNEL NO. 5

This channel is normally recommended for high level remote channels. When its input lever switch is placed in the "A" position one audio source is connected. In the center position no audio circuits are connected. However, in its "B" position five input lines are available selectable one at a time by a front panel rotary switch.

Also associated with this "B" input is a three position switch which will place the selected input either on the cueing buss, directly to mixing channels or will permit the monitor amplifier to feed program to the incoming audio line.

### SUBSTANTIAL MONITOR AMPLIFIER

The QRK-5 contains a built in 10 Watt monitor amplifier. This powerful, plug-in, solid state amplifier serves a dual function in that the cueing buss is mixed through a balanced control into its input along with the output of the monitor gain control. The output of this amplifier is fed to an internally mounted monitor/cue speaker, with terminals provided for the connection of one or more external speakers, if so desired.

### PLUG-IN, SOLID STATE, PROGRAM AMPLIFIER

Program material in the QRK-5 is fed through the master gain control to the 1010 plug-in, solid state amplifier. The output of this amplifier is then connected through a balancing transformer to a three position switch which will permit the output signal to be switched to one of three separate lines. An illuminated VU meter is provided for the output of the console.

### SPECIAL PUBLIC ADDRESS OUTPUT

The QRK-5 finds application where the console, in addition to feeding an audio program line simultaneously serves as a source for a public address system. Thus, the QRK-5 has an independent gain control for its "PA" output which is independent of the normal program lines.

### RUGGED ALTEC MIXER FADERS

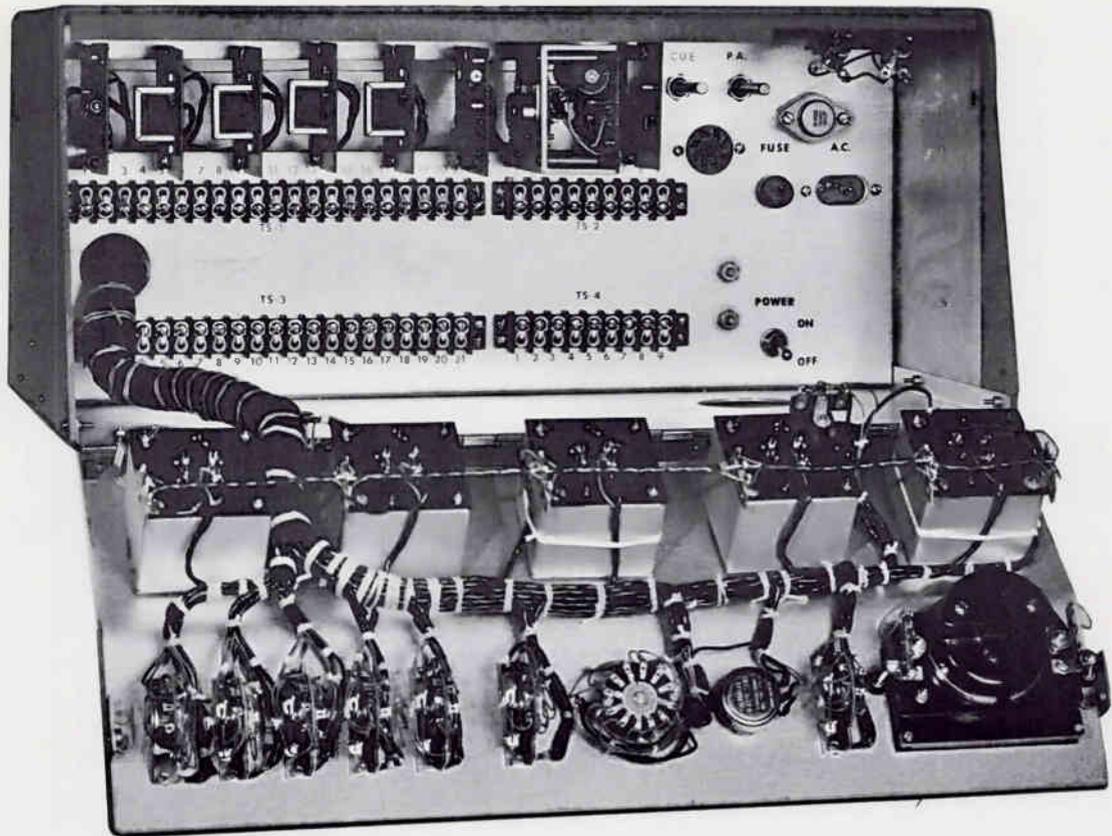
The five mixer attenuators are Altec Lansing precision step attenuators. It is unlikely that these Altec attenuators will ever require cleaning. However, if they should, they may be easily cleaned without being disconnected from the audio console.

### BUILT IN POWER SUPPLY

A heavy duty power supply is also internally mounted. This inclusion within the cabinet eliminates any problems of ground loops and hum pick up from external power supply to console connections. The major regulator components for the power supply are mounted on a plug-in, solid state printed card.

### MUTING RELAY

A four pole, double throw, muting relay is also internally mounted and wired to function with the mixer one select switch. This relay is prewired to mute the monitor amplifier. Terminals are provided for its use in other studio functions such as "On-The-Air" Lights.



## TECHNICAL SPECIFICATIONS

### INPUTS: (As Supplied in Standard Unit)

- (2) Microphone (Low Level) . . . . 200 ohms balanced  
Convertible to high level by exchanging preamp  
with transformer card.
- (12) High Level . . . . . 600 ohms balanced  
Convertible to low level by exchanging input  
transformer card with preamplifier plug-in card.

### OUTPUTS:

- (3) Program Lines . . . . . 600 ohms balanced
- (1) PA Line . . . . . 30 ohms unbalanced
- (1) Monitor Line . . . . . 4 ohms unbalanced

### LEVELS:

- Input
- Low Level Microphone . . . . . -55 dbm
  - High Level . . . . . -10 dbm
- Output
- Program . . . . . +8 dbm Normal (Max. +18 dbm)
  - Monitor . . . . . 10 Watts into 4 ohms
  - Cue . . . . . ½ Watt

### FREQUENCY RESPONSE:

- Program . . . . . ±1.5 dbm, 10 Hz to 20 KHz
- Monitor . . . . . ±2.0 dbm, 40 Hz to 20 KHz

### DISTORTION:

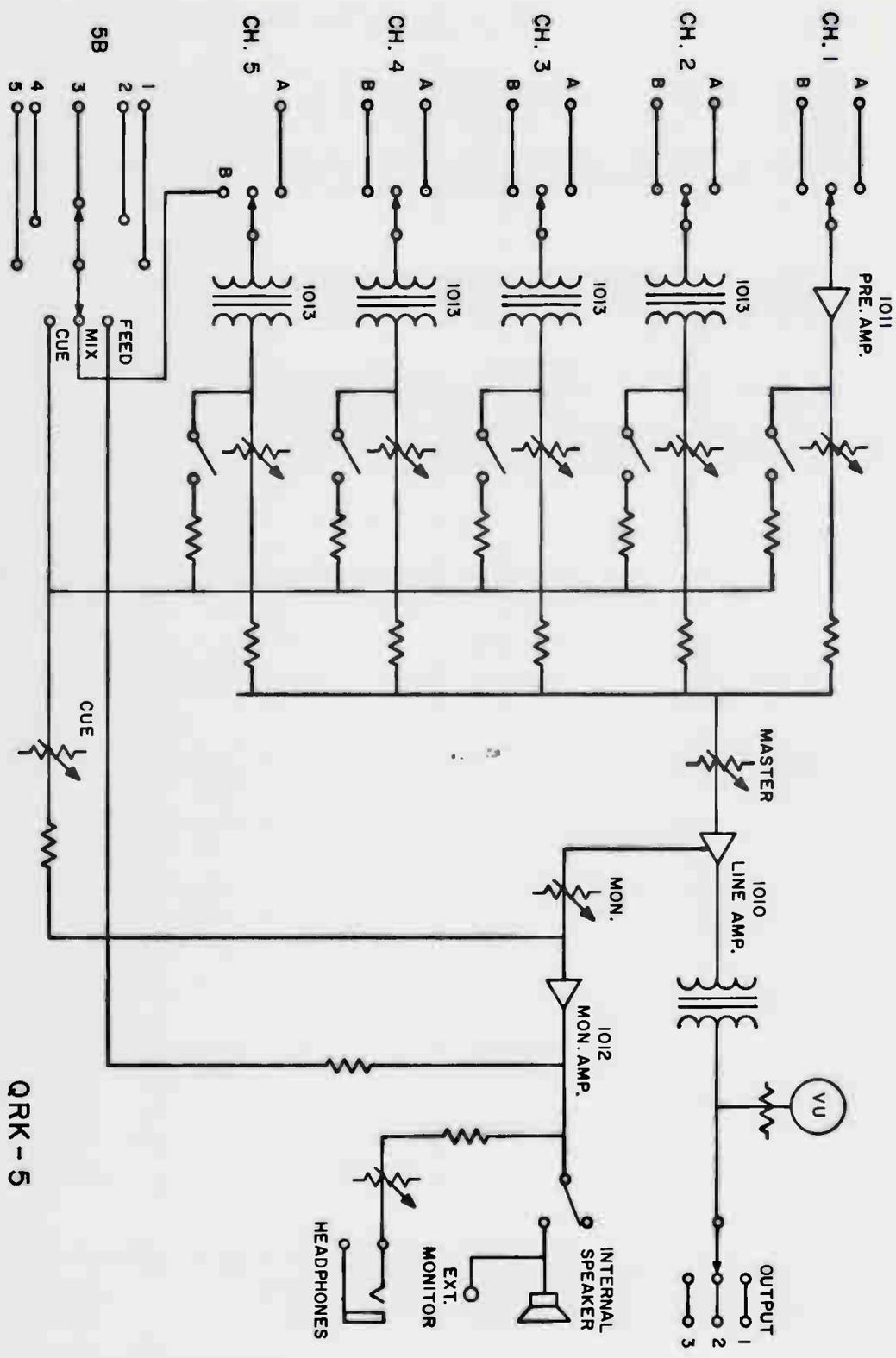
- Program . . . . . Less than 0.5% @ +8 dbm output,  
0.5% Max. @ +18 dbm output.
- Monitor . . . . . 1% Max. @ 10 Watts output.

**NOISE:** Less than - 75 db with -55 dbm input and +8 dbm output.

**POWER:** 115 volts AC, 50/60 cycles

### MECHANICAL SPECIFICATIONS

- Width - 18"
- Height - 7¾"
- Depth - 12"
- Weight - 30 lbs.



QRK-5  
5 CHANNEL AUDIO CONSOLE  
SIMPLIFIED BLOCK DIAGRAM

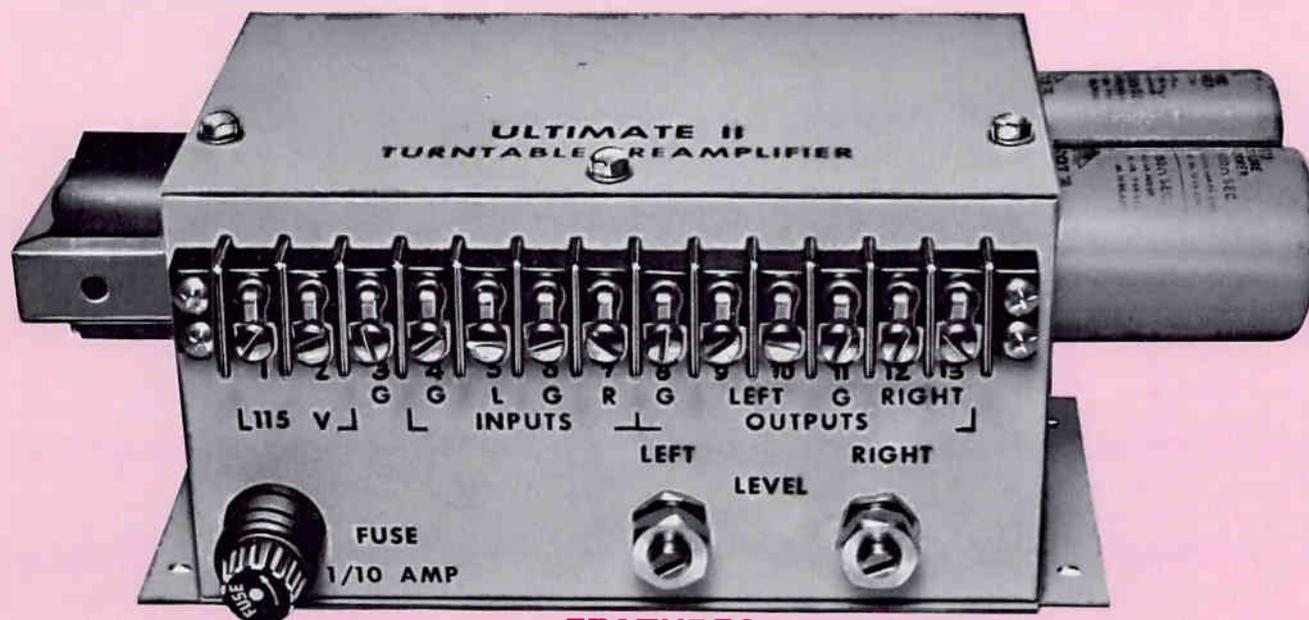
EXPORT SALES: Telesco International Corporation \* 171 Madison Avenue \* New York, New York 10016



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# ULTIMATE II-TURNTABLE STEREO EQUALIZED PRE-AMPLIFIER



## FEATURES

- Fixed equalization per RIAA and NAB specifications.
- Maximum "head room" (+10 dbm output.)
- Typical distortion — 0.1% @ any output level to +10 dbm.
- Gain @ 1 Kc — with 12 mv input — 1 volt output.
- Modern Solid State integrated circuitry.
- Built-in power supply.
- 100% magnetic shielding.
- Full range output level control without degradation of response, noise, or distortion.
- Magnetically shielded output transformer provides 150/600 ohms balanced output.
- Maximum dynamic range - eliminates clipping and distortion @ high level passage.
- Contains built-in rumble filter.
- Designed for use with all popular variable reluctance and magnetic cartridges.
- Noise level — below rated output — better than -75 db.
- Two independent channels.
- Can be driven by two mono turntables.
- Separation between channels — better than 60 db.
- Scratch filtering can be achieved by simply adding resistor across input terminals.



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## USES

The **QRK** Ultimate II stereo equalized pre-amplifier is designed to be used with two monaural or one stereo cartridge to provide the broadcaster and recording laboratory with a reliable pre-amplifier for disc reproduction. In addition to having excellent noise, distortion and equalization properties, the Ultimate II has exceptional dynamic range. This substantial "head room" eliminates the common problem of distortion and clipping at loud passages due to the overloading of commercial pre-amplifiers. It also has substantial separation between channels (60 db) to assure minimum cross talk in stereo operation and reliable operation with two mono turntables.

## DESCRIPTION

### MAXIMUM "HEAD ROOM"

The average output level of commercial pre-amplifiers is approximately -20 dbm. This is quite adequate for the average mixing buss in conventional consoles. However, it is not unusual for a record disc to have a loud passage which would require the pre-amplifier to produce an output substantially higher than the -20 dbm level. Many pre-amplifiers do not have sufficient dynamic range to accept this increased level without introducing distortion and clipping.

The **QRK** Ultimate II can produce +10 dbm on both channels without any evidence of distortion or clipping. Thus, it contains a substantial reserve or "Head Room" for the common loud record passages which will permit amplification without degradation of the signal.

### RESPONSE WITHIN +0.5 db OF NAB CURVE

The Ultimate II contains a fixed equalization to compensate for the NAB equalization in the original recording. Thus, the result is that the output of the pre-amplifier when fed by a NAB disc is essentially flat from 30 cycles to 15,000 cycles.

### BUILT-IN POWER SUPPLY

One major source of noise and hum pick-up in many commercial pre-amplifiers is the interconnection wires and circuitry between the pre-amplifier and its power supply. The **QRK** Ultimate II has a power supply as an integral part of its physical package. This eliminates many problems and contributes substantially to the very low noise (-75 db) of the pre-amplifier on both channels.

## MAGNETICALLY SHIELDED OUTPUT TRANSFORMERS

The Ultimate II contains as a standard component, a substantial magnetically shielded transformer which achieves a balanced 150/600 dbm output. This transformer can substantially reproduce +10 dbm at 30 cycles without saturating on both channels. The use of transformers isolates the ground circuitry between the pre-amplifier and its termination and thus eliminates "ground loops."

### NOISE INDEPENDENT OF OUTPUT LEVEL

The **QRK** Ultimate II has facilities for changing the gain of the amplifier on both channels by utilizing independent attenuators at the output of the device rather than at the input level. Thus, the ratio of signal to noise, below +10 dbm output, is independent of output level settings and remains at least 75 db below the desired signal.

### BUILT-IN RUMBLE FILTER

With the advent of stereo, greater emphasis has been placed on the rumble characteristics of turntables, tone arm and cartridges. Rumble components are normally very low frequencies that are related to the turntable speeds. Thus, they produce components at approximately 5 to 15 cycles. The **QRK** Ultimate II contains solid state circuitry which introduces a low frequency roll-off of 6 db per octave below 70 cycles on each channel.

### \*\*CAN BE USED WITH ALL POPULAR MONO AND STEREO CARTRIDGES

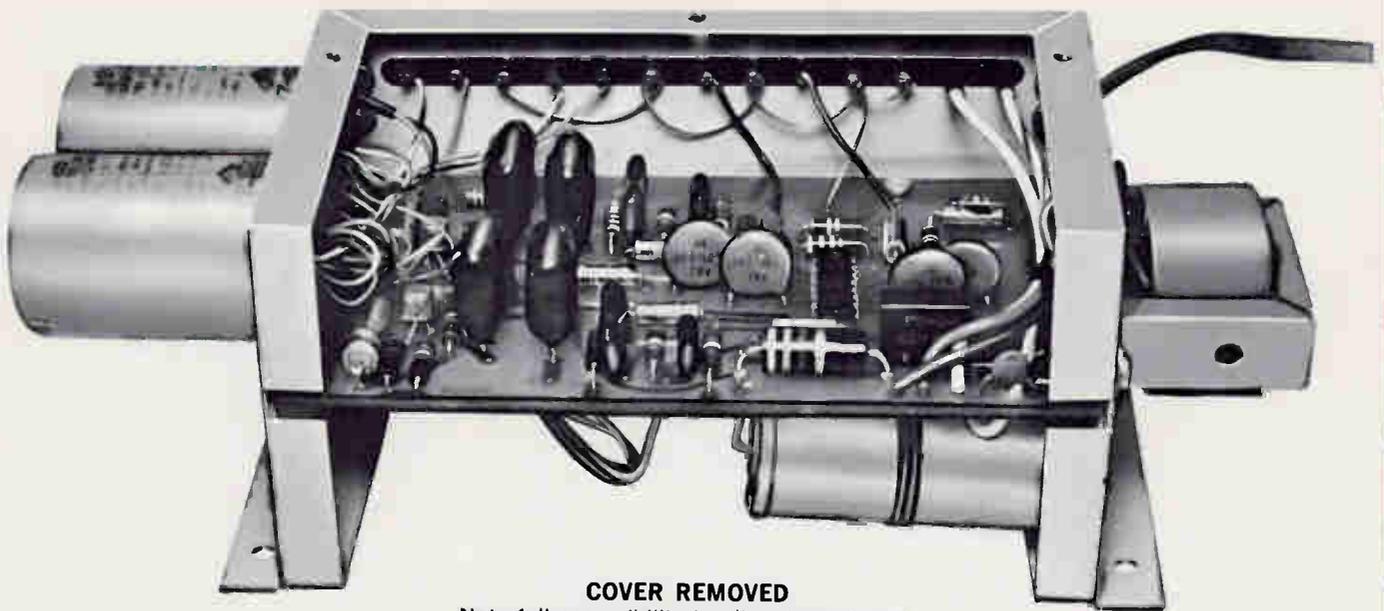
The **QRK** Ultimate II has an input impedance of approximately 150 K on each channel. By terminating its input terminals with an appropriate terminating resistor, the pre-amplifier may be driven by any popular cartridge.

### \*SCRATCH FILTERING

The **QRK** Ultimate II normally has its input terminals terminated with an impedance of approximately 47 K. This results in a reasonably flat response with respect to a normalized RIAA curve. However, by simply adding a low value resistor across the input terminals, a high frequency roll-off, or "scratch filtering" will occur. Rather than making this easily available to untrained personnel, **QRK** provides the data and permits the operator to make his own decision relative to insertion in the circuit.

### SEPARATION BETWEEN CHANNELS - 60 db

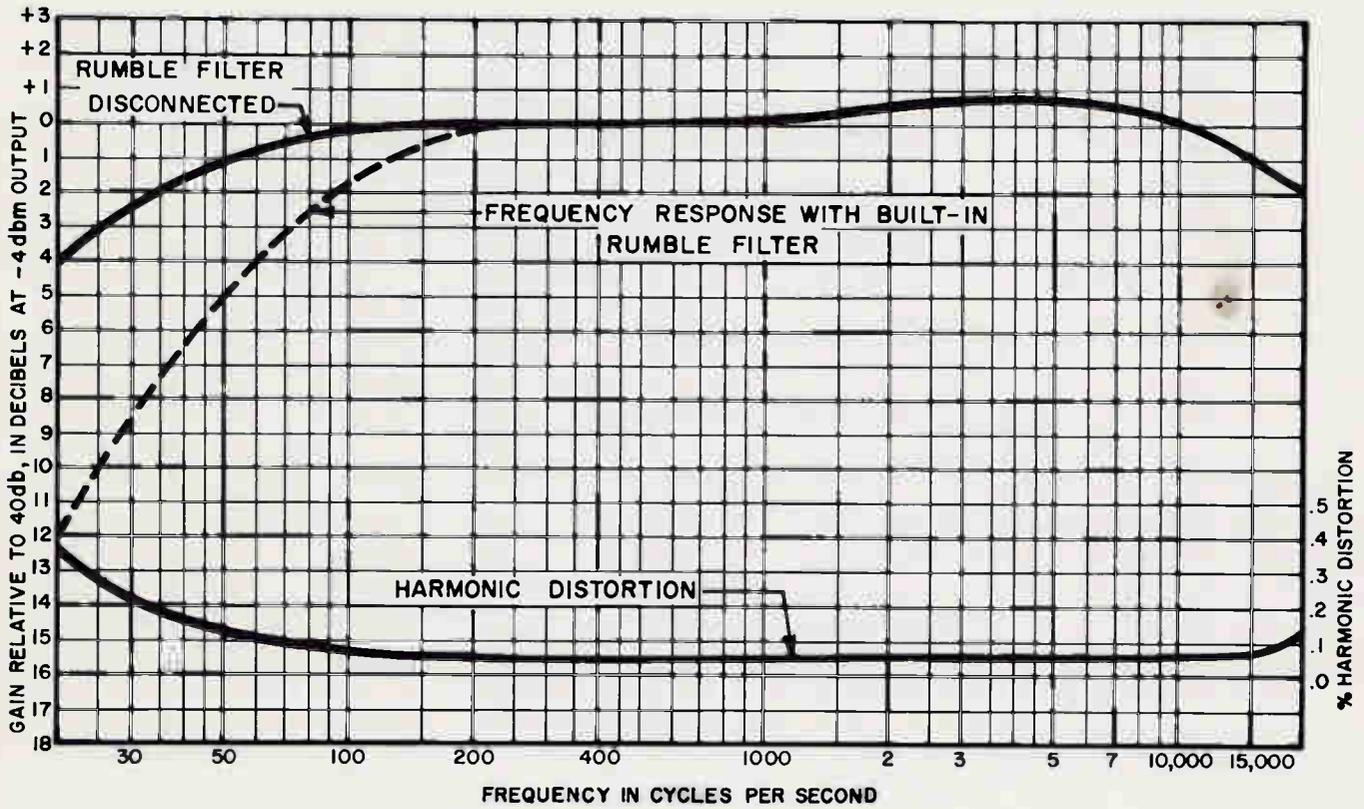
The **QRK** Ultimate II has two independent channels with a minimum separation of 60 db between each other. Thus, the broadcaster can be assured of practically "absolute isolation" in the stereo mode. In addition, where two turntables are located adjacent to each other, one Ultimate II can serve as a pre-amplifier for two mono turntables.



**COVER REMOVED**

Note full accessibility to all parts and modern, Solid State and fabrication techniques.

**NORMALIZED FREQUENCY RESPONSE & HARMONIC DISTORTION**



The response curve described above is normalized to the NAB curve for standard disc reproducing characteristics.

## TECHNICAL SPECIFICATIONS

Output Level with standard NAB reference input (12 mv) .....	0 dbm
Guaranteed Maximum Output Level without signal clipping .....	+10 dbm output
Maximum Input Level .....	50 mv
Gain @ 1 Kc.....	0.8 volt output with 12 mv input
Noise, with 12 mv input .....	-75 db
Output Impedance .....	150/600 ohms (balanced)
Distortion at all levels to +10 dbm output .....	0.2% max. (.1% typical)
Frequency Responses with respect to NAB curve .....	$\pm 1$ db -50 HZ to 15 KHz
with rumble filter connected .....	-3.0 db @ 50hz
.....	12 db per octave below 70 hz
Separation between channels .....	60 db
Maximum Operating Temperature .....	+60° C
Power - 105/125 volts, 50/60 cycles .....	6 watts

Size - 9" L x 3" H x 3" W

Weight - 2½ #net, 3 #gross

Mounting position - Can be mounted in any position.

### QRK PRODUCTS

- Professional Turntables      • Turntable Cabinets
- Precision Tone Arms          • Equalized Pre-Amplifiers
- Mono and Stereo Cartridges

**EXPORT SALES:** *Telesco International Corporation • 171 Madison Avenue • New York, New York 10016*



**ELECTRONIC PRODUCTS, INC.**

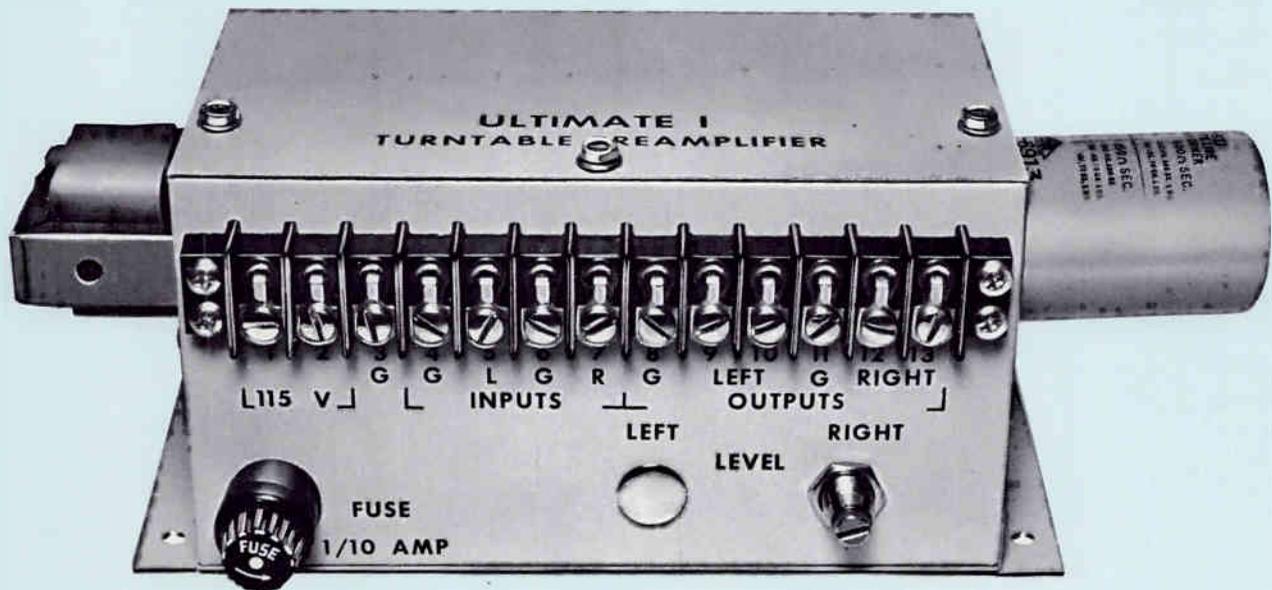
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*A Subsidiary of CCA Electronics Corp. Gloucester City, New Jersey 08030*



# ULTIMATE I—TURNTABLE

## MONO EQUALIZED PRE-AMPLIFIER



### FEATURES

- Fixed equalization per RIAA and NAB specifications.
- Maximum "head room" (+10 dbm output).
- Typical distortion — 0.1% @ any output level to +10 dbm.
- Gain @ 1 Kc — with 12 mv input — 1 volt output.
- Modern Solid State integrated circuitry.
- Built-in power supply.
- 100% magnetic shielding.
- Full range output level control without degradation of response, noise or distortion.
- Magnetically shielded output transformer provides 150/600 ohms balanced output.
- Maximum dynamic range — eliminates clipping and distortion @ high level passage.
- Contains built-in rumble filter.
- Designed for use with all popular variable reluctance and magnetic cartridges.
- Noise level — below rated output — better than —75 db.
- Can be driven with stereo cartridge with full response.
- Scratch filtering can be achieved by simply adding resistor across input terminals.



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## USES

The **QRK** Ultimate I, monaural equalized pre-amplifier is designed to be used with turntable monaural and stereo cartridges to provide the broadcaster and recording laboratory with a reliable pre-amplifier for disc reproduction. In addition to having excellent noise, distortion and equalization properties, the Ultimate I has exceptional dynamic range. This substantial "head room" eliminates the common problem of distortion and clipping at loud passages due to the overloading of commercial pre-amplifiers.

## DESCRIPTION

### MAXIMUM "HEAD ROOM"

The average output level of commercial pre-amplifiers is approximately  $-20$  dbm. This is quite adequate for the average mixing buss in conventional consoles. However, it is not unusual for a record disc to have a loud passage which would require the pre-amplifier to produce an output substantially higher than the  $-20$  dbm level. Many pre-amplifiers do not have sufficient dynamic range to accept this increased level without introducing distortion and clipping.

The **QRK** Ultimate I can produce  $+10$  dbm without any evidence of distortion or clipping. Thus, it contains a substantial reserve or "Head Room" for the common loud record passages which will permit amplification without degradation of the signal.

### RESPONSE WITHIN $+0.5$ db OF NAB CURVE

The Ultimate I contains a fixed equalization to compensate for the NAB equalization in the original recording. Thus, the result is that the output of the pre-amplifier when fed by an NAB disc is essentially flat from 30 cycles to 15,000 cycles.

### BUILT-IN POWER SUPPLY

One major source of noise and hum pick-up in many commercial pre-amplifiers is the interconnection wires and circuitry between the pre-amplifier and its power supply. The **QRK** Ultimate I has a power supply as an integral part of its physical package. This eliminates many problems and contributes substantially to the very low noise ( $-75$  db) of the pre-amplifier.

### MAGNETICALLY SHIELDED OUTPUT TRANSFORMER

The Ultimate I contains as a standard component, a

substantial magnetically shielded transformer which achieves a balanced 150/600 dbm output. This transformer can substantially reproduce  $+10$  dbm at 30 cycles without saturating. The use of a transformer isolates the ground circuitry between the pre-amplifier and its termination and thus eliminates "ground loops".

### NOISE INDEPENDENT OF OUTPUT LEVEL

The **QRK** Ultimate I has facilities for changing the gain of the amplifier by utilizing an attenuator at the output of the device rather than at the input level. Thus, the ratio of signal to noise, below  $+10$  dbm output, is independent of output level settings and remains at least 75 db below the desired signal.

### BUILT-IN RUMBLE FILTER

With the advent of stereo, greater emphasis has been placed on the rumble characteristics of turntables, tone arm and cartridges. Rumble components are normally very low frequencies that are related to the turntable speeds. Thus, they produce components at approximately 5 to 15 cycles. The **QRK** Ultimate I contains solid state circuitry which introduces a low frequency roll-off of 6 db per octave below 70 cycles.

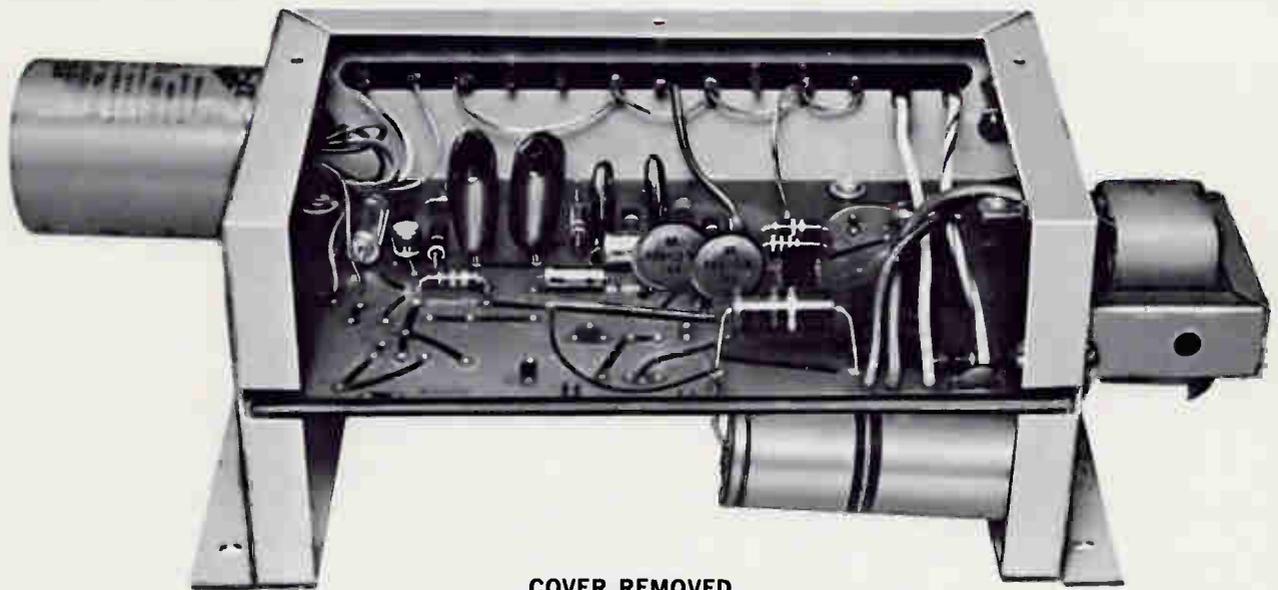
### CAN BE USED WITH ALL POPULAR MONO AND STEREO CARTRIDGES

The **QRK** Ultimate I has an input impedance of approximately 150 K. By terminating its input terminals with an appropriate terminating resistor, the pre-amplifier may be driven by any popular cartridge.

For example, stereo cartridges have had their outputs paralleled and have been terminated with one half of their individual normal impedance wired across the Ultimate I. Perfect reproduction has occurred with this combination.

### SCRATCH FILTERING

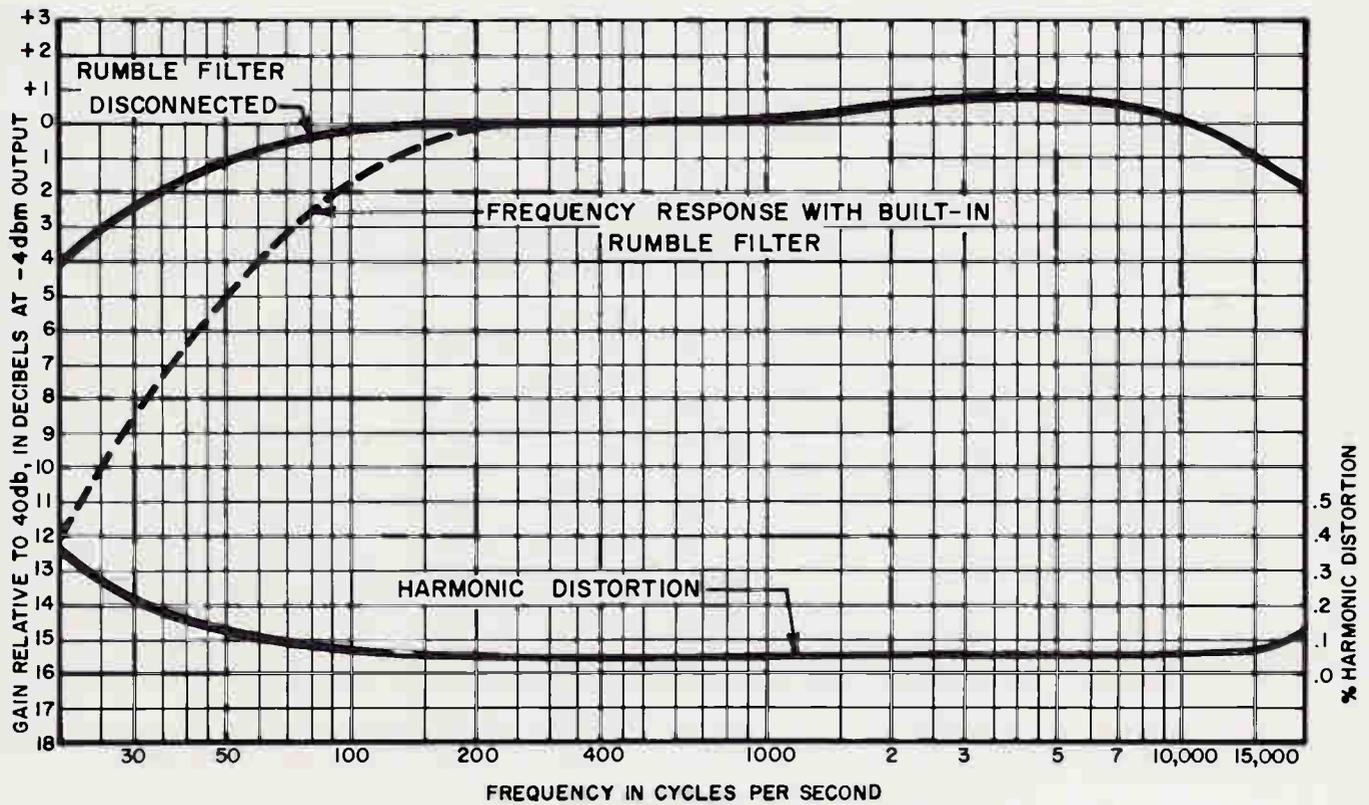
The **QRK** Ultimate I normally has its input terminals terminated with an impedance of approximately 47 K. This results in a reasonably flat response with respect to a normalized RIAA curve. However, by simply adding a low value resistor across the input terminals, a high frequency roll-off, or "scratch filtering" will occur. Rather than making this easily available to untrained personnel, **QRK** provides the data and permits the operator to make his own decision relative to insertion in the circuit.



**COVER REMOVED**

Note full accessibility to all parts and modern, Solid State and fabrication techniques.

**NORMALIZED FREQUENCY RESPONSE & HARMONIC DISTORTION**



The response curve described above is normalized to the NAB curve for standard disc reproducing characteristics.

## TECHNICAL SPECIFICATIONS

Output Level with standard NAB reference input (12 mv) .....	0 dbm
Guaranteed Maximum Output Level without signal clipping .....	+10 dbm output
Maximum Input Level .....	50 mv
Gain @ 1 Kc .....	0.8 volt output with 12 mv input
Noise, with 12 mv input .....	-75 db
Output Impedance .....	150/600 ohms (balanced)
Distortion at all levels to +10 dbm output .....	0.2% max. (.1% typical)
Frequency Responses with respect to NAB curve .....	$\pm 1$ db -50 Hz
with rumble filter connected .....	-3.0 db @ 50 hz
.....	12 db per octave below 70 hz
Maximum Operating Temperature .....	+60° C
Power - 105/125 volts, 50/60 cycles .....	4 watts
Size - 9" L x 3" H x 3" W	
Weight - 2 # net, 2½ # gross	
Mounting position - Can be mounted in any position.	

### QRK PRODUCTS

- Professional Turntables
- Turntable Cabinets
- Precision Tone Arms
- Equalized Pre-Amplifiers
- Mono and Stereo Cartridges

EXPORT SALES: *Telesco International Corporation \* 171 Madison Avenue \* New York, New York 10016*



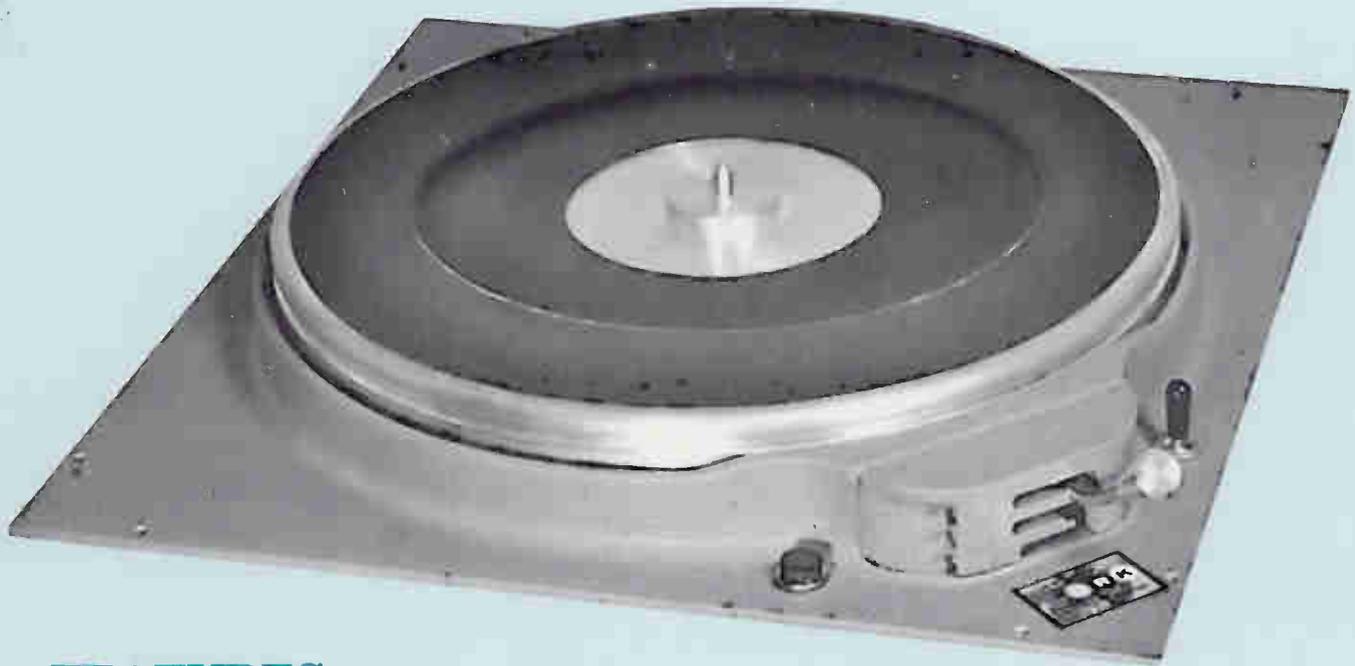
**ELECTRONIC PRODUCTS, INC.**

1568 NORTH SIERRA VISTA, FRESNO, CALIF. 93703 • Phone: 209 251-4213

A Subsidiary of CCA Electronics Corp. Gloucester City, New Jersey 08030



**MODEL 12S/16S - INSTANT START  
BROADCAST PROFESSIONAL TURNTABLE**



## FEATURES

- Instant Start
- Anticipated life - 20 years.
- Three moving parts.
- 99.95% speed regulation
- 25 years of service.
- World's most popular professional turntable. (25,000 users)
- Rim drive assures minimum rumble consistent with maximum torque.
- Precision rugged aluminum base and platter.
- Instant speed change to 33 1/3, 78 and 45 RPM.
- Available in 12-inch and 16-inch versions.
- Available with either synchronous or four pole motors.
- Patented platter configuration permits reliable reproduction of 33 1/3, 78 and 45 RPM records of non-flat or "dished" form.
- Chassis easily mounted in any turntable housing or table.
- Available from stock - stored at nationwide distributors and at two plants - one on each USA coast.
- Supplied with optional equalized pre-amplifiers, tonearms, and housings.
- Available in custom colors.
- Supplied with pre-drilled holes for specified tonearms.



**ELECTRONIC PRODUCTS, INC.**  
Telephone: 209/251-4213  
1568 No. SIERRA VISTA  
Fresno, California 93703

A Subsidiary of  
**CCA ELECTRONICS CORP.**  
716 Jersey Avenue Tel. (609) 456-1716  
GLOUCESTER CITY, NEW JERSEY 08030

# DESCRIPTION

## INSTANT START

The QRK-12S professional turntable is designed specifically for the broadcast and recording industries, where fast start up, consistent with excellent quality is required to achieve continuous programming with a minimum of time between events.

## THREE MOVING PARTS

The QRK instant start turntables incorporate only three moving parts. A substantial synchronous motor with a precision capstan; a wearproof neoprene idler wheel; and a precision balanced aluminum platter. Operation of the speed control engages the idler wheel with a specific portion of the capstan which in turn transfers this motion to the rim of the platter.

## RIM PLATTER DRIVE

QRK developed the fundamental patent for the conventional "instant start" professional turntables. In evaluating the various methods of coupling the energy from the motor to the platter, it was concluded that rim drive represents the optimum compromise between reliability, instant start and minimum rumble.

## RUGGED 3-SPEED ADJUSTER

Located in the corner of the turntable is a finished metallic arm which, when placed in the appropriate slot, will engage the idler wheel with the capstan and produce a turntable speed of 33 RPM, 45 RPM or 78 RPM.

## NON-SLIP EXCLUSIVE PLATTER WITH FIXED 33 1/3, 45 AND 78 FACILITIES

QRK is the only major professional turntable which has facilities for playing conventional records without adding custom adaptors to the platter. The center pin serves as a centering device for 78 and 33 RPM records. These record sizes rest on the center large hub and the outer felt portion of the platter. The 45 RPM records use the large hub as a centering device and nestles inside the center recessed area. The substantial traction available from this platter configuration permits the use of semi-warped, non-flat records.

## ADEQUATE AREA FOR TONE ARM INSTALLATION

The QRK-12S turntable is located in the center of its base. Thus, there exists a reasonable area on three corners of the platter to install the specific tone arm desired by the users. If desired, QRK will pre-drill the mounting holes for the specific tone arms. This can be supplied at a nominal additional charge. If tone arms are ordered with the turntable, pre-drilling is available at no additional charge.

## AVAILABLE WITH COLORS OF YOUR CHOICE

The standard QRK-12S turntable is supplied in a baked gray enamel color. At an optional price, these tables may be provided in the color of the user's choice.

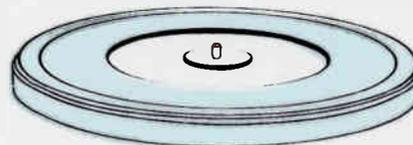
## INSTALLATION SIMPLICITY

The QRK-12S requires only 6" of depth and approximately 1½ square feet of surface area. The turntables are supplied with a full scale hole pattern which can serve as an overlay in fabricating the turntable housing. (QRK offers a complete line of walnut finished cabinets for these turntables.)

## ECONOMIC FOUR POLE MOTOR OR SUBSTANTIAL SYNCHRONOUS MOTOR

The QRK Model 12S normally is supplied with a synchronous motor where accurate speed regulation is not imperative. A four pole induction motor is available which results in a more attractively priced turntable. When ordering the four pole motor, specify Model 12/ 4P.

## AVAILABLE IN 12-INCH AND 16-INCH VERSIONS



*Exclusive* PLATTER - DAPTER

# SPECIFICATIONS

### Line Voltage

115/230 volts AC - (115 volts standard)  
Note: If 230 volts specify - optional cost.

### Line Frequency

50/60 cycles (60 cycles standard)  
Note: If 50 cycles specify - optional cost.

### Speed Regulation

99.95%

### Wow, Rumble, Flutter

Meets or exceeds NAB standards.

Start-up time @ 33 RPM for full speed  
1/8 sec. max. (1/16th of revolution)

### Standard Color

Gray with brown felt.  
Turntable available with special colors @ optional cost.

### Dimensions 12S / 16S

Width - 14 1/2" / 19 5/8"; front to back -  
15 3/8" / 19 5/8"; depth below frame - 6" / 6"

### Weight

\* 17 net; packed \* 23



**MODEL 12C - INSTANT START  
BROADCAST PROFESSIONAL TURNTABLE**



## FEATURES

- Instant Start
- Anticipated life - 20 years.
- Three moving parts.
- 99.95% speed regulation
- 25 years of service.
- Available in custom colors.
- World's most popular professional turntable. (25,000 users)
- Rim drive assures minimum rumble consistent with maximum torque.
- Precision rugged aluminum base and platter.
- Instant speed change to 33 1/3, 78 and 45 RPM.
- Patented platter configuration permits reliable reproduction of 33 1/3, 78 and 45 RPM records of non-flat or "dished" form.
- Chassis easily mounted in any turntable housing or table.
- Available from stock - stored at nationwide distributors and at two plants - one on each USA coast.
- Supplied with optional equalized pre-amplifiers, tonearms, and housings.
- Supplied with pre-drilled holes for specified tonearms.



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A Subsidiary of

**CCA ELECTRONICS CORP.**

716 Jersey Avenue Tel. (609) 456-1716  
GLOUCESTER CITY, NEW JERSEY 08030

# DESCRIPTION

## INSTANT START

The QRK-12C professional turntable is designed specifically for the broadcast and recording industries, where fast start up, consistent with excellent quality is required to achieve continuous programming with a minimum of time between events.

## THREE MOVING PARTS

The QRK instant start turntables incorporate only three moving parts. A substantial synchronous motor with a precision capstan: a wearproof neoprene idler wheel; and a precision balanced aluminum platter. Operation of the speed control engages the idler wheel with a specific portion of the capstan which in turn transfers this motion to the rim of the platter.

## RIM PLATTER DRIVE

QRK developed the fundamental patent for the conventional "instant start" professional turntables. In evaluating the various methods of coupling the energy from the motor to the platter, it was concluded that rim drive represents the optimum compromise between reliability, instant start and minimum rumble.

## RUGGED 3-SPEED ADJUSTER

Located in front of the turntable is a finished metallic arm which, when placed in the appropriate slot, will engage the idler wheel with the capstan and produce a turntable speed of 33 RPM, 45 RPM or 78 RPM.

## NON-SLIP EXCLUSIVE PLATTER WITH FIXED 33 1/3, 45 AND 78 RPM FACILITIES

QRK is the only major professional turntable which has facilities for playing conventional records without adding custom adaptors to the platter. The center pin serves as a centering device for 78 and 33 RPM records. These record sizes rest on the center large hub and the outer felt portion of the platter. The 45 RPM records use the large hub as a centering device and nestles inside the center recessed area. The substantial traction available from this platter configuration permits the use of semi-warped, non-flat records.

## ADEQUATE AREA FOR TONE ARM INSTALLATION

The QRK-12C turntable is displaced somewhat to the left on its base. Thus, there exists a reasonable area to the right of the platter to install the specific tone arm desired by the user. If desired, QRK will pre-drill the mounting holes for the specific tone arms. This can be supplied at a nominal additional charge. If tone arms are ordered with the turntable, pre-drilling is available at no additional charge.

## AVAILABLE WITH COLORS OF YOUR CHOICE

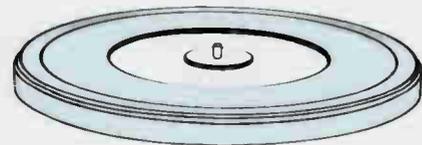
The standard QRK-12C turntable is supplied in a handsome beige color. At an optional price, these tables may be provided in the color of the user's choice.

## INSTALLATION SIMPLICITY

The QRK-12C requires only 6" of depth and approximately 1½ square feet of surface area. The turntables are supplied with a full-scale hole pattern which can serve as an overlay in fabricating the turntable housing. (QRK offers a complete line of walnut finished cabinets for these turntables.)

## OPTIONAL ACCESSORIES AVAILABLE

QRK offers a complete line of equalized preamplifiers, handsome turntable housings, and a number of popular tone arms and cartridges. These are available on an individual basis or prewired in a complete assembly.



*Exclusive* PLATTER - DAPTER

# SPECIFICATIONS

## Line Voltage

115/230 volts AC - (115 volts standard)  
Note: If 230 volts specify - optional cost.

## Line Frequency

50/60 cycles (60 cycles standard)  
Note: If 50 cycles specify - optional cost.

## Speed Regulation

99.95%

## Wow, Rumble, Flutter

Meets or exceeds NAB standards.

## Start-up time @ 33 RPM for full speed

1/8 sec. max. (1/16th of revolution)

## Standard Color

Beige with brown felt.

Turntable available with special colors @ optional cost.

## Dimensions 12S / 16S

Width - 14 1/2" / 19 5/8"; front to back -  
15 3/8" / 19 5/8"; depth below frame - 6" / 6"

## Weight

\* 17 net; packed \* 23

# Q R K MODEL 101

## PROFESSIONAL TONE ARM



### FEATURES

- Tracks as low as 1/2 gram without skipping grooves.
- Designed to work with modern, highly-compliant, light-tracking cartridges.
- When used with modern cartridges - **will not wear records.**
- Ruggedly built of high-strength alloys.
- Elastically damped counterbalance with vernier adjustment for precision zero balance.
- When used with QRK cartridge - **no resonances from 30 cycles to 30 Kc.**
- Excellent cueing visibility.
- Separate horizontal and vertical pivots with stops.
- Skating force with QRK cartridge negligible (less than 2/10 gram.)
- Easy one-hole mounting with pivots and rest heights adjustable - 1 11/32" to 2 3/8".
- Statically Balanced - no springs. Loading easily adjustable by calibrated counterweight arm.
- Gravity Loading assures tracking on warped records.
- Provisions for Anti-skate adjustment.
- Removable head for fast cartridge installation.
- Provided with audio cord with matching 5-connector plug.
- Extra length and careful design minimizes lateral tracking error - Max. error 1.25 degrees.
- Cartridge head can accommodate all standard and majority of non-standard cartridges.
- No exposed audio leads - maximum shielding.
- Stylus not affected by stiffness or dress of audio cable.
- Independent, simple to operate, balancing and tracking controls.

### USES

The QRK-101, professional Tone Arm, is a contemporary design which, when used with modern cartridges, provides the broadcasting and recording industries with a device that can faithfully reproduce modern stereo records without the common problems of poor tracking, skipping and excessive record wear. It also incorporates a number of mechanical features which permit ease of installation, rapid cartridge change and excellent cueing visibility.



**ELECTRONIC PRODUCTS, INC.**

1568 NORTH SIERRA VISTA, FRESNO, CALIF. 93763 • Phone: 209 251 4213

*A Subsidiary of UCA Electronics Corp. Gloucester City, New Jersey 08030*

# MODEL 101 PROFESSIONAL TONE ARM

## DESCRIPTION

**Designed for Modern Cartridges:** The highly compliant, light tracking cartridges presently being offered represent a minimum of loading (1 to 3 grams) to the tone arm. This weight is not sufficient to assure proper tracking by viscous damped and older type tone arm designs. Increased loading on the older type tone arms to assure tracking reduces the reproduction qualities of the cartridges and introduces substantial wear to records. The QRK-101 can reliably track with the highly compliant, light tracking modern mono and stereo cartridges.

**Separate Vertical and Horizontal Pivots:** The QRK-101 tone arm is designed to faithfully reproduce modern stereo records. This can only be accomplished with individual vertical and horizontal pivots. In addition, the QRK-101 incorporates stops which prevent damage to audio cables.

**Simplicity of Mounting, Adjustment and Cartridge Change:** The QRK-101 requires only one conventional sized hole for mounting. In addition, it contains calibrated controls to achieve balance and anti-skate adjustments in a matter of seconds. There is no requirement to spend endless hours "weighting" the tone arm. The "head" of the tone arm can be removed in seconds by simply "unscrewing" a threaded, keyed bushing. Thus, a cartridge can be replaced in a minimum of time.

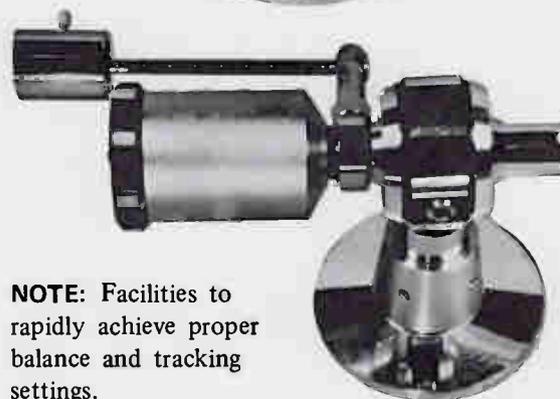
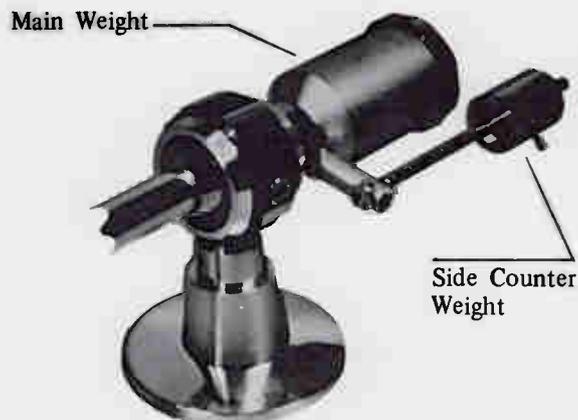
**Gravity Loading Assures Excellent, Uniform Tracking:** The QRK-101 Tone Arm does not utilize any viscous damping or spring loading. Thus, the loading on the cartridge of the QRK Tone Arm will be constant, independent of the flatness of the record. In a viscous damped arm, the arm will not track on a warped record due to the built-in viscous damping. This results in actual skipping of grooves and low frequency intermodulation distortion products. Spring loaded arms introduce "non-constant" tracking loads on warped records.

**Minimum Tracking Error:** The QRK-101 Arm is somewhat longer than conventional arms. This fact, together with a special form factor design, results in a maximum lateral tracking error of less than 1.25 degrees.

**Designed to Accommodate Non-Standard Cartridges:** The tone arm cartridge housing contains (3) three sets of mountings to accommodate practically all popular and non-standard cartridges.

**Low Mass Arm Does Not Contribute to Resonances:** Friction-free operation is guaranteed by the use of miniature ball bearings. In addition, special alloys are used with substantial mechanical strength but of such a nature that resonances do not occur. When used with the QRK Cartridge, the first resonance is at 35,000 cycles which is the stylus tip mass resonance.

**Excellent Cueing Visibility:** Due to the unique form factor of the arm, it is possible to quickly locate the cartridge stylus on the disc when viewing the arm from any view.



**NOTE:** Facilities to rapidly achieve proper balance and tracking settings.

## SPECIFICATIONS

**Dimensions:** Overall - 13 5/8"  
Spindle to Pivot - 9"  
Spindle to Back of Arm - 3 3/8"  
Overhang - Spindle to Stylus Center 9/16"  
Adjustable for off-standard pickups.

**Weight:** - 12 Ounces

**Tracking Error:** - 1.25° Max.

**Resonance:** - Below 10 cycles with average pickup. Virtually damped out.

**Tracking Pressure:** - Depending on cartridge, can track @ 1/2 Gram. (2 1/4 grams recommended for QRK F3 Cartridge)

**Viscous Damping:** - None required. (Silicon oil in pivot bearings produces drag and effects trackability and reproduction qualities.)

**Balancing:** - Achieved by Adjustable Control

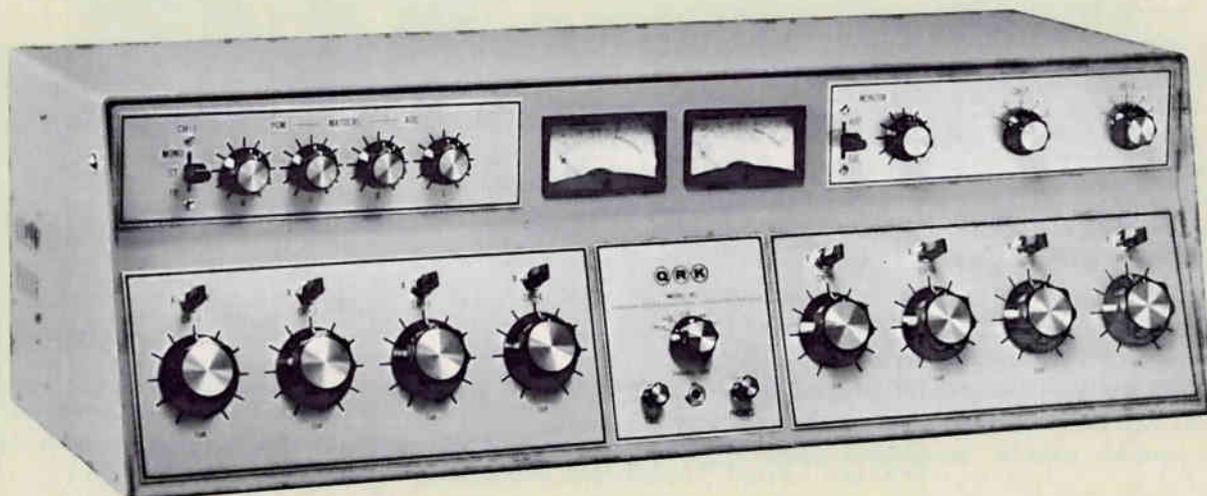
**Tracking Adjustment:** - Achieved by side mounted calibrated counter weight.

**Cartridge Head:** - Removable - Can mount non-standard cartridge.

**Pivot and Rest Heights:** - Adjustable (1 11/32" to 2 3/8") - Supplied with color coded, audio cables with plugs at each end.

# QRK - 8S

## 8 CHANNEL STEREO AUDIO CONSOLE



### FEATURES

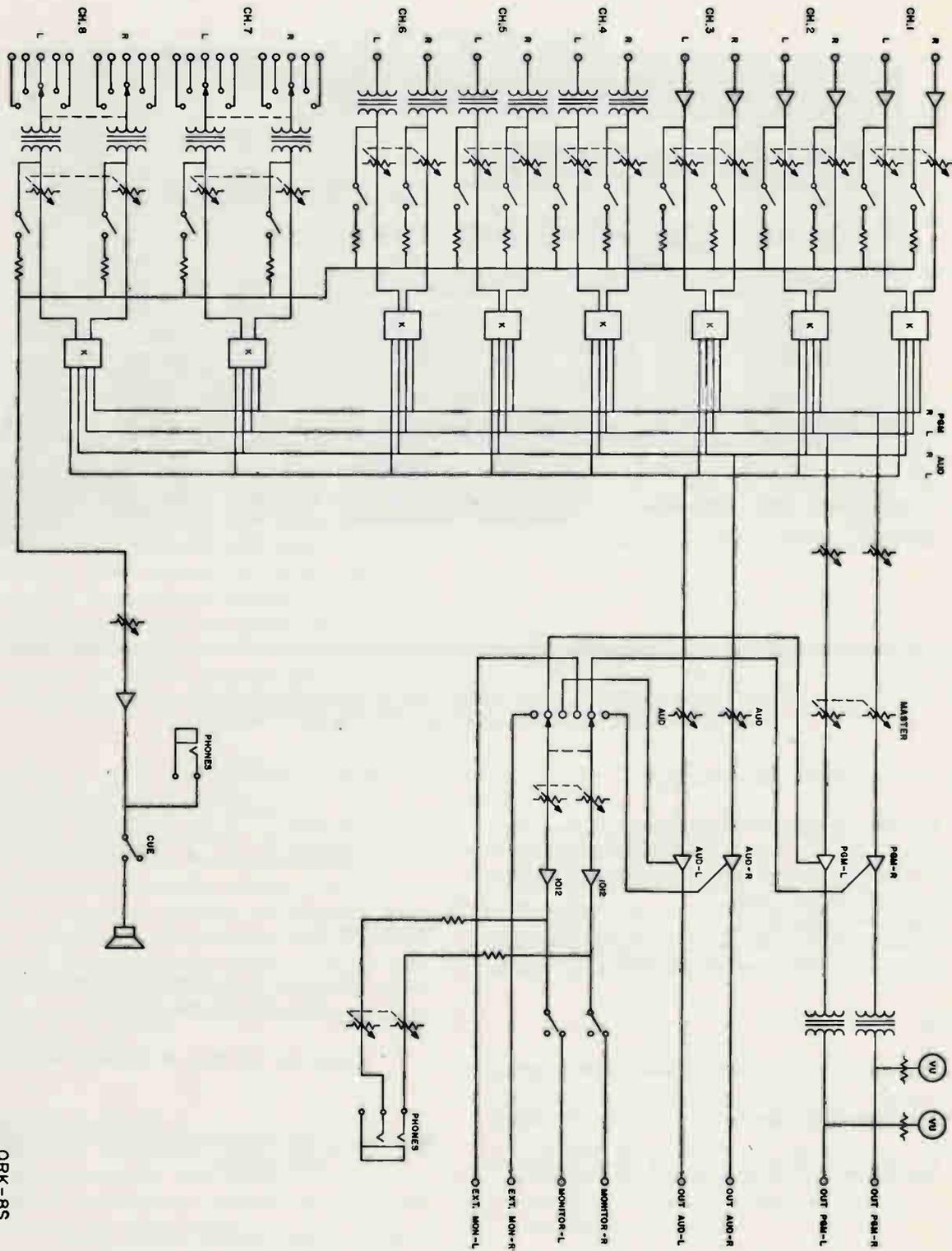
- Altec Faders with Removable Covers for Cleaning.
- Totally Self Contained, No External Power Supply or External Modules.
- Built-In Muting.
- Substantial "Head Room" - Distortion-Free Operation at +18 dbm Output.
- 16 Stereo Inputs - Switchable to 8 Faders
- Response +1.5 dbm 10 Hz - 20 KHz
- Distortion - Less than 0.5% @ +8 dbm output.
- Plug-In Modules Permit Replacement and Interchange in Seconds.
- Stereo Monitor Amplifier with 10 Watts Output on Both Channels.
- Cue Position in All Faders.
- 100% Solid State.
- Standard Unit Supplied with Six (6) Pre-amp Modules and Ten (10) Balanced Transformers. Additional Plug-In Pre-amps Available at Optional Price.
- Plug-In Cue Amplifier and Speaker.
- Independent Stereo Audition Amplifiers.



**ELECTRONIC PRODUCTS, INC.**

1568 NORTH SIERRA VISTA, FRESNO, CALIF. 93703 • Phone: 209 251-4213

*A Subsidiary of CCA Electronics Corp. Gloucester City, New Jersey 08030*



QRK-85  
8 CHANNEL STEREO CONSOLE  
SIMPLIFIED BLOCK DIAGRAM

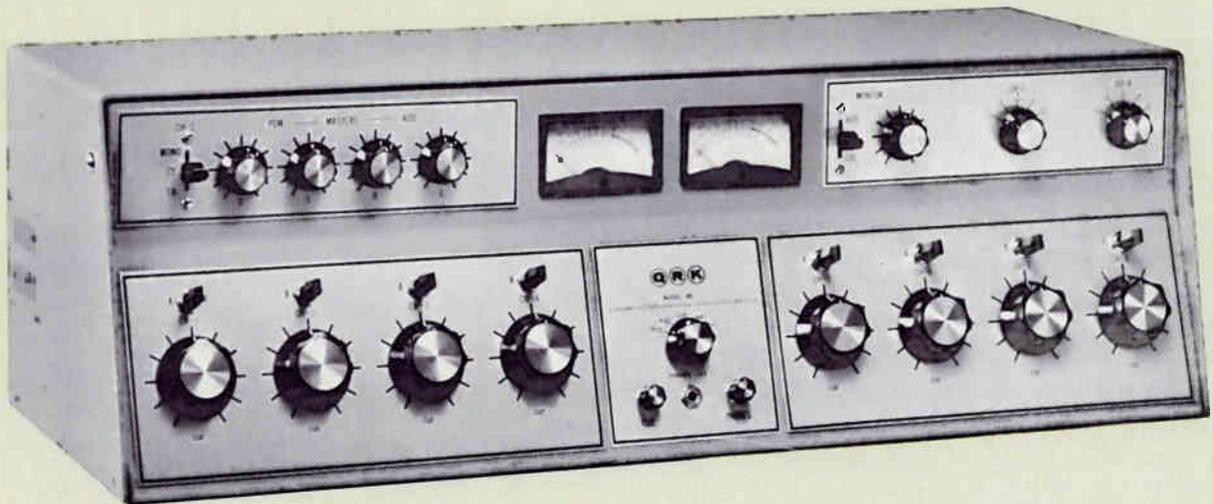
EXPORT SALES: Telesco International Corporation \* 1044 Northern Blvd. \* Roslyn, L. I., New York 11576



**ELECTRONIC PRODUCTS, INC.**  
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A Subsidiary of GCA Electronics Corp. Gloucester City, New Jersey 08036

# QRK - 8S

## 8 CHANNEL STEREO AUDIO CONSOLE



### FEATURES

- Altec Faders with Removable Covers for Cleaning.
- Totally Self Contained, No External Power Supply or External Modules.
- Built-In Muting.
- Substantial "Head Room" - Distortion-Free Operation at +18 dbm Output.
- 16 Stereo Inputs - Switchable to 8 Faders
- Response +1.5 dbm 10 Hz - 20 KHz
- Distortion - Less than 0.5% @ +8 dbm output.
- Plug-In Modules Permit Replacement and-Interchange in Seconds.
- Stereo Monitor Amplifier with 10 Watts Output on Both Channels.
- Cue Position in All Faders.
- 100% Solid State.
- Standard Unit Supplied with Six (6) Pre-amp Modules and Ten (10) Balanced Transformers. Additional Plug-In Pre-amps Available at Optional Price.
- Plug-In Cue Amplifier and Speaker.
- Independent Stereo Audition Amplifiers.



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# DESCRIPTION

## TOTALLY SELF CONTAINED

The QRK-8S, Stereo Console is completely self contained. All of its components are mounted within a handsome, modern, metal cabinet. No external modules are required.

## REASONABLE CAPACITY

The QRK-8S has facilities for handling sixteen (16) stereo audio inputs and mixing eight into the single output stereo stage. A description of each of the mixing channels follows:

### Channel No. 1, No. 2 and No. 3

These channels have facilities for driving two plug-in amplifiers in each channel which are supplied as standard with the QRK-8S. The output of these amplifiers are used to feed an Altec attenuator which in turn drives either the program or audition channels. The Altec fader has a "cue" switch which is operated when the control is turned to its maximum counter clockwise position. These channels are normally used for microphone inputs.

### Channel No. 4, No. 5 and No. 6

These channels have the same connections as Channel 1; however, they are normally supplied with (2) plug-in transformers for accepting high-level stereo audio signals such as those present from a tape machine or equalized turntable pre-amplifier. They can be converted to low-level channels by simply exchanging the transformer plug-in modules with pre-amplifier modules. This entire procedure can be accomplished in seconds. Pre-amplifiers are available at an optional cost.

### Channel No. 7 and No. 8

These channels are normally recommended for high-level remote channels. Five stereo input lines are available for each channel selectable one at a time by a front panel rotary switch.

## SUBSTANTIAL STEREO MONITOR AMPLIFIER

The QRK-8S contains a built-in 10 Watt Stereo Monitor Amplifier. This powerful, plug-in, solid state amplifier can be driven by the program line, the audition line or an external source. Its output is used to drive a front panel stereo phone jack or 4 ohm speakers.

## PLUG-IN, SOLID STATE, STEREO PROGRAM AMPLIFIER

Program material in the QRK-8S is fed through the master gain control to (2) two 1010 plug-in, solid state amplifiers. The output of these amplifiers are then connected through a balancing transformer to the output line. Two illuminated VU meters are provided for monitoring the output of the console.

## SUBSTANTIAL STEREO AUDITION AMPLIFIERS

The QRK-8S contains two (2) plug-in audition amplifiers, identical to that used in the line amplifiers. These normally drive a 30 ohm unbalanced load. However, with the addition of a transformer and VU meters, this line may be used in an emergency as a program line.

## CUE AMPLIFIER

The QRK-8S contains a Plug-In Cue Amplifier which is used to drive a built-in speaker as well as a front panel phone jack.

## RUGGED ALTEC MIXER FADERS

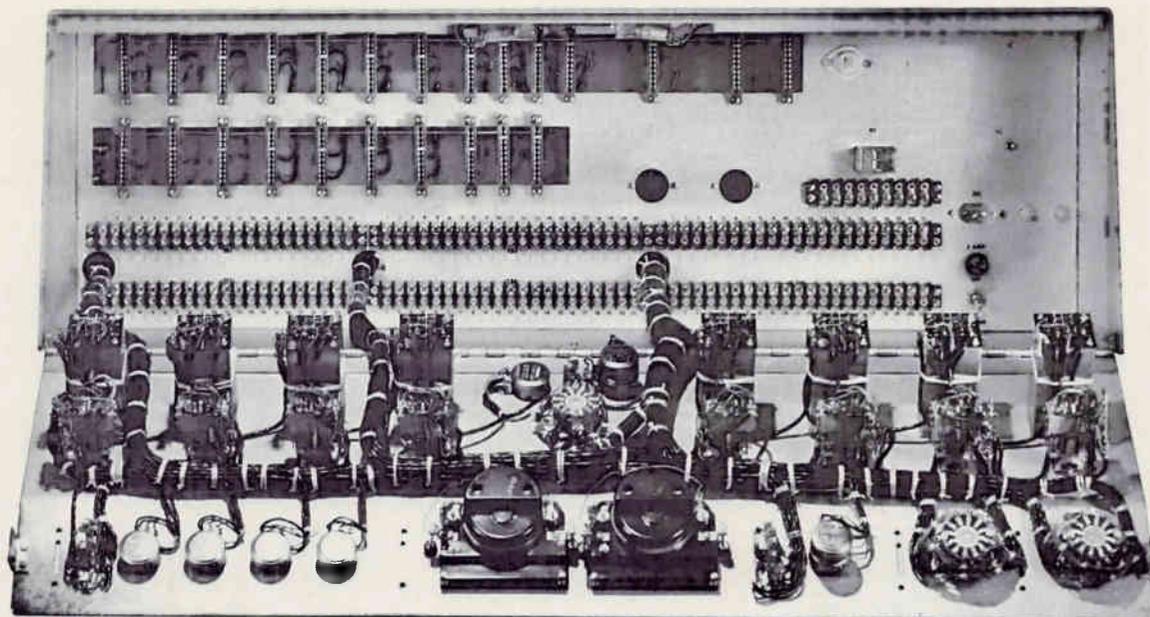
The eight mixer attenuators are Altec Lansing Stereo precision step attenuators. It is unlikely that these Altec attenuators will ever require cleaning. However, if they should, they may be easily cleaned without being disconnected from the audio console.

## BUILT-IN POWER SUPPLY

A heavy duty power supply is also internally mounted. This inclusion within the cabinet eliminates any problems of ground loops and hum pick-up from external power supply to console connections. The major regulator components for this power supply are mounted on a plug-in, solid state printed card.

## MUTING RELAY

A four-pole, double-throw, muting relay is also internally mounted and wired to function with the mixer one select switch. This relay is pre-wired to mute the monitor amplifier. Terminals are provided for its use in other studio functions such as "On-The-Air Lights."



## TECHNICAL SPECIFICATIONS

### INPUTS: (As Supplied in Standard Unit)

- (3) Microphone (Low Level) (Stereo) . . .  
 . . . . . 200 ohms balanced  
 Convertible to high level by exchanging pre-amp  
 with transformer card.
- (13) High Level (Stereo) . . . . . 600 ohms balanced  
 Convertible to low level by exchanging input  
 transformer cards with pre-amplifier plug-in cards.

### OUTPUTS:

- (1) Program Lines (Stereo) . . . . . 600 ohms balanced
- (1) Audition Line (Stereo) . . . . . 30 ohms unbalanced
- (1) Monitor Line (Stereo) . . . . . 4 ohms unbalanced

### LEVELS:

#### Input

Low Level Microphone . . . . . -55 dbm  
 High Level . . . . . -10 dbm

#### Output

Program . . . . . +8 dbm Normal (Max. +18 dbm)  
 Monitor . . . . . 10 Watts into 4 ohms  
 Cue . . . . . ½ Watt

### FREQUENCY RESPONSE:

Program . . . . . ±1.5 dbm, 10 Hz to 20 KHz  
 Monitor . . . . . ±2.0 dbm, 40 Hz to 20 KHz

### DISTORTION:

Program: Less than 0.5% @ +8 dbm output, 0.5  
 Max. @ +18 dbm output.

Monitor: 1% Max. @ 10 Watts output.

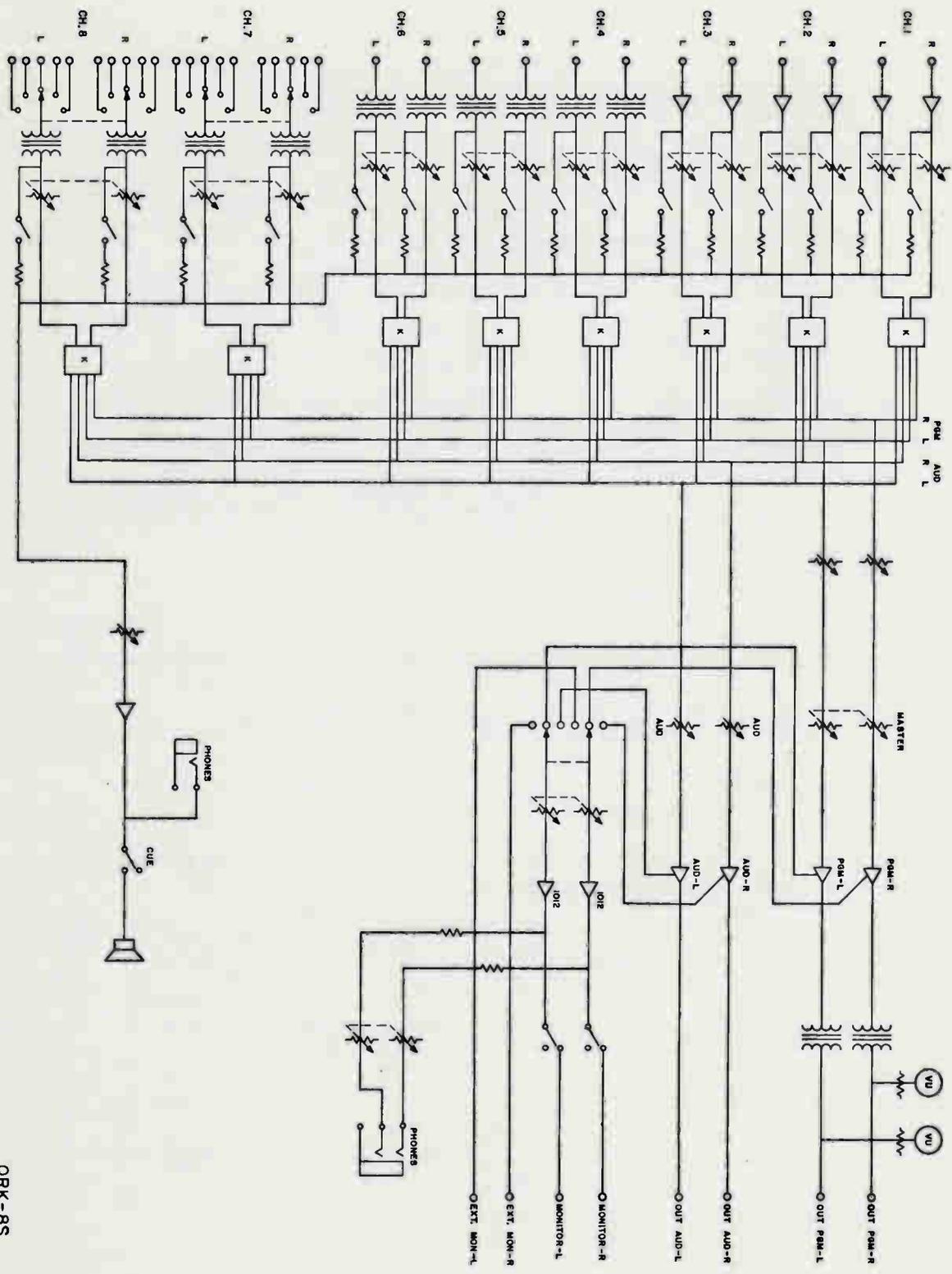
### NOISE:

Less than -75 db with -55 dbm input and +8  
 dbm output.

**POWER:** 115 Volts AC, 50/60 cycles.

### MECHANICAL SPECIFICATIONS

Width - 30½"  
 Height - 9½"  
 Depth - 12"  
 Weight - 45 lbs.



QRK-8S  
8 CHANNEL STEREO CONSOLE  
SIMPLIFIED BLOCK DIAGRAM

EXPORT SALES: Telesco International Corporation \* 1044 Northern Blvd. \* Roslyn, L. I., New York 11576



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# QRK-8

## 8 CHANNEL MONAURAL AUDIO CONSOLE



### FEATURES

- Altec Faders with Removeable Covers for Cleaning.
- Totally Self Contained. No External Power Supply or External Modules.
- Built In Muting Relay.
- Substantial "Head Room" - Distortion Free Operation at +18 dbm Output.
- 22 Inputs - Switchable to 8 Faders.
- Response  $\pm 1.5$  dbm 10 Hz - 20 KHz.
- Distortion - Less than 0.5% @ +8 dbm Output.
- Plug-in Modules Permit Replacement and Interchange in Seconds.
- Monitor Amplifier With 10 Watts Output.
- Cue Position In All Faders.
- 100% Solid State.
- Standard Unit Supplied with Three (3) Pre-amp Modules and Five (5) Balanced Transformers. Additional Plug-in Pre-amps Available at Optional Price.
- Plug-in Cue Amplifier and Speaker.
- Independent Audition Amplifier.



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*A Subsidiary of CCA Electronics Corp. Gloucester City, New Jersey 08030*

# DESCRIPTION

## TOTALLY SELF CONTAINED

The QRK-8 Mono Console is completely self contained. All of its components are mounted within a handsome, modern, metal cabinet. No external modules are required.

## REASONABLE CAPACITY

The QRK-8 has facilities for handling twenty-two audio inputs and mixing Eight into the single output stage. A description of each of the mixing channels follows:

### CHANNEL NO. 1, NO. 2 & NO. 3

These channels have facilities for switching any of three low level inputs to the plug-in preamplifier supplied as standard with the QRK-8. The output of this preamplifier is used to feed an Altec attenuator which in turn drives the master attenuator. The Altec fader has a "cue" switch which is operated when the control is turned to its maximum counter clockwise position. The output of the channel is used to drive either the audition or program channels. These channels are normally used for microphone inputs.

### CHANNEL NO. 4, NO. 5 & NO. 6

These channels are normally supplied with plug-in transformers for accepting high level audio signals such as those present from a tape machine or equalized turntable preamplifier. They can be converted to low level channels by simply exchanging the transformer plug-in module with a preamplifier module. This entire procedure can be accomplished in seconds. Preamplifiers are available at an optional cost. They are normally used for turntable operation.

### CHANNEL NO. 7 & NO. 8

These channels are normally recommended for high level remote channels. In the center position no audio circuits are connected. Five input lines are available for each channel selectable one at a time by a front panel rotary switch.

Also associated with this input is a three position switch which will place the selected input either on the cueing buss, directly to mixing channels or will permit the monitor amplifier to feed program to the incoming audio line.

## SUBSTANTIAL MONITOR AMPLIFIER

The QRK-8 contains a built in 10 Watt monitor amplifier. The output of this amplifier is fed to an internally mounted monitor/cue speaker, with terminals provided for the connection of one or more external speakers, if so desired. The input to this amplifier can be selected to be the program line, the audition line or an external source.

## PLUG-IN, SOLID STATE, PROGRAM AMPLIFIER

Program material in the QRK-8 is fed through the master gain control to the 1010 plug-in, solid state amplifier. The output of this amplifier is then connected through a balancing transformer to a three position switch which will permit the output signal to be switched to one of three separate lines. An illuminated VU meter is provided for the output of the console.

## SUBSTANTIAL PLUG-IN ADDITION AND CUE AMPLIFIERS

The QRK-8 contains two (2) plug-in amplifiers which are identical to the line amplifier. One serves as a cue while the other serves as the audition amplifier. In addition to serving as interchangeable units, this also represents substantial output level in the audition line.

## RUGGED ALTEC MIXER FADERS

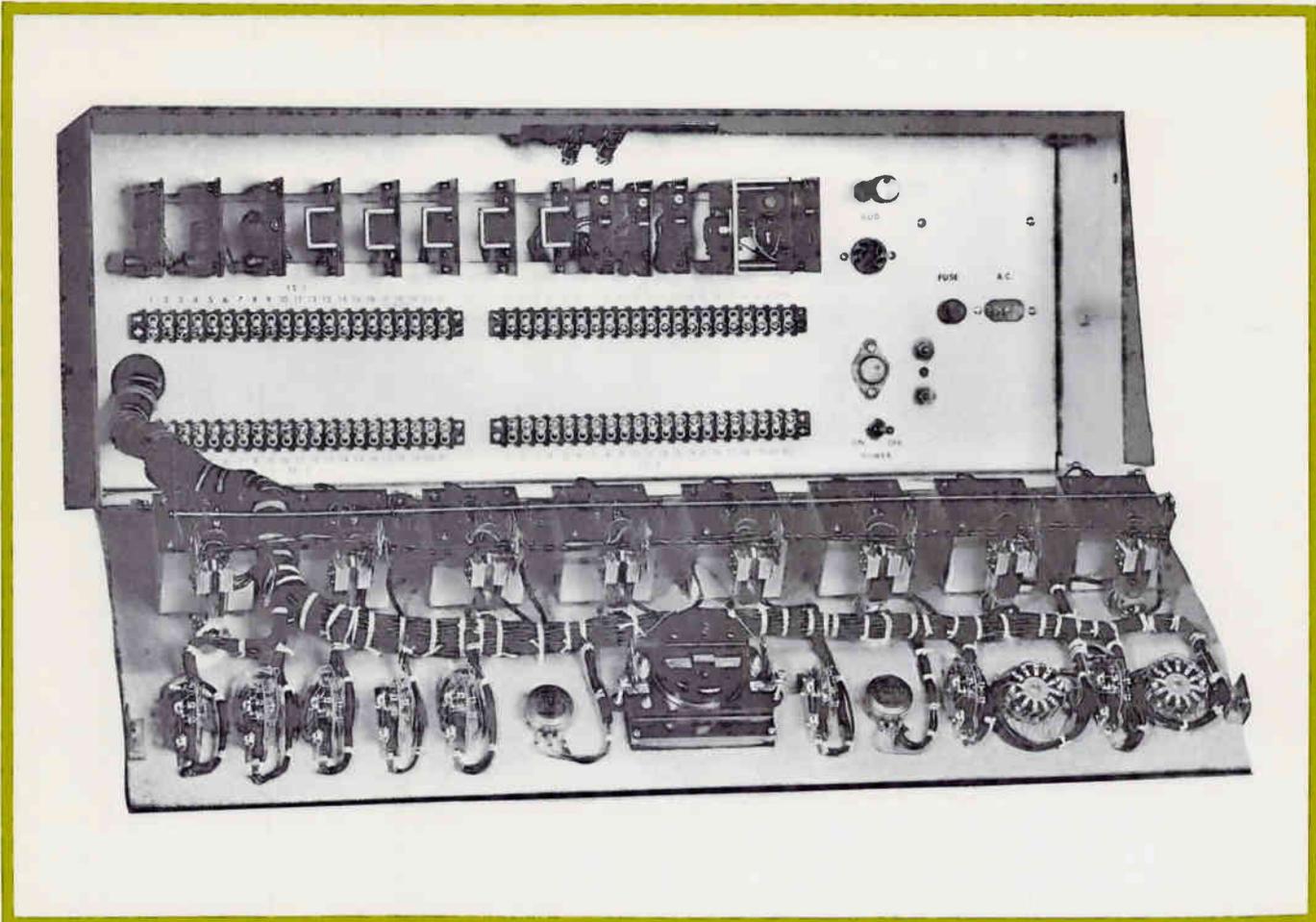
The Eight mixer attenuators are Altec Lansing precision step attenuators. It is unlikely that these Altec attenuators will ever require cleaning. However, if they should, they may be easily cleaned without being disconnected from the audio console.

## BUILT IN POWER SUPPLY

A heavy duty power supply is also internally mounted. This inclusion within the cabinet eliminates any problems of ground loops and hum pick up from external power supply to console connections. The major regulator components for this power supply are mounted on a plug-in, solid state printed card.

## MUTING RELAY

A four pole, double throw, muting relay is also internally mounted and wired to function with the mixer one select switch. This relay is prewired to mute the monitor amplifier. Terminals are provided for its use in other studio functions such as "On-The-Air" Lights.



## TECHNICAL SPECIFICATIONS

### INPUTS: (As Supplied in Standard Unit)

- (7) Microphone (Low Level) . . . . 200 ohms balanced  
Convertible to high level by exchanging preamp  
with transformer card.
- (13) High Level . . . . . 600 ohms balanced  
Convertible to low level by exchanging input  
transformer card with preamplifier plug-in card.

### OUTPUTS:

- (3) Program Lines . . . . . 600 ohms balanced
- (1) Audition Line . . . . . 30 ohms unbalanced
- (1) Monitor Line . . . . . 4 ohms unbalanced

### LEVELS:

#### Input

- Low Level Microphone . . . . . -55 dbm
- High Level . . . . . -10 dbm

#### Output

- Program . . . . . +8 dbm Normal (Max. +18 dbm)
- Monitor . . . . . 10 Watts into 4 ohms
- Cue . . . . . ½ Watt

### FREQUENCY RESPONSE:

- Program . . . . . +1.5 dbm, 10 Hz to 20 KHz
- Monitor . . . . . ±2.0 dbm, 40 Hz to 20 KHz

### DISTORTION:

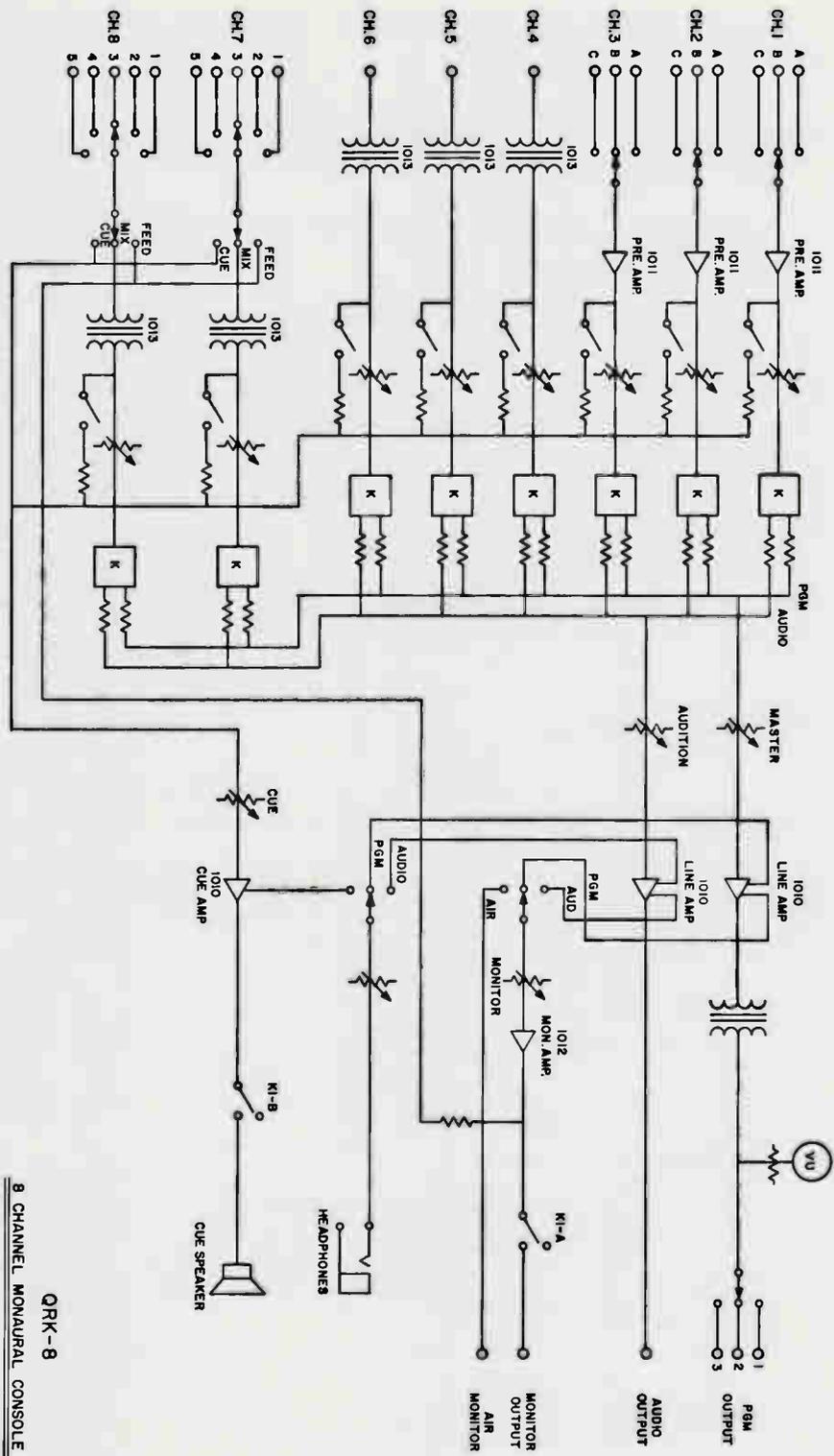
- Program . . . . . Less than 0.5% @ +8 dbm output,  
0.5% Max. @ +18 dbm output.
- Monitor . . . . . 1% Max. @ 10 Watts output.

**NOISE:** Less than - 75 db with -55 dbm input and +8 dbm output.

**POWER:** 115 volts AC, 50/60 cycles

### MECHANICAL SPECIFICATIONS

- Width - 26½"
- Height - 9½"
- Depth - 12"
- Weight - 35 lbs.



QRK-8  
8 CHANNEL MONAURAL CONSOLE  
SIMPLIFIED BLOCK DIAGRAM

EXPORT SALES: Telesco International Corporation \* 171 Madison Avenue \* New York, New York 10016



**ELECTRONIC PRODUCTS, INC.**  
1568 NORTH SIERRA VISTA, FRESNO, CALIF. 93703 - Phone: 209 251 4213  
A subsidiary of CCA Electronics Corp. Gladstone, N.J. New Jersey 08030

# Q R K - 5S

## 5 CHANNEL STEREO AUDIO CONSOLE



### FEATURES

- Altec Faders with Removeable Covers for Cleaning.
- Totally Self Contained. No External Power Supply or External Modules.
- Built In Muting
- Substantial "Head Room" - Distortion Free Operation at +18 dbm Output.
- 9 Stereo Inputs - Switchable to 5 Faders.
- Response  $\pm 1.5$  dbm 10 Hz - 20 KHz.
- Distortion - Less than 0.5% @ +8 dbm Output.
- Plug-in Modules Permit Replacement and Interchange in Seconds.
- Stereo Monitor Amplifier with 10 Watts Output on Both Channels.
- Cue Position In All Faders.
- 100% Solid State
- Standard Unit Supplied with two (2) Pre-amp Modules and eight (8) Balanced Transformers. Additional Plug-in Pre-amps Available at Optional Price.
- Independent Stereo Audition Amplifiers.
- Plug-in Cue Amplifier and Speaker.



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*A Subsidiary of CCA Electronics Corp. Gloucester City, New Jersey 08030*

## DESCRIPTION

### TOTALLY SELF CONTAINED

The QRK-5S, Stereo Console is completely self contained. All of its components are mounted within a handsome, modern, metal cabinet. No external modules are required.

### REASONABLE CAPACITY

The QRK-5S has facilities for handling nine stereo audio inputs and mixing five into the single output stereo stage. A description of each of the mixing channels follows:

#### CHANNEL NO. 1

This channel has facilities for driving two plug-in preamplifiers which are supplied as standard with the QRK-5S. The output of these preamplifiers are used to feed an Altec attenuator which in turn drives either the program or audition channels. The Altec fader has a "cue" switch which is operated when the control is turned to its maximum counter clockwise position. This channel is normally used for microphone inputs.

#### CHANNEL NO. 2, NO. 3 & NO. 4

These channels have the same connections as channel 1, however they are normally supplied with two (2) plug-in transformers for accepting high level stereo audio signals such as those present from a tape machine or equalized turntable preamplifier. They can be converted to low level channels by simply exchanging the transformer plug-in modules with preamplifier modules. This entire procedure can be accomplished in seconds. Preamplifiers are available at an optional cost.

#### CHANNEL NO. 5

This channel is normally recommended for high level remote channels. Five stereo input lines are available selectable one at a time by a front panel rotary switch.

### SUBSTANTIAL STEREO MONITOR AMPLIFIER

The QRK-5S contains a built in 10 Watt Stereo Monitor Amplifier. This powerful, plug-in, solid state amplifier can be driven by the program line, the audition line or an external source. Its output is used to drive a front panel stereo phone jack or 4 ohm speakers.

### PLUG-IN, SOLID STATE, STEREO PROGRAM AMPLIFIER

Program material in the QRK-5S is fed through the master gain control to two (2) 1010 plug-in, solid state amplifiers. The output of these amplifiers are then connected through a balancing transformer to the output line. Two illuminated VU meters are provided for monitoring the output of the console.

### SUBSTANTIAL STEREO AUDITION AMPLIFIERS

The QRK-5S contains two (2) plug-in audition amplifiers, identical to that used in the line amplifiers. These normally drive a 30 ohm unbalanced load. However, with the addition of a transformer and VU meters, this line may be used in an emergency as a program line.

### CUE AMPLIFIER

The QRK-5S contains a plug-in cue amplifier which is used to drive a built in speaker as well as a front panel phone jack.

### RUGGED ALTEC MIXER FADERS

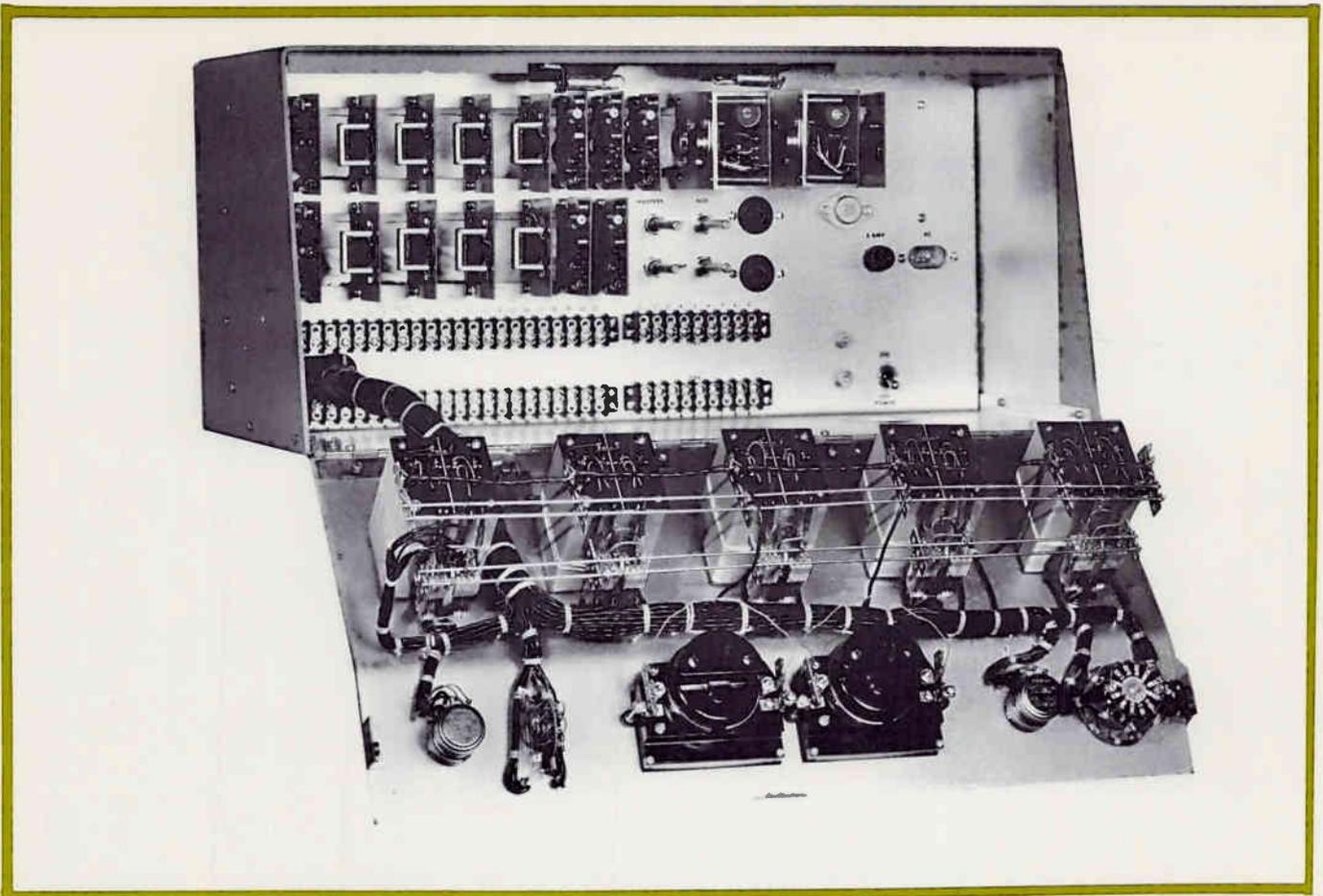
The five mixer attenuators are Altec Lansing stereo precision step attenuators. It is unlikely that these Altec attenuators will ever require cleaning. However, if they should, they may be easily cleaned without being disconnected from the audio console.

### BUILT IN POWER SUPPLY

A heavy duty power supply is also internally mounted. This inclusion within the cabinet eliminates any problems of ground loops and hum pick up from external power supply to console connections. The major regulator components for this power supply are mounted on a plug-in, solid state printed card.

### MUTING RELAY

A four pole, double throw, muting relay is also internally mounted and wired to function with the mixer one select switch. This relay is prewired to mute the monitor amplifier. Terminals are provided for its use in other studio functions such as "On-The-Air" Lights.



## TECHNICAL SPECIFICATIONS

### INPUTS: (As Supplied in Standard Unit)

- (1) Microphone (Low Level) (Stereo) . . . . . 200 ohms balanced  
Convertible to high level by exchanging preamp with transformer card.
- (8) High Level (Stereo) . . . . . 600 ohms balanced  
Convertible to low level by exchanging input transformer cards with preamplifier plug-in cards.

### OUTPUTS

- (1) Program Lines (Stereo) . . . . . 600 ohms balanced
- (1) Audition Line (Stereo) . . . . . 30 ohms unbalanced
- (1) Monitor Line (Stereo) . . . . . 4 ohms unbalanced

### LEVELS

#### Input

Low Level Microphone . . . . . -55 dbm  
High Level . . . . . -10 dbm

#### Output

Program . . . . . +8 dbm Normal (Max. +18 dbm)  
Monitor . . . . . 10 Watts into 4 ohms  
Cue . . . . . ½ Watt

### FREQUENCY RESPONSE

Program . . . . . ±1.5 dbm, 10 Hz to 20 KHz  
Monitor . . . . . ±2.0 dbm, 40 Hz to 20 KHz

### DISTORTION

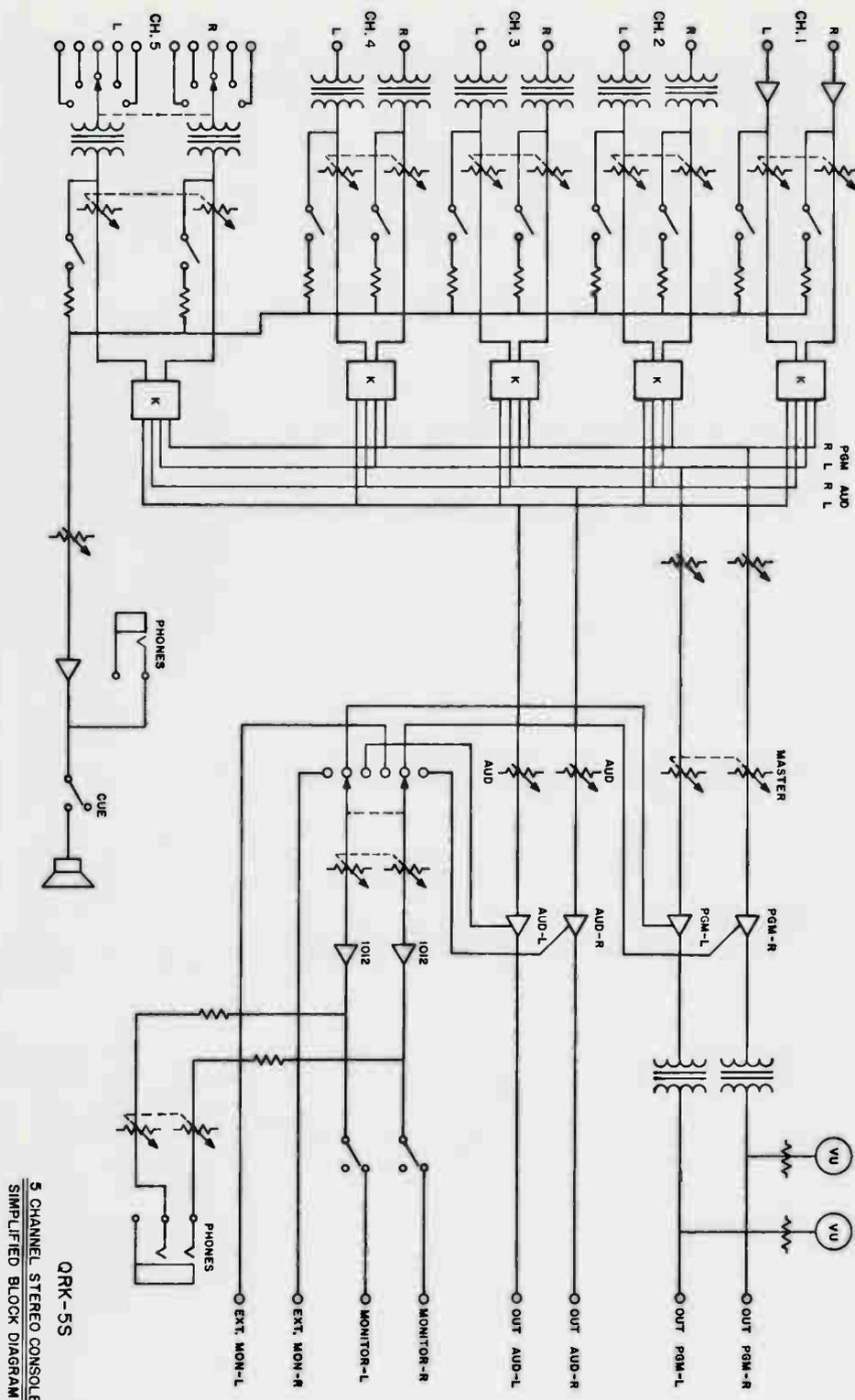
Program . . . . . Less than 0.5% @ +8 dbm output,  
0.5% Max. @ +18 dbm output.  
Monitor . . . . . 1% Max. @ 10 Watts output

**NOISE:** Less than -75 db with -55 dbm input and 3.8 dbm output.

**POWER:** 115 Volts AC, 50/60 cycles.

### MECHANICAL SPECIFICATIONS

Width - 20½"  
Height - 9½"  
Depth - 12"  
Weight - 32 lbs.



QRK-5S  
5 CHANNEL STEREO CONSOLE  
SIMPLIFIED BLOCK DIAGRAM

EXPORT SALES: Telesco International Corporation \* 171 Madison Avenue \* New York, New York 10016



**ELECTRONIC PRODUCTS, INC.**

1565 NORTH SIERRA VISTA, FRESNO, CALIF. 93704 • Phone: 209-251-4213

A Subsidiary of CCA Electronics Corp. Gloucester City, New Jersey 08030



# MODEL F3 STEREO CARTRIDGE

## FEATURES

- Specifications unequalled by any other cartridge
- Rugged - Designed to last under the punishment of "back-cueing"
- Trackability second to none when tested at 2 grams tracking force and +18 dbm output
- Frequency Response -  $\pm 1$  db 20 - 20,000 cycles  
 $\pm 3$  db 10 - 35,000 cycles
- No Resonance Peaks - 10 to 35,000 cycles
- Constant Mechanical Impedance at all frequencies
- IM distortion factor less than 1% over full frequency range
- Channel Separation unequalled by any other cartridge:
  - 25 db from 100 to 10,000 cycles
  - 20 db from 20 to 20,000 cycles
- Channel Balance - Typical  $\pm 1$  db on both channels.
- Tracking Force - 1.5 - 3.5 grams. Optimum at 2 1/4 grams in QRK Arm - Assures Minimum loading on stylus and optimum disc and stylus life.
- Precision Mechanical Pivot for stylus designed to absorb heavy broadcast applications
- Low internal impedance permits operation of long audio output cables without effecting frequency response and output.

## USES

The QRK F3 Tone Arm Stereo Cartridge was designed to provide the broadcast and recording industries with a rugged, reliable stereo cartridge which could faithfully reproduce stereo records with a minimum of tone arm loading and which can withstand the rugged work load of broadcast "back-cueing" and normal mis-handling.



## DESCRIPTION

**Trackability - Second to None:** QRK has thoroughly evaluated the Model F3 cartridge under the most severe program material (15 db above normal recording levels at all audio frequencies.) The cartridge, when mounted in the QRK Tone Arm and loading for a nominal 2 1/4 grams has consistently tracked without skipping.

**Separation - Channel separation is important in mono reproduction as well as stereo. In mono, if the channels are not closely balanced and the L and R channels are paralleled, peaks and dips will occur in the response. The QRK F3 cartridge has a channel separation of better than 25 db from 100 to 10,000 cycles and 20 db minimum at 20,000 cycles. This is unequalled by any other cartridges we have measured. Competitive cartridges normally have separations of less than 6 db at the higher audio frequencies.**



**ELECTRONIC PRODUCTS, INC.**

1568 NORTH SIERRA VISTA, FRESNO, CALIF. 93703 • Phone: 209 251-4213

A subsidiary of CCA Electronic Corp. Goodletts City, New Jersey 08028

# MODEL F3 STEREO CARTRIDGE

## DESCRIPTION (Continued)

**Channel Balance** - The QRK F3 cartridge is guaranteed to produce the same output voltage on each channel within 2 db over the full frequency range. (Typical results  $\pm 1$  db.) This is an extremely important feature for both mono and stereo operations. It contributes to the excellent response when paralleling the channels for mono performance and maintains substantial directionality for stereo.

**No Resonant Peaks** - One of the major problems in a cartridge design is to eliminate mechanical and electrical resonance which amplifies selectively specific frequencies in the audio spectrum. The QRK F3 cartridge has its first resonance, its tip mass resonance, at 35,000 cycles, thus there is no spurious amplification over the complete audio frequency range.

**Rugged** - The QRK F3 cartridge utilizes an elastomeric thrust bearing which is designed to overcome the "nemesis" of all broadcast cartridges - "back-cueing." The fabricated metal pivots instead of the usual "O" ring maintain the original stylus alignment under the stress of mis-handling and "rough duty" service.

**Minimum Tracking Force** - Assures minimum disc and stylus wear - The QRK F3 can reliably track under a tracking force range of 1.5 to 3.5 grams. The recommended 2¼ grams when used in the QRK Tone Arm, have consistently tracked without losing contact with the groove wall at the loudest recorded passages. (Highest stylus velocities.)

## TECHNICAL SPECIFICATIONS

**Output** - 4 Millivolts @ 3.54 CMV - 45° (Left or Right)

**Frequency Response** - 10 - 35,000 Hz (cps)  $\pm 3$  db;  
20 - 20,000 Hz (cps)  $\pm 1$  db

**Channel Separation** - Dynamic Full Range - 25 DB  
(CBS STR III L & R Channel Square Wave)

**Recommended Load** - 10,000 ohms or more (47K Normal)

**Inductance** - 55 Millihenries

**DC Resistance** - 700 Ohms

**Tip Mass Resonance** - 35,000 Hz (cps)

**Mounting** - Standard ½" (12.7mm) centers

**Pickup Weight** - 5.5 grams

**Stylus** - Diamond - .6 spherical

**Tracking Force** - 2 - 2¼ grams

**Channel Balance** -  $\pm 2$  db ( $\pm 1$  db typical)

**Terminals** - 4 in standard Configuration

