

The Series DC-12 remote control audio consoles -- from Ramko Research



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The DC-12 Series Stereo and Mono Consoles make remote controlled audio a reality



DC-12MR Shown

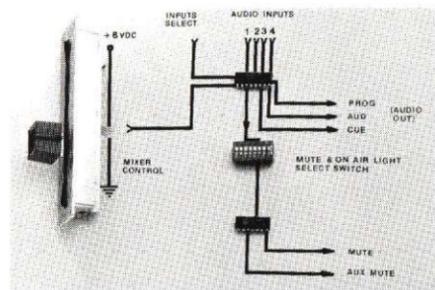
WHY REMOTE CONTROL?

Many years ago we recognized the need for an audio console that would allow the operator controls to be placed in one area with the active audio components in another. The advantages with this system are many fold. The console itself no longer dictates where the audio system must be located. The DC-12 remote audio electronics may be located as close to the control head as needed or as far away. Although a maximum distance of 60 feet is recommended, we have built them for operation with up to 90 feet of separation. In addition, ease of maintenance is obviously enhanced since the rack mounted audio electronics is readily accessible without interfering with the operator.

VOLTAGE CONTROLLED AUDIO

Introduced by Ramko in early 1975, DC control of all audio attenuation and switching was considered a revolutionary concept in broadcast consoles. It has since proven itself so superior to conventional methods of audio control that virtually every other manufacturer of consoles is now busy trying to catch up.

The three major advantages to this system are; (1) in a properly installed system the DC controlled console will exhibit far less susceptibility to RF pickup and external interference than conventional consoles that control audio directly. The reason being that the conventional console

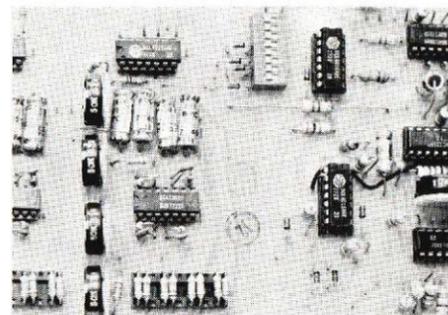


must route all of its audio from the inputs, to the various controlling elements (mixers, switches, etc.) and then finally to the console output. The DC controlled console on the other hand, eliminates all of this audio wiring thus dramatically reducing possible pickup of outside interference; (2) The DC controlled console is less prone to be affected by mechanical malfunctions or problems such as scratchy pots or noisy switches; (3) Since all audio switching is done via DC control (+6V or -6V) all internal and external functions (mute, on air lights, remote equip. start/stop) are programmed by simply setting the internally located switches. Additionally since all mixing is accomplished via voltage controlled amplifiers only one pot is needed to control both left & right simultaneously (stereo) thus the elimination of tracking error normally associated with dual ganged pots.

INCREASED FLEXIBILITY

From the moment of initial installation thru your day to day operations, these consoles will continue to impress you with their ability to adapt to whatever situation presents itself. No soldering or internal wiring necessary to set up or change the "ON AIR" light relay, muting, or AUX MUTE relay, UNLIKE other consoles on the market all of these functions are programmable via internally located switches and may be re-programmed at a moments notice.

The remote equipment start/stop feature is an optional device (LC-2 or LC-4) and simply plugs into the console for complete control of your cart or reel to reel machines, turntables, etc., right from the console panel input and output select switches.



Possibly one of the most significant advancements in flexibility is our exclusive patch panel, input gain select feature. This means that at a moments notice ANY INPUT can be made to accept anything from a mic level thru a line level signal. Not just mic or line level but anywhere in between if desired. In addition, unlike other consoles on the market, when this is done none of the other inputs are affected on that mixer. Thus on our DC-12 12 mixer model you have a minimum of 8,192 combinations of mic and line level inputs that could conceivably be setup. If you include all of the variations in between mic level and line level please write us with the results as our computer will not print out that many significant figures.

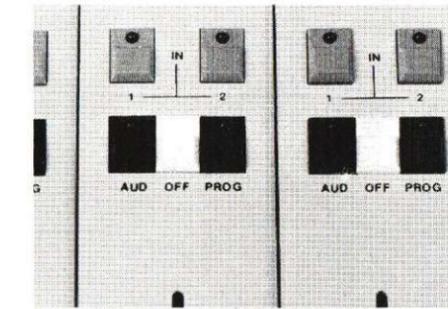
Since you by now know that the other consoles you've looked at require OPTIONAL mic or whatever modules to accomplish even a fraction of the above, the next question is probably — HOW MUCH? The answer is — NOTHING! You simply plug in the prescribed value of resistor(s), which are included with your console, and that's it.

EASIER OPERATION

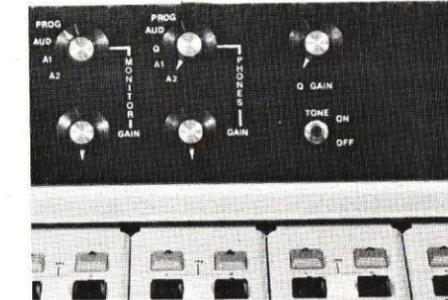
Whether you're the station manager, operations manager, or the personality behind the microphone you will find the DC-12 a pure pleasure to own, to work with, and to operate. From the quiet illuminated push button select switches to

the two mode cueing system (push button and/or pot down), built in tone generator and incomparable solid state "VU" meters.

The LED illuminated push buttons afford the operator instant recognition of the next happening, which one to push, and what is happening now or has already occurred.



It is important to note that the operator has 2 separate means of initiating the CUE mode. One in the normal fashion of potting down and one via the push button switch located directly below the linear fader. He may go directly to cue without having to change the mixer setting.



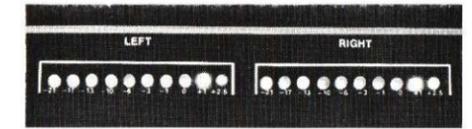
How much easier can it get? Plenty! First of all, the reason we've spent so much effort in this area is simply to make your station sound better. The less time a person has to spend remembering mundane things such as switch and function positions, what was just aired or cued and what hidden surprises the console has in store for him, the fewer mistakes he will make and the smoother your stations sound. This is one reason you will find SUPER QUIET push buttons on our consoles instead of the usual loud clanking, short life, mechanical lever switches still being used on even the most expensive competitive consoles. Thus no more mechanical noise transmitted over a live mic when switching console inputs or outputs. Additionally since these switches activate only solid state logic that actually switch and route the audio it is accomplished very positively with no margin for error and in less than 2 tenths of 1 millionth of one second. No more pops, clicks, or momentary feedback with partially actuated switches.

PURER REPRODUCTION

No conventional, transformer coupled broadcast console has the capability to reproduce audio, as faithfully and clearly as our units with their far advanced solid state balanced inputs and outputs. This fact has been attested to by hun-

dreds of Broadcasters who have taken the time to write, phone or personally tell us what a dramatic difference it has made in the sound of their stations.

The reasons for this are many but simple. FIRST, all inputs and outputs are solid state balanced. Unlike transformers they are quite insensitive to impedance mismatches. In fact the mismatches can be millions of times, and more, than the specified impedance without any noticeable effect on distortion or response. Not so with the average audio transformer as even a couple times mismatch can invalidate the consoles performance. SECOND, our solid state devices exhibit far less distortion and a flatter response than even the finest transformer available today. THIRD, since the solid state devices are purely resistive they are much less susceptible to hum, RF and other external interference. A FOURTH and very large consideration is the solid state, light emitting diode, "VU" meter.



This was pioneered by RAMKO RESEARCH over 4 years ago and designed specifically to overcome the distinct limitations of the well known, mechanical "VU" meter. Recognizing both the limitations and advantages of the "VU" meter and the "Peak" reading meter system we set out to combine the best of both worlds. The result was our now famous solid state "VU" meter, the SSM-1. This improvement in metering has proven itself so superior to the conventional meter that all RAMKO products incorporating meters now utilize this concept.

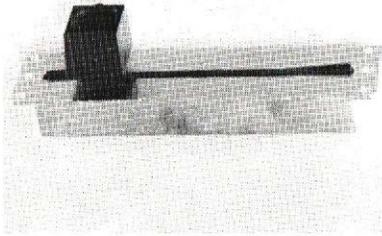
Here's what it does for your operator and your sound. Since the solid state meter (SSM) has an exceptionally fast response you can actually see over modulation peaks that the mechanical meter can't. Couple this with the electronic circuit that gives the SSM "VU" ballistics on the decay and you end up with a tighter, cleaner sound than ever before. At the same time your normal audio power level is still maintained. In addition the bright red and yellow LED display is so legible (can be read up to 30 feet away) that the operator is always aware of what is going on.

You will also note that we didn't stop at just metering the Prog. & Aud. outputs. Although the mono DC-12's have a meter for each output, we took the stereo versions a step farther. In addition to the left meter and the right meter (switchable, Aud. or Prog.) we included a third to monitor the stereo mix (mono) output.

LONGER, TROUBLE FREE LIFE

One of the major aims in creating the DC-12 series was to make sure you spent your time operating the console instead of repairing it. All of the LED's and lamps have a life expectancy of over 11 years. The push button select switches are spec'd by the manufacturer at 5,000,000 operations. This works out to 1 actuation every 60 seconds, 24 hours a day for over 9 years. The

mixer pots are by one of the leaders in the industry and utilize a glass hard, super quiet conductive plastic element.



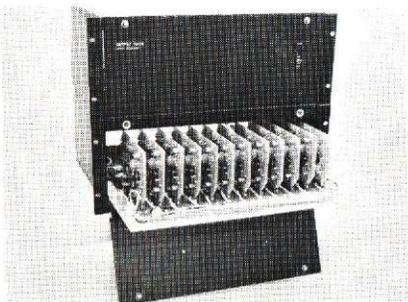
This long life element in conjunction with the heavy cast aluminum housing thus protects you from even the heaviest handed operator.

Without highly reliable electronics the best mechanical construction in the world would go for naught. That is why we utilize only gold plated contact IC sockets and card edge connectors. All of the quad operational amplifiers, used throughout the console, are sent to an outside testing firm for 3 days of burning in, freezing and electrical tests to insure their reliability in the field. Since the power supply is the backbone of your console we made every effort to make this section as reliable as possible. This supply is fully protected against shorts and overheating and utilizes massive heat sinking rated much above that necessary.

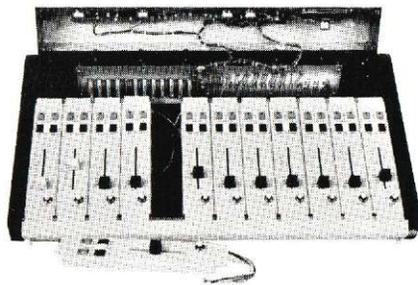
Although the list goes on, we think our warranty sums it up best. **A FULL 4 YEARS ON ALL PARTS AND LABOR!**

EASIER MAINTENANCE

No console has ever been easier to service. Although every effort has been made to make these consoles as reliable as possible, if something should go wrong you won't have to go thru contortions to repair it. Simply push two buttons and the front rack panels hinge down for complete accessibility to all plug in cards and components. In addition, the mother boards that the modules plug into are mounted on rails thus may be slid out for total accessibility.



The control head has been designed for the same lightning fast access. Push two buttons and the front lip swings down. Next swing the rear hood back and you have complete access to all components and the plug in mixer mods.



To make sure that the console is as easy to maintain as possible these consoles come with a very comprehensive manual that describes everything from physical locations (detailed photos) and circuit descriptions, to how each circuit function works.

FROM ONE TO TWENTY CHANNELS

Since the DC-12's are totally modular in construction you may order any number of channels now and add on later. A total of 12 channels may be accommodated with the standard control head and an additional eight may be added via the DC-12 extender. Thus up to 20 channels.

MODELS AND OPTIONS

DC-12SR—Stereo audio console, dual channel, 12 mixer, slide attenuators and 2 inputs per mixer. Metered stereo & mono outputs. Complete.

DC-12MR—Same as above but mono only.

DC-12CE/MF—Console extender main frame. Holds up to 8 DC-12 mods.

DC-12MOD—Mixing and switching module for DC-12 series consoles and extenders.

REMOTE CONTROL

CABLING—The DC-12's come with a standard 6' length of cable. Additional cabling may be specified (up to a total of 60').

LC-2 & LC-4—These optional units allow you to start/stop your cart machines, turntables, etc., right from the DC-12 control head.

Our sales staff will be happy to assist you in putting together any combination of the above. **PLEASE CALL COLLECT.**

2 WEEK TRIAL PERIOD

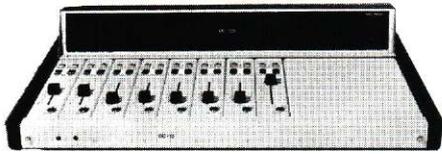
As we have always done with all of our products, the DC-12's are offered on a full 2 week trial basis. Put it thru your tests or on the air. You'll find that indeed we produce what we claim. Write, wire or call COLLECT today. You will be money and performance ahead.

RAMKO RESEARCH

11355 "A" Folsom Blvd.
Rancho Cordova, Calif. 95670
(916) 635-3600

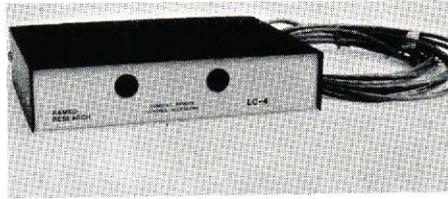
OPTIONS & ACCESSORIES

The DC-12CE/MF console extender enables you to expand the DC-12 at any future date. Although the photo below shows a full compliment of 8 additional mixers, any quantity less than that may be used.



The extender main frame is used with one additional 7 1/2" input rack unit. This input rack simply plugs into the main output rack unit. The LC-2 & LC-4 remote start/stop options allow you to remote control cart machines, reel to reels,

turntables, etc., directly from the consoles front panel select switches.



Simply plug the LC(s) into the console socket provided & connect your remote equipment to the LC barrier strips. The LC-2 will accommodate 2 mixing channels at 2 inputs each which the LC-4 will accommodate 4 mixing channels at 2 inputs each. Separate brochures available.

SPECIFICATIONS:

INPUTS: 2 per mixer. All inputs balanced & gain selectable from mic thru high level. As shipped, channels 1 & 2 set for mic levels (balanced 150/250 ohms, -55 dBm). All other inputs are set for high level, -10 dBm nominal, balanced bridging.

OUTPUTS: PROGRAM - 600 ohm, differential balanced, +8 dBm nominal, +20 dBm max. AUDITION - same as Program. MONITOR - 5 watts per channel into 8 ohms. CUE - 2.5 watts to internal speaker.

HEADPHONES - 8 ohms thru high impedance. STEREO MIX (mono) - 600 ohms @ +8 dBm. MUTED, UNMUTED & AUX. MUTED MONITOR, selectable via internal switches.

RESPONSE: PROGRAM & AUDITION - +0, -2 dB 20 Hz to 20 kHz referenced to 1 kHz @ +8 dBm out. MONITOR - +0, -2 dB 50 Hz to 15 kHz referenced to 1 kHz @ 1 watt out.

CROSSTALK: -70 dB @ 1 kHz, -55 dB @ 20 kHz.

STEREO SEPARATION: L to R/R to L -50 dB, 20 Hz to 10 kHz.

PROGRAM/AUDITION, 0.3% or less 20 Hz to 20 kHz. Combined Stereo/Monitor Drive: 0.3% or less 20 Hz to 10 kHz.

S/N: PROGRAM, AUDITION AND COMBINED STEREO - -63 dB (unweighted) below +8 dBm referenced to -50 dBm in. -70 dB (unweighted) below +8 dBm on high level channels, referenced to -10 dBm in.

POWER: 117 VAC, 50/60 Hz. 220 VAC optional.

MUTING: One internally switch selectable (CUE & MONITOR MUTE) and one internally selectable relay for remote speaker muting.

ON-AIR-LIGHT: Programable relay (dry contacts) capable of 1 A @ 240 VAC.

SIZE: 28 1/4" W X 16" D X 7" H - Table top control head
19" W X 14" D X 7" H - Rack electronics.
Two rack packages per console.

INTERCONNECT CABLES: 6' of preassembled cabling supplied as standard. Longer lengths available at additional cost.

REPRESENTED BY:



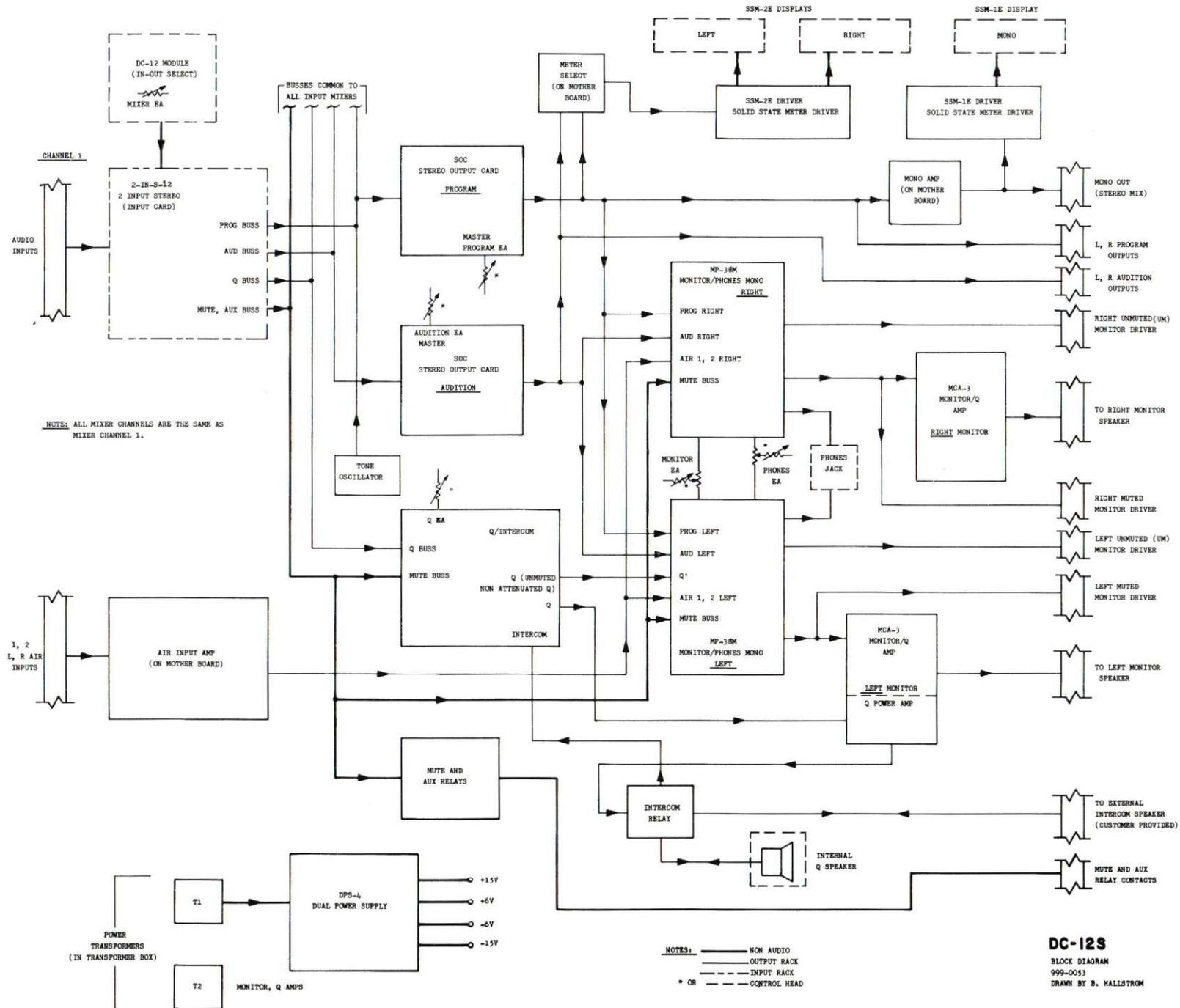
4 YEAR WARRANTY. 2 WEEK TRIAL PERIOD.

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DC-12S

BLOCK DIAGRAM
999-0033
DRAWN BY B. HALLSTROM