

BUILDING A BETTER CONSOLE? HERE ARE YOUR ALTEC AUDIO CONTROLS!



ALTEC ATTENUATORS, MIXERS, VU EXTENDERS AND STEREO PAN POTENTIOMETERS provide less than 1-milliohm contact resistance, lower noise, easier upkeep, and longer life. Choose from more than 300 types, either rotary or straight-line. New rotaries use pure silver dual brushes, independently sprung to eliminate "stumble."



ALTEC 9060A MICROPHONE EQUALIZER provides up to 12-db equalization, and 16-db attenuation at 100 cycles and 10 kc. Straight-line controls are precisely calibrated in 2-db steps. Passive L/C/R bridged "T" network circuit. Compact plug-in design. 3½"H x 1½"W x 5½"D.



ALTEC 9061A & 9063A PROGRAM EQUALIZERS provide continuously variable equalization at selectable frequencies: up to 12-db boost at 40 or 100 cycles, and 3, 5, 10 or 15 kc; 16-db attenuation at 100 cycles and 10 kc. Passive circuitry. 9061A, for plug-in mounting, features straight-line controls. 3½"H x 1½"W x 5½"D. 9063A, for standard rack mounting, has rear-mounted input and output terminals normaled through front-panel jacks and rotary control switches. 3½"H x 19"W x 5¼"D.



ALTEC 9062A & 9073A GRAPHIC EQUALIZERS have completely passive circuitry which induces no hum or distortion at levels from -70 to +24 dbm. The 9062A provides quiet, positive variable boost or attenuation in 1 db steps at seven critical frequencies. The 9073A boosts or attenuates six different frequencies of +8 or -8 db in 1 db steps. Precise slider controls have an accuracy of ±0.5 db per step, enabling a frequency overlap for an essentially flat response. Escutcheon plates available for rack mounting. 9062A, 3½"H x 10"W x 5¼"D. 9073A, 3½"H x 8¾"W x 5¼"D.



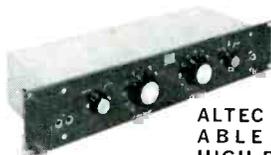
ALTEC 9064A NOTCH FILTER eliminates unwanted narrow-band frequencies with negligible effect on program material. The 9064A is made to your specification with notch frequencies from 50 to 20,000 cps. Available as single or dual notch filter. 2"H x 3"W x 2-15/16"D.



9065A FIXED LOW-PASS AND 9066A FIXED HIGH-PASS FILTERS provide 18 db per octave attenuation from selected cut-off point. (30-db per octave units also available.) No insertion loss. The 9065A may be ordered to any cut-off point from 50 to 20,000 cps; the 9066A from 40 to 20,000 cps. 1½½"H x 1½½"W x 2½½"D.



ALTEC 9068A VARIABLE LOW-PASS FILTER AND 9069A VARIABLE HIGH-PASS FILTER provide 18 db per octave attenuation with 10 positions of LF and HF cut-off. With toroidally wound inductances, units may be used in extremely low-level circuitry without noise or hum pick-up. Zero insertion loss. 9068A LOW-PASS FILTER is 3"H x 2¼"W x 5½"D. 9069A HIGH-PASS FILTER is same size.



ALTEC 9067A VARIABLE LOW- AND HIGH-PASS COMBINATION FILTER combines the 9068A and 9069A for rack mounting. Rear-mounting input and output terminals normaled thru front panel jacks. 3½"H x 19"W x 5¼"D.



ALTEC PRECISION NETWORKS introduce no frequency discrimination or distortion from 0 to 150 kc. Units include mixers, matching pads, fixed-loss pads, bridging pads, and VU meter extenders in unbalanced "T" and balanced "H" configurations. Networks come in four sizes, are enclosed against dust and dirt, and are available in a wide range of impedances.

Send today on your letterhead for special professional discounts (available to bona fide recording and broadcast studios only). We'll send you name of nearest Professional Altec Distributor and complete Altec catalog covering speech input and playback equipment. Write Dept. A1.

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ANAHEIM, CALIFORNIA

rent available is high—high enough to drive the speaker or low-impedance phones.

Therefore, your question as to how a solid-state device can operate a speaker could have been "how a tube-type device can drive a speaker." Solid-state devices have low output impedances. Therefore, they naturally are fine drivers for loudspeakers and low-impedance headsets. Because of this, there is no need for bulky output transformers to match the impedances of the amplifier to those of the speakers or headsets.

Elimination of "pops" in a music system

Q. When my music system is turned on and the set is at normal listening level, a change of setting of the function switch produces a loud "pop" in the speakers. In addition, when the tape monitor switch is moved, "pops" occur.

How can the "pops" be eliminated? W. C. Harmack, Toledo, Ohio.

A. The problem of the "pops" in your equipment is not a new or a strange one. The source of this problem is that as a circuit is switched in, the coupling capacitor at the output of a piece of equipment connected to the selector switch charges up by way of the grid resistor of the particular stage fed by the arm of the selector switch. The capacitor will charge until the switch is in the proper position—corresponding to a particular amplifier function, such as tuner. This is so because the capacitor has no charging path to ground. The rapid charging of the capacitor looks to the rest of the amplifier just like any other audio signal coming from one or another of the input sources.

The easiest way to cure your problem is to connect a 5-megohm resistor to each contact representing an input source on the function switch—tuner, tape recorder, phonograph, and so on. Do not connect the arm of this switch to ground. This connection would accomplish nothing. Simply connect each of the contacts to ground via these 5 megohm resistors, one for each contact. Repeat this same process for the monitor switch. If the equipment is stereophonic, then whatever is done on one channel, should be duplicated on the other. In all likelihood your problem will be completely eliminated.

Two Preampers from a Single Cartridge

Q. Will you please show me how I can split the output from a 5-millivolt monophonic cartridge having an impedance of 200 ohms, and feed it to two preamps, without significant signal loss or impedance mismatch? L. B. Boger, Salisbury, North Carolina.

A. To connect your cartridge to two separate preamps, use a Y-connector. Connect the input of the Y connector to the leads from the tonearm. Connect the two outputs of the Y connector to the appropriate preamp inputs. You can make these connections with no ill effects because the impedance of the cartridge is very low as compared to the impedance of the preamp. Further, the low impedance of the cartridge nullifies any losses in the interconnecting cables.

It may be necessary to run a short, heavy ground strap between the two pre-amplifier chassis so that hum can be kept to a minimum.

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