

ACROSOUND

ULTRA-LINEAR II



60 WATT
POWER AMPLIFIER
KIT

\$79⁵⁰

AVAILABLE THROUGH LEADING DISTRIBUTORS
\$79.50 complete kit (\$83.00 west coast); \$109.50 wired
and assembled (\$113 west coast).

The Acrosound Ultra-Linear II is a 60 watt power amplifier which combines the inherently superior qualities of Ultra-Linear* circuitry with new feedback circuit design to provide a new standard of stability in feedback amplifier performance.

This combination of features makes possible a power amplifier of distinctly superior listening qualities which is unusually well suited to meet the difficult requirements imposed by complex speaker systems as, for example, those embodying electrostatic tweeters and electrodynamic woofers.

A secondary feature of the amplifier is the provision of an effective damping control which is adjustable over a range of damping factors between 0.5 and 10 for optimum speaker match. This control does not change volume (i.e. overall feedback), nor increase distortion, and is not frequency discriminating.

The amplifier is supplied in kit form with all critical wiring preassembled on a rugged printed circuit board. Components used are of the finest grade, and no economies are made that will adversely affect performance or cause a deterioration in performance over the life of the amplifier. A full choke, condenser power supply is used, transformers are supplied fully potted in drawn steel containers, and tubes are operated well within ratings.

The heart of the amplifier is the new Acrosound TO-600 Output Transformer which combines extremely low leakage reactances between windings with a novel feedback winding** providing a degree of feedback relatively unaffected by the reflected impedance of the speaker system. The speaker system may therefore have any degree of complexity or reflect either highly inductive or capacitive impedances with little effect on amplifier performance.

The amplifier is attractively styled and presents a professionally finished appearance that is both functional and pleasing.

*U.S. pat. #2,710,312 licensed by Keroes Enterprises

**Patent pending

SPECIFICATIONS

Rated output power

60 watts, 120 watts peak.

IM Distortion

Less than 1% at 60 watts for any standard combination of test frequencies.

Harmonic Distortion

Less than 1% at any frequency between 20 CPS and 20 KC at power output within 1 DB of 60 watts.

Frequency Response

At 1 watt—1 DB from 5 CPS to 85 KC. At 60 watts—1 DB from 18 CPS to 30 KC. Note: There is no peaking at any frequency; the rolloff is gradual and controlled above 85 KC for best transient response.

Square Wave Response

Undistorted squarewave response from 20 CPS to 20 KC with no overshoot or ringing. Capacity loads will not cause ringing or any other type of instability. Rise time of wave 1.5 microseconds.

Sensitivity

1.6 volts RMS for 60 watts output.

Output Impedances

4, 8, and 16 ohms.

Damping Factor

Variable from 0.5 to 10. Damping control may be switched out to provide a fixed damping factor of 15.

Hum

90 DB below rated output.

Size

7" by 15¹/₈" by 8" high.

Weight

30 lbs.

Tubes

1-ECC83/12AX7, 1-ECC82/12AU7
1-GZ34, 2-EL34/6CA7

Color

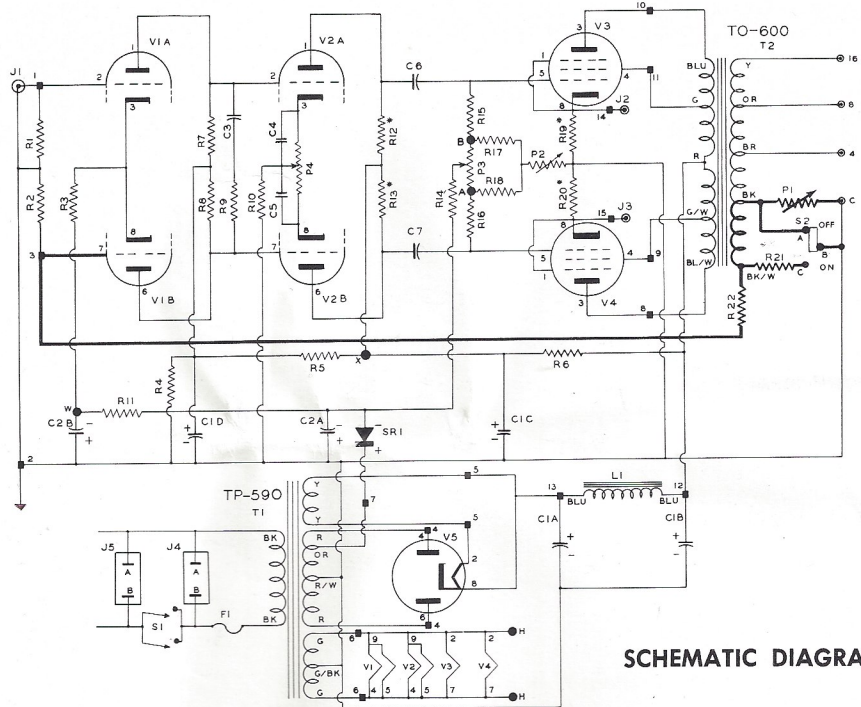
Amplifier attractively finished in two-tone metallic Brown.

ULTRA-LINEAR II

Acrosound has long been famous as a manufacturer of top quality output transformers for use in high fidelity amplifiers. The high performance of these transformers is the result of combining skill in design with superior materials and workmanship. Acrosound has also pioneered in the development of superior amplifier circuits. Certain innovations originated by Acro, such as the development of Ultra-Linear output stage circuitry, have become recognized as a genuine advance in the art, and are now used world wide.

The **Ultra-Linear II** amplifier represents the development of Ultra-Linear circuitry to highest degree. To match the superb low distortion qualities of the output stage, a Hybrid feedback arrangement has been perfected which provides a greater degree of stability in a feedback amplifier than heretofore attained. This arrangement, shown by heavy lines on the schematic diagram, makes use of a separate Hybrid winding on the output transformer to provide feedback. The Hybrid winding has special characteristics, and when used in the manner shown, separates the functions of output circuit and feedback circuit thus providing a greater latitude for optimum design in each direction.

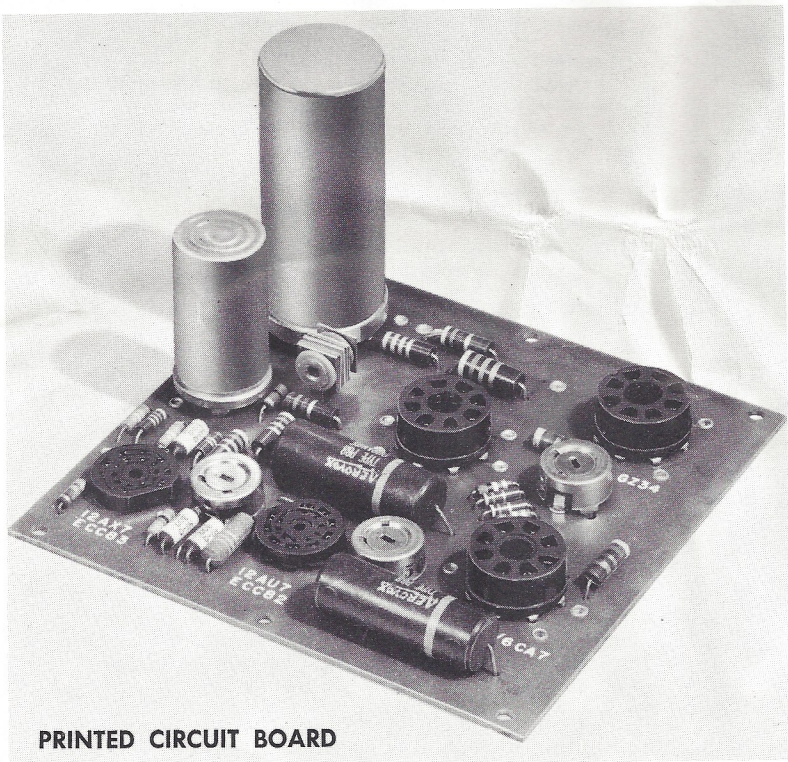
The balance of the circuit is clean and uncluttered consisting of a



SCHEMATIC DIAGRAM

cathode coupled phase inverter which is directly coupled to the driver stage. Operating parameters have been carefully adjusted for maximum clean drive with gain constant and independent of variations in line and stage supply voltages. Note that feedback voltage is electronically mixed with the signal voltage in the first stage, thereby preventing interaction between the feedback and input circuits. To obtain optimum square wave response, which also is a function of feedback stability, R-C response shaping networks have been applied according to the design methods of Bode to the plate circuit of the first stage and to the cathode circuit of the driver stage. Low distortion 6CA7/EL34 output tubes are used with optimum Ultra-Linear taps. Type KT88 and 6550 output tubes may also be used with equivalent results.

The circuit wiring of the **Ultra-Linear II** amplifier is almost completely contained on a printed circuit board, a feature which assures exact duplication of high performance. Each board is supplied completely preassembled, and carefully tested. Anyone handy with a screw driver and soldering iron will have no difficulty in rapidly assembling the amplifier with the aid of simple step by step instructions and large pictorial diagrams supplied. Construction time will be about two hours depending upon the proficiency of the builder.



PRINTED CIRCUIT BOARD