

CONCLUSION

In all the commercial units incorporating the amplifier circuit described in this paper, the basic power amplifier circuit delivers 80 w (40 w per stereo channel, both channels operating simultaneously), with AC line voltage as low as 110 v, from 20 Hz to 20,000 Hz and with less

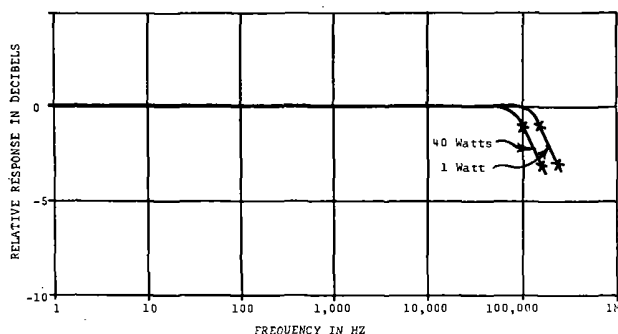


Fig. 12. Frequency response of the complete amplifier with feedback, 8 ohm load and 0 ohm source.

than 0.15% distortion at any frequency in this range. Distortion typically is less than 0.1%. The noise level at the output terminals is less than 600 μ v, typically even less than 400 μ v.

The two units shown in Fig. 13 are commercial models that incorporate the amplifier circuit described in this paper. The JBL Model SA600 combines the power amplifier with a preamplifier/control unit, both combined into a single chassis. JBL Model SE400S is intended for use with separate component preamplifiers. The SE400S, however, is somewhat more sophisticated than the amplifier circuit shown here; it uses plug-in equalizer boards to provide specific equalization for particular loudspeaker systems. Moreover, the equalizer board also controls a secondary negative *current* feedback loop to vary the internal impedance of the amplifier so that critical

damping can be achieved for different loudspeaker systems.

It should perhaps be emphasized that the circuit is really a DC operational amplifier. It would be relatively simple, if one wished, to make a laboratory direct-current power amplifier from the design. It would be necessary to use a heat sink of greater capacity and a chopper-stabilized side amplifier. With these modifications, the circuit would become a laboratory power amplifier with a bandwidth from DC to over 20,000 Hz and a drift stability of approximately 1 μ v referred to the input.

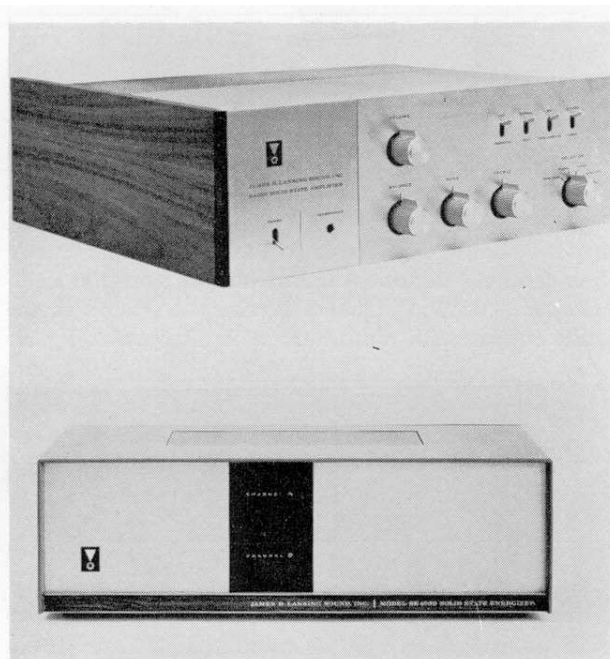


Fig. 13. (a) Model SA600 combines power amplifier with preamplifier/control unit in single chassis. (b) Model SE400S intended for use with separate component preamplifiers.

THE AUTHOR



Bart N. Locanthi was born in White Plains, New York in 1919. His education at the California Institute of Technology was interrupted by World War II, after which he returned and received a B.S. degree in physics in 1947. From 1947 to 1953 Mr. Locanthi was a part of the design group for the electric circuit analog computer at California Institute of Technology, and from 1953 to 1960 he served as chief engineer

and part owner of Computer Engineering Associates, an independent firm specializing in computer components and engineering services.

Prior to 1960, Mr. Locanthi also served as consulting engineer to James B. Lansing Sound, Inc., Los Angeles. In 1960 he joined the company as vice president in charge of engineering, the position he holds at the present time.