Abstracts

An All-Transistor 1-kW High-Gain UHF Power Amplifier (Correspondence)

R.L. Bailey, W.P. Bennett, L.F. Heckman and I.E. Martin. "An All-Transistor 1-kW High-Gain UHF Power Amplifier (Correspondence)." 1969 Transactions on Microwave Theory and Techniques 17.12 (Dec. 1969 [T-MTT]): 1154-1156.

A power amplifier in which the outputs of 64 RCA type 2N5016 overlay transistors are combined to provide a total CW output power of 1 kW at 400 MHz is described. A concept is employed wherein several transistors are connected in parallel to first form a power module, and then the outputs of a number of modules are combined in a Wilkinson N-way hybrid power combiner. This combiner has built-in isolation between each of the N input terminals. An identical N-way hybrid is employed as a power divider providing equal distribution of driving signal to each of the power modules. An overall power gain of 33 dB is achieved by providing additional transistor stages of preamplification. CW and pulse performance of the amplifier is described. Performance of the amplifier as the driver for a high-power tetrode tube is reported.

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