Abstracts

Tuning analysis for the high-Q class-E power amplifier

W.H. Cantrell. "Tuning analysis for the high-Q class-E power amplifier." 2000 Transactions on Microwave Theory and Techniques 48.12 (Dec. 2000 [T-MTT] (Special Issue on 2000 International Microwave Symposium)): 2397-2402.

The effects of component variations on a high-Q class-E amplifier are simulated and measured. Design equations are provided for the case of a 50% duty cycle with B at its optimum value for a given R. Six distinct operating points are analyzed for the output network. The problem of tuning a high-Q class-E amplifier is addressed. Normally, it cannot be tuned for maximum output power without degrading efficiency. An auxiliary circuit is added to the design so that it can be tuned for maximum output power in order to achieve optimum efficiency. Measured data are obtained at low frequencies for an amplifier with a loaded Q of 340.

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