Abstracts

High-efficiency load-pull harmonic controlled Class-E power amplifier

F.J. Ortega-Gonzalez, J.L. Jimenez-Martin, A. Asensio-Lopez and G. Torregrosa-Penalva. "High-efficiency load-pull harmonic controlled Class-E power amplifier." 1998 Microwave and Guided Wave Letters 8.10 (Oct. 1998 [MGWL]): 348-350.

This paper proposes a method to design high-efficiency Class-E power amplifiers following a frequency-domain approach instead of the classical time-domain analysis. Included are equations and plots of universal constant power and efficiency contours of Class-E amplifiers. To validate this method, a 900-MHz Class-E amplifier using a bipolar transistor has been designed and constructed. Power-added efficiency up to 79% and collector efficiency up to 91% have been measured at 900 MHz. Multiharmonic load-pull approach to the design of Class-E amplifiers proves that Class-E operation is possible at microwave frequencies using bipolar technology.

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