Abstracts

Optimum Design of Nonlinear Microwave Circuits

M.C.E. Yagoub and H. Baudrand. "Optimum Design of Nonlinear Microwave Circuits." 1994 Transactions on Microwave Theory and Techniques 42.5 (May 1994 [T-MTT]): 779-786.

This paper reports a direct optimization method of nonlinear circuits. The procedure consists in determining in the power space, a surface including all the extremum allowed powers at terminal ports of each nonlinear component of the circuit. According to the required nonlinear function, an appropriate choice of the tangent planes to this surface allows to calculate the optimum loads for the nonlinear components. This method optimizes the parameters of nonlinear devices without any constraint on the circuit. A small signal analysis is then taken in order to deduce the optimum performance of the nonlinear designed circuit. The realization of a single balanced diode mixer has shown good agreement between the calculated values and the experimental results.

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