Abstracts

Computer Aided Design of Broadband and Low-Noise Microwave Amplifiers

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The design of low-noise broadband microwave integrated amplifiers is particularly suited to the application of optimization techniques. Circuit theory is incapable of synthesizing these circuits, and bread-boarding is expensive as well as difficult. The analytical solution of microwave integrated circuits has been developed, and though complicated, is suitable for computer solution. It is then possible for the engineer to use a computer model of a circuit as a breadboard; however, with the many variables and the conflicting objectives of high flat broadband gain and low-noise figure it is best to leave the tuning of this breadboard to an optimization routine. This paper presents an objective function for the optimization of low noise broadband amplifiers. The effectiveness of this technique is demonstrated with examples.

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