Abstracts

A Simplified "Real Frequency" Technique Applied to Broad-Band Multistage Microwave Amplifiers

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A computer-aided design (CAD) procedure, which is a new and simplified "real frequency" technique, is introduced for treating the broad-band matching of an arbitrary load to a complex generator. The method can be applied to the design of interstage equalizers for microwave amplifiers. It utilizes the measured data obtained from the generator and the load networks. Neither an a priori choice of an equalizer topology, nor an analytic form of the system transfer function, is assumed. The optimization process of the design procedure is carried out directly in terms of a physically realizable, unit normalized reflection coefficient which describes the equalizer atone. Based on the load-generator matching technique, a sequential procedure to design multistage microwave amplifiers is presented. An example is given for a three-stage, FET amplifier proceeding directly from the measured scattering parameters of the FET devices. The example is in three parts and illustrates the sequential method; that is, first a single-stage, then a two-stage, and finally the three-stage system is computed.

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