

Abstracts

Nonlinear Design Procedures for Single-Frequency and Broad-Band GaAs MESFET Power Amplifiers

T.J. Brazil and S.O. Scanlan. "Nonlinear Design Procedures for Single-Frequency and Broad-Band GaAs MESFET Power Amplifiers." 1988 Transactions on Microwave Theory and Techniques 36.2 (Feb. 1988 [T-MTT] (Special Issue on Computer-Aided Design)): 388-393.

The design and optimization of MESFET power amplifiers are investigated using an intermediate-level or "functional" device modeling approach. The approximations involved are discussed, together with considerations of required circuit terminations at harmonic frequencies. Three variations of the approach, based on large-signal admittance, scattering, and hybrid parameters, are compared in the design of a single-frequency amplifier, and the method is extended to broad-band power amplifier design. In all cases, results are validated by comparison with a full time-domain large-signal amplifier analysis, involving realistic, distributed external circuits.

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