Abstracts

Analysis of Strongly Nonlinear Circuits with a Frequency-Domain Method Coupled with a Consistent Large-Signal Model

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The paper describes an analysis method that extends the applicability of frequency-domain methods to strongly nonlinear circuits. Nordinearities are described with Chebyshev expansions which are evaluated with a numerically stable three-term recurrence formula. The method is coupled with a novel, measurement-based consistent modelling approach which allows improved accuracy in describing the frequency-dependence of the measured small-signal parameters. The analysis method and the modelling approach are verified by comparing measurements and calculations on a MESFET mixer, driven with two and three tones.

❑ Return to main document.