

Abstracts

Extraction of a nonlinear AC FET model using small-signal S-parameters

J.H.K. Vuolevi and T. Rahkonen. "Extraction of a nonlinear AC FET model using small-signal S-parameters." 2002 Transactions on Microwave Theory and Techniques 50.5 (May 2002 [T-MTT]): 1311-1315.

The nonlinearities of an RF FET can be obtained by a set of small-signal circuit elements extracted over a range of terminal voltages and temperatures. This study used pulsed S-parameter measurements on a 3 \times 3 DC-bias-point grid at two different temperatures to obtain electrical and electrothermal nonlinearity coefficients up to the third order. The extracted nonlinear AC model can be used in a Volterra analysis to gain an insight into the distortion mechanisms. The measurement results were in good agreement with the calculated third-order intermodulation values.

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