Abstracts

Augmented behavioral characterization for modeling the nonlinear response of power amplifiers

P.M. Asbeck, H. Kobayashi, M. Iwamoto, G. Hanington, S. Nam and L.E. Larson. "Augmented behavioral characterization for modeling the nonlinear response of power amplifiers." 2002 MTT-S International Microwave Symposium Digest 02.1 (2002 Vol. I [MWSYM]): 135-138 vol.1.

It is shown that a simple extension of the conventional behavioral characterization of amplifier nonlinearity can be used to quantify power amplifier performance including many memory effects. External variables that influence the amplifier behavior (such as power supply voltage, input bias or temperature) are identified. Measurements of gain and phase (AM-AM and AM-PM conversion) are subsequently made over a range of these external variables. The variation of the external variables is explicitly taken into account with linear equivalent circuits at baseband. The method is shown to be useful for the estimation of bias circuit effects and self-heating effects.

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