Abstracts

An Examination of Data Based Large Signal Models for Wireless Amplifiers

J. Staudinger, E.Y. Lan, R. Vaitkus, R. Lucero and J. Hallmark. "An Examination of Data Based Large Signal Models for Wireless Amplifiers." 1996 MTT-S International Microwave Symposium Digest 96.3 (1996 Vol. III [MWSYM]): 1747-1750.

The validity of the assumptions used to construct a data based large signal GaAs MESFET model is examined for wireless RF power amplification. The compliance of measured S-parameter data to model consistency constraints is calculated for a wide region of the device's I-V plane. Strong compliance is observed at the contour integral point and over localized regions of the I-V plane, but not over extended regions which would be traversed by the dynamic load line of a power amplifier operating in gain compression. These effects are further examined by comparing harmonic balance predictions of the data based model to that of a common analytical large signal GaAs MESFET model and to load pull measurements of power, efficiency, and linearity.

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