

Abstracts

A New Multiharmonic Loading Method for Large-Signal Microwave and Millimeter-Wave Transistor Characterization

F.M. Ghannouchi, R. Larose and R.G. Bosisio. "A New Multiharmonic Loading Method for Large-Signal Microwave and Millimeter-Wave Transistor Characterization." 1991 Transactions on Microwave Theory and Techniques 39.6 (Jun. 1991 [T-MTT]): 986-992.

A new multiharmonic loading method for nonlinear microwave and millimeter-wave transistor characterization using six-port techniques is presented. The system allows independent load tuning of an excitation signal and its harmonics. Load-pull measurements on a MESFET have been performed at the fundamental frequency, $f_{sub 0}$, and at the second ($2f_{sub 0}$) and third ($3f_{sub 0}$) harmonics. The results highlight the importance of such measurement in designing and modeling nonlinear devices and circuits. The experimental results were found to be directly applicable for optimizing efficiency and output power in high-power MESFET amplifiers and MESFET frequency multipliers.

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