

Abstracts

A Novel Computerized Multiharmonic Active Load-Pull System for the Optimization of High Efficiency Operating Classes in Power Transistors

F. Blache, J.M. Nebus, P. Bouysse and J.P. Villotte. "A Novel Computerized Multiharmonic Active Load-Pull System for the Optimization of High Efficiency Operating Classes in Power Transistors." 1995 MTT-S International Microwave Symposium Digest 95.3 (1995 Vol. III [MWSYM]): 1037-1040.

A fully automated multiharmonic load-pull system allowing accurate measurement and control of the first three harmonic load terminations of RF and microwave transistors is presented in this paper. The technical originality of the proposed system lies in that the first, second and third harmonic load terminations can be independently and automatically monitored and fixed while varying the input power driving the transistor at the fundamental frequency. Appropriate hardware and software allow fast and automatic plots of power/efficiency performances of DUTs versus input power for different harmonic loadings. To demonstrate an attractive application of the system, measurements of a 1800 μm gate periphery MESFET at 1.8 GHz for mobile communication applications are presented. Both suitable harmonic load terminations and non-appropriate ones yielding respectively optimum and poor power added efficiency are given.

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