Abstracts

Large-Signal Automated Load-Pull of Adjacent-Channel Power for Digital Wireless Communication Systems

J.F. Sevic, M.B. Steer and A.M. Pavio. "Large-Signal Automated Load-Pull of Adjacent-Channel Power for Digital Wireless Communication Systems." 1996 MTT-S International Microwave Symposium Digest 96.2 (1996 Vol. II [MWSYM]): 763-766.

A large-signal fully automated load-pull system for characterization of adjacent-channel power for pi/4-DQPSK-based digital wireless communication systems is described. It is demonstrated that the commonly held beliefs that adjacent-channel power for the North American digital system follows a third-order process and that adjacent-channel power for the Japanese digital system follows a fifth-order process are in general not true. Instead, it is shown that adjacent-channel power is a composite of third- and fifth-order nonlinearities, the relative contributions of each being load impedance and device dependent. A simplified power series analysis coupled with spectral decomposition of the digitally modulated source signal is used to characterize conditions under which third-order intermodulation will correlate to adjacent-channel power.

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