Abstracts

Large- and small-signal IMD behavior of microwave power amplifiers

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In this paper, large-signal intermodulation distortion (IMD) sweet spots in microwave power amplifiers are studied and predicted using a new mathematical basis. The variations in the IMD versus drive pattern with active bias point and the terminating matching networks are investigated. This nonlinear distortion model enabled the design of power amplifiers specially tailored to present a desired IMD versus drive-level pattern. For practical validation purposes, a MESFET case study and an illustrative application example are presented.

❑ Return to main document.