Abstracts

On the use of multitone techniques for assessing RF components' intermodulation distortion

J.C. Pedro and N.B. De Carvalho. "On the use of multitone techniques for assessing RF components' intermodulation distortion." 1999 Transactions on Microwave Theory and Techniques 47.12 (Dec. 1999 [T-MTT] (Special Issue on 1999 International Microwave Symposium)): 2393-2402.

A comprehensive analysis of various techniques currently used for assessing microwave components' nonlinear distortion behavior is presented in this paper. The output of a third-order system subject to a two- or three-tone input is given, and then used as the comparison reference for studying the response to a general multitone or random excitation. Theoretical results thus obtained allowed the generalization of standard two-tone intermodulation (IMD) figures of merit, to multitone IMD ratio, multitone or noise adjacent channel power ratio, and noise power ratio (NPR). This approach proved that normal NPR tests produce optimistic results that can be as large as 7 dB when evaluating in-band co-channel power interference.

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