Abstracts

Generalized autocorrelation analysis of spectral regrowth from bandpass nonlinear circuits

K. Gard, M.B. Steer and L.E. Larson. "Generalized autocorrelation analysis of spectral regrowth from bandpass nonlinear circuits." 2001 MTT-S International Microwave Symposium Digest 01.1 (2001 Vol. I [MWSYM]): 9-12 vol.1.

Estimation of spectral regrowth generated by a digitally modulated carrier passed through a nonlinear RF circuit is analyzed using a formulation of the output autocorrelation function. The estimation is based on developing an analytical expression for the output power spectrum when the nonlinearity is modeled as a complex power series model extracted from measured amplitude-to-amplitude (AM-AM) and amplitude-to-phase (AM-PM) characteristics. An analytical expression of the output power spectrum is developed from statistical moments for a complex Gaussian input signal. Comparisons are presented of measured versus predicted ACPR values for a CDMA amplifier.

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