Abstracts

Effects of Nonlinear Distortion on CDMA Communication Systems (1996 Vol. II [MWSYM])

S.-W. Chen, W. Panton and R. Gilmore. "Effects of Nonlinear Distortion on CDMA Communication Systems (1996 Vol. II [MWSYM])." 1996 MTT-S International Microwave Symposium Digest 96.2 (1996 Vol. II [MWSYM]): 775-778.

We report a rigorous approach to analyze the effects of nonlinear distortion on code division multiple access (CDMA) wireless communication systems based on time-domain analysis and band-pass nonlinearity theory. Given AM-AM and AM-PM characteristics of a nonlinear device, this technique is capable of predicting adjacent channel power rejection (ACPR), power compression, and base-band signal vector constellation at the output of the nonlinear device. To demonstrate and verify the capability of this technique, an L-band power amplifier was designed, built, tested with CDMA waveforms, and compared with the simulated results. Excellent agreement between the measured and predicted results has been achieved.

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