Abstracts

A novel distortion analysis method for amplifiers considering frequency characteristics

K. Horiguchi, K. Yamauchi, K. Mori, M. Nakayama and T. Takagi. "A novel distortion analysis method for amplifiers considering frequency characteristics." 1998 MTT-S International Microwave Symposium Digest 98.3 (1998 Vol. III [MWSYM]): 1619-1622.

This paper proposed a novel distortion analysis method for amplifiers considering frequency characteristics. In this method, a frequency-dependent nonlinear amplifier is represented with a model, which consists of a frequency-independent nonlinear amplifier and input/output filters. Time-domain analysis using a single-carrier method, which uses single-carrier amplitude and phase distortion of an amplifier, is carried out for the frequency-independent amplifier, and frequency-domain analysis is applied to the filters. We calculate the third-order intermodulation of a GaAs MESFET amplifier with this method and the harmonic balance method. The results are in good agreement.

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