Abstracts

Characterization of spectral regrowth in microwave amplifiers based on the nonlinear transformation of a complex Gaussian process

A statistical technique is presented for the characterization of spectral regrowth at the output of a nonlinear amplifier driven by a digitally modulated carrier in a digital radio system. The technique yields an analytical expression for the autocorrelation function of the output signal as a function of the statistics of the quadrature input signal transformed by a behavioral model of the amplifier. The amplifier model, a baseband equivalent representation, is derived from a complex radio-frequency envelope model, which itself is developed from readily available measured or simulated amplitude modulation-amplitude modulation and amplitude modulation-phase modulation data. The technique is used in evaluating the spectral regrowth for a CDMA signal.

❑ Return to main document.