Abstracts

Intermodulation Distortion in Kahn-Technique Transmitters

F.H. Raab. "Intermodulation Distortion in Kahn-Technique Transmitters." 1996 Transactions on Microwave Theory and Techniques 44.12 (Dec. 1996, Part I [T-MTT]): 2273-2278.

The Kahn Envelope Elimination and Restoration (EER) technique implements a linear RF power amplifier (PA) by combining nonlinear, but efficient, RF and AF power amplifiers. For signals with high peak-to-average ratios, the average efficiency of a Kahn-technique transmitter can be three to four times that of a transmitter that employs conventional linear RF PA's. Since switching-mode amplifiers are employed, the linearity of an EER transmitter depends upon parameters such as the bandwidth of the envelope modulator and the differential delay between envelope and phase signals. This paper determines the relationship between these parameters and IMD levels and verifies the predictions by laboratory measurements. The results can be used to determine the requirements for the components of a Kahn-technique transmitter.

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