Abstracts

Measurement and Simulation of Memory Effects in Predistortion Linearizers

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A typical method for designing a predistortion linearizer is to realize a circuit that creates an AM/AM and AM/PM characteristic inverse to that of the power amplifier to be linearized. This strategy is correct only if the predistortion circuit maintains this characteristic also at signal envelope frequencies. This is often not true due to the time constants present in the linearizer circuits that limit its effectiveness (hereafter these effects are referred as memory effects). This problem is not limited to linearization techniques but affects the operation of nonlinear systems in general. The purpose of this paper is to review the major consequences of memory effects, to present efficient techniques to measure them, and to illustrate a simulation approach that can be used to predict their influence in practical systems.

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