Abstracts

An adaptive Volterra predistorter for the linearization of RF high power amplifiers

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An efficient digital baseband predistortion linearizer is presented to compensate for nonlinear distortions induced by RF high power amplifiers in wireless communication systems. The proposed approach utilizes an indirect learning architecture with a fast recursive least squares (RLS) filtering algorithm, implemented using V-vector algebra, to update the coefficients of a Volterra-based predistorter. There is no requirement for an initial identification of the nonlinear characteristics of HPA as in linearizers based on conventional pth-order inverse methods. Simulation results show that that good performance and low computational complexity are achieved in the linearization of both narrow and wide bandwidth systems.

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