Abstracts

A novel DSP architecture of adaptive feedforward linearizer for RF amplifiers

Yuanxun Wang, J.D. Fredrick and T. Itoh. "A novel DSP architecture of adaptive feedforward linearizer for RF amplifiers." 2001 MTT-S International Microwave Symposium Digest 01.2 (2001 Vol. II [MWSYM]): 805-808 vol.2.

A novel adaptive design for feedforward amplifier linearizer with DSP control is proposed in this paper. Compared to existing adaptive architectures, this is a "blind" design which does not require pilot signal and intentional signal perturbation and phase calibration. A polar gradient adaptive algorithm is developed to support the hardware architecture, providing the unconditional convergence during the full working range of the phase control components. The stability criterion is analyzed. The linearizer performance for multi-tones and for a CDMA signal is simulated and demonstrated using EDA design tools.

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