Abstracts

Design and characterization of a microwave feed-forward amplifier with improved wide-band distortion cancellation

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A new approach to the design of a wide-band feed-forward amplifier (FFAMP) is presented in this paper. Phase equalizers are employed in an FFAMP to match the nonlinear delay/phase characteristics of the main and error amplifiers, improving phase balances within the cancellation loops and providing improvement in signal cancellations over a wide bandwidth. The proposed 1.7-1.9-GHz FFAMP was fabricated and characterized. The conventional FFAMP obtains an average of 15-dB third-order intermodulation (IM3) distortion cancellation over the whole bandwidth. With the phase equalizers, the proposed FFAMP achieves a further 6-dB reduction on IM3 level.

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