Abstracts

A new "active" predistortor with high gain using cascode-FET structures

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An MMIC-compatible miniaturized "active" predistorter using cascode FET structures is presented. The predistorter has gain expansion and negative phase deviation characteristics required to compensate for the distortion of typical power amplifiers. Unlike the previously reported predistorters, the predistorter of this work is capable of providing gain as high as 7-17 dB, eliminating the need for additional buffer amplifiers. This makes our approach well suited to MMIC implementation. Analysis of gain and phase deviation was also conducted. From the analysis, the origin of nonlinear distortion of predistorter was found to be G/sub m/ of the upper FET and R/sub ds/ of the lower FET. The predistorter of this work was applied to linearize a 2-GHz MMIC power amplifier for CDMA handset applications. ACPR improvement of 5 dB was achieved.

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