Abstracts

A new linear amplifier using low-frequency second-order intermodulation component feedforwarding

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A new linearization method by feedforwarding low-frequency second intermodulation component (f/sub 2/-f/sub 1/) is proposed. Drain voltage modulation by forwarding second intermodulation voltage improves linearity significantly. This new technique, which adopts a simple circuit configuration, has advantages in the stability and bandwidth due to the feedforwarding nature and shows a very good performance in comparison with other harmonic tuning circuits. Analytical derivation of low-frequency feeding voltage gain (/spl beta/) to obtain perfect cancellation of IMD/sub 3/ is presented. For verification of the proposed circuit topology, a two-tone test and a CDMA signal test at carrier frequency 2.15 GHz are performed and show about 18- and 10-dB improvement of IMD/sub 3/ and adjacent channel power ratio (ACPR), respectively.

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