Abstracts

Residual second order intermodulation suppression in third order distortion generators

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Commonly used diode-based third order distortion generators produce residual second order distortion signals due to the unmatched statistical characteristics of the diodes. In this paper, a novel circuit technique is presented by which, in theory, the suppression of undesirable residual second order distortion is achieved. A theoretical analysis of the proposed novel circuit topology was carried out using Volterra series analysis. Simulated results show that the proposed technique posses a residual second order intermodulation distortion (IM2) 35 dB lower than the one obtained with conventional architectures. Experimental results indicate that 20 dB cancellation is achievable.

❑ Return to main document.