

A Bootstrapping Technique to Improve the Linearity of CMOS Passive Mixers

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A bootstrapping technique for passive mixers has been implemented in a fully integrated 1V CMOS front-end. The idea is to improve the linearity of the mixer by making the switching instants independent of the IF output signal. The technique reduces the intermodulation distortion without degradation of the conversion gain or the noise figure. The measured IIP₃ of the front-end was increased by 5dB resulting in an increased dynamic range, which is critical for low supply voltages.