

A 1 Volt Switched Transconductor Mixer in 0.18 μ m CMOS

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Abstract

A new CMOS mixer topology can operate at low supply voltages by using switches connected only to the supplies. Mixing is achieved exploiting two cross-coupled transconductors, which are alternately activated by the switches. A down conversion mixer prototype with 12 dB conversion gain was designed and realized in standard 0.18 μ m CMOS. It achieves satisfactory mixer performance up to 4GHz, at a supply voltage of 1 Volt. Moreover, the mixer topology features a fundamental high frequency noise figure benefit.