

**“Highly linear low-voltage IQ downconverter for reconfigurable wireless receivers”**, pp.147-153

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**Abstract** – This paper describes design of an active, highly linear, low-voltage IQ downconversion mixer based on a currentmode output architecture for use in cellular applications operating in a 700MHz - 2200MHz frequency range. Trade-offs between current consumption and performance are analysed and a reconfigurable mixer prototype, working at a low voltage supply of 1.5V with a moderate current consumption of 8 mA, is described. Measurements of the I/Q mixer core, fabricated in a 0.13 $\mu$ m RF CMOS technology, show an out-of-band input referred 1 dB compression point of -7dBVrms (+6dBm in 50 $\Omega$  system) and an out-of-band IIP3 of +2 dBVrms (15dBm), indicating the feasibility of utilising low-voltage receivers in multiband, multi-standard front-ends with decreased RF selectivity.