Abstracts

A 2 GHz subharmonic sampler for signal downconversion

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Subharmonic sampling is a discrete-time alternative for the signal downconversion problem. It can be used either to replace a traditional continuous-time mixer in a superheterodyne receiver or can be combined with other discrete-time analog signal processing blocks in novel receiver architectures. We present a 2 GHz bandwidth integrated mixer based on subharmonic sampling. The sampler uses a two-diode topology with a 3 V supply. The downconversion loss for the passive sampler is 1 dB and the total system gain 3 dB. The mixer achieves IIP3 of +16 dBm and -1 dB compression +7 dBm for a single-tone input.

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