

1-GHz and 2.8-GHz CMOS Injection-locked Ring Oscillator Prescalers

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We implemented prescalers that can operate up to 2.8 GHz by exploiting the injection locking phenomena in differential CMOS ring oscillators. We tested a 5-stage, 1-GHz injection-locked modulo-8 prescaler fabricated in a 0.24- μm CMOS technology that consumes 350 μW of power and occupies 0.012 mm^2 of die area. The locking range is 20 MHz and the locked phase noise is -110 dBc/Hz @ 100 kHz. A 2.8-GHz, 3-stage, modulo-4 divider is also presented.