A Phaser-Based Real-Time CMOS Spectrum Sensor for Cognitive Radios

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Abstract: Real time spectrum sensing can be useful for cognitive radio (CR) devices to detect primary signals without the need for a receiver, reducing complexity and false detection. In this paper, an integrated CMOS real time CR spectrum sensor in 57-354 MHz frequency band with a new integrable phaser is presented, which is the first real time spectrum sensor applicable to radio frequency integrated circuit (RFIC) area. The integrated chip has been fabricated in a standard 0.18 \(_\text{m}\) CMOS IBM technology and draws 11 mA from a 1.8 V supply voltage.

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