

## عنوان مقاله:

An ultra low power noise shaping SAR ADC in 90 nm CMOS technology

## محل انتشار:

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## خلاصه مقاله:

This paper presents an ultra-low-power successive approximation register (SAR) analogue-to-digital converter (ADC) with a new noise shaping technique. The operation of the proposed structure is similar to the first order modulator except for its quantizer that is realized by a SAR ADC. Also, it has a simple loop filter topology so that only a Finite Impulse Response (FIR) filter is used to provide the first-order noise shaping. Due to the high resolution quantizer as well as the small load capacitor, the need for high output swing, fast-settling and high gain Operational Transconductance Amplifier (OTA) for the FIR filter is obviated. The ADC is designed and simulated in 90nm CMOS technology with Spectre simulator. Simulation results show that the average power consumption of the ADC is less than 4.6  $\mu$ W for a 0.5 V power supply.

## کلمات کلیدی:

Ultra low power, SAR ADC, Noise shaping, first order Modulator, CMOS technology

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/398005>

