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### Patent Search

Invention Title	DESIGN AND ANALYSIS OF 8-BIT PIPELINE ADC USING 90NM CMOS TECHNOLOGY
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#### Abstract:

[039] This invention presents an 8-bit Pipeline Analog-to-Digital Converter (ADC) utilizing advanced 90nm CMOS technology, achieving a significant breakthrough in hi low-power ADC design. Operating at a remarkable 250 MS/s, this ADC is particularly suited for wireless communication and data security applications. It features a ur flash ADC within its pipeline, enhancing conversion speed while maintaining power efficiency. A key component, the sample and hold circuit, ensures accurate signal for high-speed data processing. The ADC incorporates advanced linearization techniques, boosting accuracy, and employs error correction mechanisms to ensure rel Notable for its high Signal-to-Noise Ratio (SNR) and Spurious-Free Dynamic Range (SFDR), the ADC balances high performance with low power consumption. This des manufacturability using standard semiconductor processes marks it as a cost-effective, scalable solution for modern digital signal processing needs. Accompanied Dr 1-2]

#### Complete Specification

Description:[001] The field of invention in the proposed invention relates to the development of a high-speed, low-power Pipeline Analog-to-Digital Converter (ADC) 90nm CMOS technology.

[002] This 8-bit ADC, operating at 250 MS/s, integrates advanced linearization methods within its pipeline structure, improving speed and reducing power consumpt particularly noteworthy for its application in wireless communication and data security, standing out for its exceptional performance in speed and efficiency. The de includes a novel 4-bit flash ADC and a sample & hold circuit, contributing to its improved capabilities.

#### BACKGROUND OF THE INVENTION

[003] The following description provides the information that may be useful in understanding the present invention. It is not an admission that any of the informati provided herein is prior art or relevant to the presently claimed invention, or that any publication specifically or implicitly referenced is prior art.

[004] Further, the approaches described in this section are approaches that could be pursued, but not necessarily approaches that have been previously conceived pursued. Therefore, unless otherwise indicated, it should not be assumed that any of the approaches described in this section qualify as prior art merely by virtue c inclusion in this section.

[005] Pipeline ADCs are essential in mobile wireless communication systems, which require high-speed ADCs with low power requirements to facilitate increased ce coverage, additional service providers, and streamlined system architecture. These systems often demand high spurious-free dynamic range (SFDR) and signal-to-nr ratio (SNR), as well as sample rates around 250 MS/s to handle sufficient bandwidth.

[006] The invention discusses the shift in ADC design from traditional flash architectures and bipolar technologies to pipelined switched-capacitor topologies, which

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