## 24MO115 A Folding ADC Based on Switched Capacitor Circuits in 350 nm CMOS

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This paper presents a 8-bit folding analog-digital converter (ADC) using switched capacitors (SC) circuits. In this architecture, the conversion is achieved when the signal crosses a certain voltage level and at this time, a voltage value is added or subtracted from the analog input signal. The proposed ADC consists in eight identical stages, to perform the conversion of one bit at a time. Each stage is built with a amplifier circuit using switched capacitor with gain 2. The ADC is designed in a standard 0.35 µm CMOS (Complementary Metal-Oxide-Semiconductor) technology. A conversion time of 120 ns and a SNDR of 45.8 dB were obtained by simulations with the ADC prototype, to a 8 bits resolution converter with 3.3 V power supply and a 11 mW power consumption.
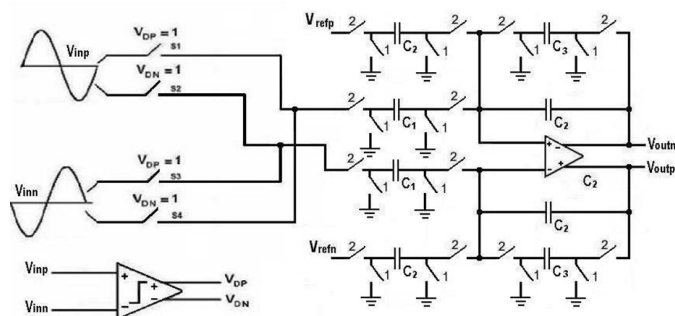

Schematic diagram to one stage of the folding ADC.

24MO133 User-friendly software tool for advanced ADC testing

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This paper describes an open source, user-friendly data evaluation program developed for ADC testing. This software tool performs multiple kinds of mathematical methods (nonlinear least squares/maximum likelihood) to extract the information from the recorded data. This Matlab toolbox has been created for users who have relevant knowledge in ADC testing, and would like to perform the mathematical computations – especially those that require complex numerical methods – in an efficient way. The software is equipped with a graphical user interface (GUI). It is a significantly extended version of the earlier similar-purpose toolbox [1]. Usage of this program does not require any programming knowledge, nevertheless one can get familiar with the framework of the software, as the program files contain the raw program code that runs using the Matlab interpreter. The main goal of this software is to create the possibility of publishing reproducible ADC test evaluation results. Statements of related papers can be verified easily: if the raw data are shared, the computations can be re-performed using this software tool.

Keywords-ADC testing, maximum likelihood, least squares, histogram test, standard IEEE-1241
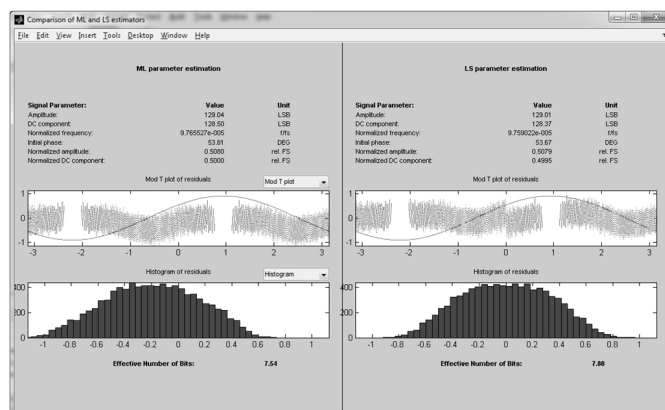
Comparison of ML and LS paramater estimation