

Input range driver for measurement of a differential 10 bit SAR ADC

ABSTRACT

Imbalance and out-of-range input signals can cause inaccuracy in fully differential successive approximation (SAR) analog to digital converter (ADC). Therefore, implementation of an ADC driver can solve the problem since the input can be properly adjusted to suit with an ADC input. AD8139 single to differential amplifier was chosen as an ADC driver in this design and placed on a printed circuit board (PCB) to drive differential input signal of SAR ADC. The result shows each of output amplitude of the amplifier remains equal and is 180° out of phase for DC and AC input signal. The fabricated 10 bit SAR ADC is capable to digitize full code from analog input produced by the ADC driver.

Keyword: Driver amplifier; Differential SAR ADC; Single to differential