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(54) **ANALOG TO DIGITAL CONVERTER WITH INVERTER BASED AMPLIFIER**

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(57) **ABSTRACT**

An analog-to-digital converter ("ADC") includes an input terminal configured to receive an analog input voltage signal. A first ADC stage is coupled to the input terminal and is configured to output a first digital value corresponding to the analog input voltage signal and a first analog residue signal corresponding to a difference between the first digital value and the analog input signal. An inverter based residue amplifier is configured to receive the first analog residue signal, amplify the first analog residue signal, and output an amplified residue signal. The amplified residue signal is converted to a second digital value, and the first and second digital values are combined to create a digital output signal corresponding to the analog input voltage signal.