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Kanzian et al.

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(54) **CALIBRATION SYSTEM AND METHOD FOR SAR ADCS**

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(71) Applicant: **Infineon Technologies AG**, Neubiberg
(DE)

(72) Inventors: **Marc Kanzian**, Wernberg (AT); **Alan Paussa**, Villach (AT); **Francesco Conzatti**, Villach (AT); **Joseph Semmler**, Muehlhausen (DE)

(57) **ABSTRACT**

In accordance with an embodiment, a method for operating a successive approximation ADC comprising a first capacitor array includes measuring a first weight of an MSB- a^{th} bit of the ADC by applying a first reference voltage to first terminals of capacitors of the first capacitor array corresponding to the MSB- a^{th} bit, applying a second reference voltage to first terminals of capacitors of the first capacitor array corresponding to significant bits lower than the MSB- a^{th} bit, applying the first reference voltage to first terminals of a first set of capacitors of the first capacitor array corresponding to significant bits higher than the MSB- a^{th} bit, and applying the second reference voltage to first terminals of a second set of capacitors of the first capacitor array corresponding to the significant bits higher than the MSB- a^{th} bit; subsequently, a weight of a capacitance of the capacitors corresponding to the MSB- a^{th} bit is successively approximated.

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