



US 20230231568A1

(19) **United States**

(12) **Patent Application Publication**
Wagner et al.

(10) **Pub. No.: US 2023/0231568 A1**

(43) **Pub. Date: Jul. 20, 2023**

(54) **HOMOGENEITY ENFORCED CALIBRATION
FOR PIPELINED ADC**

(52) **U.S. Cl.**
CPC **H03M 1/1023** (2013.01)

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

(57) **ABSTRACT**

(72) Inventors: **Matthias Wagner**, Engerwitzdorf (AT);
Thomas Bauernfeind, Arbing (AT);
Oliver Lang, Natternbach (AT)

A method of operating a pipelined analog-to-digital converter (ADC) having a plurality of output stages includes: performing a first calibration process for the pipelined ADC to update a parameter vector of the pipelined ADC, where components of the parameter vector are used for correcting nonlinearity of the pipelined ADC, where performing the first calibration process includes: providing an input signal to the pipelined ADC; converting, by the pipelined ADC, the input signal into a first digital output; providing a scaled version of the input signal to the pipelined ADC, where the scaled version of the input signal is generated by scaling the input signal by a scale factor; converting, by the pipelined ADC, the scaled version of the input signal into a second digital output; and calibrating the pipelined ADC using the first digital output and the second digital output.

(21) Appl. No.: **17/579,022**

(22) Filed: **Jan. 19, 2022**

Publication Classification

(51) **Int. Cl.**
H03M 1/10 (2006.01)

