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Tai et al.

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(54) **ANALOG TO DIGITAL CONVERSION DEVICE AND ANALOG TO DIGITAL CONVERSION METHOD**

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See application file for complete search history.

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(56) **References Cited**
PUBLICATIONS

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(57) **ABSTRACT**

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An analog to digital conversion method includes: receiving an analog input signal by using a coarse analog to digital converter (ADC) and a fine ADC; generating a first digital signal by using the coarse ADC according to the analog input signal; comparing each bit of the second-most significant bit to the least significant bit of the first digital signal with the most significant bit of the first digital signal to generate a comparison result; according to the comparison result, controlling switching of a high bit capacitor array of the fine ADC to convert the analog input signal received by the fine ADC into a residual signal; generating a second digital signal according to the residual signal by sequentially switching a low bit capacitor array of the fine ADC by using the fine ADC; and combining the first digital signal and the second digital signal to generate a digital output signal.

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(58) **Field of Classification Search**
CPC H03M 1/145; H03M 1/56; H03M 1/42; H03M 1/442; H03M 1/20; H03M 1/466; H03M 1/12; H03M 1/00; H03M 2201/16

16 Claims, 5 Drawing Sheets

