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Self-Calibration Technique of Cyclic ADC

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Research Objective

Cyclic analog-to-digital converter (key in digital electronics) ➡ Low power, good linearity

Our Innovation

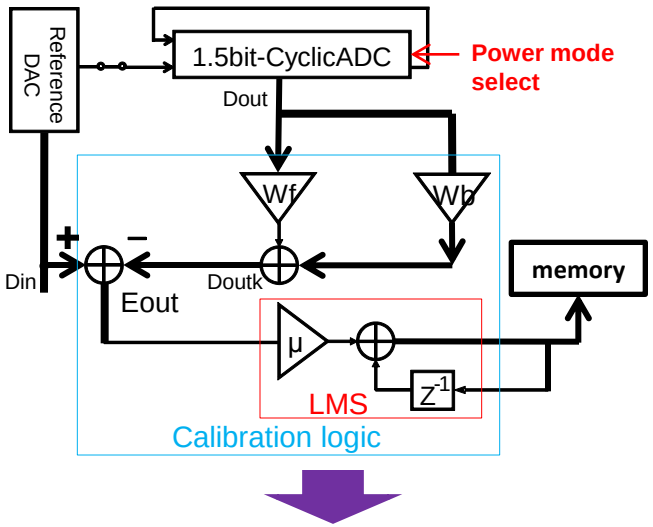
Novel digital calibration algorithm for cyclic ADC.

- Detection of cyclic ADC errors with two power modes

  High power mode ➡ capacitor mismatch error

  low power mode ➡ amplifier error

- Digital correction of cyclic ADC errors



Verification

Created mathematical model of the proposal, and verified its effectiveness with Matlab simulation.

Calculate calibration coefficients

Eout=Din-Doutk

Eout → 0 (Calibration complete !)