

ALL DIGITAL IMPLEMENTATION OF CLOCK SPECTRUM SPREADING (DITHER) FOR LOW POWER/DIE AREA

ABSTRACT OF THE DISCLOSURE

A digital circuit configured to spread a clock train spectrum includes a clock configured to generate the clock train, and a variable divider configured to divide the frequency of the clock train by a temporally-varying-divider value to modulate the clock train and generate a dithered clock train. The circuit further includes a first accumulator configured to accumulate the dithered clock train to generate a frequency modulation waveform, and a second accumulator configured accumulate the frequency modulated waveform to generate a phase modulation signal. The circuit further includes a phase-value calculator configured to calculate the temporally-varying divider value based on the phase modulation signal; and a closed-loop control circuit configured to track and filter the modulation of the dithered clock train to generate a second clock train that is the spread spectrum of the first mentioned clock train.

FIG. 2



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