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(54) **ELECTRONIC DEVICE, OPERATING METHOD THEREOF, AND ELECTRONIC SYSTEM**

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(57) **ABSTRACT**

An electronic device includes a first sample circuit configured to generate a first sampling signal by sampling an input signal in response to edges of a clock signal, a first comparator configured to generate a first logic decision signal by comparing a voltage level of the first sampling signal with a reference voltage level, an analog bang-bang phase detector configured to generate a first detection signal by executing an exclusive OR (XOR) operation on successive samples of the first logic decision signal, and a digitally controlled oscillator configured to vary a frequency of the clock signal according to the first detection signal.

