Abstract

The logic construction of a double-edge-triggered (DET) flip-flop, which can receive input signal at two levels of the clock, is analyzed and a new circuit design of CMOS DET flip-flop is proposed. Simulation using SPICE and a 1 micron technology shows that this DET flip-flop has ideal logic functionality, a simpler structure, lower delay time and higher maximum data rate compared to other existing CMOS DET flip flops. By simulating and comparing the proposed DET flip-flop with the other designs present, it is shown that the proposed DET flip-flop reduces power dissipation while keeping the same data rate and can be used for high speed applications.

References


Index Terms

Computer Science

Circuits and Systems

Keywords

Counter, Hold time, Finite State Machine, Registers Storage Element.