LOW POWER BUS DRIVER CIRCUIT DESIGN

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ABSTRACT
LOW POWER DESIGN IS IMPORTANT DUE TO THE INCREASING DEMAND FOR PORTABLE PRODUCTS AND THE EXPENSIVE COST FOR HEAT DISSIPATION. IN THIS THESIS, ATTENTION HAS BEEN PAID TO REDUCE THE POWER CONSUMPTION OF A BUS WITH LARGE CLOCK/BUS LOAD. GENERALLY, A BUS SYSTEM CONSUMES A TREMENDOUSLY SIGNIFICANT PORTION OF POWER IN THE WHOLE CHIP. IN ORDER TO DECREASE THE DEGREE OF POWER CONSUMPTION, WE LAUNCH A LOW-SWING BUS DRIVER CIRCUIT AS WELL AS A LOW SWING BUS DRIVER CIRCUIT WITH CHARGE RECYCLING TECHNIQUE. A SIGNIFICANT REDUCTION IN POWER DISSIPATION IS ACHIEVED, DUE TO THE REDUCED SWING VOLTAGE ON THE INTERCONNECTION LOADS. THE DRIVER CHIP WAS IMPLEMENTED WITH A TSMC 0.35μM CMOS PROCESS TECHNOLOGY.

Keywords: BUS DRIVER, LOW-SWING, CHARGE RECYCLING, LOW POWER

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