**DESIGN OF HIGH SPEED CARRY SELECT ADDER USING BRENT KUNG ADDER**

**Abstract:**

 In this paper, Carry Select Adder (CSA) architecture are proposed using parallel prefix adder. Instead of using 4-bit Ripple Carry Adder (RCA), parallel prefix adder i.e., 4-bit Brent Kung (BK) adder is used to design CSA. Adders are key element in digital design, performing not only addition operation, but also many other function such as subtraction, multiplication and division. Ripple Carry Adder (RCA) gives the most complicated design as-well-as longer computation time. The time critical application use Brent Kung parallel prefix adder to drive fast results but they lead to increase in area. Carry Select Adder understands between RCA and BK in term of area and delay. Delay of RCA is larger therefore we have replaced it with Brent Kung parallel prefix adder which gives fast result. Power and delay of 4-bit RCA and 4-bit BK adder architecture are calculated at different input voltage. This paper describes comparative performance of 4-bit RCA and 4-Bit BK parallel prefix adder designed using TANNER EDA tool.

**Keywords—** Brent Kung (BK) Adder, Ripple Carry Adder, Power, Delay

**TOOLS:**

1. **XilinxISE 14.7**

**LANGUAGE:**

1. **VerilogHDL**