

## **Final Report**

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## **Objective**

The objective of this project is to create 3 different adders and compare their size, power consumption, and delay. The final design will use a multiplexer to pick what adder you want to use.

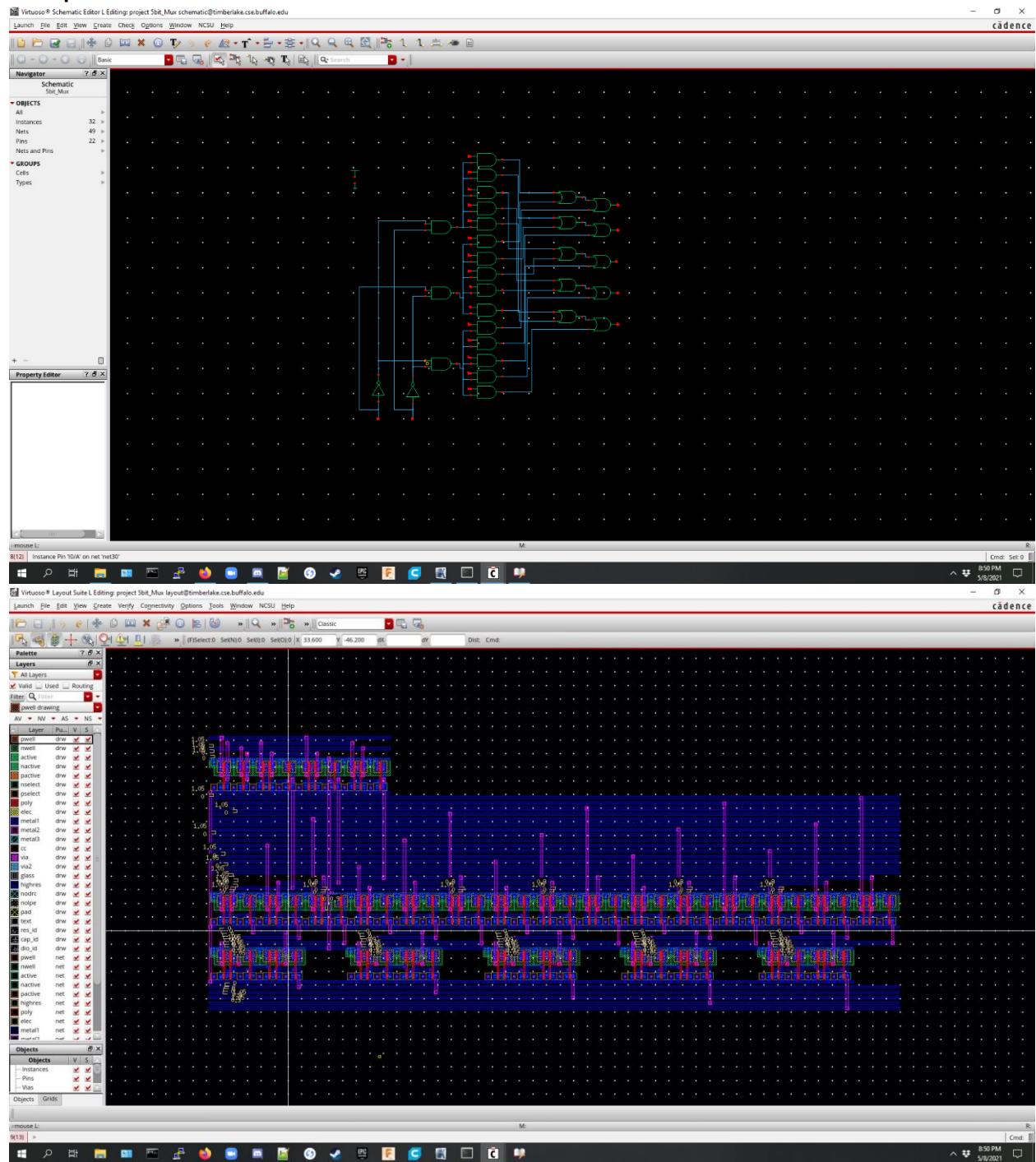
## **Project Truth Table**

The Select bit chooses the adder when Select is 00 it's the ripple carrier adder, 01 is the parallel prefix adder, 10 is the conditional sum adder, and 11 disables the output.

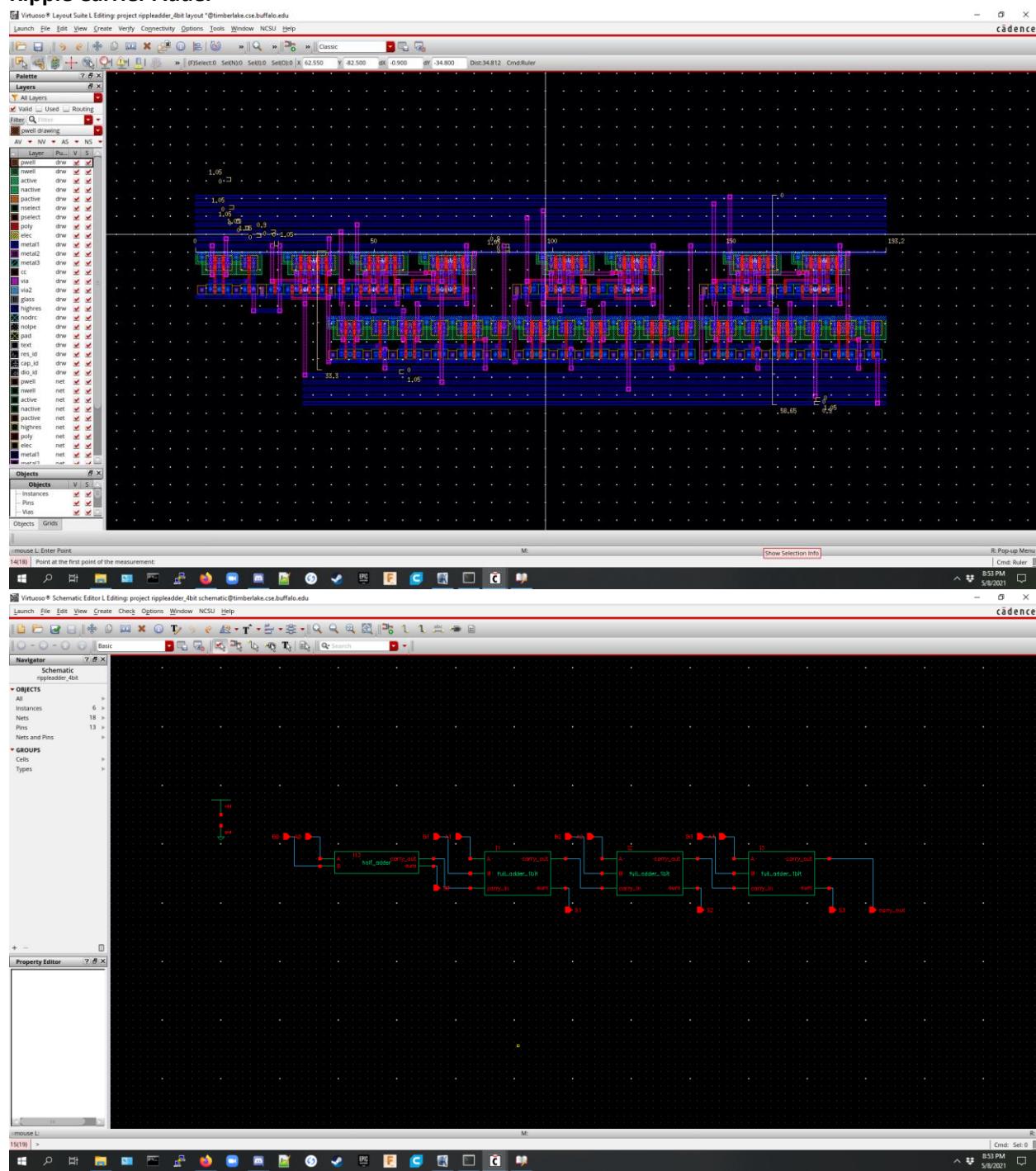
<b>A</b>	<b>B</b>	<b>Select</b>	<b>Output</b>
1111	1111	00	11110
0111	0111	00	01110
1011	1011	00	10110
0011	0011	00	00110
1101	1101	01	11010
0101	0101	01	01010
1001	1001	01	10010
0001	0001	01	00010
1110	1110	10	11100

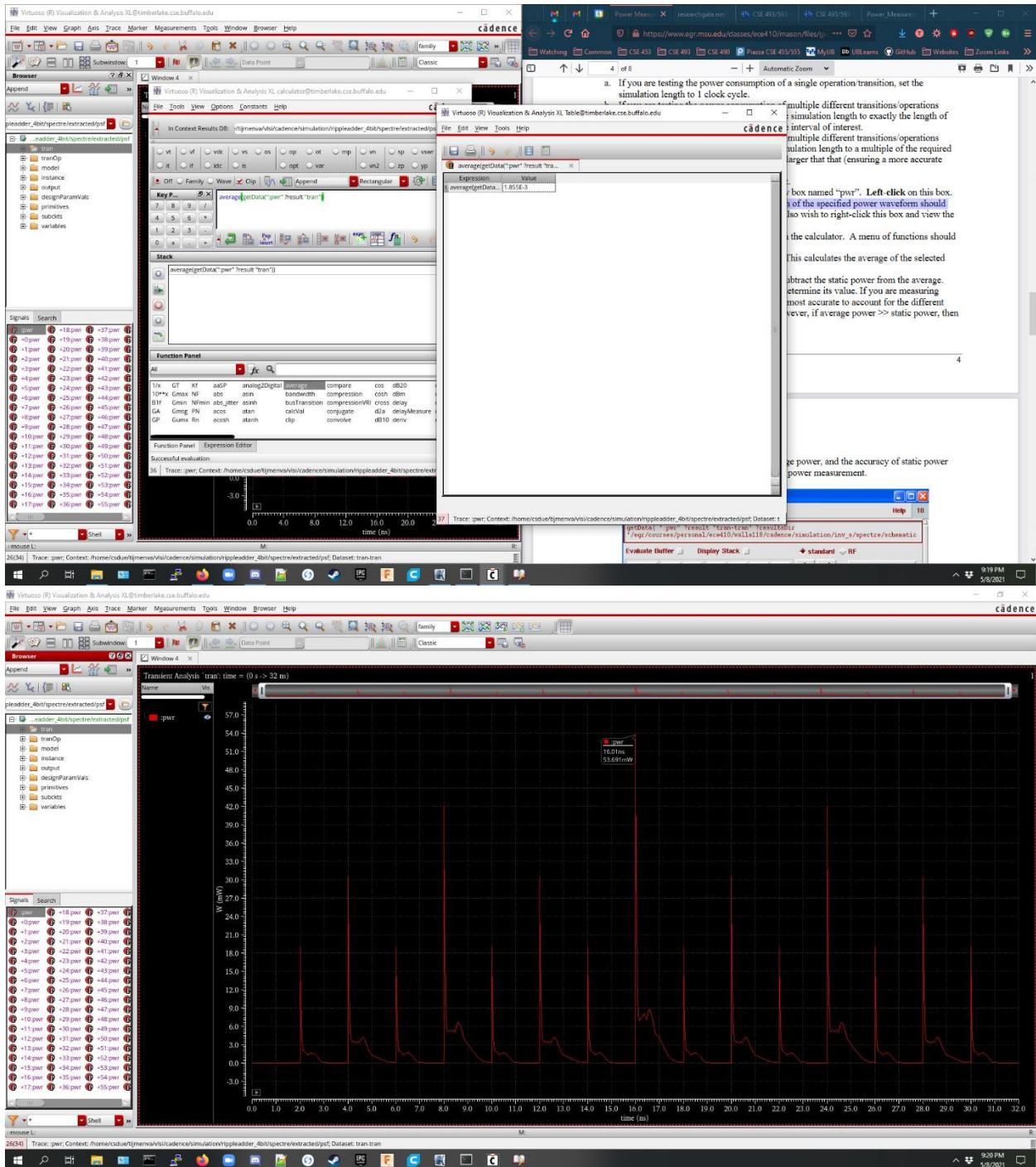
0110	0110	10	01100
1010	1010	10	10100
0010	0010	10	00100
1100	1100	11	00000
0100	0100	11	00000
1000	1000	11	00000
0000	0000	11	00000

## Multiplexer

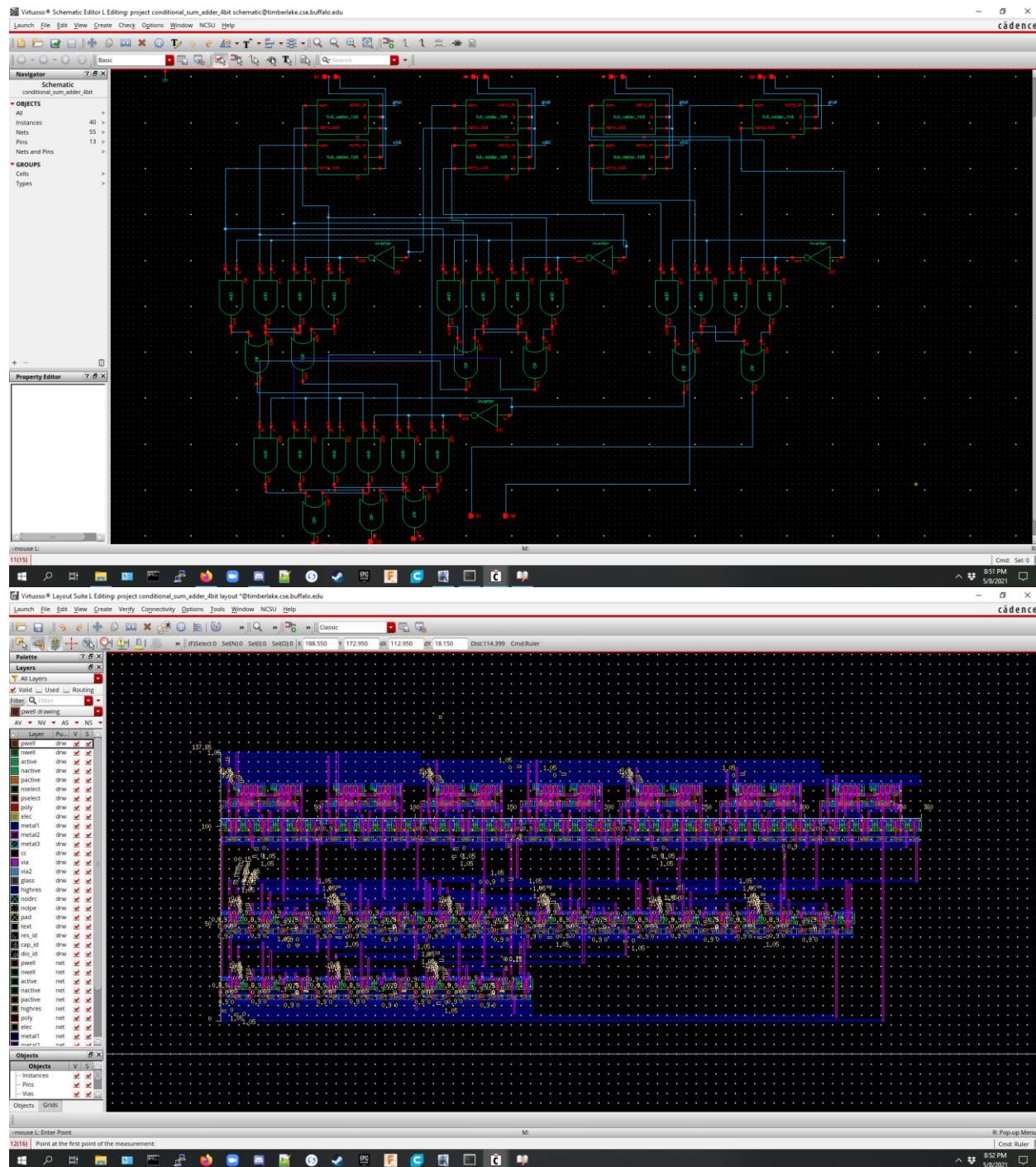


## Ripple Carrier Adder





## Conditional Sum Adder



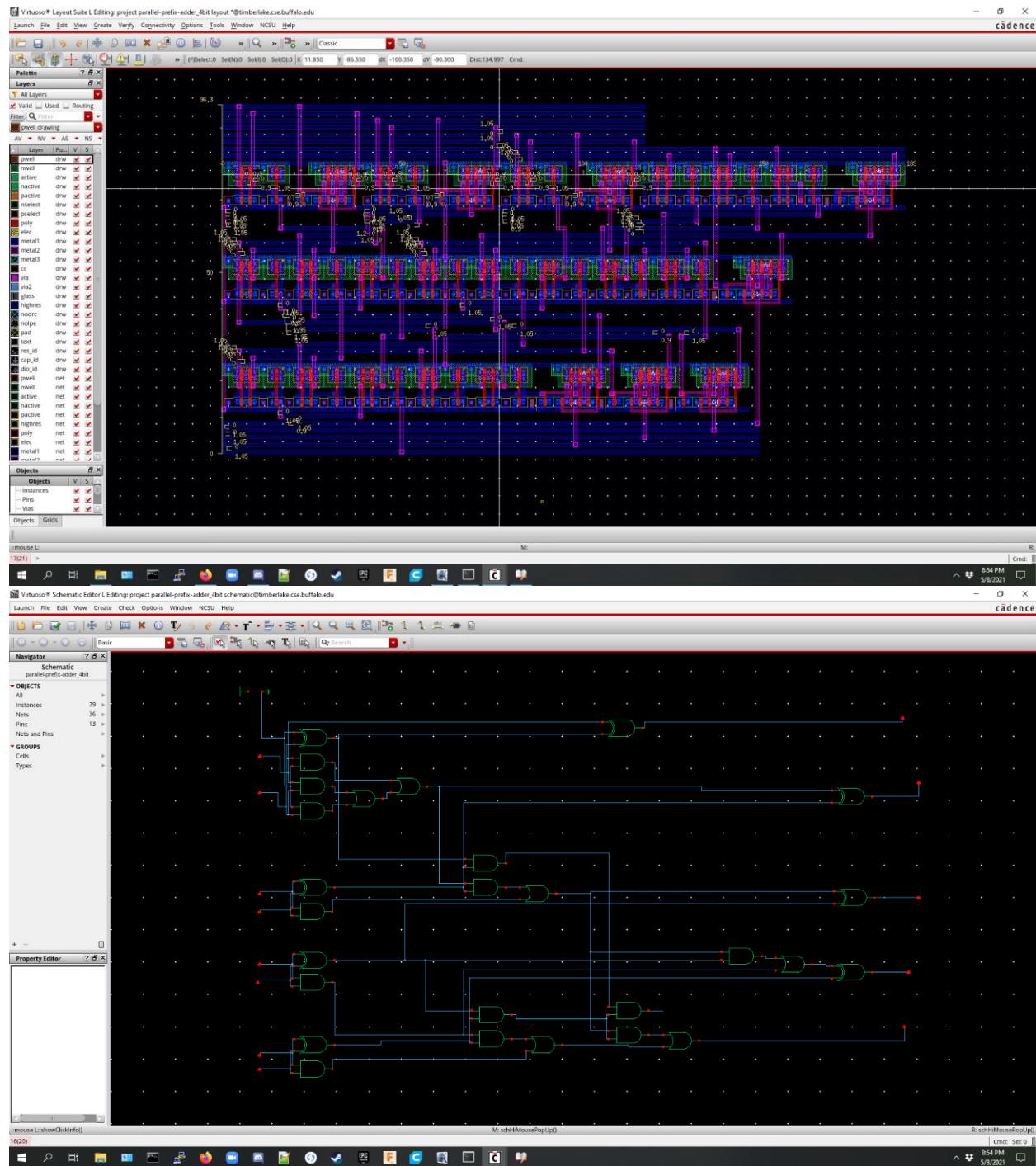


Final Size: 360um \* 137.85um

Average Power Consumption: 73.37 mW

Propagation Delay: .8705 ns

## Parallel Prefix Adder



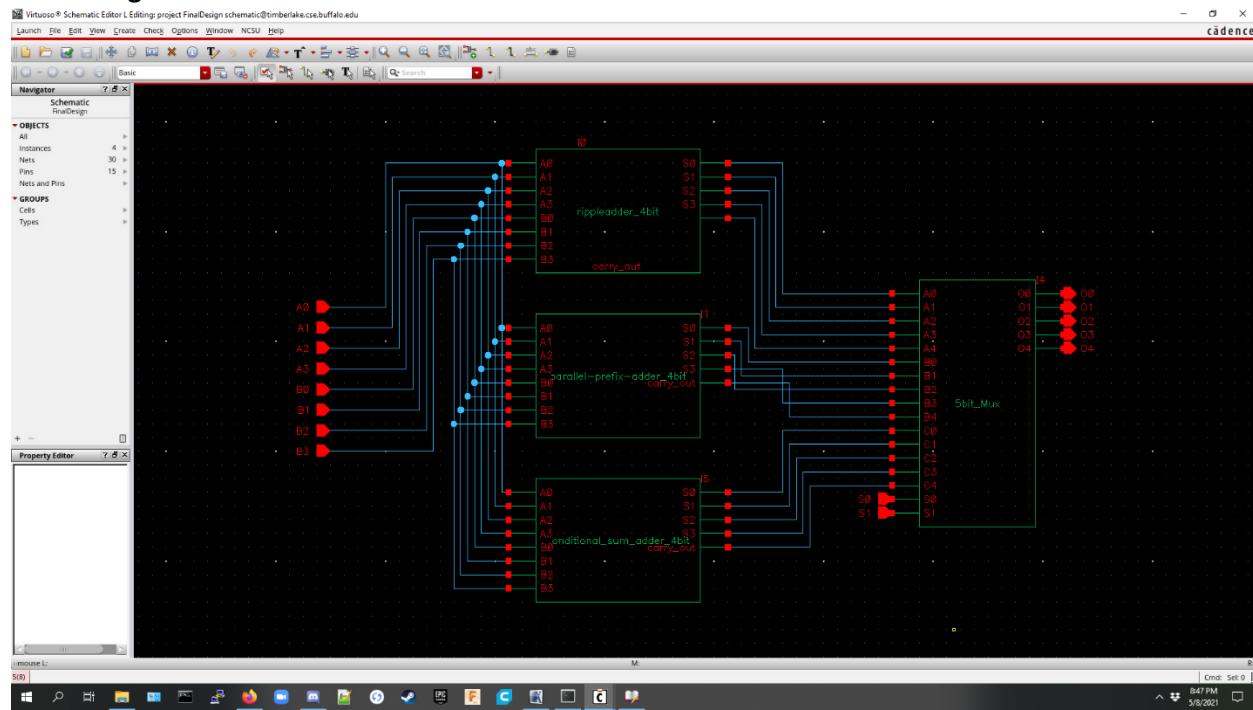


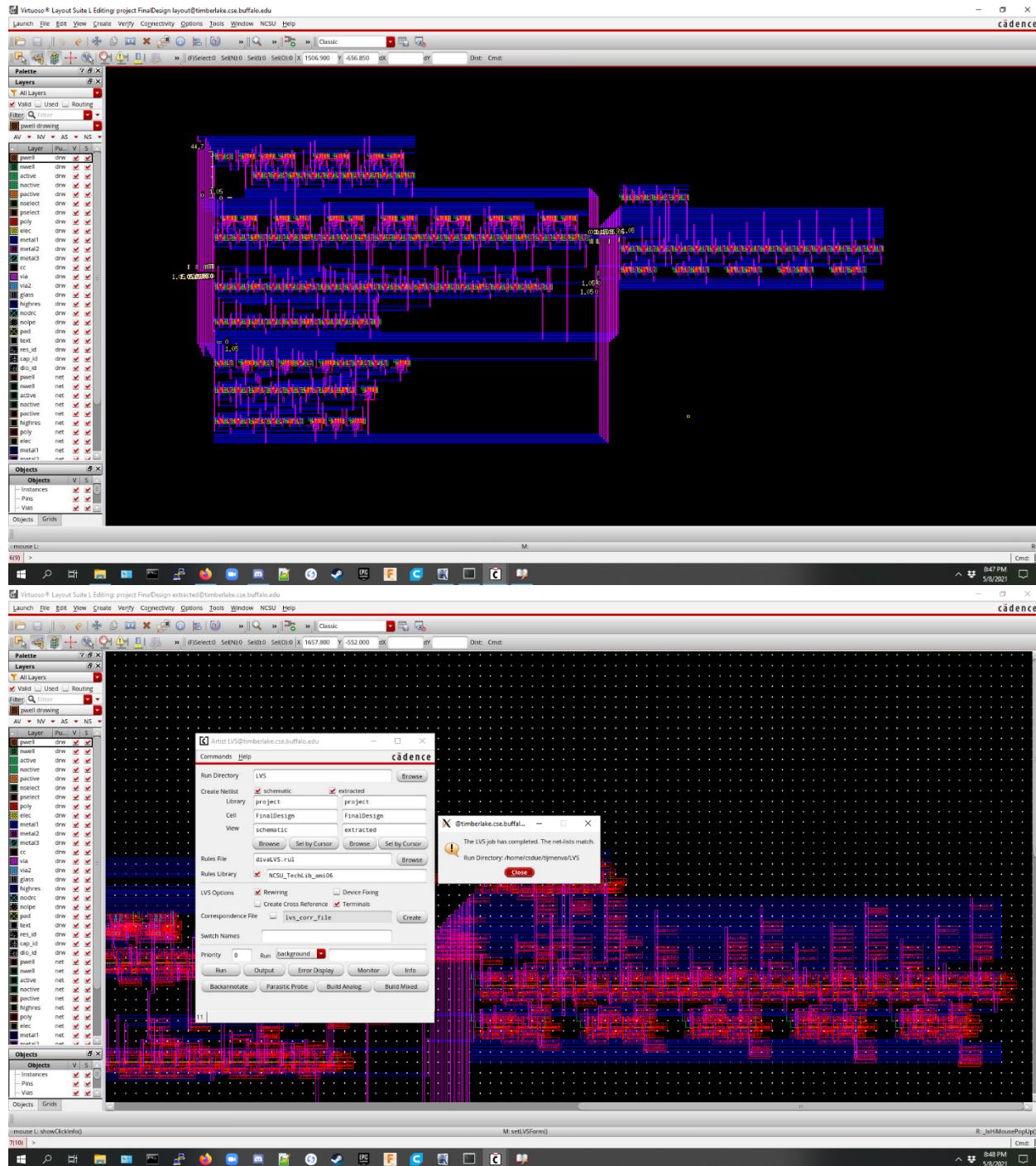
Final Size: 189um \* 96.3um

Average Power Consumption: 22.33 mW

Propagation Delay: 1.024 ns

## Final Design





## Final Pad frame

