Truth table of color theory

Blue PIN 7 (MSB)	Green PIN 6	Red PIN 5 (LSB)	Color	Count
0	0	0	Black	1
0	0	1	Red	2
0	1	0	Green	3
0	1	1	Yellow	4
1	0	0	Red	5
1	0	1	Magenta	6
1	1	0	Cyan	7
1	1	1	White	8

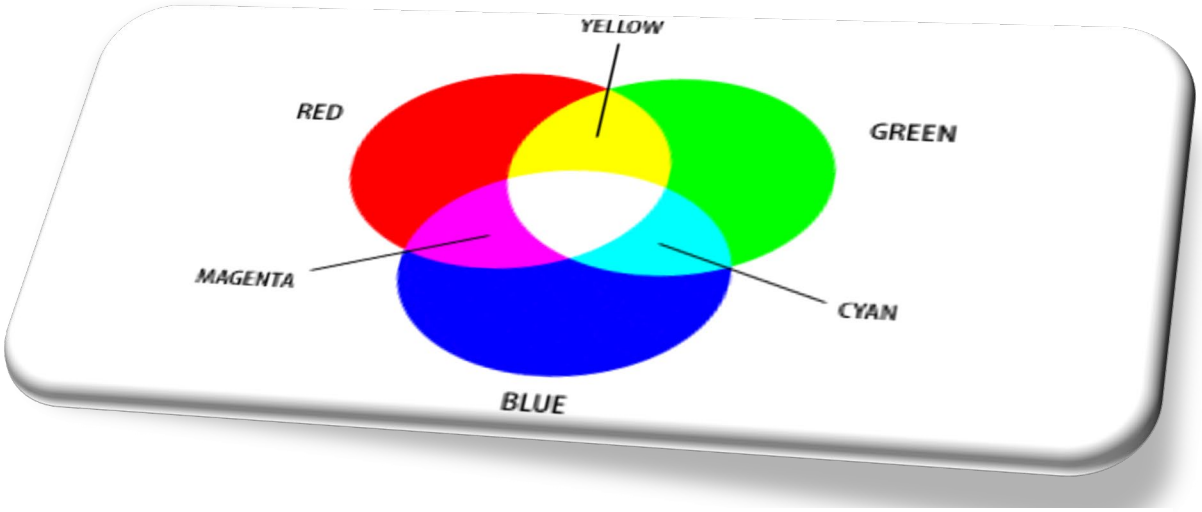


Figure 1

Debouncing circuit

Software delay function

Hardware implementation using RC circuit first stage.

$$charging\ time = R * C\ ;in\ seconds$$

For time 1 milli second

$$\tau(1msec) = 10000(ohm) * 1 * 10^{-6}\ (F)$$

Another hardware consideration propagation delay of not **gate** and Schmitt trigger

Using oscilloscope to get the time high to low then the simulation yield

Total propagation delay from low to high

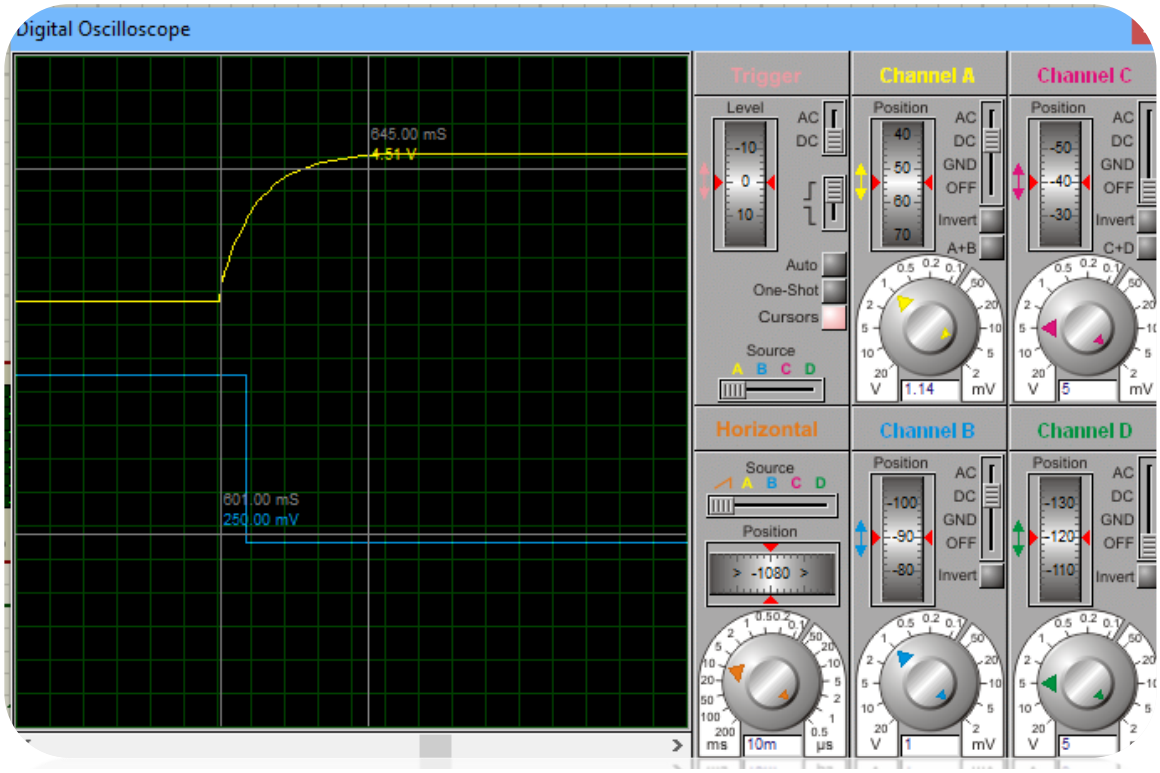
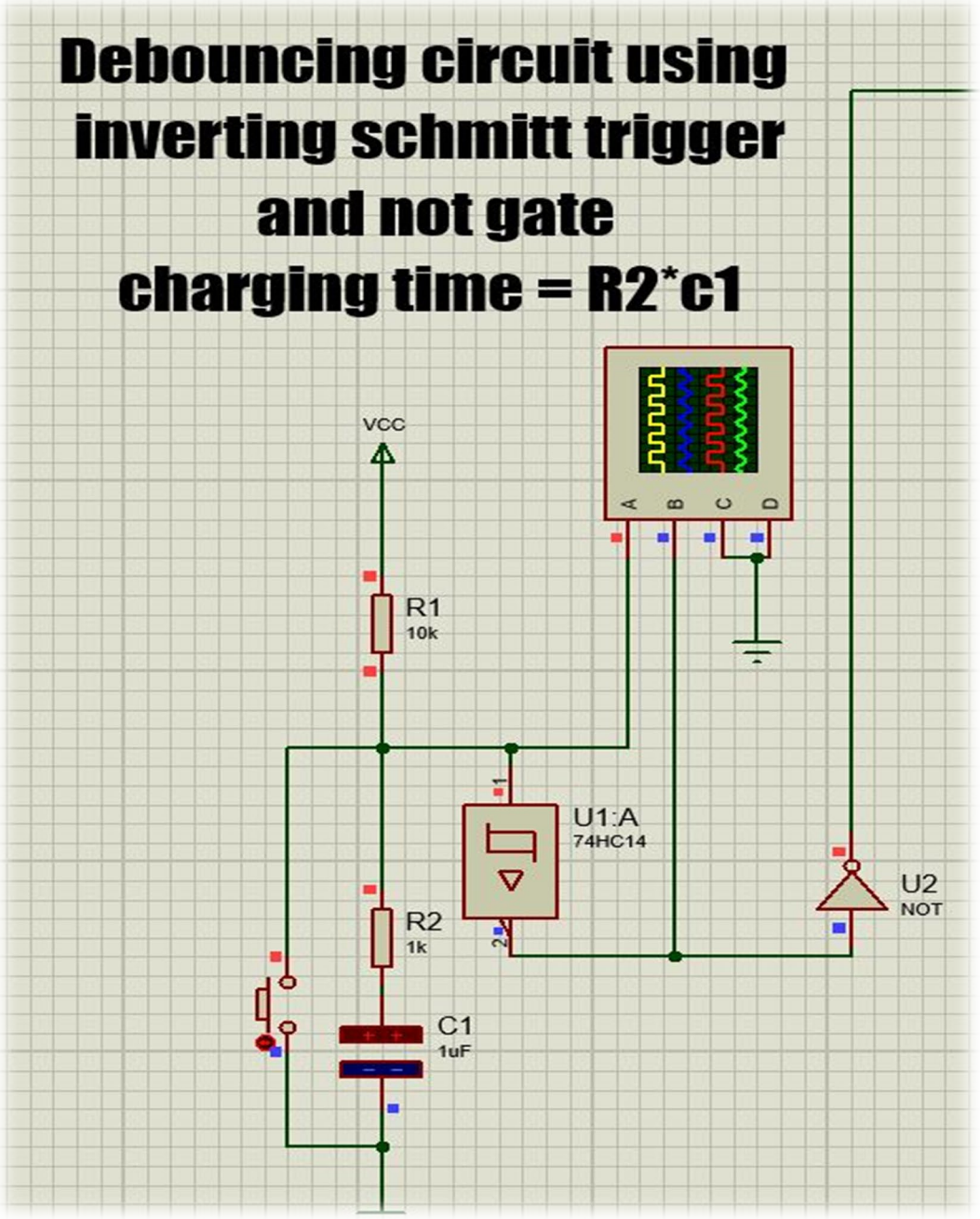


Figure 2

$$time\ delay = 645 - 601 = 45\ msec$$

Hardware implementation using inverting Schmitt trigger second stage.



Simulation schematic