

# EE 205 Circuit Theory

## Lab 8

### 555 Timer Circuit (Oscillator)

The aim of this lab is to analyze 555 timer circuit in order to obtain a sine wave generator.

#### 555 timer sine wave generator circuit:

Consider the example circuit given in Fig.1.

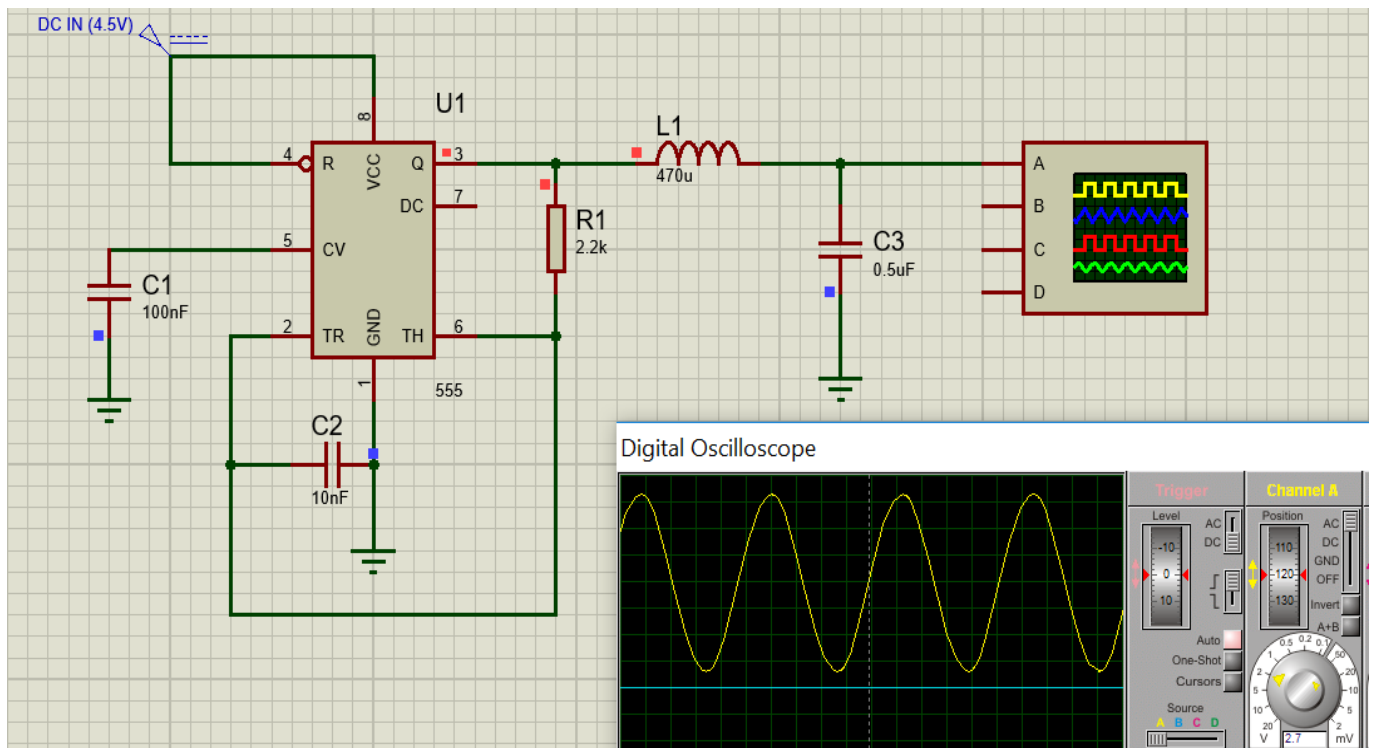


Fig.1. 555 Timer circuit (Sine wave generator).

Suppose that the resonance frequency  $f_c = 10 \text{ kHz}$  is desired. Then, let  $L1 = 470\mu\text{H}$  gives  $C3 = 0.5 \mu\text{F}$ .

Since

$$f_r = \frac{1}{2\pi\sqrt{LC}}$$

Procedure:

1. Implement the circuit in Fig.1. in Proteus.
2. Connect an oscilloscope at the output.
3. Run the simulation and observe the amplitude and frequency of the output voltage signal.
4. What changes when you change the DC source voltage ?
5. Can you make an oscillator at 10 MHz ? or 100 MHz ?