

# ME 333 Homework 6

Marshall Johnson

February 15, 2022

## Chapter 24 LED Project

### 24.1.2) Choose $R$

$10\text{k}\Omega$

### 24.2.1) PWM Calculation

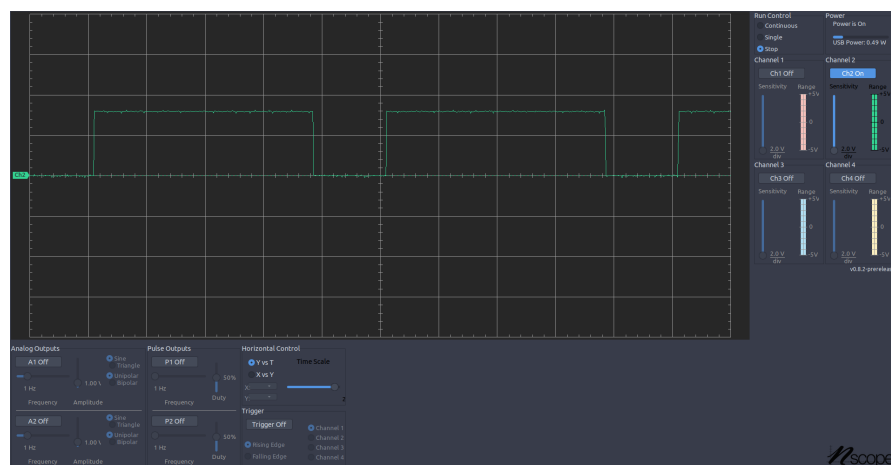
PR3 should be 3999.

$$50000 = (P + 1) * 1 * 12.5\text{ns}$$
$$\therefore P = 3999$$

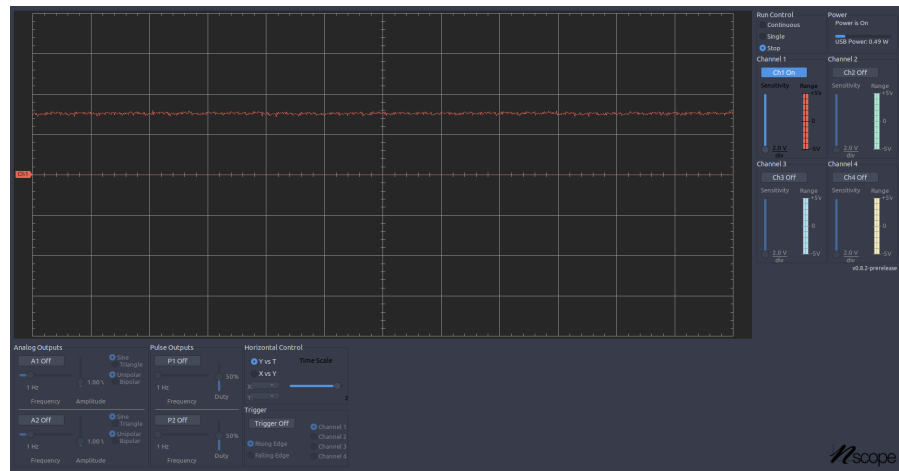
### 24.2.2) PWM Program

Screenshot files with description:

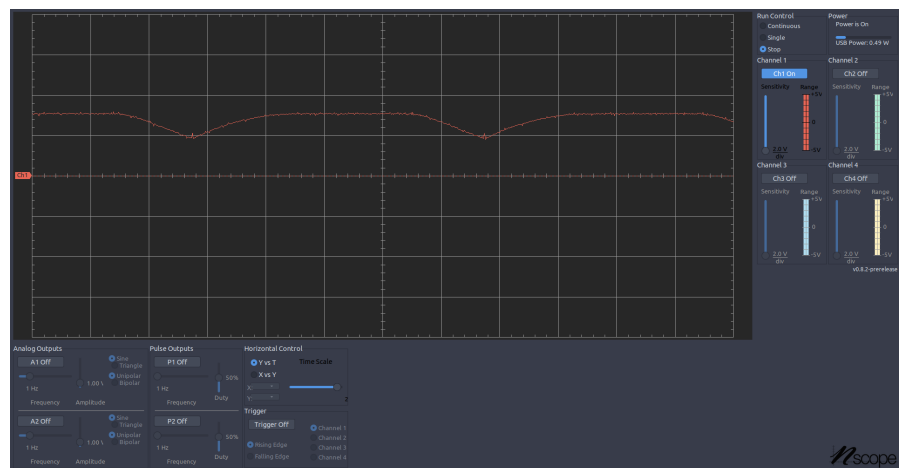
(a) OC1\_waveform.png: the OC1 waveform.



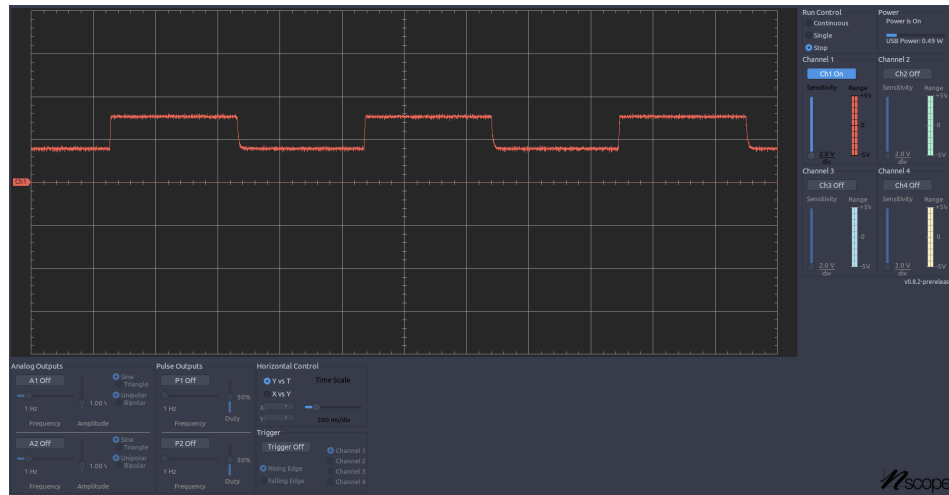
(b) Vout.png: sensor voltage with capacitor in circuit



(c) Vout\_nocap.png: sensor voltage without capacitor in circuit



24.3.1) Get a screenshot of your oscilloscope trace of V out showing 2-4 periods of what should be an approximately square-wave sensor reading.



24.3.2) Turn in your code.

See pwm.c