

Homework 15

Done by: Devdhar Kodiatar

24.1.2:

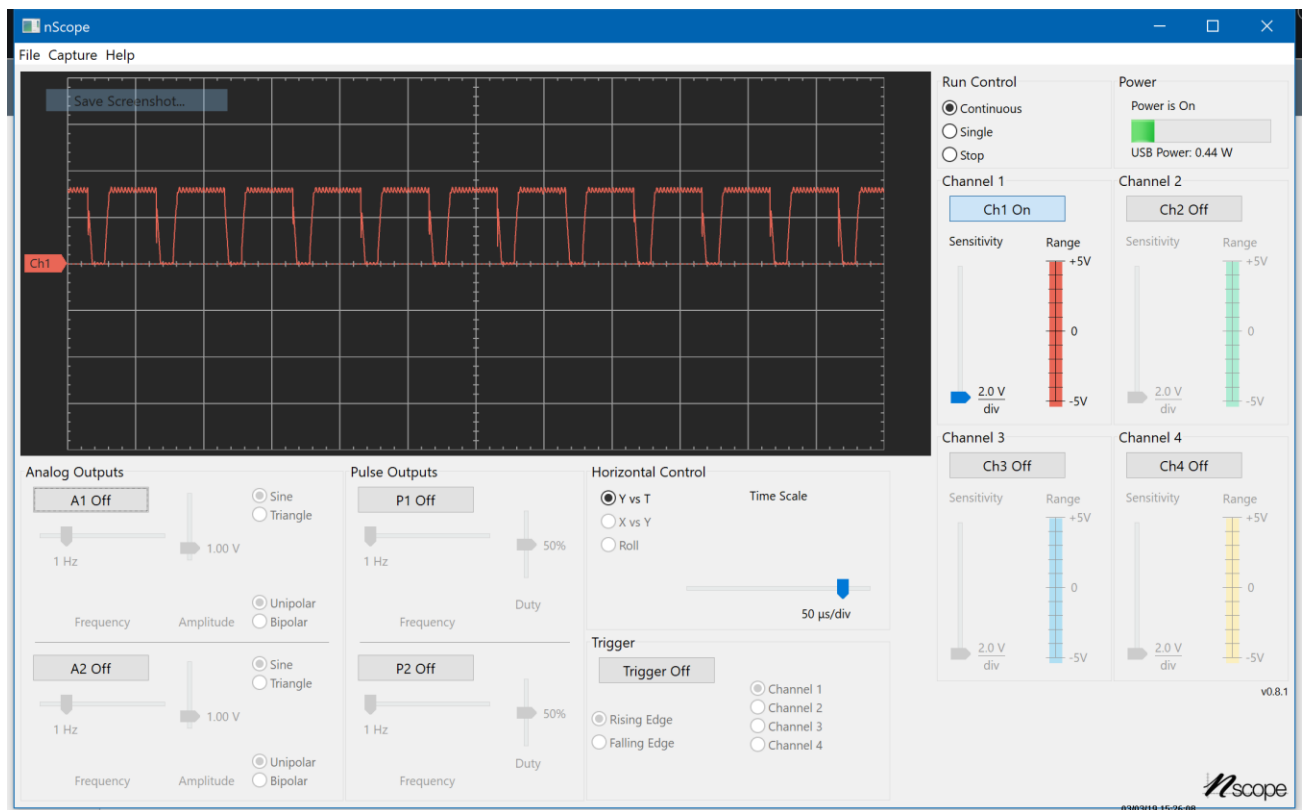
R value is chosen to be 10 kilo ohms.

24.2.1:

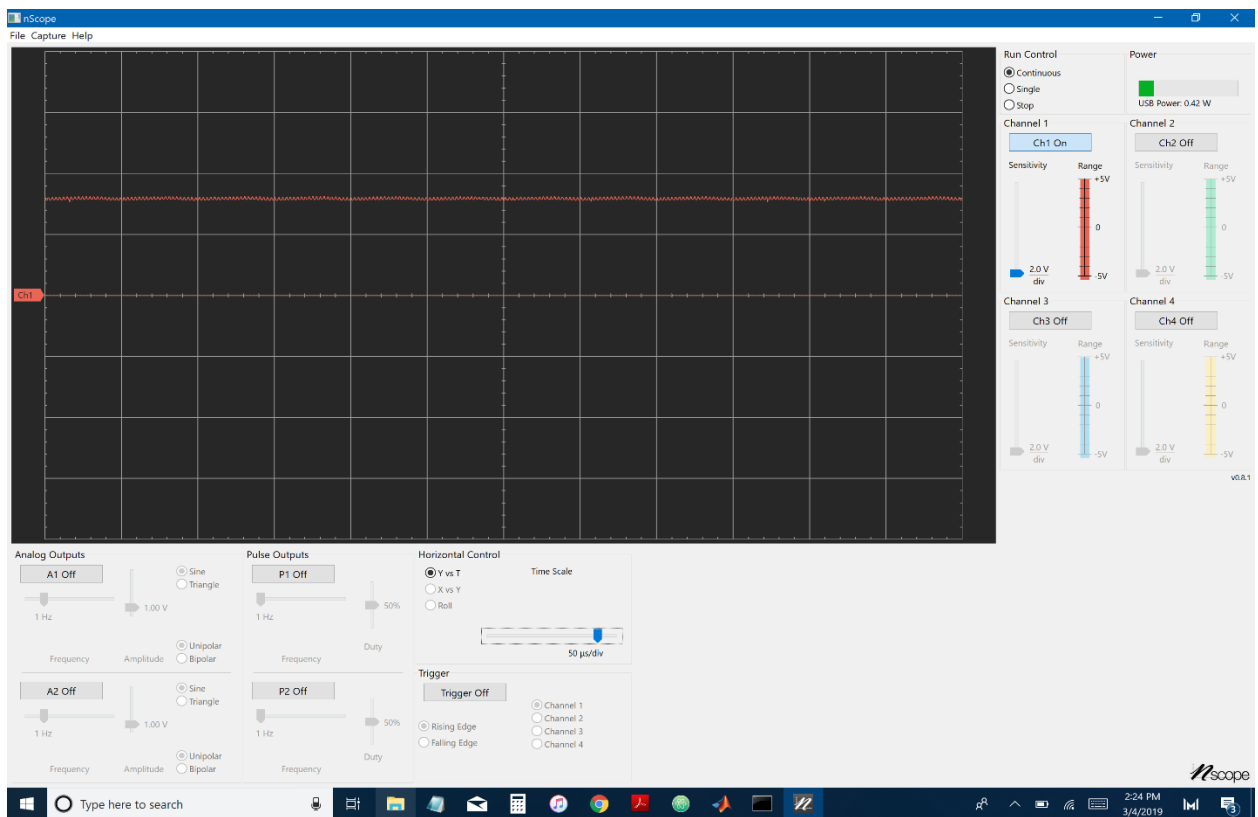
$$\frac{1}{20000} = (PR3 + 1) \times N \times 12.5 \text{ ns}$$

Therefore, $PR3 = 3999$

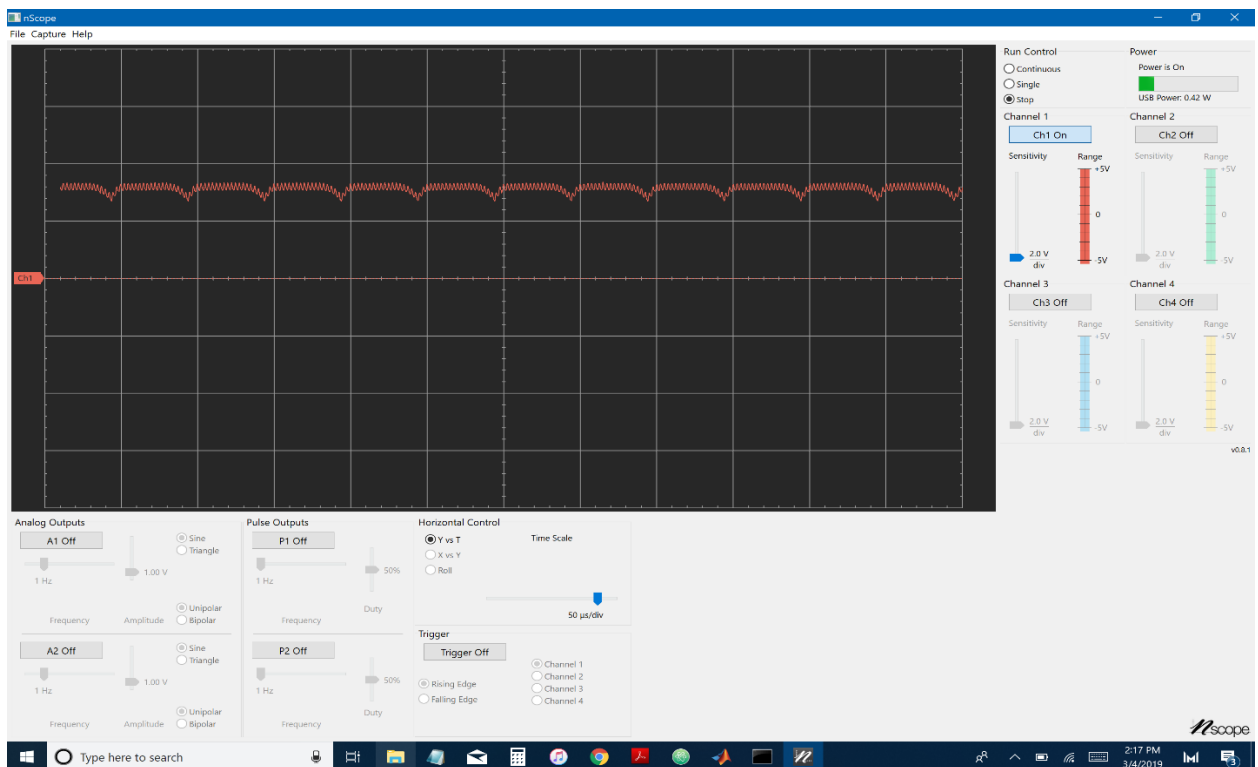
24.2.2 (a): OC1 waveform



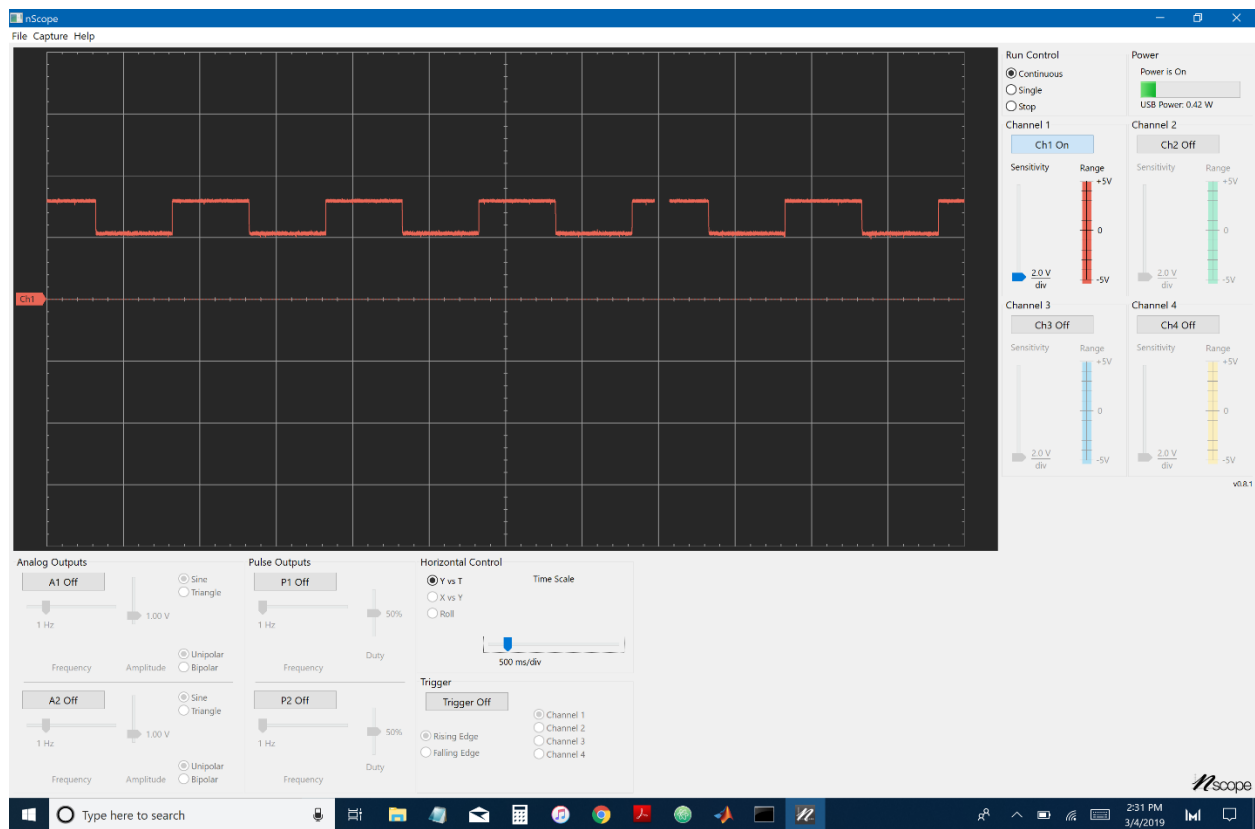
24.2.2 (b): Sensor voltage V_{out}



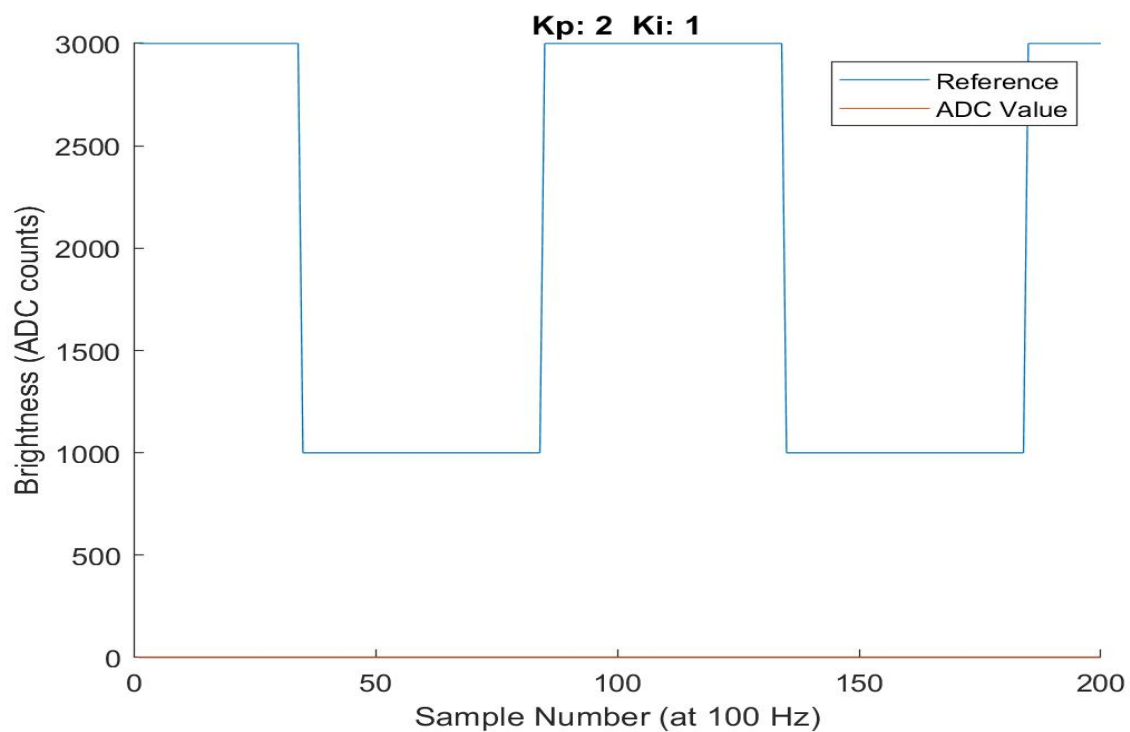
24.2.2 (c): Sensor voltage V_{out} (without 1μ F capacitor)



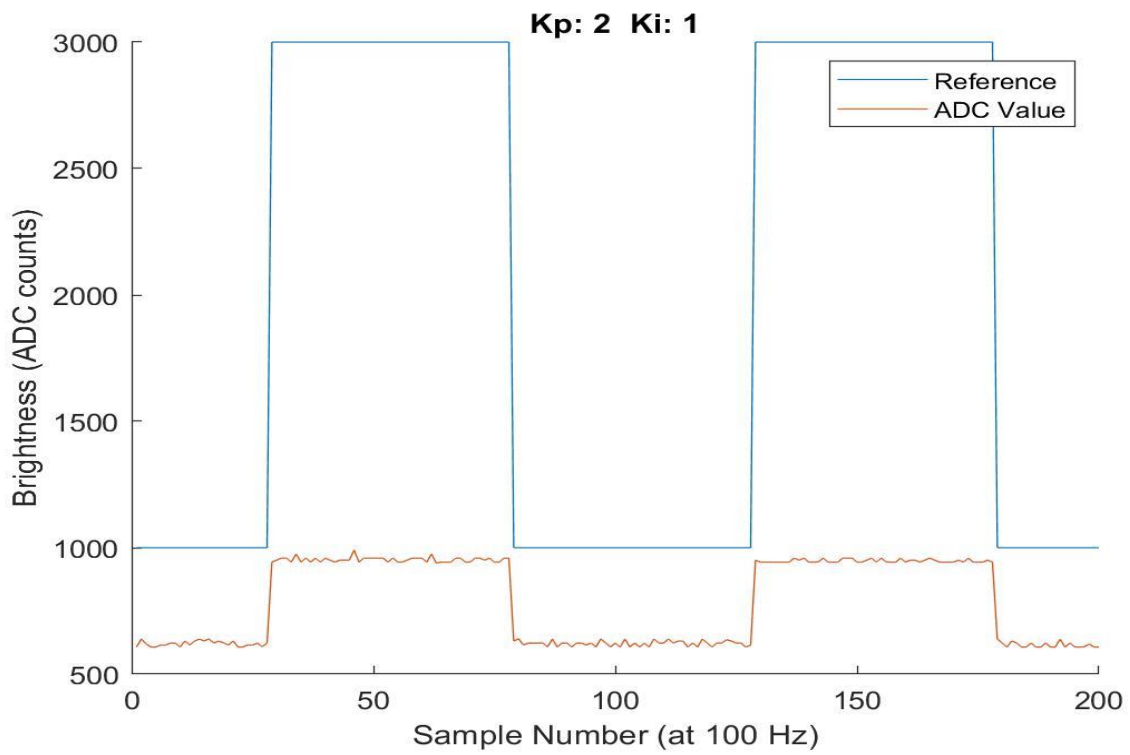
24.3.1: Sensor Voltage Vout with ISR



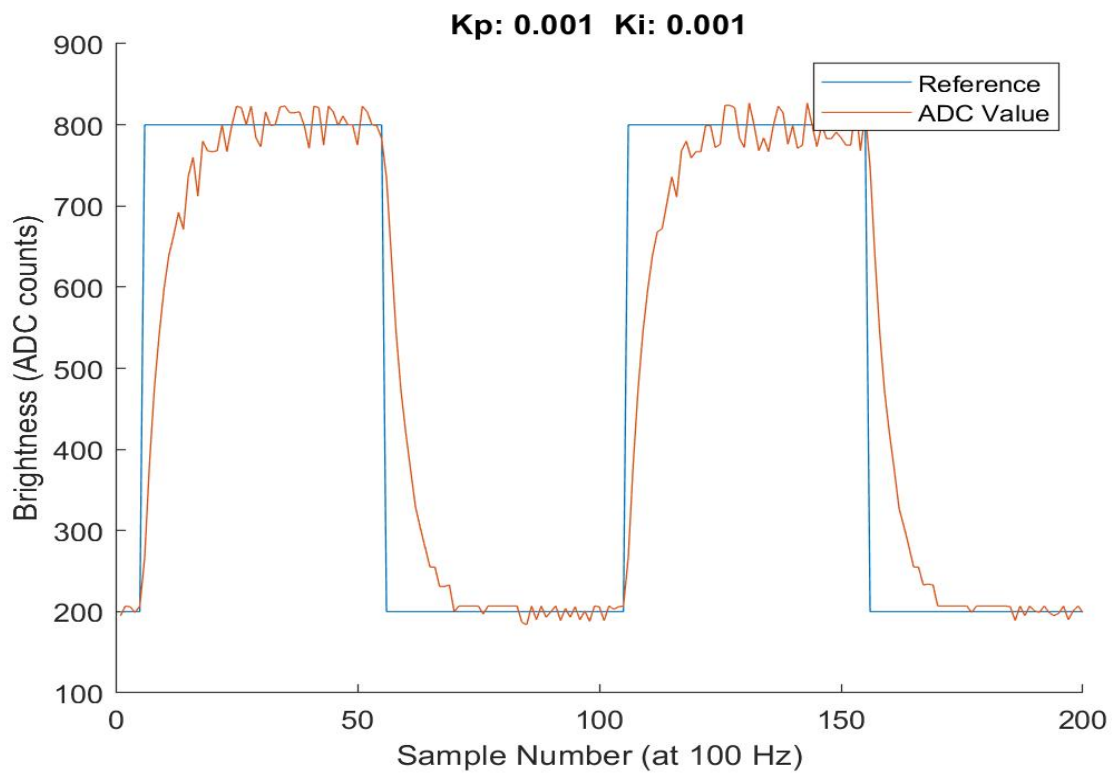
24.5: MATLAB communication with the PIC32



24.7: Reading the ADC value



24.8: Normal tuned response



24.8: Best tuning

