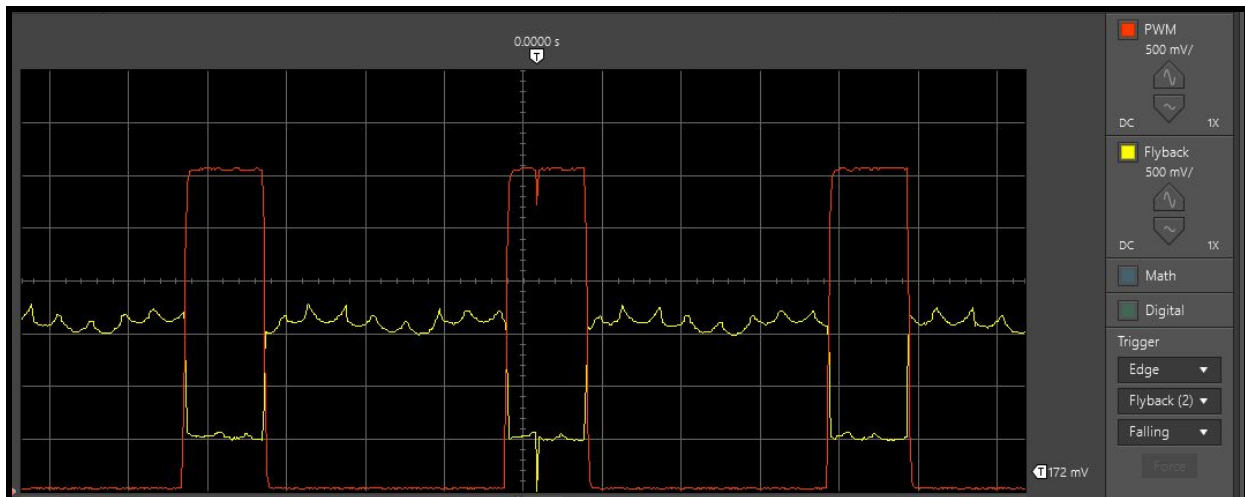


Lab 5 Writeup

Part 1



PWM vs **FLYBACK** with the flyback diode

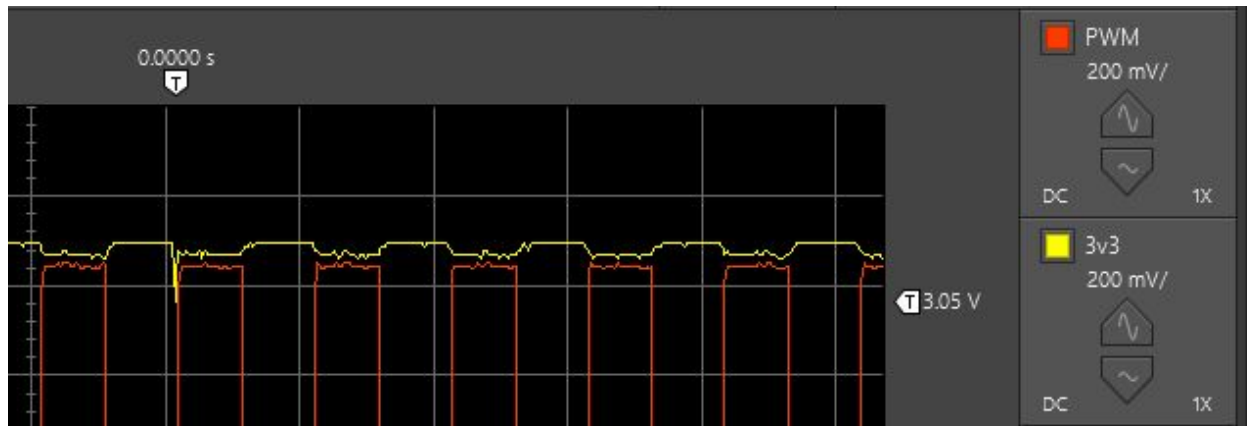


PWM vs **FLYBACK** without the flyback diode

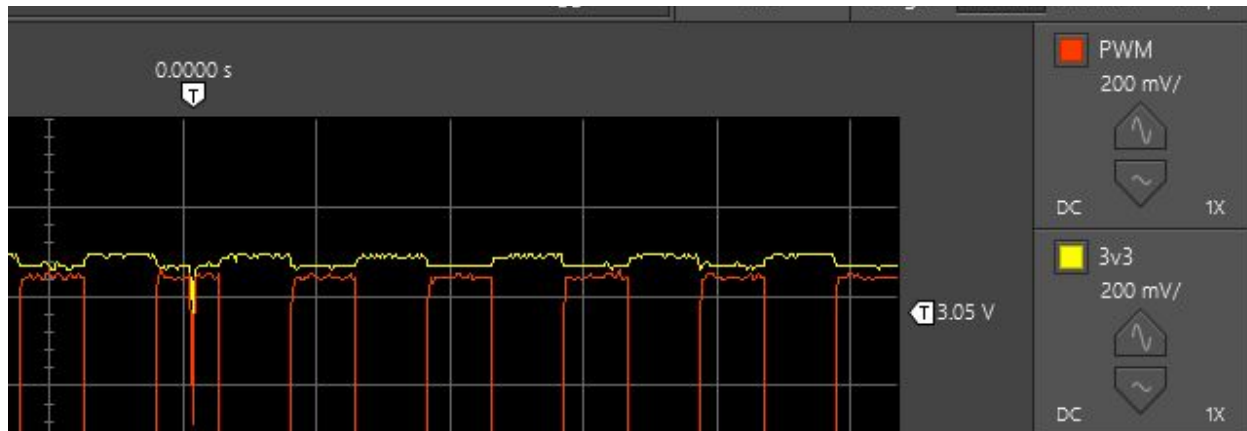
In both configurations, the flyback voltage would settle at around 0.5V while the PWM signal was high. Occasionally, the voltage would drop to approximately 0 momentarily. While the PWM signal was low, the flyback voltage would hover around approximately 1.5V.

Unfortunately, we could not control the duty cycle between these two screen shots. We could only capture the flyback rail dropping to 0V while varying the PWM signal's duty cycle.

Part 2



PWM vs **VCC** with the decoupling cap



PWM vs **VCC** without the decoupling cap

In both cases, the lowest VCC would drop was around 3.05V while the battery was at approximately 4V.

Part 3/4



Unfiltered PWM vs **FLYBACK** with the flyback diode



Filtered PWM vs **FLYBACK** with the flyback diode

The filtered PWM signal has a slightly smoother rise and fall slope compared to the unfiltered signal. The flyback signal seems to be a scaled mirror of the PWM signal.

The voltage spike observed with the unfiltered PWM occurred periodically.