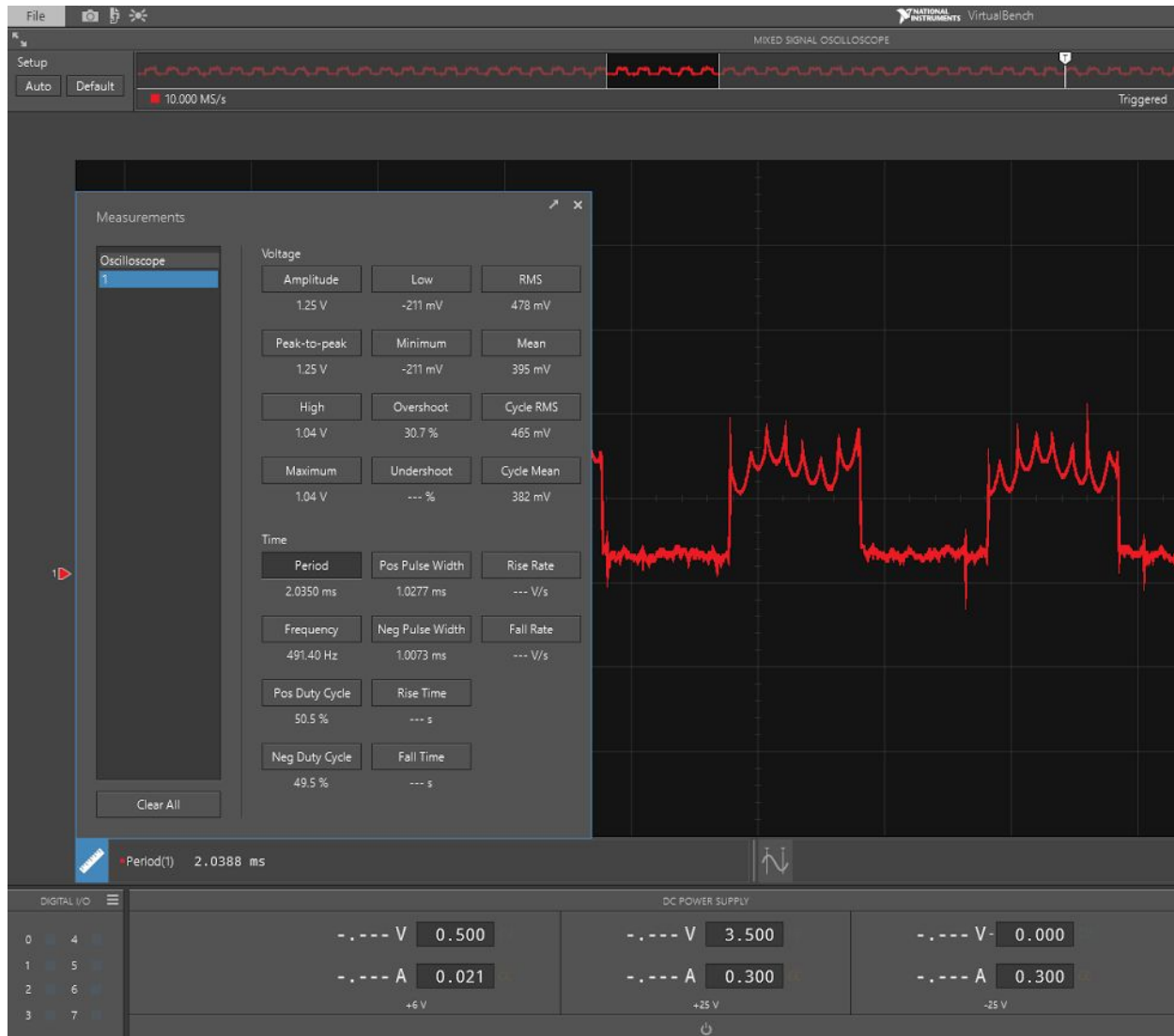


Alexander Orr A11166916

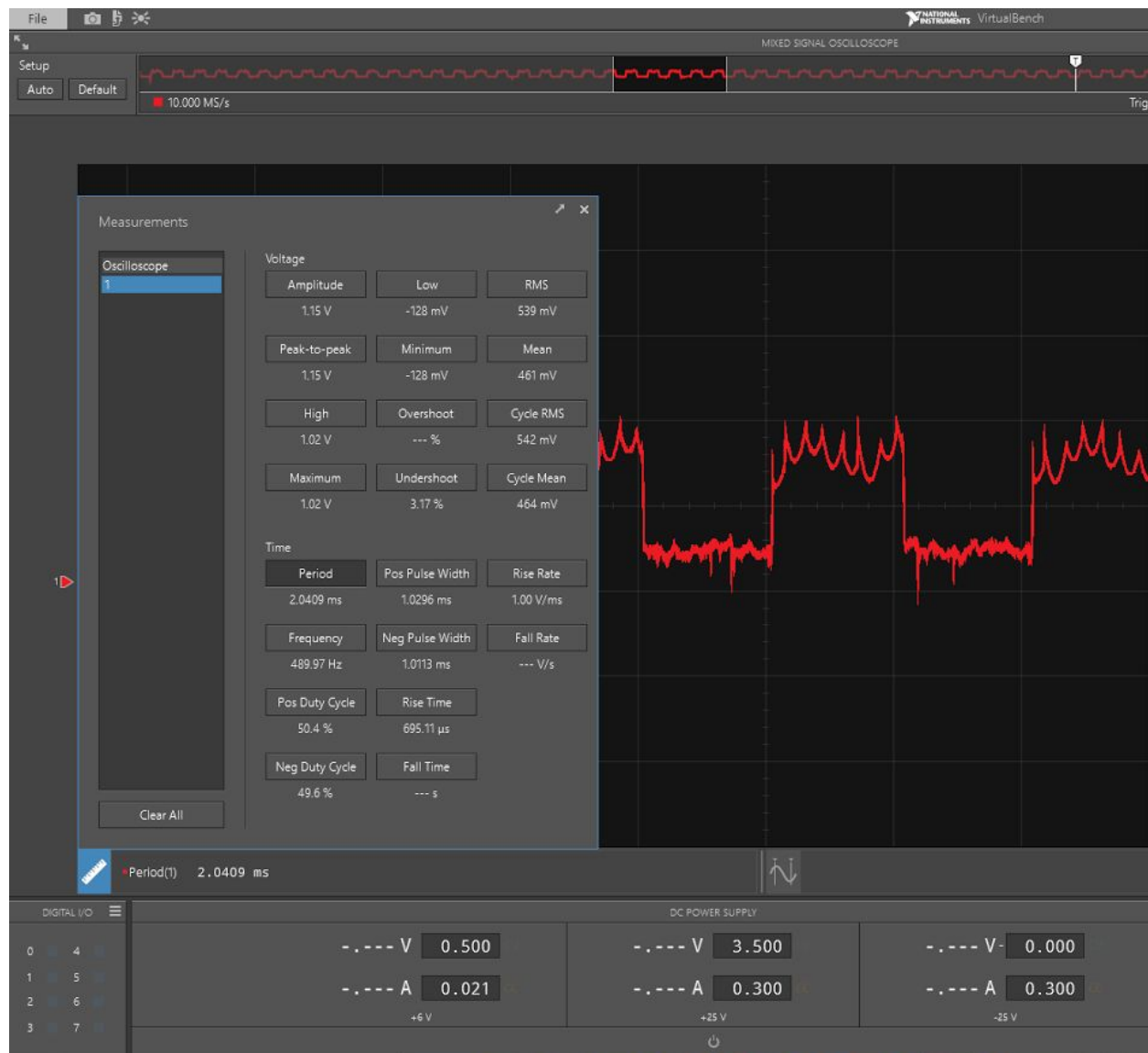
Joshua Crook A12147973

Lab 5 writeup

1. Peak to peak:
With flyback diode - 1.25V



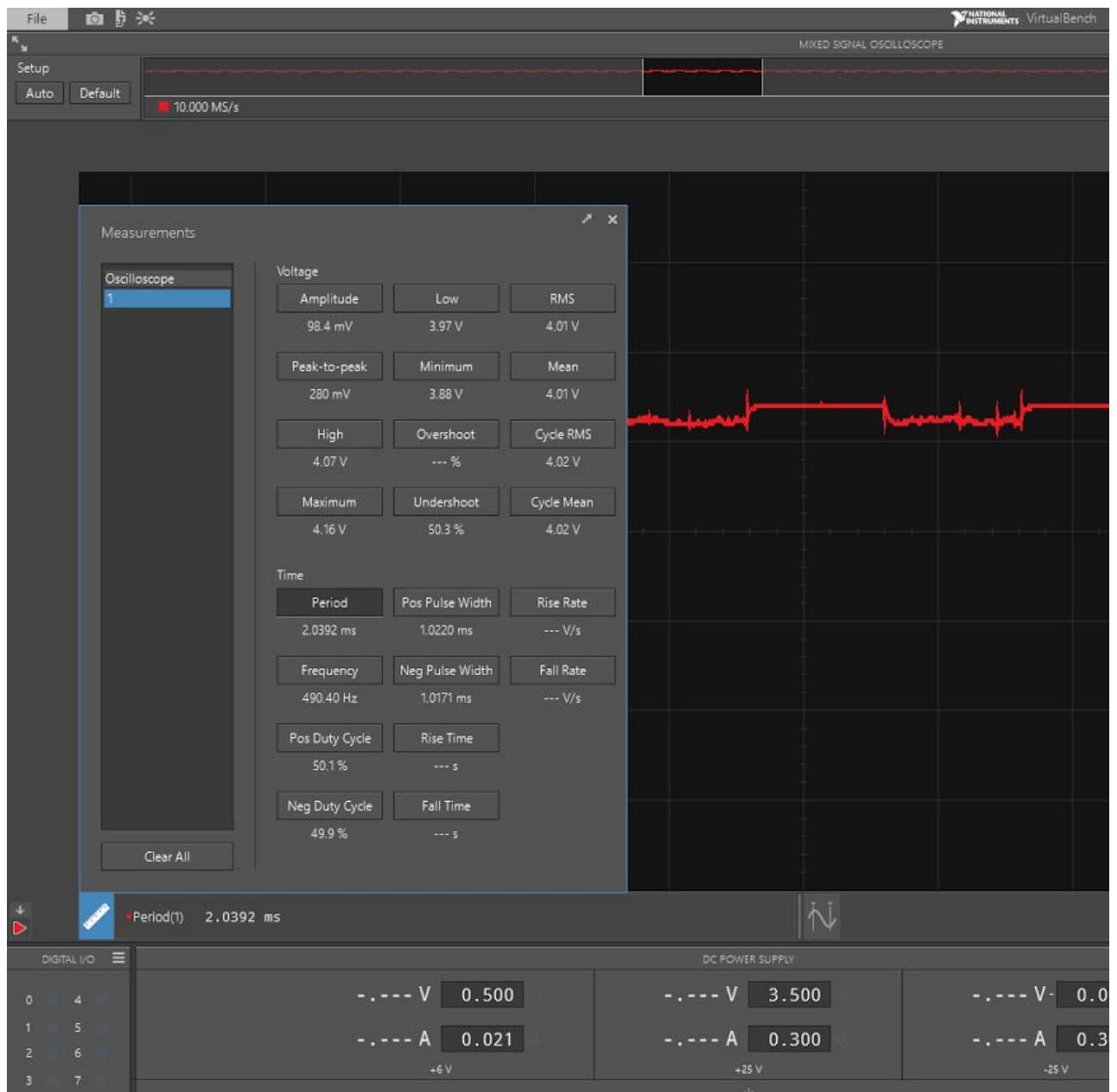
Without flyback diode - 1.15V



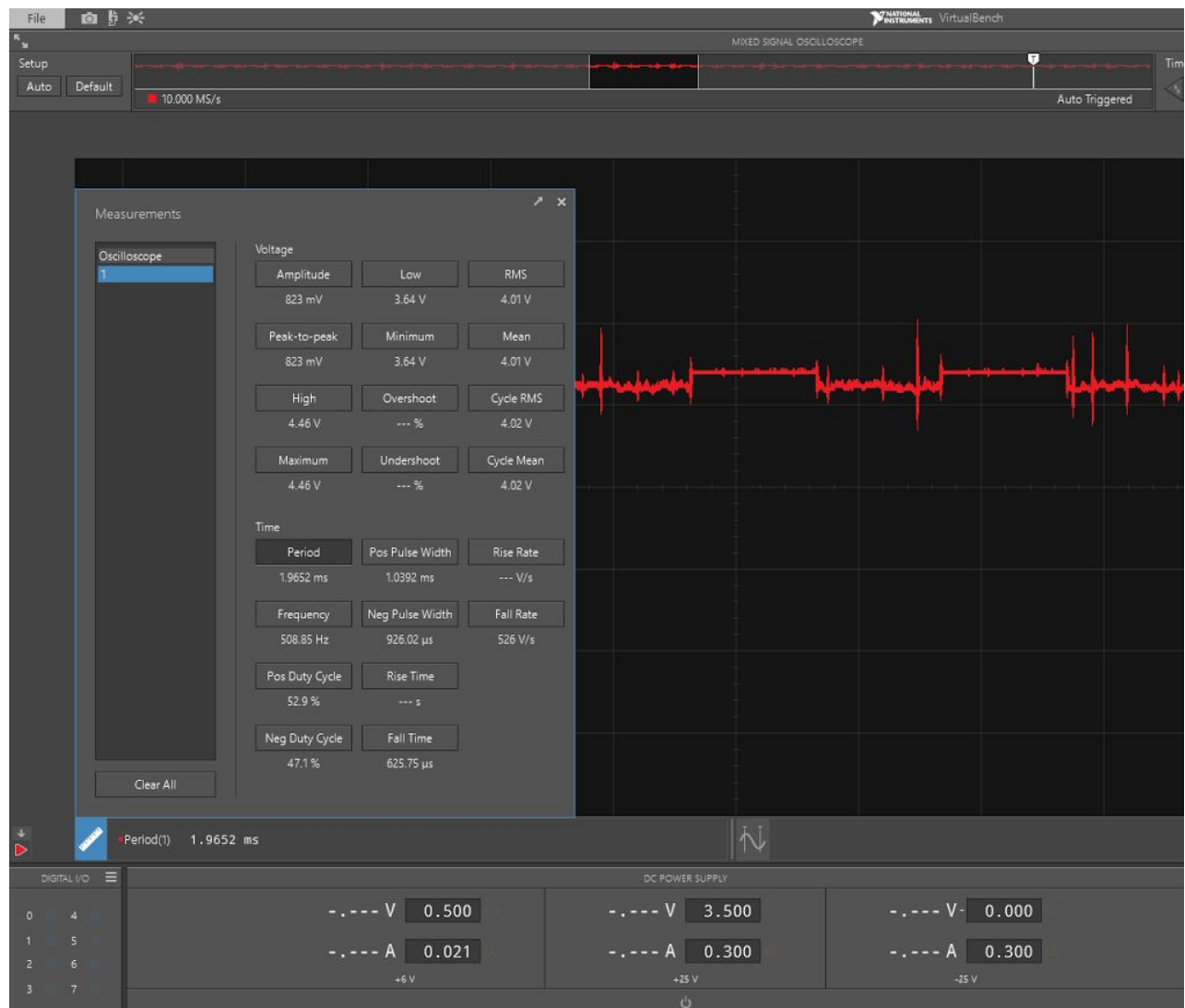
Regardless if the flyback diode is in or not, the peak to peak measurement of the signal remains relatively the same as it runs. Thus the diode is not interfering with the signal when it is plugged in.

2.

With decoupling capacitor - minimum voltage: 3.88V



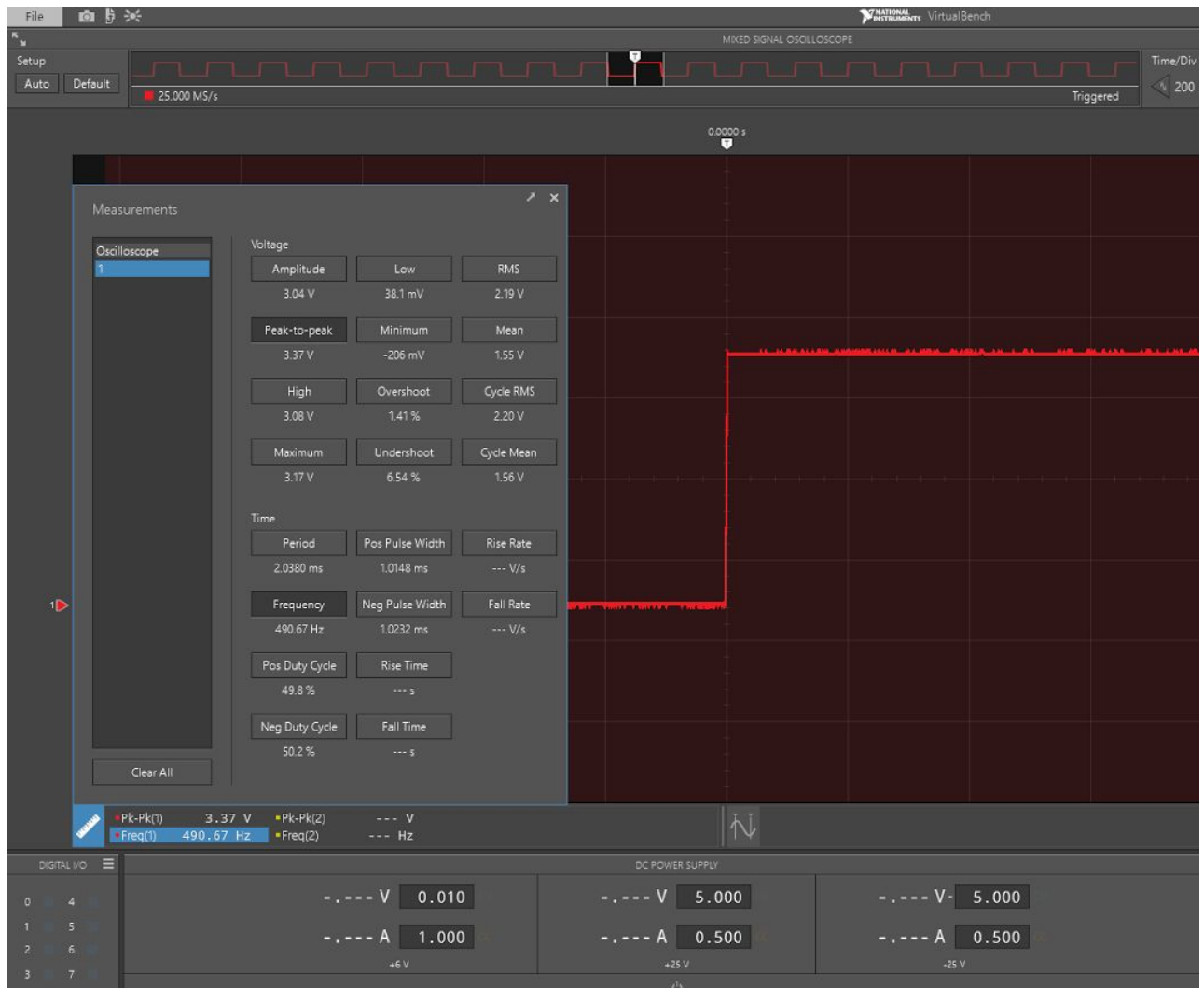
Without decoupling capacitor - minimum voltage: 3.64V



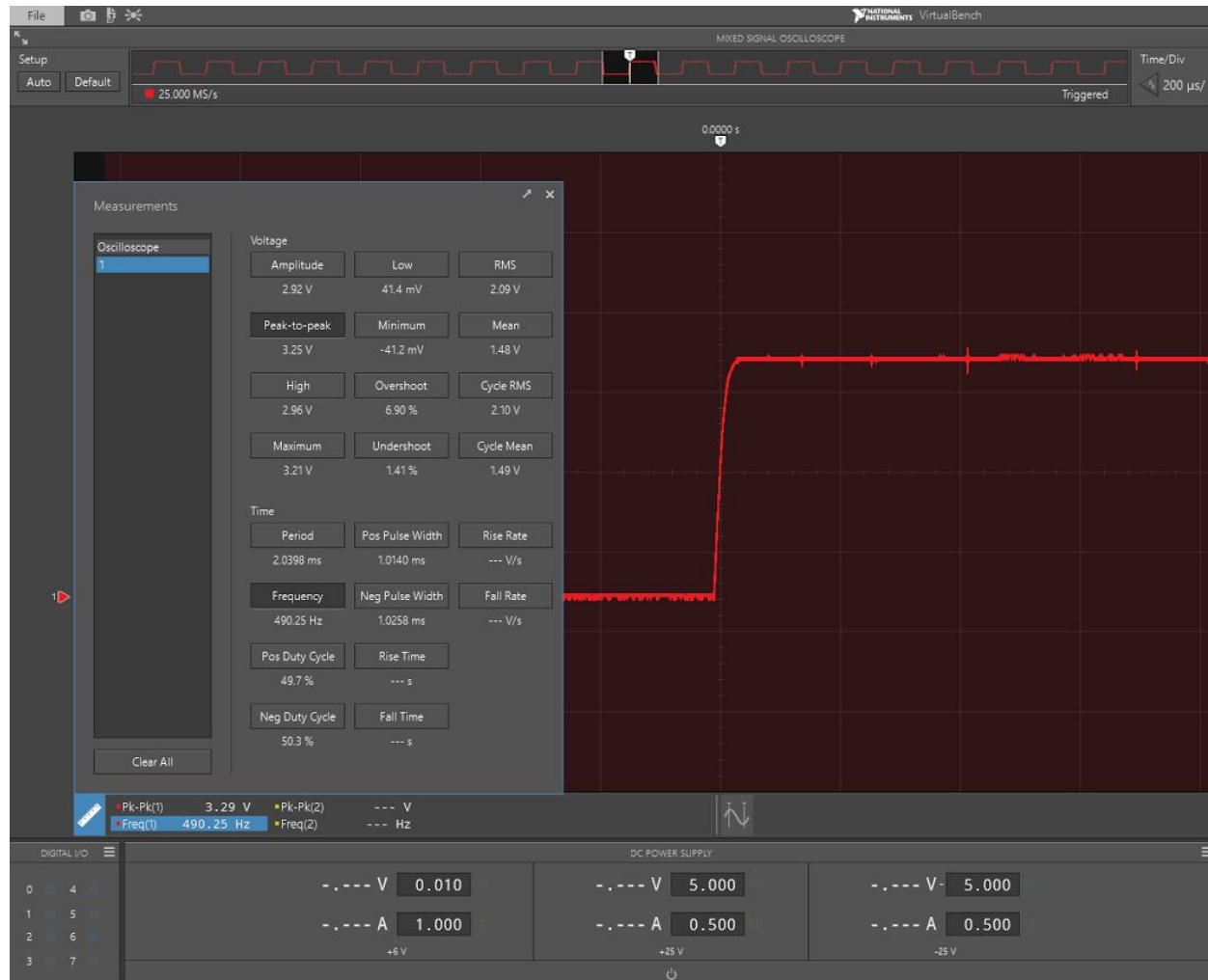
Upon observation we could see that without the decoupling capacitor the signal hit a lower minimum voltage due to there being more noise and signal volatility.

3.

PWM line

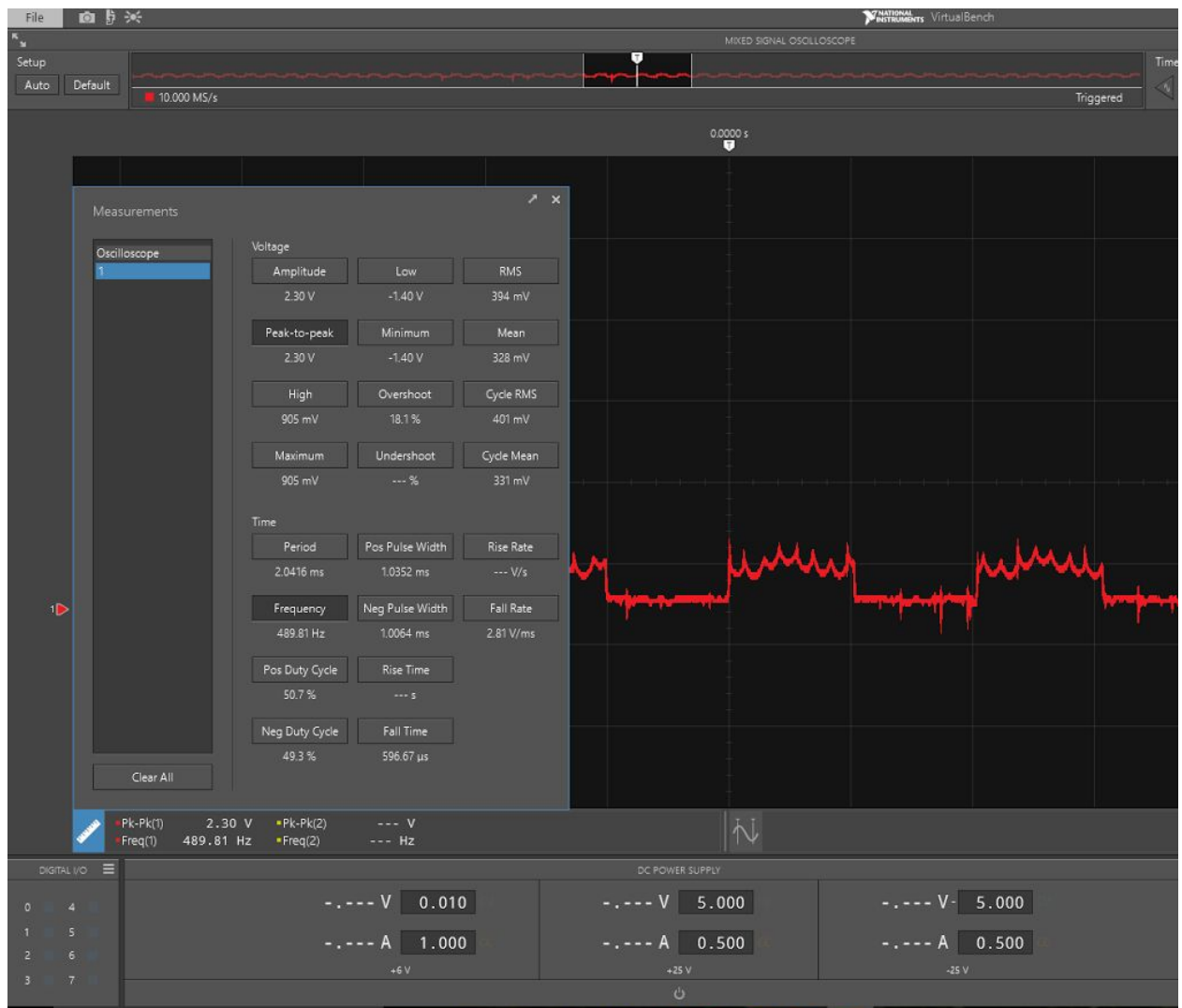


Filtered Line

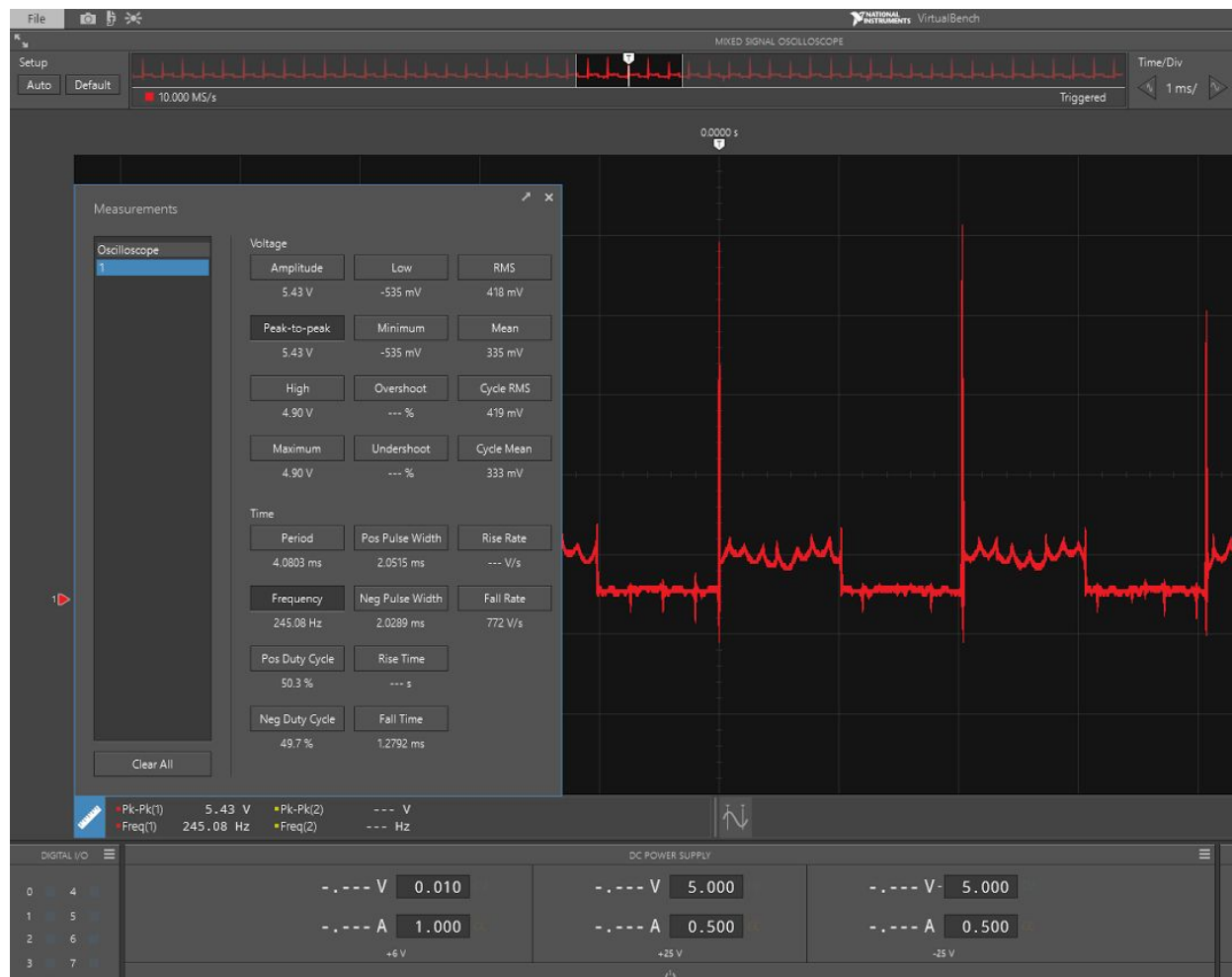


The filter seems to only have a slight effect on the signal. There is a curve in the signal but it is very subtle and does not quite reach shark tooth formation.

4. With filter



Without filter



The filter seems to have a clear effect on the signal by even out the waveform and getting rid of any large spikes.