

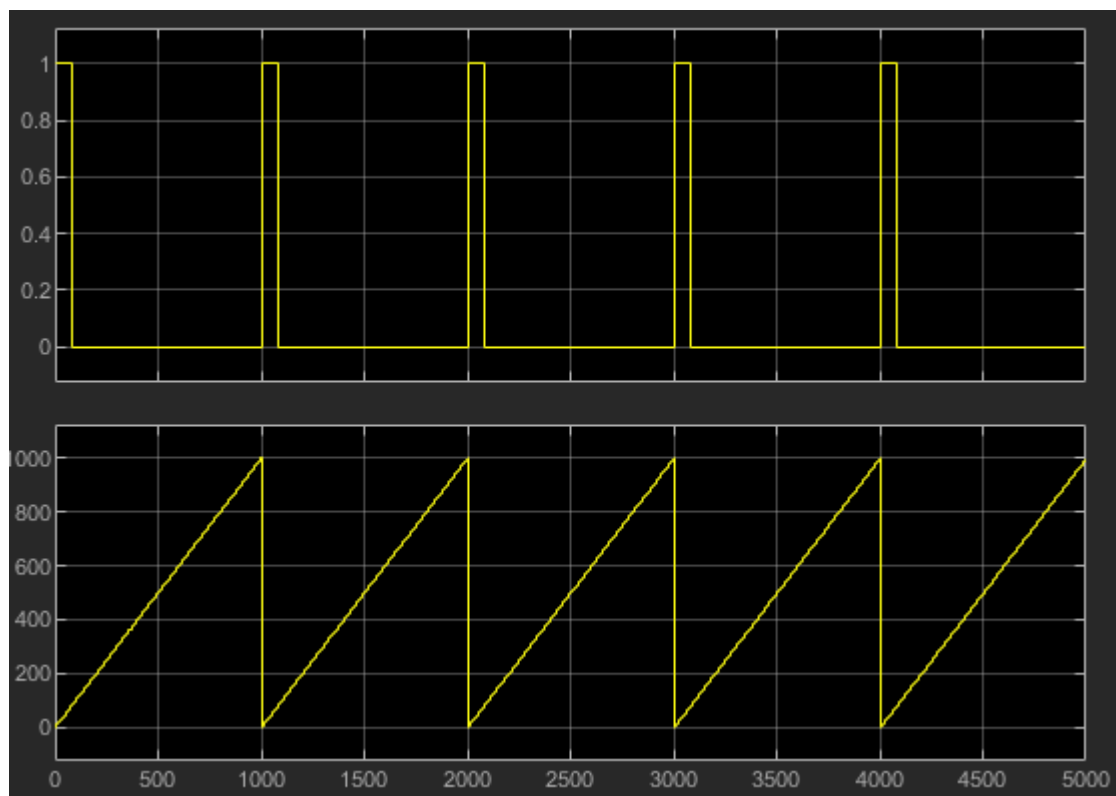
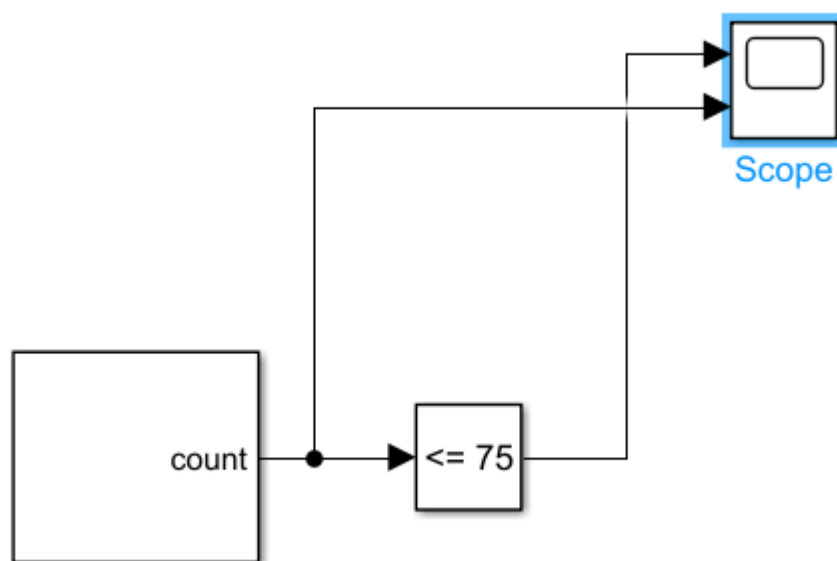
2160 Lab 10 Report

Patrick Taylor and James Wachala

Section Number: 1

April 3rd, 2019

Prelab



Here we see the signal on for only part of the cycle, that part being the 1.5ms it's on.

Assignment 1

do HLS
16.2

configurable_pwm/ConfigurablePWM * - Simulink academic use

File Edit View Display Diagram Simulation Analysis Code

ConfigurablePWM

configurable_pwm ConfigurablePWM

count
Full Pulse

1 Enable
2 Direction
HDL Counter1

≤
Relational Operator

1
PWM

Ready

DDFs
de-DE
DiagSvcs
Dism
downlevel
drivers
DriverStore

Details

Block Parameters: HDL Counter1

HDL Counter (mask) (link)

Counter for HDL code generation.

Parameters

Counter type: Count limited

Initial value: 30

Step value: 6

Count to value: 120

Count from: Initial value

Count from value: 30

☐ Local reset port

☐ Load ports

☒ Count enable port

☒ Count direction port

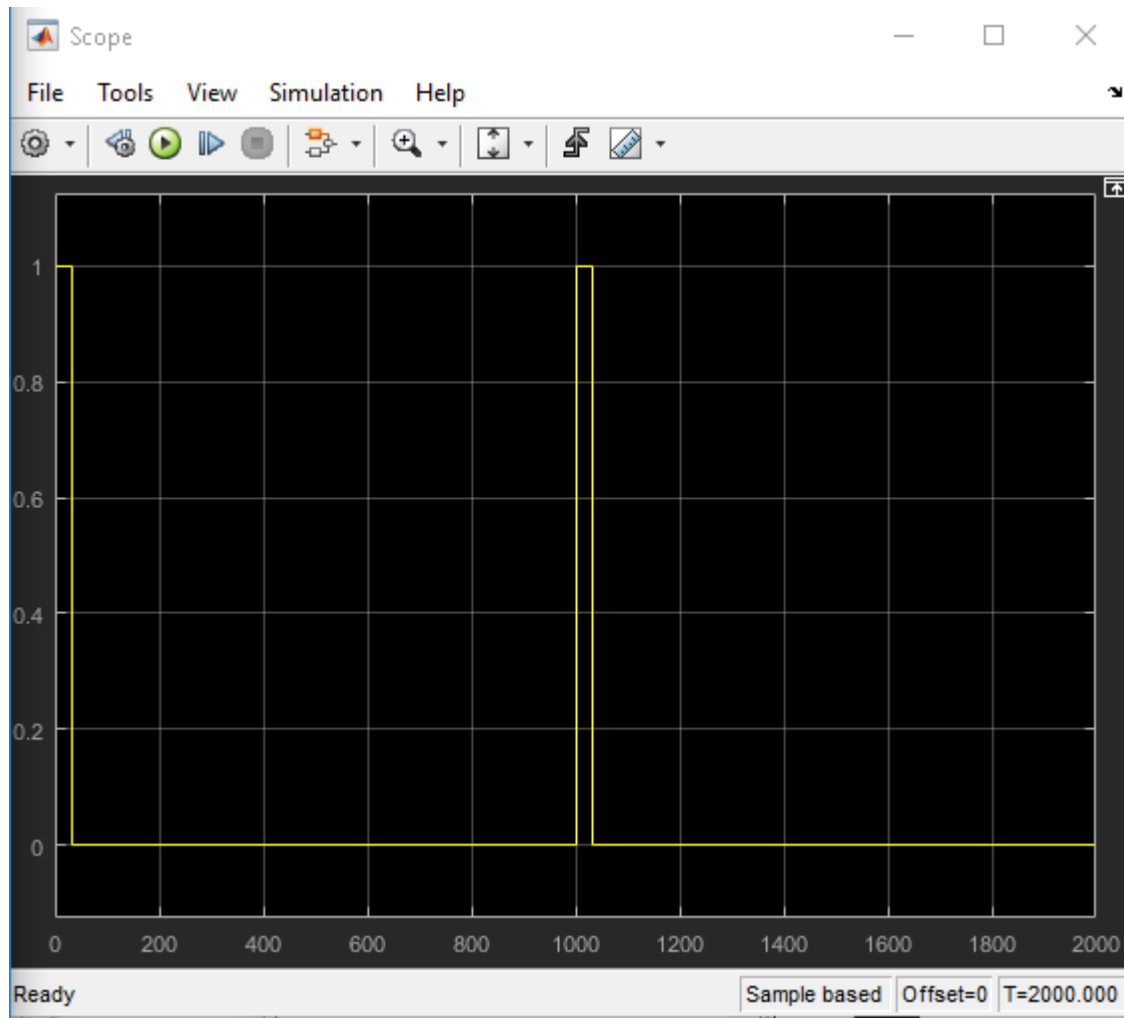
Counter output data is: Unsigned

Word length: 8

Fraction length: 0

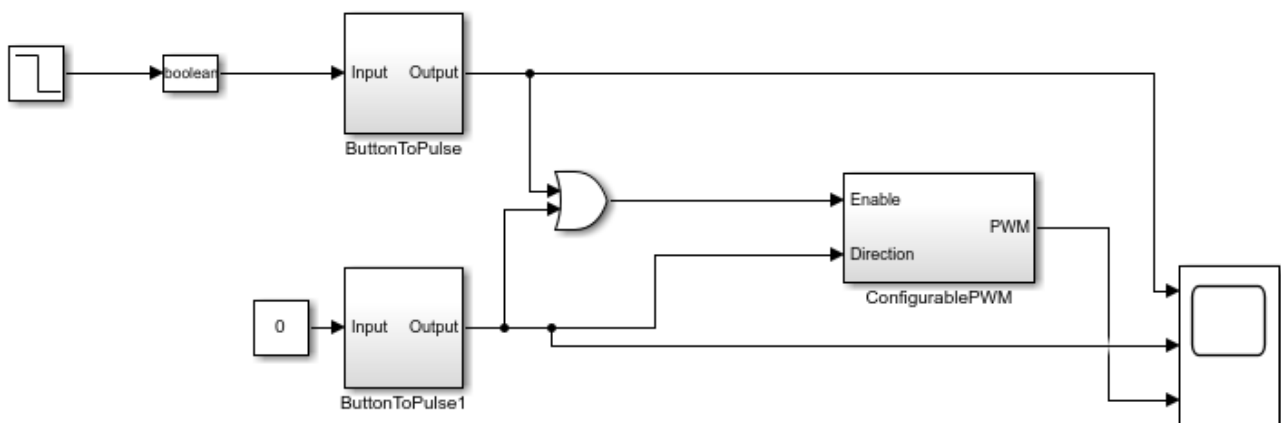
Sample time: 1

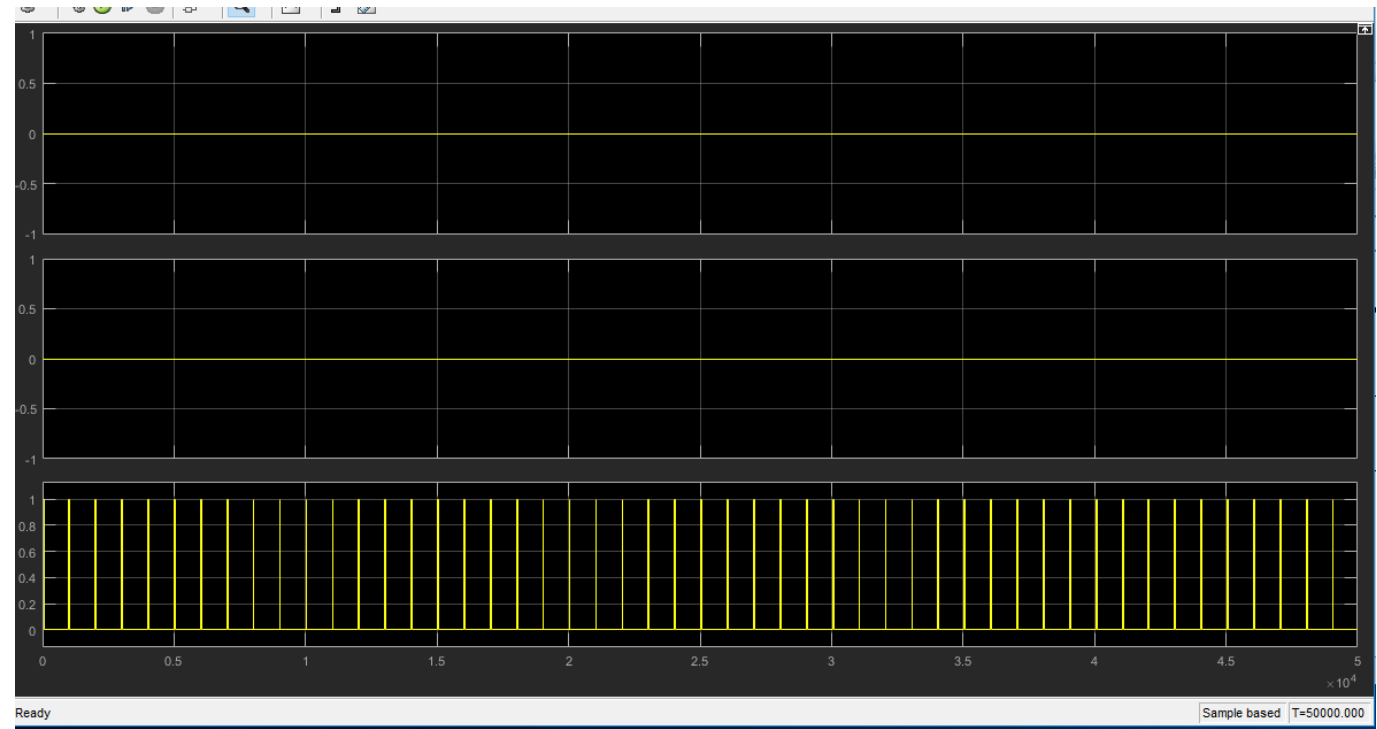
OK Cancel Help Apply



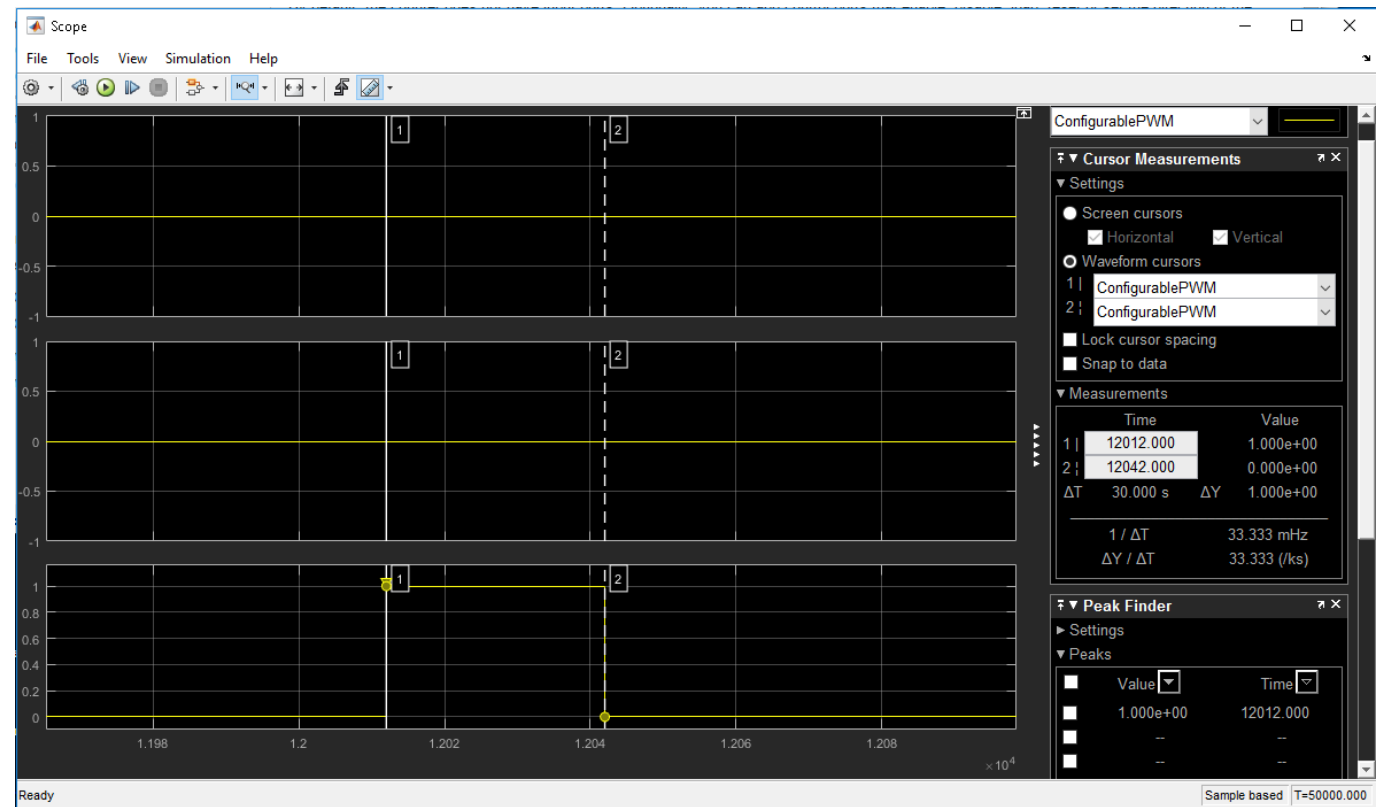
Here, the arm is disabled, so it stays at angle 0 using the pulse width shown.

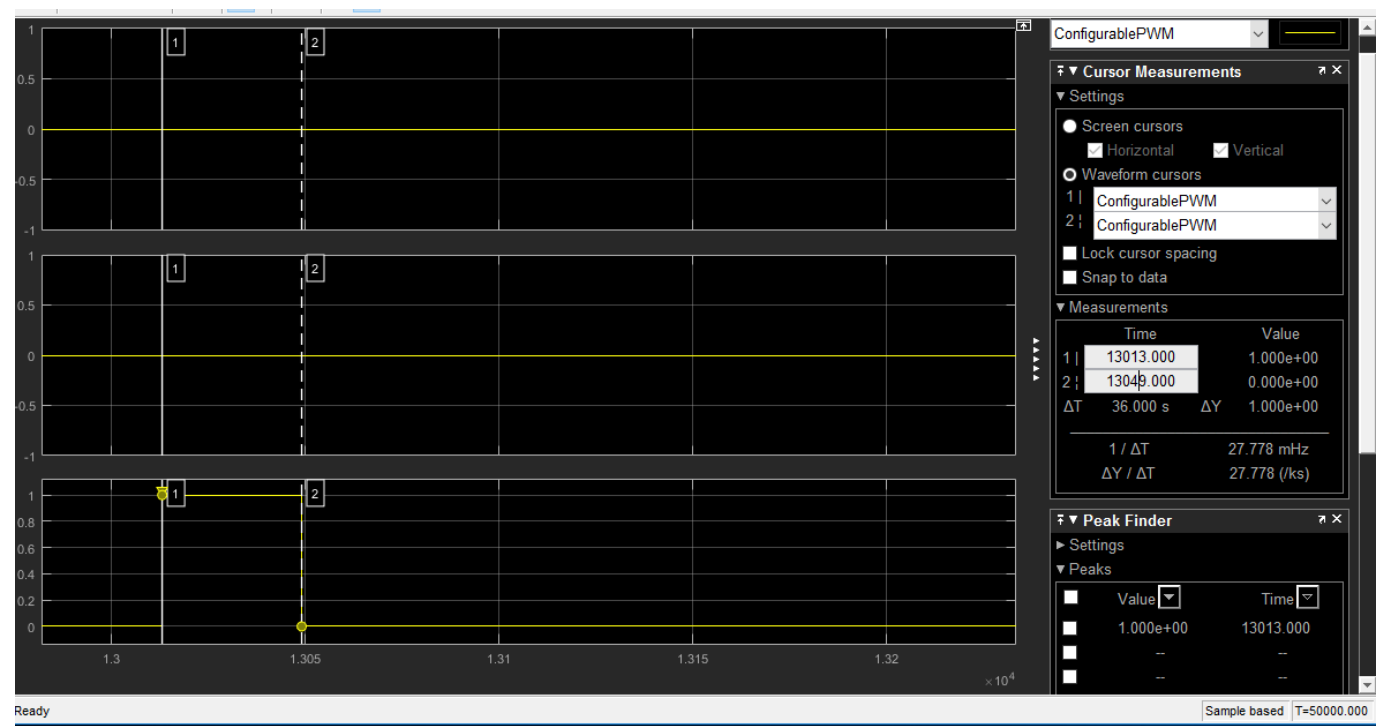
Assignment 2



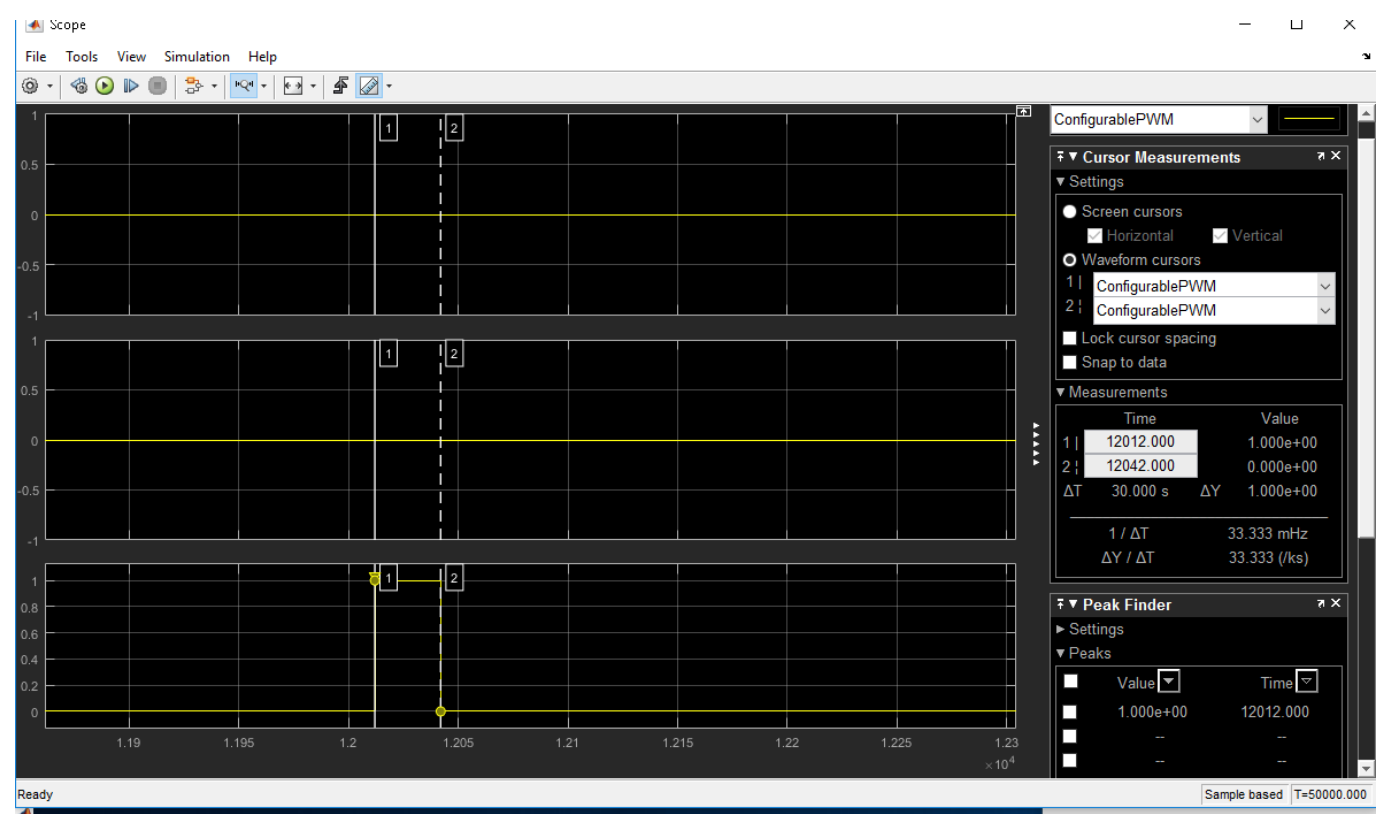


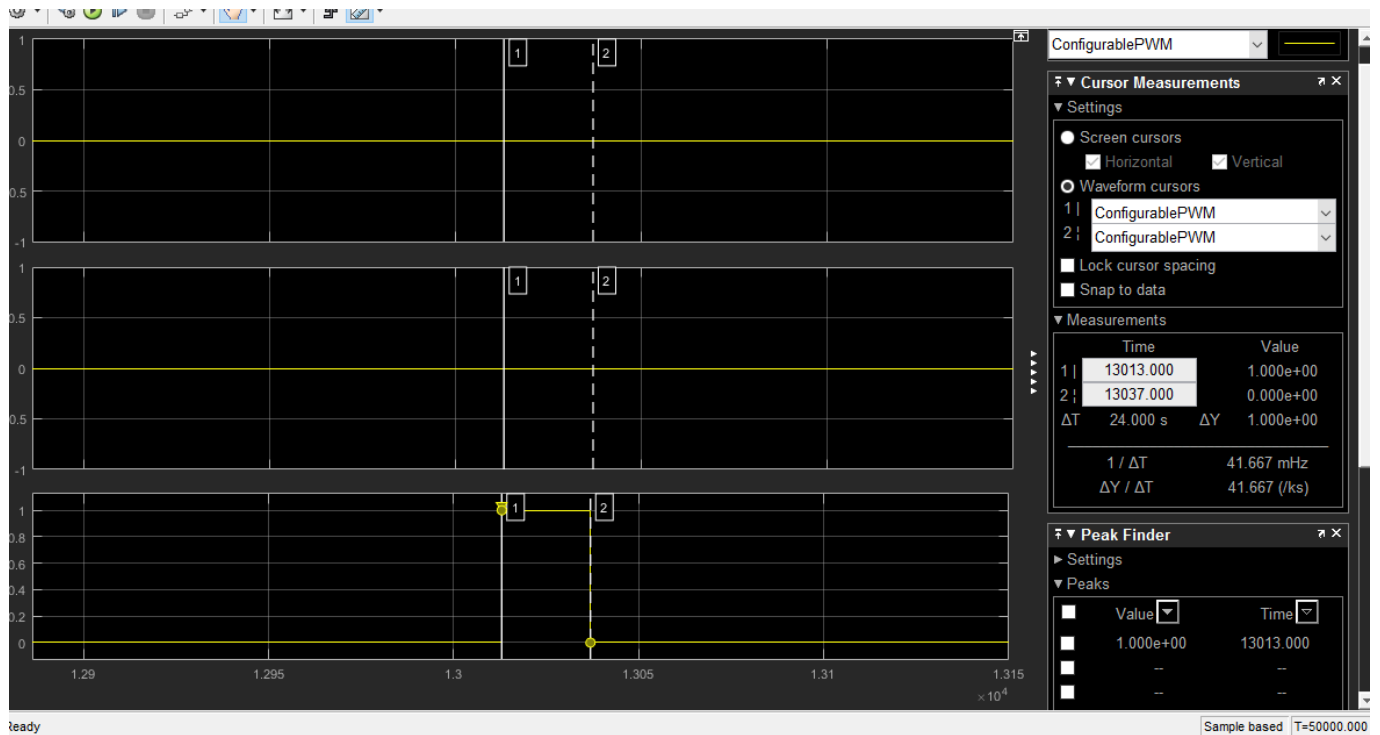
The first two graphs don't show anything as those components are disabled. However, the third graph shows the 'position 0' PWM pulse, being supplied as expected.





First pulse width: 30 time units = .6ms. Second pulse width: 36 time units = .72ms.

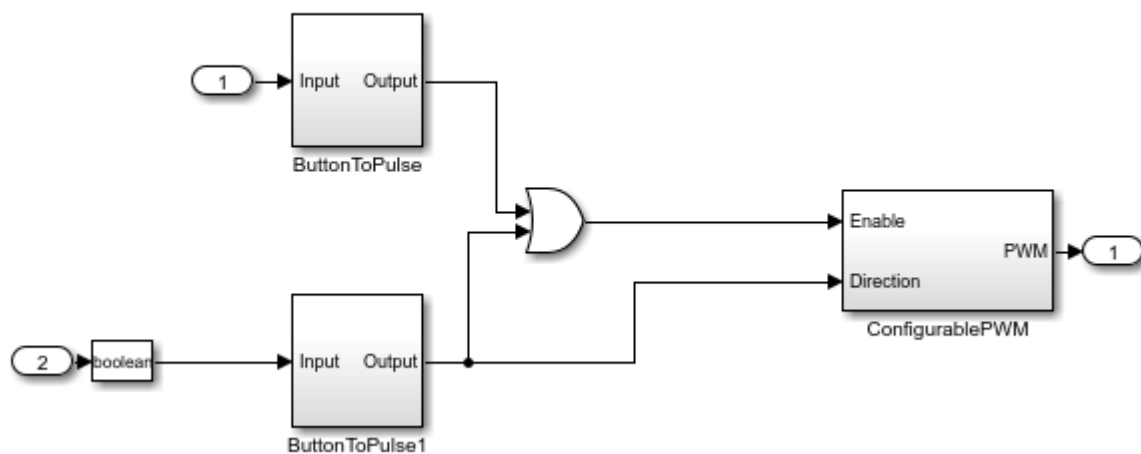




First pulse width: 30 time units = .6ms. Second pulse width: 24 Time units = .48ms.

This result is as expected, as the counter starts at a 30 time unit width, and going down a pulse width increment (6 time units) would bring it to 24 time units. This has no meaning for the robot arm, being out of range, but is as expected for the construction of this circuit.

Assignment 3



Extra Credit

