Calculations:

$f_{wave} = f_{cpu}/[(\text{prescalar of timer})*(\text{steps in timer})*(\text{steps in wave form})]$

Sawtooth high: $f_{sawtooth}$ = 16 million/(64*1*255) = 980.39 Hz

Sawtooth low: $f_{sawtooth}$ = 16 million/(64*255*255) = 3.844 Hz

Triangle high: $f_{triangle}$ = = 16 million/(64*1*510) = 490.16 Hz

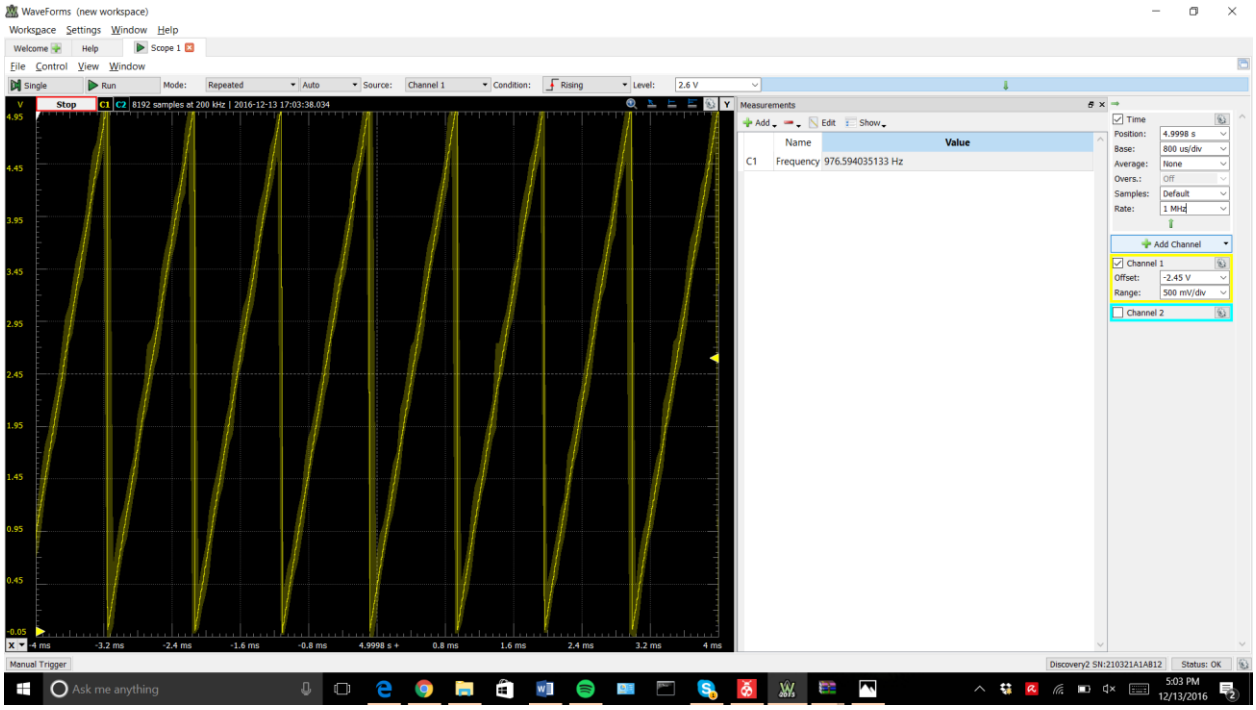
Triangle low: $f_{triangle}$ = = 16 million/(64*255*510) = 1.922 Hz

Sine high: f_{sine} = 16 million/(64*1*255) = 980.39 Hz

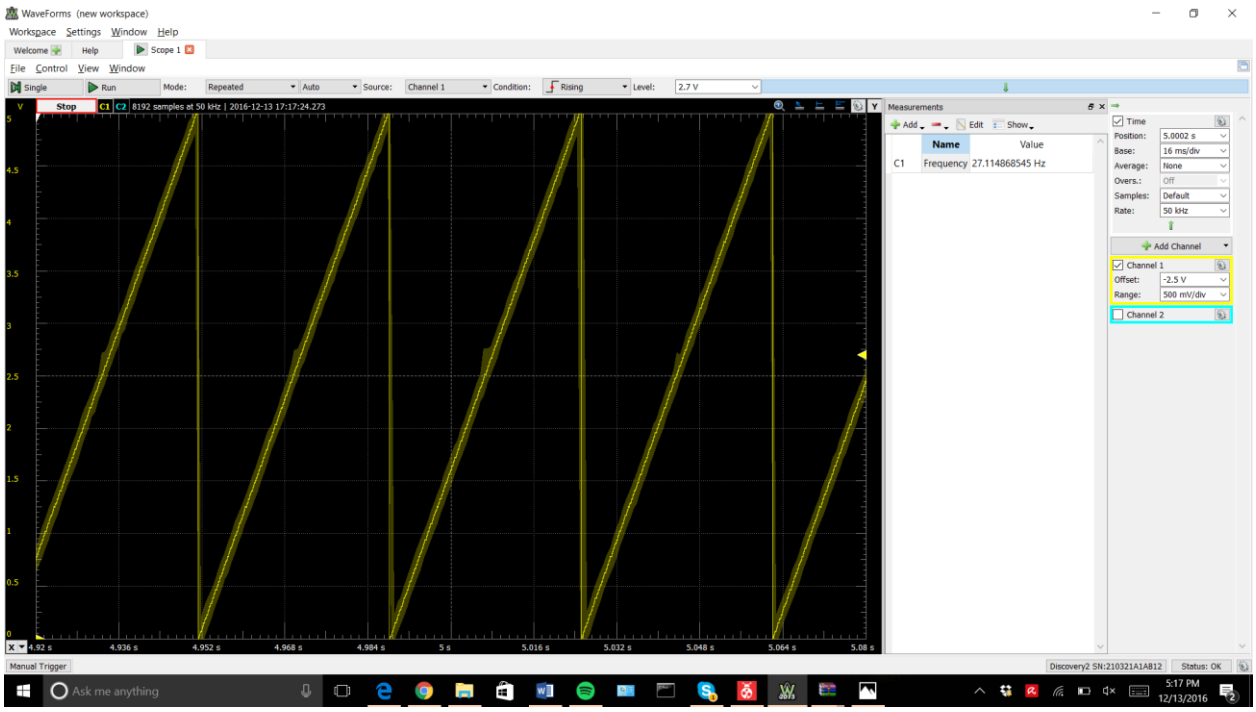
Sine low: f_{sine} = 16 million/(64*255*255) = 3.844 Hz

Screenshots:

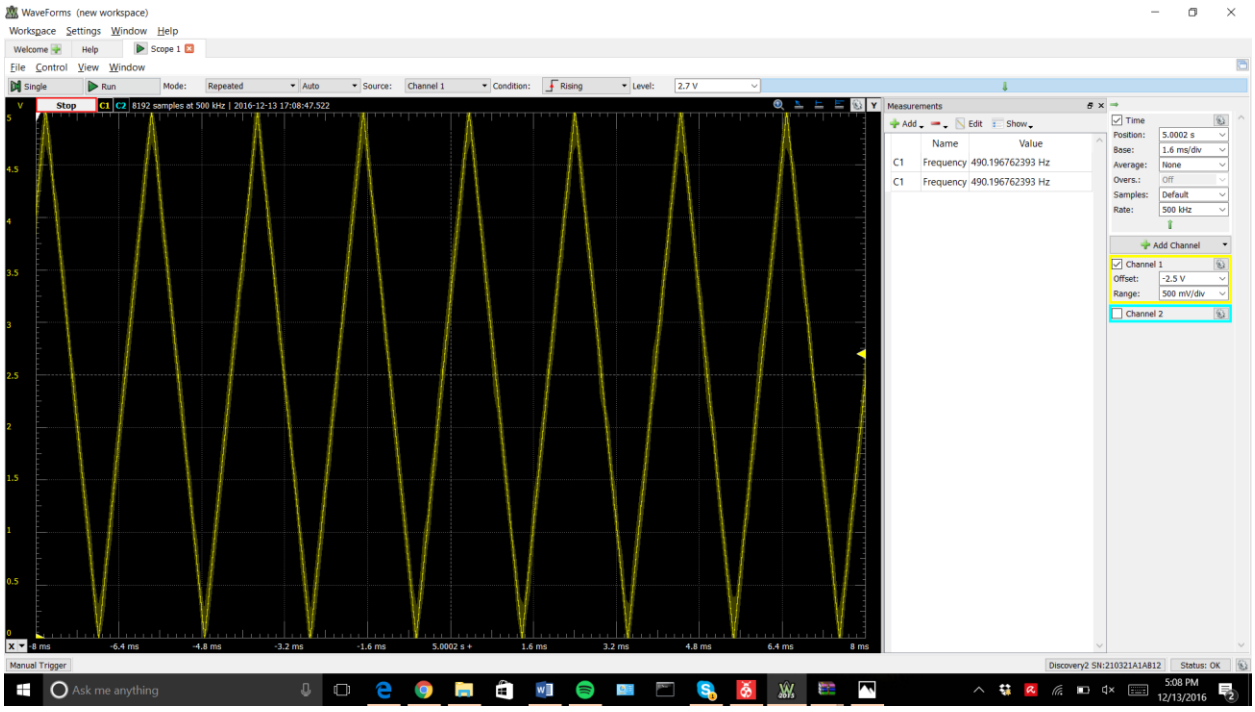
Sawtooth high:



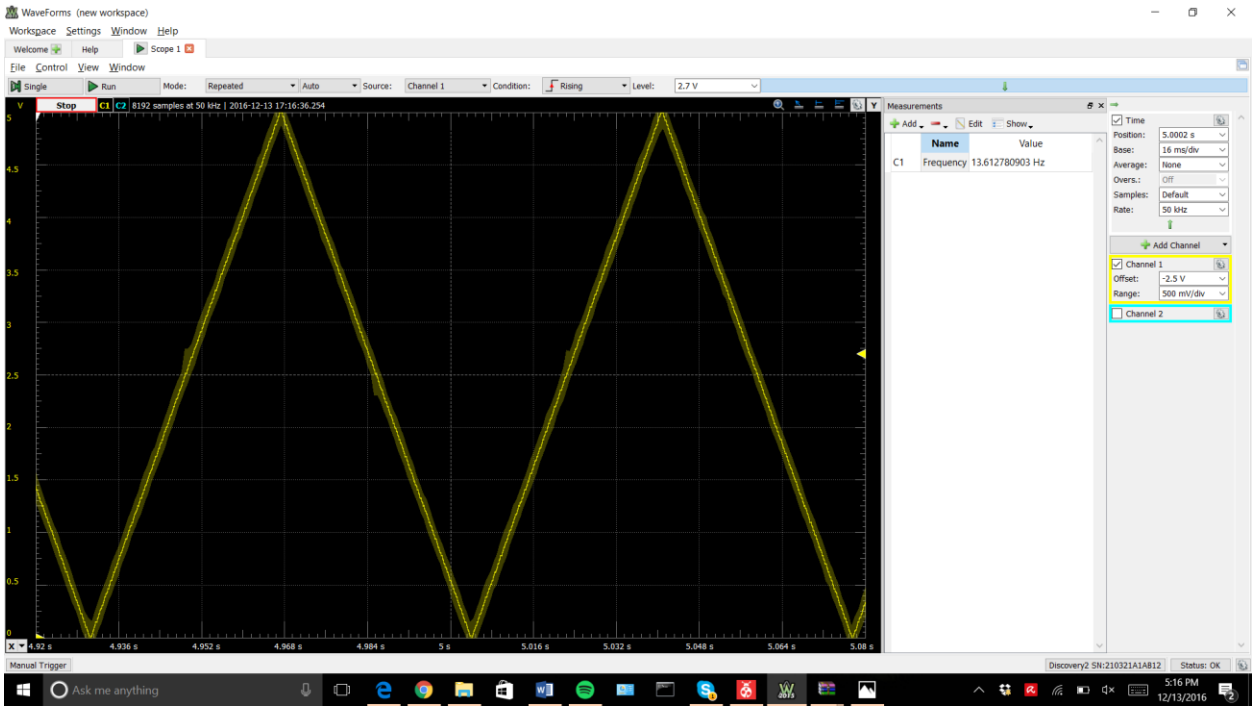
Sawtooth low:



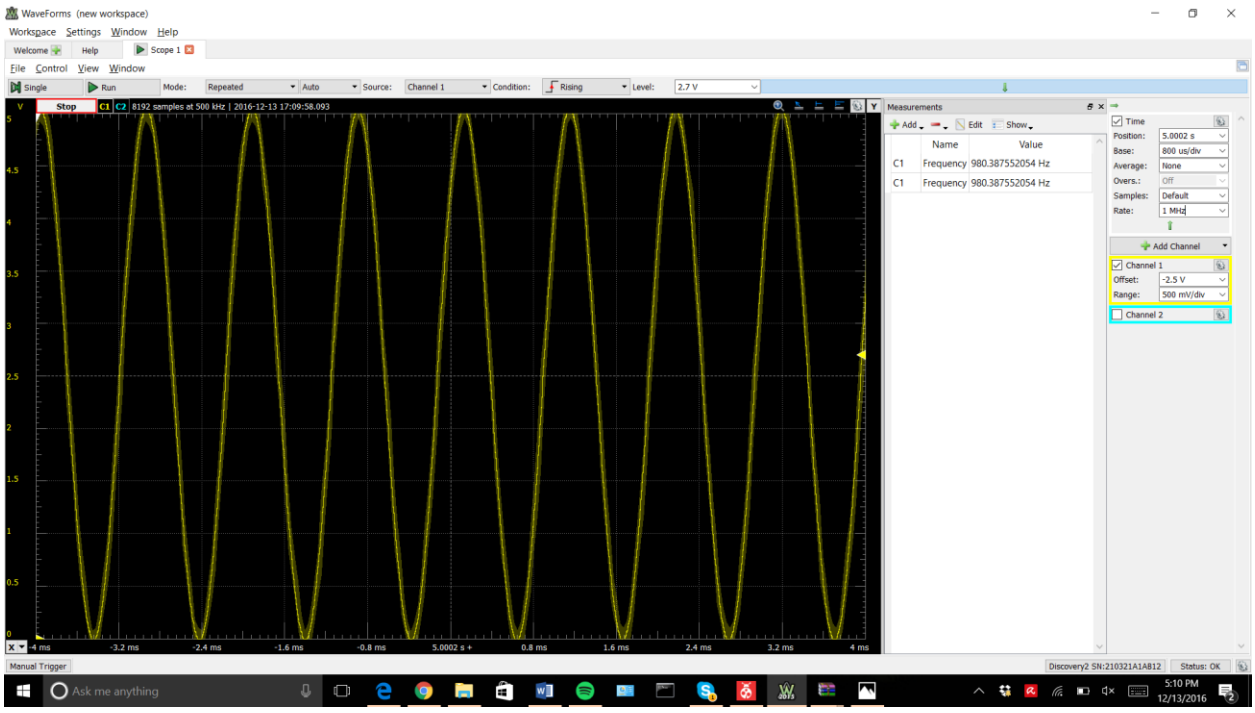
Triangle High:



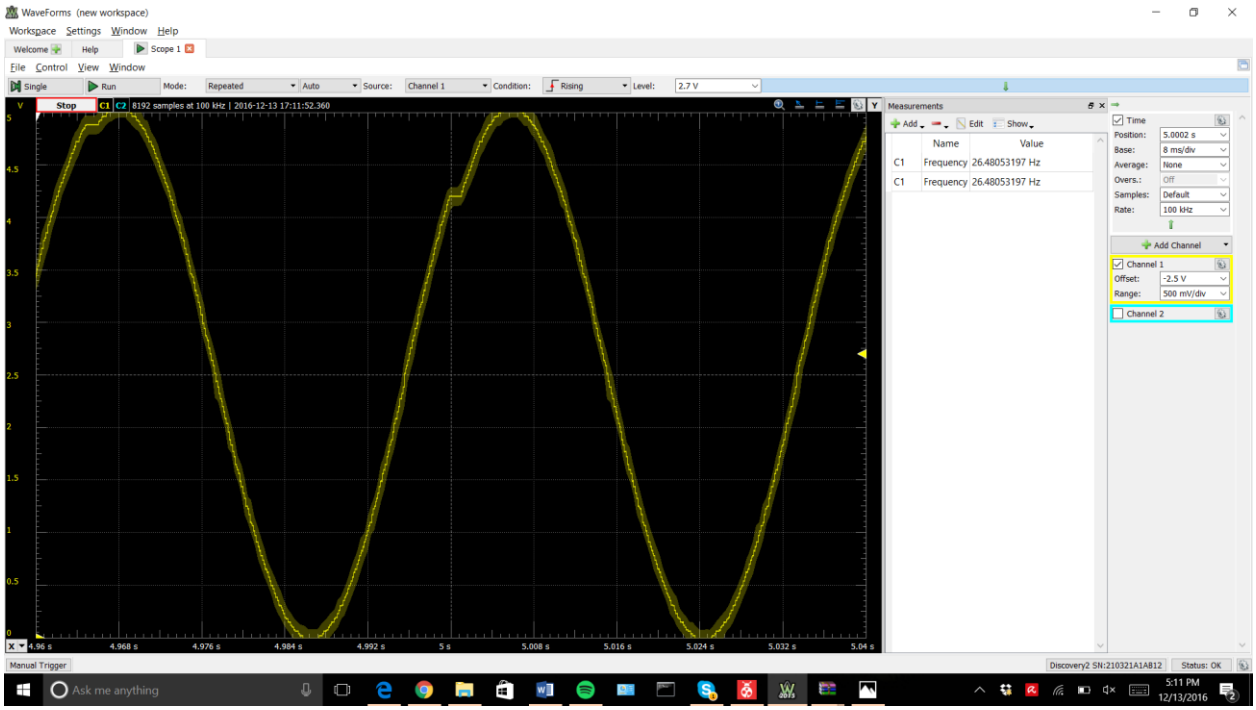
Triangle Low:



Sine High:



Sine Low:


WaveForms (new workspace)
Workspace Settings Window Help
Welcome Help Scope 1
File Control View Window
Single Run Mode: Repeated Auto Source: Channel 1 Condition: Rising Level: 2.7 V
Stop C1 C2 8192 samples at 100 kHz | 2016-12-13 17:11:52.360
Measurements
Add Edit Show
Name Value
C1 Frequency 26.48053197 Hz
C1 Frequency 26.48053197 Hz
Time
Position: 5.0002 s
Base: 8 ms/div
Average: None
Overs.: Off
Samples: Default
Rate: 100 kHz
Add Channel
Channel 1
Offset: -2.5 V
Range: 500 mV/div
Channel 2
Manual Trigger
Discovery2 SN:210321A1AB12 Status: OK
Ask me anything
5:11 PM
12/13/2016