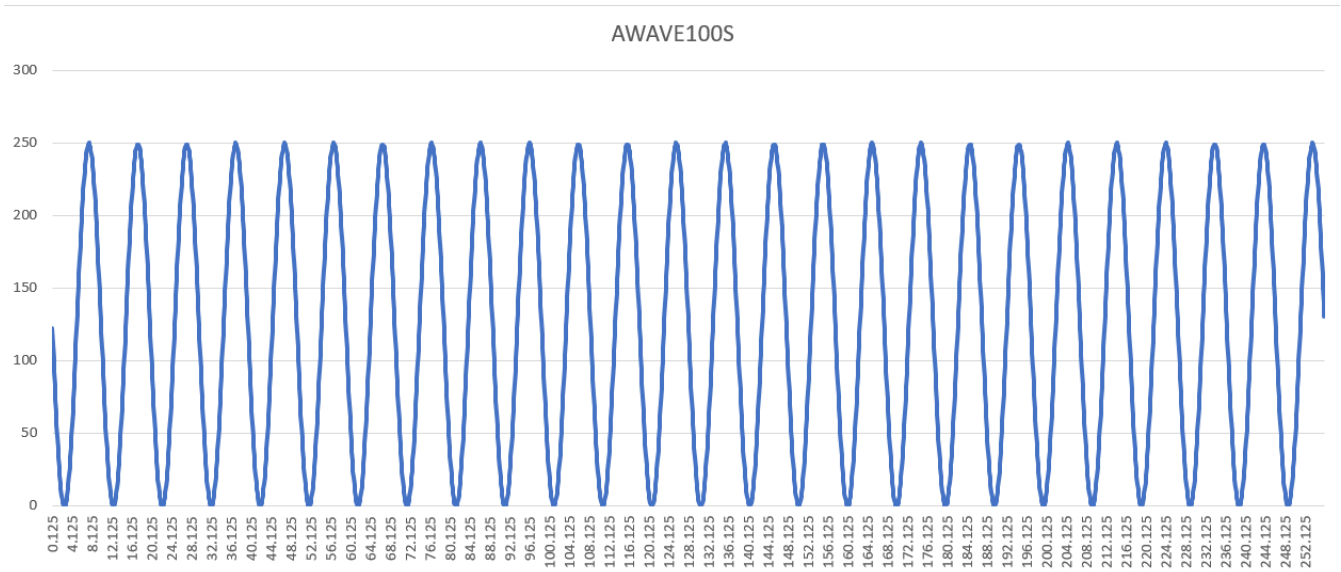


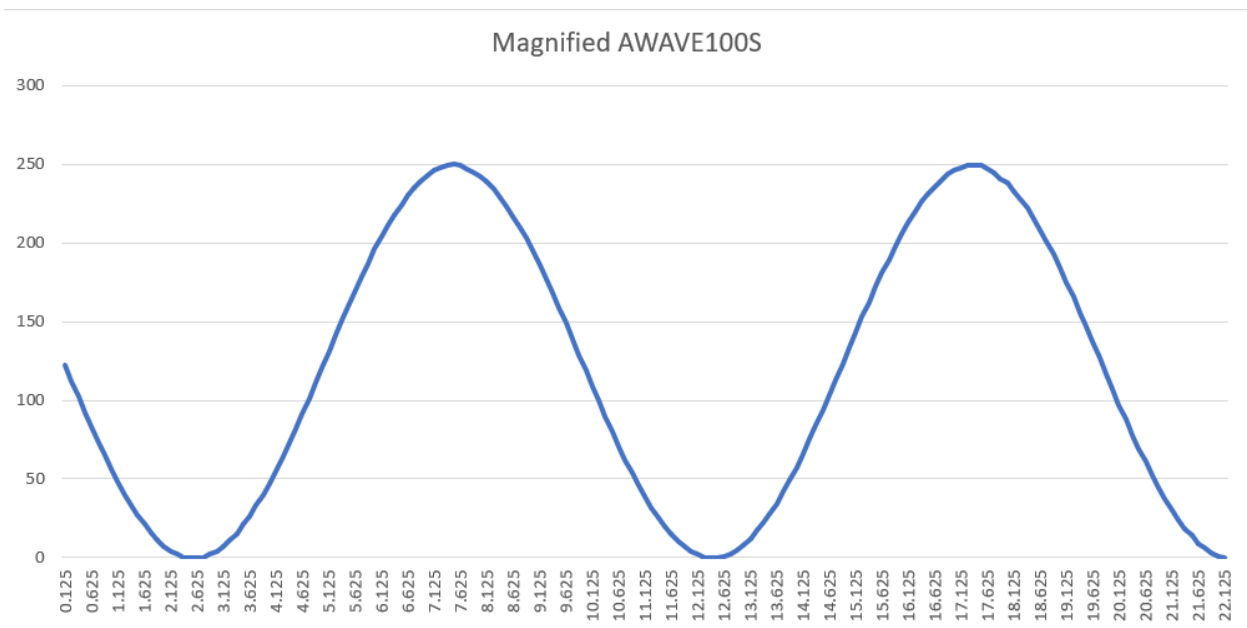
Ryan Talalai
CMPEN 472 FA23
HW 11 Report
27 November 2023
Prof Choi

HW11 ADC

AWAVE100S

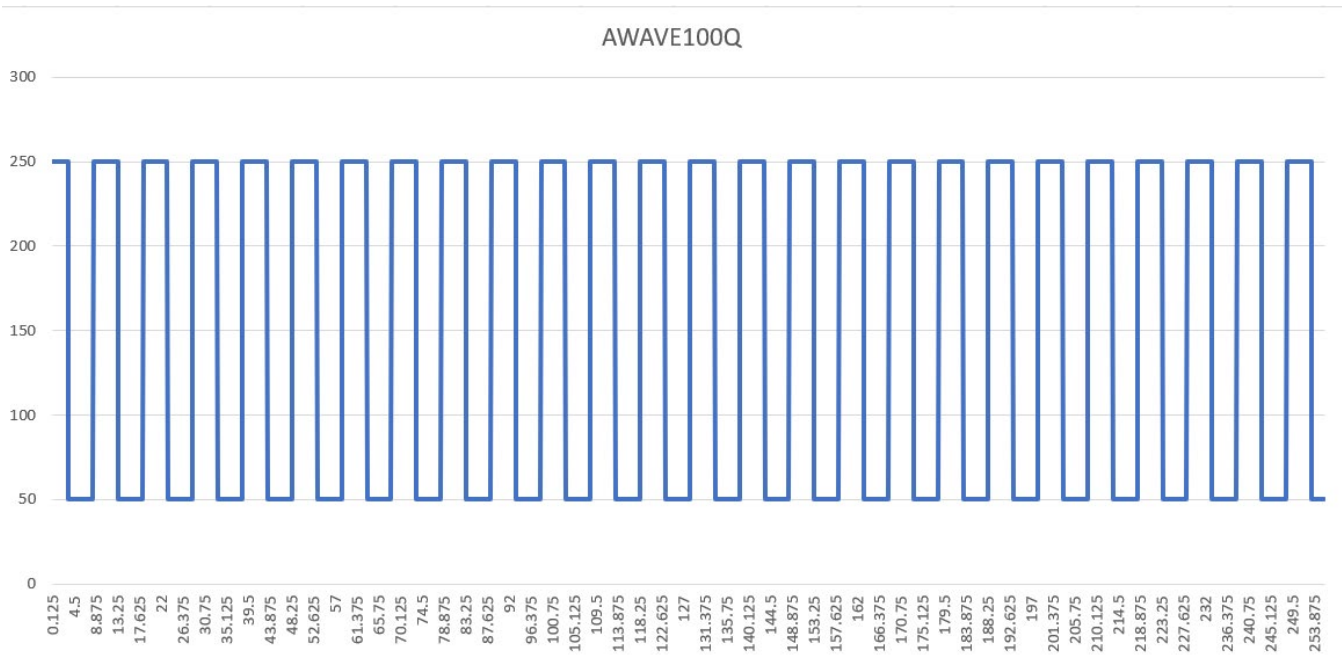


Sine wave graph using data from AWAVE100S file. Peak is at approximately 250, minimum is 0. There are about 80 points in 1 cycle, which takes approximately 10,000 μ s to generate, making the frequency around 100 Hz.

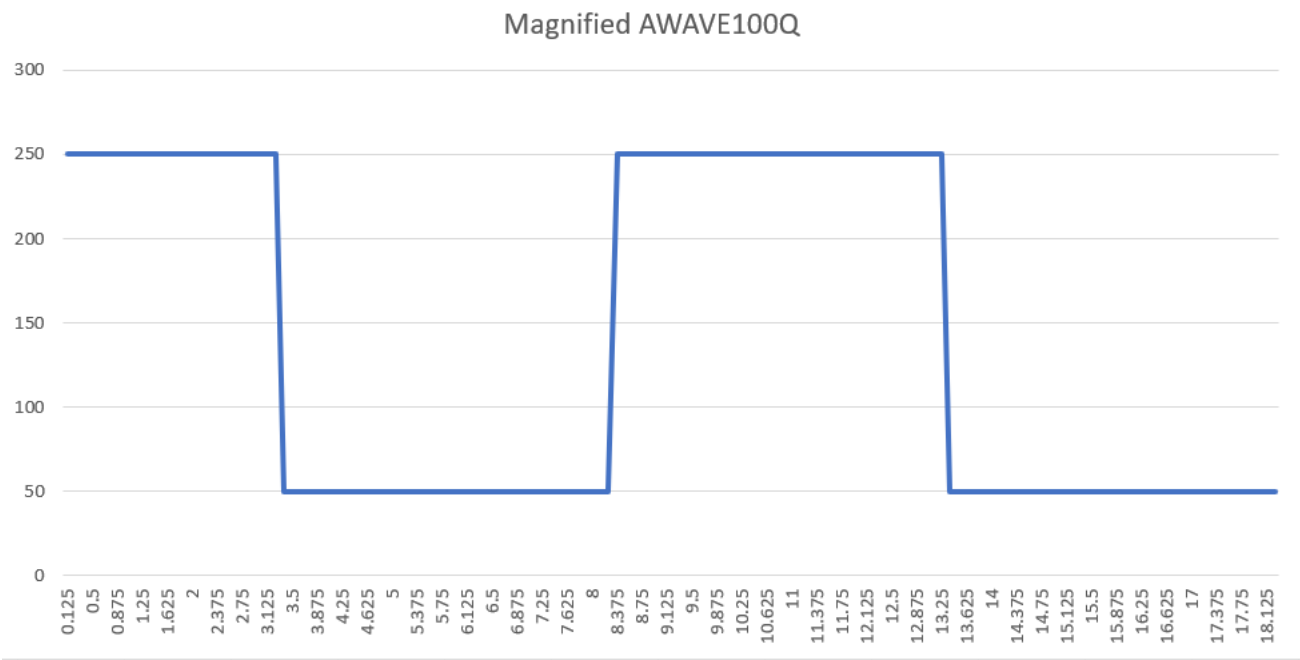


Magnified two cycles of sine wave.

AWAVE100Q

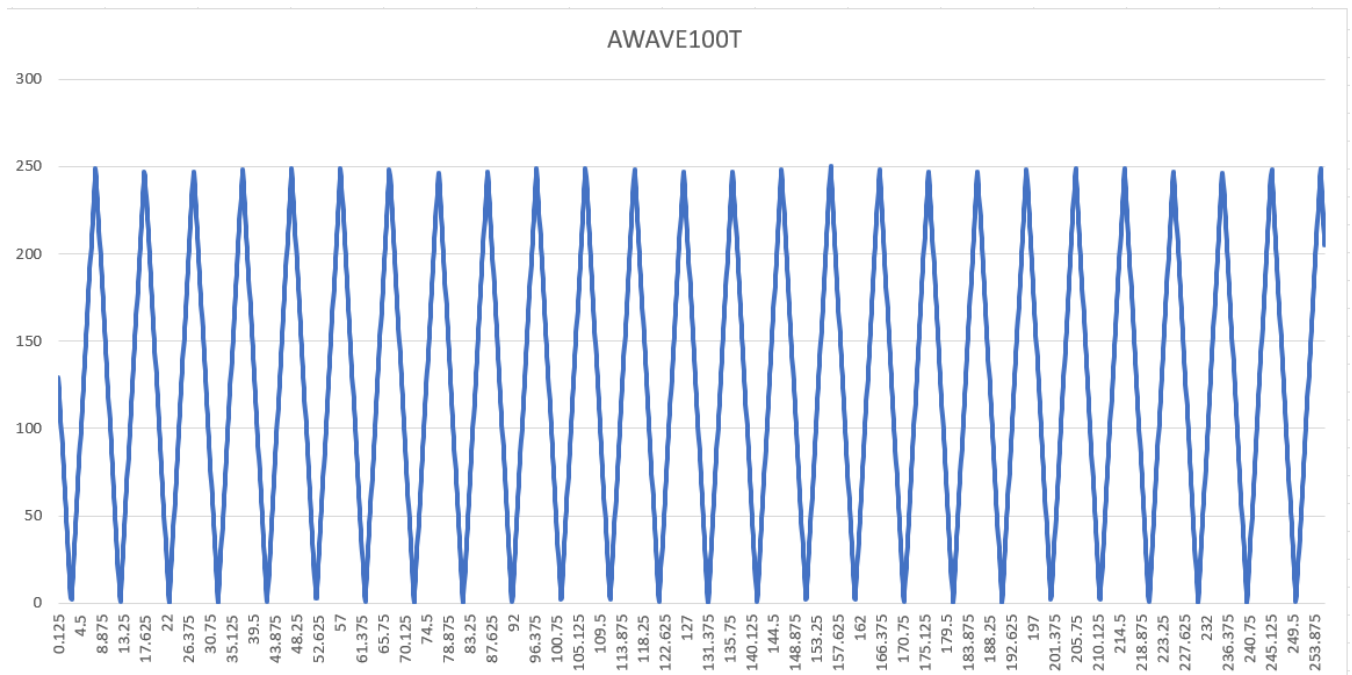


Square Wave from data in AWAVE100Q. Max is 250, min is 50. There are 79 points in one cycle, which takes 9875 μ s to generate. This makes the frequency approximately 99 Hz.

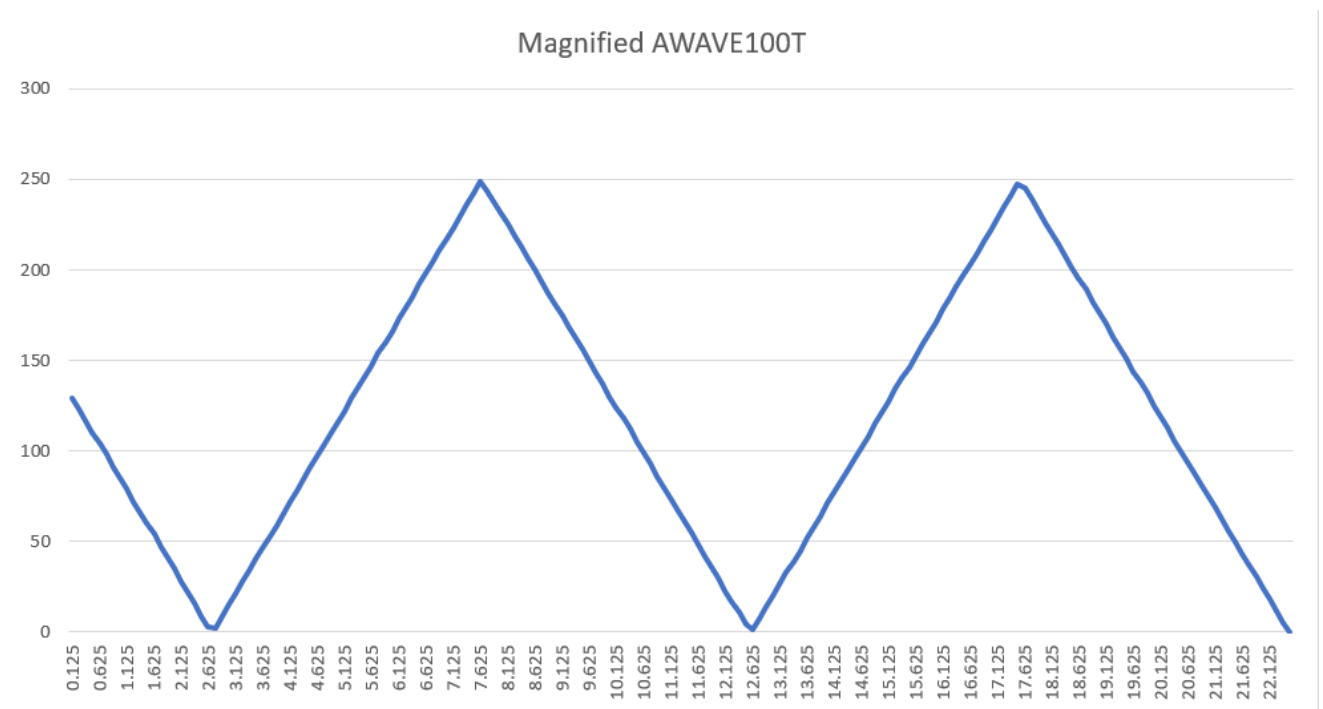


Magnified 2 cycles of the square wave.

AWAVE100T

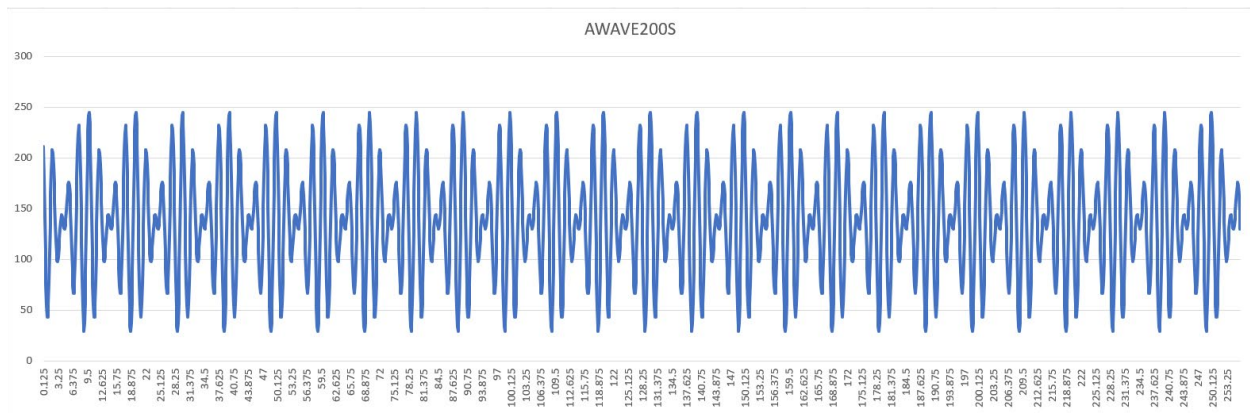


Triangle wave from data in AWAVE100T file. Max is 250 and min 0. Once cycle contains 79 points, which takes 9875 μ s to generate. This makes the frequency approximately 99 Hz.

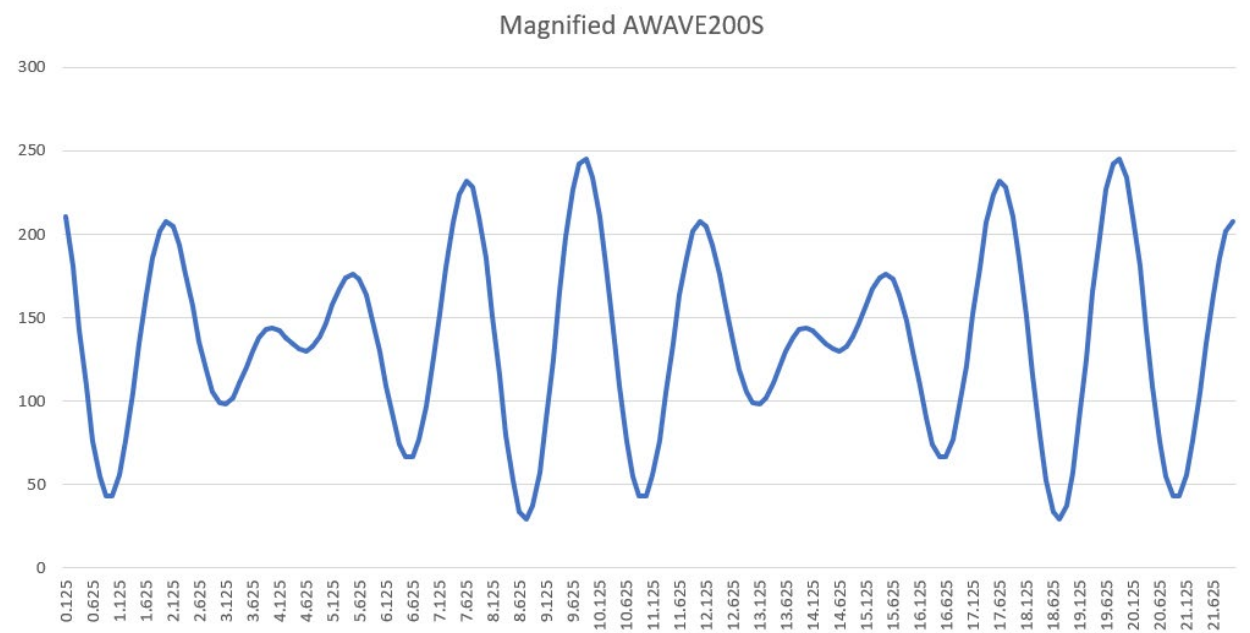


Magnified 2 cycles of the triangle wave.

AWAVE200S



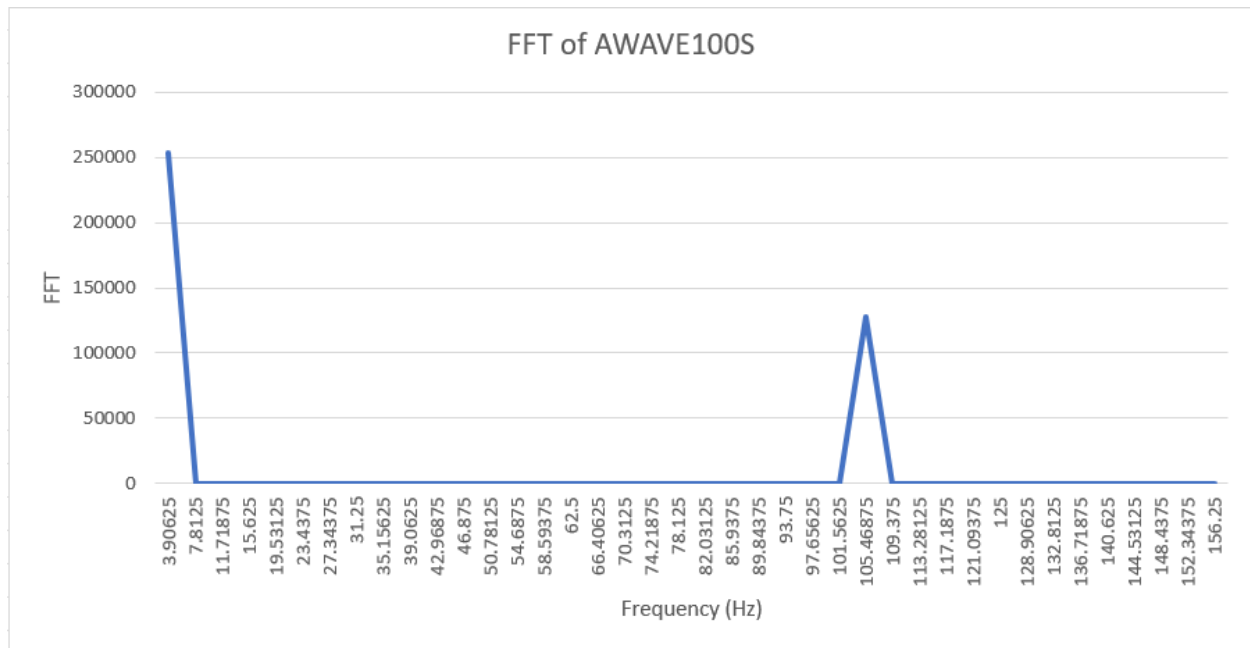
Mixed sine wave, data from AWAVE200S. Max is approximately 245 and min 29. There are 80 points in 1 cycle, 10000 μ s to generate, frequency approximately 100 Hz.



Magnified 2 cycles of mixed sine wave.

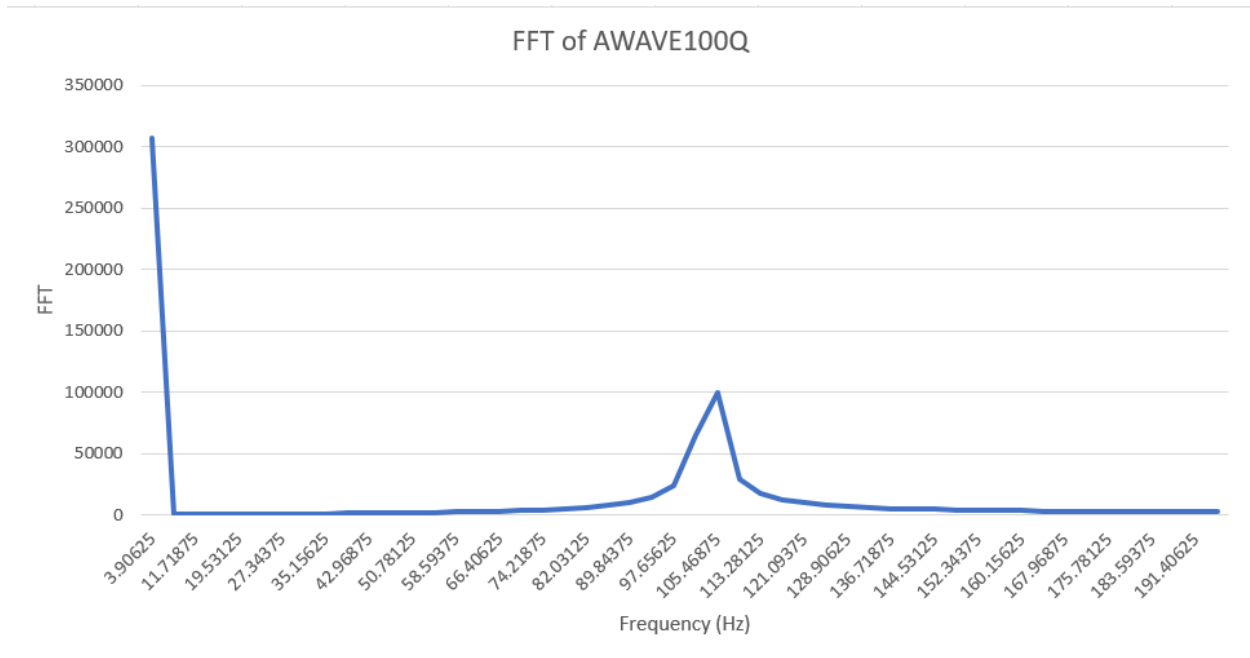
FFT

AWAVE100S



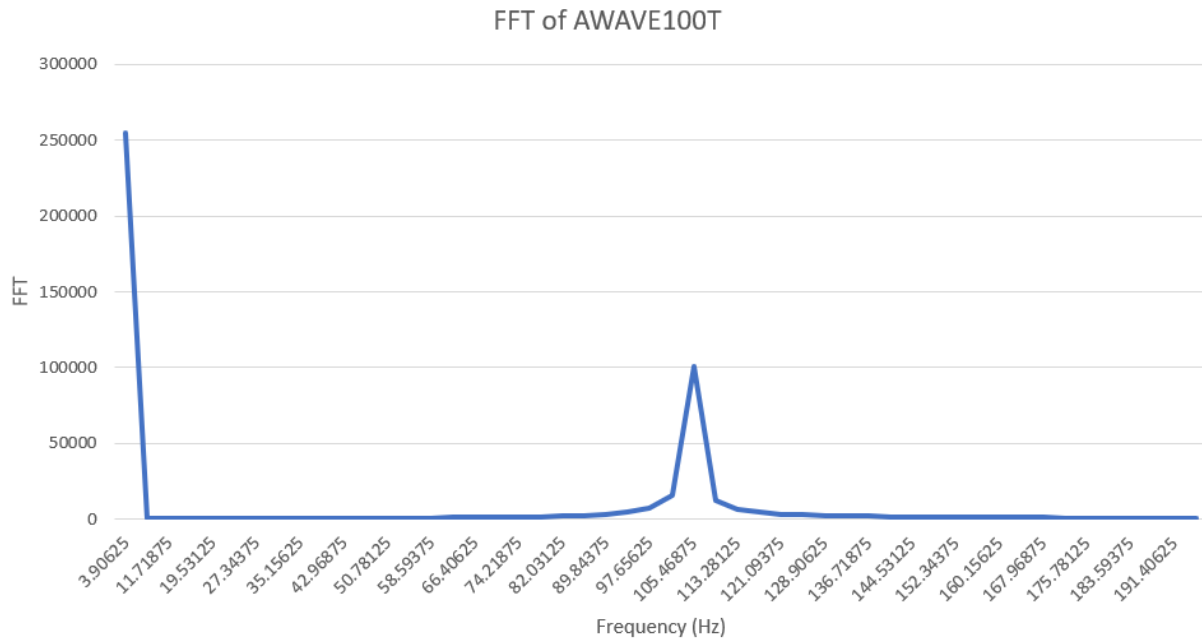
FFT of sine wave data, first 40 data points. Peak frequency is at approximately 105 Hz.

AWAVE100Q



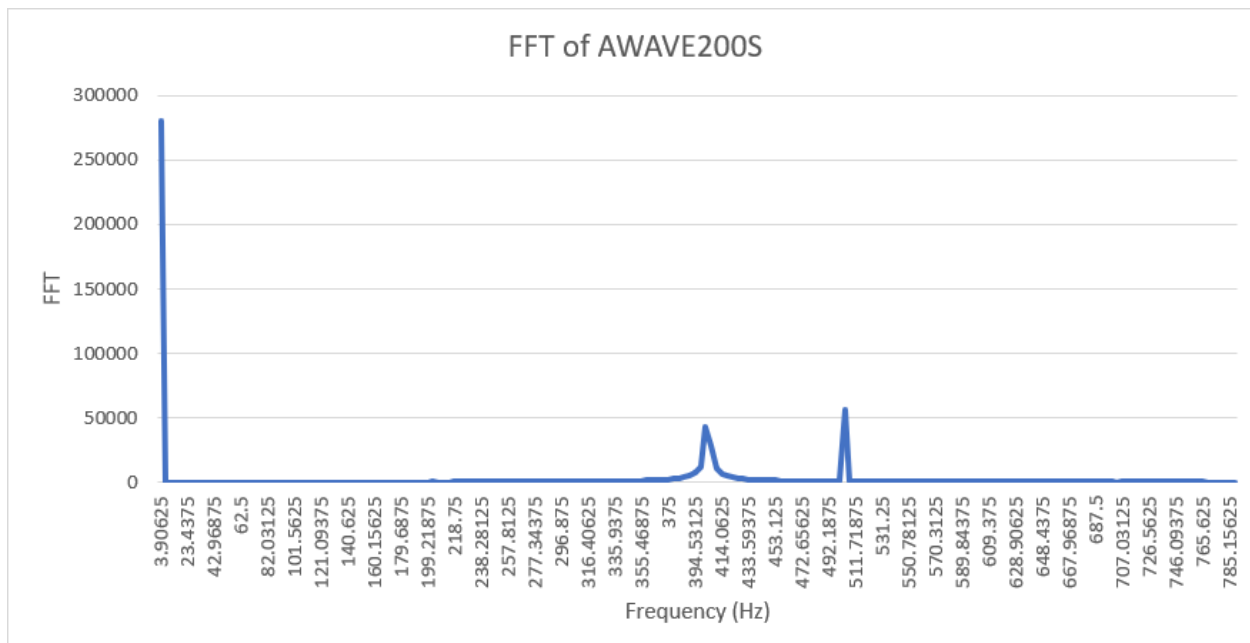
FFT of square wave data, first 50 points. Peak frequency is at approximately 105 Hz.

AWAVE100T



FFT of triangle wave data, first 50 points. Peak frequency at approximately 105 Hz.

AWAVE200S

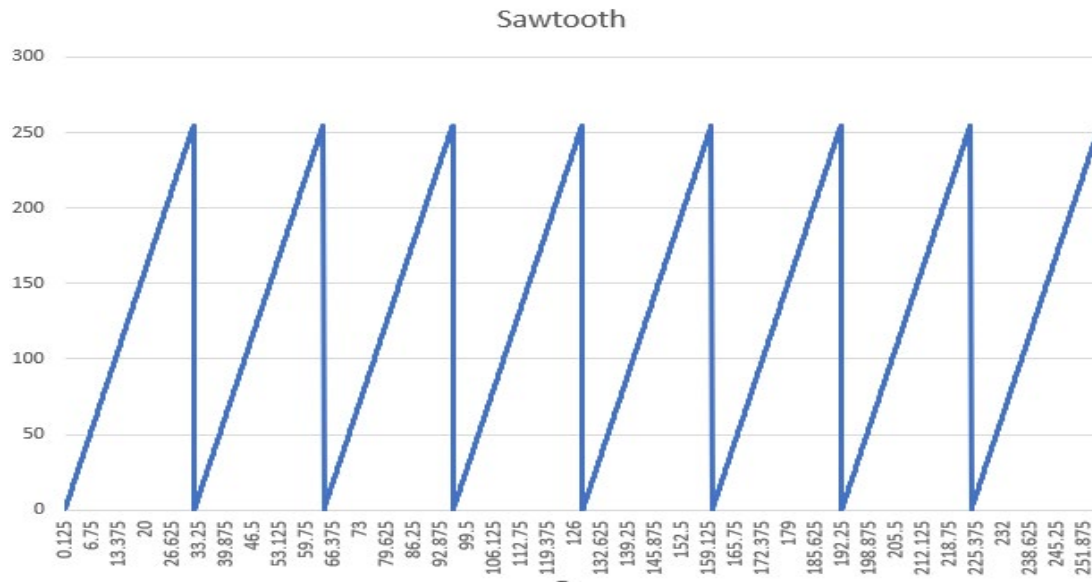


FFT of mixed sine wave, first 200 points. Peak at approximately 103 Hz and 129 Hz. These peaks are mirrored in the last 200 points at approximately 7600 Hz.

HW 10 Report

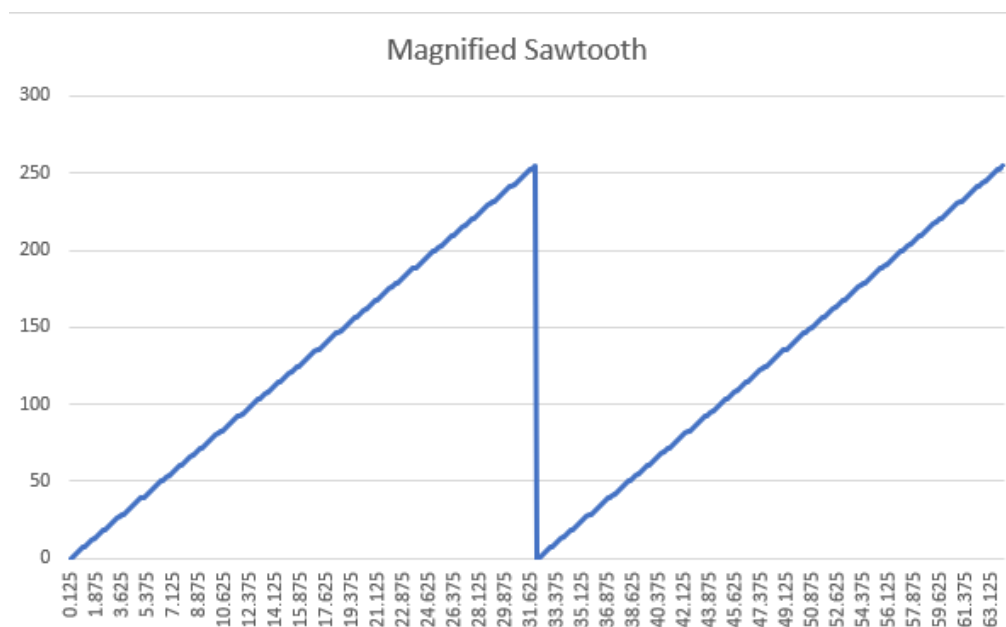
Signal Wave Plots:

Sawtooth:



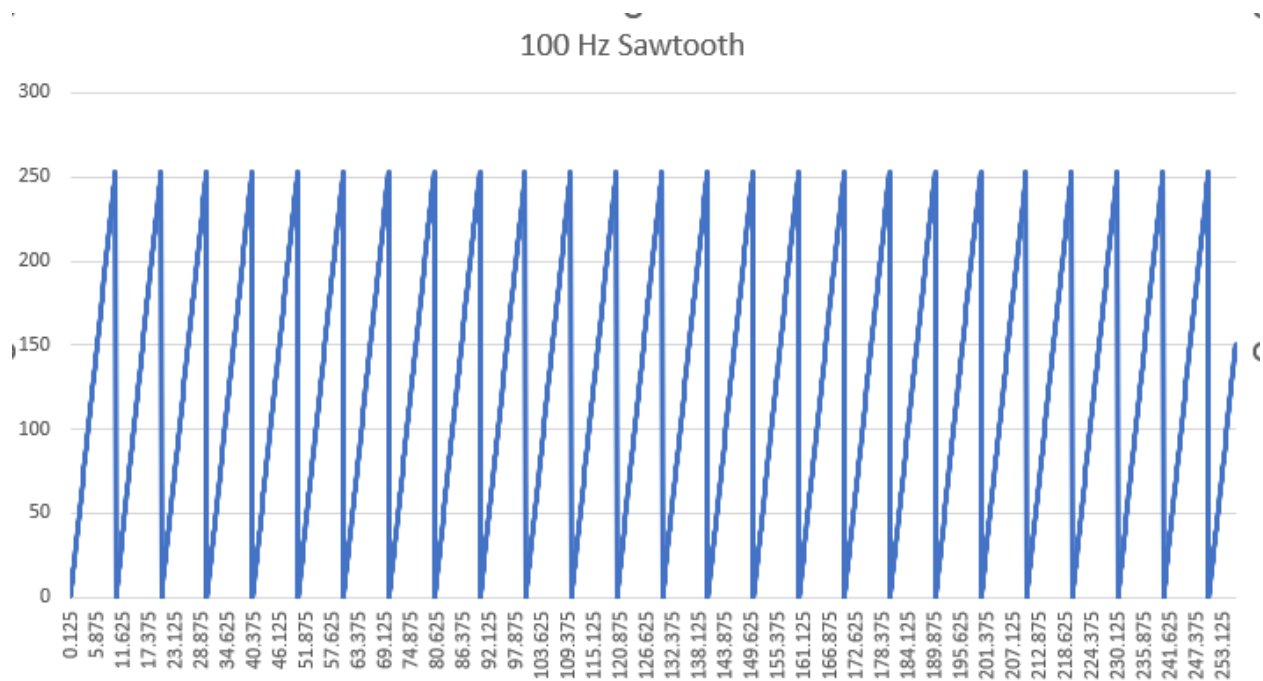
Sawtooth wave. One cycle of the waveform is 256 points, which takes 32,000 μ s to generate. This makes the frequency approximately 32 Hz. Max is 255, min is 0.

Magnified Sawtooth:



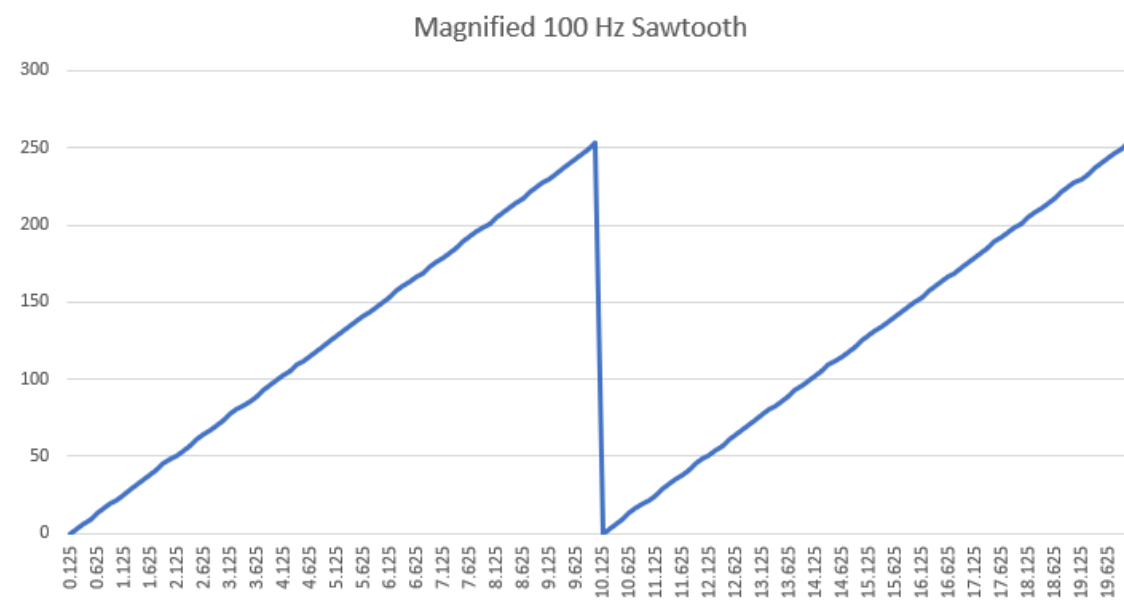
Magnified 2 cycles of the sawtooth Wave.

100Hz Sawtooth:



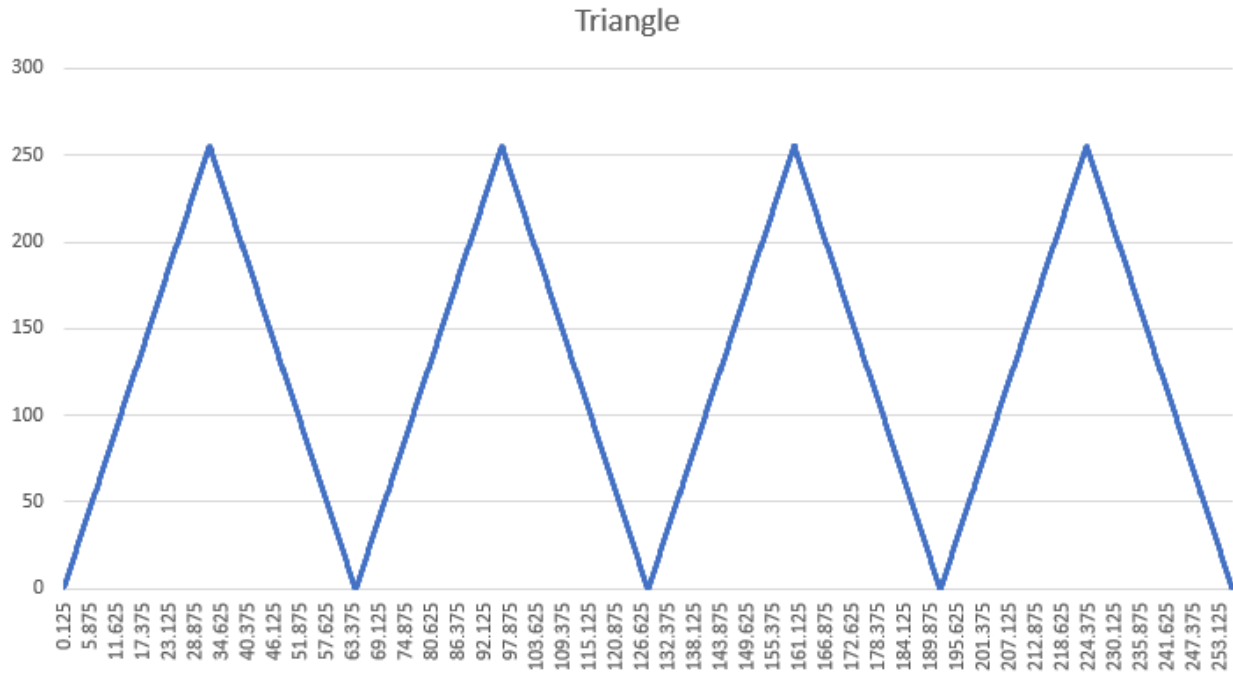
100 Hz Sawtooth Wave. One cycle is 80 points, which takes 10,000 μ s to generate. This makes the frequency approximately 100 Hz. Max is 253, Min is 0.

Magnified 100 Hz Sawtooth:



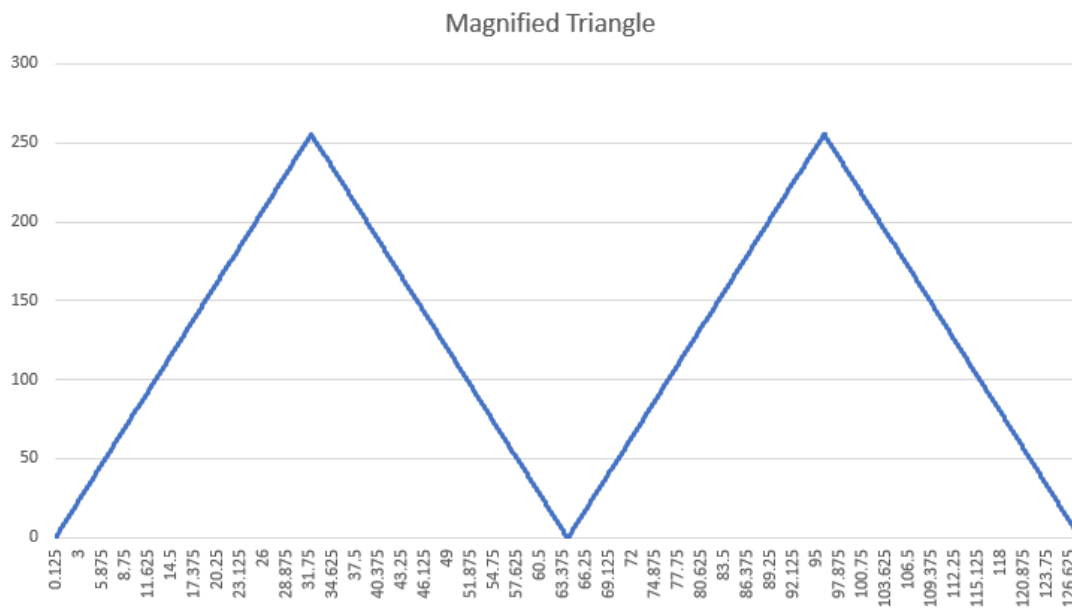
Magnified 2 cycles of 100 Hz sawtooth wave.

Triangle:



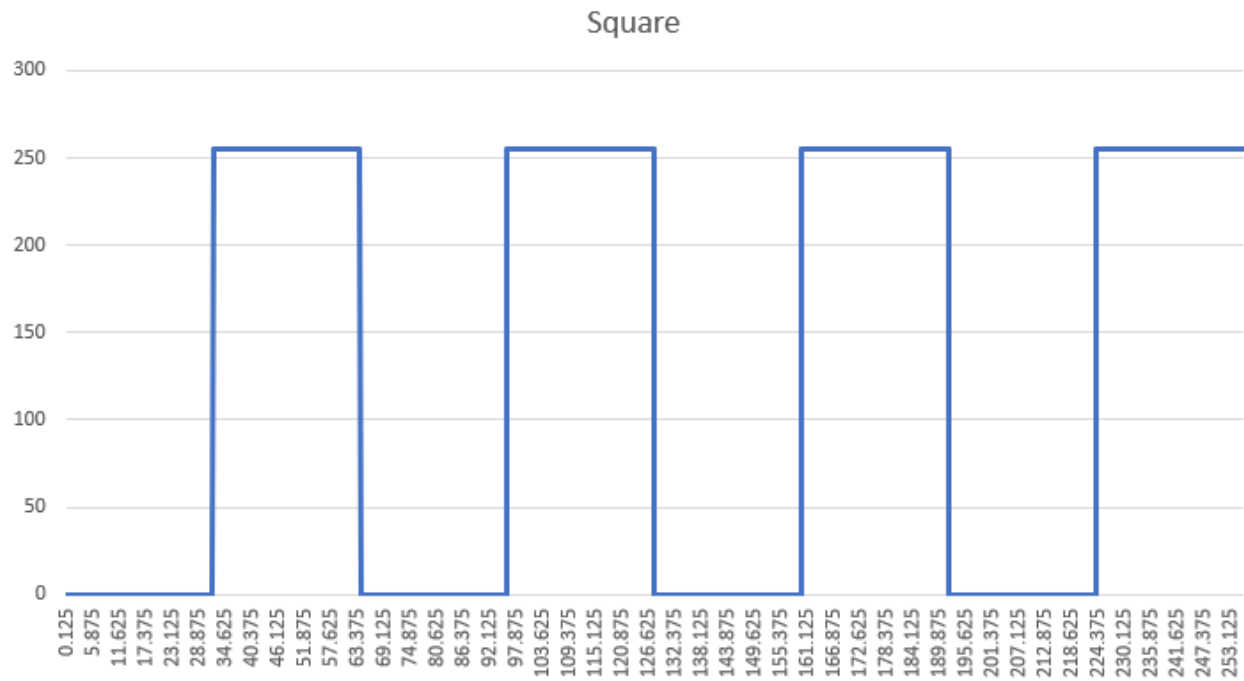
Triangle Wave. One cycle has 512 points, which takes 64,000 μ s to generate. Max is 255, min is 0.

Magnified Triangle:



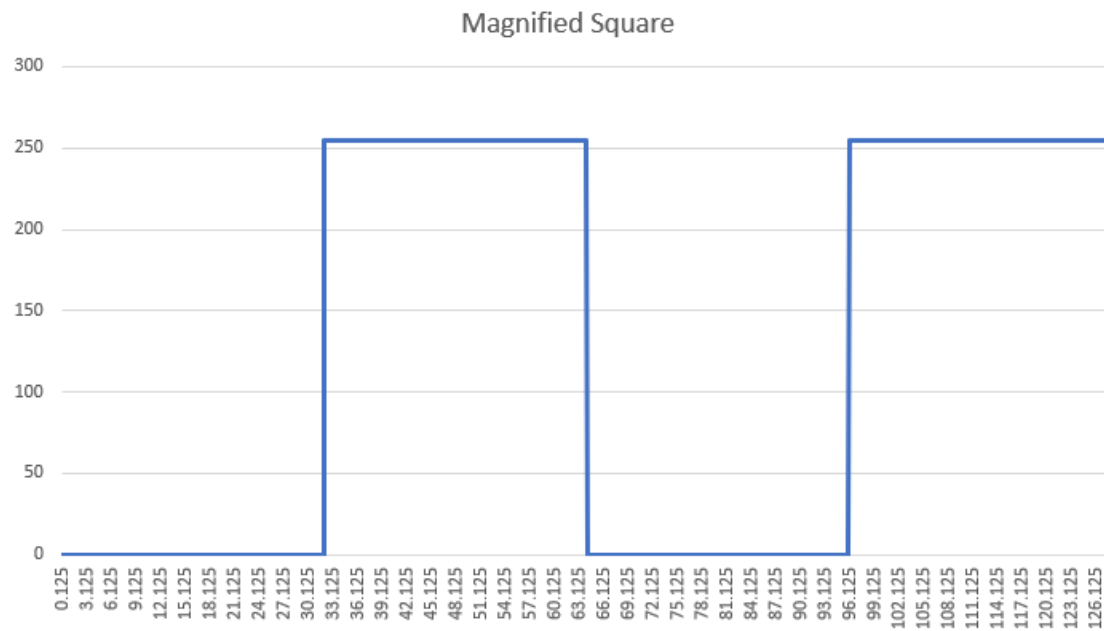
Magnified 2 cycles of triangle wave.

Square:



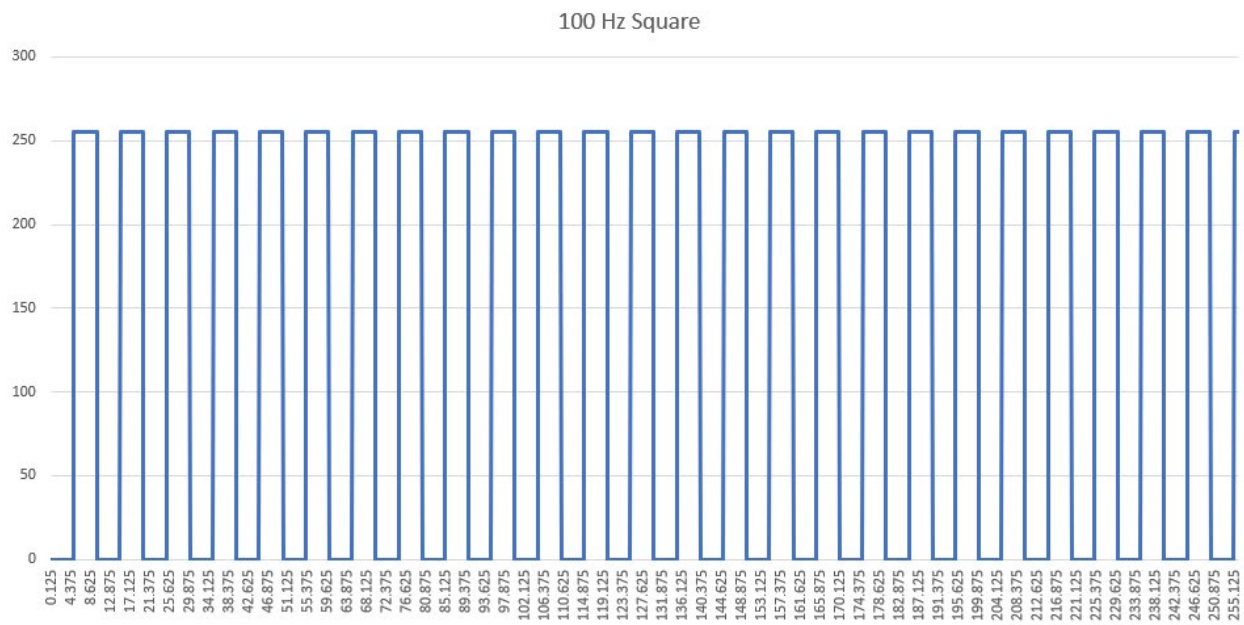
Square Wave. One cycle has 512 points, which takes 64,000 μ s to generate. Max is 255, min is 0.

Magnified Square:



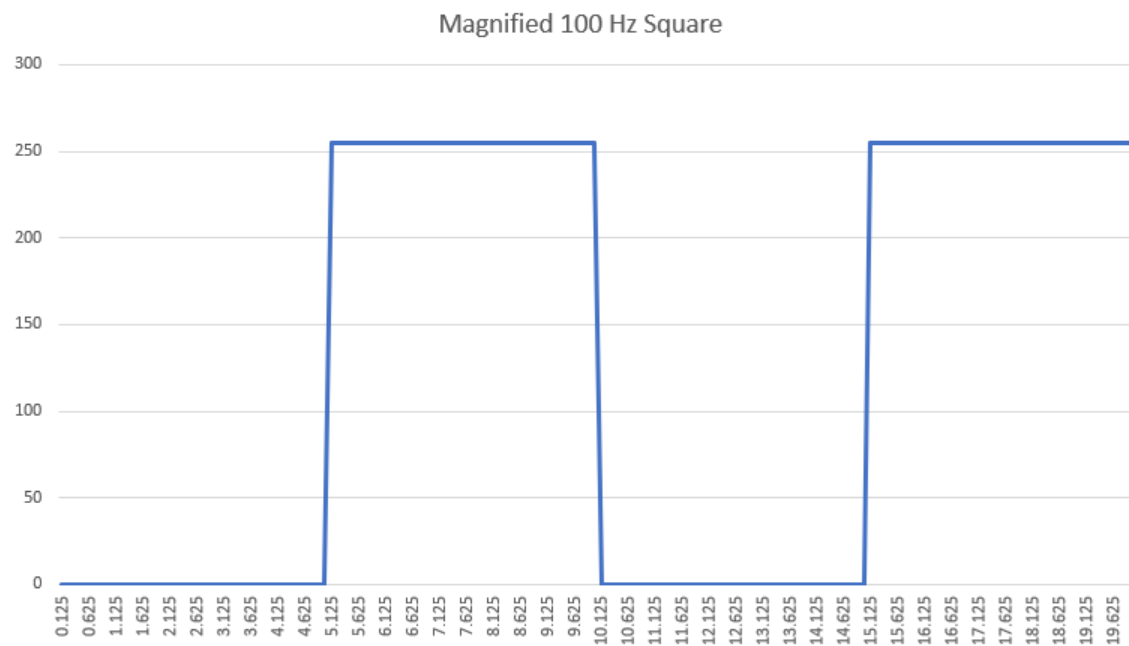
Magnified 2 cycles of square wave.

100Hz Square:



100 Hz Square wave. One cycle has 80 points, which takes 10,000 μ s to generate. This makes the frequency approximately 100 Hz.

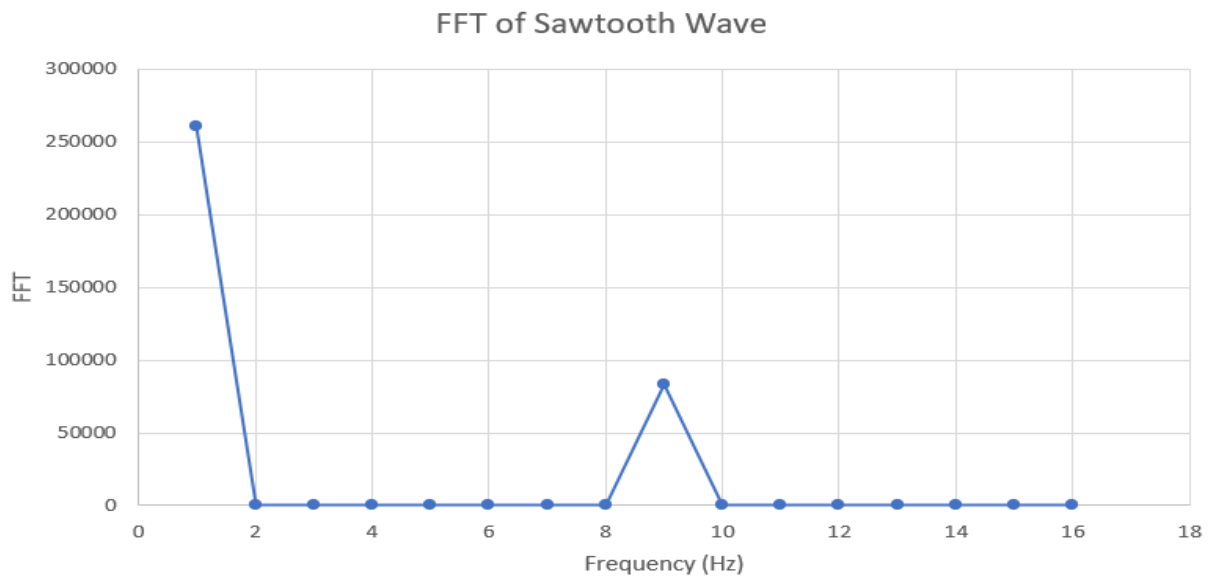
Magnified 100 Hz Square:



Magnified 2 cycles of 100 Hz square wave.

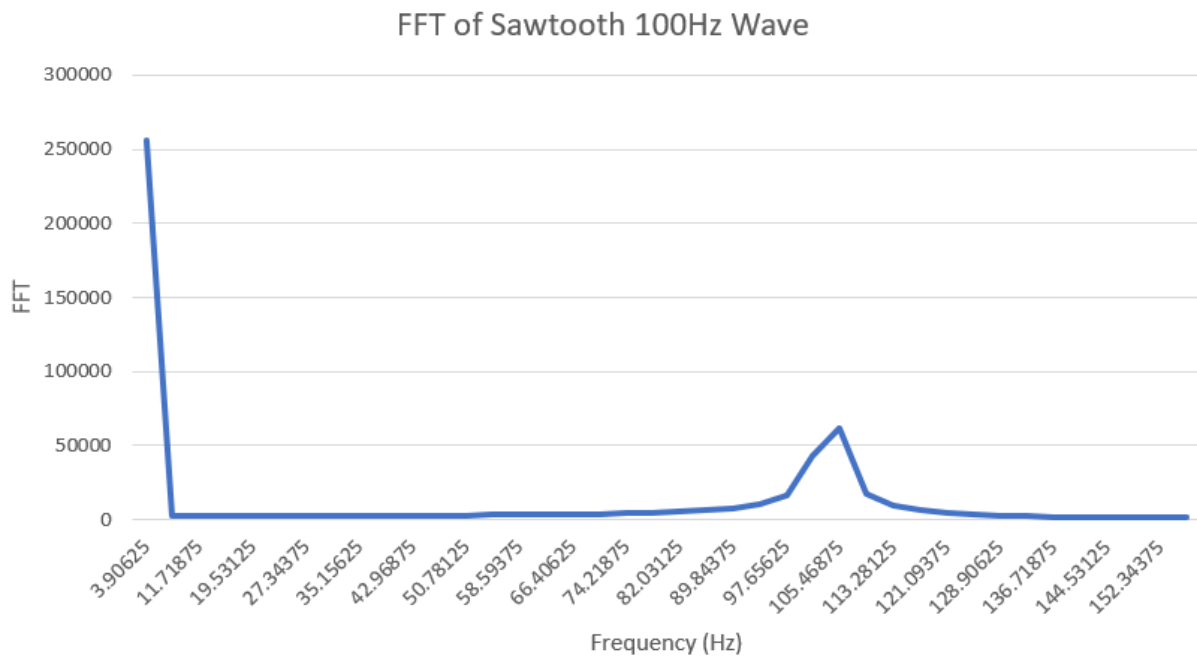
FFT

Sawtooth



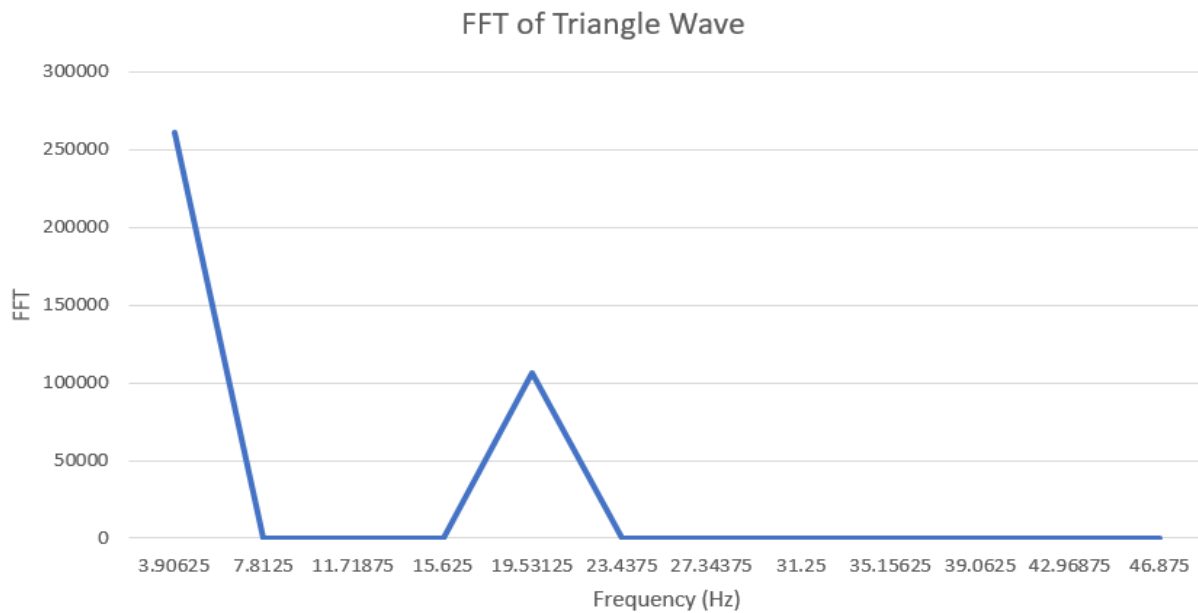
FFT of Sawtooth Wave. Peak frequency at approximately 35 Hz.

Sawtooth 100 Hz



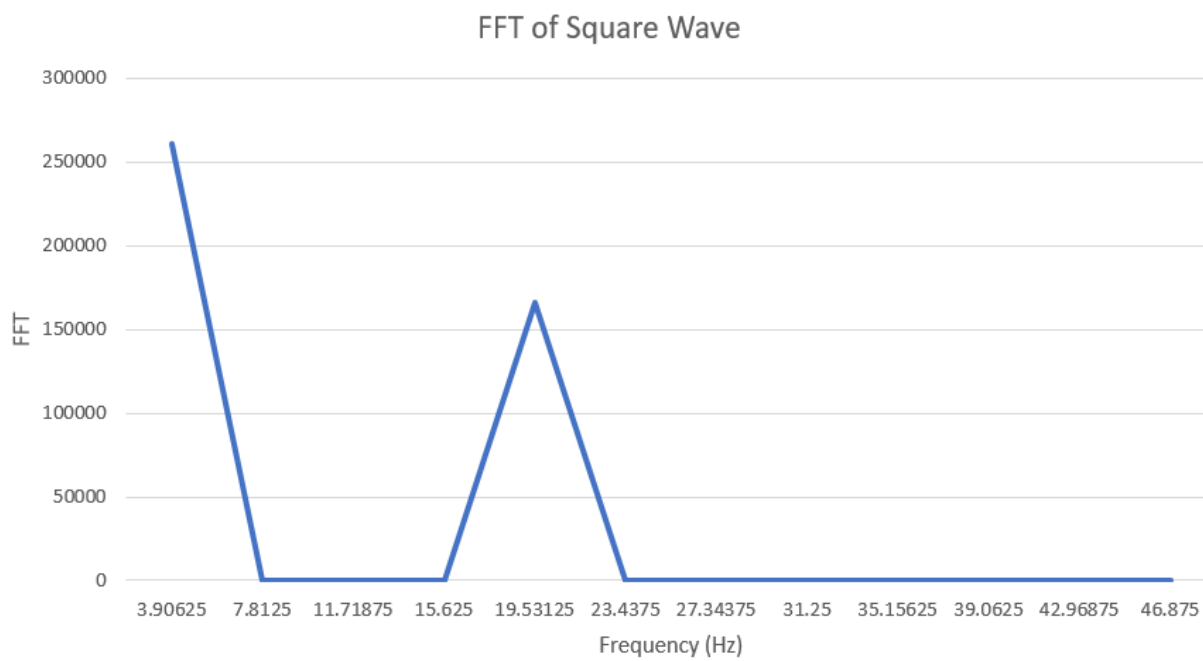
FFT of 100 Hz Sawtooth Wave. Peak frequency at approximately 105 Hz.

Triangle



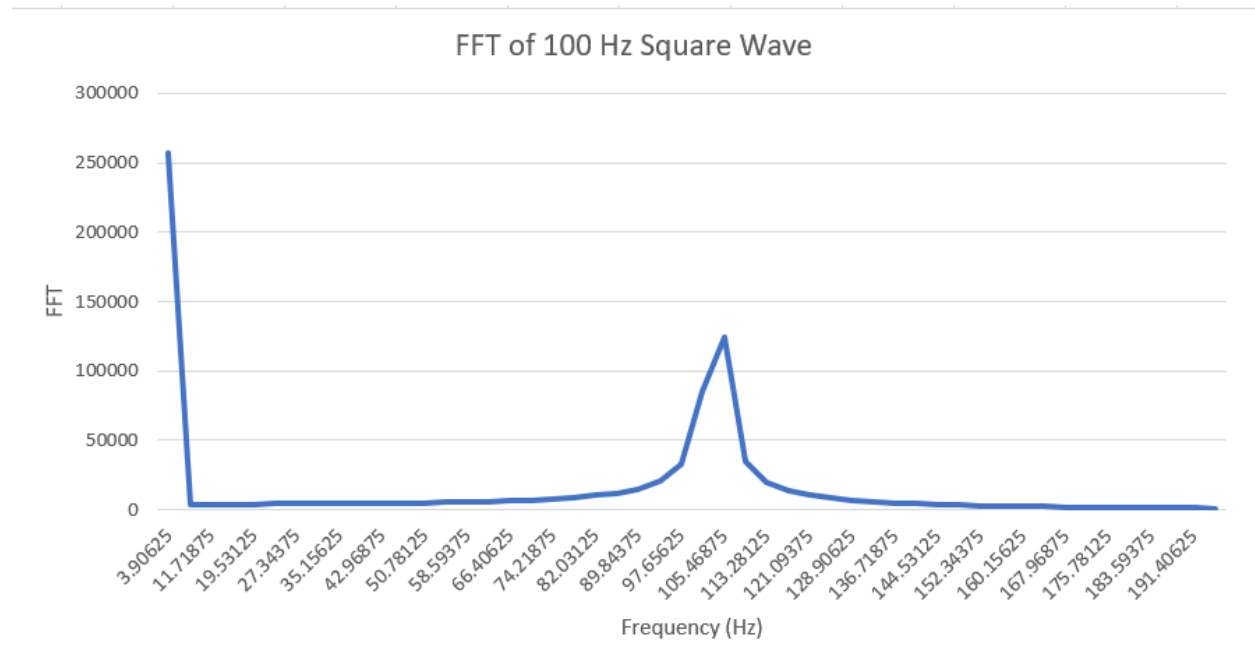
FFT of Triangle Wave. Peak Frequency at approximately 21 Hz.

Square



FFT of square wave. Peak Frequency at approximately 21 Hz.

Square 100 Hz



FFT of 100 Hz Square Wave. Peak frequency at approximately 105 Hz.

** All data generated from the Homework 11 CodeWarrior file.

** All plots generated from Microsoft Excel.