Using the CPX as a Data Acquisition System (DAQ)

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Video

The hyperlink below takes you to a video of me using the cpx to log accelerometer data. I chose to use method one to log the data. Please follow the link below:

[Accelerometer Video](https://drive.google.com/file/d/1RU9ODI1MUbCcGbFTIkvDQ81w-U1SYcEQ/view?usp=sharing)

MU CODE

Below is the code I implemented on my cpx using MU to log the accelerometer data from the cpx:

"""

@author: Justin

"""

import time

import board

import busio

import digitalio

import adafruit\_lis3dh

##Accelerometer is hooked up to SDA/SCL which is I2C

i2c = busio.I2C(board.ACCELEROMETER\_SCL, board.ACCELEROMETER\_SDA)

\_int1 = digitalio.DigitalInOut(board.ACCELEROMETER\_INTERRUPT)

lis3dh = adafruit\_lis3dh.LIS3DH\_I2C(i2c, address=0x19, int1=\_int1)

lis3dh.range = adafruit\_lis3dh.RANGE\_8\_G

while True:

t = time.monotonic()

x,y,z = lis3dh.acceleration

print((t,x,y,z))

time.sleep(0.1)

PYTHON CODE

Below is the code I implemented on my computer using python to plot the accelerometer data from the cpx. I created a .txt file for the python program to read, interpret, then plot:

"""

@author: Justin

"""

import numpy as np

import matplotlib.pyplot as plt

data = np.loadtxt('Accel\_data.txt')

t = data[:,0]

x = data[:,1]

y = data[:,2]

z = data[:,3]

plt.plot(t,x)

plt.plot(t,y)

plt.plot(t,z)

plt.show()

PLOT

Below is my python program’s output. It is a plot of the accelerometer data from the cpx versus time:

