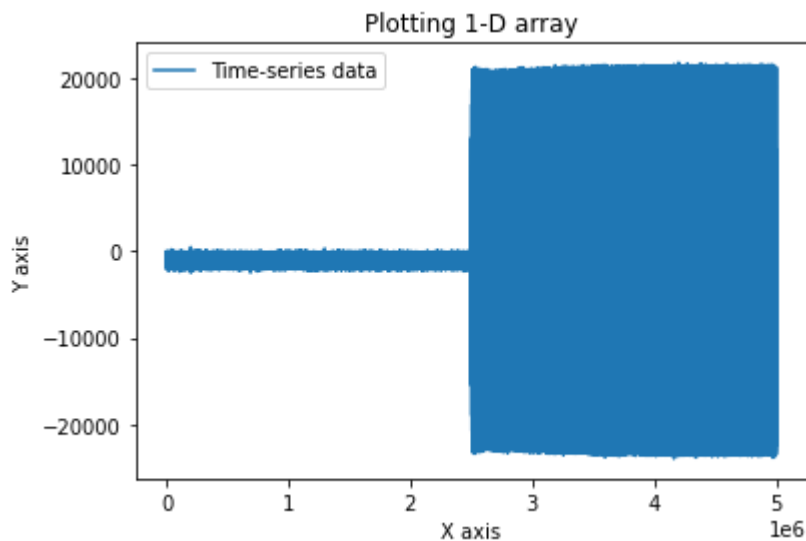


```
In [1]: import scipy.io
import matplotlib
import matplotlib.pyplot as plt
import numpy as np
f = scipy.io.loadmat('HobbyKing_HKT6A/HobbyKing_HKT6A_0001.mat')
f.keys()
x = f['data']
x = x['Data']
x[0]
x = np.array(x[0])
x.shape
x=x[0].transpose()
t = np.array(range(0, len(x[0])))
```

```
In [2]: #x = x.astype(int)
#y=x.transpose()
plt.title("Plotting 1-D array")
plt.xlabel("X axis")
plt.ylabel("Y axis")
plt.plot(t,x[0],label = "Time-series data")
plt.legend()
plt.show()
```

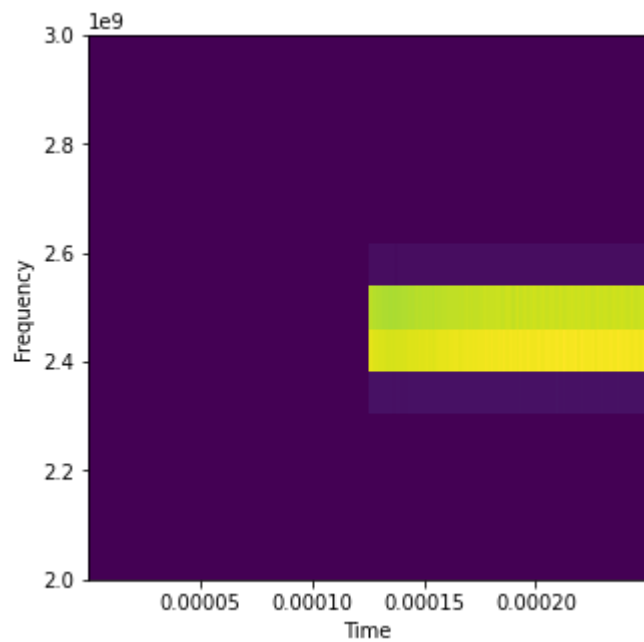


```
In [3]: s1 = np.empty([0]) # For samples
sub1 = x[0]
s1 = np.append(s1, sub1)
NFFT = 256
samplingFrequency = 20e9
noverlap = 200
dpi=1

#plt.figure()
plt.figure(figsize=(5,5))
#powerSpectrum, frequenciesFound, time, imageAxis = plt.specgram(s1, NFFT=NFFT, Fs=samplingFrequency)
powerSpectrum, frequenciesFound, time, imageAxis = plt.specgram(s1, Fs=samplingFrequency)
plt.pcolormesh(time,frequenciesFound,powerSpectrum )
plt.xlabel('Time')
plt.ylabel('Frequency')

ax = plt.gca()
```

```
ax.set_ylim([2e9, 3e9])  
plt.savefig('plot.png')  
plt.show()
```



In []: