Fourier Transform

In this example we will demonstrate the fourier transform using wind speeds.

In [14]:
```
import pandas as pd
import numpy as np
```

In [15]:
```
data = pd.read_csv("OriginalDataset.csv")
#data
```

In [16]:
```
dataLatest = data[['LV ActivePower (kW)','Wind Speed (m/s)']]
#dataLatest
```

WindInput

After filtering the data we place the data into a csv file that can be copied into the Raven input csv.

In [17]:
```
df = dataLatest.iloc[0:144]
df.to_csv('WindInput.csv')
#df
```

In [18]:
```
import matplotlib.pyplot as plt
```

Wind Output

After passing the input into Raven and running Raven, we can put the output file into our graph. The data is shown below with the original data represented in Red and the Raven Data represented in blue. Another important feature to remember in Fourier is that the graph is highly dependant on the periods that are entered make sure that the periods reflect the peaks and valleys in the data for the best fit.

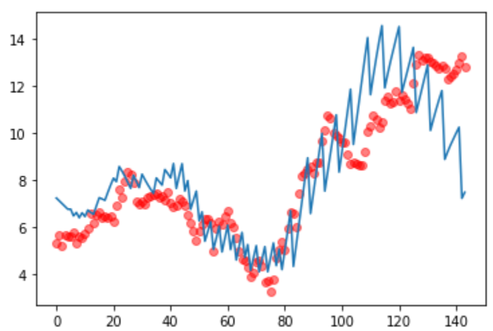
In [19]:
```
y = df['Wind Speed (m/s)']


dat = pd.read_csv('WindOutput.csv')

# print(dat)

plt.plot(dat.seconds, y, 'o', alpha=0.5, color='red')
plt.plot(dat.seconds, dat .signal2)
```

Out[19]:
```
[<matplotlib.lines.Line2D at 0x255261bd760>]
```



In [ ]:
```

```