



In[143]:=

```
SetDirectory["~white/Desktop/H2datacomp/"];  
ch2 = Import["vcseldata.csv", "csv"];  
ch2small = Table[Take[ch2[[i]], {1900, 2299}], {i, 51}];  
data = ch2small[[11]];
```

■ Plot the data

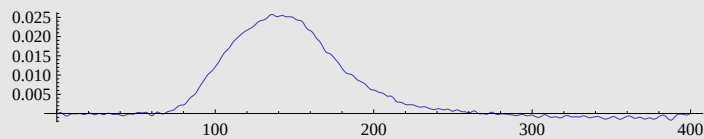
In[147]:=



In[148]:=

```
ListPlot[data, Joined → True, AspectRatio → 1 / 6]
```

Out[148]:=

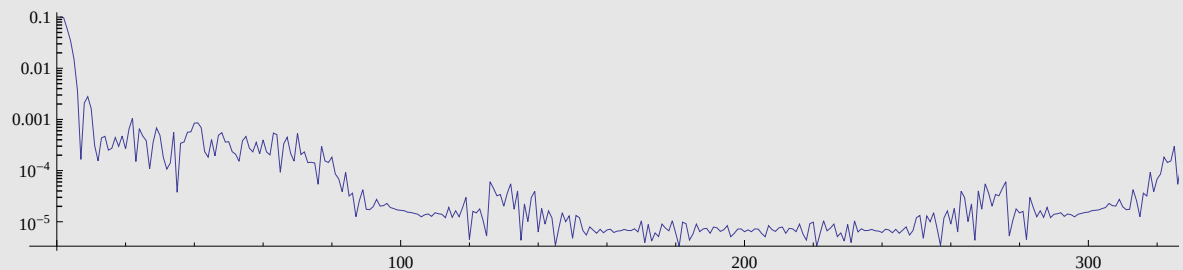


■ Plot the Fourier Transform of the data

In[149]:=

```
ListLogPlot[Abs[Fourier[data]],  
PlotRange → All, Joined → True, AspectRatio → 1 / 6]
```

Out[149]:=



■ Create a Band-pass filter

In[150]:=

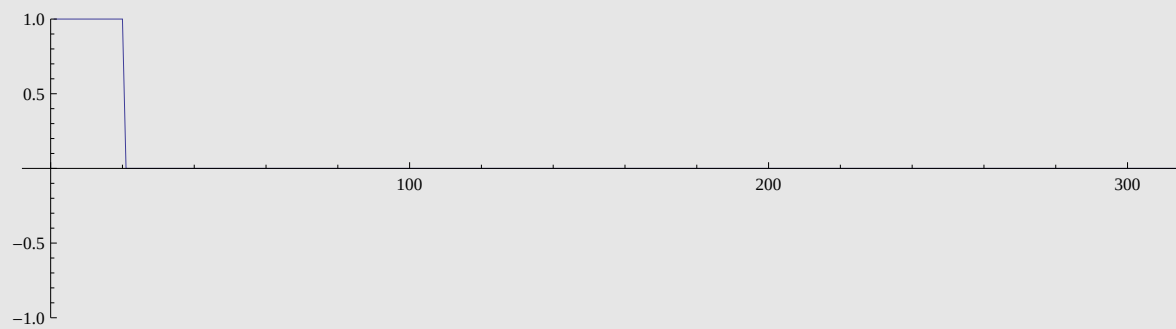
```
PassFilter[Low_?IntegerQ, High_?IntegerQ, Pts_?IntegerQ] :=  
Join[Table[0, {i, Low}], Table[1, {i, High - Low}], Table[0, {i, Pts / 2 - High}],  
Table[0, {i, Pts / 2 - High}], Table[1, {i, High - Low}], Table[0, {i, Low}]];
```

■ Example Band-pass filter between 0 & 200 MHz

In[151]:=

```
ListPlot[PassFilter[0, 20, 400], Joined → True, AspectRatio → 1 / 5]
```

Out[151]=



■ Take Fourier Transform of the data set

In[152]:=

```
datainput = N[Fourier[data]];
```

■ Create a function that plots both original data (Blue) and filtered data (Red)

In[153]:=

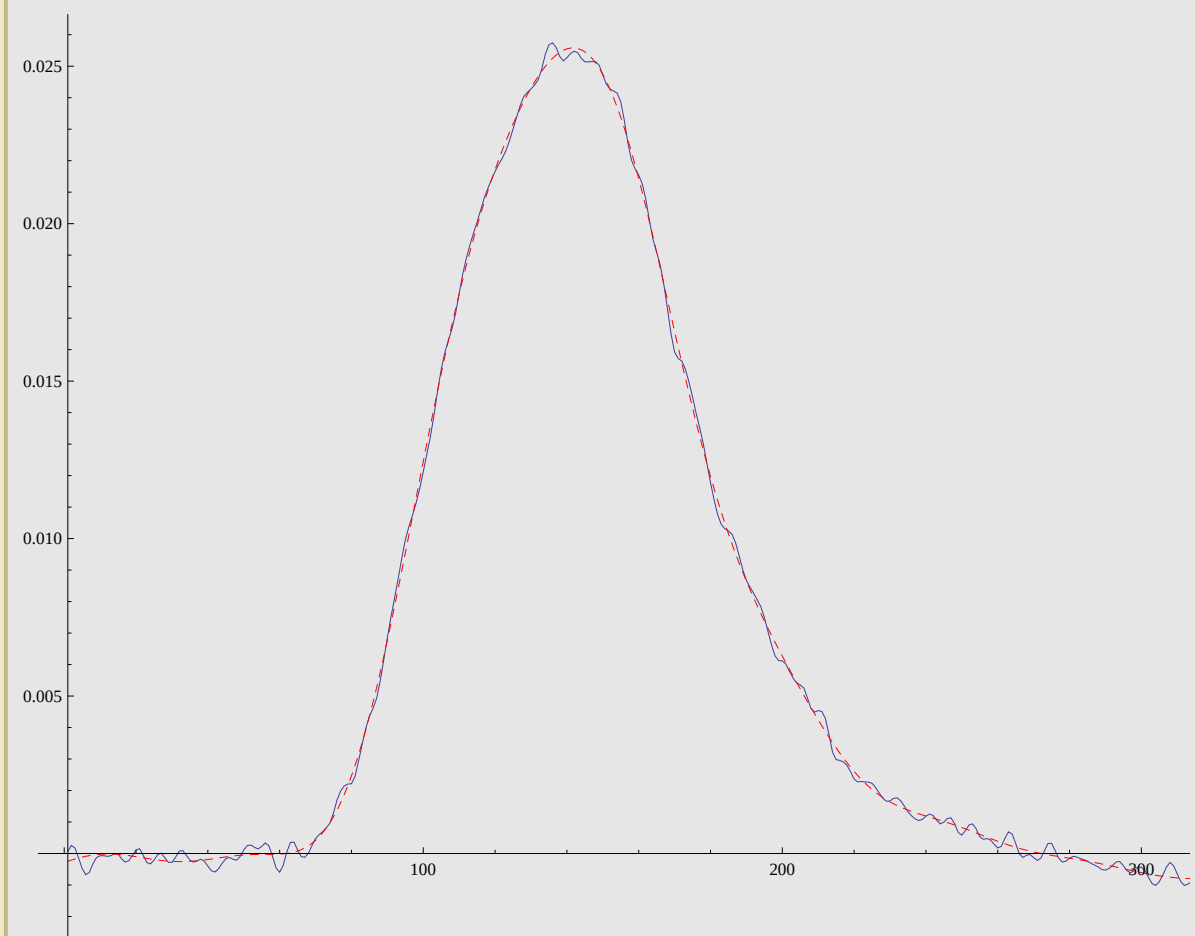
```
ShowPass[Lowf_?IntegerQ, Highf_?IntegerQ] :=  
  Show[ListPlot[data, PlotRange → All, Joined → True],  
    ListPlot[Re[InverseFourier[datainput PassFilter[Lowf, Highf, 400]]],  
      Joined → True, PlotRange → All, PlotStyle → {Dashed, Red}]]
```

■ Example useage with High freq set to 100 MHz.

In[154]:=

ShowPass[0, 10]

Out[154]=



■ Example useage with High freq set to 20 .

In[155]:=

ShowPass[0, 20]

Out[155]=

