Laura Douglas
ECE 430
LAB 2

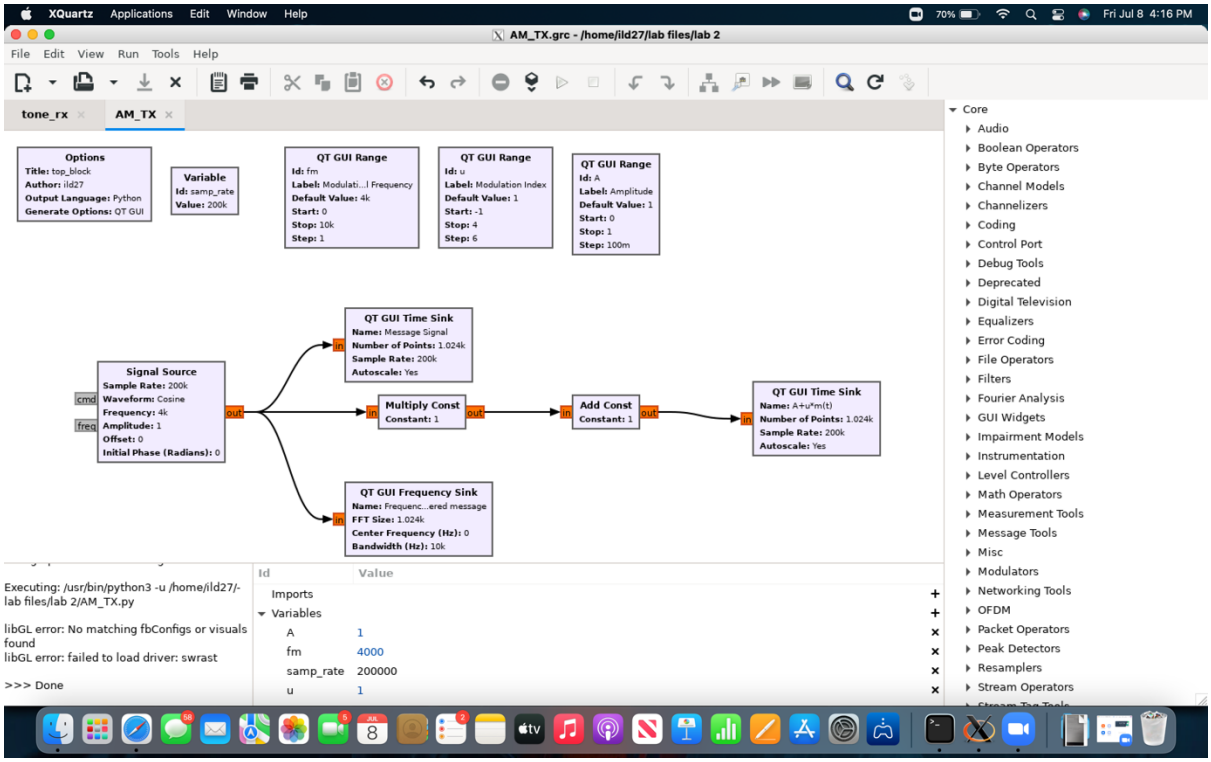

Figure 1: AM transmission flowgraph

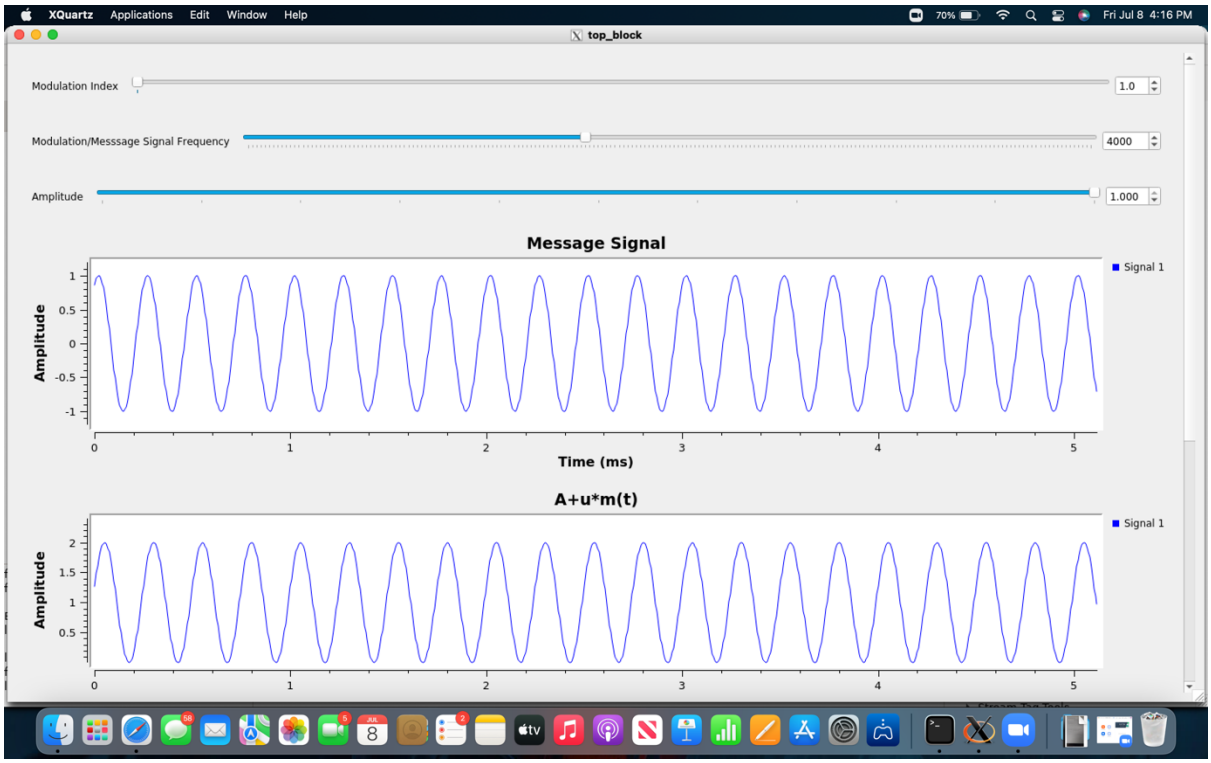

Figure 2a: Transmitted message signal

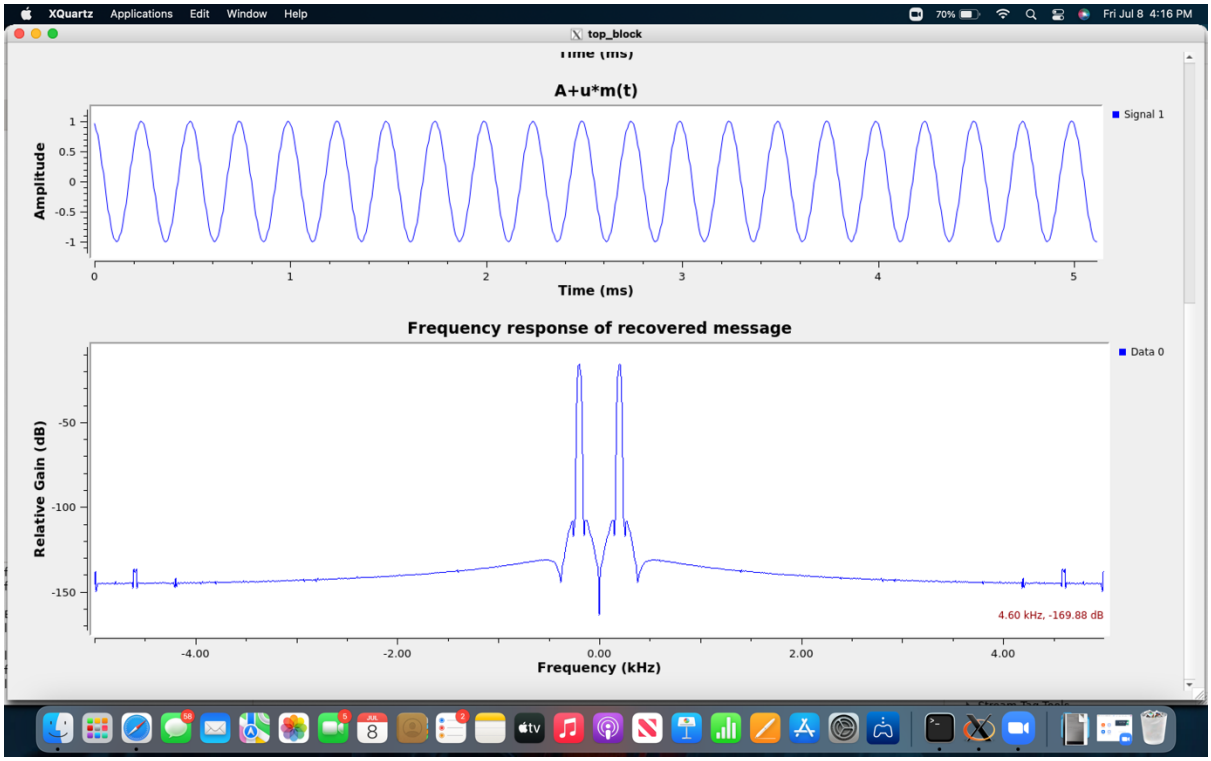

Figure 2b: Transmitted message signal

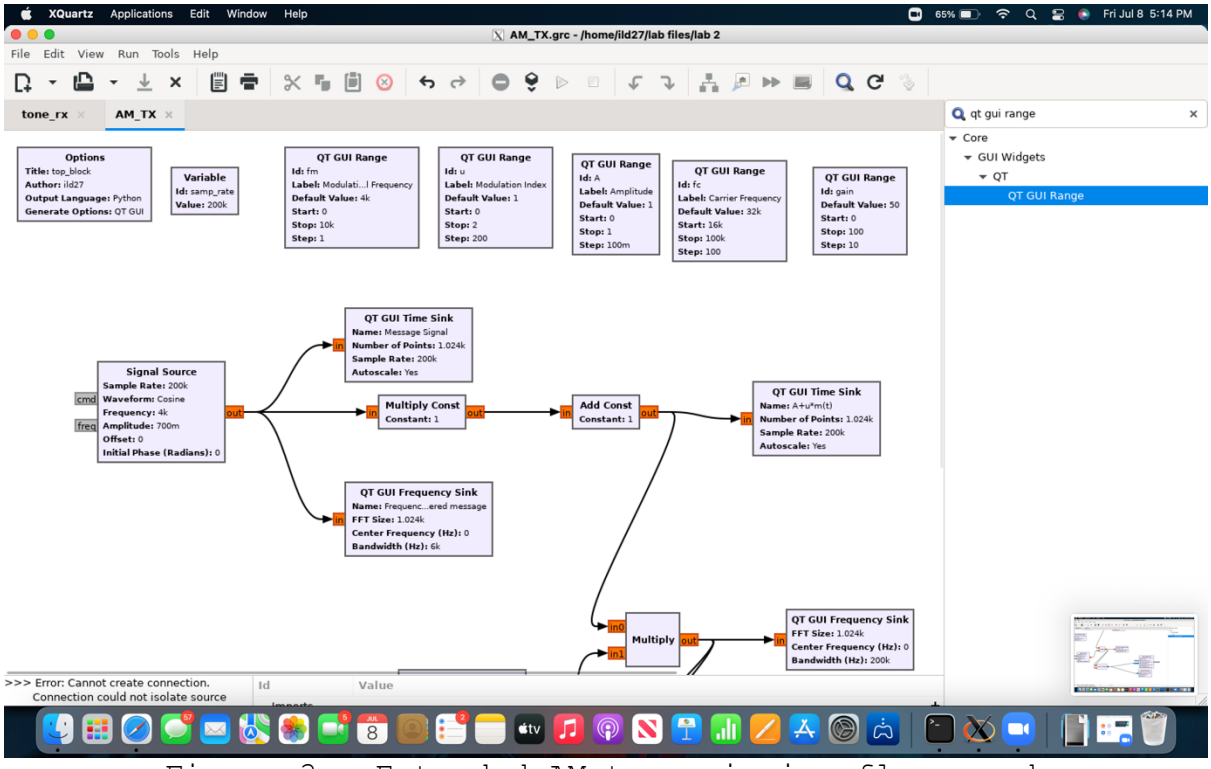

Figure 3a: Extended AM transmission flow graph

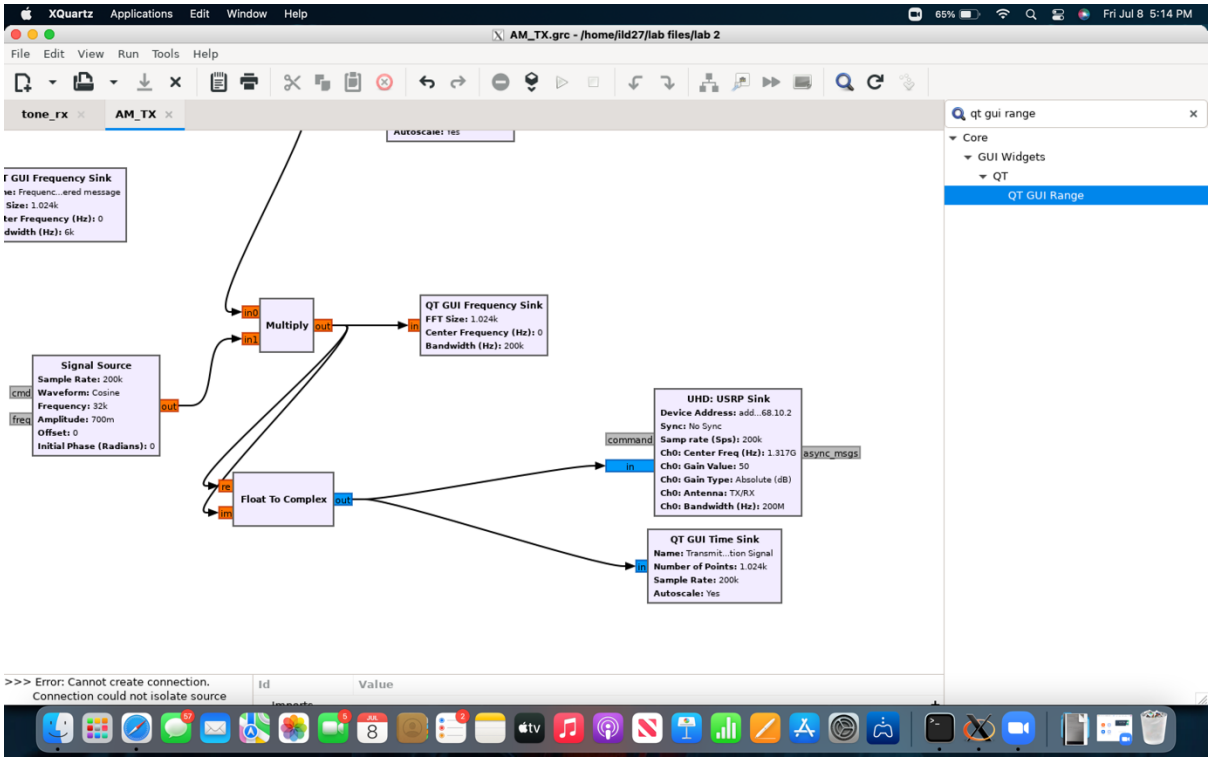

Figure 3b: Extended AM transmission flow graph

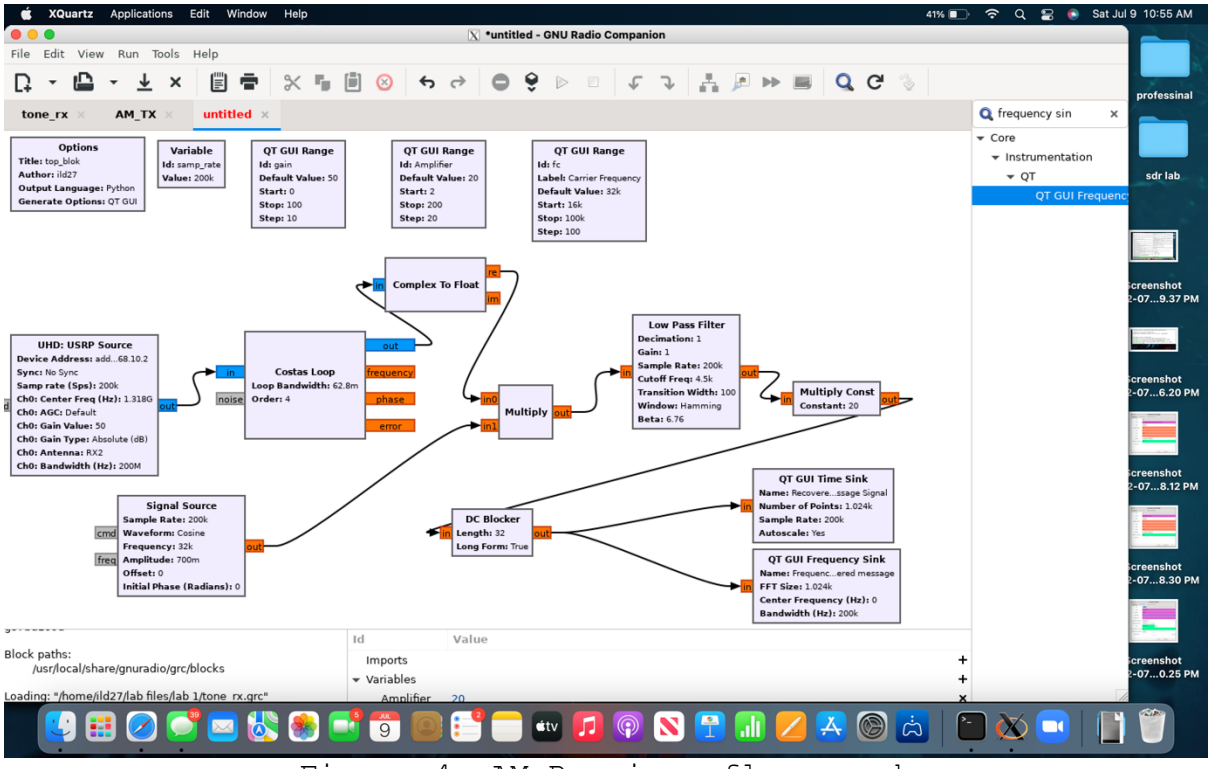

Figure 4: AM Receiver flow graph

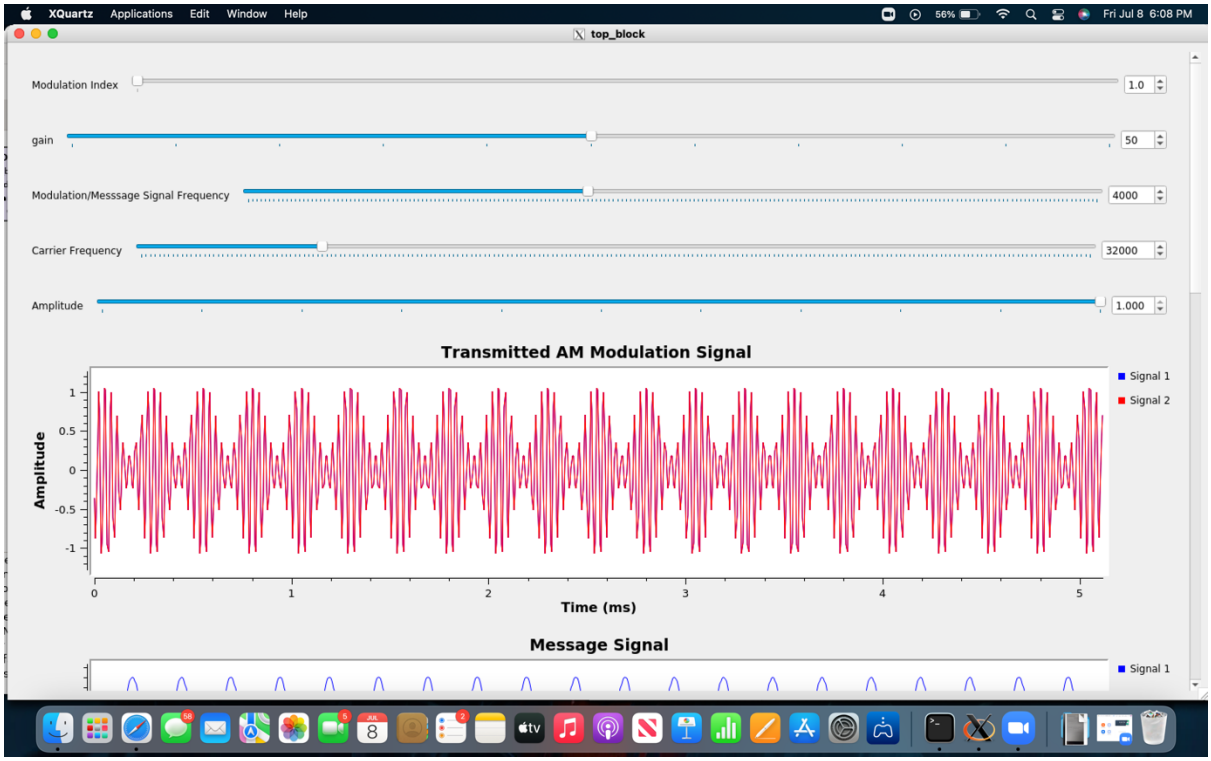

Figure 5: Transmitted AM modulation signal

We got the correct curves for a gain of 50. So, we didn't increase the gain further.

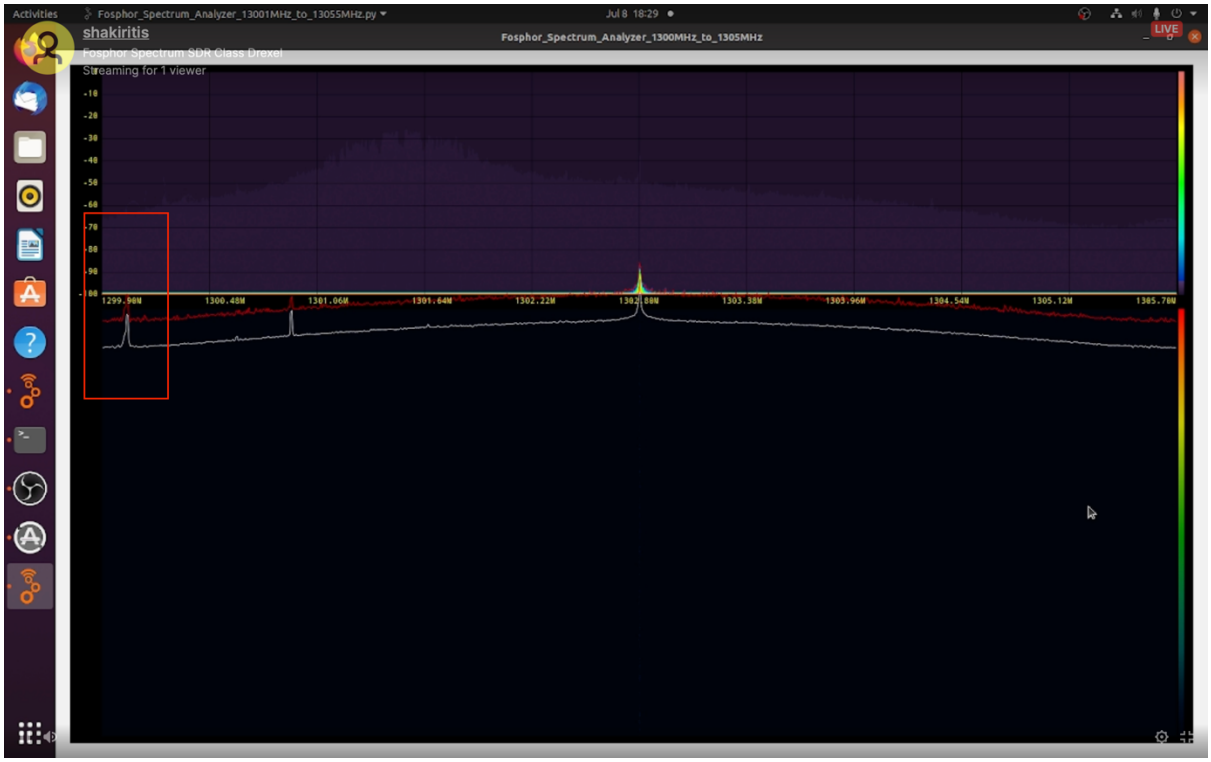

Figure 6: Real-time spectrum from AM signal transmission

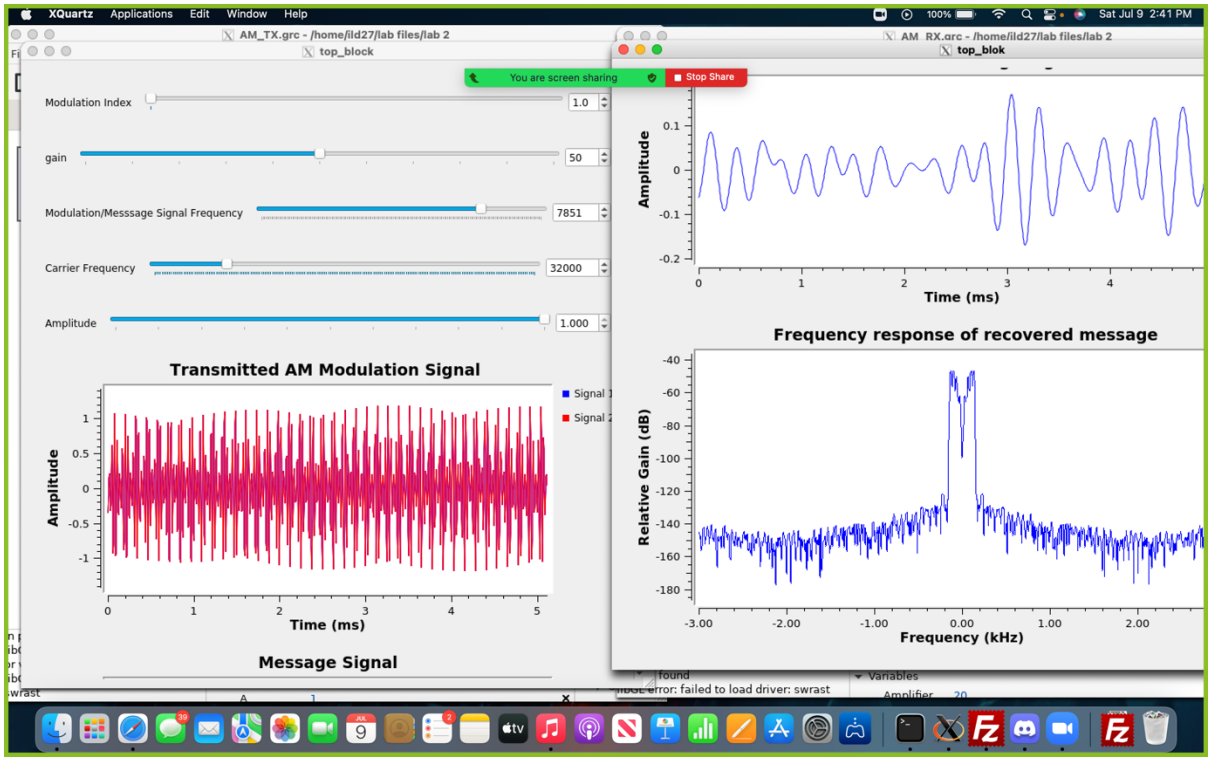

Figure 7: AM receiver graph

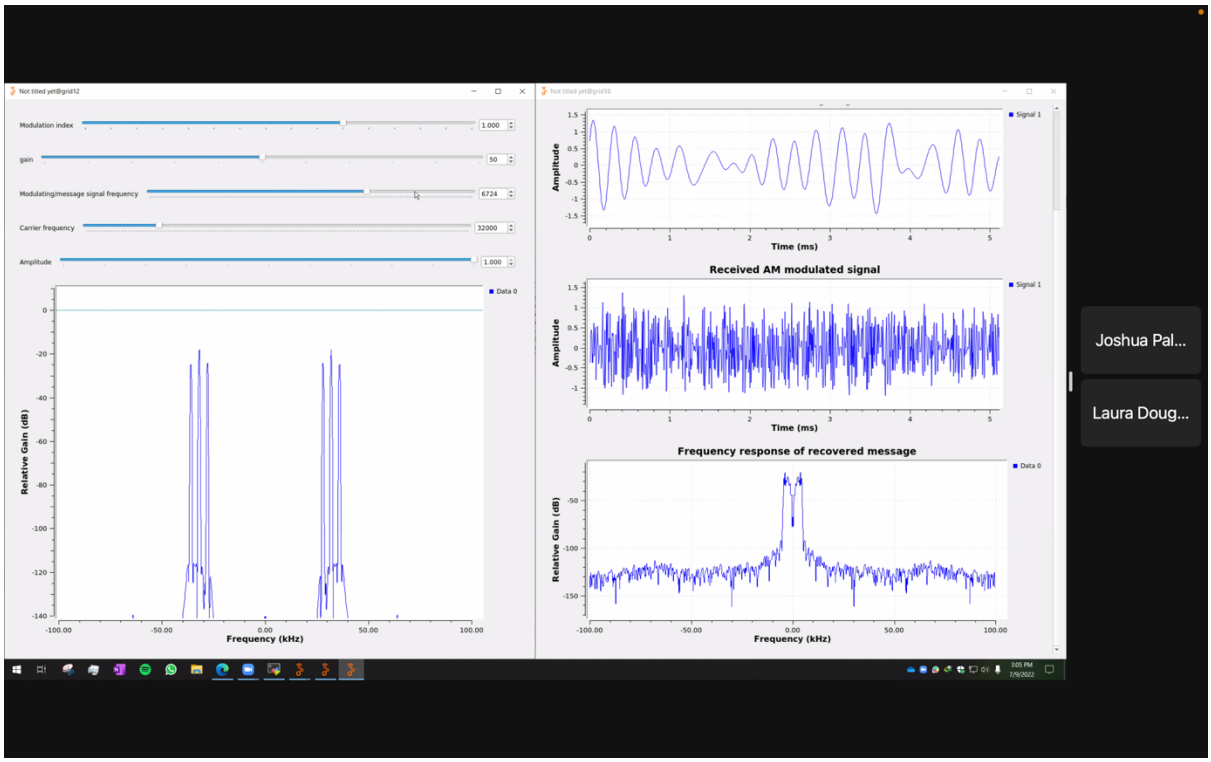

Figure 7: AM transmission

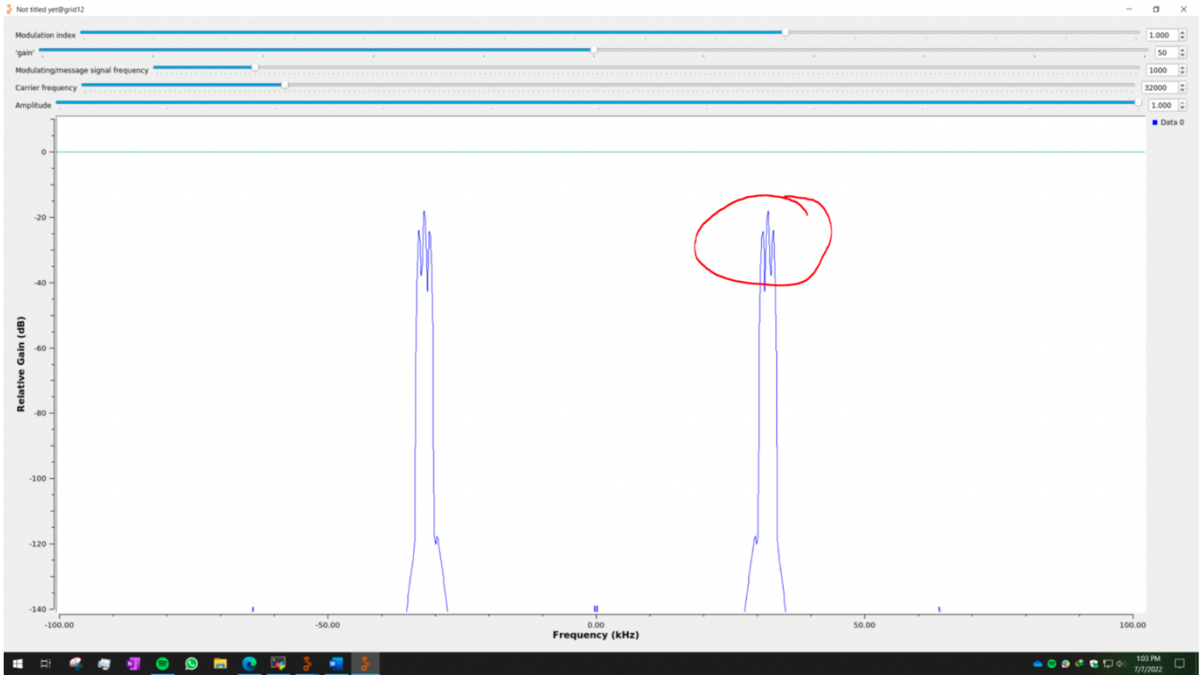

Figure 8: Graph when fm is decreased from 4k Hz to 2k Hz

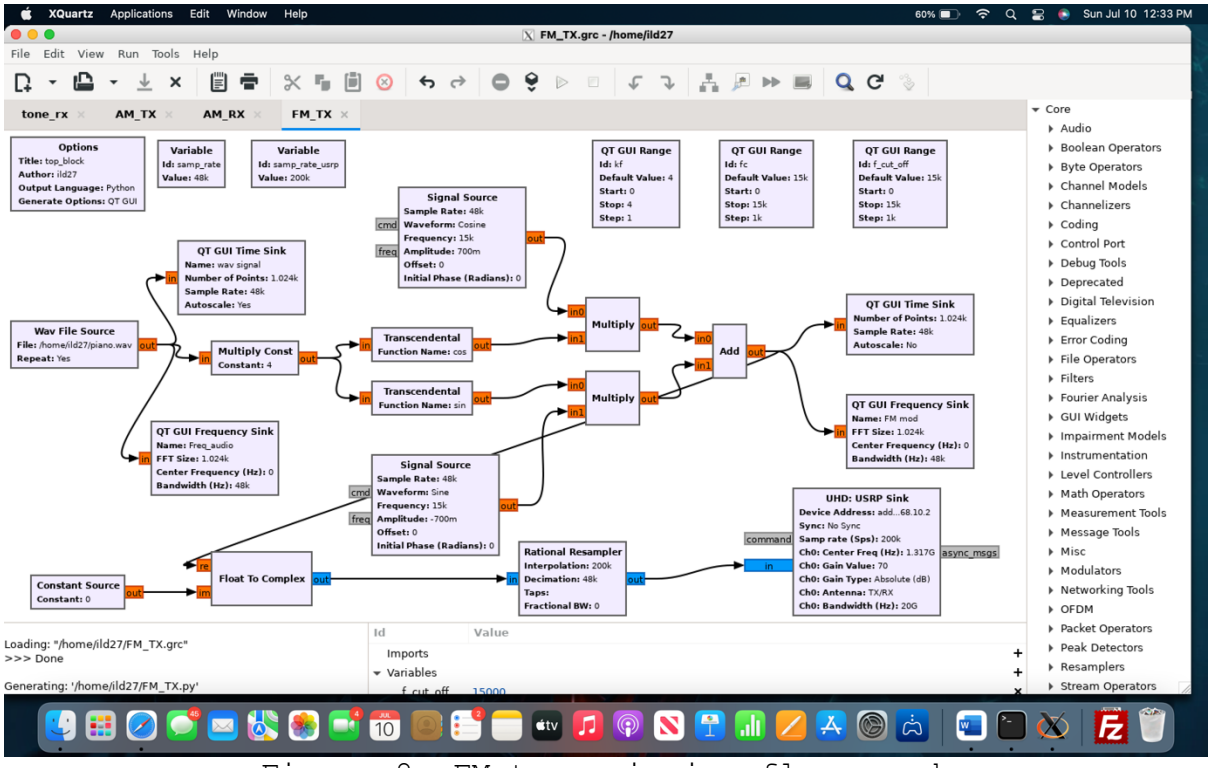

Figure 8: FM transmission flow graph

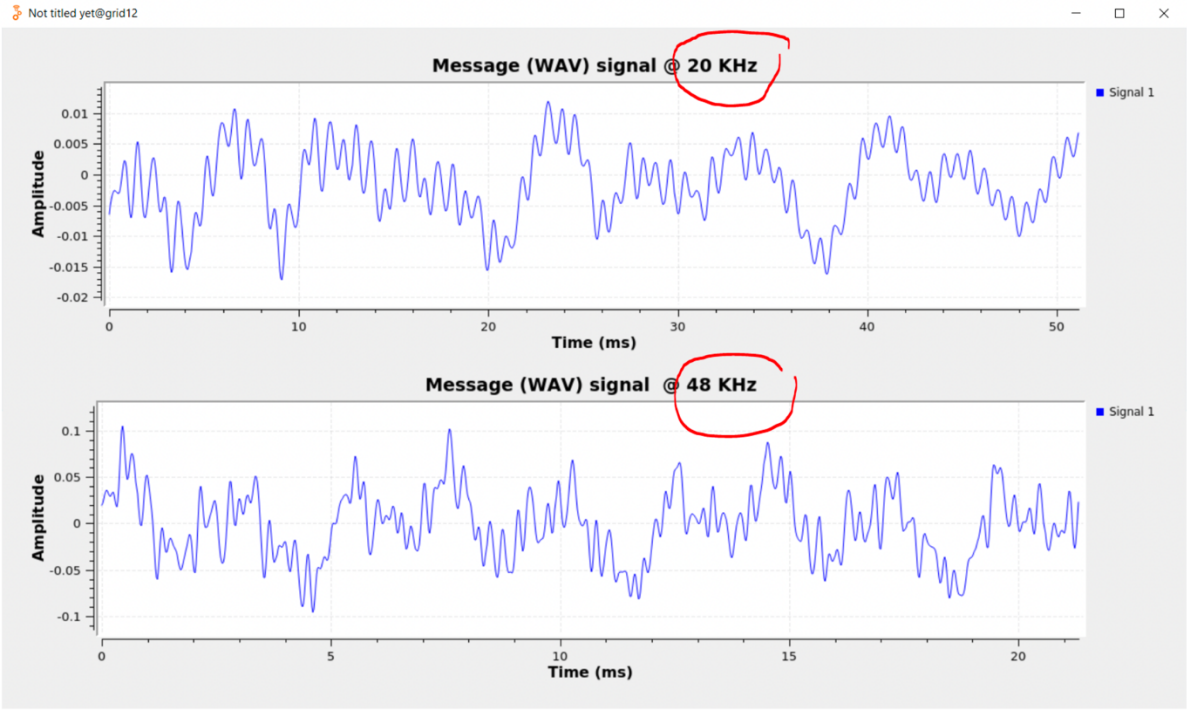

Figure 9: 48 KHz sampling rate works as the piano tone is a low frequency tone which by intuition is not over 24.

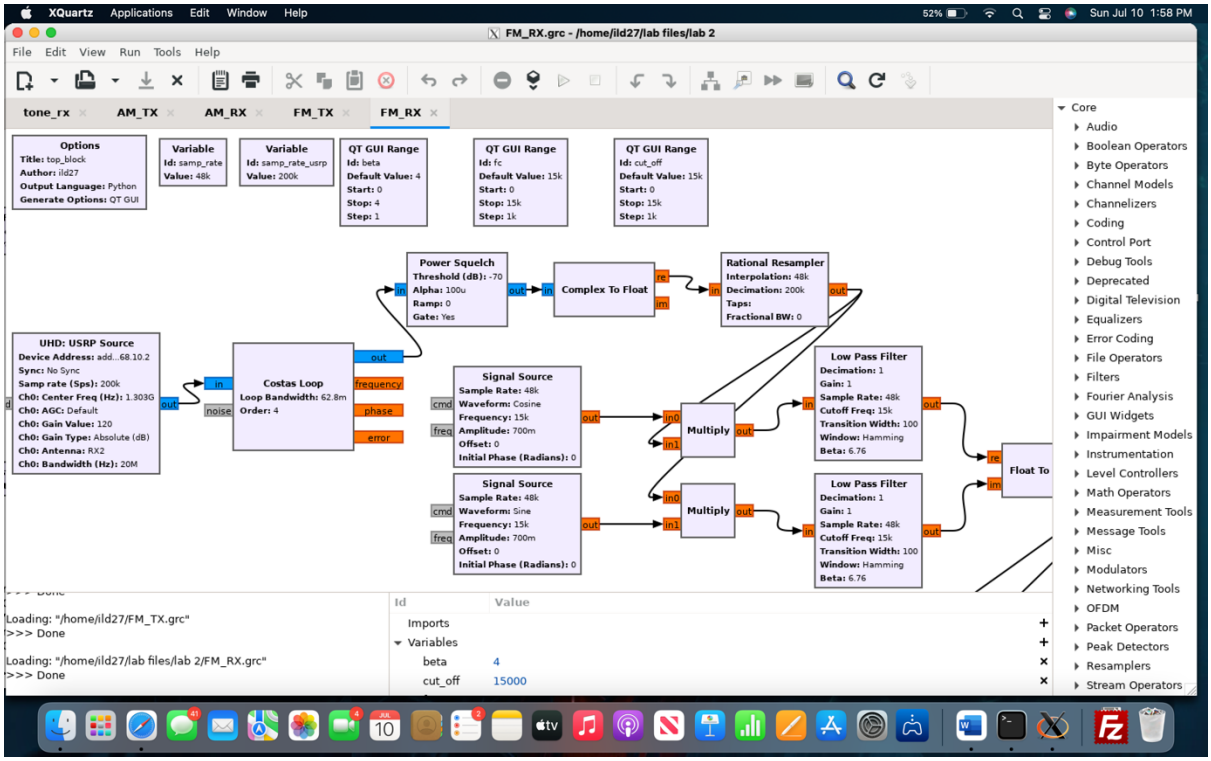

Figure 10a: FM receiver flow graph

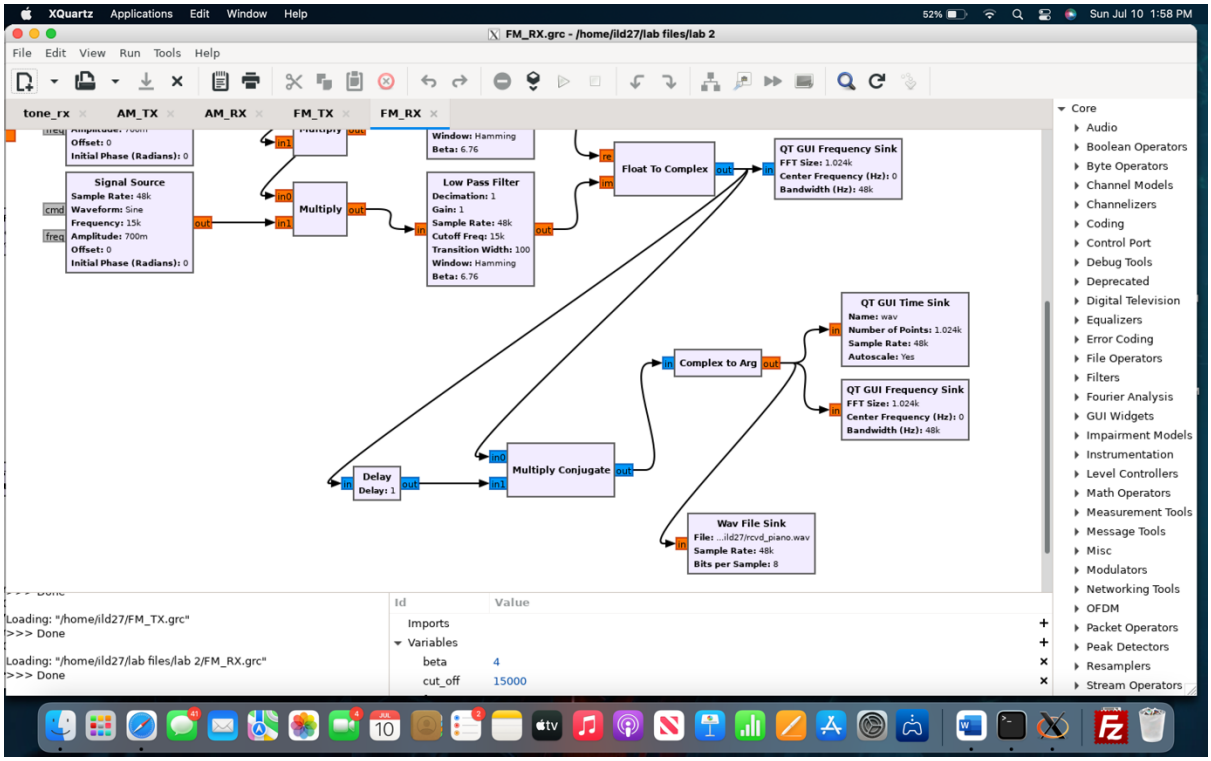

Figure 10b: FM receiver flow graph

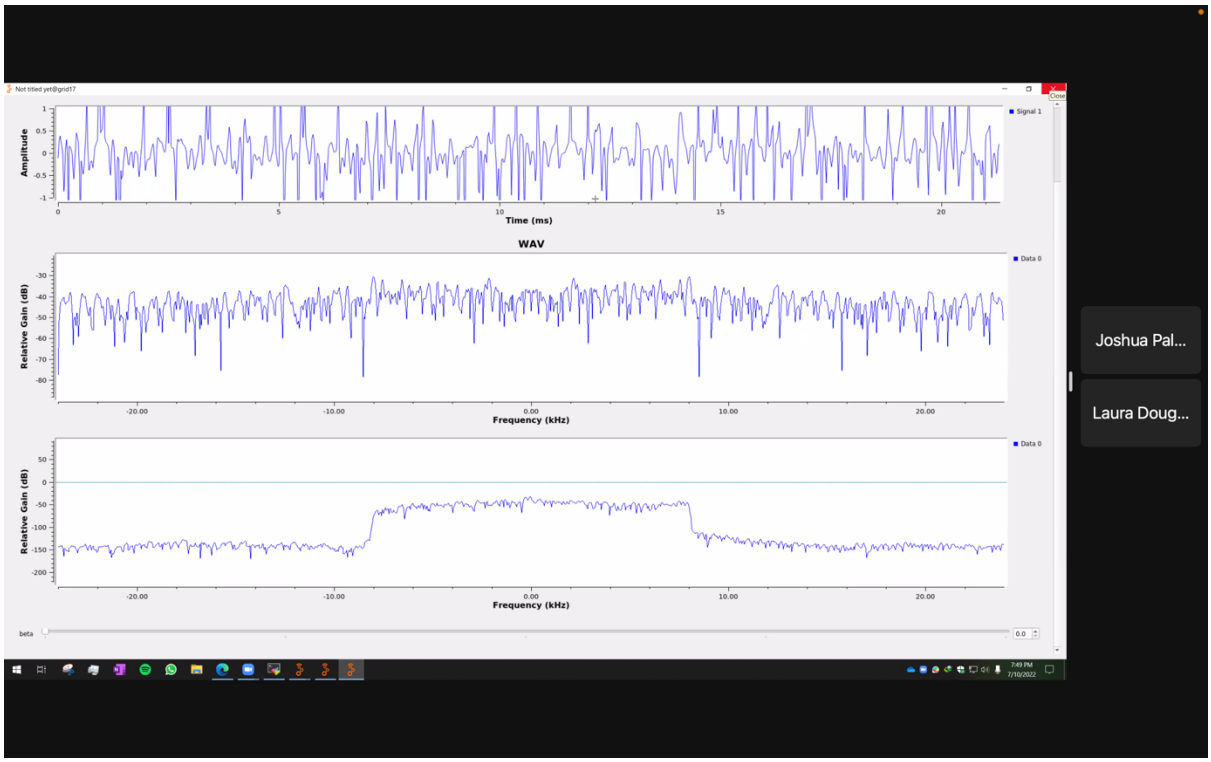

Figure 11: FM receiver graphs at cut off frequency of 8k (although the higher frequencies still don't get removed completely, the piano music can be heard). We were able to determine this value using MATLAB.

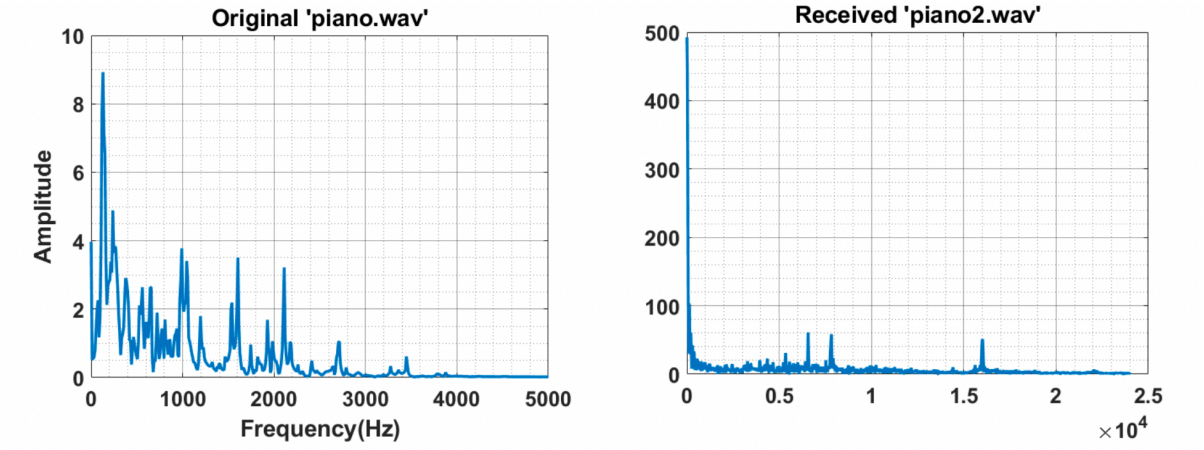

Figure 12: MATLAB frequency plots