Vector Signal Analysis of Frequency Modulated Signals ... part 3

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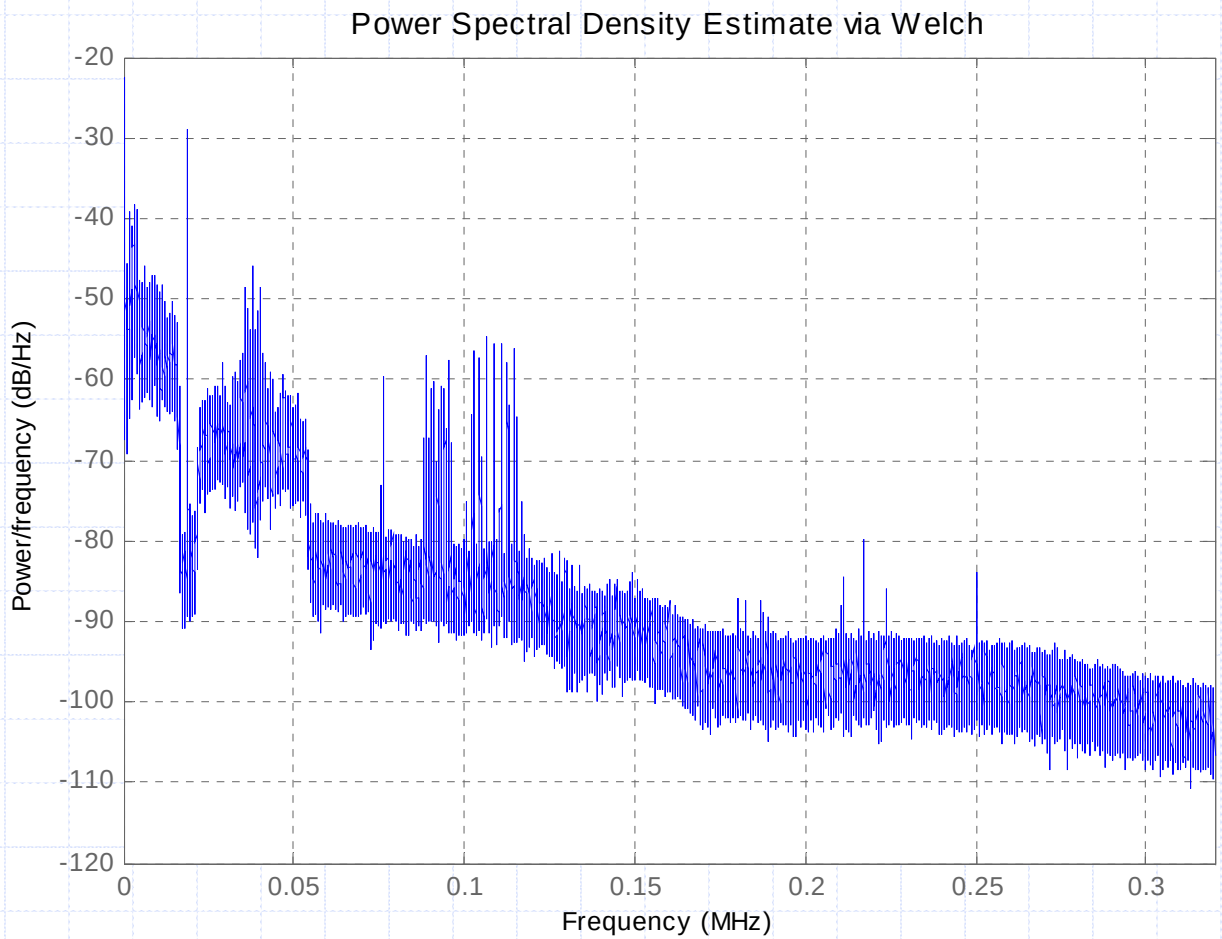
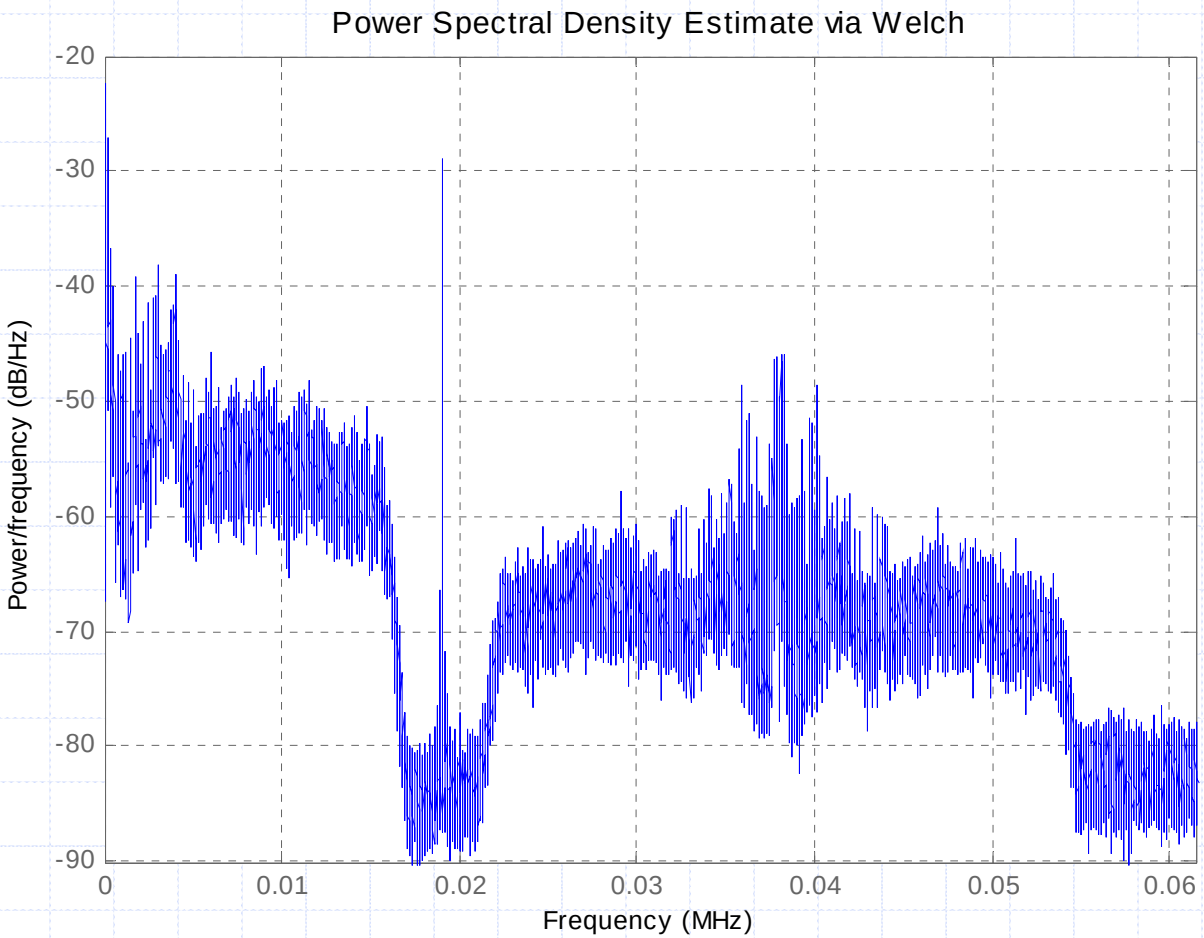
FM Demodulation Project

- Any problems with your demodulation of the radio signal (95.1 MHz)?
- What was the message?
- Was this stereo, mono, ... ?

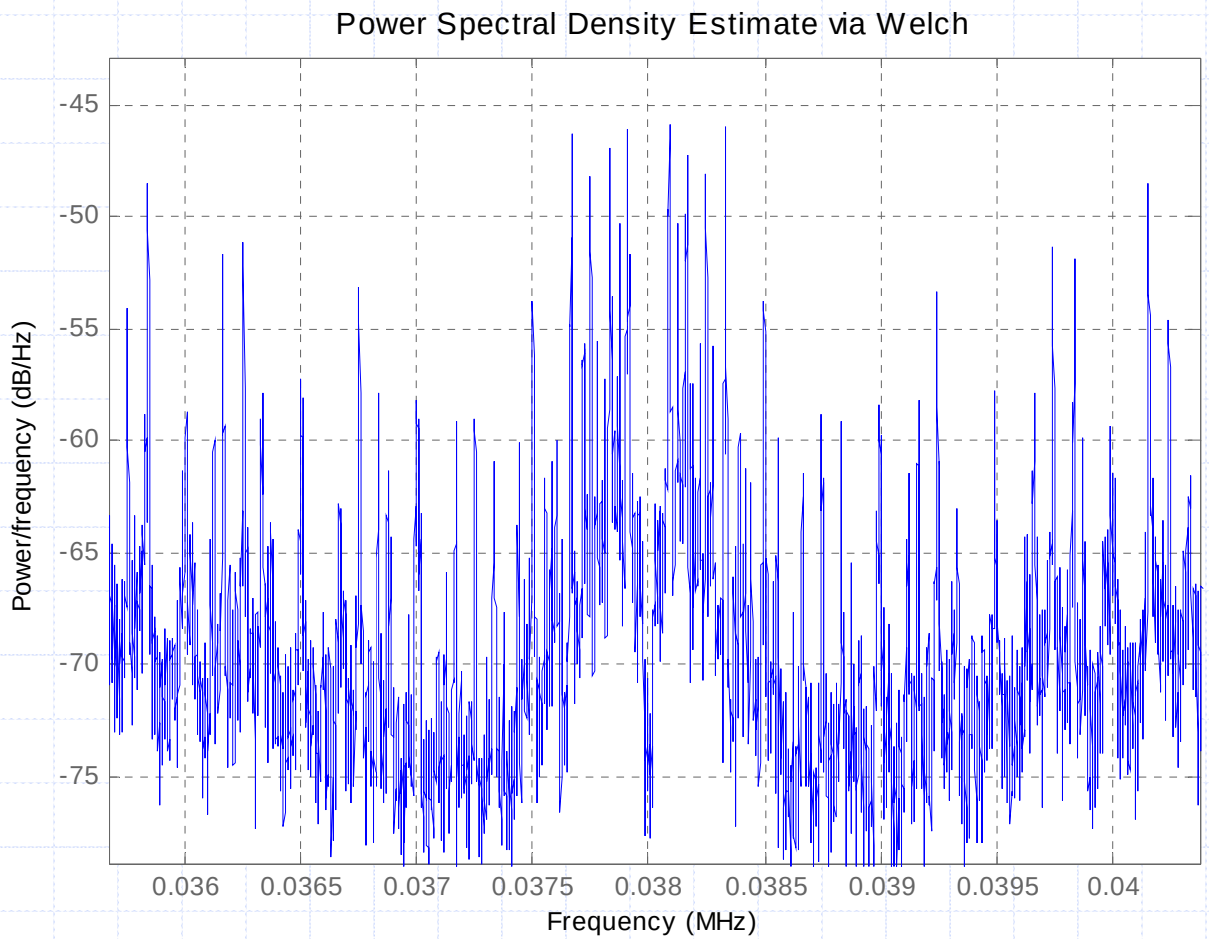
Composite Baseband Signal (CBS)



Zoomed CBS


Power Spectral Density Estimate via Welch
Power/frequency (dB/Hz)
-20
-30
-40
-50
-60
-70
-80
-90
0
0.01
0.02
0.03
0.04
0.05
0.06
Frequency (MHz)

Zooming on DSB-SC



But What About Recovering the Stereo Message?

Homework

- Demodulate the data contained in the FM_95_1_span_500.mat file … netuser drive (EE4800-04)
  - Load the .mat file
  - Recover the stereo message
  - MATLAB commands … double, psd, pwelch, sound, soundsc, angle, unwrap, diff, load, and filtfilt may be helpful

Final Project Discussion

- FM stereo demodulation
- Digital FM demodulation (SCA)
- Pager demodulation
- FM cellular demodulation
- 802.11 demodulation
- MATLAB TV ... analog TV demodulation
- Channel impairments and their mitigation
- Digital cable TV demodulation