

Assignment 2

ECE5654 (McGwier and Tandon) – due February 17. Please submit your matlab scripts.

Using Matlab:

- 1) Simulate a QPSK or 4-PSK signal, 8192 symbols long with 4 samples per signal as a complex signal at a frequency of 0 Hz. Assume a sampling frequency of 1 Hz (or one sample per second).
- 2) Compute and display the power spectrum of the signal constructed in Problem 1
- 3) Apply a lowpass filter with a cutoff frequency of 0.25 Hz and display a power spectrum of the results.
- 4) Apply a lowpass filter with a cutoff frequency of 0.125 Hz and display its power spectrum
- 5) Apply a lowpass filter with a cutoff frequency of 0.1 Hz and display its power spectrum and display the real part of the signal for the first 400 samples.
- 6) Describe the results in problem 5)