

EE504P – S03 Assignment #3 – Due at Lecture 13.

Using the data set provided in the file “Assign3-4.txt”, compute the peak amplitude for the voltage and current using a 16-point DFT filter. The data set contains one-second worth of data sample at 960 Hz as a 3 x 960 element matrix in ASCII tab delimited file. The columns of data are arranged in the order of: time, voltage, and current.

You can use any appropriate mathematical software such as MathCAD, Matlab, and Excel.

1. Provide a graph for each voltage and current that has both the time sample data and computed peak magnitude plotted together.
2. Provide a list of filter coefficients that you used for the filtering.
3. Determine how many samples are needed to achieve a steady state output in the input is not changing in either phase or magnitude?
4. Provide a plot to verify your conclusion.