

EE432 Fall 2012 Homework 07
Due: Wednesday, November 14, 2012

I. Windowed LPF Design

1. Using the method given in Table 9.4, design a windowed low pass filter with the following specifications:

Pass band edge : 5 kHz
Stop band edge : 7 kHz
Stop band attenuation : 42 dB
Sample frequency : 20 kHz

On a separate sheet, show your calculations.

2. Use *fvtool* to demonstrate how well the magnitude response meets the criteria above. If it doesn't quite meet the specs, that does not necessarily mean you did anything wrong. Print out the plot and on the plot, indicate the information below and fill in the following table:

Pass band edge (Hz)	
Stop band edge (Hz)	
Cutoff frequency (Hz)	
Transition width (Hz)	
Stop band attenuation (dB)	
Type of window	
# Coefficients in filter	

II. Windowed BPF Design

1. Using the method given in Table 9.4, design a windowed band pass filter with the following specifications:

Pass band edges : 28 kHz and 38 kHz
Transition widths : 1 kHz
Stop band attenuation : 65 dB
Sample frequency : 100 kHz

On a separate sheet, show your calculations.

2. Use *fvtool* to demonstrate how well the magnitude response meets the criteria above. If it doesn't quite meet the specs, that does not necessarily mean you did anything wrong. Print out the plot and on the plot, indicate the information below and fill in the following table:

Center frequency (Hz)	
3dB bandwidth (Hz)	
Cutoff frequencies (Hz)	
Type of window	
Stop band attenuation (dB)	
# Coefficients in filter	

Turn in your plots for parts I and II as well as the filled-in tables and requested calculations.