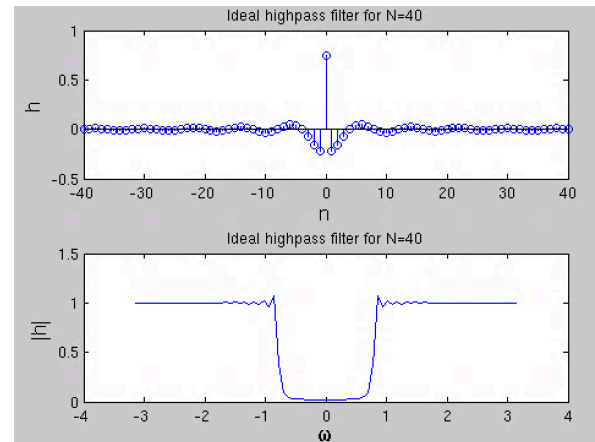
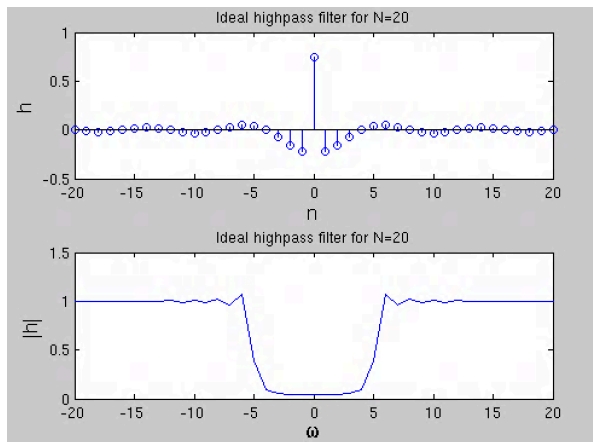
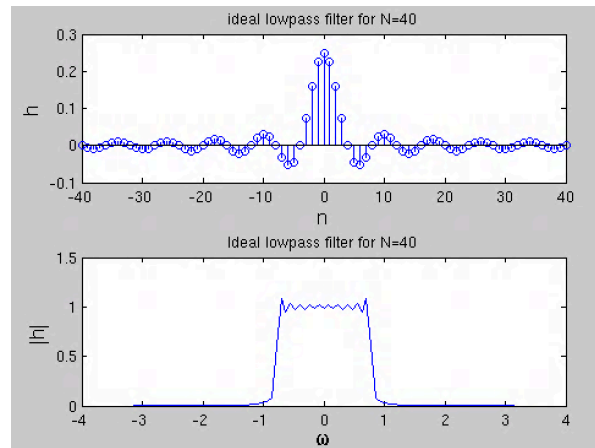
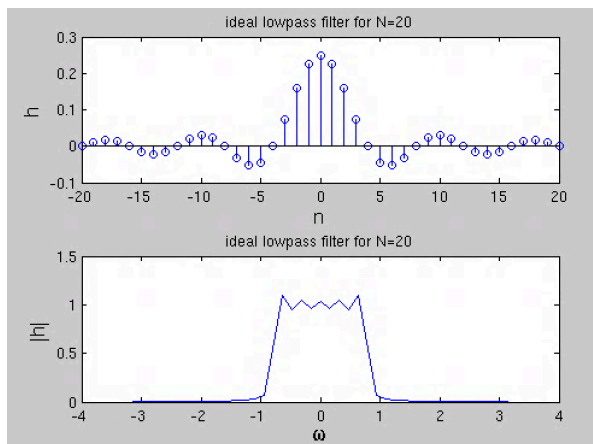


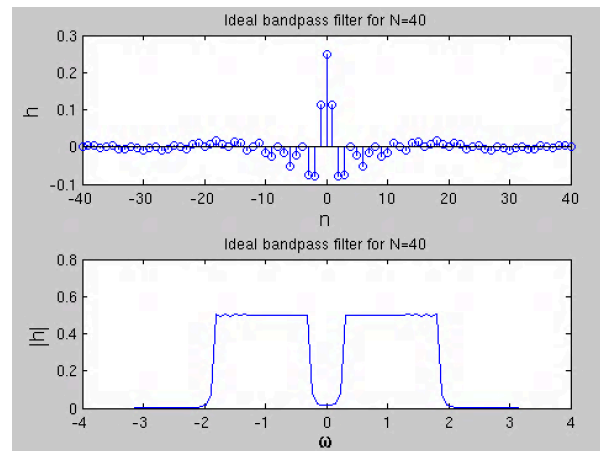
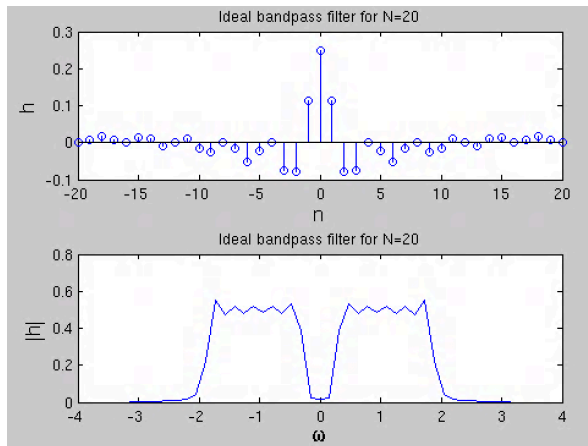
ECE 311 lab4

Xuanying Li
Section C

Report Item 1

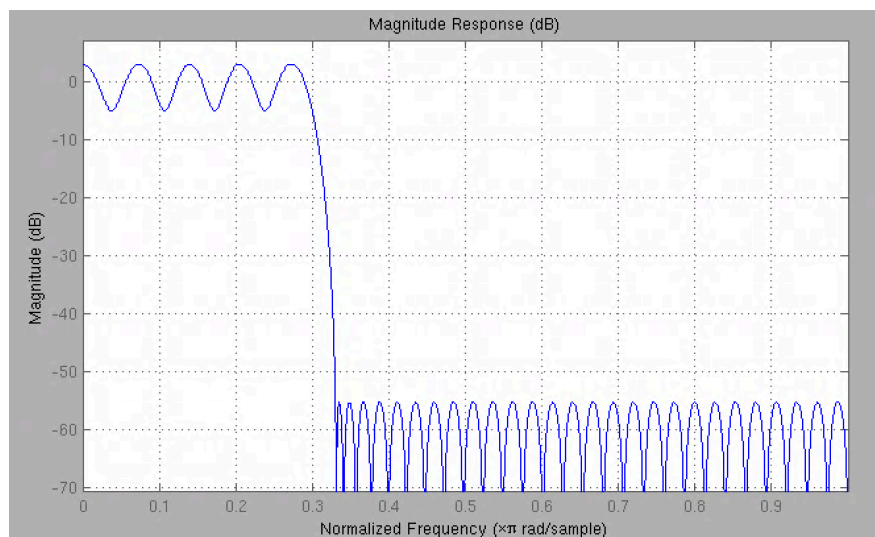
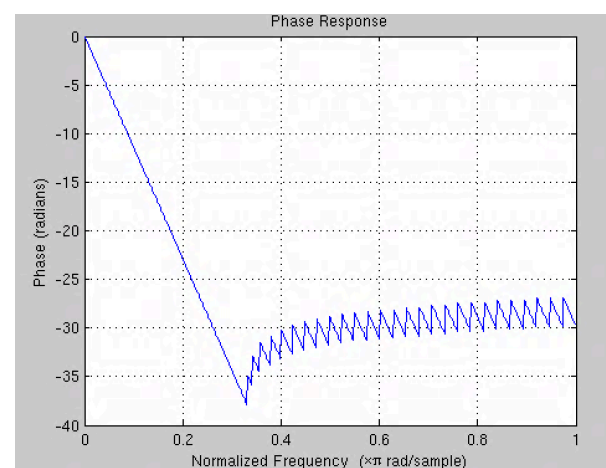
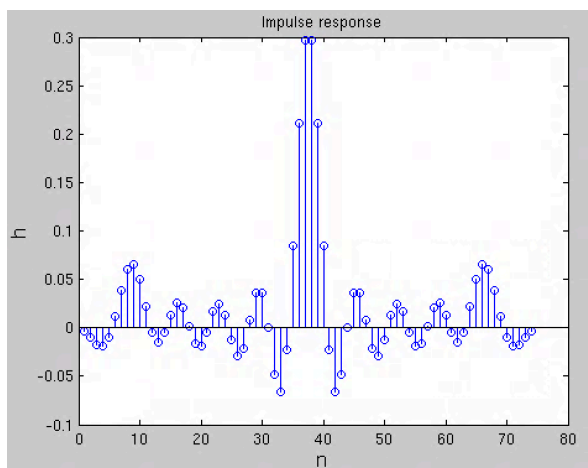
The ideal filter has no ripple. However, there is some ripple in my filter. I think the reason is the size of n . When I change n from 20 to 40, the ripple will be smaller.





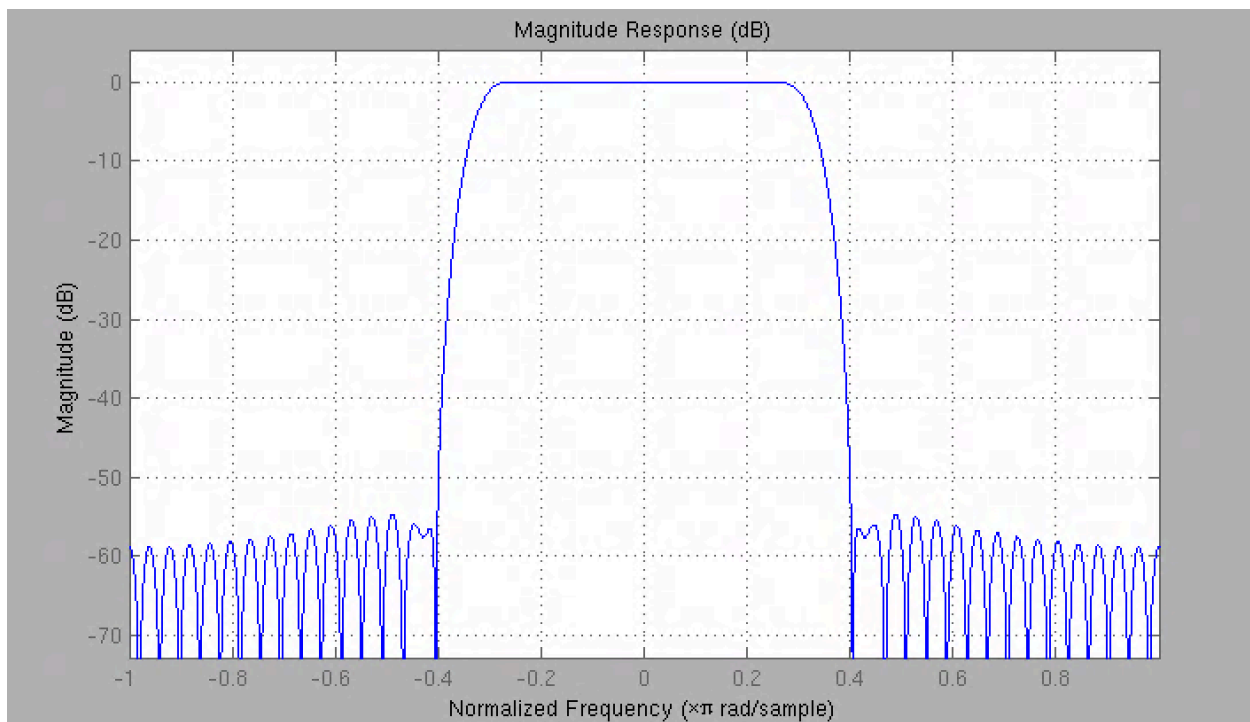
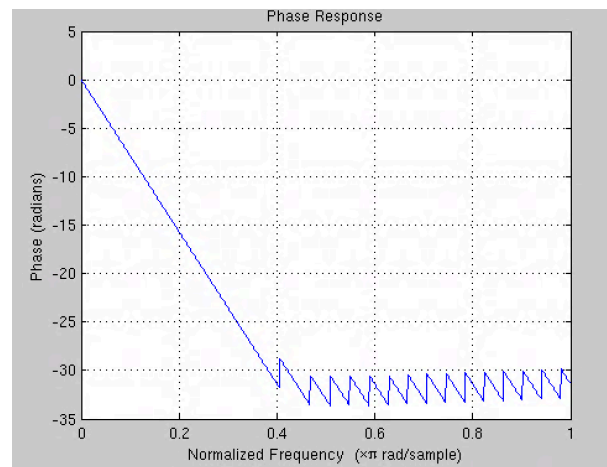
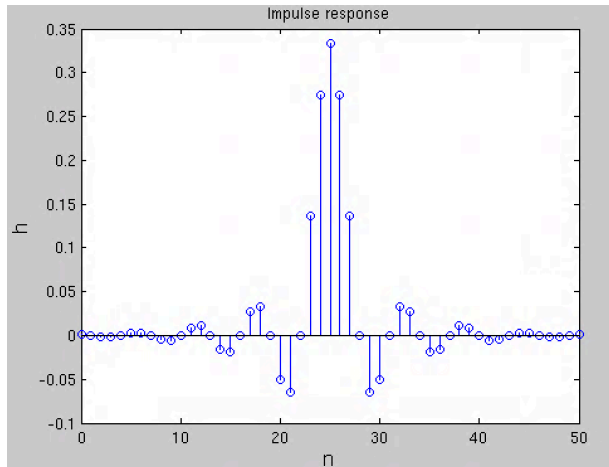
Report Item 2

The passband ripple is 8dB. The stopband is -55dB. The transition bandwidth is 0.03 π rad/sample.

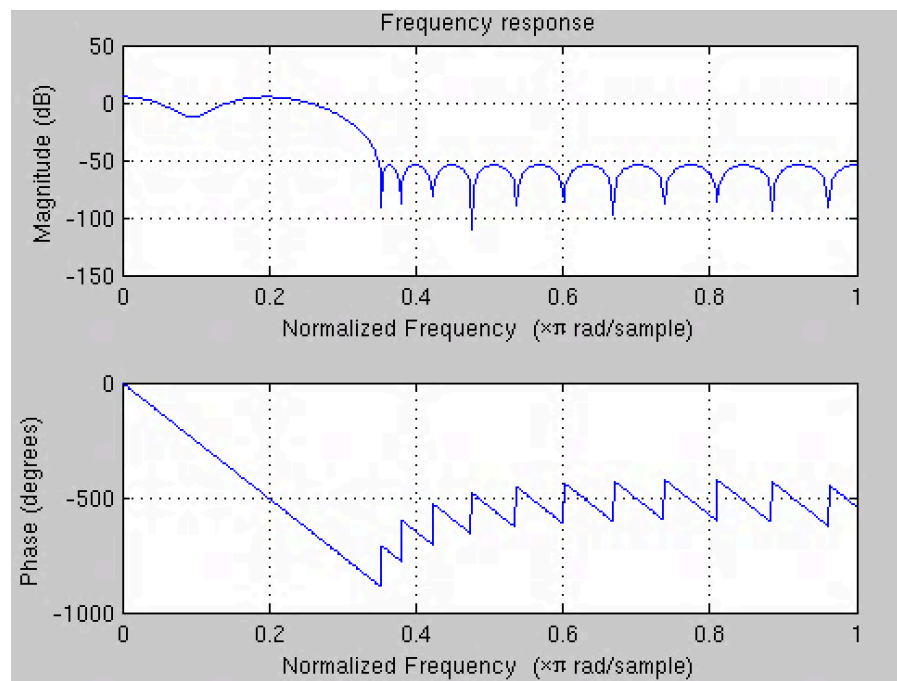
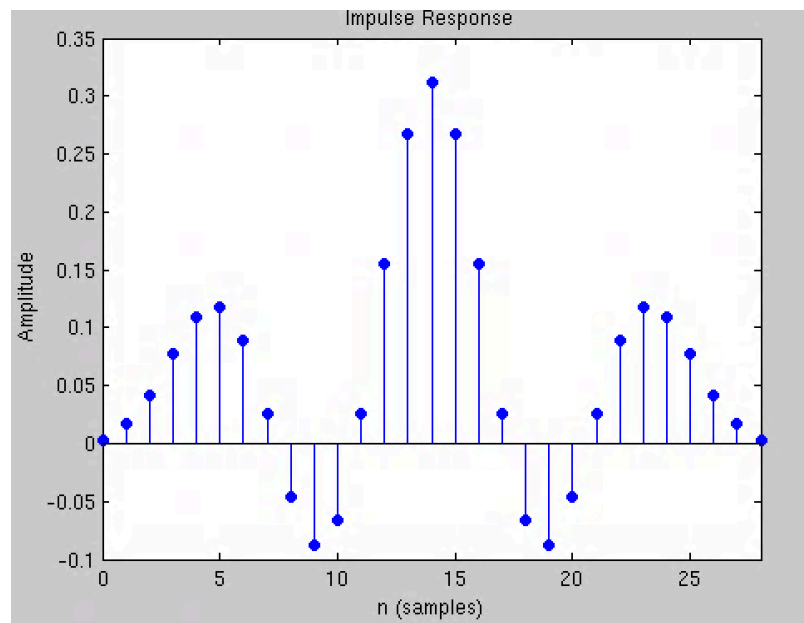


Report Item 3

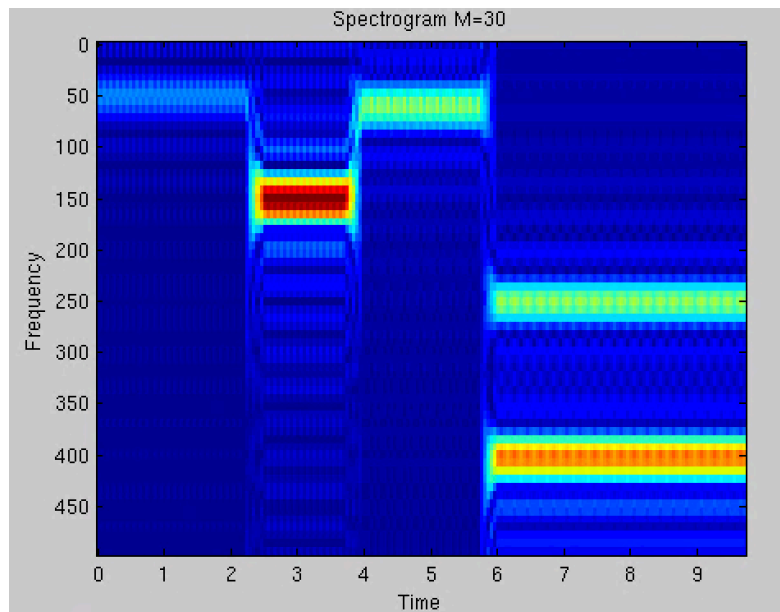
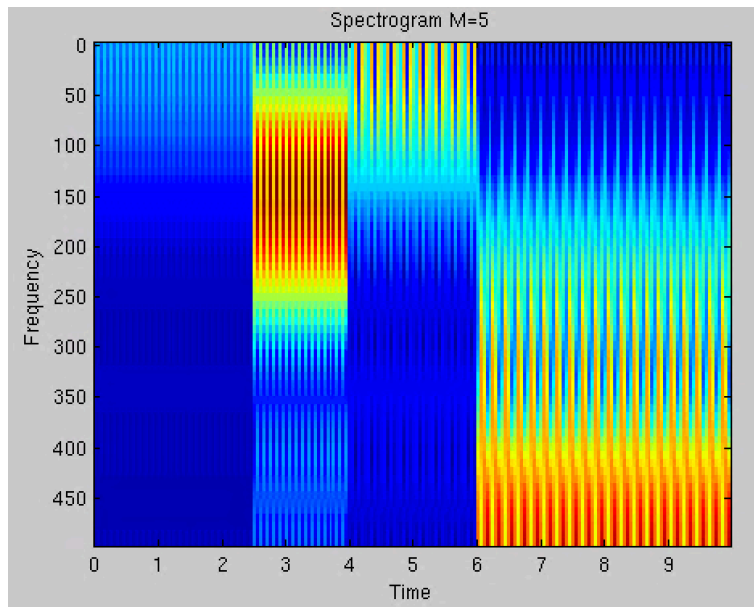
The passband ripple is 0dB. The stopband attenuation is -55dB. The passband edge frequency is 0.28π and stopband edge frequency is 0.4π .



Report Item 4

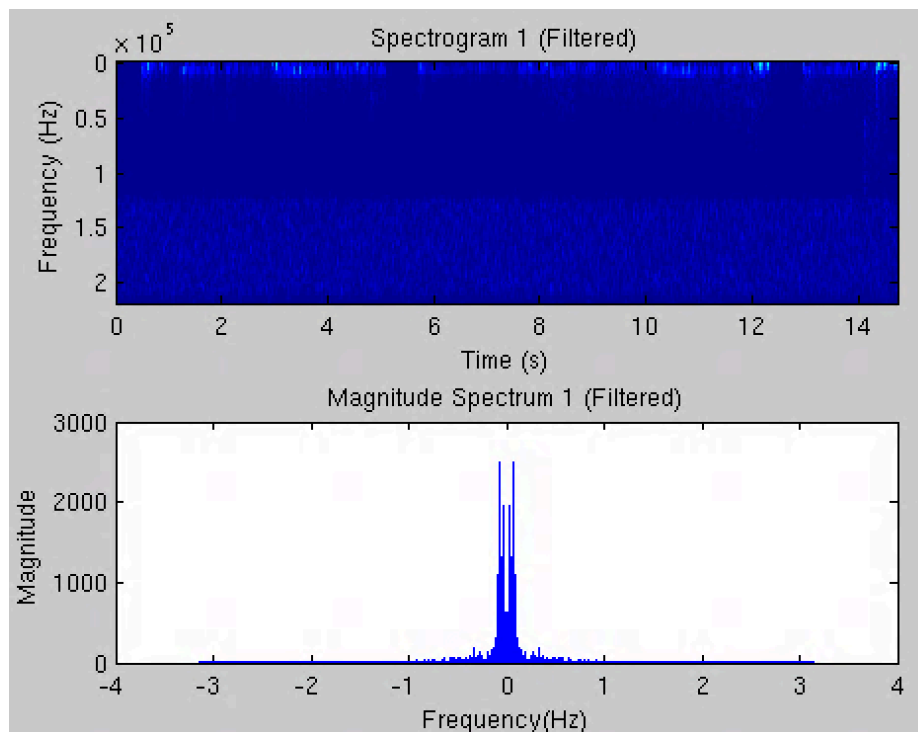
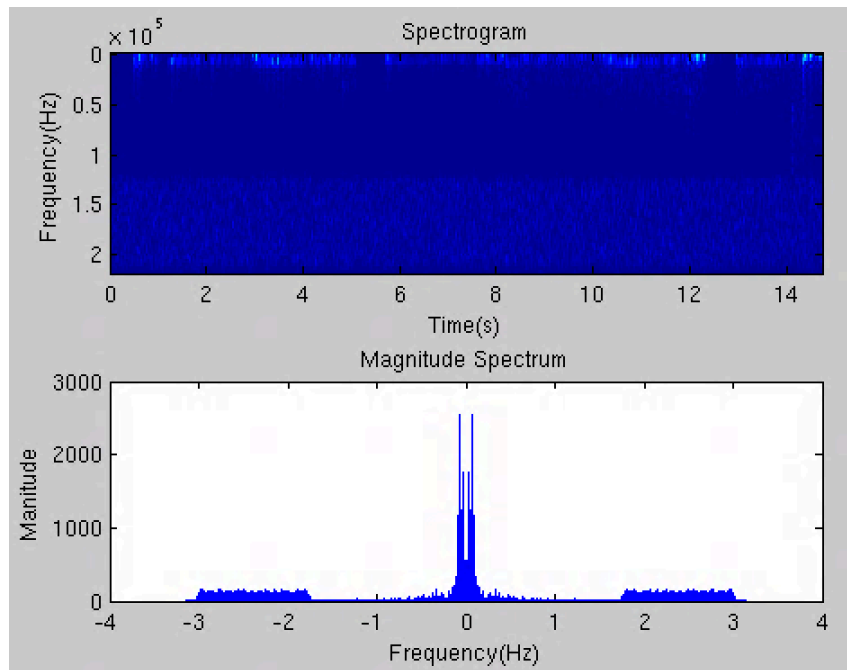


Report Item 5



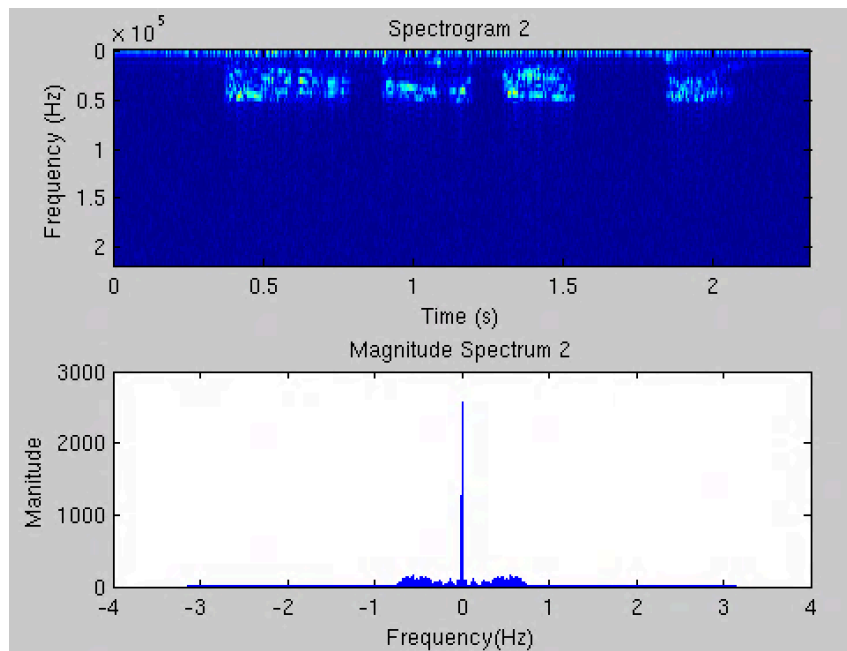
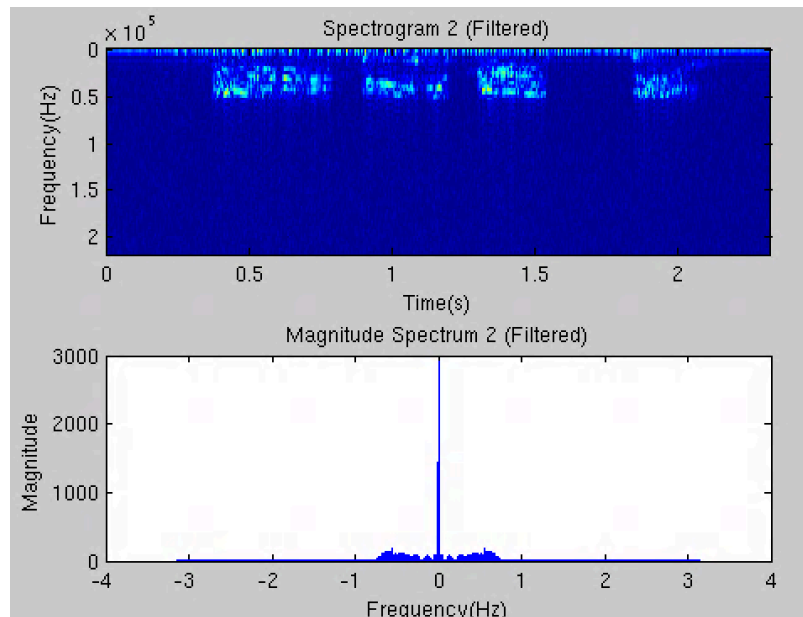
The frequency is 100Hz from 2.25 s to 4s and 300Hz from 5.8s to 10s. We can improve the resolution by changing M.

Report Item 6



The length of the sound is 15 seconds. My filter can remove the noise from the sound because the noise is far from the 0Hz. So I can use windowing method to removed the noise.

Report Item 7



The noise is not far from the center. It is far from the peak. So the filter can not remove the noise by windowing method.