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EEN 436

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DSP Homework 4



a) Using fixed-type window:

Magnitude Response (dB):



Impulse Response:



Lower zoom of Magnitude Response (dB):



Upper zoom of Magnitude Response (dB):



Error function:



b) Using Kaiser Window:

Magnitude Response(dB):



Impulse Response:



Lower Zoom of Magnitude Response (dB):



Upper Zoom of Magnitude Response (dB):



c) Verified with fir1 function:





a) Using fixed window:

Magnitude Response(dB):



Impulse Response:



Upper Zoom of Magnitude Response(dB):



Lower Zoom of Magnitude Response (dB):



Approximation Error:



b) With Kaiser window:

Magnitude Response (dB):



Impulse Response:



Lower Zoom of Magnitude Response (dB):



Upper Zoom of Magnitude Response (dB):



 c) Verified with fir1:





a/b) Using fixed window:

Magnitude Response (dB):



Impulse Response:



Amplitude:



c) Using Parks-McClellan algorithm:

Magnitude Response (dB):



Impulse Response:



Amplitude:



Error Response:



d) PM uses 34th order, Kaiser uses 59th order.



Filtered/Unfiltered using Parks-McClellan:



Filtered/Unfiltered using Kaiser:





d) Using Parks-McClellan:

e) Parks McClellan: 46th order