**DIGITAL SIGNAL PROCESSING LAB EXPT.9**

**NIKHIL ROUT**

**22BEC1020**

**AIM:**

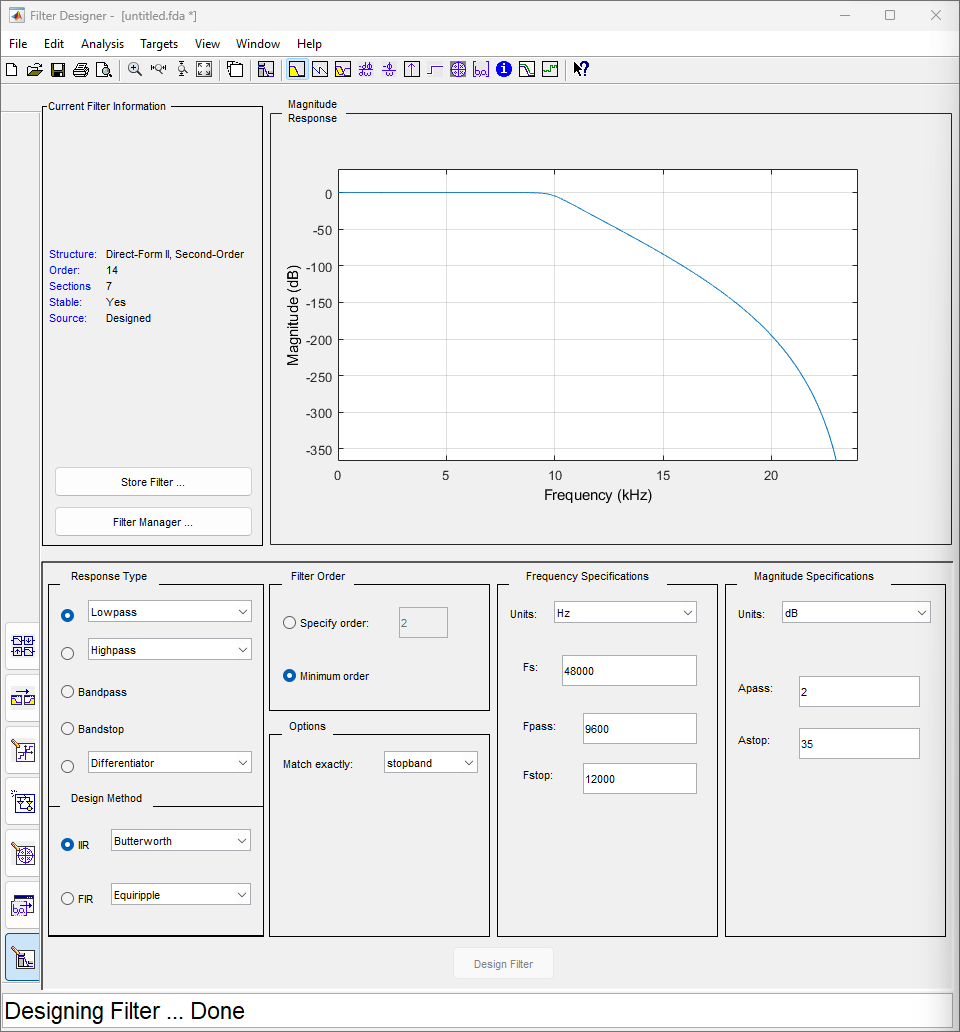
**➢ To design a Digital IIR Butterworth Low Pass Filter with Maximum Passband Loss = 2 dB, Minimum Stopband Loss = 35 dB, Passband Cut-Off Frequency = 1500 Hz, Stopband Cut-Off Frequency = 2000 Hz and Sampling Rate = 8000 Hz.**

**➢ To design a Digital IIR Chebyshev - I Low Pass Filter with Maximum Passband Loss = 2 dB, Minimum Stopband Loss = 35 dB, Passband Cut-Off Frequency = 1500 Hz, Stopband Cut-Off Frequency = 2000 Hz and Sampling Rate = 8000 Hz.**

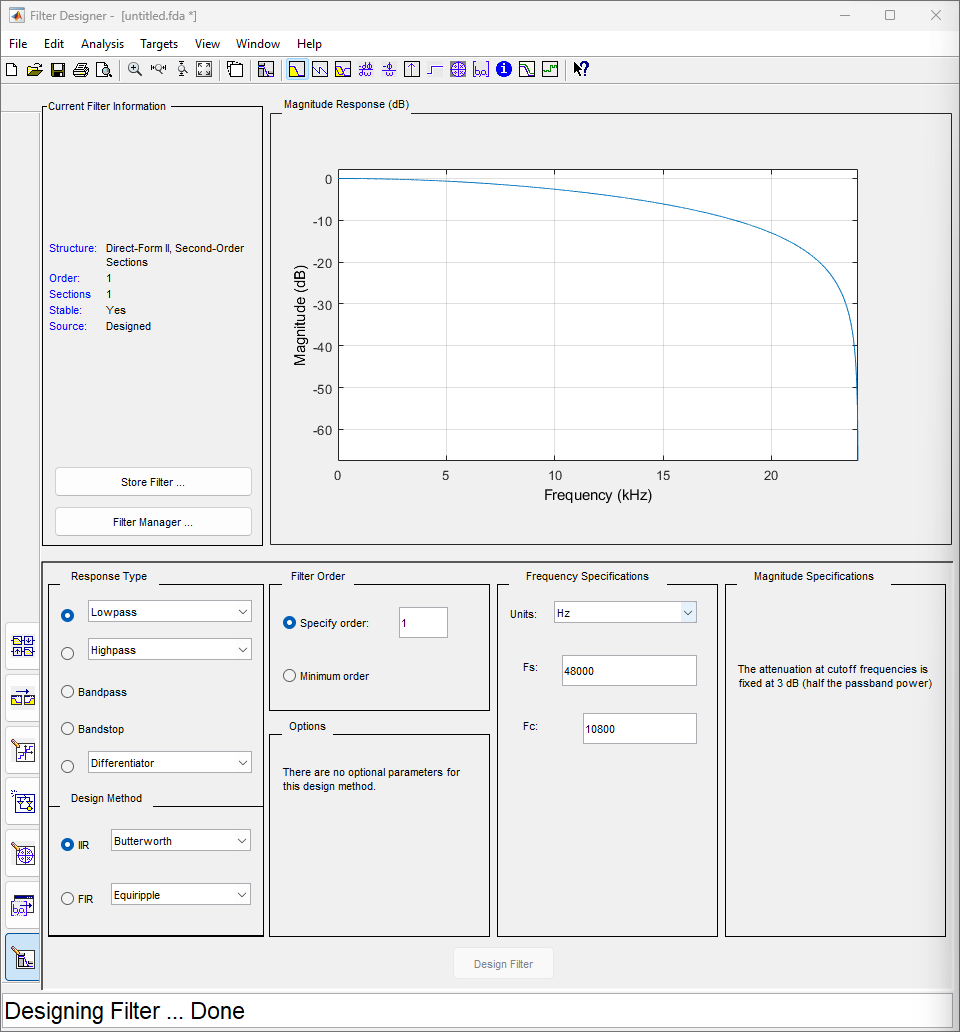
**➢ To design a Digital IIR Chebyshev - II Low Pass Filter with Maximum Passband Loss = 2 dB, Minimum Stopband Loss = 35 dB, Passband Cut-Off Frequency = 1500 Hz, Stopband Cut-Off Frequency = 2000 Hz and Sampling Rate = 8000 Hz.**

**➢ To design a Digital FIR Hamming – Windowed High Pass Filter with Passband Cut-Off Frequency = 2500 Hz and Sampling Rate = 8000 Hz.**

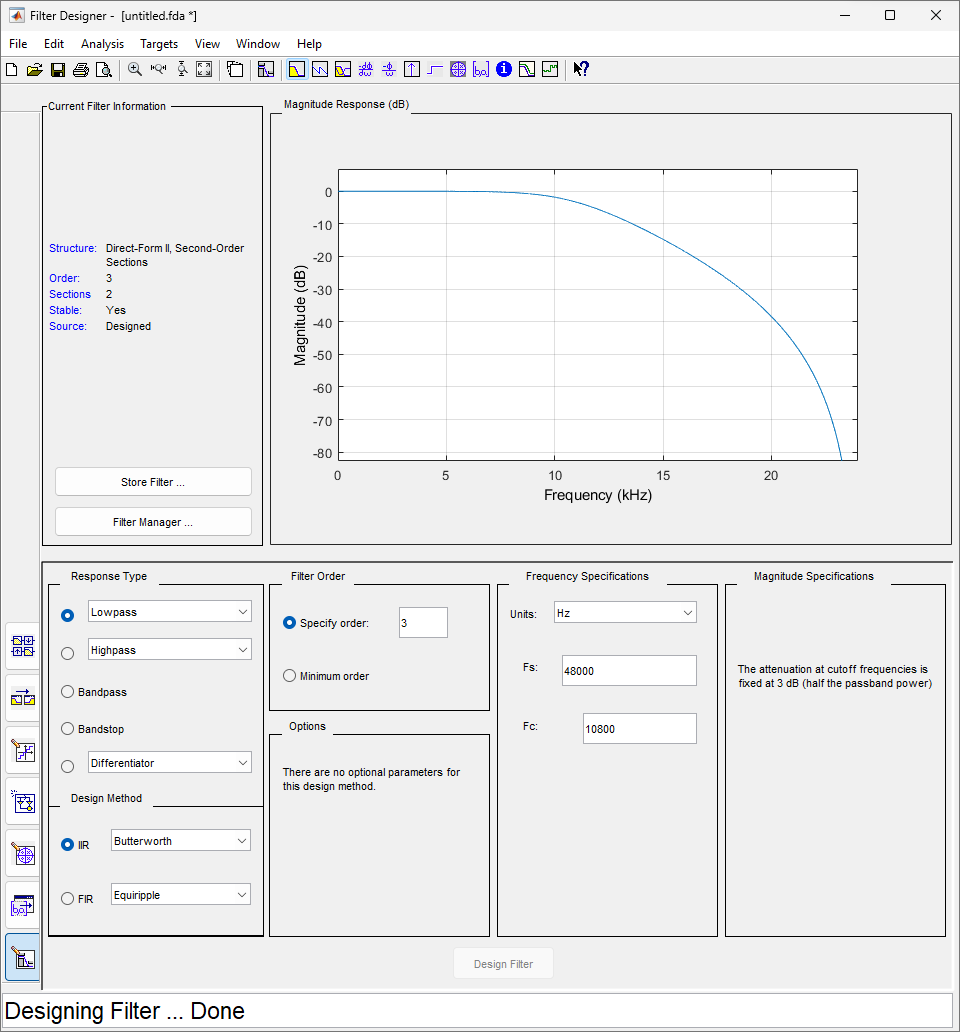
**LOW PASS IIR FILTER - BUTTERWORTH**

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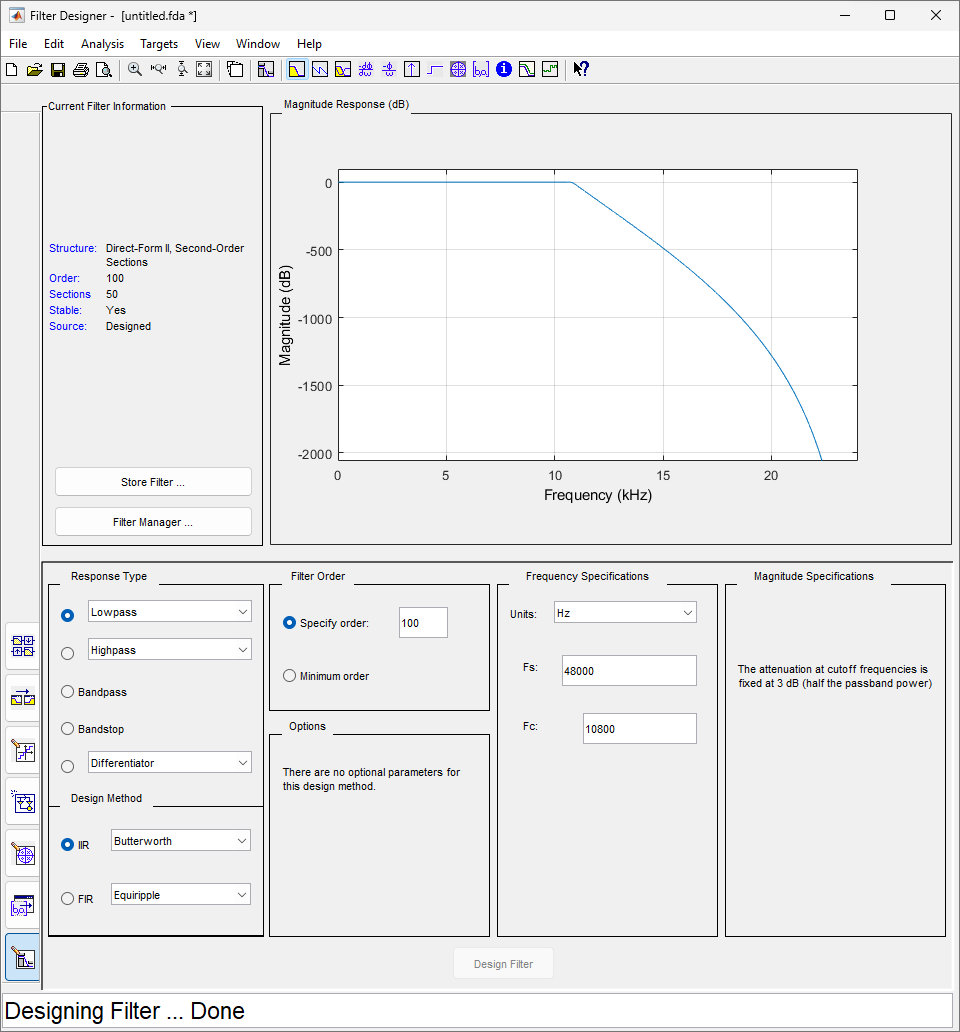
**ORDER-1**

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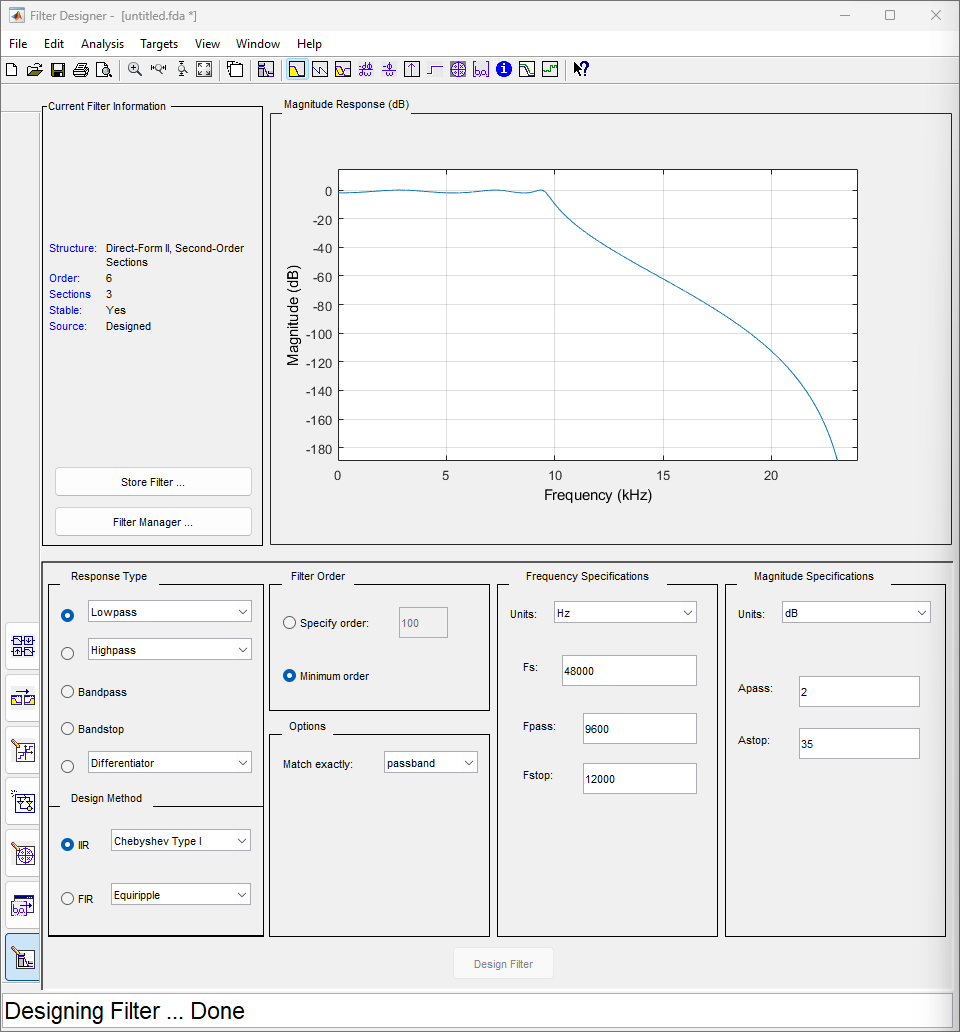
**ORDER-3**

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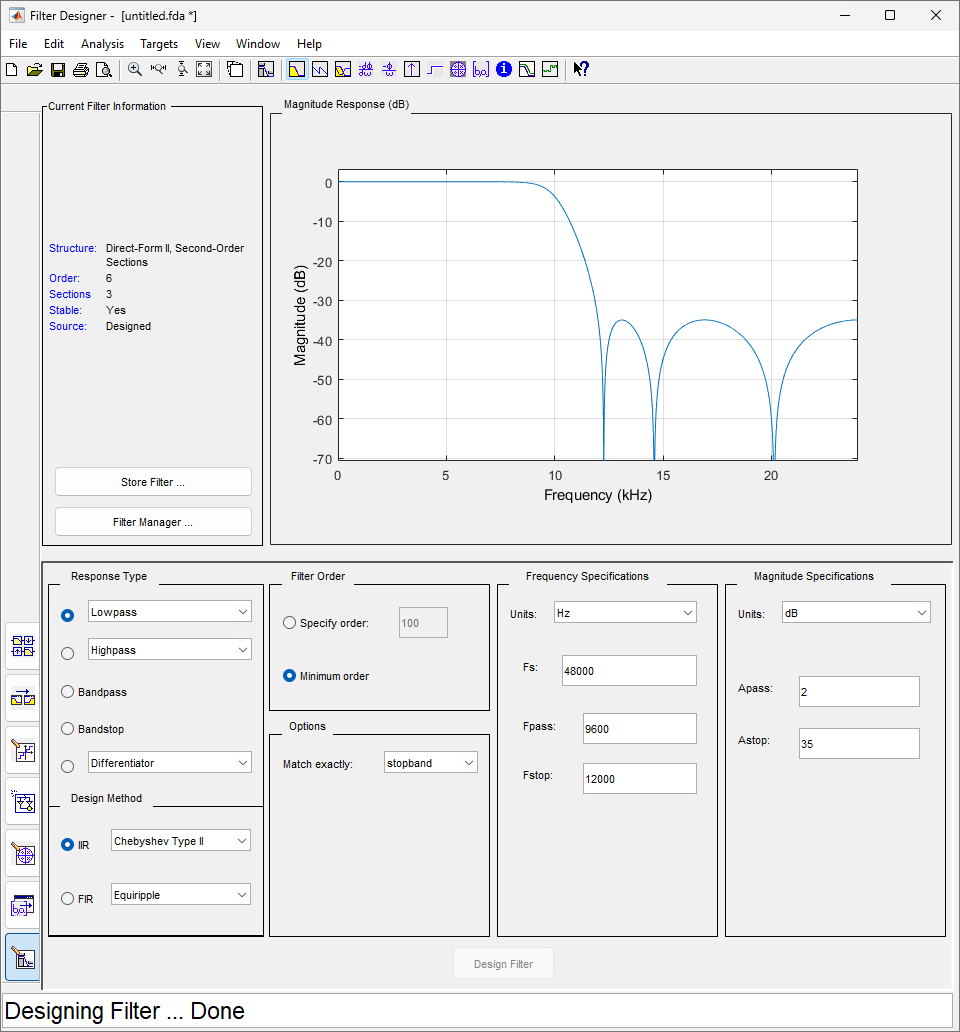
**ORDER-100**

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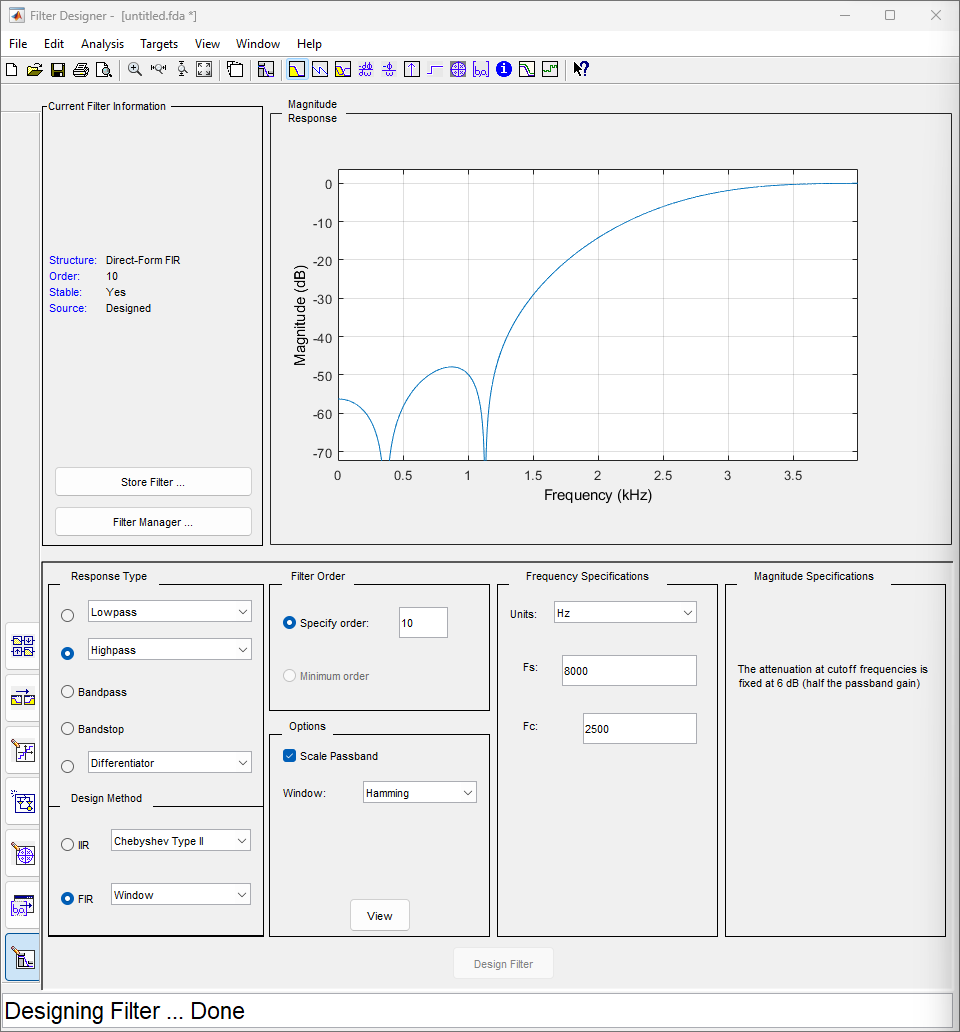
**LOW PASS IIR FILTER – CHEBY1**

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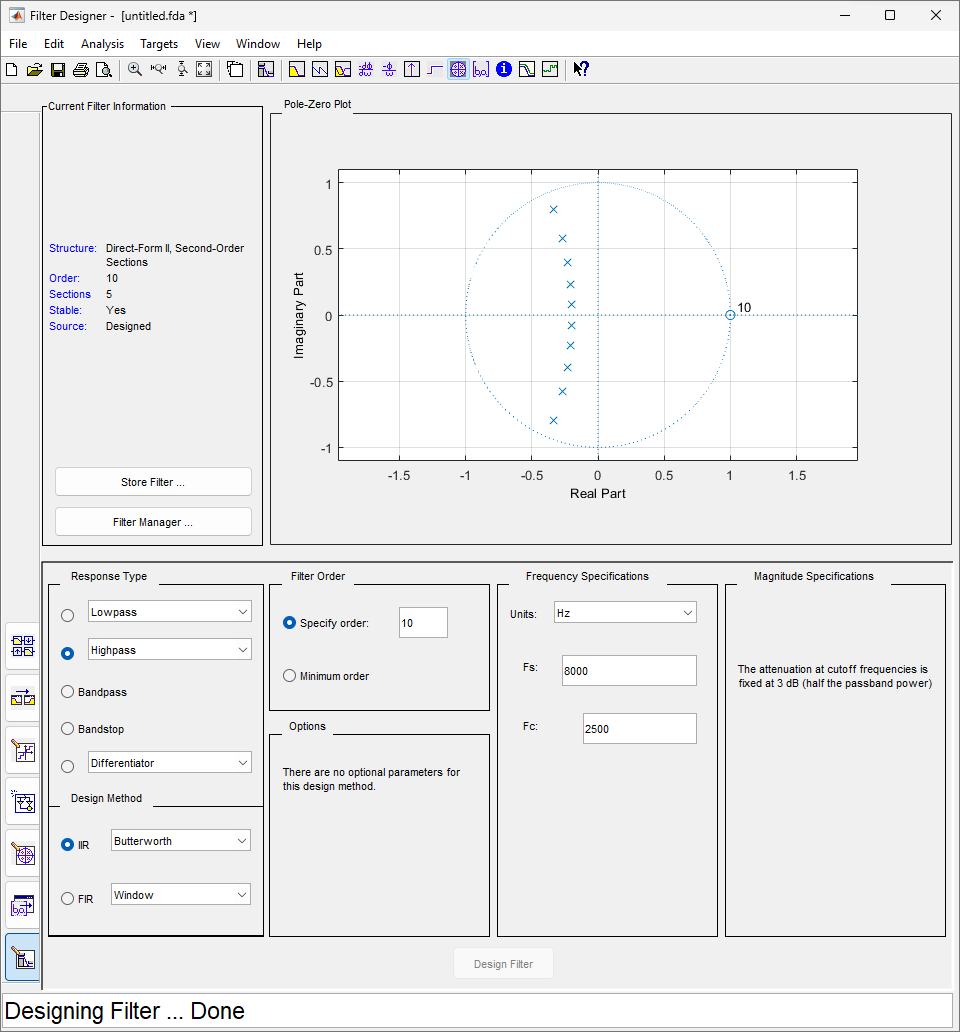
**LOW PASS IIR FILTER – CHEBY2**

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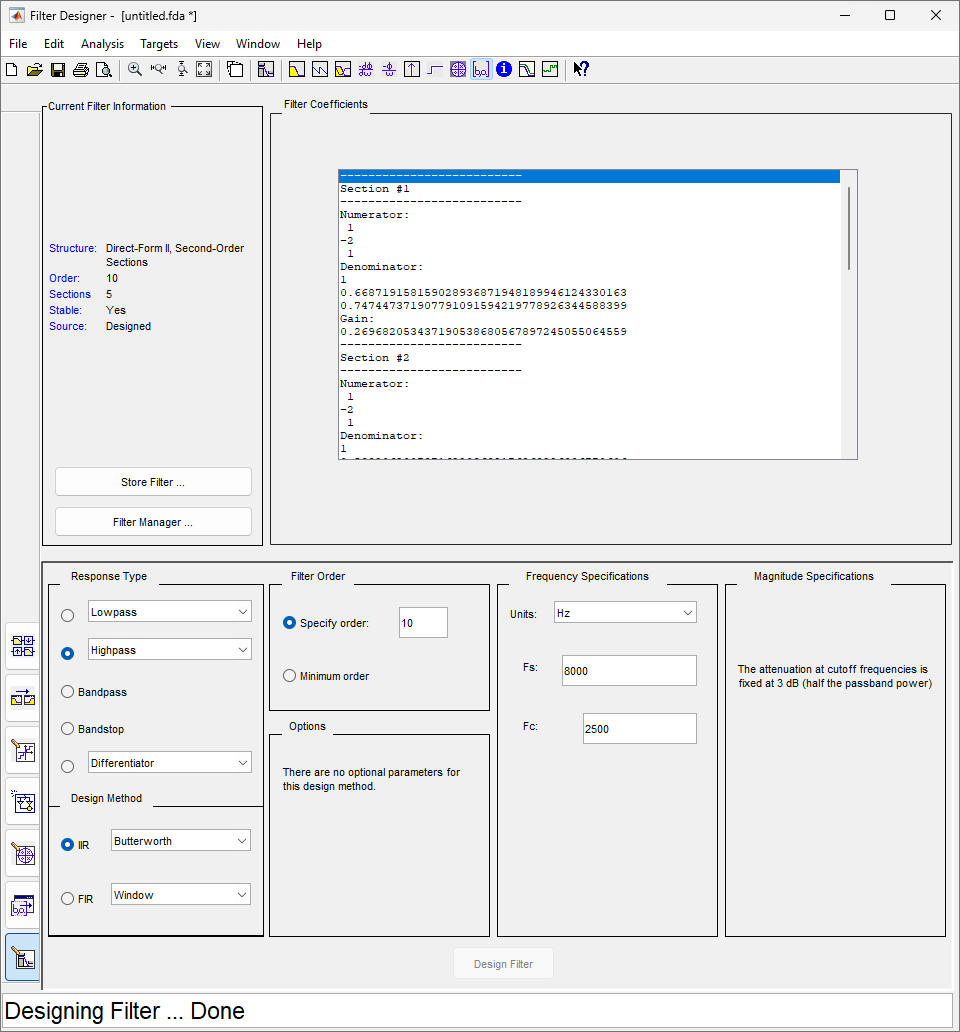
**HIGH PASS FIR FILTER – WINDOW HAMMING**

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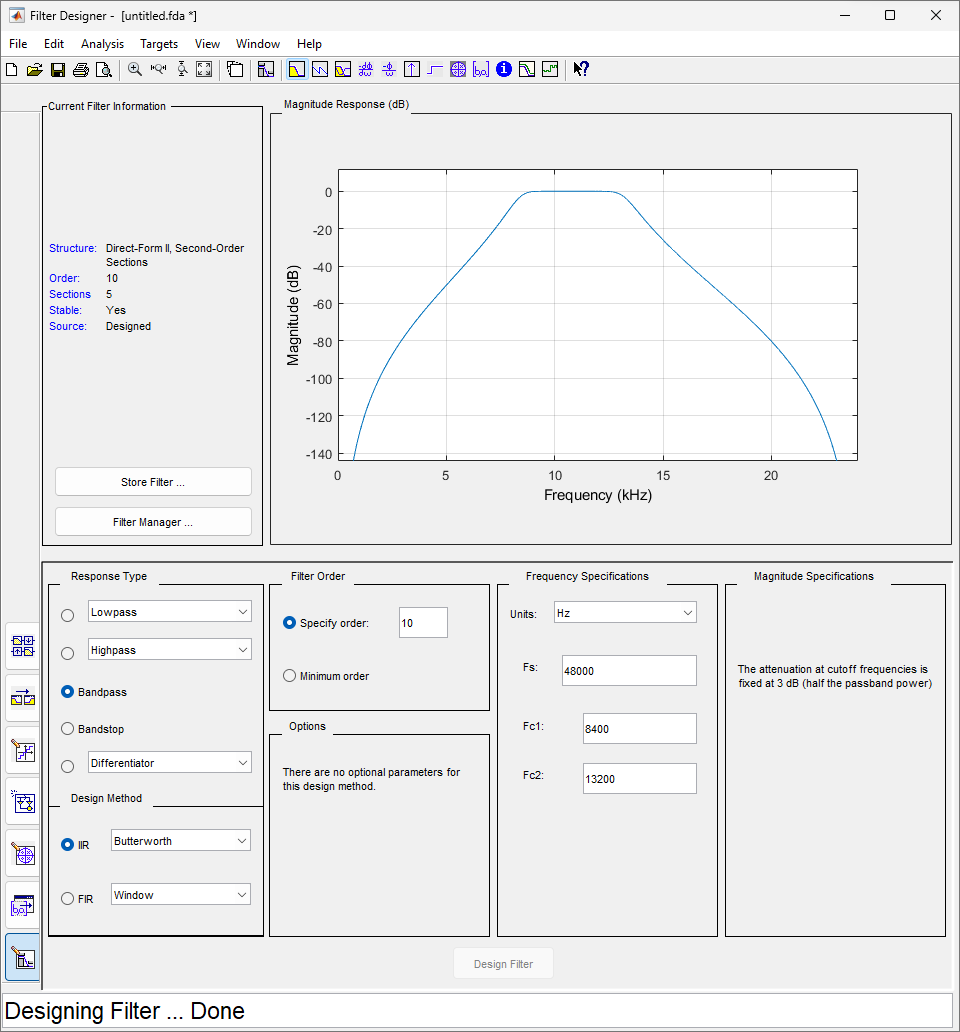
**POLE-ZERO PLOT**

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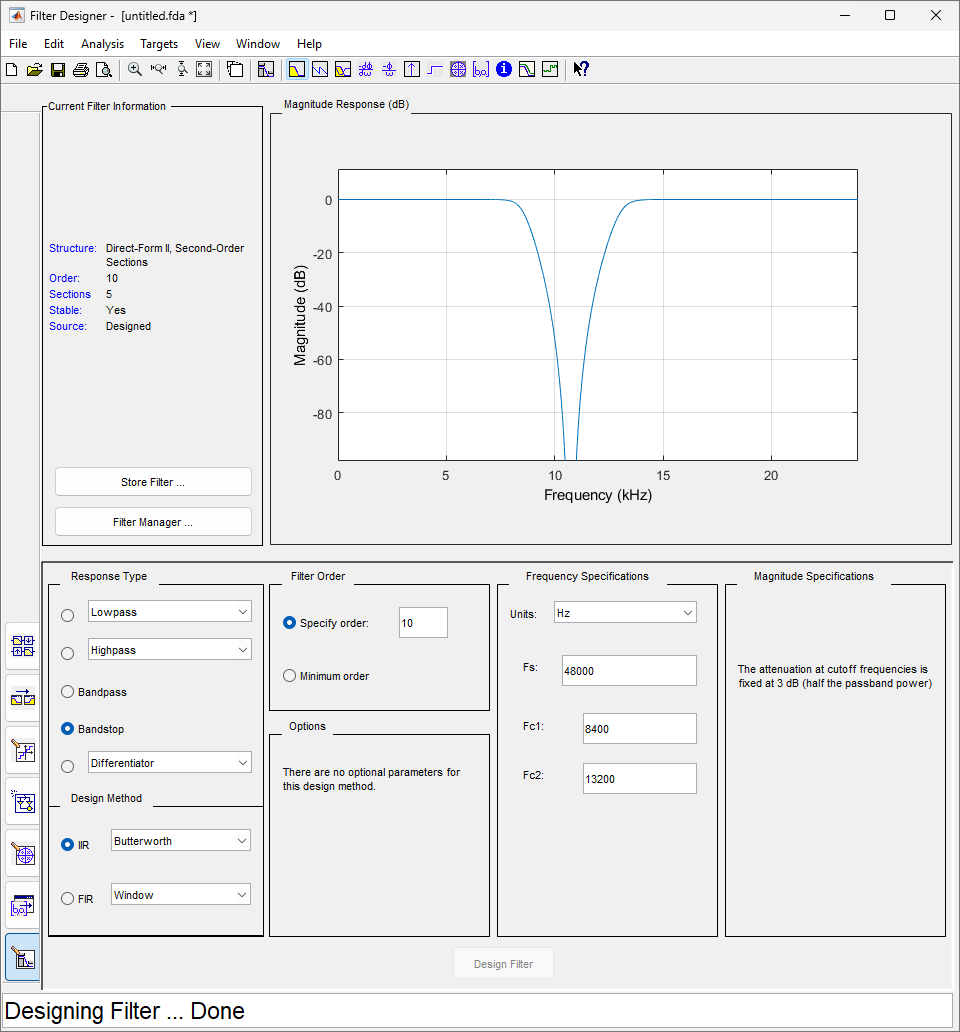
**FILTER-COEFFICIENTS**

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**BANDPASS BUTERWORTH FILTER**

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**BANDSTOP BUTTERWORTH IIR FILTER**

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