

Special Problem 3.H-4

Say you require a filter with a **center frequency** $f_0 = 1.0$ GHz, and **bandwidth** $\Delta f = 100$ MHz.

You need the attenuation of the filter to be **40 dB** at $f = 1.1$ GHz

1. Determine the filter **order** required for a:

- a) Butterworth Filter
- b) Chebychev with 0.5 dB passband ripple.
- c) Chebychev with 3.0 dB passband ripple.

2. Using the results in part 1, determine the filter **attenuation** at $f = 930$ MHz for **each** of the three filter designs.