

Special Problem 4.B-6

You are designing a super-heterodyne receiver to receive RF signals from **90 to 140 MHz**.

You **only** other design requirement is at **30 dB of image rejection**.

Your preselector filter is a **3rd order Butterworth filter**.

Determine:

- 1.** the **lowest possible** Intermediate Frequency (IF) for this design, as well as the required LO frequencies, if **high-side** tuning is used.
- 2.** the **lowest possible** Intermediate Frequency (IF) for this design, as well as the required LO frequencies, if **low-side** tuning is used.