

### Special Problem 4.B-3

You have designed a receiver using **high-side tuning** and an IF of 100MHz.

However, this receiver does **not** have a preselector filter!

You tune your **LO** to receive a radio station transmitting at **1.0 GHz**.

But, there are also several **other radio stations** in your vicinity, transmitting at these frequencies:

A. 0.05 GHz

F. 0.8 GHz

K. 1.9 GHz

B. 0.1 GHz

G. 0.9 GHz

L. 2.0 GHz

C. 0.2 GHz

H. 1.1 GHz

M. 2.1 GHz

D. 0.6 GHz

I. 1.2 GHz

E. 0.7 GHz

J. 1.3 GHz

**Which** of these stations will likely cause the detected signal (from the 1.0 GHz station) to be distorted, and **why** (there will be a **different** reason for each station)?

**Hint:** first determine all frequencies that will likely cause distortion, and then determine which ones are on this list.