

Supplementary question 2

I want to have some signal that varies with frequency so that I can monitor possible frequency changes in a single-frequency electrical voltage, but I want to avoid constructing any resonant filter or frequency counter. I don't need an accurate measurement of the frequency – just some signal that varies predictably as the frequency changes. I do, however, want to be able to distinguish between the frequency increasing or decreasing relative to some central frequency.

Can you think of a way of doing this, exploiting some of the concepts explored here with transmission lines?

(Note: there is certainly no single correct answer to this question!)