

Set-Up

This Wavetek function generator produces a signal that is sampled by the box behind it. The sampling box performs a simple sample-and-hold and its output is fed directly to a loudspeaker.

Question 1

Determine the sampling frequency of the sampling box by experimenting with the frequency and/or waveform of the function generator. Explain as you proceed.

Question 2

Set the function generator to a sinusoid at 10 Hz. What is causing the dominant tone that you hear and at what frequency is it?

Question 3

Sketch the magnitude of the frequency spectrum coming out of the loudspeaker.

Question 4

Set the function generator to about half the sampling frequency. Explain why you hear an oscillation in the loudness. What is the frequency of this oscillation? (Show me in the frequency domain what is going on).