

Physics of sound

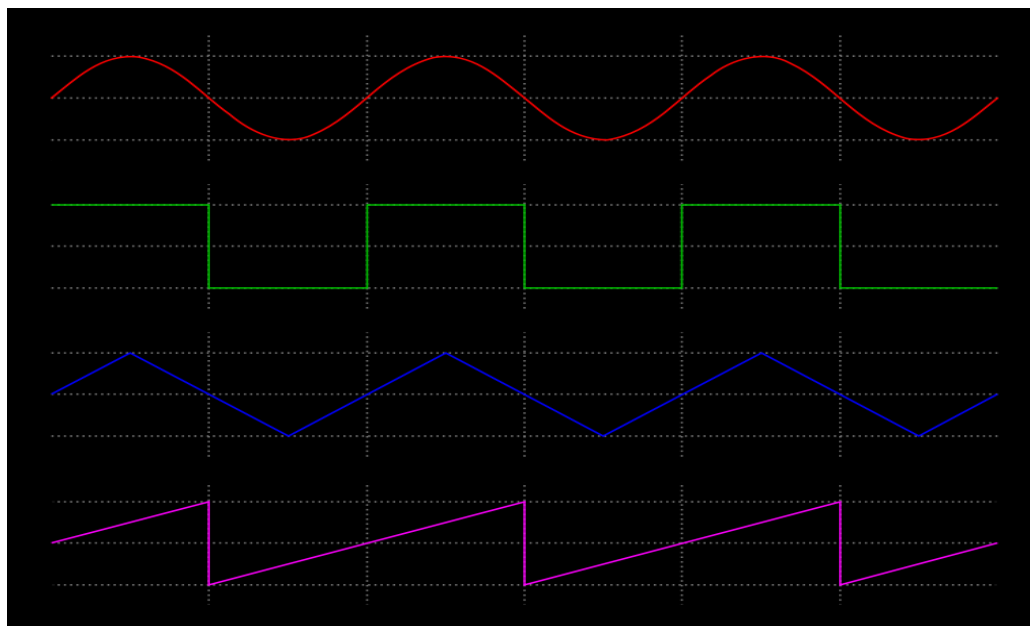
Lab1

Aims:

- 1- To know the difference between simple wave (sine wave) and complex wave (other wave than sine wave ex.: square wave, noise,...)
- 2- To know the relationship between frequency and period (**inverse relationship**).
- 3- To know how to measure and calculate period and frequency values from the time domain graph (waveform method) in CSL.

Procedure:

- 1- Select CSL MAIN PROGRAM from main menu
- 2- Select file
- 3- Then, select Generate Waveform
- 4- Small window will appear on the center of the screen
 - a. We can select from this window type of tone (wave) ex.: sine, square... or we can select white noise
 - b. If we select a sine wave (simple wave)>>> can select the **frequency**
- 5- After we determine type of the wave and frequency (step 4), the graph will appear on the screen
- 6- Select marker symbol (|green) from the taskbar.
- 7- Move the green cursor and red cursor to select certain area (less area selected, more clear wave graph)
- 8- Then select view from taskbar
- 9- Select between data maker and cursor
- 10- Then, the time domain graph will appear on the screen
- 11- With red cursor, we can get the values for **t1** and **t2** (t1: the time at the beginning of the cycle, t2; time at the end of the cycle)
- 12- Calculate period >>>>> **$P = t_2 - t_1$**
- 13- Then calculate frequency>>>>> **$F =$** (the result should be same as the frequency which chosen from generate waveform window)
- 14- Then, go to file
- 15- Select **Reset User Configuration** (to remove data and to repeat the procedure with other options or before closing the program)
- 16- The procedure could be repeated with other frequency (high or low) to see the relationship between F and P (as F increase >>>> P decrease)
- 17- Also, the procedure could be repeated with other wave to see the difference between sine wave (simple) and complex wave (square, triangle wave ,noise ,...)



Non-periodic:

Speech



Noise

