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The Oscilloscope

Lab-report in Physics
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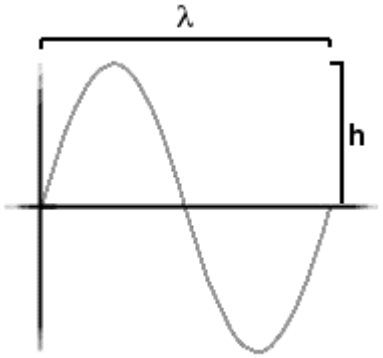
The aim with this experiment is to get to use and to understand the oscilloscope, and to see what we have learned about different signals, on a screen. We were supposed to use different kinds of signals, with different frequency and different current, and then be able to calculate frequency, the V_{MAX} and the V_{RMS}, from the image on the screen. So we used a waveform generator to create a wave, an oscilloscope to get an image of the wave, and a digital mulitmeter to measure the V_{RMS}.

So, here is a short summary of what we did.



h = 2.8 cm
λ = 2.85 cm

V_{MAX} = h * 1V / div = 2.8 * 1 = 2.8 V

And,

f = 1 / T = 1 / (2.85 * 0.5 * 10^{-3}) = 689 Hz

According to the waveform generator the frequency is 699 Hz, and that is acceptable.

When we measured the voltage, V_{RMS}, with the DMM it showed 1.57 V. The relation between V_{MAX} and V_{RMS} is:

V_{MAX} / V_{RMS} = $\sqrt{2}$ ≈ 1.41421

In my case V_{MAX} / V_{RMS} = 1.43312 → acceptable.