



ABU DHABI UNIVERSITY

ELECTRIC CIRCUITS 2

Lab Report 2

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Abstract

The aim the first lab experiment was to get us familiar with two very important equipments, the Instek's GEG-8015F signal generator and the Instek's GED S-2202 oscilloscope. We got to know how to operate both of these equipments in this lab.

1 Introduction

Through this lab we got familiarize with the two devices, the function generator and the oscilloscope. The function generator generates a variety of functions, it can generate functions with different frequencies and different amplitude. While the oscilloscope enables us to observe the functions that we are generating at the function generator. On the oscilloscope the horizontal axis is the time while the vertical is the voltage measured (amplitude).

2 Experiment Setup

First of all a function generator gives an output, which is an AC signal, of which we can control the amplitude, frequency, and shape. The function generator that we used is named GEG-80015GF. We got familiarized by most of its buttons, the power button, control knob that controls the output frequency, and one which controls the output of the frequency(sin, triangle square), another to control the voltage amplitude of the signal.

Oscilloscope is an instrument which takes a signal as an input and then plots the signal with respect to time. Name of the oscilloscope which we are using is GEDS-2202. This oscilloscope can plot wave form of two input signals so you first have to select the input channel 1 or 2. Each channel has a separate control knobs for vertical scale and vertical position. The scale of the horizontal axis is controlled by the SEC/DIV knob. The Auto-Set button automatically configures the oscilloscope to display the input wave at best settings and the SAVE button lets you save the result on a flash drive through the USB port.

3 List of Equipment Used

- Function generator
- Oscilloscope
- Function Generator Crocodile Clips
- Breadboard
- Cables
- Resistor

4 Procedure

- First of all we connected the oscilloscope to the function generator with the crocodile clip of the oscilloscope connected to the ground. Then we kept on checking and adjusting the knobs and buttons on the function generator to the desired values and kept recording the output from oscilloscope.
- After that we connected two $1k\Omega$ resistors in series and apply an input voltage of 5V and 10kHz frequency. Then we connected CH1 across the resistive circuit and CH2 across one of the resistors.

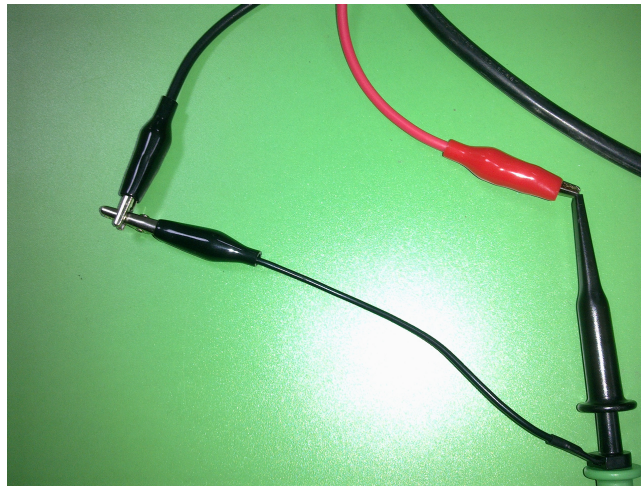


Figure 1:

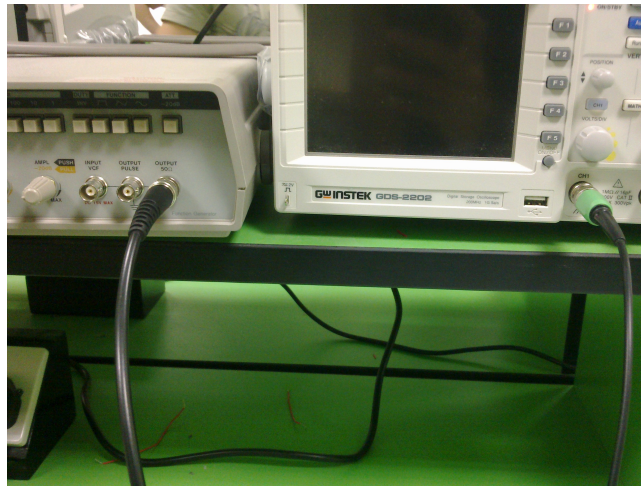


Figure 2:

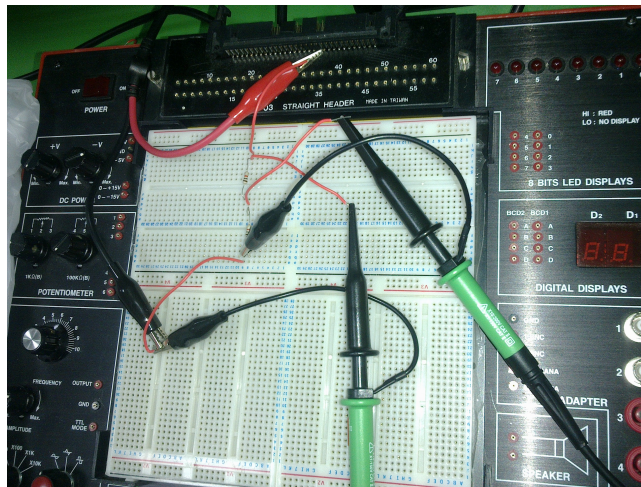


Figure 3:

5 Results and Discussions

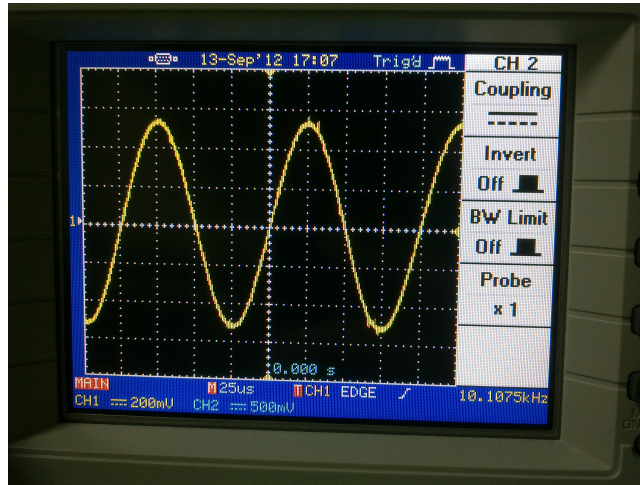


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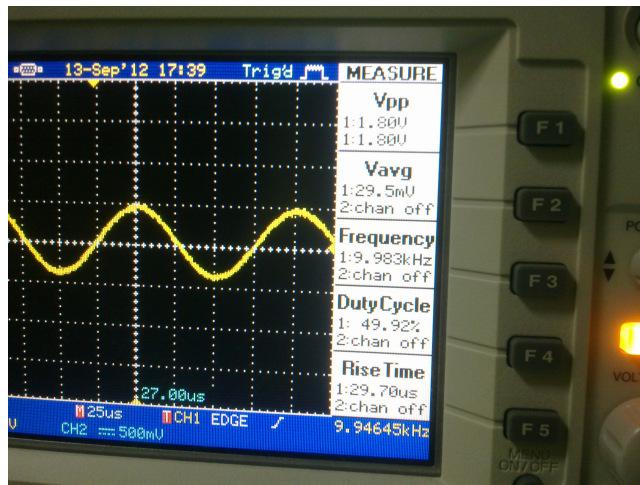


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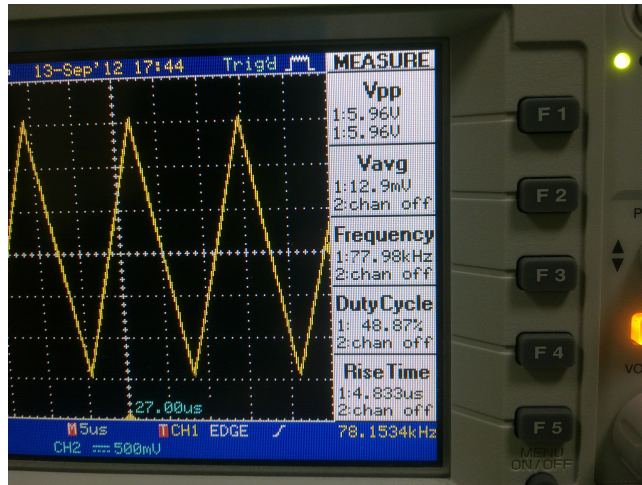


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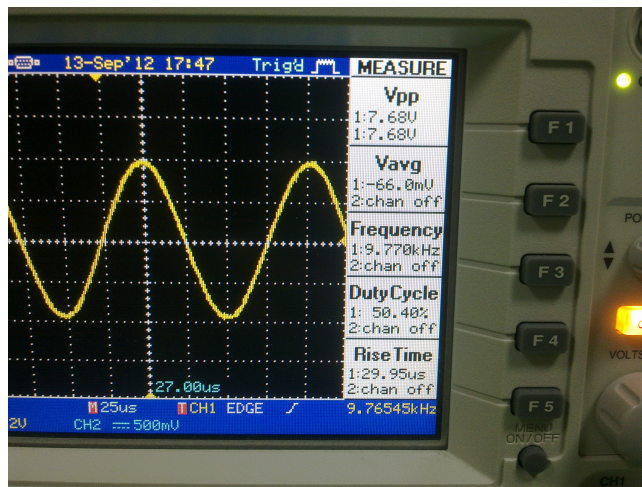


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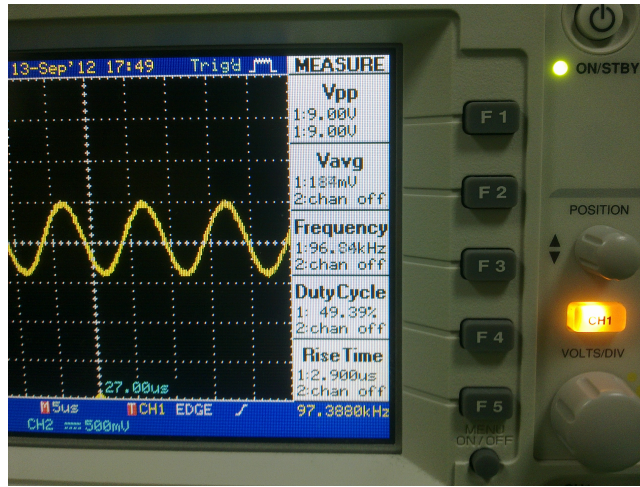


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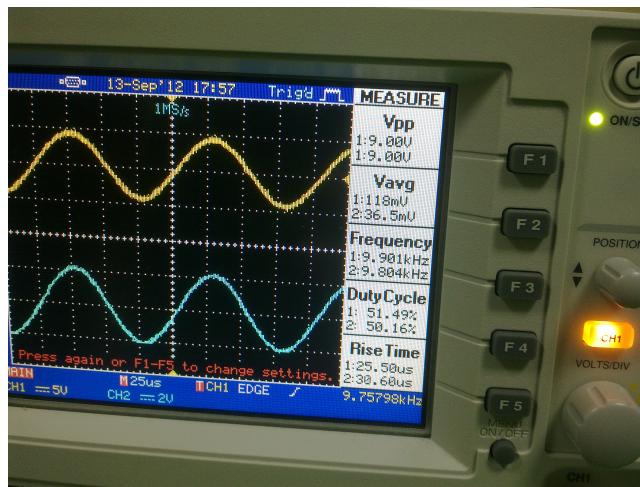


Figure 9:

6 Conclusion

Instek's GEG-8015F signal generator and the Instek's GED S-2202 oscilloscope are two integral for any AC analysis. The function generator can produce a variety of AC signals while the oscilloscope comes with wide range of features apart from displaying the signal to help find amplitude, slope, frequency, time-period.