

THIS SCRIPT PROVIDES YOU ALL THE STEPS YOU NEED TO FOLLOW IN ORDER TO CREATE, MEASURE AND ANALISE BOTH DC AND AC ELECTRIC POWER

INTRODUCTION

In this user manual you will find information step by step on how to use our portable lab. Created by a group of 9 students from DETI, our goal is to help other students and developers in their own projects.

For full information on the inside circuitry and software used, please refer to our website.

For information on the STM32 Nucleo-G431KB, please refer to the designated datasheets and reference manuals provided in the ST (life augmented) website.

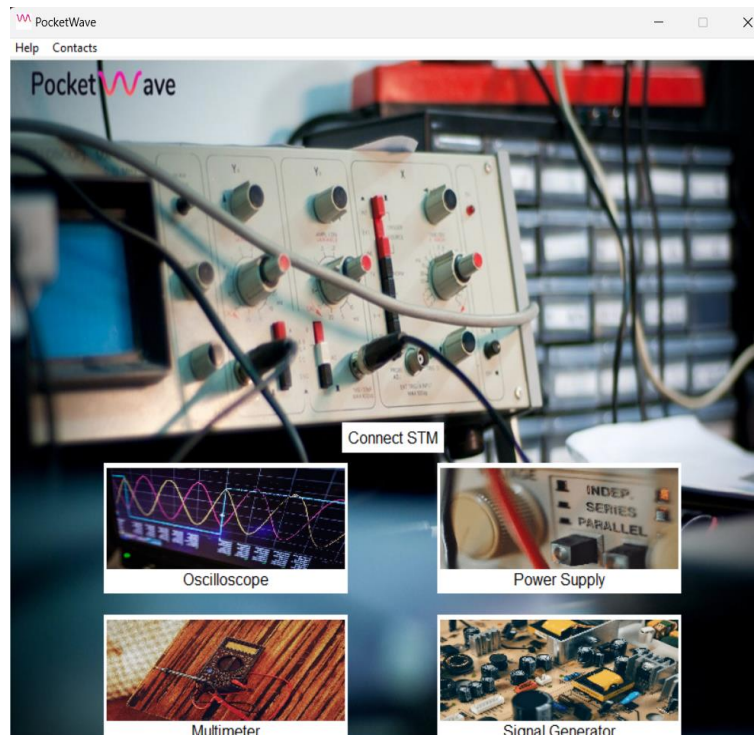
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GUI

First things first, you need to log on our website and connect the usb cable to your computer in order to activate the microcontroller. All the modules will be controled here.



POWER SUPPLY

In this module you will be able to provide power for your circuits, two independent variable supplies in the range of [-12V, 12V] and 1mA.

MULTIMETER

Using our multimeter module you will be able to read voltages from 0 to 3.3V, and accurately measure of resistances up to 100kΩ.

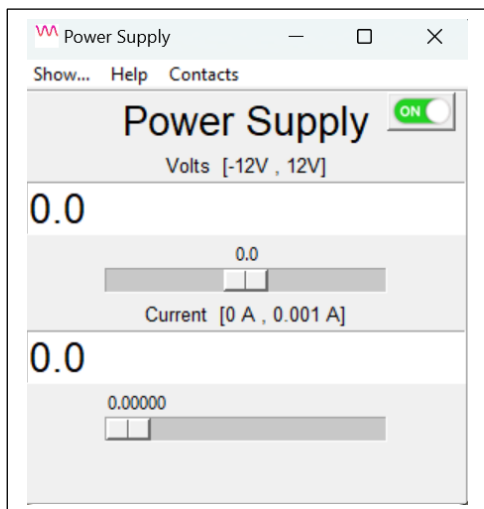
OSCILLOSCOPE

This module will allow you to measure electric signals up to 12V.

SIGNAL GENERATOR

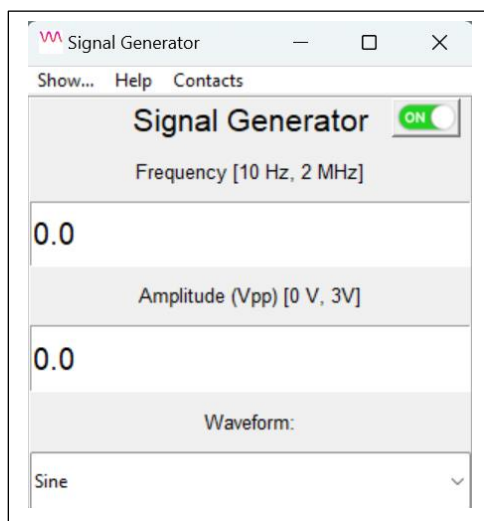
Our signal generator will provide electric signals up to 2MHz with a maximum voltage of 3V.

POWER SUPPLY



1. Connect the positive and the negative terminals to your circuit.
2. Write down the desired voltage and current for the designated application, and press ENTER
3. Turn the power supply module on

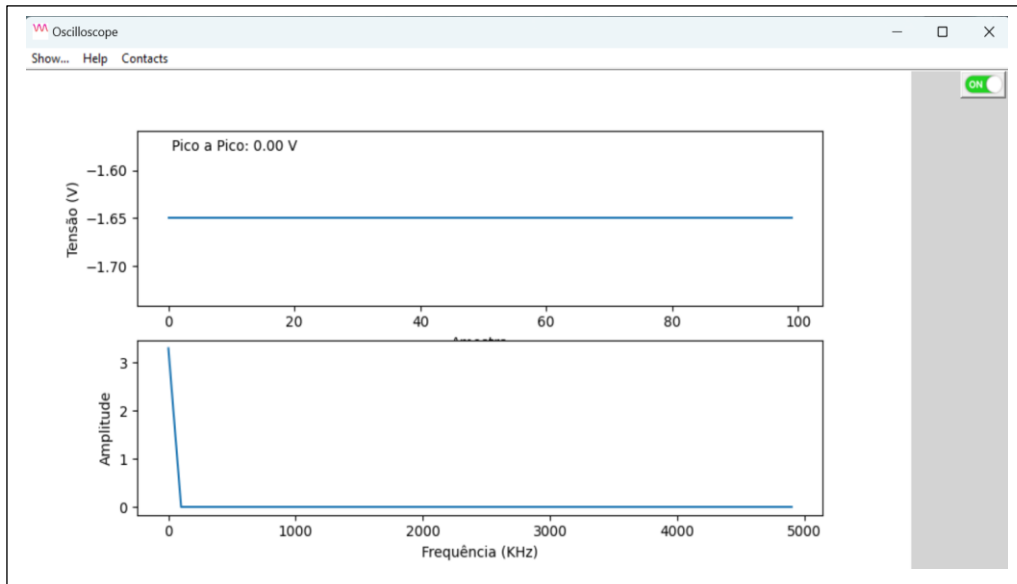
SIGNAL GENERATOR



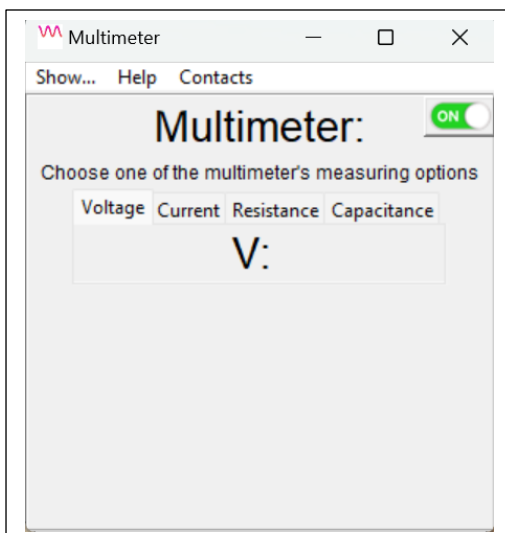
1. Connect both positive and negative terminals to your circuit
2. Choose the type of wave you want to generate, voltage and working frequency, and press ENTER.
3. Turn on the signal generator module

OSCILLOSCOPE

First, make sure your signal will be according to our working values. Then connect both positive and negative terminals. After that you just need to turn on the oscilloscope module and watch your signal in live plot.



MULTIMETER



1. Make sure you are not trying to measure voltages outside our established working values
2. Connect both positive and negative terminals
3. Turn on the multimeter module and