

Arduino Oscilloscope

Ian Diaz

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Basics

The Arduino Oscilloscope is a cheap and easy PCB connected to an Arduino UNO that, as the name says, it performs the actions of an oscilloscope. However, it is important to know that it operates to perform quick measurements, not precise. Some specifications I made for this Oscilloscope can be found in Table 1. The design and implementation of this PCB with an Arduino can be seen in Figure 1.

Maximum Frequency to perform good Measurements	4 (kHz)
Maximum Voltage Measurable	5 (V)
Minimum Voltage Measurable	0 (V)

Table 1: Quick Specifications

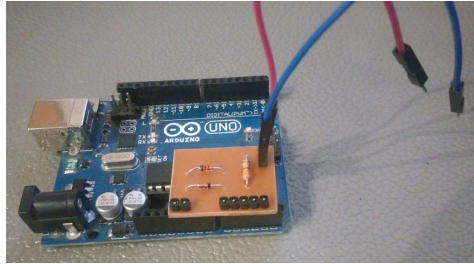


Figure 1: Implementation

PCB Manufacturing

To create this cheap Oscilloscope you will need the following elements:

- 2 Diodes
- 1 330(Ω) Resistor
- 7 Male Pins
- 2 Female Pins

The design of the PCB are ready to print in a PDF file in this repository. The final PCB should look something like shown on Figure 2.

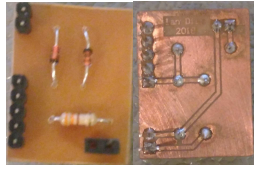


Figure 2: Oscilloscope PCB

Operation

To operate this Oscilloscope, you have to upload the `.ino` program located in this repository into an Arduino UNO and proceed to connect the PCB with the Arduino. Finally, you have to install the PCScope, into a Windows PC, and, when finished, plug the arduino to the computer, click in the button connect of the PCScope, and you should be ready to measure. Some measurments made can be seen on Figures 3 and 4.

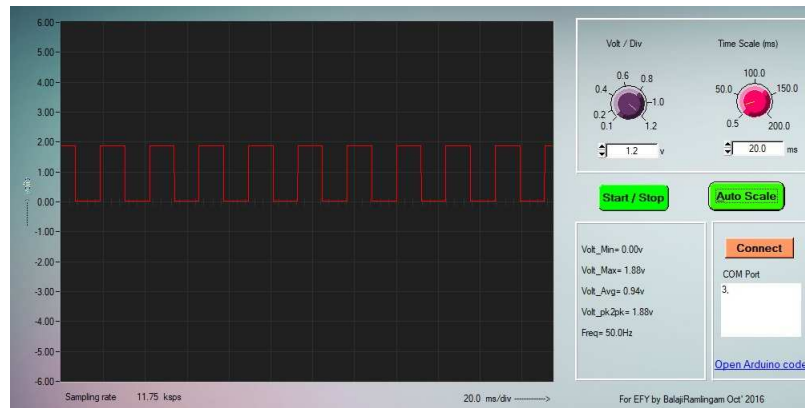


Figure 3: Measurement of a square signal



Figure 4: Measurement of a DC signal