This is copy of original content from https://www.hackster.io/Ameduino/diy-arduino-oscilloscope-844fa3

Story

A very basic and easy to make Arduino PC oscilloscope.

Features:

- 50K samples/second(actually it can go up to 110K but the signal will become noisy)
- Auto trigger
- Frequency counter
- Reasonably accurate voltage readings (depending on the accuracy of the resistors used for the voltage dividers)
- Optional: selectable voltage range: 5V, 6.6V, 10V, 20V

You'll Need:

- An Arduino Leonardo or Arduino Micro
- 2 crocodile clamps
- a 0.1µF capacitor (optional)
- a 5.1V zener diode (optional)
- a pc with Processing

For the voltage dividers (optional, if you want to measure than 5V or want selectable range):

- 2 two-pole dual throw switches
- two 3K resistors
- two 1.5K resistors
- one 1K resistor
- a small perfboard or breadboard

If you only need to measure op to 5V, you can skip the voltage dividers and connect the probes directly to GND and A1. You'll have to modify the code a bit:

In the **Arduino** code, replace:

```
ADMUX =  B00000000;         // select external reference and port 5 (A0)
```

with:

```
ADMUX =  B01000000;         // select internal reference (Vcc - 5V) and port 5
(A0)
```

In the **processing** code, replace:

```
// read switch position & set voltage range boolean
switch1=((buffer[writeIndex*2]&(byte)8)==8);
boolean switch2=((buffer[writeIndex*2]&(byte)4)==4); if (!switch1&&!switch2)
voltageRange=20; if (!switch1&&switch2) voltageRange=10; if (switch1&&!switch2)
voltageRange=6.64; if (switch1&&switch2) voltageRange=5;
```

with:

```
voltageRange=5;
```

Schematics

Circiot