Mini Oscilloscope Using Arduino.

About This Project:

Measuring instruments like the multi-meter, the oscilloscope and others are essential in the field of electronics engineering. It is important to say here that the need for measuring instruments improves accuracy and also gives the engineer the understanding needed to create an efficient system. Without measurements we will not be able to live in this modern world. The system discussed in this report will help engineers to make vital measurements as circuits are being designed.

This is an Arduino Based Oscilloscope System. The main brain of our system is the Arduino Nano. In this system there are four controlling buttons/switches. These buttons are mainly used for controlling this system output on display. One button is variable voltage controller, second is hold button, last two buttons are cycle select and increase/decries.

Firstly input the power to run this system. Then supply 5V current for measuring various outputs. After connecting the extra current source then the system is controlled the proper voltage by the button variable voltage control. It helps to input the proper voltage in this system. If we find the proper wave shape of a signal then we will hold it in our screen by clicking the hold button. After the process if we need to change our cycle of wave we will change our cycle by using the cycle select button. And the last button will work to increase and decrease the current limit of this system. In this system it's able to display Pure AC sign, Pulsating DC , Pure DC , Square Wave , Saw-tooth wave .
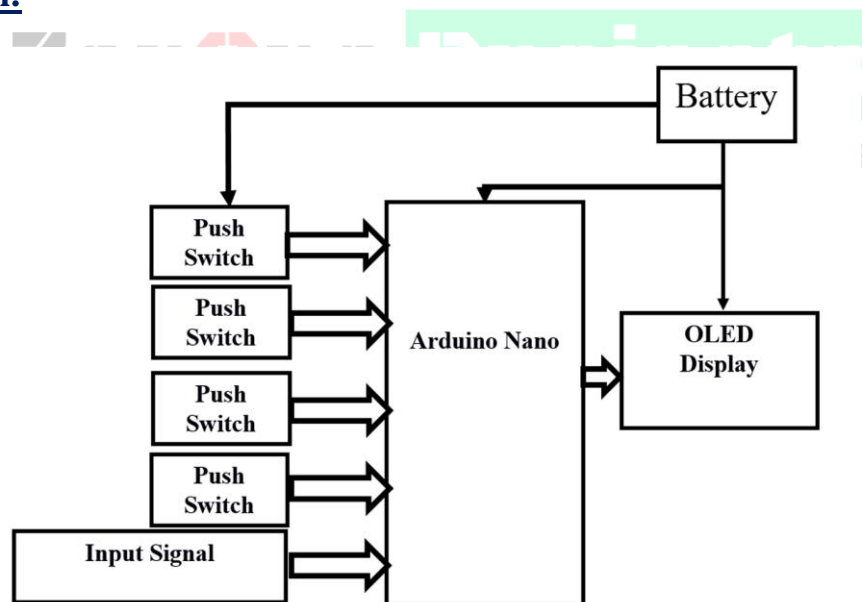
Block Diagram:

Figure: Block Diagram of Mini Oscilloscope Using Arduino.

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Required Instrument:

- Arduino Nano.
- OLED Display.
- Push Switch.
- Battery.
- Variable Resistor.
- Transformer.
- Diode.
- Capacitor.
- Resistor.

Advantages:

There are many advantages of our project because of its accuracy. Some of the advantages are pointed out below:

- This project is easy to use
- Cost effective
- No foul play takes place
- User-friendly
- Automatic and requires less human interaction
- Good way to reduce energy wastage

Applications:

Our project has many application areas and actually we need to use it in many places to verify the exact person which have the proper access. Some of the application areas of the project has been pointed out below:

- Research Lab
- Industrial Lab
- Personal Use
- University Lab

N.B: *Any modification of this project can be done as per your requirement. We will make the project according to your needs. Contact us with your any innovative engineering projects idea. We will help you to implement your project.*

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