

ABSTRACT

With the development of electronic devices, usability and functionality of these devices will increase as well. To be able to work optimally, such devices require stable power. But in fact, they rarely encountered electronic devices work optimally despite the received power and large stable. This is caused by the presence of non-linear load factors. These factors create a distortion for voltage and current waves in the circuit called harmonics. Harmonics there is usually measured by scale Total Harmonic Distortion (THD). To be able to measure the THD necessary tool called Harmonics Meter. But the tool is still relatively expensive.

At this final project has designed a tool harmonics meter. This tool can measure the voltage and current values that exist on a continuum. Thus it can be used to measure how much value and THD distortion power that exist in a circuit. The working principle of this tool is to use the output of the sensor current and voltage as a reference for analysis using discrete Fourier transformation. The tool is also designed to use the Arduino Microcontroller. The signals generated by the sensor - the sensor will be processed using Arduino Arduino so that the output of power can be a value measured distortion and THD. THD distortion power value and the exit will be displayed on the LCD which is also processed by Arduino.

After the design and testing of this thesis, it was found that the measurement of the value of Total Harmonic Distortion (THD) with non-linear loads has an accuracy rate of 99,027%.

Keywords: Harmonics Meter, Total Harmonic Distortion, Distortion Power, Arduino Microcontroller.