

## **ABSTRACT**

*Optical power meter is a measuring tool used to measure the optical signal power in an optical communication system. Generally, this measure consists of optical receivers, display screen, and the buttons measurement. Usually this measurement using optical fiber (optical fiber) as an optical signal transmission medium in the process of measurement.*

*In this final project, we will design an optical power meter which consists of three blocks of the receiver optical circuit, sismin ATmega8535 AVR microcontroller, and power supplies. However, all the circuit blocks will not run if not the existence of a block of optical transmitter circuits. Optical transmitter circuit functions as a regulator of light to be emitted optical source. Commonly used optical sources can be a Laser Diode (LD) or Light Emitting Diode (LED). Optical signal power emitted by its value varies according to the characteristics of each optical source. In the process of measuring the optical power meter, optical source emits a direct light to the optical receiver with air transmission media. Optical receiver circuit block consisting of photodetector and amplifier circuit. Photodetector function to convert the received optical signals into electrical currents. Then go to the amplifier circuit to obtain the maximum output voltage form. Output voltage goes to block sismin ATmega8535 microcontroller. In this block the incoming voltage level converted into ADC data with programming language C. The output of this block is the value of the power measurements in accordance with the type of optical source. The value of these resources will be displayed by the LCD.*

*Generally, the optical power meter power meter on the market is working that uses a light source Laser Diode (LD) and optical fibers as optical signal transmission medium, and the price is quite expensive. Therefore, this final project will be designed with an optical power meter that uses visible light source is Light Emitting Diode (LED), air transmission media and they were cheaper.*

**Keywords:** *Light Emitting Diode (LED), Power, Photodetector, AVR Microcontroller ATmega8535, Liquid Chrystal Display (LCD)*