DESIGN AND DEVELOPMENT FACE TO FACE ACTIVE INFRARED MOTION DETECTOR FOR SECURITY SYSTEM

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ABSTRACT

THE DESING AND DEVELOPMENT FACE TO FACE ACTIVE INFARED MOTIOM DETECTOR FOR SECURITY SYSTEM

Infrared motion detector is one of the common motion detectors that used in the security system. The infrared motion detector are divided into two with is active and passive. This project is conduct to design and develop a face to face active infrared motion detector. This detector is design to replace reflector to reflect that infrared that emit by emitter. To design the circuit, the circuitmaker6 student software is used; it will make the designed process easier. Then, the designed circuit will develop and the output voltage for each circuit was measured and recorded. From the data the attenuation was calculate. The calculate attenuation then was analyses and it show that the increasing of the distance make the attenuation increases, for distance 1cm, 4cm and 7cm, the attenuation are 0.58dbm, 1.5dbm and 1.97dbm . The attenuation is the loss of the energy. So to avoid it, the best way is reduce the distance.

CHAPTER 1

INTRODUCTION

1.1   Background

Home security alarm system is an electronic alarms designs to alert the user if the house is thief enter the house. The security sensor are used to indicate the opening of a door or window active infrared (IR). A home security alarm panel is a wall-mounted unit where the detection devices and wiring of the alarm are ultimately connected and managed. These include devices such as sirens, door contacts, and active infrared motion detectors. Typical panels are located in utility closets or access rooms. [3].

For detector, it is combination between two part of electronic circuit, first is the transmitter circuit and the second circuit is receiver circuit. For the transmitter we use the photodiode and for receiver we use NPN phototransistor.

The project is divided into four stages. The first stage was develop power supply, second stage are concern on the design face to face IR motion detector. Third stage was concern on development of the circuit. During this stage emitter and detector circuit was developing. And the last stages are combine all and testing it.