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**FINAL REPORT OF DIPLOMA PROJECT**

**VIDEO CAPTURE WITH ULTRASONIC MOTION DETECTOR**

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## ABSTRACT

Video capture system is widely used in smart home nowadays and as a security. The first goal why video capture used is to capture unrecognized human like burglar or any moving object through a specific area or its detection zone.

In this project, we have build an additional circuit that will inform the owner of that video capture system is activated because someone had pass through the detection zone. The owner directly knows who is come at the moment, without need to wait at the camera. This device is called an Ultrasonic Motion Detector. This device will functions as a "hand" to push the trigger of the camera by a movement in its detection zone. So, when someone is passing through the detection zone, it will activate the camera system and its image will be captured.

Another advantages is the amount of power used also could be reduced because the camera will only operate when there is any movement detected. This project will be a good alternative to the video/camera system that already have on the market that will cost thousands of ringgit.

# CHAPTER 1

## INTRODUCTION

### 1.1 Background

Video capture with ultrasonic motion detector is designed to detect the person who go through or come into the house. When the motion detected, the signal will submitted through the relay and the object will be captured on the camera, the intercom system that also connected with the circuit will also be activated, the circuit will functions as a switch to the camera and intercom system. The ultrasonic motion sensor is very sensitive to any movement, nothing will pass in detection zone safely without detected, even a cat will be detected if it pass through the detection zone. This system usually used at main entrance so that the system can capture and record all the event through a day. The system will also be useful at any room in the house, so any one that come in with out permission will be recorded.

### 1.2 Scope of Work

To make the circuit operate, the circuit must be design first. Nowadays, much electronic software can be found in the market. So, there are plenty types of software can be used to design the circuit. This design can be transferred to the PCB to make the circuit hardware, in this project we are using the PCB Designer from Niche Software. The hardware also involved the components that were in this circuit.

The hard ware is the most important thing to make sure the circuit operate smoothly. The simulation program also can make sure the circuit run, but in simulation program all component was assume in good condition. In reality the hardware was depend on the components condition.

In next chapter, it will explain problems that happened during finishing this project. The entire problem will be look up and a discussion will be done to overview the project step by step. By doing discussion the project can be improved.