

FINAL YEAR PROJECT REPORT

Autonomous PCB Drilling Machine



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DEDICATION

To our respected parents whose utmost love, care and struggle against all odds brought us to this height of knowledge with the blessings and help of the
ALLAH ALMIGHTY

STATEMENT OF SUBMISSION

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Dated

Autonomous PCB Drilling Machine

Abstract

In this report, working of Autonomous PCB Drilling Machine is proposed. In this project, an automated machine is made to read image through MATLAB get coordinates of holes and drill through motors controlled by microcontroller. Microcontroller serves as its brain that continuously guide machine. Report describes the major areas relevant to the project. A discussion of the project working as well as component selection and hardware implementation is also present in the report.

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CHAPTER 1

INTRODUCTION

1.1 Motivation

One of the main factors that influenced the choice of topic for this project was the small team size. The project topic had to be manageable between three people. We were also eager to tackle a project that would present opportunities to integrate a number of different hardware and software systems to develop our skills in hardware engineering, software engineering and system integration. The chosen topic is interesting in that it addresses these issues by integrating a number of systems including MATLAB software on the PC, PIC microcontrollers. There are a number of hardware issues such as interfacing, communication and timing and software issues such as file formats and language choice, which must be considered. The outcome of the project will be an interesting test of whether or not it is possible to implement a drilling machine of this type, which is easy to use, affordable and accurate.

1.2 Aim of Project

The development of electronic circuit usually uses PCB or Printed Circuit Board. One of the processes in making PCB is to make a hole. Here we are discussing the development of automatic drilling machine for PCB. The aim of this project was to reduce the time and labor required for drilling holes in PCB using simple, user friendly and cost effective method, as PCBs are extensively used in electronics. In the making of a PCB, after etching process, the PCB will be placed to this system and then it will be drilled automatically according to user commands.