ARDUINO BASED DIGITAL IC TESTER

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ACKNOWLEDGEMENT

In the name of Allah, The Most Generous and The Most Merciful. With the deepest sense of gratitude to Allah the Almighty for giving me strength and ability to complete my final year project and thesis.

My deepest gratitude is expressed to my supervisor, Syed Abdul Mutalib Al Junid for all the guidance, support and advice provided to me throughout the final year project.

Last but not least, I am also would like to express my appreciation to my beloved family, friends and anybody who are involved directly or indirectly for their support and devices during completing my final year project.

Thank you.

ABSTRACT

Nowadays integrated circuits (IC) chip is rapidly growth and become more complexity. The need of devices that can test this IC chip reliable and low cost is very necessary. This paper describes a low cost digital IC tester implemented using the Arduino Mega 2560 microcontroller. The digital IC tester receives keypad information about the chip under test, then the microcontroller will send digital signal to the chip. The resulting chip outputs are then compare with the IC chip expected result to determine whether chip under test is faulty or not.

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CHAPTER 1

INTRODUCTION

1.1 BACKGROUND OF STUDY

Dramatic improvement of integrated technology in IC manufacturing is rapidly leading to exceedingly complex, multi-million transistor chips [1]. Integrated circuit (ICs) chip such as TTL and CMOS are use on most electronic device and equipment. The growth of the ICs is expected to increase in the future. With increasing complexity of the ICs problems related to ICs testing have become more complex and critical. The cost of testing the ICs has become main major of the total cost of electronic production. It predicted that it will soon cost more to test a transistor than to make it if the main problem of ICs testing is not been resolved. IC testing has now become major problems in the semiconductor world and it will need an economic solution with reliable performance.

Nowadays, there are many companies that produce many kind of ICs chip for specific use. Because of development technologies of integrated circuit is growing so fast, so many new ICs chip is produce every year. More advance integrated circuit tester to test this ICs chip is needed. To test the IC chip the need of special device is require which is integrated circuit tester. There are three types of integrated circuit which is digital integrated circuit, analog integrated circuit and mixed integrated circuit. It