COLLEGE OF COMMUNICATION AND INFORMATION TECHNOLOGY

74 SERIES CHIP CHECKER

A Thesis

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Bachelor of Science in Computer Engineering

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CERTIFICATION

This thesis entitled **"74 Series Chip Checker"**, prepared and submitted **by Benjo B. Castillo, Denver John T. Flordeliz, John Vincent F. Evangelio, and Alvin David L. Navida** in partial fulfillment of the requirements for the degree **Bachelor of Science in Computer Engineering**, has been examined and recommended for Oral Examination.

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ABSTRACT

The 74 Series IC Chip Checker is a microcontroller-based circuitry that tests whether the IC is in good working condition or bad condition. In industries, testing of the product is a major and expensive, and time-consuming process. Before making the whole system work, testing is mandatorily performed to avoid errors and undesired results. Similarly, in educational institutions, while performing practical it is necessary to check the ICs whether it is good or bad before performing experiments. Many a small fault at the IC level makes the system perform inaccurately and produce wrong outputs. The proposed system gives a cheap, small, portable, and easy to handle IC tester that tests the ICs belonging to basic gate circuitry.

INTRODUCTION

The 74 Series Chip Checker is implemented by using the Arduino UNO microcontroller board. The processing of the inputs and outputs is done by the microcontroller. The display part on the microcontroller board is modeled using a Tin-film-transistor liquid-crystal display (TFT LCD). The 74 Series Chip Checker automatically identifies what type of IC is inserted. After the successful testing of the IC, the result is displayed on the TFT LCD.

The basic function of the 74 Series chip checker is to test a digital IC for correct logical functioning as described in the truth table and/or function table. It can test digital ICs having a maximum of 20 pins. Since it is programmable, any number of IC's can be tested within the constraint of the memory available.