

## ABSTRACT

The two-axis PCB (Printed Circuit Board) automatic drilling machine has long been developed and implemented in various types of industries. The accuracy of the coordinates of drilling points on the PCB is greatly needed, in addition to time, energy, and cost efficiency.

This final assignment talks about the design and the making of two axis (x, y) PCB automatic drilling machine with a MCS-51 Microcontroller which has a serial communication with visual basic 6.0 by submitting the coordinate numbers desired (the positions of points 0, 0 has already been determined). Then, the drill will move so that PCB will have a hole in connection with the said coordinates. During the performance, we are to focus on the accuracy in the drilling and the serial communication between microcontroller with visual basic which has converted the coordinate of the drilling points.

To examine the accuracy of this PCB drill, we are to search precise and good algorithm conversion so that we obtain the coordinates of drilling points and communicate with the microcontroller which will move the motor stepper in connection with the bit of information being sent, while the PCB dimensions that could be made has a size of 20x20 centimeters.

The desired result of this final assignment is an implementation of two-axis PCB automatic drilling machine with a high precision tolerance of drilling points of only one millimeter, and the occurrence of serial computer communication relation with the microcontroller.