

ABSTRACT

Nowadays, technology is developing very rapidly. Thus causing industry sector have to keep evolving, especially in the creative industries. Therefore, creative industries must be able to improve their productivity by efficiency, effectiveness, and precision. One of the ways to be able to achieve that is by using automatic machine as its production system.

CNC router is a sub part of CNC milling where the two of them have similar concepts and way of working. CNC router is a cutting and carving tool that able to form a shape of the wood using the drilling method. Over time, many academicians created a CNC router machine with different concepts and configuration. CNC router is a machine that is able to be created in such a way with a different purpose for each need which has a high accuracy and time efficiency to do a production.

For this final project, CNC router will be designed and implemented by G-Code program using GBRL controller as the CNC machine controller. A microcontroller is used to receive a G-Code for PC that will be sent back to the micro-controller, which later being controlled using a GBRL controller to move the stepper motor.

And CNC Router has the accuracy error less than 1%, said work properly and could produce form in line with the design picture determined former.

Keywords: CNC (Computer Numerical Control), CNC Router, G-Code, GBRL Controller, Stepper Motor