

ABSTRACT

This final project report discusses design and realization of complex 3-axis CNC machines based on microcontroller which combined with laser. This machine can be used for Engraving and Marking on wood, acrylic and PCB objects. Design picture that have been made on the PC sent to the microcontroller using serial communication then CNC perform execution on object according to point coordinates. laser will create patterns on objects automatically according to the design drawings. After testing, the CNC machine can be used engraving and marking on wood, acrylic and PCB to 2D or 3D objects with 98.5%. This machine works on a object with maximum size of 4 x 4 cm.

Keywords: Machine, 3-axis CNC, Laser, microcontroler