Abstract Details

Title: Design and development of 3 –axis cnc routerat low cost

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Abstract: This paper discusses the design and development of low cost 3-axis cnc router with arduino uno microcontroller.this is combined with the spindle drill and milling bit. This cncrouter can be used for cutting, engraving on wood, foam,plywood object.firstly we make the design on computer software like online software cnc apps.com where we write the alphabet name or design then itgenerated the g-code file in .txt extension which can open in notepad.we also can edit the dimension of design picture in txt file. Further, we open the universal g code sender open source software connected arduino uno with computer. Upload the file on software which sent the data to motor driver of stepper motors. Spindle motor which attach to z axis will create pattern on objects automatically according design drawing file upload through software.after testing on cnc machine can be used for cutting, engraving on wood, plywood, acrylic, foam to 2d or 3d objects with high carving accuracy and high depth accuracy. This cnc router works on a object with maximum size of 300x300mm.

Keyword: cnc, microcontroller, cutting, engraving, arduino uno