

ARM MOVEMENT FOLLOWER

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ABSTRACT

In this report, a proposed design of a robotic arm that mimics the movement of the instructor's arm wirelessly is presented. This project uses Flexbend sensors as the transducer and a PIC16F877A as controller. Moreover, the low cost RF module, integrated with encoder HT12E and decoder HT12E, is used in order to control the robotic arm wirelessly. Furthermore, the robotic arm, that is constructed using two servo motors representing the shoulder and elbow, is controlled using the combinations of bits generated by the controller, PIC16F877A. Also, a table of the movement characteristics and output waveforms are shown in this report in order to describe in details results of the project. Therefore, results show that the robotic arm is able to mimic the human arm. However, it is unable to do the rolling movement due to the available servo motor is only able to move 180 degree.

Index terms: robotic arm, mimicking, human-machine interface, wireless.