

ABSTRACT

Nowadays, technology of robot grown rapidly. Most of robot can assist human tasks. However, most existing robot has unfamiliar form with humans. So often people feel uncomfortable and difficult to interact with the robot. Walking ability is one of the system of the whole system in the human body. Therefore, in this final project built a bipedal robot like human form, so the robot can help humans work and feel more comfortable in interacting.

Bipedal robot made using aluminum frame, ATmega32 microcontroller and LM2576 IC regulator. It's programmed using C programming language and integrated with 6 (six) pieces Hitec HS-322 servo motors to move his legs.

For keeping the balance of robot, the angle of soles joint should move 20° CW for left foot and 200° CCW for right foot. Then, to get a step along 5cm, the servo motor on the hip joint and knee joint should move at 40° . The robot can walk straight and stabil along 200cm with a speed of 3.5 cm/sec and instability of movement at speeds above 5cm/sec.

Keywords: *Robot, Bipedal, Servo, ATmega32, C Programming Language, Hitec HS-322, IC LM2576 regulator circuit*