

DTMF WIRELESS CONTROLLED ROBOT

Prepared by: Tan Siang Hwee

ABSTRACT

This project presents a wireless controlled robot using mobile phones via dual tone multiple frequency (DTMF) for robot signaling. The robot is controlled in eight directions by pressing the corresponding keypad on the mobile phone to generate DTMF tones for movement control. The design employs IC MT8870 that decodes the DTMF tones from the mobile phone via earphone. A PIC16F877A microcontroller is used to process the digital output from the DTMF decoder IC and determines the robot movement by giving output to the motor driver L298.

Temperature of motor driver and the current flow of motor are monitored by using temperature sensor LM35 and 0.47Ω current sense resistor. The output of these sensors is feedback to the microcontroller which in turn ensures the safety of motor and its driver. The buzzer will sound if there is overheat of motor driver or overcurrent of motors. Additionally, an LCD is interfaced to display the movement of robot, temperature of motor driver, and current flow of motors. The circuits are designed, tested individually and integrated into a prototype. All the objectives and aims were achieved and the project was completed successfully. The design can be further improved by adding a wireless cam and password authentication for visual feedback and security purpose.

Keywords: *DTMF, MT8870, PIC16F877A microcontroller, L298, LM35*