

ABSTRACT

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MICROCONTROLLER BASED AUTOMATIC BRAKING SYSTEM ON REMOTE CONTROL CAR

(xiv + 68 pages: 26 figures; 16 tables)

Microcontroller Based Automatic Braking System on Remote Control Car is a system which is capable of increasing the safety level in driving aspect by using a remote control car as a miniature of real car. This final project creates a system which is able to prevent an accident caused by human error while driving such as crashing into obstacles while driving.

The system is an integration of several sensors to a microcontrollers and attached to a remote control car. The infra-red range sensor is used for detecting obstacles in the front or back side of the car based on the input by remote control. The range values that are sent to a microcontrollers are compared to speed values that are sent from a speed sensors to determine a time for the system to do an auto-braking procedure. The auto-braking procedure will be executed if the system indicates the crashing will occurred based on the range and speed values.

The system has been tested on a designated route and has been succeeded in preventing the remote control car to crash into the obstacle with one hundred percent succeed rate. The system is currently not applicable to a real car due to minimum specification and technical issues. Further studies can include using range and speed sensors which is higher in technical specification and resolution for more accurate measurement. The use of a stable power supply for microcontrollers is also recommended.

References: 8 (1995-2009)