

ABSTRACT

The garage is a place to store the car to avoid theft or to protect the car against the hot sun or rain so that the life of the vehicle can be longer. Usually the garage door can be opened by pushing the door up, side, or front. But in addition to the security function for the stored car, the garage adds to the difficulty if you want to enter the car without the help of others. The driver needs to get out of the car, then open the garage door, enter the car, and close the door again when the car has entered the garage.

This is what inspired the author in making an automatic garage door drive system. The system built in this research is a system that uses RFID (Radio Frequency Identification) and a smartphone to be able to open the garage door without having the driver get out of the vehicle plus a camera as an additional security. The components used are the RDM6300 sensor as an RFID reader, the ultrasonic sensor as a distance guard between the garage door and the car body and ESP32-CAM as communication from the smartphone to the device and as a camera. The process of monitoring environmental conditions around the garage door is carried out using the telegram application installed on the smartphone and when the garage door is in a state of opening the door.

The results of the design of the automatic garage door opening system are shown by the average reading distance of the RDM6300 with the 125 Khz RFID Tag as far as 6.7 cm, the average response to opening the garage door via a smartphone is 2.50 seconds and the image that has been photographed will be displayed. display on the chatbot via the telegram application for 7.24 – 9.17 seconds depending on the provider used. Then the results of the design of the automatic garage door opening system are shown by testing the whole system, where the garage door will open on average for 20.68 seconds, close on average for 31.59 seconds and the garage door does not hit the car within the average range. 3.96 cm.

Keywords: *Garage, RFID, Smartphone, RDM6300, Ultrasonic*