DESIGN AND BUILD VEHICLE SECURITY TOOLS WITH MICROCONTROLLER AND GPS BASED SMARTPHONES

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ABSTRACT

Vehicle security systems are very vulnerable to theft, so additional systems are needed for vehicle security against crime. The solution from the researchers is to modify a vehicle security system using a smartphone based on a microcontroller and GPS as security and being able to track the vehicle. For this reason, the author has designed a vehicle security system using a State machine that utilizes several sensors and existing technologies. The sensor used is a GPS sensor. The GPS sensor is used as a location reading and notification when the vehicle changes places when parked. The research method is in the form of design (hardware and application design on smartphones) and testing (subsystem testing and overall system testing). The research data is in the form of data from testing the bluetooth communication subsystem, GPS detection. Data transmission between bluetooth and bluetooth modules on smartphones can reach 10 meters. GPS Receiver accuracy used is less than 7 meters. There is a difference of 4 m to 7 m in the determination of vehicle positioning carried out by the system and smartphone. This is because environmental conditions greatly affect the accuracy of the GPS data obtained.

Keywords*: Smartphone, Bluetooth Module, GPS.*