ANTI-THEFT CAR PROTECTION SYSTEM (ATCPS)

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Abstract. Security and protection have become an important issue in almost every sector of business and engineering. The project titled "Anti-Theft Car Protection System" focuses on improved methods to prevent the Car from thefts. Most recent methods available are of alarm types and in the case the car is stolen, it provides alarm sound. Alarm sound keeps thieves away but not able to protect the cars from theft in a perfect manner. Our project aims to provide a simple and efficient car protection system using mobile technology. If "Anti-Theft Car Protection System (ATCPS)" is installed in the car, it responds to the call from the registered user. Once the car is stolen, after receiving a call from registered user, ATCPS will generate a signal to activate two relays (electromechanical switches) one to switch off the car engine and other to turn on the camera to capture image of the thief. GPS module is attached to provide location of the stolen car.

INTRODUCTION

The project "Anti-Theft Car Protection System (ATCPS)", offers an improved and efficient way of protecting cars from theft using mobile technology. The concept can be described as follows:

ATCPS receives a call (wireless signal) from the user and converts it into an electrical signal, amplifies it and pass it to the input of the microcontroller. Microcontroller generates two outputs. One of the outputs is used to shut down the engine of the car and the other one will switch on the camera. The first output is connected to a relay which is an electromechanical switch that used to cut the electricity going to the car engine by disconnecting the fuse of the car's switch. And the other output is used to activate the camera to take an image of the thief and saves this image inside the memory. And the GPS device will give the location of the stolen car.

METHODOLOGY

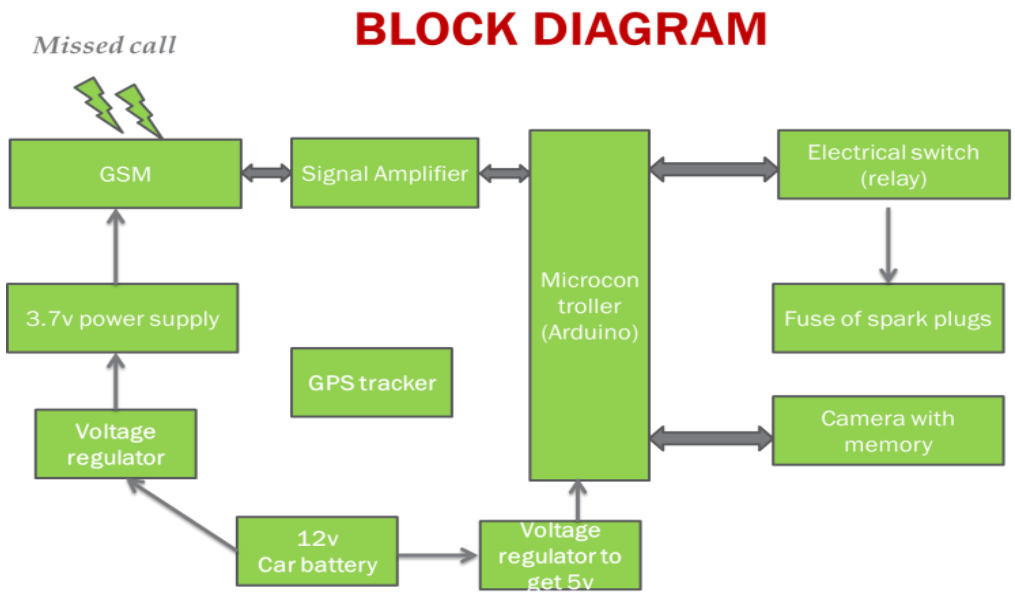

Figure 1. Block diagram of ATCPS

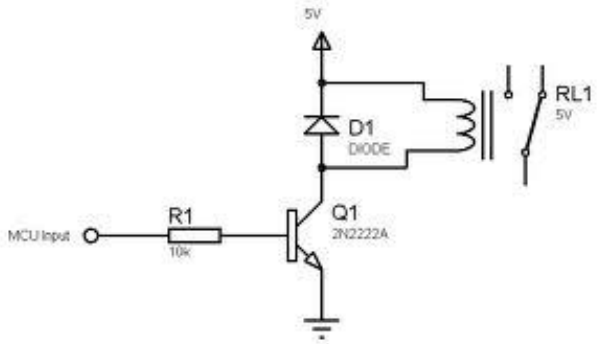

Figure 2. Relays circuit used in ATCPS

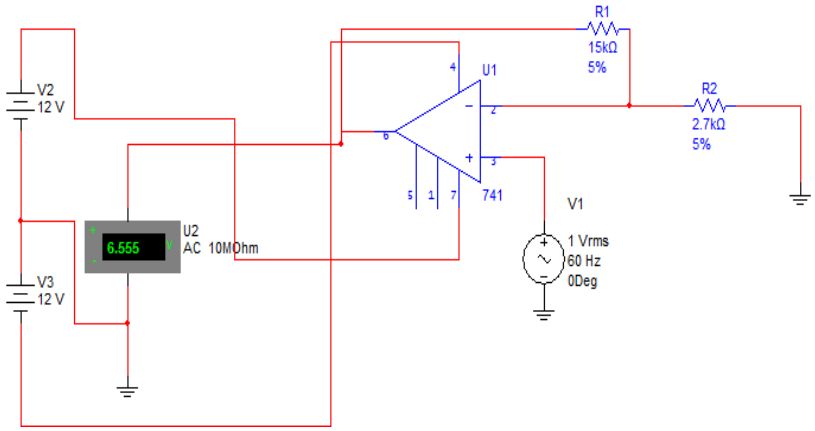

Figure 3. Amplifier circuit used

RESULTS AND DISCUSSION

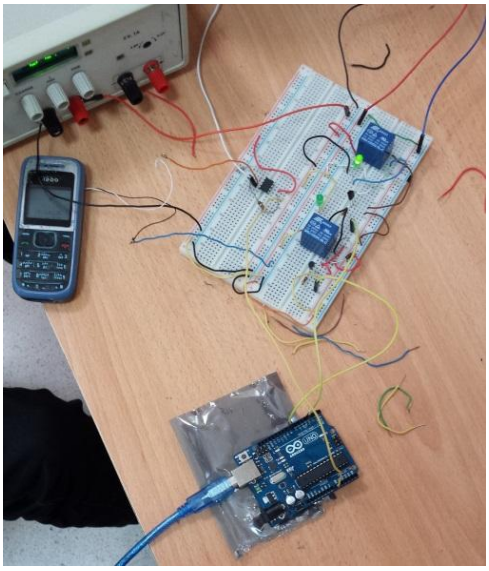

Figure 3. Working of ATCPS

Working

The working of ATCPS can be explained as follows:

First of all when a call is received to the phone from the registered user, the phone then generates a signal which is amplified with the help of operational amplifier. The output of this amplifier is then passes to the input of the microcontroller. The microcontroller will make instructions to control two output terminals. The first output is connected to a relay which is an electromechanical switch that will cut the current flowing to the car's engine through the fuse of the car switch and hence the car will be stopped, the second output is connected to a camera which is placed in a hidden position in front of the driver this camera will capture a photo of the person who has stolen the car and saves it in the memory. The GPS device will give the geographical information about the stolen car.

CONCLUSION

Anti-theft car protection system is an improved and useful method for finding the stolen cars, by using various technologies: GSM and GPS Module. The aim was to design and construct anti-theft system that has high performance while car theft.

Anti-theft system designed and built in this research is a dynamic anti-theft system. This means that after stealing, the car owner can calls number assigned to this system and trigger his car in each geographic location and then thieves cannot turn on it again.

Anti-theft car protection system provides a link between GSM technology and the car protection application and an easy way to find the stolen automobiles. ATCPS is based on (ARDUINO) microcontroller that is interfaced with all components to disable the movement of the car, in case it is stolen.