IJIRCCE

e-ISSN: 2320-9801 | p-ISSN: 2320-9798

INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH

IN COMPUTER & COMMUNICATION ENGINEERING

Volume 12, Issue 9, September 2024

INTERNATIONAL STANDARD SERIAL NUMBER INDIA

Impact Factor: 8.625

© 2024 IJIRCCE | Volume 12, Issue 9, September 2024| DOI: 10.15680/IJIRCCE.2024.1209035

www.ijircce.com | e-ISSN: 2320-9801, p-ISSN: 2320-9798| Impact Factor: 8.625| ESTD Year: 2013|

International Journal of Innovative Research in Computer and Communication Engineering (IJIRCCE)

(A Monthly, Peer Reviewed, Refereed, Scholarly Indexed, Open Access Journal)

Vehicle Theft Detection/Notification and Remote Engine Locking

Omkar Mulik, Nishant Munde, Prathmesh Kalokhe, Saurabh Salave, Prof.Takale.V.B

Department of Electronics & Telecommunication, JSPM Bhirabai Sawant Polytechnic Institute, Pune, Maharashtra, India

ABSTRACT: The main purpose of this project is to prevent vehicle theft. This functionality is achieved by detecting vehicle status in theft mode and by sending an SMS which is generated automatically. This SMS is then sent to the owner of the vehicle. The owner can then send back the SMS tin order to disable the ignition of the vehicle. Thus in this way crimes can be reduced to a great extent as vehicles today are being stolen in large number.

Hence, vehicles today require high security which can be achieved with the help of this application. How the system works is when a person tries to steal the vehicle, the microcontroller is interrupted and the command is sent to the GSM modem to send SMS. On the receipt of the message, the owner sends back the SMS to the GSM modem. This is done in order to stop the engine. This GSM modem is interfaced to the microcontroller. This microcontroller on the receipt of the message uses a mechanism that helps to stop the engine. Motor is being used in this project in order to indicate vehicle ON/OFF state. Further enhancement can be done to this project by using a GPS system that helps to find out the exact position of the vehicle with the help of its latitude and longitude which then can be sent to the owner of the vehicle via SMS. This data can be then entered by the owner on Google map to find out the exact location of the vehicle.

I. INTRODUCTION

Vehicle theft is a significant global problem that puts vehicle owners at risk of financial loss and safety concerns. To mitigate this issue, security systems have been developed that can detect and prevent vehicle theft. One of these systems is the Vehicle Theft Detection and Remote Engine Locking system. The Vehicle Theft Detection and Remote Engine Locking system utilizes sensors placed at various points in the vehicle to detect attempted theft activities, such as towing or breaking in. Once the sensors detect such activities, the system notifies the vehicle owner through an app or SMS, enabling them to activate the engine locking feature remotely. This feature effectively prevents the thief from driving the vehicle away. Compared to traditional security systems, the Vehicle Theft Detection and Remote Engine Locking system is more advanced and sophisticated. Its ability to detect a wider range of potential theft scenarios and provide remote control of the vehicle offers a higher level of security and control to vehicle owners, ensuring that their vehicles are always safeguarded. This paper aims to provide an overview of the Vehicle Theft Detection and Remote Engine Locking system, highlighting its benefits and effectiveness in preventing vehicle theft. Additionally, the study will identify potential limitations and discuss strategies to optimize the system's effectiveness.

II. METHODOLOGY

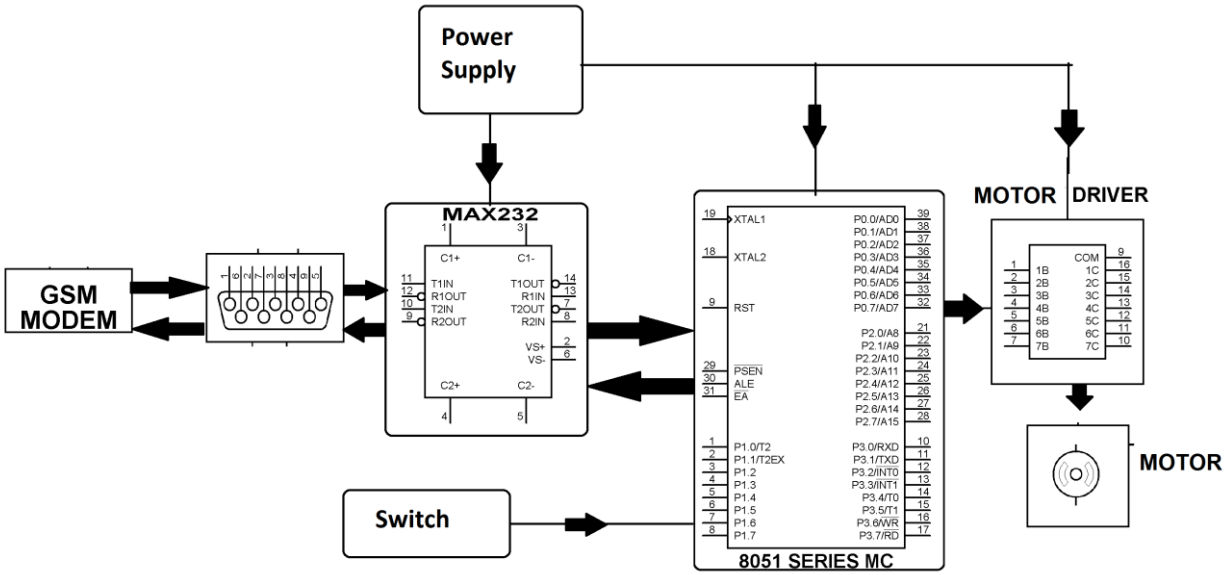
Block diagram for the vehicle theft detection and remote engine locking project using the provided components: The proposed system for vehicle theft detection and tracking with remote engine locking uses the Internet of Things (IoT) technology and Blynk app. The system consists of several components, including an Arduino board, GPS module, GSM module, and a relay module. The system operates by detecting unauthorized access to the vehicle through the use of sensors placed inside the car. When the system detects an unauthorized access, it immediately sends a notification to the car owner's mobile phone via the Blynk app. The notification includes the current location of the vehicle, which is obtained through the GPS module. The car owner can use the Blynk app to remotely lock the engine of the vehicle to prevent further unauthorized access. The app also provides the car owner with real-time updates on the location of the vehicle. The experimental results of the system show that it is effective in detecting unauthorized access and tracking

www.ijircce.com | e-ISSN: 2320-9801, p-ISSN: 2320-9798| Impact Factor: 8.625| ESTD Year: 2013|

International Journal of Innovative Research in Computer and Communication Engineering (IJIRCCE)

(A Monthly, Peer Reviewed, Refereed, Scholarly Indexed, Open Access Journal)

the location of the vehicle. The remote engine locking system can also be controlled efficiently through the Blynk app. The proposed system provides an efficient solution for car theft prevention and tracking



Hardware Specifications

- 8051 series Microcontroller
- Crystal
- Diode
- GSM modem
- Switch
- Motor
- Voltage Regulator
- DB9 connector

III. CONCLUSION

In conclusion, the Vehicle Theft Detection and Tracking Notification with Remote Engine Locking System Using IoT presents a promising solution for enhancing vehicle security. The combination of IoT technology, GPS tracking, and a mobile application enables the system to detect and report intrusion attempts to the vehicle owner's mobile application in real-time, allowing for prompt action to be taken. The remote engine locking feature provides an additional layer of security by allowing the vehicle's engine to be disabled remotely, effectively preventing theft. Experimental results from the research demonstrate the system's efficiency and effectiveness. The proposed system accurately detects and reports all intrusion attempts, and the remote engine locking feature works as intended. The success of this research highlights the potential of IoT technology for enhancing vehicle security, which can reduce vehicle theft and improve public safety. Overall, the Vehicle Theft Detection and Tracking Notification with Remote Engine Locking System Using IoT offers a practical and reliable solution for vehicle security

www.ijircce.com | e-ISSN: 2320-9801, p-ISSN: 2320-9798| Impact Factor: 8.625| ESTD Year: 2013|

International Journal of Innovative Research in Computer and Communication Engineering (IJIRCCE)

(A Monthly, Peer Reviewed, Refereed, Scholarly Indexed, Open Access Journal)

REFERENCES

[1] S. Mohanasundaram, V. Krishnan and V. Madhubala, "Vehicle Theft Tracking, Detecting And Locking System Using Open CV," 2019 5th International Conference on Advanced Computing & Communication Systems (ICACCS), Coimbatore, India, 2019, pp. 1075-1078, doi: 10.1109/ICACCS.2019.8728460.

[2] K. Lappanitchayakul, "Anti-theft device for car: Alert system using radio wave," 2019 International Conference on Intelligent Informatics and Biomedical Sciences (ICIIBMS), Shanghai, China, 2019, pp. 351- 355, doi:10.1109/ICIIBMS46890.2019.8991531.

[3] P. V. Crisgar, P. R. Wijaya, M. D. F. Pakpahan, E. Y. Syamsuddin and M. O. Hasanuddin, "Hardware Design for IoT-Based Vehicle Tracking and Theft Detection System," 2021 International Symposium on Electronics and Smart Devices (ISESD), Bandung, Indonesia, 2021, pp. 1-6, doi: 10.1109/ISESD53023.2021.9501601.

[4] A. Karnik, D. Adke and P. Sathe, "Low-Cost Compact Theft-Detection System using MPU-6050 and Blynk IoT Platform," 2020 IEEE Bombay Section Signature Conference (IBSSC), Mumbai, India, 2020, pp. 113-118, doi: 10.1109/IBSSC51096.2020.9332214.

[5] M. Wolf, A. Weimerskirch, and T. Wollinger, "State of the Art: Embedding Security in Vehicles," EURASIP Journal on Embedded Systems, vol. 2007, no. 5, pp. 1-12, 2007.

[6] K. H. Johansson, M. Torngren, and L. Nielsen, "Vehicle Applications of Controller Area Network," in Handbook of Networked and Embedded Control Systems. New York, NY, USA: Springer-Verlag, 2005, pp. 741–765.

[7] K. Koscher et al., "Experimental Security Analysis of a Modern Automobile," 2010 IEEE Symposium on Security and Privacy, Oakland, CA, USA, 2010, pp. 447-462, doi: 10.1109/SP.2010.34

INTERNATIONAL STANDARD SERIAL NUMBER INDIA

INNO SPACE SJIF Scientific Journal Impact Factor

doi cross ref

निस्केयर NISCAIR

INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH

IN COMPUTER & COMMUNICATION ENGINEERING

9940 572 462 6381 907 438 ijircce@gmail.com

www.ijircce.com

Scan to save the contact details