Atmega Based Vehicle Theft and Engine Lock System

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Abstract:

The "ATmega-Based Vehicle Theft and Engine Lock System" integrates an ATmega microcontroller for robust vehicle security. It enables users to remotely manage engine status via SMS commands and receives real-time GPS updates for accurate location monitoring. Upon activation, the system initiates monitoring of the vehicle's whereabouts and awaits user commands via SMS. It proactively alerts users whenever the engine is activated, enhancing theft prevention measures. This system combines the reliability of ATmega microcontrollers with GPS technology to provide effective vehicle security and peace of mind for users concerned about theft and unauthorized use of their vehicles.

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I. INTRODUCTION

The "ATmega-Based Vehicle Theft and Engine Lock System" represents a sophisticated solution utilizing ATmega microcontroller technology to bolster vehicle security effectively. Enabling remote management of engine status via SMS commands and delivering real-time GPS location updates, this system ensures proactive monitoring of vehicle whereabouts. By alerting users promptly upon engine activation, it enhances theft deterrence measures significantly. With its integrated capabilities, this system offers peace of mind to vehicle owners by safeguarding against unauthorized use and potential theft incidents.

II. LITERATURE REVIEW

A. VEHICLE THEFT ALERT AND ENGINE LOCK SYSTEM USING GSM & GPS

The primary objective of this study is to implement a system utilizing GSM and GPS technologies for vehicle theft prevention and engine immobilization. This system notifies the vehicle owner of any unauthorized entry attempts via SMS alerts. Additionally, the system allows the owner to send a SMS command that disables the vehicle's ignition system, effectively stopping the vehicle.

B. VEHICLE THEFT ALERT & ENGINE LOCK SYSTEM USING ARM7

The system involves processing, interfaces, connections, and data transmission/reception utilizing GPS technologies. A vehicle tracking system, an electronic device installed in vehicles, allows owners or third parties to monitor their locations. This embedded system utilizes GPS and GSM for vehicle tracking and positioning. The data exchange between mobile units and control stations has been effectively established, confirming compatibility of the results.

C. VEHICLE THEFT DETECTION AND REMOTE ENGINE LOCKING SYSTEM

This system is designed for anti-theft purposes, employing an embedded system equipped with Global Positioning System (GPS) and Global System for Mobile communication (GSM). Users can track vehicle positions on Google Maps. The GPS locator identifies the current location of the target and transmits it, along with various parameters received from the vehicle's data port, via Short Message Service (SMS) over the GSM network to a GSM modem controlled by a microcontroller.

This paper introduces a cost-effective vehicle tracking and monitoring system.

D. VEHICLE THEFT DETECTION AND LOCKING SYSTEM

This paper introduces a system designed to reduce vehicle thefts by promptly alerting the owner when the vehicle is moved or stolen without authorization. The system ensures security by sending an alert message in such events. Additionally, registered users can track the vehicle's location using GPS technology, which provides real-time location updates. Furthermore, GSM technology is utilized to notify the owner immediately when the vehicle is started.

III . METHODOLOGY

The ATmega-based system integrates an ATmega microcontroller, GPS module, and GSM module. Upon activation, it initializes GPS tracking and awaits user SMS commands for engine control. Real-time updates on vehicle location and engine status changes are relayed via GSM, ensuring effective remote monitoring and theft prevention.

KEY COMPONENETS

1.ATMEGA 328 MICROCONTROLLER
2.GY-NEO6 GPS MODULE
3.SIM800L GSM MODULE
4.RELAY MODULE 1 CHANNEL
5. 16x2 LCD DISPLAY
6.DC MOTOR(IGNITION COIL)

7.KEY

CIRCUIT DIAGRAM
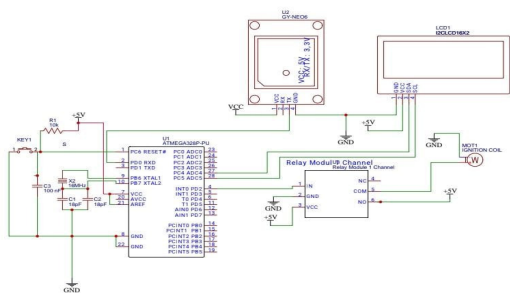
WORKING

The Atmega based vehicle theft and engine lock system using GPS" operates on a straightforward yet effective principle: allowing users to remotely control their vehicle's engine status via SMS commands, while also providing real-time location updates. Firstly, upon activation, the system initializes and starts monitoring the vehicle's location using the installed GPS module.

Simultaneously, it awaits commands from the user via SMS.-This feature serves as a proactive alert mechanism, informing the user of the vehicle's status and location whenever the engine is turned on.

IV. WORKING MODEL
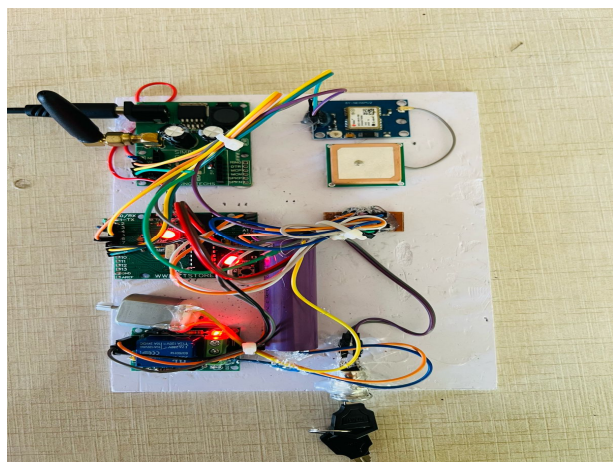
V. CONCLUSION

Through the integration of remote engine control via text and real-time GPS tracking, we are set to revolutionize vehicle management. Our system provides instant alerts for engine activation along with precise location details, enhancing security and offering peace of mind. Our dedication to innovation ensures a seamless and user-friendly driving experience. By continually advancing our technology, we aim to empower individuals with greater

vehicle control while emphasizing safety. Your feedback has played a crucial role in shaping our efforts, and we are eager to introduce these enhancements to our community. Together, we are driving towards a safer and more interconnected future on the roads.

VI . REFERENCE

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Authors:Komal Gupta, Pushpa Gupta, Deelip Bharti, Deepak Jaiswal,Mr. Sachidanand JaiswalBuddha Institute of Technology,GIDA,Gorakhpur(UP)

[2] VEHICLE THEFT ALERT & ENGINE LOCK SYSTEM USING ARM7

Authors: Prof.R.M.Sahu,Sonali Lole Department Of Electronics.PDEA's College Of Engineering Manjari(BK), Pune

[3] VEHICLE THEFT DETECTION AND REMOTE ENGINE LOCKING SYSTEM

Authors: Prabha Kant Dwivedi, Pragya Jaiswal, Shobha Nishad, Priya Singh, Sristi Singh , Archana Department of Electronics and Communication Engineering, Buddha Institute of Technology, India

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