

## MOTORBIKE ALARM

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**Abstract** - The design and development of an innovative anti-theft alarm system for motorcycles. The design is concept is based on two way communication strategy between the vehicle and owner. Radio frequency(RF) link technology is employed to achieve two way communication. Details of subsystems, their functions and operating steps are described. A prototype of the alarm is developed and tested. The results show that the prototype alarm performed well within the distance of 100 meters in open space and 30 meters in crowded areas. When fully developed, it is expected that this innovative alarm system could prevent the motor cycles from being stolen effectively although it can never achieve 100% thief proofs.

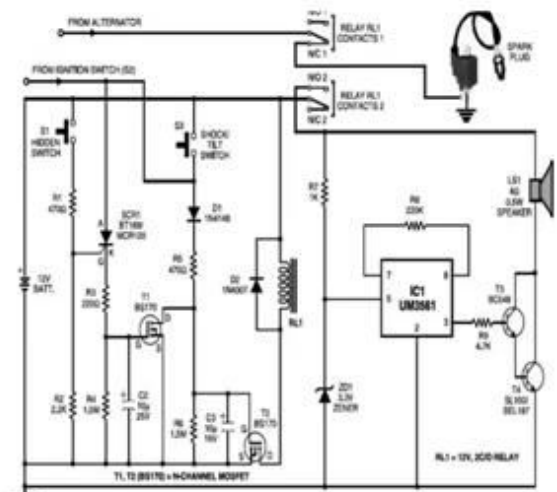
### CHAPTER II INTRODUCTION

This chapter will explain briefly about the project background, objectives to achieve, problem statement and scope of work. Nowadays we heard so many cases about the loss motorcycle. It is not just the cases that have been reported but they are also many cases that is not been reported. There are many kind of alarm system for motorcycle available in the market such as an alarm in a lock and a vibrate circuit. Most of the current alarm systems are too sensitive, so the false alarm is going higher. Of course we want our security alarm to be sensitive but if the sensitive increase a false alarm, it not too practical. By doing this project that using tilt switches which is mercury, it will trigger the alarm when the steering is moved or when the bike is lifted off its side-stand or its centre- stand. Of course this kind of alarm unable to catch the thief 100% but it prevents the motorcycle from being stolen easily. Despite the suspect can broke the key place at ignition starter without trigger an alarm, the motorcycle still cannot be stole easily because the system has

locked at the ignition circuit until one of the reset switch has been pressed.

This project will control the false alarm because it is not only about vibrator just touch the motorcycle, but it will trigger when the lid at mercury switch is contacted by the mercury. This project, cover the application of tilt switch, ignition circuit, relay, and ICUM3561.

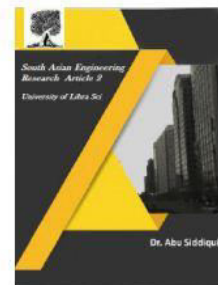
### CHAPTER III PROPOSED SYSTEM



**Fig 1: Circuit Diagram of Motor bike alarm**



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### 3.1 Tilt Switch

Tilt switches contain a conductive liquid and when tilted this bridges the contacts inside, closing the switch. They can be used as a sensor to detect the position of an object. Some tilt switches contain mercury which is poisonous.

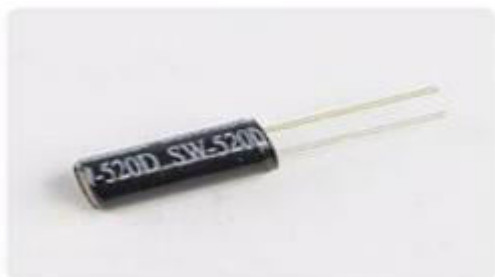


Figure 2: Tilt Switch

### 3.2 Ignition Switch

An ignition switch, starter switch or start switch is a switch in the control system of a motor vehicle that activates the main electrical systems for the vehicle, including "accessories" (radio, power windows, etc.). In vehicles powered by internal combustion engines, the switch provides power to the starter solenoid and the ignition system components (including the engine control unit and ignition coil), and is frequently combined with the starter switch which activates the starter motor.

The ignition coil's secondary has more turns than the primary. This is a step-up transformer, which produces a high voltage from the secondary winding. The primary winding is connected to the battery (usually through a current-limiting ballast resistor). Inside the ignition coil one end of each winding is connected together. This common point is taken to the capacitor/contact breaker junction.



Fig 3: Ignition Switch

The other, high voltage, end of the secondary is connected to the distributor's rotor

### 3.3 Hidden Switch

This circuit features an intermittent siren output and automatic reset. It can be operated manually using a key-switch or a hidden switch; but it can also be wired to set itself automatically when you turn-off the ignition. By adding external relays you can immobilize the bike, flash the lights etc.

This is a circuit for a low cost motorbike alarm system that sets off an alarm whenever someone attempts to ride the bike or to move it. Then, after fifteen seconds it disconnects the ignition switch using relay. The idea is to install a on-off switch somewhere on the bike where it's pretty well hidden that will have to be switched to "on" before the bike can be kick started.



Fig 4: Hidden Switch

### 3.4 ICUM3561

UM3561 is a low-cost, low-power CMOS LSI designed for use in alarm and toy applications.



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Since the integrated circuit includes oscillator and selector circuits, a compact sound module can be constructed with only a few additional components. The M3561 contains a programmed mask ROM to simulate siren sound.

Pin Configuration

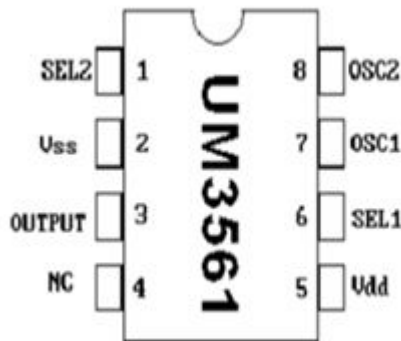


Fig 5: PIN DIAGRAM OF ICUM3561

## CHAPTER IV

### RESULTS

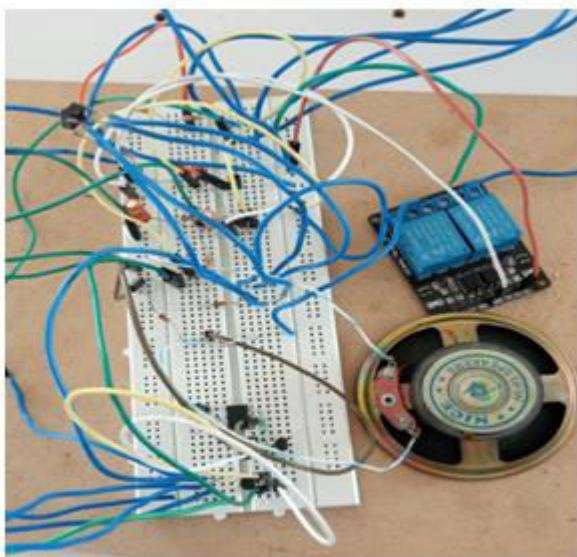


Fig 6: CONNECTIONS OF THE CIRCUIT



Fig 7: Output

## CHAPTER V CONCLUSION

The motor bike anti-theft system, is very useful technology that adds the security of the vehicles. It is a simple and effective technology which can be easily mounted on any motorbike without having much modifications to the existing systems. The cost of implementation for this system is very low and it is very much affordable. The level of protection it offers, the compactness and affordability makes this technology a feasible one.

### FUTURE SCOPE

Mechanical and electronic immobilizers can be adopted to get better functioning.

Vehicle tracking by GPS can be adopted, if this system fails then we can get location of the vehicle.

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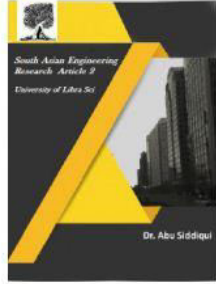


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