

# IoT based Automated Siren using Solar Power

Dr. B Doddabasavana Goud<sup>1</sup>, Chaya Bai P<sup>2</sup>, Nekitha<sup>3</sup>, Ruhee Tabassum<sup>4</sup>, Bharathi K<sup>5</sup>

Professor, Department of EEE<sup>1</sup>

BE Student, Department of EEE<sup>2,3,4,5</sup>

Rao Bahadur Y Mahabaleswarappa Engineering College, Ballari, Karnataka, India

**Abstract:** Now a day's college siren is operated manually. It replaces the manual switching of the siren in the college. The intension of this project is to implement IOT based automatic alarm system takes over the task of ringing the siren at predetermined time. It saves man power, time and ultimately money and also gives highest accuracy. The main components of this system are ESP IOT Cloud Board, RTC, and siren. When this time equals to siren ringing time, then the relay for the siren is switched on. The siren ringing time can be edited at any time, so that it can be used at normal class timings as well as exam times. Required power supply is given through Solar. The main aim of this project is to implement IOT based automatic alarm system using solar power. The main task of this system is to ring the siren at predetermined time with accuracy and without any human intervention.

**Keywords:** Solar Power.

## I. INTRODUCTION

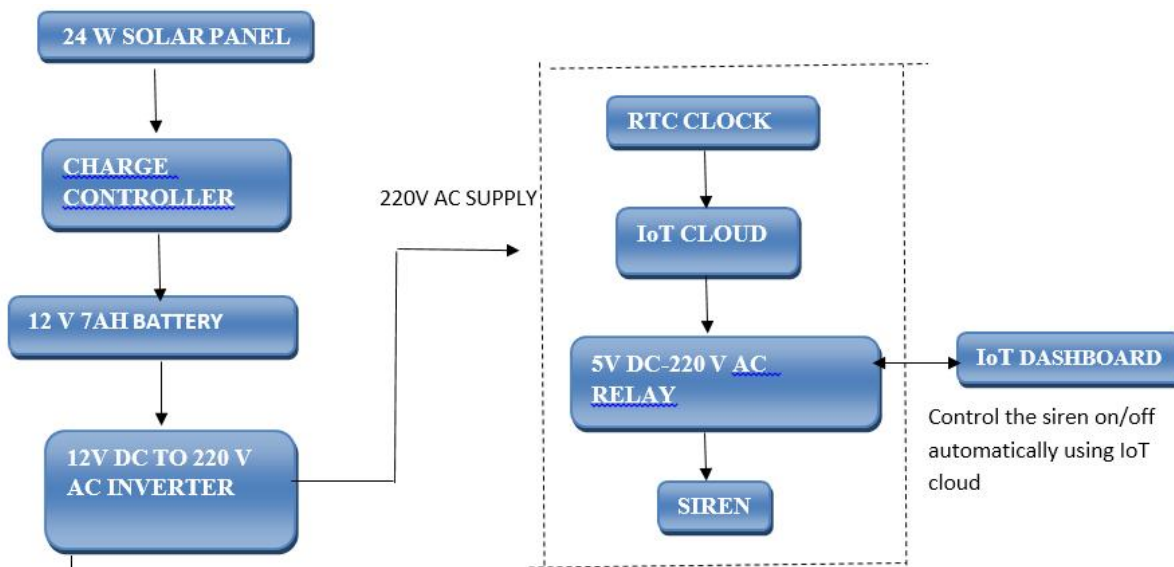
When people suppose about volition or renewable energy, also we go for solar energy. Solar energy is one of the most promising renewable sources that's presently been used worldwide to contribute for meeting rising demands. Solar energy is clean abundant and fluently exercised form of energy. Solar energy, although unreliable, is getting more and more popular with advancement in technology and dwindling in cost with ultramodern control systems. Solar technologies convert sun into the electrical energy either through photovoltaic PV panels or through glasses that concentrate solar radiation. This energy can be used to induce electricity be stored in batteries or thermal storehouse. Generally, batteries are used to store solar power for after use. A solar charge regulator manages the power going into the battery bank from the solar panels. A PWM charge regulator stands for palpitation range modulation which acts as intelligent switch between battery and solar panel that controls the voltage and current flowing into the battery.

The Internet of effects (IoT), is a system of interrelated computing bias, mechanical and digital machines, objects, creatures or people that are give with unique identifiers (UIDs) and the capability to transfer data over network without taking mortal to mortal or mortal to computer commerce. An IoT ecosystem consists of web- enabled smart bias that use bedded systems, similar as processors, detectors and communication tackle, to collect shoot and act on the data they acquire from their surroundings. Iot bias partake the detector data they collect by connecting to an IoT gateway or other edge bias where data is either transferred to pall to be anatomized or anatomized locally. Occasionally these bias communicate with other affiliated bias and act on the information they get form one another.

### 1.1 Apparatus Required

SL.NO	APPARATUS	QUANTITY	TYPE	RATING
1.	Solar panel	01	Poly crystalline	12V(DC),24W
2.	Charge controller	01	Gel	2 A
3.	Battery bank	01	Lead acid battery	12V, 7.6AH/20HR
4.	Relay	01	Electromagnetic	5V
5.	Siren	01	Electronic motor	600W
6.	ESP Iot WIFI module	01		3.2V
7.	Inverter	01		12V (DC), 200W

## II. BLOCK DIAGRAM



## III. METHODOLOGY

The methodology used in the system is divided into three stages of operation

- Input stage: Generation of power.
- Intermediate stage: Software rested inter connected system.
- Output stage: Blowing of siren

### 3.1 Input Stage

The input stage involves generation of power which is done through the solar photovoltaic cells which uses sun as a source of energy for generation of power. The generated power is connected to charge regulator which is farther fed to battery to empower the farther operation of the system.

### 3.2 Intermediate Stage

The intermediate stage also involves IOT cloud rested circuit which utilizes the programming law. This program observes switching operation of relay rested on precise intervals of time, the temptress connected to relay operates rested on switching characteristics of relay circuit.

### 3.3 Output Stage

The final stage of the system involves siren which is empowered through programming circuit

## IV. ADVANTAGES

- Using solar energy to run the siren reduces electricity bill
- Automated siren avoids human interference and human error.
- Siren can be controlled through android app by using iot
- Maintenance free.

## V. APPLICATIONS

- This system can be erected in colleges
- This system can also be erected in industries to alert employee for change of shifts
- This can be applied even in agriculture farming to supply of water at a required time
- This can also be used to scare birds in crop fields in order to avoid eating of Grains.

**VI. CONCLUSION**

The IOT based automatic siren is designed and constructed in current work. The conclusion of the project is summarized as, the IOT interfaced with siren system is accurate and reliable and it results in precise operation of the siren on proposed interval of times without human effort. This system can be employed in schools, colleges and industries for a time based alarming system. This project also offers new and advanced idea to help the people by enabling continuous operation through solar panel.