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"RFID BASED BATTERY CHARGING STATION USING SOLAR PANEL"

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ABSTRACT

In our proposed project we are trying to make solar operated battery charging station. We are give a scenario of a automatic system of charging station using RFID card & reader. In case of battery operated vehicle if battery discharged then no way to charge it on highway or any other public place. To deal with these disappointment RFID card based battery charger is used by people by suddenly plugging the charger to the battery. This working of RFID based battery charger is simplified and used in where there is no gird power is obtained instead of that we run charging station by the help of solar panel.

In our project we design a system using RFID card reader interface with Microcontroller. User get the RFID card according to their required time. Reader read the card data and gives information to the microcontroller. Microcontroller is the brain of our system which read card data through reader and gives command signal to relay. Relay is use for connect battery power to connector at which users load is connected. Simultaneously controller will display the operation in 16*2 LCD. After completion of time controller disconnect the battery power through the relay. In our project we are employing the solar for driving whole system. Thus we can say that our project is RFID based battery charging station using solar.

INTRODUCTION

The idea of this RFID based battery charger using solar panel helps us in the emergency posture by the way of charging our battery. In this generation and the future generation the battery is playing and will be play the another role of our life. The daily usage of this battery operated device like vehicle, laptop, mobile ,it should be alive at every seconds without dead. In the way to give the life to this character our RFID card based battery charger using solar panel is used in the public places where the charging station is not available yet. we mostly face the low battery situation in the long time conversation, playing games, songs, at the interesting and serious condition the battery going to low means it brings our mood to irritation and tension. In case of battery operated vehicle if battery discharged then no way to charge it on highway or any other public place. To deal with these disappointment RFID card based battery charger is used by suddenly plugging the charger to the battery. This working of RFID based battery charger is simplified and used in where there is no gird power is obtained by the help of solar panel.

Battery phones play's an important role in present communication world as well as day to day life. The describes battery charger using solar panel system based on RFID card and RFID module. So to operate these battery phones public charging needed & it should be useful to public. This design is based on AVR ATMEGA16, a 40 pin microcontroller with LCD displays showing the actual time left. During the time period, a relay output is latched. This can be used at Hotels, Conference centers, Exhibition halls, service offices, Shopping malls, Airports, Train terminals. So that the battery users can reactivate a low battery or dead battery by simply plug in & charging.

OBJECTIVES

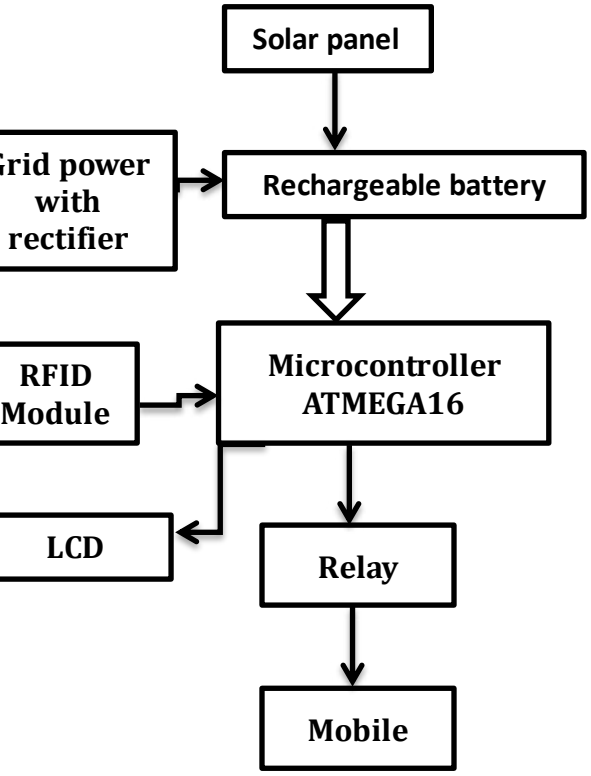
Our objective of this project RFID based battery charging station is to use in the public places. Our aim is to use following parameters.

- Solar energy as energy source.
- Rechargeable battery as storage device.
- Multi-voltage outputs.
- Charging of various low-voltage devices.

- RFID based pay & charge system for public.RFID card system use as cashless system

TOOL AND METHODOLOGY

1. BLOCK DIAGRAM

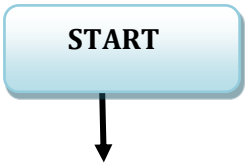


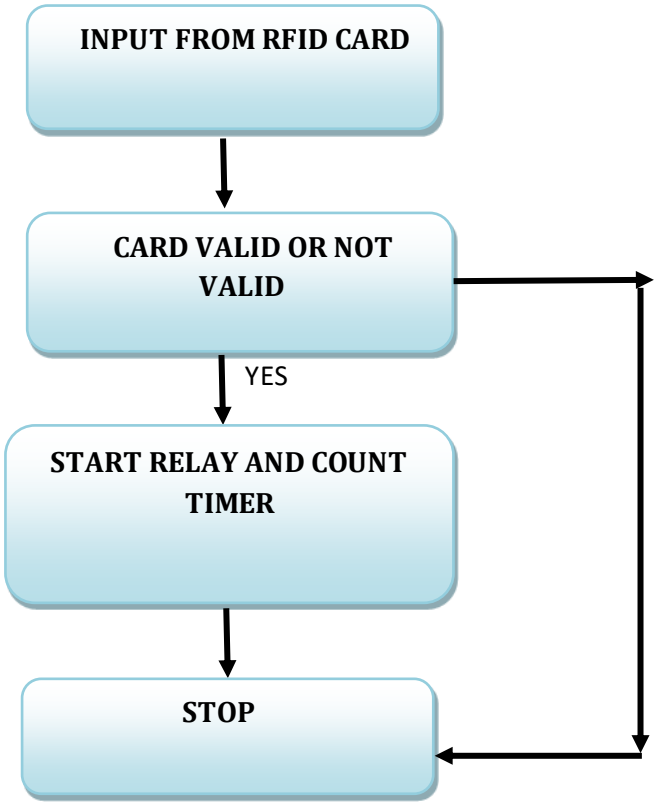
Above block diagram shows the RFID Based Battery charger using Solar Panel and
Power supply.

SOLAR PANEL
To provide power supply regularly, we use Solar Panel, DC Power Supply, and Battery. Solar Panel provide DC power supply which is given to charge the rechargeable battery of 12V and
DC power supply which is from Grid supply provides DC 12V to charge the battery. Means here we use two standby power supply.
INPUT
In this when a RFID card is inserted in a RFID card box which is made up of one transmitter and receiver. When the interruption occurs in the sensor mechanism then command signal will be send to the microcontroller.
RFID can be used if we don't have requires long time
Period of charging. RFID is radio frequency identification
Used electromagnetic energy as a medium for communication. The basic components, reader and transponder are connected to microcontroller.
Transponder is a radio transmitter and receiver. When the transponder receives a signal from reader unit, it responds by transmitting its unique identification code.
CONTROLLER
Microcontroller works only when the command receives from RFID. LCD Display will show the timer in reverse counting. Controller gives command signal to relay switch ON or OFF.
OUTPUT
The supply from relay given to the battery charger pin. The charger will be ON only when the RFID card is inserted or RFID card swap.
It gives 4.8V & 1500 mA power to the battery.
The microcontroller used is ATMEGA16 which is a type of reprogrammable microcontroller programmed.
Driver circuit
consists of relay, which acts as a switch to turn ON and turn OFF .The relay output is directly given to the battery charger pin .The different battery charger requires different size pins

The solar power application to battery charging has been studied properly.
Solar chargers convert light energy into DC current for a range of voltage that can be used for
Charging the battery They are generally portable but can also be mounted as per required place
.
In this design of RFID based battery charger is a fixed solar panel is used to charge the battery upto maximum in bright sun light. Development of a RFID based battery charger based on main power and solar power is discussed and this is primarily for rural areas where the battery s are basic needs for communication as well as for battery operated vehicle and the main power is not available all the time.

FLOW CHART





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Ms.Mayuri. A. Kale

CONCULSION

To present this project is to bring aware of the RFID based battery charging station to the public places. The necessity of battery phone communication and battery vehicals is vast increased in this technology life. So usage time of battery is also increased without decreasing the battery charge the RFID based battery charging station is used at the time of unavailability of charger with us. Thus this project is useful to the rural people were the insufficiency of grid power by solar panel and RFID is also used.

RESULT

We make a ptototype model of our project and intially we successfully run project for charging battery of mobile phone. From this prototype model we conclude that for batteries of vehicals we need big solar system and also no. Of readers and card are also increased.

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