



MOBILE CHARGING ON COIN INSERTION

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ABSTRACT

Now a day mobile phones are play's important role in the present communication world as well as day to day life. This paper describes the mobile battery charger on coin insertion. The mobile phone business is currently worth billions of dollars and supports of most number of features in every mobile phone with different operating systems. So to operate these mobile phones public charging is needed, and it should be useful to public. This is designed based on micro controller that does the countdown timings for a period of 5 minutes with LCD displays showing the actual time left. During the timing period a relay output is latched and finishing timing in progress. Recommended locations include: Hotels, Conference centers, Exhibition halls, Serviced offices, Exchange halls, Hotels, Health clubs, Training centers, Golf clubs, Retail outlets, Shopping malls, Internet cafes, Universities, Colleges, Hall of residence, Airports, Train terminals, etc., so that the mobile phone users can reactivate a low or dead battery by simply plugging in and charging for one rupee.

KEYWORDS: Mobile Phone, Battery Charger, LCD display, PIC microcontroller.

1. INTRODUCTION

As in today's world, mobile phone has become a necessary thing for the people. Today's technically advanced mobile phones are capable of not only receiving and placing the calls but also can store data, taking pictures and many more. Mobile phones help us to stay connected with others and provide the user high security. As the use is increasing an equal amount of power is required to run the application. As in regular routine we can charge the phone easily but as routine changes and if we are on a long journey or in emergency or in some unpredictable situations where we require emergency mobile charging at that time coin insertion mobile charging system plays a vital role where one can easily charge their phone at public places at low cost. This system consists of coin sensing

module that recognises valid coins and then signals the microcontroller for further action. If a valid coin is sensed, then the signal is sent to the microcontroller and then microcontroller starts the charging mechanism providing a 5V supply through the power supply. Now the system also monitor the amount of charging to be provided. So the microcontroller starts the reverse countdown timer to display the charging time for that mobile phone. Now if the user inserts another coin in that time, the microcontroller adds the time to currently remaining charging time and starts the reverse countdown. The system also uses renewable resource like solar energy to charge the mobile phone by converting solar energy into electrical energy. This system also have secondary source as AC input in

rainy season. The system also has solar tracking subsystem which ensures the maximum utilization of solar energy to be done. So this system can be used for smart mobile charging at public places.

2. Methodology

BLOCK DIAGRAM:

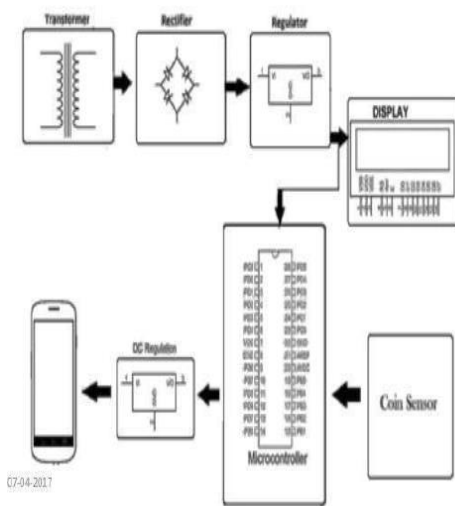


FIG 1.3 BLOCK DIAGRAM

2.1 PROPOSED SYSTEM:

To overcome disadvantages mobile battery charging, we are going to implement Mobile battery charge on coin insertion system. The charging Time period is calculated by using Atmel 89c51 microcontroller and after that microcontroller display the remaining time period. When Time period reaches to zero automatically power supply will cut by using relay circuit. In recent times, there have been lots of advancements in technologies being developed for charging the mobile phones. In most cases solar

energy is used for charging the mobile phones. Solar energy converts light energy into DC current that can be used for charging the mobile phones.

3. DEVELOPMENT AND IMPLEMENTATION

3.1 EXECUTION STEPS:

- Transformer converts ac into pulsating DC (here 230v into 120v)
- Transformer and rectifier both act as adopter in the equipment
- By using of IC7805CV,we can convert 12 v to 5v .Because of the whole system work by 5v
- By setting of time in ARDUINO IDE software,the time display on LCD display
- In this case,we are using IR sensor instead of COIN SENSOR
- IR sensor detects any object due to this charge easily without any particular ➤ This is the smart coin based mobile charging system that charges your mobile for particular amount of time on inserting a coin. The system is to be used by shop owners, public places like railway stations to provide mobile charging facility. So the system consists of a coin recognition module that recognizes valid coins and then signals the microcontroller for further action. If a valid coin is found it signals the microcontroller and microcontroller then starts the mobile charging mechanism providing a 5V supply through a power supply section to the mobile phone, now system also needs to monitor the amount of charging to be provided. So the microcontroller starts a reverse countdown timer to display the charging time for that



mobile phone. Now if the user inserts another coin in that time, the microcontroller adds the time to currently remaining charging time and starts the reverse countdown. So the system can be used for smart mobile charging at public places.

3.1 WORKING:

While a current flows via the coil, the ensuing magnetic field attracts an armature that is routinely linked to a moving contact. The movement either makes or breaks a reference to a hard and fast contact. While the modern to the coil is switched off, the armature is again through a force approximately 1/2 as strong as the magnetic pressure to its comfortable function. Commonly this is a spring, but gravity is also used commonly in commercial motor starters. Maximum relays are manufactured to function fast. In low voltage software, that is to lessen noise. In a high voltage or high present day application, that is to lessen arcing. Fig 3 suggests circuit image of relay. Fig5. Circuit symbol of a relay. The relay's transfer connections are generally categorized COM, NC and NO: COM = common, usually connect to this, it's far the transferring a part of the transfer. NC = commonly Closed, COM is attached to this while the relay coil is off. NO = generally Open, COM is connected to this when the relay coil is on.

4. PROBLEM STATEMENT:

Now a days students and many other people use the public transportation ,people who are making every long journey in order attend business conventions ,conferences, or for any private purpose don't know their battery

level is low and they often forget their charger at home or it in hotel room. Many critics argued that long distance travelling vehicles provides power points. Even through one or two power points are provided at a particular place in the vehicles it is not all sufficient for all passengers, therefore need to provide a public charging service is essential and coin based mobile charging are designed to solve these problem .Now a days electricity is very important in daily life without any electrical appliance the world will stop working. Some electrical and electronic appliances required charging ,some example been mobilephones,cameras,Bluetooth,head set.

Energy place a important role for powering the system to work well either in humans or in any artificial system .Communication is fundamental need for humans and a mobile system provides the power to communicate with the world so easily.Mobile phone is like a part of our day to day life.Without it,one feels incomplete and unsecure because most of the work is done with the help of it.Smart phone is most common gadget in cities and also in the small towns now.But big backlog of this phone is high battery consumption due to several features.Thus,most of the time the smart phone users runs out of the battery.Suppose on a railway station a person is waiting for train by enjoying music on phone or surfing for any important information and it could suddenly run out of the battery.At that time if the charging facility is available some where then it is like boon. By designing and constructing a method by circuit to transmit wireless electrical power will eliminate the

use of cables in the charging process, thus making it simpler and easier to charge low power device and it would also ensure the safety of the device. Since it would eliminate the risk of short circuit.

APPLICATIONS:

1. Railway stations
2. Shops
3. Rural areas
4. Public places like internet café, wolf centers .
5. Useful to protect and use for mobiles at any palces.
6. It can be used for emergency purposes.
7. It can be used for different types of mobiles.
8. It can be installed in railway stations, bus stands, public places.
9. It can be used in offices for paying facilities.

ADVANTAGES:

1. Simple and efficient
2. Less expensive
3. Reduced man power
4. reduced power consumption
4. Easy to operate

5. Results

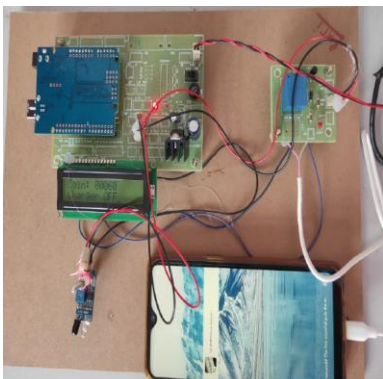


FIG:5.4 WHEN SENSOR IN OFF
CONDITION

When adopter is placed of transformer and rectifier. so, its acts as and it converts AC to DC from 230v to 12v and IC7805 controller maintain constant voltages and it converts 5v because of whole system maintain 5v.

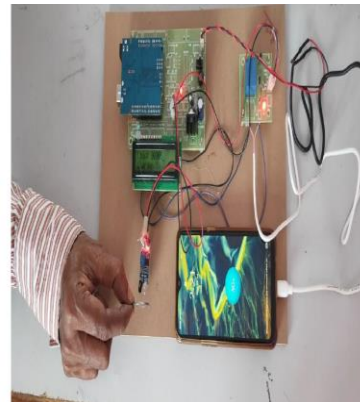


FIG 5.2.1 WHEN COIN PLACED
INFRONT OF SENSOR

➤ When coin place in front of sensor it should working on process and it makes mobile charging. and time and ON condition shows on led.

6. CONCLUSION:

After analysing the related articles, literatures and a few similar projects the current system was selected. The developed system is able to achieve the primary objectives like charging the mobile phone using coin insertion for a specific duration of time, tracking the maximum sunlight, charge controller to avoid damage to the battery due to over voltage. The system is able to control the communication between various components. In this research we consider a hybrid framework that combines



the advantages of power supply charging and solar energy harvesting technologies.

FUTURE SCOPE:

As the system uses solar energy so it is very much efficient. It can be installed on railway stations, bus stops and public places for pay charging facility. The system is very much useful for emergency charging purposes or in rural areas where AC supply is not available for 24x7 hours

➤ In this we can use COIN sensor instead of IR sensor.

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