E-Vehicle Charging using Coin Insertion

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Abstract- Now a days 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 ATMEL 89c51 a 40-pin 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, ATMEL microcontroller

1 INTRODUCTION

The mobile phone market is a vast industry, and has spread into rural areas as an essential means of communication. While the urban populations use more sophisticated mobiles with good power batteries lasting for several days, the rural populations buy the pre-owned mobile phones that require charging frequently. Many times battery becomes flat in the middle of conversation particularly at inconvenient times when access to a standard charger isn't possible. The coin-based mobile battery chargers are designed to solve this problem. The user has to plug the mobile phone into one of the adapters and insert a coin; the phone will then be given a micro pulse for charging. It does not bring a mobile from 'dead' to fully charged state. The charging capacity of the mobile is designed with the help of pre-defined values. It is of course, possible to continue charging the mobile by inserting more coins. This compact and lightweight product is designed to cater for the growing number of rural mobile users worldwide.

A suitable microcontroller is programmed for all the controlling applications. The source for charging is obtained from direct power grid.

2. RESEARCH METHODLOGY

2.1: Problem Identified:

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

2.2: Proposed Work

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 89c51micrntroller and after that microcontroller display the remaining time period. When Time period reaches to zero automatically power supply will cut by using relay circuit.

3. BLOCK DIAGRAM:

The 230 volt AC supply is given to the step down transformer because Atmel 89c51 microcontroller support to 5 volt only. After that AC voltage is converted in to DC voltage by using rectifier. Then fixed DC voltage is regulated by using voltage regulator. Here we get fixed 5 volt DC supply. This DC supply is given to the LCD display, Atmel 89c51 microcontroller.
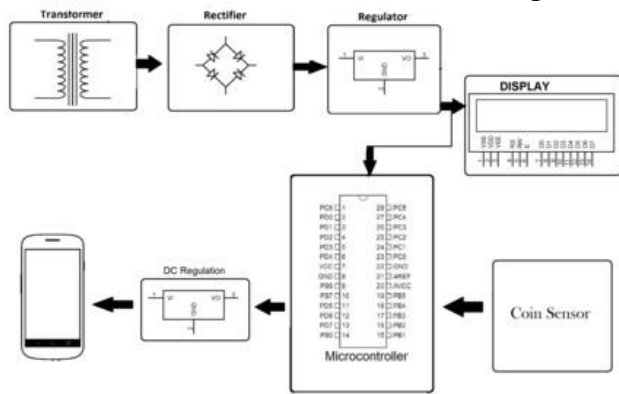
Fig.1: Block diagram of Mobile Charging on coin insertion

4. DESIGN OF SYSTEM:

The Atmel 89c51 microcontroller, a LCD display, Coin sensor , it was develop to solve the Battery Discharge problems. In this, System is designed using embedded code for the interfacing of LCD and Sensor. While inserting a coin into sensor ,if coin valid then controller start reverce countdown and mobile will charge. The system design can be classified in two categories, Hardware implementation and software implementation.

4.1 Hardware Implementation

In this system, power supply is used to provide the power to the whole circuitry like Microcontroller,relay, transformer, resistors, capacitors are the main components used for designing the system. Power supply is also given to the coin sensor for inserting a coin. In this proposed system, we have used Atmel 89c51 microcontroller, The MAX 232 chip is used to interfacing the different component. For Displaying the charging time period the microcontroller is programmed using software interfacing with the help of kill software. This displayed on the 16*2 LCD display.

4.2 Software Implementation:

For Software Implementation we have used the software "Keil uversion4". In Software Implementation, The main part is programming of the "Atmel 89c51" microcontroller and interfacing of each device like LCD Display, Relay, Transformer with microcontroller. Once the power supply is given hardware circuit is get initialized.

4.3 Components of Hardware in System:

The components of hardware implementation are as follows:

4.3.1 Relay The relay is used as a switch for the system.

4.3.2 Power supply Power supply is main component of the circuit. Power supply is provided to microcontroller and other device from direct ac lines or from AC to DC adapter.

4.3.3 Microcontroller In this system, Atmel 89c51 microcontroller is used. IC 16F877x is used.

5. CONCLUSIONS:

A method of charging mobile batteries of different manufactures has been designed and developed whenever required. This project is very useful in today's life. Because now days the necessity of communication is very important, so every person having cell phone but every time we cannot carry charger with us. When we are going for long travel we may forget to carry cell phone charger. This project is used to help the people by coin based charger. Also now days because use of internet and smart phones, this kind of project is very useful. Conventional grid power is used for mobile charging hence project is low cost.

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