

Coin based Cell Phone Charger using Solar Tracking System

Supriya Sawant

*Department of Electronics and Communication Engineering
USHA Mittal Institute of Technology, SNTD university, Mumbai, Maharashtra, India*

Rajeshwari Salve

*Department of Electronics and Communication Engineering
USHA Mittal Institute of Technology, SNTD university, Mumbai, Maharashtra, India*

Arundhati Mehendale

*Department of Electronics Engineering
USHA Mittal Institute of Technology, SNTD university, Mumbai, Maharashtra, India*

Abstract- The coin based mobile charger developed in this project is mainly to provide service to rural area where many times grid power is not present. This charger can also be used in urban areas. In this charger solar panel is the main component used as it will harness the solar energy and will charge the battery which can be used anytime without requiring any electricity. The user has to just connect the mobile to the input port and insert a coin in the coin sensor and charging will begin. This will not bring the mobile from dead to fully charged but will at least charge some part of mobile battery such that the mobile can be used for making some important calls or some important work can be done. The biggest advantage is, it is one time investment as the coin will be received back by the coin sensor.

Keywords – Microcontroller, Solar panel, Coin sensor, Light Dependent Resistor

I. INTRODUCTION

Mobile phones have become a major source of business/personal communication. The need to provide a public charging service is essential.

This charger is developed using solar panel, as use of natural resources are widely spreading all over the world. Solar energy is one of the best natural resource which can be used. The main aim of this project is to provide service to rural population where mobile is basically used for communication purpose and where electricity is not available 24hours a day.

II. BLOCK DIAGRAM

The basic block diagram of the mobile battery charger is given in Figure 1.

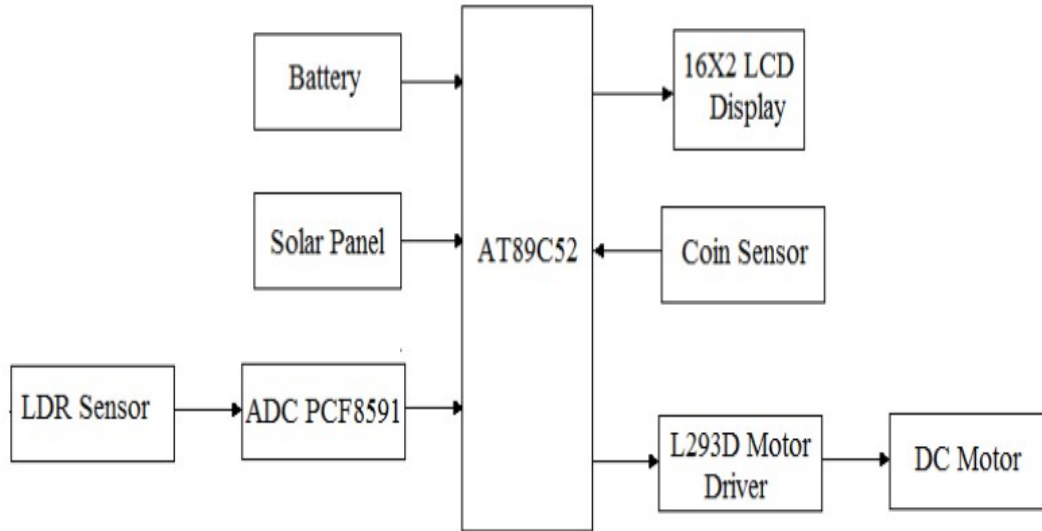


Figure:1

To begin the charging, the user has to insert a coin of specific diameter into the coin sensor. On coin sensor there are proximity sensors which will detect the coin and will check whether the coin inserted is correct and if it is of specified diameter then pulses will be sent to microcontroller and the charging of the mobile will begin for a particular time. The coin sensor will also send a pulse to LCD which will display to the user that the charging has begun. A solar panel is used for harnessing the solar energy and its movement is being controlled by motor driver.

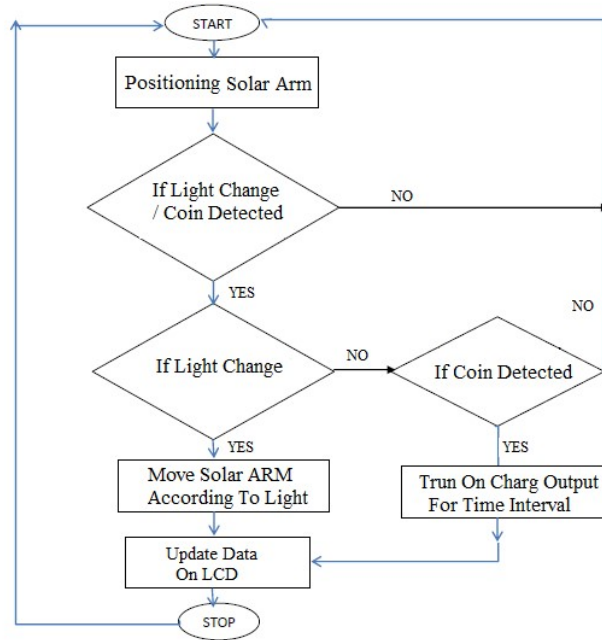
III. HARDWARE IMPLEMENTATION

In this system power supply is used for supplying power to microcontroller, resistors, capacitors which are main components used for designing a system. For displaying the charging time period the microcontroller is programmed with the help of Keil software. This is displayed on 16x2 LCD display.

IV. SOFTWARE IMPLEMENTATION

For software implementation we have used Keil version. In software implementation, the main part is programming of 'Atmel 89C52' microcontroller and interfacing of LCD display.

V. FLOWCHART



VI. RESULT

As soon as the system is switched on, the LCD display to insert coin after the coin is detected the mobile start charging. If the coin is not detected it throws coin out of the coin sensor. The LDR detects the light intensity. The stepper motor rotates according to the intensity of the light.

VII. CONCLUSION

In this paper a novel method of charging mobile batteries of different manufacturer using solar power has been designed for rural and remote areas where the power supply is not at all available all the time. This project can be implemented outside any premises where the user has to plug the mobile phone into one of the suitable multi-charge connector pin by inserting a coin in order to charge the mobile. It is of course, possible to continue charging by inserting more coins.

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