

Coin Based Mobile Charger

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Abstract: *Drop coin and get power is a project in which the user can prepay for the amount of electricity he requires. It is analogous to all the prepaid system available. The concept will be useful in hotels; PGs etc. where the customer usually has to pay a fixed amount even if he didn't use electricity that much. Using this project the customer will be paying only for the consumed electricity. Here in this project the person has to drop coins as per his power requirement. The number of coins dropped will be displayed in the LCD. When load gets connected the power gets switched 'ON'. The count starts decreasing simultaneously and as it reaches 0 the power supply is disconnected. A PIC microcontroller is used to control overall process..*

Keywords: Electricity, Coin based Charger

I. INTRODUCTION

Power supply is an integral part a vital role in every electronic system and hence their design constitutes a major part in every application. In order to overcome mal-operation which results due to fluctuations in the load and discontinuity in the supply proper choice of power supply is indeed a great need in this hour. The aim of this project is to provide a solution for charging of mobile or any other device at public places. The person who wants to charge his/her mobile has to insert a coin and connect his/her mobile with the charger. Mobile will be charged at a particular amount of time depending on the number of coins inserted by the person. As soon as the Coin Sensor detects the coin, it sends a pulse to the controller.

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.

II. LITERATURE SURVEY

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. A fixed solar panel of size 635x550x38mm, 37WP is used to charge the mobile phones up to maximum 2.0 amp[1].

The Infra-Red Sensor is another way to charge mobile phones. The Infra-Red transmitter transmits IR signals in the transmitter side and receives the IR signal in the IR receiver side. Based on the signal between the IR transmitter and receiver, insert a coin to change the polarity of pulse in SCU input. The SCU converts low pulse to high pulse and fed as input into driver circuit and driver circuit provides sufficient input voltage of relay. This will be used for charging the mobile phones. The microcontroller performs the countdown time period for a 3minutes, with LCD display shows the actual time left. During the time period a relay was out latch and finishing time in progress [2].



In [3], it experimentally investigated the working of Coin based mobile charger with solar tracking system by peak power positioning. In this experiment the operational amplifiers can operate the ON/OFF and directional functions of the structured five motors. These motors rotate in two axes. The tracker's sun sensor is mounted. From the output of this device it will check the outputs are all equal, then the collector structure is nearly perpendicular to the sun and tracking error is reduced. According to [4], the renewable energy is the main source of one of the renewable energy sources is solar energy. This energy generated more energy because the solar panel is to maintain a perpendicular to the sun's rays.

III. HARDWARE OVERVIEW

SYSTEM BLOCK DIAGRAM- BLOCK DIAGRAM

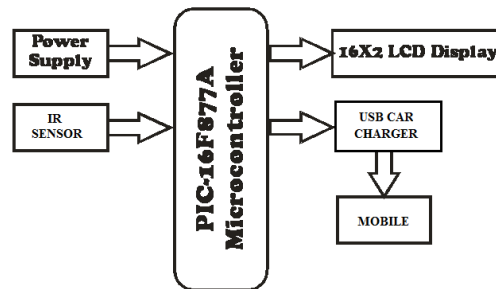


Fig: 3.1.-Block diagram of system

BLOCK DIAGRAM DESCRIPTION

The block diagram above represents the architecture of the proposed project "Coin Based Mobile Charger" system. The system consists of a microcontroller. This controller is a PIC 16F877A microcontroller, programmed to control and perform the desired operation of the designed system. This microcontroller is the brain of the complete system. The circuit requires a regulated power supply for the complete action of each component in the circuit. This requirement of power is fulfilled by the power supply unit in the system. This power supply unit provides regulated 5v and 12v supply as per the requirement of various components.

COMPONENTS

This project is designed by following blocks

- Microcontroller
- Crystal Oscillator
- Relay
- ADC
- LCD display.
- LCD

The project is design using 8051 microcontroller. This project we are going to develop for waste water electricity generation using microcontroller. The Block Diagram consists of the microcontroller, Sensors and Power Supply. The systems consist of pot sensor for theft Measurement. The LCD used is 16 X 2 For Display. The microcontroller used is 8051 family. The reset and crystal would be connected as per requirement of microcontroller. The project consists of three Variable resistances which would be connected to the microcontroller.

IV. ADVANTAGES:

- Simple and hand efficient.
- Less expensive.



- Reduced man power.
- Low power consumption.
- Installation is easy.
- It can be useful while travelling and when we don't have charger with us during travel.

V. APPLICATIONS

- Use in Hotels, Lodges, Guest House, Rest House.
- Use in Game Consoles.
- Public Services such as cyber café, music stations, automatic mobile charging points.
- Useful to public for using coin to charge for the mobile phone in any palace.
- It can be used for different type of mobiles.

VI. CONCLUSION

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.

VII. RESULT

In this system, we have implemented the simple and hand efficient mobile charger which helps the user, charge their phones during urgent needs. This system is very helpful to the users who are all using mobile phone without charging conditions in public places. This system simple to use and is less expensive.

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