Solar Panel Universal Mobile Charger with Coin Insertion

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Abstract - The objective of this project when we inserting a coin in the input device then mobile phone charging will be start. Basically this project is based on solar energy and the solar panel used to convert the optical energy into electrical energy. The solar panel universal mobile battery charger developed which providing a unique service to the rural public area where electricity is not available for few hour to several hour and different public places such as bus stands, railway stations, hospitals etc. The solar panel universal mobile battery charger is worked according to the coding written in pic microcontroller. When we insert a coin, the coin sensor sense the coin and input is given to the pic microcontroller. The controller read the program and provides supply to the charger for a particular time period. The time period depends on the coding written in the controller. A multi-pin charger is connected through the controller. By using the multi-pin charger one or more than mobile will charge.

Keywords - Mobile phone, multi pin battery charger, solar panel, pic-microcontroller, relay.

I. INTRODUCTION

The aim of this project to provide a unique service to the semi urban and rural areas where power supply is not regular for mobile charging. In this project we are using the solar energy at the place of external power supply. When the customer insert a coin in this device then the mobile charging will be start for 10 minute. This project to easily install outside area and any business premises. The growth of mobile phone market is phenomenal in recent years and the need for the mobile battery charging is required at anytime and anywhere.

II. BASIC ASSUMPTIONS

The design of solar panel based universal mobile phone charger is based on the following assumptions.

• The solar power is used for mobile battery charging.
• The charging current is required up to 2.5AH @ 3.5VDC.
• The pic microcontroller is used.
• Only one rupees coin is inserted.
• Battery is used for power storage.
III. ARCHITECTURE OF SOLAR PANEL UNIVERSAL MOBILE CHARGER WITH COIN INSERTION SYSTEM

There are two stages in this system: one is the input stage, and the second is the output and display stage.

4.1. Input Stage
In the input stage, there are three components connected with each other. First, an insertion box is used to insert a fixed-size coin, and the second component is a sensor used to sense the coin. When a coin is accepted, the battery charging unit starts charging the mobile battery for a specific period through the pic microcontroller. If another coin is inserted, it will be returned to the refund box.

4.2. Output Stage and Display
The LCD is used to display all the information to the customer. It is connected to the controller. When the customer connects the mobile with the charger and inserts a coin, it will display whether the mobile charging has started or not. If charging has started, the mobile will charge for a specific time period according to the pic microcontroller. After a specific time period, it will be shown as disconnected.

V. CIRCUIT DIAGRAM

VI. EXPERIMENTAL RESULT
This mobile charger is entirely based on solar energy and is more useful in today's life. This system is effective and efficient. The only drawback is that it will not be used all night because...
sun energy is not available. But some percent of battery will charge so that for some times this charging system can use.

VII. FUTURE SCOPE
As we know this system is depend on the solar energy so it is effective, like mobile phone this system is also used for television in future. Also we can use solar energy for home and industrial purpose.
VIII. CONCLUSION

A method of mobile charging using Solar Panel Universal Mobile Charger With Coin Insertion has been designed and developed for rural and remote areas where the electric power is not available continuous day and night.

REFERENCES


