



COIN BASED MOBILE CHARGER USING SOLAR PANEL

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ABSTRACT—

This is a coin based flexible charging structure that charges the convenient for a particular proportion of time on expansion of coin. The structure can be used by retailers and open spots like railroad stations, etc., to give compact charging office. Thusly, the system involves a coin affirmation module that sees the inserted coin and a while later shows the scaled down scale controller for extra action. By then the controller starts the convenient charging framework giving deftly through sun arranged board to a hand-off contact the to the PDA. The objective of this errand is embedding's the coin and charging the mobile phone. This endeavor is extraordinarily significant to the people who are generally using PDA without charging office out in the open spots. A sensor system is used to perceive the closeness of coin that is arranged using IR sensor. The coin is implanted between the IR transmitter and recipient. Exactly when the IR signal is thwarted by the coin, the IR sensor offers a basis hint to the controller by which the controller orders the charging unit by giving deftly (ie. from sun based load up) for a predefined time (60sec). After that it will be confined. If another coin is inserted, the time term will be extended normally. The driver circuit is arranged using hand-off to give the deftly to the charger to charge the compact.

Key words : Solar board, Microcontroller, Coin, Mobile, Charging circuit, IR sensor, Rechargeable batteries, Relay, LCD.

INTRODUCTION

Phone is by and by commonly used device in grandstand. In urban zones just as it has been spread into nation domains. PDAs are used for correspondence. In urban areas there are various exchanges are open for charging anyway in rural zones as a general rule charging workplaces are out of reach, power isn't available. Every so often battery ends up being low in focal point of the conversation and we need squeezing essential of charging. Around then this coin worked compact charger is used. In this endeavor the convenient will charge when adaptable is related with charging opening, yet from the start we need to insert coin. According to coin it will charge for some rate. The coins are used in this endeavor are according to Indian cash 1Rs, 2Rs, 5Rs, 10Rs. In addition, in this undertaking it charges the flexible continuously while embeddings the more number of coins. Exactly when any customer needs to plug the compact into one of the connectors and supplement a coin. The phone will by then be given a little scope beat for charging. This little scope beat given by the system infers the wireless doesn't charge totally, considering the way that it depends upon the time described in the code then the versatile will charge. In this we gather little scope controller based daylight based charger close by coin consideration which offers a stand-out help to the rural open where force isn't available for inadequate/full daytime. The coin-based flexible battery charger can be quickly and easily presented outside any premises. The wireless [1] grandstand is a gigantic industry, and has spread into common districts as a principal strategies for correspondence. While the urban people uses progressively refined mobiles with extraordinary power batteries continuing for a couple of days, the nation masses buys the pre-owned PDAs that require charging routinely [2]. Usually battery [3] ends up being level in conversation particularly at severely orchestrated events when access to a standard charger is past the domain of creative mind. The coin-based flexible battery chargers are planned to handle this issue. The customer needs to plug the PDA into one of the connectors and expansion a coin; the phone will by then be given a littler scope beat for

charging. It doesn't bring an adaptable from 'dead' to totally stimulated state. The charging furthest reaches of the compact is arranged with the help of pre portrayed time. It is, clearly, possible to continue charging the compact by embeddings more coins. This negligible and lightweight thing is expected for the creating number of natural compact customers. A microcontroller is redone for controlling all applications. The hotspot for charging is gotten from sun arranged essentialness [4]

II. LITERATURE SURVEY

From the past papers, altogether more data have been amassed. In addition, a more prominent measure of the gathered data have been genuinely orchestrated, so the proportion of data to survey our procedure has been in like manner extended. Another kind of charger proposed for open people utilities. This sort charger will be useful for the open people; regularly the battery ends up being level in conversation in particularly at gravely masterminded events when access to a standard is past the domain of creative mind. Consequently sun based base adaptable charger is continuously important. The power deftly for the charger is settled from sun situated power and current smoothly. As demonstrated by S. B. SHRIDEVI [9], delineate coin base flexible charger using daylight based after structure. In this investigation, the structure is plan for open in nation similarly as semi urban areas. This is organized base on microcontroller that does the initiation time for a period of 3 min with LCD show exhibiting the continuous left. During the timespan an exchange out is snare and finishing time in progress. According to S. BHANU. PRATAP [8], Coin based convenient charger is useful in many making countries where the present deftly isn't open for a couple of hours on steady timetable. In correspondence domain flexible is fundamental for correspondence. They organized sun controlled adaptable charger for charging various makers mobiles. It is used to help the people where the power nimbly isn't open for a long time step by step. As showed by M.S. VARADARAJAN [5], the coin-based versatile battery charger is created for offering a novel help to the natural open where lattice power isn't available for mostly/full daytime and a wellspring of salary for site providers. The customer needs to plug the phone into one of the connectors and supplement a coin; the phone will by then be given a little scope beat for charging. The structure and execution of sun based after making power structure was bankrupt somewhere near HENRY SHU-HUNG CHUNG[1], where an after framework is composed with a master controller, sensors and data/yield interface, that it can grow the essentialness age viability of sun based cells. In order to follow the sun, cadmium sulfide light fragile resistors are used. To achieve perfect sun based after, a feathery computation is made and realized. A field programmable entryway show is applied to structure the controller with the objective that the daylight based cells reliably face the sun in the day time. As showed by M.PASTRE[3], the supportable force source is rapidly getting importance as an essentialness resource, as oil based commodity costs waver. At the informational level, it is along these lines essential for structuring and development understudies to have an appreciation and valuation for the headways related with manageable force source. One of the most notable manageable force sources is sun based essentialness. Sun fueled after enables greater imperativeness to be made in light of the fact that the sun based barricade can hold a contrary profile to the sun's shafts. This structure develops a previous senior arrangement adventure where understudies amassed a sun situated controlled battery charger, therefore making this system ideally free. According to T.GUNAWAN [2] perfect circumstance for ingestion inverse to the sun controlled radiation during daylight hours, can extend the accumulated essentialness by up to 50%.Commercially; single-rotate and two center point following segments are available. For the most part, the single center tracker follows the Sun's East-West turn of events, while the two-rotate tracker follows furthermore the Sun's changing height point. An after system must have the choice to follow the sun with a particular degree of precision, return the position to its interesting circumstance continuously end and moreover track during times of spread over. They probably inspected the working of Coin based telephone charger with sun fueled after system by top power arranging

Basic Assumptions

The structure of coin based general convenient battery charger relies upon the going with assumptions:

- Maximum sun based imperativeness is used for charging the lead destructive battery which is inside the adaptable battery charger to keep it charged totally continually.
- The stimulating voltage is to 5vDC and this arrangements with the mobiles delivered by Nokia, Sony-erricson, Blackberry, HTC and others of first and second time mobiles.
- A singular sun fueled leading body of 17V prepared for giving force.
- Provision to charge most outrageous 10 special sorts of mobiles is given.

III.PROPOSED SYSTEM

Block Diagram

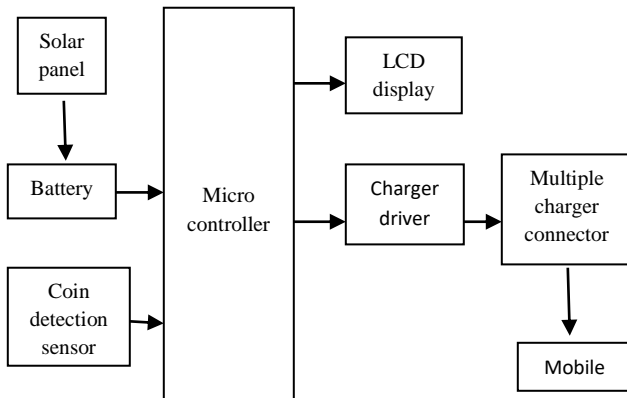


Fig.1: Block diagram for solar tracking

Micro controller

In this circuit we use microcontroller for interfacing with LCD, Coin sensor, Relay circuitry. Here we use 8051 microcontroller which is provided with 5V DC supply voltage. The data pins are interfaced with LCD. Pin 21 is interfaced with relay circuitry. Pin1 is interfaced with coin sensor circuitry.

Solar panel

It generally absorbs sunlight and converts it into DC electric energy and it is reduced to 12v & 5v Dc by voltage regulator in order to provide required voltage to Relay, Coin sensor, Microcontroller, LCD Circuitry.

Coin sensor Detector

In this detector we use IR Transmitter & Receiver which are placed in Line of sight. When the coin is inserted it interrupts the IR transmitter & receiver. That interruption is compared with Voltage controlled oscillator if any change occurred in received signal then LM567 (VCO) sends signal to the micro controller which triggers relay.

Charge driver circuit

Basically it is a Relay circuitry. The relay is a switching circuit which acts as a switch to ON & OFF. The interrupted from the microcontroller is given to the relay circuitry which turns ON the relay circuitry then its charges through USB cable. The excess charge is stored in the batteries.

Battery

Here we use 3 rechargeable batteries of 12V each battery stores upto 4V charge. The power generated from solar panel is converted into electrical power and stored in these batteries.

LCD

It is used to display the countdown time and the timer starts when relay gets ON. The countdown time is 60sec from the coin insertion.

IV.DESIGN AND IMPLEMENTATION

At whatever point a coin is inserted the IR sensor will recognize the coin and assurance implanted coin is correct. If the correct coin is implanted LCD demonstrates the information to the customer for next technique. The data power which is made through Solar Energy to the circuit. Microcontroller is the middle period of the structure which accept a critical activity in the undertaking. Microcontroller works exactly when the request gets from IR sensor .LCD show shows all the strategy of controller on the screen and number of moves depends on the amount of connectors we used in the system. The yield stage is known as the charging methodology or finish of charge. The smoothly from the exchange is given to the flexible charger pin. By interfacing the mobile phone to the flexible charger pin the amount of coins can be installed by this whole the fulfillment of charge occurs.

V.RESULTS AND DISCUSSION



Fig.2: While inserting the coin

The figure 2 shows Insertion of coin to charge the mobile phone.

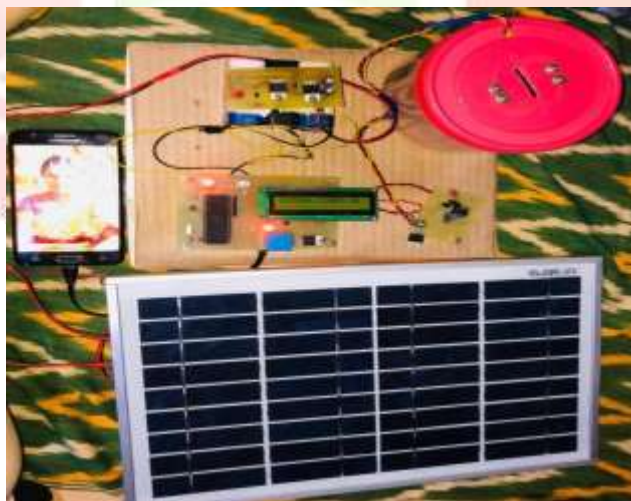


Fig.3: The mobile phone is charging

Figure 3 shows charging the mobile phone after inserting the coin. After insertion the countdown timer is shown on the display (60 sec). When the countdown reaches 0 sec the relay stops and in turn charging is also stopped. If we want to continue charging we need to insert another coin.

VI. CONCLUSION

The coin based PDA charger is significant to open for using coin to charge for the mobile phone in any open places basically like charging it customarily. The endeavor work "Coin Operated Mobile Charger using sun fueled board " is organized, developed basically and the proto sort module is created with microcontroller for live show. An a little bit at a time approach is executed in this endeavor work and results are viewed as worthy. The critical endeavor is setting up the item for playing out the exercises depending upon the wellsprings of information. The show of the machine basically depends upon the item code we portray in the controller. The advancement utilized here is for working up the model module just; it must be changed in accordance with structure it into an authentic working system. Nearly 70% people use mobile phone all over world. This is useful in today's scenario. Because now-a-day's communication has become a major part in human lives. At many times we cannot carry mobile charger with us; if mobile discharges and we have any important work and charging sources are unavailable then this project is useful. Mostly in rural areas this system is useful because they always have the problem of lack of electricity.

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