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Coin Based Solar Mobile Charging

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ABSTRACT:We all know this era is mobile phone era. People having mobile phone. Communication is more important in all fields. Today's smart phone having much more facilities, due to that facilities mobile phone required more charging. Sometimes our call may cut in mid-way due to lack of charging. The objective of this project is inserting the coin to charge your mobile phone in public places. People who are all using mobile phones in outside of home or office without charging condition, the coin based mobile phone charger is very useful to that person for using coin to charge that mobile this system gives charging to that mobile phone which need immediate charging. Once we connect the mobile to charging slot, we required to put the coins in this system. After inserting coin, it will compare with database, and if the coin insertion is exact then mobile will charge. This charging system is depending on the solar. Using solar panel, the sun energy is converted into electrons(current). The mobile phone business is currently worth billions of dollars, and supports millions of phones. The need to provide a public charging service is essential. Many critics argued that a public mobile phone charging service is not a lucrative business because most users can charge their phones at home, in their office or in their cars. Coin operated mobile phone charger is new business milestone because many are attending business conventions and forgetting their charger at home or work place. Students and many people use the public transportation that don't know that their level of their battery is low are prospective customers for coin operated mobile phone charger service We know much of sun energy is wasted on earth and we need to use that energy. That's why in this system use the solar energy. And the coin detection is using MATLAB.

KEYWORDS:(Solar Panel, Relay, Battery, Mobile, LCD Display WEB-CAM, ARM-7 ACP2021/31/32)

I. INTRODUCTION

Power supply is an integral part a vital role in every electronic system the mobile will be charged at a particular amount of time depending on the no of coin inserted the person. In this system avoid the duplication of web camara used this camara take place the image of coin and it will compart data if converted the coin detect it will insert the cheering otherwise it will give the message on lcd that inserted the converted the coin 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. Applications. The source for charging is obtained from direct power grid and solar energy in case of non-availability of grid power. Mobile phone is now vast industry in market. Not only in urban areas but also it has spread into rural areas. Mobile Phones are used for communication. In urban area there are many resources available for charging but in rural areas most of the time charging facilities are unavailable, electricity is absent. Sometimes battery becomes low in middle conversation and we need urgent requirement of charging. Itis avoiding also duplication of coin. This project is very useful to people who are using mobile phone without charging public place as like railway station, shop These problems are overcome by using this work. In this work we also build a very good micro controller based solar charger. The coin based mobile battery charger developed in this work providing a unique service to the public where grid power is not available for partial/full daytime and a source of revenue for site providers. The coin-based mobile battery charger can be quickly and easily installed outside any business premises.

II. BASIC ASSUMPTION

The design of coin based universal mobile battery charger is based on the following assumptions:

• Maximum solar energy is used for charging the lead acid battery inside the mobile battery charger to keep it charged fully all the time • Provision to

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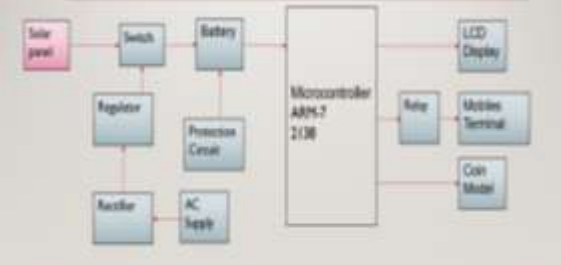
charge maximum 10 different types of mobiles are provided.
• Charging Current is required up to • 4.8AH@ 6VDC • Solar Panel having size 650x565x40 mm, 38WP capable of supplying up to 3.0 amp is used.
• Web-Cam; which is used for coin detection using image processing.4.PROPOSED SYSTEM.

III. BLOCK DIAGRAM



IV. INPUT STAGE

The mobile battery charger starts charging a mobile connected to it, when a coin is inserted at the coin insertion slot at the input stage. Solar panel refers either to a photovoltaic module, a solar hot water panel the detection of coin is done with the help of webcam. The type of coin and the size will be displayed at the LCD display for the user, so as to ensure correct coin insertion. Any other coin, if inserted in the slot.

V. SOFTWARE SPECIFICATION

For programming of this system Embedded C is used. Following software is used for the programming.

MATLAB : It is the software which is used for coin detection in this system. It avoids the coin duplication. Coin".While charging it displays "Charging" and at the end of charging cycle it displays "Charge completed". For charging continuously the coin has to be inserted when the display shows "Charge Completed".

HARDWARE SPECIFICATION ARM7-LPC2131/32/34/36/38 The ARM7TDMI-S is a general purpose 32-bit microprocessor, which offers high-performance and very low power consumption. The ARM architecture is based on Reduced Instruction Set Computer (RISC) principles, and the instruction set and related decode mechanism are much simpler than those of micro programmed Complex Instruction Set Computers (CISC).

RELAY

It is consisting of a set of inputs terminal for a signal, and a set of operating contact terminal. Relay used where it is necessary to control a circuit must be control by signal. Relay with calibrated operating chartists and used multiped operating coil are used to protect electrical equipment. Electromagnetic relay with accurate operating charactsits overload, short circuit, and another fault. A relay is an electrically operated switch. Current flowing through the coil of the relay creates a magnetic field which attracts a lever and changes the switch contacts. The coil current can be on or off so relays have two switch positions and they are double throw (changeover) switches. Relays allow one circuit to switch a second circuit which can be completely separate from the first. For example, a low voltage battery circuit can use a relay to switch a 230V AC mains circuit.

CONTROLLER

Microcontroller is the heart of this system. All system run through uC (Microcontroller). In this proposed system the ARM 7 TDMI uC is used which having large storage capacity. Battery gives the power to the microcontroller and uC work on that solar energy.

KEIL MICRO VERSION: The µ Vision IDE from Keil combines project management, make facilities, source code editing, program debugging, and complete simulation in one powerful environment. The µ Vision development platform is easy-to-use and helping you quickly create embedded programs that work. The µ Vision editor

POWER

The salient feature of the universal mobile battery charger is that it draws power from the solar energy during the day time for charging the internal battery of the controller. Only if additional power is required, then the grid power is used. A solar inverter has been designed for supplying 230V, 50Hz so that both grid power and the solar power and debugger are integrated in a single application. are connected in parallel with a switch to changeover from one to the other Web cam, Power supply, Battery

VI. ALGORITHM

1.start.
2. Enter the coin.
3. Enter the coin in shows in correct.
4. If coin is not correct then led display. Please inserted the correct coin.
5. If coin is correct then charge your phone.

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6. END

VI. FLOWCHART

VII. RESULT

We have implemented the setup and measured the power availability and charging rate. By using coins of Rs 10we have measured the charging time. We have tested a circular disc of Rs.10 size but our system recognised the coin is not correct. Hence, we could achieve the expected result.

VIII. CONCLUSION

This system is useful to save energy from sun and intelligent tracking solar energy. Also having Low power consumption. Use of sun energy is essential at that time so this solar activated system is also essential in today's life. This system is particularly significant throughout the summer season with its long days of sunshine readily available to capture and no energy will be lost. In rural areas electricity is not available all time but communication is one of the need of people, so this solar based mobile charger helpful for those areas. In this proposed system the coin recognition is also one of the important parts. This project "coin based mobile charger" is designed and made with the hope that it is very much economical and helpful in many public places. It is also more beneficial to the people to charge their mobile which needs to be charge during urgency period. This project helped us to know the periodic steps in completing a project work. MATLAB is used for avoiding coin duplication. So this system is useful from all ways. We can implement this system in common places and can provide the required power to all kind of mobile phones of different manufactures.

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