International Journal On Engineering Technology and Sciences – IJETS™
ISSN(P): 2349-3968, ISSN (O): 2349-3976
Volume X, Issue III, March – 2023

Portable Charging on Coin Addition

Shane Boaz R
Electronics and Communication Engineering
Cyber Forensics Applied Lab Student
Francis Xavier Engineering College
Tirunelveli
shaneboazr.ug21.ec@francisxavier.ac.in

Mohamed Shiyam J
Electronics and Communication Engineering
Cyber Forensics Applied Lab Student
Francis Xavier Engineering College
Tirunelveli
mohamedshiyamj.ug21.ec@francisxavier.ac.in

Velsami I
Electronics and Communication Engineering
Cyber Forensics Applied Lab Student
Francis Xavier Engineering College
Tirunelveli
Velsamii.ug21.ec@francisxavier.ac.in

Dr. R. Ravi
Prof/Department of Computer Science and Engineering
Cyber Forensics Applied Lab In charge
Francis Xavier Engineering College
Tirunelveli
fxhodcse@gamil.com

***Abstract*— Cell phones are remarkable as of late for correspondence as well as in everyday life. Consequently, charging the devices such as cell phones has turned into the more noteworthy errand. In this paper; we are attempting to plan a versatile battery charger on coin addition. As utilizations of cell phones are expanding step by step it needs battery duration constantly, so to utilize them public charging is required which would be valuable for portable clients. This framework will charge the cell phone for a specific time frame period. When the legitimate coin is remembered, it will begin giving power supply to the wireless through one of the connectors. We will utilize a worldwide charging connector that would be reasonable for all cell phones.**

***Keywords*— Coin Accepter, Relay, Ardunio UNO, Micro Controller**

I. INTRODUCTION

This is the savvy coin based portable charging framework that charges your versatile for specific measure of time on embedding a coin. The framework is to be utilized by retailers, public spots like railroad stations to give portable charging office. Ruban Kingston et al. (2015) proposed that the reduction of Area by minimizing transistors in an operating Frequency of 3.42 GHz with the Power supply of 1.2 Volt. The results from the circuit simulation are included in this report [1] So the framework comprises of a coin acknowledgment module that perceives legitimate coins and afterward flags the microcontroller for additional activity. In the event that a legitimate coin is found it flags the Microcontroller and microcontroller, begins the versatile charging component giving a 5V stock through a power supply segment to the cell phone, presently framework likewise needs to screen how much charging to be given So the microcontroller begins an opposite commencement clock to show the charging time for that cell phone. Presently assuming the client embeds on one more coin in that time the microcontroller add the opportunity to as of now remaining charging time and start the converse commencement So the framework can be utilized for savvy versatile charging at public spots. The primary goal of this study is to develop a charger that is based on solar power and current supply. The 89c51 microcontroller IC's code, which governs how the system operates, was written. For charging the mobile battery, the technology makes the most of solar energy. K. Praghash and R. Ravi (2017) claimed that focusing on sensor nodes' energy usage while supporting LEACH protocols within its own cluster [2] The charging circuit is connected to the MOSFET output to deliver charging On the receiver side, the IR (infrared) transmitter and receiver to transmit and receive the IR signal. According to U. Muthuraman, J. Monica Esther, R. Ravi, R. Kabilan, G. Prince Devaraj, and J. Zahariya Gabriel (2022) future data analysis will be based on statistics gathered with the aid of sensors and will be implemented as a webapp [3] A coin must be inserted between the IR transmitter and receiver to change the polarity of the input pulse. This research offers a special service to the rural populace when grid electricity is not available during the daytime.

The use of grid power is the paper's key distinguishing characteristic. It will utilize solar energy during the day to charge the controller's internal battery in the event that grid power is unavailable. The user only needs to plug their mobile device into

After inserting the penny into one of the adapters, the phone will receive a micro pulse to begin charging. The mobile device's charging capacity will have predetermined values. This research study is based on the 40-pin ATMEL 89c51 microcontroller. S. Devi Rahini, R. Ravi, and Beulah Shekhar (2014) suggested that we investigate using the Support Vector Machines (SVM) method to further increase the accuracy of predicting the number of attackers when the training data are available. To pinpoint the locations of several attackers, an integrated detection and localization system is created [4] This project is equipped with a coin detector a microcontroller, a real-time clock, a driver circuit with a MOSFET, a charging circuit, an inverter, a cycle converter, and various phone types to take use of the variable current supply and the abundance of solar power.

This coin-operated charger for charging a phone is comparable to a vending machine. A sensor that is attached to the coin slot accepts the coin into the battery charging unit and begins charging the portable battery for a predetermined amount of time that is managed by the microcontroller's software. An infrared (IR) sensor is used.

II. PROBLEM STATEMENT:

Mobile phones are now regarded as a vital component of life, which is a problem. People frequently use its many functions, which drains the battery. People who frequently take long trips might need to charge their devices somewhere, thus it would be problematic if they forgot to bring chargers.

Similar to this, people may need electricity to charge their mobile phones so they may continue working in many developing places where grid power is unavailable for a few hours to several hours on a daily basis. Therefore, Mobile Charging Based on Coin Insertion is developed to solve all of these issues. It would offer dependable charging services at a lower price. This technique is really beneficial and simple to create.

III. PROPOSED SYSTEM

The technology makes use of a coin acceptor device that can identify a genuine coin. The Arduino board is connected to the coin acceptor, which is then connected to the LCD display. If a legitimate coin is discovered, the Arduino receives a signal, and the Arduino then sends a signal to the LDC to display the remaining charging time. After the allotted time has passed, the relay will stop controlling the power supply to the charger. The charger's SMPS (Switch Mode Power Supply) controls energy conversion. If the user wants to extend the charging time, he must input another coin, and the microcontroller will then add the time. The LCD screen will display how much charging time is remaining.

IV. BLOCK DIAGRAM

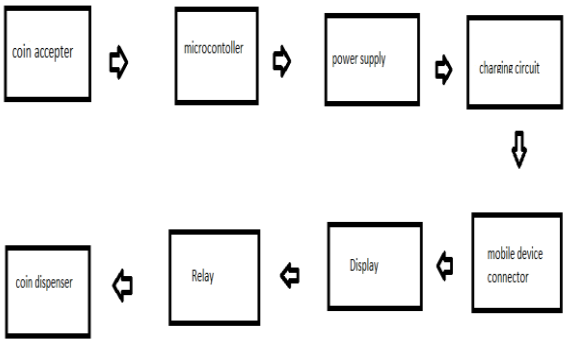

Fig 1

Block Diagram Explanation:

At the point when a coin is embedded into the machine, the coin identifier detects it, and the coin validator really takes a look at its legitimacy. Assuming the coin is legitimate, the portable charger begins charging the associated cell phone (Fig1)

V. MAIN COMPONENTS

Coin Acceptor:

This gadget has a coin insertion slot via which coins are accepted. Based on the coin's diameter, a sensor inside the coin acceptor device will identify and verify the coin. The Arduino receives a signal to turn on the power supply when the inserted coin is confirmed; otherwise, the coin is removed it shown (Fig2)

Fig 2

LCD:
Liquid Crystal Display, or LCD. It will initially say, "Please insert a coin." When the coin is validated, it shows the timing of charging; when it is not validated, it shows a notice that the coin has been rejected. The LCD is connected to the Arduino UNO and receives the system status to display on the screen shown in(Fig3)

Fig 3

Relay:
A relay is a switch that electromechanically opens and closes circuits. When the relay circuit determines that an assigned region has an undesirable condition, it instructs the circuit breaker to disconnect the affected area. Thus, the system is shielded from harm shown in(Fig4)

Fig 4

Arduino UNO:
An opensource electronics platform is Arduino. Both the hardware and software are simple to use. A microcontroller board called Arduino Uno has all the components required to support the microcontroller on it. To upload new code to the board, Arduino employs a USB cable rather than an additional piece of hardware. The Arduino board can read inputs such as light from a sensor, pressure from a finger on a button, turning on an LED, etc. 14 digital input and output pins are present shown in (Fig5)

Fig 5

SMPS:
Switch mode power supplies, or SMPS, are reliable and efficient sources of energy. It is a device in which power semiconductors that are continuously switching "on" and "off" with high frequency offer energy conversion and regulation. In the SMPS, the switching regulator regulates is shown in (Fig6) It toggles the smoothing capacitor's current supply on and off. SMPS emit extremely little heat from energy dissipation.

Fig 6

Microcontroller:
A microcontroller is a compact, reasonably priced microcomputer that is made to carry out the particular functions of embedded systems, such as displaying microwave information and receiving remote signals,

among others. The CPU, memory (RAM, ROM, EPROM), Serial ports, peripherals (timers, counters, etc.), and other components make up a generic microcontroller is shown in (fig7)

Fig 7

VI. RESULT AND DISCUSSION

The primary power source is 230V AC, which is rectified via an AC-DC converter to power the phone while also generating a 5V DC output. A common USB cord is used to charge the phone. however, when you are unable to bring the charger with you. The usage of this technique will benefit those who have coin base chargers. Considering that I still use the internet and cellphones nowadays, this kind of approach is quite helpful. Because mobile charging uses conventional grid electricity, the technique is affordable shown in (Fig8)

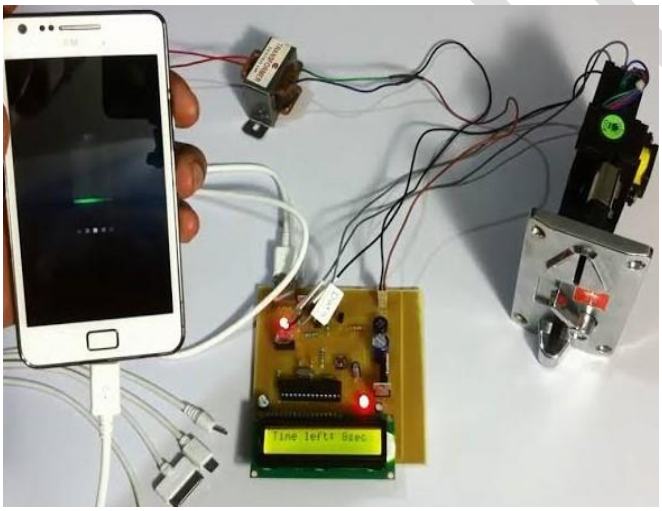

Fig 8

REFERENCES

1. M.Ruban Kingston, N. Muthukumaran and Dr.R..Ravi, "A Novel Scheme Of cos VCO Design With Reduced Number Of Transistors Using 180NM Cad Tool', International Journal of Applied Engineering Research, vol. 10, no. 14, pp. 11935-11938, 2015.
2. K. Praghash and R. Ravi, "Energy Consumption Architecture for Wireless Sensor Networks With Different Clusters", IEEE Third International Conference on Science Technology Engineering & Management (ICONSTEM), pp. 414-418, 2017.
3. U. Muthuraman, J. Monica Esther, R. Ravi, R. Kabilan, G. Prince Devaraj and J. Zahariya Gabriel, "Embedded Sensor-based Construction Health Warning System for Civil Structures & Advanced Networking Techniques using IoT", International Conference on Sustainable Computing and Data Communication Systems, pp. 1002-1006, 2022.
4. S.Devi Rahini, R.Ravi, and Beulah Shekhar, "Multiple Spoofing Adversaries Detection and Localization in Wireless Networks", International Journal of Scientific Engineering and Technology, vol. 3, no.5, pp. 495-499, 2014.