



**BUSITEMA  
UNIVERSITY**  
*Pursuing Excellence*

**FACULTY OF ENGINEERING**

**DEPARTMENT OF ELECTRICAL ENGINEERING**

**FINAL YEAR PROJECT REPORT**

**TITLE: WIRELESS MOBILE CHARGER.**

**BY**

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**REG N0: BU/UP/2020/0864**

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*This report concept submitted to the Department of Computer and Electrical Engineering  
as partial fulfillment for the award of Diploma in Industrial Electronics and Electrical  
Engineering at Busitema University.*

**AUGUST 2023**

**DECLARATION**

I **ODYEK CARLOS KIM RE N0: BU/UP/2020/0864** declares that this project report was written by me and is referred for academic purposes, it`s an original report that has never been submitted to any institution of learning.

DATE.....

Signature: .....

## **DEDICATION**

I **ODYEK CARLOS KIM** would like to dedicate this report to my beloved parent, I also thank them for the support they showed to me both financially and mentally towards the completion of this entire course plus also all the work accompanied with the report including making the project.

**APPROVAL**

This final year project under the title “WIRELESS MOBILE CHARGER” is under my guidance.

Mr. BUTIME



Sign: .....

Date: 31/7/2023 .....

Department of electrical engineering

## **AKNOWLEDGEMENT**

I thank the Almighty God for the abundant grace he has bestowed on me and the great provisions during my project implementation which has been a great success.

I greatly appreciate my lecturer for the continuous support and guidance to accomplish this project, I really thank you so much for the great help you rendered unto me

I also cordially appreciate my parents for the support they gave me both financially and emotionally.

I greatly appreciate my Department of Electrical Engineering for guiding me in this end of year project proposal and implementation.

May the Almighty God bless you abundantly.

## **ABSTRACT**

This report covers the basis and design of the wireless mobile charger. The wireless mobile charger will convert the RF/ microwave signal at 900 MHz frequency into a DC signal, and then store the power into a battery. The project is divided into 2 parts: transmitter, and charging circuit. A complete discussion of the specifications of the battery charger is provided after data measurements. This report also includes component list, financial, data results, and other key information.

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## **List of Acronyms**

USB - Universal Serial Bus

GPS - Global Positioning System

AC - Alternating Current

DC - Direct Current

RF - Radio frequency

WPT -Wireless Power Technology

mA- Milli Ampere

MIT- Massachusetts institute of Technology

## **CHAPTER ONE**

### **INTRODUCTION**

#### **BACKGROUND**

Wireless charging technology enables wireless power transfer from a power source such as charger to a load such as a mobile device conveniently across an air gap by eliminating the bunch of wire. Wireless power transmission involves the exchange of power without the need for physical connections. The development of this technology started in the late 19th and early 20th centuries, when a number of important innovations in electromagnetic research were made. These advancements established the basic principles that served as the foundation for modern electrical power transport. During the past 20 years, improvements in wireless technologies have led to a revival of related research. Public interest in wireless power has also increased with the application of Nikola Tesla ideas and inventions [1]. As a result of this, the feasibility of technological implementation merits examination. Various scientists and inventors contributed to the development of wireless power. Examining their backgrounds reveals the sources of their motivation and the methods by which they conducted research. The inventions developed during this time were more advanced than anything that had been seen before, solving challenging problems and developing the basic theories that yielded modern technology. These inventors' patents, papers, and experiments effectively describe the practicality and utility of wireless power propagation. Three prominent forms of power transmission are conduction, induction, and radiation. There are various formulas that explain how electrical power can be transmitted without the use of a physical conductor. Each mode of power transport has theories that govern how the electromagnetic waves carry power from a transmitter to a receiver

#### **PROBLEM STATEMENT**

In the creation of extremely advanced mobile devices, we have gone a long way. Although we've almost completely done away with wires and cords, at the end of the day, these devices still need to be charged, so cables are still necessary.

We require cords in order to charge portable electronic devices, such as laptop and mobile phones. Every electronic device needs electricity, and without it, even the most advanced devices are useless. Researchers have been interested in Wireless Power Transfer (WPT) with spatial freedom since MIT [Massachusetts institute of Technology] students developed the [WPT] technique using magnetic resonance in [2007]. Numerous scientists and global leaders in technology had taken notice of this. Of course, when it is more broadly accepted and used, it will be a breakthrough technology. Sadly, that day has not yet arrived. More attention was required to address the WPT technology's growing demand, so we chose to conduct research in this field. Try to give back to the community by making this technology more affordable for people so they

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