FACULTY OF ENGINEERING

DEPARTMENT OF ELECTRICAL ENGINEERING

PROGRAM: DIPLOMA IN ELECTRONICS AND ELECTRICAL ENGINEERING

FINAL YEAR PROJECT REPORT

PROJECT TITLLE: CELLPHONE NETWORK SIGNAL INTERRUPTER

BY

ODERI SOLOMON

BU/UP/2021/0702

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

CERTIFICATION

This is to certify that this project was carried out by Oderi Solomon and submitted to the department of Electrical Engineering, Faculty of Engineering, and Busitema University for the award of Diploma in Electronics and Electrical Engineering.

The construction has been under the supervision of Eng. Mugwanya Patrick as my supervisor and has been duly approved.

Eng. Mugwanya Patrick Signature----------

Project Supervisor Date---11/08/2023----------

Eng. Kigozi John signature ----------

Head of Department Date----------

DEDICATION

This project is dedicated to God Almighty for His infinite mercy and love, our dear supervisor Eng. Mugwanya Patrick our parents and relatives, friends, mentors and colleagues who have been supportive in all conditions during the project construction journey.

ACKNOWLEDGEMENTS

We sincerely appreciate our distinguished parents for their love and parental care, our honorable Head of department, Eng. Kigozi john , I want to appreciate Eng. Butime Eric for his tremendous contributions to this work and advice he gave me during the course of this work, and not forgetting all our lecturers Mr. Mugwanya Patrick. We pray that God will keep you strong for your families

Finally, we appreciate all our course mates, all our friends who have in one way or the other contributed immensely to the construction of this project. May God bless us all.

ABSTRACT

The Phone Signal Network Interrupter project focuses on developing a device capable of temporarily disrupting cellphone signals in specific areas. By creating a compact and portable jamming device, this project aims to address the need for controlled interruption of cellphone communication. The project's objectives include ensuring compatibility with multiple cellular network standards, incorporating advanced technology to minimize interference with authorized services, and conducting thorough testing to validate the interrupter's effectiveness. The proposed solution will enhance privacy, security, and control in various scenarios, while complying with legal regulations and safety standards.

Contents

CERTIFICATION i
DEDICATION ii
ACKNOWLEDGEMENTS iii
ABSTRACT iv
CHAPTER ONE 1
1.0 INTRODUCTION 1
`1.1 BACKGROUND 1
CHAPTER TWO 2
2.0Problem Statement 2
2.01 Justification 2
2.02 OBJECTIVES 2
2.03 SCOPE OF THE STUDY 2
2.04 LIMITATIONS OF THE PROJECT 3
CHAPTER THREE 3
3.0 Methodology: 3
3.01Block diagram: 4
3.02 The operation of the tuned circuit 6
3.03 Mobile Frequency signal interrupting Calculation 7
3.04 LITERATURE REVIEW 8
3.05 DIODES 9
3.06 10
3.07 RESISTORS 11
..... 11
3.08TRANSISTOR 13
3.09 14
3.10 15
3.11 Inductors 15
3.12 Integrated Circuits (ICs) 16
..... 16
3.13 FEATURES OF IC555 16

3.14 Antennas 17
3.16 Power Supply 18
3.17Printed Circuit Board (PCB) 19
3.18 JUMPER WIRES 19
3.19 BREADBOARD 22
CHAPTER FOUR 23
4.0 SYSTEM TESTING AND INTEGRATION 23
4.1 23
4.2COMPONENT TEST 23
4.3 24
4.4 PERFORMANCE EVALUATION 25
4.5 Bill of engineering measurement and evaluation 26
CHAPTER FIVE 27
5.0 CONCLUSION 27
5.1 PROBLEMS ENCOUNTERED 27
5.2 27
5.3 REFERENCES 27

FIGURES

Figure 1 methodology 3
Figure 2 block diagram of phone cell network signal interrupter 4
Figure 3 circuit diagram of the project 6
Figure 4 diodes 9
Figure 5 LED 10
Figure 6 RESISTOR 11
Figure 7 RESISTORS CONNECTED IN SERIES 11
Figure 8 RESISTORS CONNECTED IN PARALLEL 11
Figure 9 TOLERANCE OF THE RESISTOR 12
Figure 10 TRANSISTOR 13
Figure 11 TRANSISTOR CURRENTS 14
Figure 12 CAPACITORS 14
Figure 13 PIEZO ELECTRIC BUZZER 15
Figure 14 INDUCTORS 15
Figure 15 IC 555 16
Figure 16 FEATURES OF IC 555 16
Figure 17 9V BATTERY 18
Figure 18 PRINTED CIRCUIT BOARD 19
Figure 19 WIRES 19
Figure 20 microcontroller 19

Figure 21 BREADBOARD 22
Figure 22 Breadboard 22

CHAPTER ONE

1.0 INTRODUCTION

In today's interconnected world, cellphone communication has become an integral part of our daily lives. However, there are certain situations where the temporary interruption of cellphone signals is necessary to maintain privacy, security, or control over communication. The Phone Signal Network Interrupter project aims to develop a reliable and effective device that can disrupt cellphone signals within a designated area. This document presents an overview of the project, including the abstract, problem statement, proposed solution, justification, materials used, methodology, objectives, references, and block diagram.

A phone cell network interrupter is a device that is designed to interrupt the signal of a phone cell network. It is used for various purposes, such as in security systems, law enforcement, and military applications. The project aims to develop a phone cell network interrupter with high efficiency, reliability, and versatility.

The phone cell network uses radio waves to transmit and receive data signals. The network consists of a number of base stations that communicate with the mobile devices. The base station is responsible for transmitting signals to the mobile device when it is within range. The mobile device sends signals back to the base station, which then relays the signals to the network.

In certain situations, such as in high-security areas or during law enforcement operations, it is necessary to disrupt the phone cell network to prevent unauthorized use of mobile devices. A phone cell network interrupter is designed to do this by transmitting signals that interfere with the radio waves used by the network. This causes the mobile devices to lose signal and prevents them from communicating with the network.

`1.1 BACKGROUND

The background of the phone cell network interrupter final year project involves research in the field of telecommunications and radio frequency (RF) engineering. The project requires knowledge of the various radio waves used by the phone cell network, such as 2G, 3G, and 4G, and how they are transmitted and received.

The project also involves an understanding of the laws and regulations governing the use of phone cell network interrupters. In many countries, the use of such devices is heavily regulated and requires special licenses and permits.

The final year project requires the development of a working prototype of the phone cell network interrupter. This involves designing, building, and testing the device to ensure that it can effectively disrupt the phone cell network. The device also needs to be reliable, durable, and easy to use.

In conclusion, the phone cell network interrupter final year project is a challenging and complex project that requires a thorough understanding of telecommunications and RF engineering. The development of a working prototype requires careful planning, design, and testing to ensure that it meets the required specifications and regulations.

Project methodology and provide the necessary background knowledge for the successful completion of the project

CHAPTER FIVE

5.0 CONCLUSION

The aim of a project is to make the students adopt the theories into practical realization for the benefits of mankind.

Going through the planning, flow process, design and software implementation, the system has been a tough one, the chapter one to four has actually tried as much as possible to explain vividly almost all (if not all) what is involved in the construction of this project. After the complete design of the system, the deviation between the expected result and the actual result was very close. The performance and efficiency was beyond expectation and from every ramification the design of automatic water controller was successful

5.1 PROBLEMS ENCOUNTERED

During the course of designing this system there were series of problems encountered which came on the way of achieving the desired goals of this project

It was difficult to access some components like the transistor.

5.2 RECOMMENDATIONS

I strongly recommend that government should set up industries for production of basic electronic component locally and establish research centers in each university to enable student have good sound practical knowledge on electronics component and their operation.

5.3 REFERENCES

1. Zhang, J., Wang, Q., & Huang, L. (2018). Study on the Performance of Cell Phone Signal Jamming Devices. IEEE Access, 6, 4049-4056.
2. Chen, W., Li, X., & Zhang, Z. (2016). Development of Portable Cell Phone Signal Jammer. International Conference on Information Science and Control Engineering (ICISCE), 452-456.
3. Federal Communications Commission. (n.d.). Jammer Enforcement. Retrieved from https://www.fcc.gov/general/jammer-enforcement
4. Williams, L., & Payton, T. (2014). Analysis of Cell Phone Jamming on Wireless Networks. International Journal of Computer Science and Mobile Computing, 3(9), 40-46.
5. Kaur, M., & Singh, P. (2019). Review on Mobile Jamming Techniques, Effects, and Countermeasures. International Journal of Engineering Research & Technology, 8(9), 556-559.

6. National Telecommunications and Information Administration. (2005). Analysis of the Technical and Operational Implications of Cellular Phone Jamming. Retrieved from https://www.ntia.doc.gov/legacy/osmhome/redbook/redbook.html
7. Hossain, M. S., & Hossain, M. I. (2021). Design and Analysis of a Portable Cell Phone Jammer. Journal of Electronics, Communication and Instrumentation Engineering Research, 8(4), 325-330.