

## **CHAPTER 1**

### **INTRODUCTION**

#### **1.1 Overview**

The development of technology nowadays is increasing rapidly. From wired to wireless. It is being practiced for many years ago. The wireless technology first developed by Guglielmo Marconi was the telegraph that sending data for certain miles [1].

After that, it was developed till this day. Anyway, this wireless power transmission was invented by Nikola Tesla and still yet being developed. This document is mainly about transferring power wirelessly. The method chosen for this project is using radio frequency. Why this method being chosen will be explain later. By the way, this project is presented the capability to transfer it wireless without any harm to the human life.

#### **1.2 Background**

It is been well known that Nikola Tesla is a genius who lit the world. He is the person who defies the efficiency of direct current invented by Thomas Edison. After

that, he invented the Alternating current in order to overcome the problem of direct current.

When Nikola Tesla discovered alternating current (AC) electricity, he had great difficulty convincing men of his time to believe in it. Thomas Edison was in favor of direct current (DC) electricity and opposed AC electricity strenuously. Tesla eventually sold his rights to his alternating current patents to George Westinghouse for \$1,000,000. After paying off his investors, Tesla spent his remaining funds on his other inventions and culminated his efforts in a major breakthrough in 1899 at Colorado Springs by transmitting 100 million volts of high-frequency electric power wirelessly over a distance of 26 miles at which he lit up a bank of 200 light bulbs and ran one electric motor! With this souped up version of his Tesla coil, Tesla claimed that only 5% of the transmitted energy was lost in the process. But broke of funds again, he looked for investors to back his project of broadcasting electric power in almost unlimited amounts to any point on the globe. The method he would use to produce this wireless power was to employ the earth's own resonance with its specific vibrational frequency to conduct AC electricity via a large electric oscillator. [2]

### **1.3 Objectives**

1. To design a circuit of the wireless power system to transmit voltage wirelessly from source to device
2. To gain the specification for the transmitter and receiver circuit.

## **1.4 Project Scope**

This project is focus on the building of the circuit that capable to transmit the power wirelessly. It is the hardest part in designing this project. It is because I have to consider the frequency that I am using as a medium to transmit the energy. By the way, before considering the frequency, the choosing of method to be used to generate high frequency of supply is important. I have to reconsider all factors before make a decision on what method should be used

Aside from that, another scope that I have to encounter is the transmitter and receiver it selves. To make sure the transmission from supply to load is in the highest efficiency, the value of the transmitter size and the receiver size had to be calculated.

## **1.5 Problem Statement**

Nowadays, electricity is very important in daily life. Without any of electrical appliance, world is stop working. A copper wire are use to transfer the current from the supplier to load. With the so many appliances in one place, thus there so many wires in a place to supply each appliance. The crowd of the cables produces messes which will produce other problems.

Supplying voltage without using cable is almost impossible due to the connectivity and the efficiency.