

**THE EFFECTS DONE BY AN ELECTROMAGNETIC PULSE  
GENERATOR BASED ON MARX GENERATOR TOWARDS  
NEARBY CONDUCTORS AND ELECTRONIC COMPONENTS.**

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## ABSTRACT

An EMP Generator device is designed by combining a Cockcroft Walton Voltage Multiplier towards a Marx Generator. The spark is directed towards a 1600 rotation coil to direct the EMP in linear formation. Over voltages exceeding 1kv is detected along with over currents exceeding 20 ampere by measuring the currents induced in the middle of the coil. The second identical coil is placed beside primary coil to receive maximum induction and measuring voltage and current of the second coil yield the same result. Increasing the distance between coils decreases the occurring of over currents almost linearly. The pulsing current is directed into a 7402 IC and the functions failed after checked by IC checker. The performance of EMP Generator device is discussed if used in a large scale in military weaponry.

## CHAPTER 1

### INTRODUCTION

#### 1.0 Background

Electricity now is so related to us. It revolves around us such that our lives are not complete without them. It is no longer a want but is more to needs. No matter where we are or when electricity is around as whether naturally or induced by us. We cannot run from it. It can be from lightning that we see, or even the electrical pulse in our nervous system inside us. Electricity has provided a lot of advantages since its discovery of its potential. It speeds up communication, provides huge amount of energy, can be controlled, stored or produced and lots more. Today's generation use electricity a lot more than previous generation. This shows that in the future, the relationship between electricity and mankind will be almost inseparable.

An electrical current is defined as the rate of flow in the electron [1]. Electron is the smallest particle of an atom apart from neutron and proton. Having negative charges, electrons together with protons and sometimes also neutron makes up an atom. As the size of electron is very small, it is very light and easy to move. In an electrical circuit, electrons will flow in the circuit as long as there is a potential difference in the circuit, like river flowing downhill. The potential difference for electricity is called the Voltage [2]. It also known as electromotive force (EMF) it provides the