

# **DESIGN OF SWITCHING MODE POWER SUPPLY**

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## **ABSTRACT**

This thesis illustrates the design of switching mode power supply, which used flyback converter topology. The step-by-step design procedure that involved many equations and components has been implemented in this design. This thesis also gives the detailed explanation about the each topology of SMPS. The purposes of all components used have been explained in this report. Pspice is used to validate the theory. Result for steady state as well as dynamic conditions given, shows the flexibility and capability of the design.

### **Keywords**

*Switching Mode Power Supply, Flyback converter*

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# CHAPTER 1

## INTRODUCTION

### 1.1 Background

The design of a switching power supply is an iterative process that involves many variables that have to be adjusted in order to obtain an optimized solution. However, there are trade-offs which allow for a simple low costs, low components, single sided board design method. For many years the world of power supply design has seen a gradual movement away from the use of linear power supplies to the more practical switched mode power supply (S.M.P.S.).

Design the SMPS is not like the cooking where we can follow the cookbook. Many more considerations must be taken into account even if there is a published design that will meet the needs of the product. The experienced power supply designer will need a minimum of three worker-months, depending on its complexity, to design, prototype, and test the supply before releasing it to production.

### 1.2 Scope of work

This project presents the design of switching mode power supply. The aim of this project is to design the switching mode power supply and to identify the step involved during the design process. The purpose of the semiconductor used in the SMPS also explained in this project. The Pspice is used to validate the theory.