HIGHER TECHNICAL INSTITUTE

ELECTRICAL ENGINEERING DEPARTMENT

DIPLOMA PROJECT

DEVELOPMENT OF A PC CONTROLLED D.C. POWER SUPPLY

E/954

SOTERIS IOANNOU

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SUPERVISOR: Mr S. HADJIOANNOU

To my mother

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ABSTRACT

This project deals with the development of a PC controlled D.C. POWER SUPPLY.

The Objectives of the Project are:

1. To design, construct and test an interface card for an IBM PC.

2. To design, construct and test a digitally controlled power supply and connect, it to the PC interface card.

3. To develop the appropriate software to control the power supply.

Terms and conditions

1. The output ports of the PC interface card should be through an 8255 IC.

2. The programm should be either in assembly language or Pascal.

3. All plug - in connectors should be nickel - plated.

INTRODUCTION

This project present hardware and software design for interfacing a power supply to the IBM PC.

To control the output voltage a Digital to analog converter is used in the place of a zener diode so the reference voltage can be varied by the corresponding digital signal present at the PORT B of the interfacing card.

An analog to Digital Converter is used to convert the output voltage to a digital number so it can be confirmed that the desireable voltage its present at the output of the power supply.

The interfacing between the power supply and the computer is done manly by the 8255 IC. The 8255 includes three programmable ports, two 8-bit ports: A and B with the remaining eight bits as port C which can be used in two 4-bit ports Cupper (Cu) and Clower (CL).

This ports can be programmed to transfer data under various conditions, from simple I/O to interrupt I/O.