HIGHER TECHNICAL INSTITUTE

ELECTRICAL ENGINEERING DEPARTMENT

DIPLOMA PROJECT

REMOTE POWER SUPPLY CONTROL OF AN IBM PC

E.1122

DEMETRIOU CHRISIS

JUNE 1998

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PROJECT REPORT SUBMITTED TO THE DEPARTMENT
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CYPRUS

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SUPERVISOR : Mr CH. THEOPEMPTOU

JUNE 1998

DEDICATED

TO MY PARENTS
AND SISTER

ACKNOWLEDGEMENTS

Firstly, I would like to thank my parents for sponsoring this project and my friends for supporting me throughout the difficult periods of this project.

I would also like to express my gratitude to my supervisor Mr. Ch. Theopemptou for the inspiration he gave me in choosing a telephony based project.

Finally, I would like to express my sincere thanks to Mr. E. Agathangelou for providing me with an audio transformer and power supply of his modem.

SUMMARY

PROJECT TITLE : REMOTE POWER SUPPLY CONTROL OF AN IBM PC

AUTHOR : DEMETRIOU CHRISIS

SUPERVISOR : Mr. CH. THEOPEMPTOU

This project is a remote control unit like those sold on market. It detects telephone rings and auto answers incoming calls. The caller gives instructions to switch ON / OFF devices by pressing the push buttons of his public telephone.

This offers the facility to operate devices from a long distance.

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INTRODUCTION

INTRODUCTION

In the world of advanced technology we live in, time is considered to be money. To save time various companies invented units to control devices from a distance by the use of a common public telephone.

These devices are called Telephone Remote Control Units and are broadly used for lots of purposes.

Such a unit is connected to the user's telephone set. When the user is absent from home he can dial his home telephone and activate his home electrical appliance (air-conditioning, watering pump, lights, central heating, etc.) to switch "ON" or "OFF".

I was asked to design and construct such a remote control unit, though not as advanced as the once sold on market.

However the unit designed for this project offers important features such as:

- Variable number of ringing before auto-answering the incoming call (according to what the user wants).
- A 2-digit code to access operation
- A pip tone is sent after the execution of an instruction.
- By pressing "8" the telephone line is released and the device remains on the state it was.

Now, a few words about the general operation of this project:

When an incoming call exists, after a number of ringing, it is auto answered and the system waits for a 2-digit code that will enter the user into the operation mode. If the code is valid, each number corresponds to a specific instruction.

Code 1 switches ON device 1, which is the personal computer, by energising a relay.

Code 2 switches OFF device 1 by de-energizing the relay.

Codes 3 to 7 execute other operations with devices connected to the control unit with the aid of connectors. The system is also designed to receive signals from the external devices if the job is executed.

Code 8 releases the telephone line without giving a reset signal to the circuit handling the relay. We press code 8 to leave the device 1 working and interrupt the call.

Code 9 causes a forced release of the telephone call and resets all circuits.

Code 0 with the aid of a jumper offers two choices. The first choice is to perform forced release after the caller has entered the operation mode (the two-digit code is accepted), or give instruction for forced release under any conditions.