THE FINAL YEAR PROJECT REPORT

ADVANCED DIPLOMA IN ELECTRICAL ENGINEERING

SCHOOL OF ENGINEERING

MARA INSTITUTE OF TECHNOLOGY

SHAH ALAM

SELANGOR DARUL EHSAN

A DIGITAL VOICE/DATA

TELEPHONE

BY

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In the name of ALLAH the all Mighty.

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PREFACE

This report is about the project of designing digital voice/data telephone.

In Chapter 1 of the report will discuss on the general description of the digital telephone and voice/data system.

Chapter 2 elaborates on the advantages and disadvantages of digital system over analog system. The next chapter (Chapter 3), describe the voice digitization and coding scheme used in voice/data system.

Subsequently, Chapter 4 will touches on project design which will elaborate on the design of multiplexer and digital telephones.

The test and the result of the project will consequently be highlighted in the preceeding chapter; Chapter 5.

The propose design of this project will then be

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1.1 GENERAL

Data has been transported over telephones lines for years, but the techniques for compressing the data into the voice bandwidth are getting more eleborate and expensive as data rates increase. Digital telephones simplify the task by directly sending high-speed digital data over the wires for distances of up to 2 km. The data is combined with voice information digitized by the codec/filter and signalling. This combined signal is transported over existing wiring to a digital linecard in a PBX or voice/data multiplexer.

Digital PBXs used with analog telephone convert analog information into digital signals on the linecards for routing through the switch matrix. In a system where the analog telephones are replaced by digital phones, the digitization is still performed, but it is done in the phone itself and digital information is transported on the wires. Data from attached PC or terminal can