

HIGHER TECHNICAL INSTITUTE

ELECTRICAL ENGINEERING DEPARTMENT

DIPLOMA PROJECT

DEVELOPMENT OF A PC BASED
DATA LOGGER

E / 1111

BY: CHRISTODOULOU MICHAEL

JUNE 1998

HIGHER TECHNICAL INSTITUTE

NICOSIA - CYPRUS

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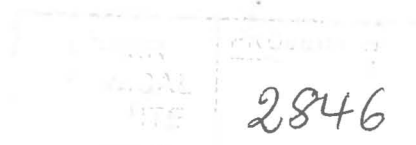
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Development of a PC based Data Logger

By

Christodoulou Michael

Project Report E/1111

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ABSTRACT

Design of a PC based data logger system

The objective of this project was to design and construct a PC based system capable of measuring voltage signals coming from various types of sensors. The system should consist of a board offering facilities for connection of more than one input circuits and direct connection to the printer cable of any ordinary PC. Accompanying software should be written to fully control and exploit the capabilities of the board. The system should offer the capability for data capture and the display and analysis of this data on an ordinary PC running Windows.

The first chapter deals in general with the field of Data Acquisition giving useful information and the explanation of terms to follow. A definition of what a data logger system is, is also given.

The second chapter has to do with hardware development. It includes a description of all the basic circuits and subcircuits.

The third chapter describes how the software was written using Visual Basic 5.

The fourth chapter describes some testing done to verify the working condition of the system and contains conclusions on the extent of fulfillment of the main objectives of the project.

At the end of the project an attachment contains four diskettes with the source code of the program used, a working version of the program, as well as the project report in Microsoft Word format.

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Introduction

As society continues to evolve and technology continues to thrive the need for efficient data capture and analysis becomes more and more of a necessity. The fast paced way of living in today's modern societies demands efficiency, accuracy and flexibility. In numerous tasks of everyday life the correct assessment of available data can easily lead one in taking the right decision faster and with more convenience than others. Therefore the need for proper data capturing techniques and efficient data analysis procedures is very important since it can provide the means for faster and more reliable response to events.

To satisfy the needs for data capture and analysis several types of data acquisition systems have evolved throughout the years. The type of data acquisition system however which is preferred for most applications of everyday life is the data logger. Data logger systems can capture and store large quantities of data over large periods of time. The data thus obtained can help to form an image of the system being monitored. Some of the applications include environmental monitoring, laboratory use, environmental control systems and even security systems.

With this project an attempt was made to design and construct a small data logger system which would be directly associated with the use of a Personal Computer (PC). The use of the PC introduces several advantages over the implementation of such systems which include increased manageability, flexibility and unlimited data processing power.