DATA ACQUISITION USING THE IBM PC

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PREFACE

This project " DATA ACQUISITION USING THE IBM PC" can be used for

data acquisition; no consideration is given to the source of data

and throughout the discussion an 8-bit Analogue to Digital

Converter (ADC) is assumed to provide the digital data.

It covers all aspects of the transfer of the data from ADC, in

the first instance, to the computer memory and subsequently, for

logging purposes, to an ASCII file.

The interface card is used to construct the circuit for the data

acquisition. The interrupt request lines are used to get the

respond from the computer. When the computer detect the interrupt

signal from the correct line, the interrupt request line, IRQ 7

(lowest - priority interrupt), the current process will be

suspended and the interrupt serviced.

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1.0 INTRODUCTION

1.1 Data Acquisition

Data acquisition is a restricted kind of data collection. It is of interest mainly to scientists and engineers. There are two distinguishing features. First, the information we wish to acquire is contained in physical variables, such as temperature, velocity and electric current. The sources of the information may be humans, animals, plants, inanimate objects or industrial equipment, and to acquire the required information it is necessary to connect some measuring devices to these objects, so that the value of the physical variables may be determined. This means that special equipment may need to be designed to convert the output of the measuring devices into a form suitable for computer processing.

Second, the physical variables are usually a function of time; indeed, some may change very rapidly with time. In consequence the data collection process needs to be highly automated in order that the data acquisition equipment can match the information source in speed.