MINI WIRELESS WEATHER STATION (PART 1)
(MEASUREMENT AND TRANSMISSION OF WEATHER DATA)

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7 MAY 2007

"I hereby declared that I have read through this report and found that it has comply the partial fulfillment for awarding the degree of Bachelor of Electrical Engineering (Industry Power)"

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Date : 7 MAY 2007

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This project report adduced as meet half conditions bachelors degree award Electrical Engineering (Industry Power)

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MAY 2007

"I admit this report is from my own work except summary and quotation which each of them I'm telling the source"

Signature : .....

Name : MOHD SYAIFUL NIZAR BIN HASSIN

Date : 7 MAY 2007

To father and mother,

sister, brother and younger siblings' beloved

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ABSTRACT

The weather is one situation environment that keeps changing from day to day. As is known by the public, the weather influences the life and actually of a person. Weather can disrupt someone plan. Therefore it is important that one knows the weather forecast for the day.

This project is about building a small home-based mini wireless weather station to help one in making simple weather forecast. The sensors will pickup temperature, humidity, pressure and amount of rain water and deliver the data to PIC16F873 to be processed. Transmission of this data is via radio wave to a receiver station. This station will display the data in a friendly manner on a computer display system.

ABSTRAK

Cuaca adalah satu keadaan persekitaran yang boleh berubah-ubah dari satu masa ke masa yang lain. Seperti yang diketahui umum,cuaca boleh mempengaruhi aktiviti kehidupan terutama manusia. Cuaca juga boleh merosakkan perancangan seseorang. Oleh itu adalah penting kepada seseorang itu untuk mengetahui ramalan cuaca pada setiap hari.

Projek ini adalah membina sebuah stesen cuaca mini tanpa wayar yang mana boleh menolong manusia membuat ramalan ringkas tentang cuaca. Sensor-sensor pada stesen ini akan mengesan suhu,kelembapan, tekanan dan jumlah isipadu air hujan dan menghantar kesemua data ke PIC16F873 untuk diproses. Penghantaran data-data ini adalah menggunakan sistem tanpa wayar kepada stesen penerima. Stesen ini akan memaparkan data keluaran kepada skrin komputer menggunakan sistem paparan.

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LCD	=	Liquid crystal display
PC	=	Personal computer
PIC	=	Programmable Integrated Circuit
IC	=	Integrated Circuit
LED	=	Light Emitter Diode
PCB	=	Printed Circuit Board
RF	=	Radio Frequency
AF	=	Audio Frequency
ASH	=	Amplifier sequenced hybrid
IDE	=	Integrated development environment
AM	=	Amplitude modulation
FM	=	Frequency modulation
DAB	=	Digital Audio broadcasting
DSP	=	Digital signal processing
ADC	=	Analogue to digital converter

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CHAPTER I

INTRODUCTION

1.1 Introduction Project

Weather is thunderstorms, tropical depressions, tornados, blizzards, squall lines, stationary fronts, cold fronts from Canadian, warm moist Gulf air, and hurricanes. Also the onset of any one of these events can be detected by monitoring a few basic conditions. Basically, weather cans influence day activities of the human with weather feature like temperature, humidity and pressure. One of the important in weather is raining.

As state on the television or the radio for the weather condition, it's always what conditions are like at the airport or some other remote location. But, what are conditions like in my backyard? To address this, the inventions have been made on the design of the mini wireless weather station. The mini wireless weather station can detect temperature, humidity, pressure and rain fall. All the sensors will send the weather data to microcontroller PIC16F873 to be process and transmitted with transmitter to the receiver. Then the data will send to receiver with wireless system to e process and display to the user computer. After that the user can check weather from their computer.

1.2 Aim

The aim of this project is design and build mini wireless weather station using microcontroller PIC16F873 and conduct windows output on monitor computer using Visual Basic software.

1.3 Objective

i. Build temperature, humidity , pressure sensor and rain fall sensor in digital
ii. Build a mini station processing digital data for process data
iii. Build a system transmitter and receiver digital data for committed processing transmitting and receiving.

1.4 Scope

i. Find the step for built and testing program using Visual Basic.
ii. Learn and find components function in project and find any connection in all circuit
iii. Find step for built and testing program using PICDEV (PIC DEVELOPMENT BOARD)
iv. Find software MPLab®IDE for built program PIC16F873

1.5 Problem Statement

i. No flood warning system
ii. Need higher cost to built the weather station
iii. No weather data record in certain period
iv. Research only covered in one area

CHAPTER II

LITERATURE REVIEW

2.0 Introduction

This chapter describe the project was done before. The company who done this mini wireless weather station are Oregon Scientific, La Crosse Technology, Sporty's Preferred Living, and Hunter Mini. All of them are the company from United State of America (USA) and there are not have the company from Malaysia.

The Oregon Scientific produce the MWR968 Wireless Weather Station who has a touch screen monitoring. Also have a clock, calculator and using three AA 1.5V batteries as a supply. The La Crosse Technology produce the mini wireless weather station named WS-2308 Complete Wired/Wireless Weather Station who come with three sensor and one wind direction. The mini wireless weather station from the Sporty's Preferred Living has a LCD monitor and can snsing temperature and humidity from the outside enviroment. Also can sense the temperature and humidity in the room.