WINDOWS BASED WIRELESS DATA ACQUISITION

MOHAMAD AZIDDIN BIN MOHAMED JAMIL

SCHOOL OF COMPUTER AND COMMUNICATION ENGINEERING
UNIVERSITI MALAYSIA PERLIS
UniMAP
2007

ACKNOWLEDGEMENT

With the name of Allah, the most gracious and the most merciful I would like to express my gratitude to the Al-Mighty for His permission to do this project in my beloved university, Universiti Malaysia Perlis (UniMAP). I also would like to extend my gratitude to my supervisor, Mr. Zulkifli Husin for his intelligence, creative and innovative ideas to guide me to do this project. Thank you so much for everything.

Next in the list, I would like to offer my heartfelt thanks to UniMAP especially the School of Computer and Communication Engineering for giving me some money to implement this project. Special thanks to Mr. Basri and Mr. Zahir for willing me to borrow the components and equipments from the lab and the Engineering Center, UniMAP for guiding and helping me to fabricate the Printed Circuit Board (PCB).

My deepest gratitude to all my colleagues for the non – stop enthusiasm and determination for assisting me in doing this project. Last but not least, thank you so much to my beloved parents and family for their kind understanding and moral support.

APPROVAL AND DECLARATION SHEET

This project report titled Windows Based Wireless Data Acquisition was prepared and submitted by Mohamad Aziddin Bin Mohamed Jamil (Matrix Number: 031080206) and has been found satisfactory in terms of scope, quality and presentation as partial fulfillment of the requirement for the Bachelor of Engineering (Communication Engineering) in Universiti Malaysia Perlis (UniMAP).

Checked and Approved by

_____

(ZULKIFLI HUSIN)
Project Supervisor

School of Computer and Communication Engineering
Universiti Malaysia Perlis
(UniMAP)

April 2007

ABSTRAK

Pada hari ini, dunia kini berubah haluan ke generasi baru sejajar dengan perkembangan teknologi dan innovasi terkini yang mana ia memberi nafas baru dalam bidang sistem terbenam. Para saintis, jurutera dan khususnya penduduk dunia semakin hari semakin banyak kerja untuk disiapkan dalam tempoh masa tertentu dan dengan modal yang terhad. Oleh itu, peralatan mudah alih, penjimtan masa dan perbelanjaan yang berbaloi menjadi antara kriteria utama yang dititkberatkan dalam penyediaan projek yang akan datang. Antara bidang yang kini pesat dibangunkan adalah sistem perolehan data. Ia melaksanakan pengumpulan data berdasarkan isyarat yang diukur. Sesuai dengan perkembangan teknologi semasa, projek ini bertujuan menambahbaik sistem yang sedia ada di mana ia menampilkan ciri penhantaran data tanpa wayar, saiz yang kecil dan mampu dimiliki. Ia juga berpontensi memaparkan data pada sebuah komputer dengan perisian konvensional, *Microsoft*® *Windows* sebagai tapak pusat dan pada paparan hablur cecair (LCD)sebagai alatan tangan. Sistem ini bermula dengan pengesan isyarat analog oleh alat pengesan isyarat analog dan dikuti oleh pertukaran data ke bentuk digital oleh Penukar Analog ke Digital (ADC). Kemudian, data ini dihantar ke sebuah mikropengawal di bahagian penghantar untuk penghantaran data secara tanpa wayar. Data ini akan diterima pula oleh mikropengawal di bahagian penerima dan dimanipulasi untuk tujuan paparan dalam bentuk graf dengan menggunakan pengisian *Visual Basic*® *6.0* dan dalam bentuk nombor pada paparan hablur cecair. Dengan terhasilnya keluaran projek ini maka ia dapat membantu pengguna untuk tujuan pengawalan dan penganalisaan data.

ABSTRACT

Nowadays, the global is transforming in to a new generation which makes the embedded system rejuvenates in order to keep abreast with the latest technology and innovation. As scientists, engineers and especially people of the world are having more task to be completed in a period of time and with limited income, that made mobility, time consuming, and cost effectiveness among the crucial criteria that must be emphasize in any upcoming project that will be develop. One major field which is currently being developed is the data acquisition system. It collects data based on the signals being measured. In order to meet the current technology, this project is aimed to enhance the current data acquisition system which features a wireless data transmission, small in size and affordable. It is also capable of displaying data on a Personal Computer (PC) using the conventional operating system, Microsoft® Corporation as the based station and on a Liquid Crystal Display (LCD) as a handheld device. The system starts with the analog signals detection from the transducer and then followed by the conversion data by the Analog to Digital Converter (ADC). This digital data will then being send to a microcontroller at the transmitter part for the wireless data transmission. Next, the data transmitted is received from another microcontroller at the receiver part and will be manipulated for displaying data in a graphical form on PC via Visual Basic® 6.0 software and in numbers on LCD. Thus, the output of this project will absolutely assist any end user to obtain data for monitoring and data analysis purpose.