IMPLEMENTATION AND ANALYSIS OF TEMPERATURE SENSOR BASED ON PIC AND WIRELESS SENSOR NETWORK TECNOLOGY

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ABSTRACT

Nowadays, technology for sensing and control is currently in high demand on a broad range of applications. Potential applications ranging from hearth care, transportation, environmental monitoring, energy, industrial monitoring and control, military, home automation and many more are taking the advantages of the wireless sensor network technology. Beside low cost and high efficiency, WSN also offers conveniences to the users.

This project presents the performance analysis of Wireless Sensor Network (WSN) used in the high-end applications such as temperature sensor. Recently WSN also focuses on national security applications and consumer applications. This project shall demonstrate the performance of WSN models, which have been developed using PIC. Temperature sensor nodes were deployed in the networks to create sensing phenomena. The results recorded that successful throughput from sensor node, strongly depends on the delay setting. Therefore, the important factors and issues pertaining to the WSN performance will also be determined and describe briefly.

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CHAPTER 1

1.1 INTRODUCTION

Wireless sensor network (WSN) are e trend of the last few years due to the advances made in the wireless communication, information technologies and electronics field [1].The developments of low-cost, low-powered, multifunctional sensors have received increasing attention from various industries [2]. WSN is a wireless network composed of autonomous and compact devices called sensor nodes or *motes*. A sensor network is designed to detect desired phenomena, then collect, process the data and transmit this information to users. Sensor nodes or *motes* in WSNs are small sized and are capable of sensing, gathering and processing data while communicating with other connected nodes in the network, via radio frequency (RF) channel. The sensor nodes scattered in a sensor field where each sensor nodes collects data and route the data back through a multi-hop hybrid wireless communications. The design of the sensor network is influenced by factors including scalability, operating system, fault tolerance, sensor network topology, hardware constrains, transmission media, and power consumption [6]. The developments is low-cost, low-powered, multifunctional   sensor   have received   increasing attention from various industries [2].

There are two kinds of sensor used in the network. One is the normal sensor node deployed to sense the phenomena. The other is a gateway node that interfaces sensor network to the external world. Sensor such as magnetometer, accelerometer, light and temperature are among the types of sensor being used depending on the application.

 WSNs has been used in high-end application such as radiation and nuclear-threat detection systems, weapons sensors for ships, biomedical applications, habitat sensing and seismic monitoring [4]. Measurable changes are vibration, temperature, sound, motion, pollutants or pressure in environmental conditions [3]. For ultra compact, high data-rate wireless sensor node is constructed using eCAM miniature camera, plugging a VGA video camera to an Eco node. The