WIRELESS TEMPERATURE CONTROLLED FAN FOR HOME APPLICATION

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ABSTRACT

This project entitled 'Temperature Controlled Fan for Home Application' will present the design, structure, development, control and evaluation of an automatic switching the electric fan by using a temperature sensor. Generally, the wireless sensor network consists of spatially distributed autonomous sensors to monitor physical or environmental conditions, such as temperature, sound, vibration, pressure, motion or pollutants, and to cooperatively pass their data through the network to a main location. There were some modification towards the wireless temperature sensor was carried out to improve its performance. The ideas that differ this project from others are by using "intelligent technology" such sense the temperature. Temperature Controlled Fan consists of thermostat or temperature sensor (LM35), LCD (liquid crystal display), push button switches and fan as the output. This temperature control application will read a value from a temperature sensor and determines when to switch a fan on or off according to minimum and maximum temperature limit settings. By set at the push button switches upper and lower limit, these settings can be changed. Then the limit settings and the current temperature are displayed on a 16x2 LCD panel. At the end of project, an automating wireless sensor temperature with 315MHz working frequency is able to transmitted data to the receiver successfully.

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CHAPTER 1

INTRODUCTION

This chapter highlights the type of the RF module that has been used and it specifications during the process of designing the wireless temperature sensor controlled fan. After defining the aim of this thesis, this chapter closes with an overview of the thesis.

1.1 HISTORY OF WIRELESS TEMPERATURE SENSOR DEVELOPMENT

A wireless sensor network (WSN) consists of spatially distributed autonomous sensors to cooperatively monitor physical or environmental conditions, such as temperature, sound, vibration, pressure, motion or pollutants [1][2]. The development of wireless sensor networks was motivated by military applications such as battlefield surveillance. They are now used in many industrial and civilian application areas, including industrial process monitoring and control, machine health monitoring, environment and habitat monitoring, healthcare applications, home automation, and traffic control [1][3].

1.2 TEMPERATURE CONTROL

Temperature control is a process in which the change in temperature of an object is measured and the passage of heat energy into or out of the object is adjusted to achieve the desired temperature [4]. In brief, temperature controlled fan is a smart application and alternative way to interact between temperature and the motor (fan) using the temperature sensor known as thermostat. It is more about automatic control based on the temperature sensor. This home application prevents the energy wasting when it is not hot enough for a fan to be needed. The main ideas is by connecting a temperature sensor to the SK40C circuit, it use to sense the ambience temperature and it will be displayed on the LCD after we set the temperature by using the upper and lower push button. Then the fan will on or off due to the value of the temperature that have been set. The wireless system is also take part in this project where at the receiver (input), the temperature sensor is being