

DESIGN AND IMPLEMENTATION OF A WIRELESS SENSOR NETWORK FOR THE APPLICATION IN A GARDEN

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ABSTRACT

The aim of this project is to design and implement a WSN for the implication of plantation in a garden. The system consists of sensors monitors the temperature, pH, moisture and of the soil that are connected in a star configuration to a PIC based substation. The substation's functions o receive the analog signal from the sensors, converting then to digital and analyze the before transmitting them to a base station through a 433 MHz RF transmitter.

Before the components could me welded to a complete system each were tested to check their operation and output characteristics. The pH sensor, temperature and moisture sensor gives and analog signal that changes by 4.7 mV, 10mV and 30.6mV respectively with a change in one unit by the element.

This project is partially complete as some of the objectives have not been fully archived. Building a sensor network for the detection of moisture, temperature and pH of the soil, building a microcontroller based station to communicate with the sensors in a network and building of the prototype were fully archived while the developing an IR software to display the data received from the sensors was not fully achieved. Successful testing of the PIC to PC interface eliminated the problem of hardware malfunction leaving the problem in the coding. To improve the project a code that can examine the data from the sensors and successful send it to a PC for displaying needs to be written.