ABSTRACT

Transport in major cities are the largest source of air pollution, where 70% of urban air pollution caused by motor vehicle activity. In addition to the fuel and vehicle type, which affects the level of air pollution, including local topography, meteorological factors and chemical reactivity of each parameter. Therefore it is necessary in doing the research to the level of air pollution and temperature in an area.

In this study the authors attempt to gauge the level of air pollution monitoring system using radio frequency and temperature-based website. In designing this tool uses two sensors, the first is a function of air pollution sensors to measure air pollution levels (CO), the second temperature sensor serves to measure the temperature and the control unit using PIC16F877A microcontroller. Data transmission using radio module YS-1020UB, while the computer is used to display the information level of air pollution and temperature using a GUI (Graphical User Interface) with Visual Basic 6 and PHP.

In data transmission, using the FM transmitter and receiver 433 Mhz frequency. Test results showed that the delivery system of measurement data of air pollution and temperature levels can be measured up to a maximum distance without a hitch as far as 600 m. The test results showed all of the sensors can work well, the level of testing temperature readings, with an average error 0.80C. Test the reading level of humidity, which is an average error 5.4% RH. The minimum testing levels of air pollution readings (CO) which can be measured at 0.5 PPM to state clean air and 2.1 PPM for the state of the air is. For maximum air pollution levels depending on the level of air pollution in the area. Obtained from research conducted measurements of air pollution and temperature levels that can be stored in a database and transmitted via radio module periodically to a central computer the destination without having to come to the site of measurement.

Keywords : *PIC microcontroller 16F877A, Air Pollution Sensor, Temperature and Humidity Sensors, Modules Radio YS-1020UB.*