

## **ABSTRACT**

The need of data about our environment around us has drive human to make a device that can be used to measure it. Two of many data that can be measured which figure environment condition is temperature and humidity.

In this final assignment had been planned and implemented a device for measuring temperature and humidity. Sensor which used for measuring temperature and humidity is SHT11. This sensor has some benefits such as only need two signal to works, the output of measurement has been digital, small size, and stable for a long time.

The device consist of two parts which is transmitter and receiver. The direction of communication between these parts is one way only. Periodically data measurement of environment condition is done at transmitter and sent it to receiver. The receiver can be computer or another microcontroller which also made in this final assignment.

The microcontroller which used to manage the works of transmitter and receiver is ATMEGA32. This microcontroller is able to work up to 16 MHz. Another facility is the size of flash program is 32 Kilobyte and SRAM is 2 Kilobyte of size. The main function of ATMEGA32 at transmitter is to control SHT11 and send the result of measurement to receiver. In receiver, the function of ATMEGA32 is to receive byte from transmitter and display the results to a television.

The result can also sent to computer for data logging. For this purpose a program is running in a computer. The program saved every received results into a file.