

ABSTRACT

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PROTOTYPE DESIGN OF A GSM NETWORK BASED WEATHER STATION

(xiv + 63 pages; 34 figures; 10 tables; 3 appendixes)

Weather is and always has been an inseparable and important factor for human's daily life, especially for some people or even companies, for example agricultural businesses or aviation or sometimes can be used just as a personal interest. For whichever reason, this knowledge is needed. In general use, parameters for weather can be divided into many but there are usually three parameters, namely temperature, barometric pressure and humidity. For some people, getting this data from long range sometimes becomes a problem due to the lack of communication network and a method of storing this data.

The goal of this research is to make and simulate the prototype of a weather station system that uses the GSM network and SMS service as the main way of providing the data of basic weather information and storing those data to a database. Also the accuracy of the data from the sensors will be evaluated according to some basic, small, portable and commercial versions of weather stations, thermometers and several other measuring devices.

The evaluation of the prototype shows that the accuracy of the sensors have a range of errors of 1.52% for temperature, 1.79% for humidity, 0.68% for pressure. The accuracy was tested on a controlled environment to evaluate them on different conditions for each sensor and how they perform. The main program have successfully receive data automatically from multiple stations and able to differentiate them. The *database* input program was tested 13 times with 100% success rate.

Reference: 16 (1995-2008).