

WSN-POWER THEFT CONTROL

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Abstract - Wireless Sensor Networks(WSN) has always been a prominent field of interest among many researchers and developers in the World. Electricity has become one of the basic requirements of human being widely used for domestic, industrial and agricultural purposes. This paper presents the design of a simple low cost wireless GSM energy meter. Wireless communication, increasing power theft is a problem that continues to plague power sector across the whole country. the purpose of this paper is to design a system in order to avoid the displeasure for the users from theft, bill irrespective of the use of the electricity due to theft. This paper deals with theft control system in energy meter which results this work is to detect illegal consumers and save electricity

Keywords: Current Sensor, Transciever, Microcontroller, GSM Modem & LCD

1.INTRODUCTION

In order to overcome the problems of the traditional meter reading system, efforts are underway around the world to automate meter reading and to provide comprehensive information to the consumer for efficient use of the utilities. The work uses the GSM network to send ARM data. In a secure and scalable automated meter reading is introduced. The work uses existing local ISPs instead of requiring its own set of proprietary communication infrastructure. The gateway node basically consists of an embedded microprocessor system, based on embedded Linux, and a modem. In remote real time automatic meter reading system that employs distributed structure based on wireless sensor networks, which consists of measure meters, sensor nodes, data collectors, server and wireless communication network. Similar work is introduced in . These systems consist of measure meters, sensor nodes, data collector (gateway), management centre (server) and wireless communication networks based on ZigBee communication technology

2.PROTOTYPE SYSTEM

Such system is not available in the market but it has only manual system .Microcontroller based system is not available yet it's a prototype system what we trying to develop since the microcontroller and GSM is an exciting ,challenging and growing field; it will pervade industry for decades to come. To meet the challenges of this growing technology, we will have to conversant with the

programmable aspect of the microcontroller .Programming is a process of problem solving and communicating in a strange language of mnemonics .The project could be developed significantly faster and much easily using a microcontroller.

3.BLOCK DAIGRAM

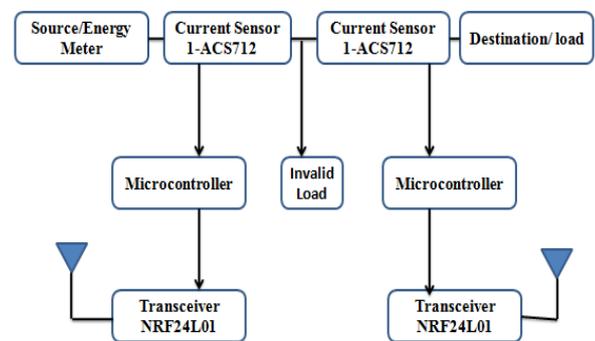


Figure 1 Transmitter Block Diagram of the Proposed System

Consider an example of an apartment system ,Energy meter is the power source which is installed at the ground floor . and the load is the flat /home . two current sensor are installed –one sensor just after the energy meter and second just before the MCB box of the house . current sensor measure the current using the principle of hall effect and gives the equivalent voltage change as the output.The Output voltage change as the output.The ouput voltage is in analog form, so the microcontroller arduino-nano atmega328p converts it into the digital form.The measured current is the transmittd to the main controller using transceiver NRF24L01.

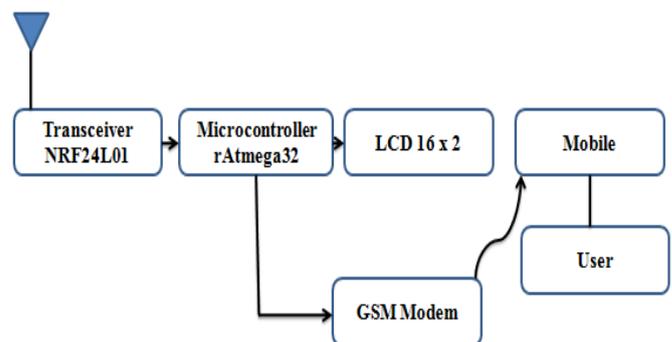


Figure 2 Reciever Block Diagram of the Proposed System

Current sensor 1 measures the transmitted source current & current sensor 2 measures the valid load current. Slave transceiver of both transmits digital data to the parent transceiver of main microcontroller atmega32 which continuously monitor the data received from both the sensor and simultaneously display it on LCD .If any unwanted load is connected between the power line of this sensor then the current measured by sensor 1 will be more than the current measured by sensor 2.This discrepancy is sensed by the main microcontroller and microcontroller commands the GSM modem to send alert message to the subscriber.

4.CONCLUSION

GSM helps to keep costs down,ensure interoperability and Future proof investments made by both utilities and consumers.Microcontroller based system is not available yet it's a prototype system what we are trying to develop since the microcontroller and GSM is an exciting,challenging and growing field.Programming is a process of problem solving and communication in a strange language of mnemonics

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