AUTOMATIC METER READING SYSTEM USING GSM FOR POWER MEASUREMENT AND BILLING

[1]NIGADE TEJASVI, [2]MANE SHITAL, [3]GAJARE ASMITA, [4]Prof. Dixit S. B.

S.V.P.M's College of Engineering Malegaon (BK)
Baramati, Pune, 413110

***Abstract*: Main object of our project is to design Automatic power meter by using GSM. In this project we also provide automatic billing system. In this system user will be having small unit including of controller, GSM, LCD,RFID. GSM is used for communication purpose and RFID used for billing process. For integrating different parts of the system we have to properly understand the working of various parts to be integrated together.**

***KEYWORDS*: GSM Module, Microcontroller, MAX232, buzzer, LCD display, mete, RFID, relay.**

I. INTRODUCTION

For reducing the human efforts we develop different technologies. Electricity is essential for day today life, so proper utilization of it must be done. The conventional method of electricity billing system is so time consuming and wastage of efforts, because many employs working on this billing process. They come to the meter place and note down the meter reading from all house building to building. In this system employee itself note down reading so many errors are occur in conventional system. The another disadvantages of conventional system user need to go to the electric board office for pay this bill. When bill is not paid then again employee come to the place of meter and disconnects the power supply. This process is time consuming

We remove all this disadvantages in current system. Meter reading is done automatically also billing system is done. When the bill is unpaid user get warning for pay the bill my message. After bill is unpaid then disconnect power supply automatically. When user pay bill then system automatically restart. When we compare this two system then we understand current system is more advance reduce human efforts.

LITERATURE SURVEY

This system is smart power measuring device which is being used for measuring gas, water, electricity consumption since it has many advantages over traditional mater system .A low cost system is designed using GSM (2)but for installation it takes more charges & not more reliable system. An easy system which is based on microcontroller which is reliable meters reading system. One more system is based on power line communication(1) This system is also more costly due to hardware required.

The first AMR system was developed in 1974 in USA. This system created with combination of GPRS & PLC. The connection between collectors & concentrators is done using PLC & concentrator connected to main station via GPRS

The GSM based automatic meter reading system is more efficient & reliable than other system. In this system automatic billing & notification through the use of GSM network (3).

ANTISMUGGLING SYSTEM FOR TREES IN FOREST USING ADXL SENSOR AND ZIGBEE MODULE

In that units three controllers, Zigbee modules and MAX232 are used. So the system becomes more complicated and also this system contains the flex sensor. The drawback of using such sensor is that it gives the accurate reading when it is bend.

This drawback can be avoided by using ADXL sensor which is 3-axis accelerometer. So we use this sensor and also minimize the circuit by reducing these three units into two units.

III. PROBLEM DESCRIPTION

Traditional meter has many disadvantages such as the error in taking reading inaccuracy in reading, delayed work, reading affect in external condition. This system will required huge man power.

This problem is reduced in our system. This system provide automatic generate reading and billing process. This system is more reliable and cost effective. in this system reduce the reading mistake and good real time. This technique send the bill of the customer directly to the cell phone of customer as an SMS and also he pay the bill via the meter itself with the swapping of debit card against the card reader followed by his secret code.

U. SYSTEM BLOCK DIGRAM

This is the block diagram of automatic meter reading system . This shows the overall view of the user unit and office unit circuit. The blocks connected here are LCD display, GSM, RFID, Power supply, MAX232, relay, buzzer etc,.

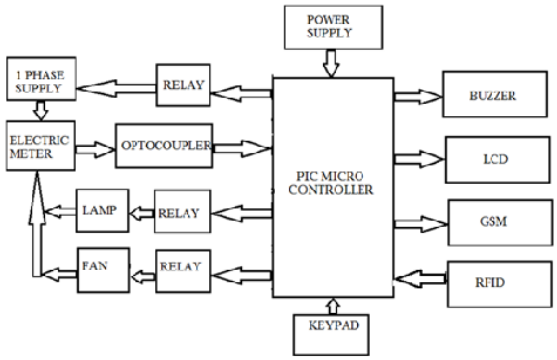

Fig: Block diagram of user unit

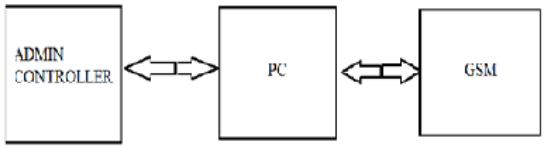

Fig 3.2 : Block diagram of office unit

LCD 16*2:-

The 16 by 2 LCD that means that it can display the two lines containing16 characters each. low power supply (2.7V to 5.5V)It can display numbers, characters and graphics, whereas LED displays are limited to numbers and few characters.LCD has its own processor, so there is no need for refreshing it through microcontroller.

MAX 232:-

MAX232 is purposed for application in high-performance information processing systems and control devices of wide application.

Supply voltage:-5v .Current 10mA supply.

GSM:-

GSM modem-RS232 it is built with dual band GSM/GPRS SIM900A. It having frequencies of 900/1800 MHz The RS232 cable is used to interface with GSM which allows us to connect microcontroller as well as PC with RS232 chip through MAX232. GSM modem does not have keypad to interact. It accept commands and acknowledges for those. Every command start with "AT". AT stands for attention. In our simple project, programs wait for mobile number to be entered so that it instruct the modem to send message using a sequence commands.

VI. CONCLUSION

The main aim of this project is to make an automated system for meter reading and billing. This system is efficient, effective& reliable .Automatic power meter reading , billing and notification through GSM reduce human efforts.

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