Unit Monitoring By Using IOT

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Abstract: The information of this paper is shows the design based on ATmega328p micro controller and also has the energy meter execution using the concept of IoT. The billing information is continuously send to the consumer by using Internet of Things and monitored by the Electricity Board section. With the help of IOT based energy meter, human effort is reduced and also increase meter reading accuracy and saves time as well as money. The user makes any misuse of energy meter then power goes off automatically through the relay. Design and performance of the paper is mainly based on Micro controller and IoT technology.
Keyword: ATmega328p, GSM Modem, Wi-fi module, LCD, energy meter.

I. INTRODUCTION

Now a days, The world is continually facing many environmental problems everywhere. The main problem is energy crisis,To over come this problem we have suitable system to control and monitor is the only solution. We are providing an ideal solution i.e concept of IOT (internet of things).

In energy meters, there is no evidence of tempering of meters, IOT based energy meter is more reliable than present meters. IOT based energy meter having the unique features and it saves the electricity from Thefting which is illegal. Number of units the consumer consumed is stored in web page(think speak) by wi-fi module and send SMS through GSM modem. Consumer Can get data of energy consumption by using their IP address on their web page (think speak). If the meter is set at particular unit it will noticed to the consumer through GSM modem. Finally, the monthly bill will be sent to the consumer also to the service provider.

II. BLOCK DIAGRAM

This fig shows block diagram of system. In this system regular monitoring and recording the data of energy meter is done. This is execute by means of a micro controller (AT mega 328)
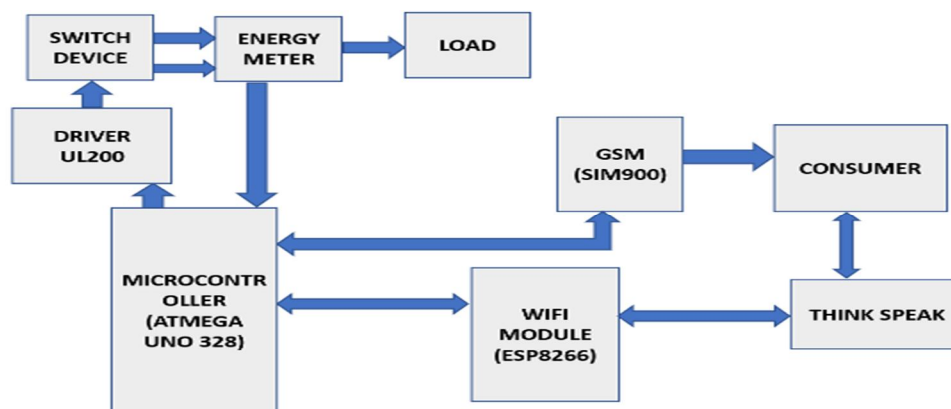

Fig- Block Diagram Of System

Micro controller(ATmega328)is regularly monitor the units of energy meter and display onLCD.The high-performance 8-bit AVR RISC-based microcontroller combines 32KB.ATmega328p has 28 pins in total. GSM Modem SIM 800 module support quad-band GSM network and it is available for SMS data receiver. GSM modem communicates with micro controller via ATmega328. It has built-in level translation, so it can work with microcontroller of higher voltage than 5V default. A-GPS technique that gets position by mobile network.

Thing speak is an open source internet of thinking application which act as a platform between Wi-Fi module and consumer. Thing speak we collect the data from Wi-Fi module and converted into the sprint form and display on the channel.ESP8266 Wi-Fi module has capability of either hosting an application or offloading all Wi-Fi networking functions from another application processor. Wi-Fi module is pre programmed with a micro controller command set its meaning, it can simply attached with micro controller devices

III. RELATED WORK

We are go through many published literature and already completed work. We can say that the researches have done a critical work on the PCB circuits and Internet of Things (IoT).

IoT based meter would refine the overall efficiency of the present system and would help in inspecting the unwanted losses of power in different area.

IV. EXISTING METHOD

The current system of energy meter gives feedback to the user in the form of bill with specific amount at the particular date every month. Consumer can able to know the units consumed by seeing their electricity bill. Also It requires huge manpower to take the readings as well maintenance. The major drawback in this system is tampering which causes energy crisis.

V. PROPOSED METHOD

In this method consumer can able to know the energy consumption time to time so they can manage their energy uses. This method is provides two way communication between consumer and provider and also other functions. if the consumer did not pay the electric bill the energy supply should be cut from the distributor side and once the bill is paid the energy supply will be connected.
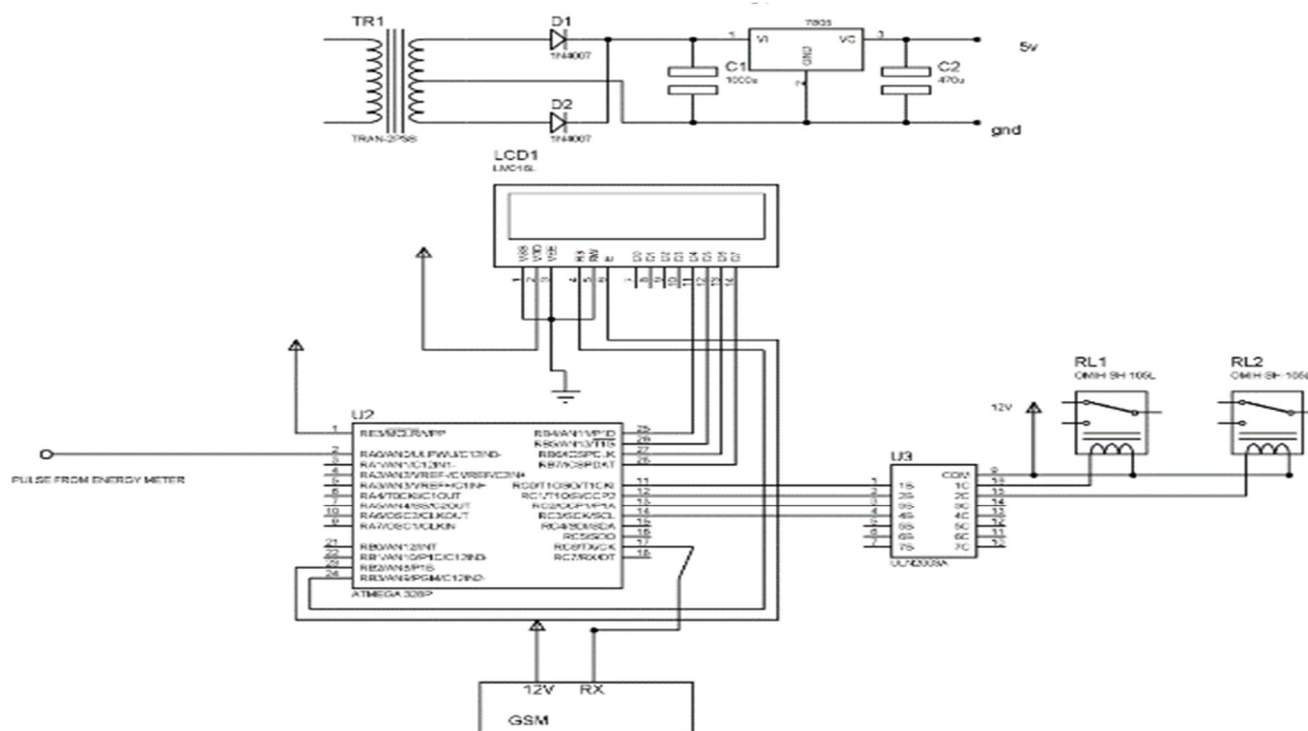
VI. CIRCUIT DIAGRAM

Fig-Circuit Diagram

VII. FUTURE SCOPE

This system Converting to home automation will prove an emerging advantages to IoT technology. Using this technology in smart grid can provide more efficient power saving and power supply. IoT technology coupled with smart meters and smart devices can help in the upbringing the cities into smarter and developed cities.

VIII. CONCULSION

This system ofEnergy meter is designed to get sms metering, tampering detection and supply disconnection process. Due to method relation between consumer and distribution can be make more transparent and reliable energy crisis reduces. It make the energy unit reading easy and accurate, so wastage of energy can not be happened. Energy consumption calculation based on connecting of calibration pulses from meter. It avoid human involvement and send effective meter reading also prevent billing mistake.

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