International Journal of Advance Research in Science and Engineering
Volume No.06, Issue No. 10, October 2017
www.ijarse.com
IJARSE
ISSN: 2319-8354

INTELLIGENT HOME EMERGENCY SYSTEM INCLUDING RENEWABLE ENERGY BASED ON WIRELESS TECHNOLOGY

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ABSTRACT

The main aim of this project is to watch the usage power by victimization the energy meter. usually we have a tendency to don't knowledge power we have a tendency to square measure victimization the daily and the way abundant worth it's up to month ending. however during this project we can we will we square measure able to knowledge power we have a tendency to are victimization a day or each hour. thus we will scale back the usage of power by turn out the hundreds employed in the homes or trade. In this project the energy meter sends the information for each day or each one hour by victimization the RTC, thus we will management the usage of the facility by turn out hundreds. during this project user will management hundreds with mobile through the Wi-Fi communications and internet primarily based things. Here we will observe the daily usage of the facility and worth by victimization the RTC, if the electricity load was high we have a tendency to turn out the spare hundreds within the home and that we will management any load with the net of things and that we will operate remotely. during this project we will see the each hour the usage of the facility and worth for that power , the usage of the sends to the laptop through the wireless local area network technology and also the if the facility usage was high we will turn out the lights by causation the message the to the controller through GSM technology. This project uses regulated 5V, 500mA DC power provide. 7805 could be a 3 terminal transformer is employed for voltage regulation. For the microcontroller and PIR sensing element we'd like 5V Dc power provide.

Keyword's :- Lpc2148,smart meter, relays Gsm Module .

I. INTRODUCTION

This introduction this project we can square measure able to knowledge power we have a tendency to arevictimization a day or each hour. Those we will scale back the usage of power by turn out the hundreds employed in the homes or trade.In this project the energy meter sends the information for each day or each one hour by victimization the RTC, thus we willmanagement the usage of the facility by turn out hundreds. during this project user will management hundreds with mobile through the Wi-Fi communications and internet primarily

based things. Here we will observe the daily usage of the facility and worth byvictimization the RTC, if the electricity load was high we have a tendency to turn out the spare hundreds within the home and that we will management any load with the net of things and that we will operate remotely. during this project we will see the each hour the usage of the facility and worth for that power

II. PROPOSED SYSTEM

These projected system is to observe the usage power by victimization the energy meter. Commonly we have a tendency to don'tknowledge power we have a tendency to are victimization the daily and the way abundant value it's up to month ending. Howeverduring this project we can we will we are able to knowledge power we have a tendency to are victimization daily or each hour.Therefore we are able to cut back the usage of power by turn out the hundreds utilized in the homes or trade. During this project the energy meter sends the information for each day or all hour by victimization the RTC, therefore we are able to management the usage of the ability by turn out masses during this project user will management masses with mobile through the GPRS communications andinternet based mostly things. Here we are able to observe the daily usage of the ability and value by victimization the RTC, if the electricity load was high we have a tendency to turn out the spare masses within the home and that we will management any load withthe web of things and that we will operate remotely.

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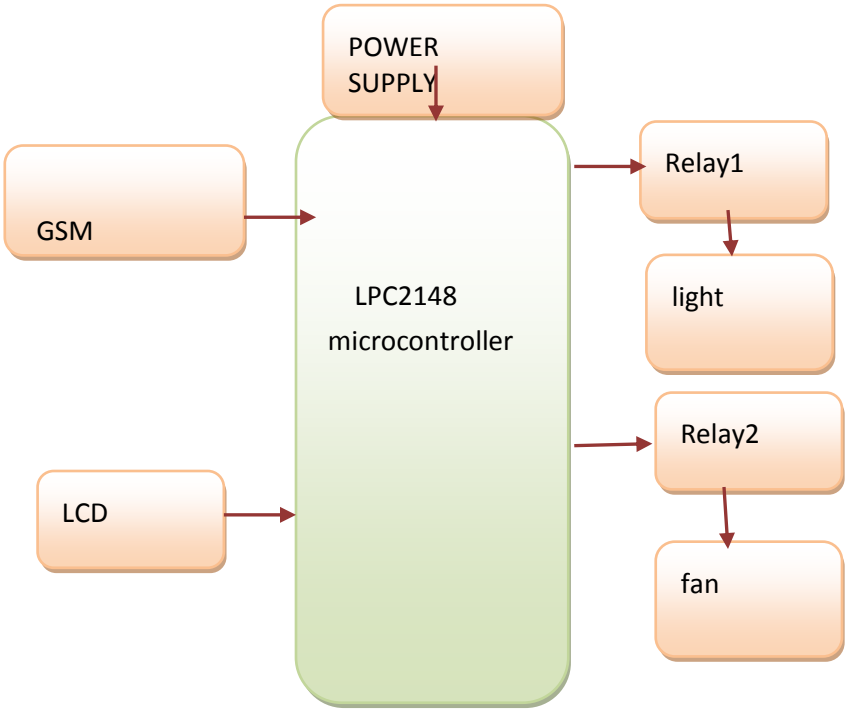


Fig 1:block diagram

About lpc2148 microprocessor:

The LPC2148 microprocessor belongs to ARM 7 family. The LPC2148 board is a 32 bit ARM7TDMI-S microprocessor with real-time emulation. It consist of 8 kilobyte to 40 kilobyte of on chip static RAM and 32kb to 512kB of on chip flash memory, the micro processor works with 12 MHz crystal frequency The processor also support different protocols suite such as ISP (In System Programming),10 bit ADC affords variable analogue output , 32-bit timers with external event counter (with 4 capture and match channels).The processor also has RTC inbuilt thus extra hardware for the timer is not required.lpc2148 has 2 serial terminals which is called as UART0 and UART1.The same controller also has SPI and I2C bus with a speed of (400kbit/s).

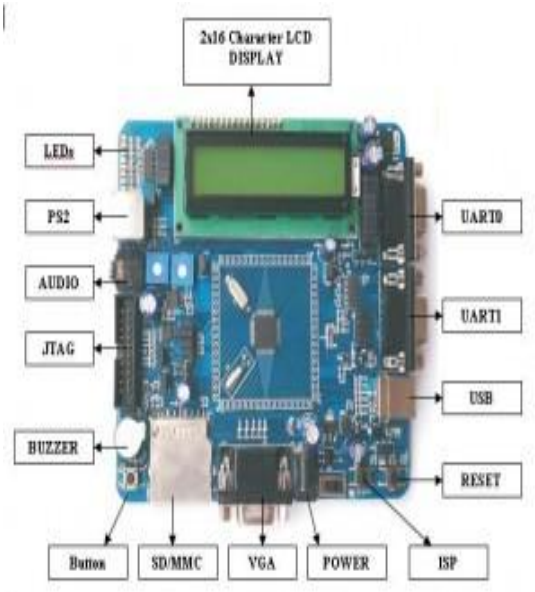


Fig 2ARM7 Lpc 2148 Development Board

The development board for the lpc2148 is shown above is used in the project which is interface with the GPS and RF module.

Aboutsim 900 GSM module:

The module shown in the above fig is SIM 900D is a powerful GSM module for SMS and call control. the manufacture of the module is SIMCOM which presents an ultra compact and reliable wireless module –sim900d . the module is a complete quad-band gsm/gprs module with a SMT type and is designed with a powerful single-chip processor . the device is integrated with ARM926EJ-S Core , allowing the customer to have small dimension and cost-effective solutions . the same module is also compatible with SIM340DZ. The same module delivers GSM/GPRS 850/900/1800/1900MHZ performing for voice, SMS, data, and Fax in small form factor

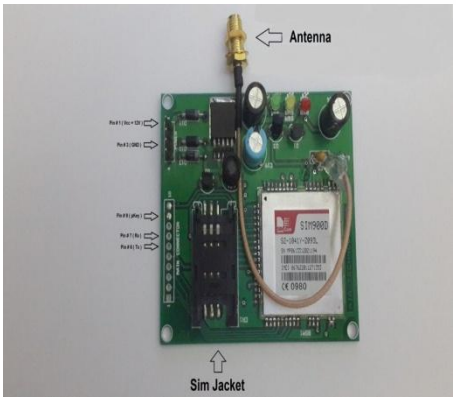


Fig 3.SIM 900d gsm module

Smartmeters:

Smart Meters are new electrical, gas, and water digital meters that send usage info via radiofrequency electromagnetic wave (RF) to a utility company. they're primarily referred to as AMI (advanced metering infrastructure) or AMR (automated meter reading) meters, andeven have different proprietary names (for example, ERT, AWS).In abundant of Calif., electrical and gas sensible Meters are wireless.Sensible Meters may also be wired. The meters collect our energy usage info in terribly elaborate format and transmit that info on to the utility company each day, throughout the day. Most electrical meters use a mesh network system within which the meters relay the energyinfo from meter to meter till it arrives at a collector meter, that then sends the knowledge on to associate degree antenna, typicallymounted on a utility pole. From there, it's transmitted to the utility company. Wired sensible Meters send the usage knowledge via electrical lines orphone lines. Electrical sensible Meters have a second antenna to "talk" to new sensible appliances and devices. this can be referred to as the house space Network (HAN). These appliances and devices, like thermostats, air-con units, refrigerators, laundry machines, dishwashers, and numerous sensing units are outfitted with 2-way transmitter/receivers that send to and receive info from the sensible Meter throughout the day.

Fig 4: smart meter

Relay:

A relay is associate degree electric switch that opens and closes below the management of another electrical device. within the original kind, the switch is operated by associate degree magnet to open or shut one or several sets of contacts. A relay is ready to regulate associate degree output circuit of upper power than the input circuit, it are often thought-about to be, during a broad sense, a variety of associate degree electrical electronic equipment.

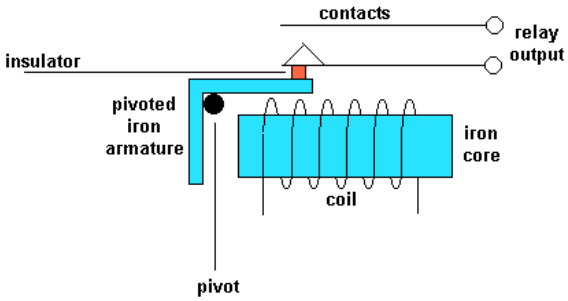


Fig 5: Relay

IV. SOFTWARE DESIGN

In this proposed project, we are using LPC2148 microprocessor and need to use the following software equipment to program for it.

1. Keil uVision 5.
2 Flash Programmer.

The Keil micro Vision is an IDE Embedded c Programming Language. In this IDE, we need to import all the utilities and libraries according of the controller. This IDE is very less difficult and is user friendly way to apply. It consists of all the C/C++ compilers, assemblers and debuggers in it. Here we need to generate a hex file to run the processor. The hex file consists of only binary numbers which is dumped in to the micro processor.The flash magic is the programming software. The C/C++ software is written in IDE may be processed into Hex documented i.e. Hex file. By using the same hex file into the microcontroller and perform the task with application

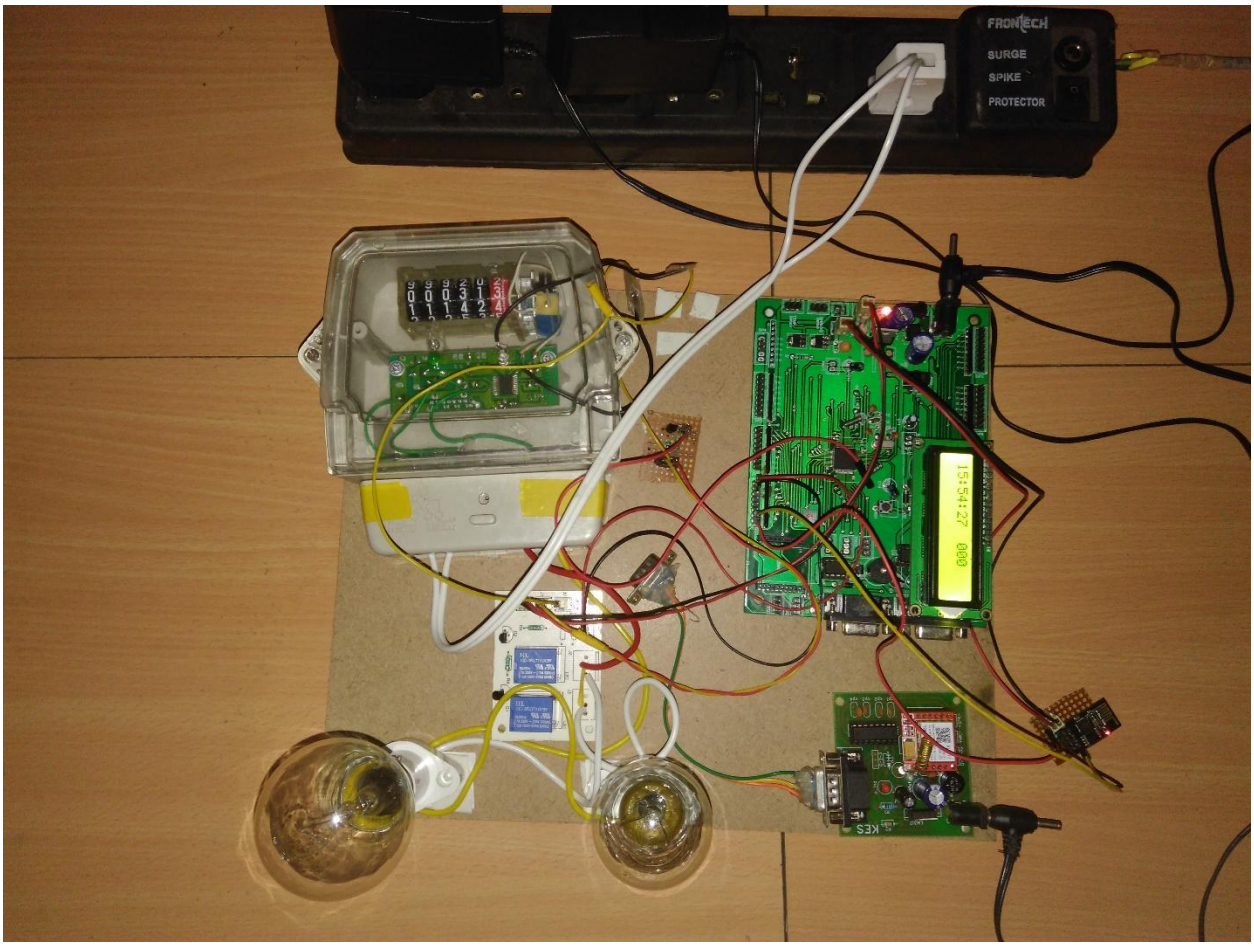
V. WORKING DESCRIPTION

The most objective of the project is to watch the sensor information and conjointly transmit the data through local are a network technology.In this project the microcontroller plays avital roleto perform the desired task.The microcontroller we used in this project is ARM7 (LPC2148) inbuilt features such as inbuilt programming ADC,SPI,I2C, PWM,and RTC.These smart meter interfacing AC power supply receiving voltage to calculate every day/hours. Its using home application connecting relay the same time we are connecting GSM module and we write the code in such manner to communicate with the microcontroller and perform the specific task.TheGSM module is interfaced with microcontroller which is used to measure the corresponding data and monitor the

information through messages. The system can also view the data from a mobilephone,

VI. RESULT

Here the results are shown our project "**Intelligent home emergency system including renewable energy based on wireless technology"** These smart meter interfacing AC power supply receiving voltage to calculate every day/hours. Its using home application connecting relaythe same time we are connecting GSM module and we write the code in such manner to communicate with the microcontroller and perform the specific task. The GSM module is interfaced with microcontroller which is used to measure the corresponding data and monitor the information through messages. The system can also view the data from a mobilephone, hardware connation successfully.



VIII. CONCLUSION

Its using home application connecting relay the same time we are connecting GSM module and we write the code in such manner to communicate with the microcontroller and perform the specific task. The GSM module is

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