ISSN: 2394-7659
IMPACT FACTOR- 2.789

IJERMS

International Journal of Engineering Researches and Management Studies

SMART RATION CARD AUTOMATION

Shinde Sakshi*[1], Malgunde Archana[2], Somoshi Sonali[3] & Somoshi Tejal[4]
*1, 2, 3 &4Research Scholar, Department of Electronics & Telecommunication Engineering, Jaihind Polytechnic, Kuran, India.

ABSTRACT

Now a day, ration card is very important for every home &use for various fields such as family member details, to get a gas connection, it acts as an address proof for various purposes. For that we are selecting this project is Smart Ration Card Automation With the help of this project we intend to improve the efficiency of ration card system by avoiding activities such as inaccurate weighing of materials Also, we have attempted to make a network in which the buyer will get a message whenever he is unable to remain present to get the ration stock for the month. This system uses GSM & RFID technologies.

Keywords- RFID, GSM, LCD&89c51 .

1. INTRODUCTION

In this section, we are going to provide an introduction about automatic rationing for public distribution system using RFID & GSM module to prevent food adulteration, inaccurate weight and irregularities. This automated system we replace the conventional ration card by smart card this card is RFID (Radio frequency identifier). The Government of India having a(UID) Unique Identification) number i.e. AADHAR number, Which contains all user information such as name ,address ,contact number , bank related information no of family members etc. for every person in country. Using this AADHAR number and contact details, the government sends a message (SMS) to the head of family member. The message is about data of rationing material is available or not. Regarding quality or quantity of ration. . The message is any regional user friendly language.

People who are accessing the ration shop for subsidies in the cost of products would be allotted a smart ration card (electronic ration card). This card is RFID (radio frequency identifier) based card containing all information about the user AADHAR number , name ,contact, date of birth ,no of family member , gender, type of card i.e. (yellow, white , orange) , no of gas etc. the automated rationing system installed at the ration shop would having four sub sections i.e. smart card interfacing with microcontroller , microcontroller and display, GSM interfacing with microcontroller to send a message to government, and PC to microcontroller via RS-232.

The person would have to swipe the card on system placed on ration shop counter. After that for security identification and misuse, the system would ask the password i.e. our AADHR last four digits. With correct entry we can see our type of card and then number of gas at last we see details about our ration.

ISSN: 2394-7659
IMPACT FACTOR- 2.789

IJERMS

International Journal of Engineering Researches and Management Studies

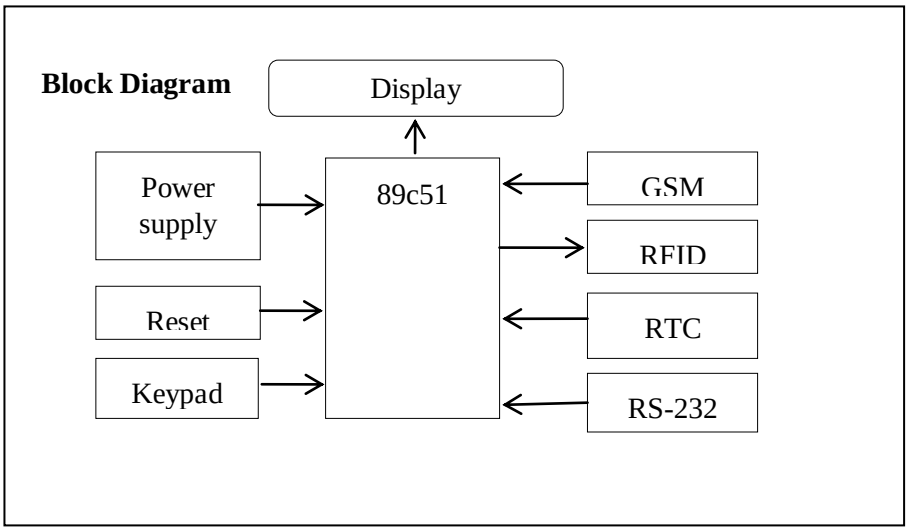

Fig.1 Block diagram of Smart Ration Card Automation.

2. MICROCONTROLLER (89C51)

89c51 is small chip computer it perform operation in one microsecond so, is called as microcontroller. Microcontroller is 40 –pin IC. The 89c51 is 8 bit microcontroller having a 4kb Flash memory & programmable Erasable read only memory with low power high performance CMOS technology.The operating frequency of 11.0592 MHz.

It has 4 -8bit parallel Input-Output ports (I/O). It has 2-16bit Timer. Port 3 is Multifunction port through the transmit and receive data. The 89c51 operates on +5V.Microcontroller consume total current is 71 mA.

Fig. 2 Microcontroller (89c51)

3. GSM

GSM stands for Global System for Mobile. GSM or GPRS module is used to communication between computer as well as mobile.

It is a standard developed by the European telecommunication standard institute to describe protocols for 2G digital cellular network used by mobile phones.GSM is digital mobile telephony that is widely used in communication .GSM operates at either a 900 MHZ or 1800 MHZ frequency band. A GSM modem is a specialized type of modem which accepts a SIM card & operators over a subscription to a mobile operator just like a mobile phone.

ISSN: 2394-7659
IMPACT FACTOR- 2.789

IJERMS

International Journal of Engineering Researches and Management Studies

4. RFID

Fig.3 RFID MODULE.

RFID stands for Radio Frequency Identifier .It is the wireless technology to identify the thing, person and animal. RFID uses the electrostatic or electromagnetic waves .it consist of RFID tag and Reader. A bidirectional communication between RFID Tag &RFID Reader is occurred, it is small electronic device that consist of small chip and antenna. RFID is also called as DSRC (Dedicated Short Range Communication.).In RFID the power supply is inbuilt i.e.it does not required power supply.

5. RTC

RTC stand for Real Time Clock. It provides the time day and date information .it works 24 hours mode, it stored the 1-byte i.e.8bit data format. It works on frequency is 500 kHz or 2 MHz it uses a serial input output sending method to interface with 89c51 microcontroller.

Power supply

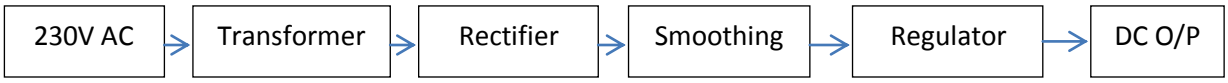

Fig.4 Power supply

Microcontroller required regulated Dc Power supply . It convets high AC voltage into Regulated Dc voltage .It contains Transformer, Rectifier, Filter ,Regulator IC.

Transformer - steps down high voltage AC mains to low voltage AC.
Rectifier- converts AC to DC, but the DC output is varying.
Smoothing - smoothest the DC from varying greatly to a small ripple.
Regulator- eliminates ripple by setting DC output to a fixed voltage.

6. MAX-232

It is 16 Pin IC .It used to convert the TTL\CMOS logic levels to RS-232 logic level during serial communication of microcontroller with PC. The microcontroller operates at TTL logic level i.e. 0to5V &the serial communication in Pc operates on RS-232 standards i.e.-25v to +25v which is difficult to make a direct connection between them to communicates with each other .The main function of MAX -232 is to match the voltage level.

7. HARDWARE MODULE

- Microcontroller 89C51
- RFID
- Power Supply or Power Adapter

ISSN: 2394-7659
IMPACT FACTOR- 2.789

IJERMS

International Journal of Engineering Researches and Management Studies

- Level Converter MAX 232
- GSM MODEM
- SIM
- RTC

8. SOFTWARE MODULE:

- Keil u Vision IDE
- Flash magic
- Proteus
- Dip trace

9. Circuit diagram

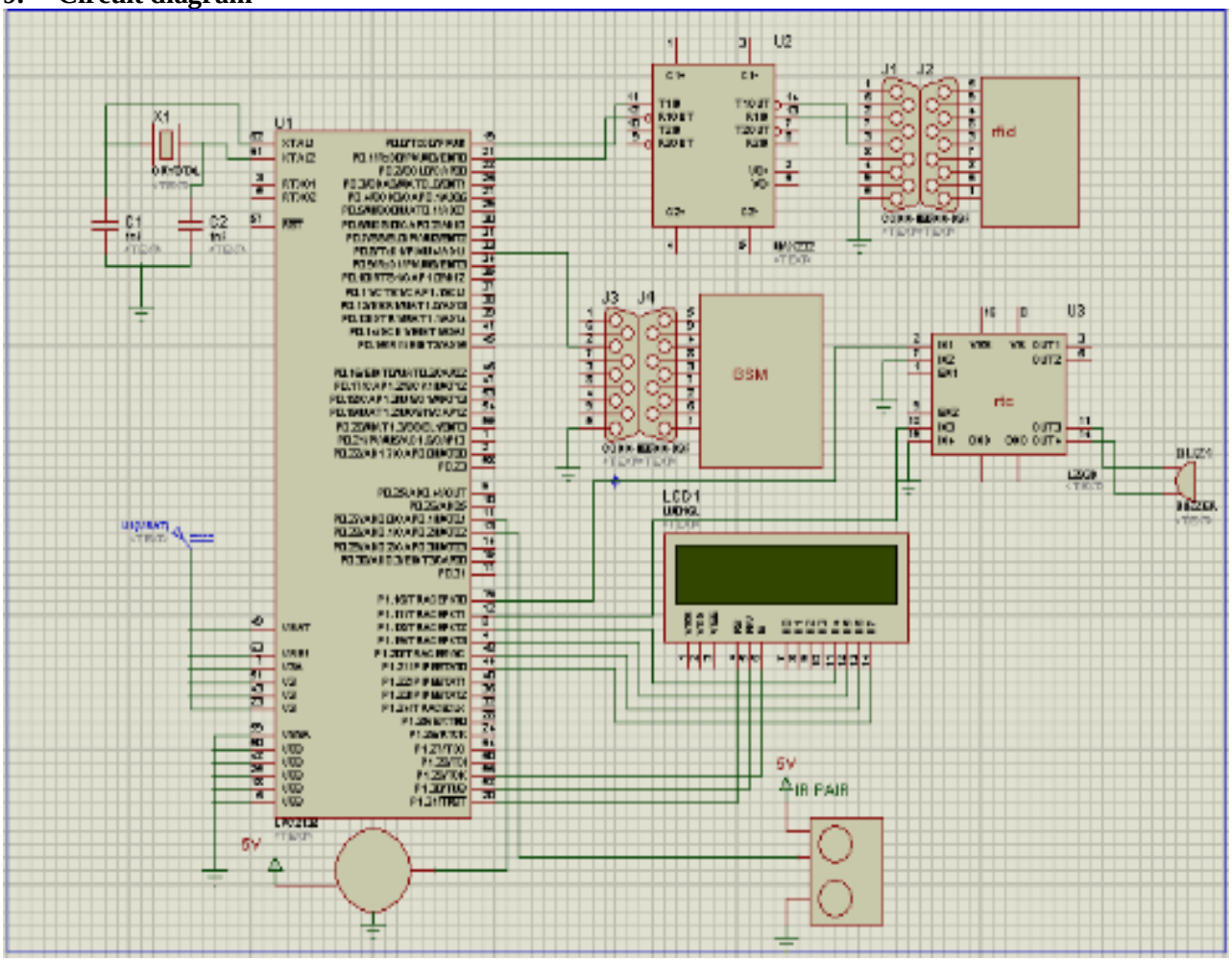

Fig.5Circuit diagram.

ISSN: 2394-7659
IMPACT FACTOR- 2.789

IJERMS

International Journal of Engineering Researches and Management Studies

Circuit diagram working

The circuit diagram of Smart ration card as shown in figure which shows the connection between microcontroller to component such as GSM module, RFID, LCD display, RTC module &Power supplyetc. and shows way in which they are connected to one another. transmitting pin of RFID reader is connected to the pin 2 RX pin to the microcontroller that the reader transmit 12-bit hex code to the microcontroller and microcontroller transmit the these hex code to the GSM by connecting transmitting pin 1 of microcontroller (TX pin) of microcontroller to receiving pin of GSM which helps in sending the message about the delivered ration on register number &VCC pin is connected to 5V power supply while the ground pin is grounded.

Flow chart

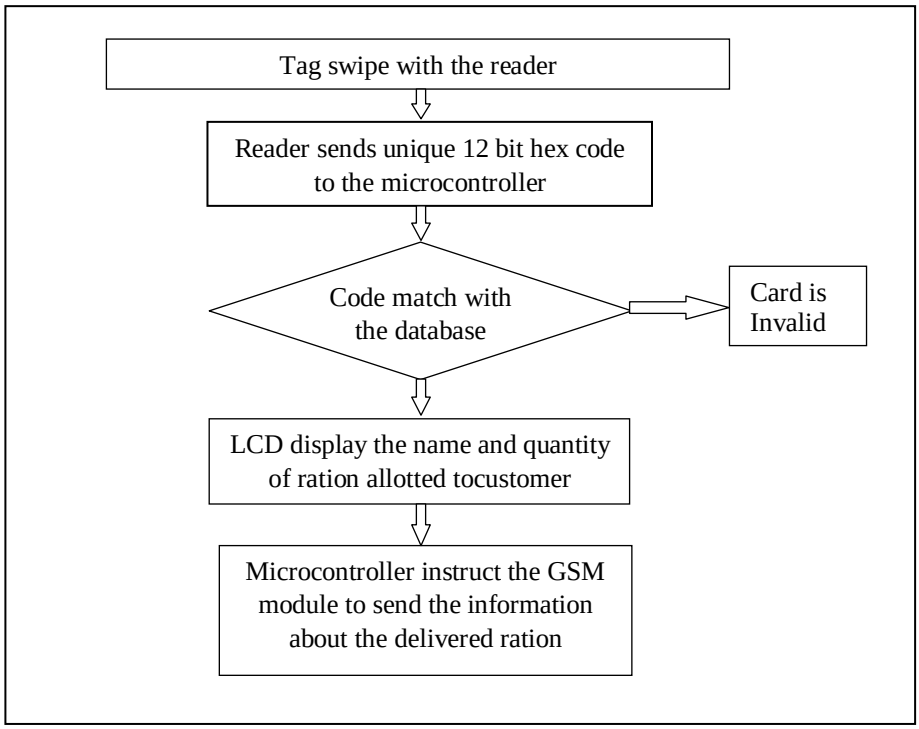

Fig.6 Flow chart of smart ration card

10. ADVANTAGES

1. This system is fully automated and it does not require any human interaction except setting the initial time setting.
2. Saving time.
3. This system is avoid irregularities in ration shop
4. Decreased corruption in Government when these systems become automated.
5. This system is fully automated thus reduce humanefforts.

11. FUTURE SCOPE

1. GPS modems are used for online stored computer system.
2. We can provide AADHAR linking process.

ISSN: 2394-7659
IMPACT FACTOR- 2.789

IJERMS

International Journal of Engineering Researches and Management Studies

3. We can provide automatic billing system.
4. Whole data store in PC.
5. We can provide finger identification system.

12. CONCLUSION

In this system, we have constructed a Smart Ration Card with the help of GSM & RFID technology. Used this system we save our time & irregularities of old ration system.

13. RESULT

1. In this process we use the KEIL Version4 software to run the coding and idea up the code into the Controller.Then the ISIS schematic capture is to made-up hardware modules and provide the Output.
2. These system based on radio frequency identification of customer .each customer provided RFID card i.e. electronic card or smart ration card.
3. We can send these changes account information to customer's mobile using GSM module.

Fig.7 Result diagram for project

REFERENCES

[1] *R. Ramani, S. Selvaraju, S. Valarmathy, P. Niranjan, "BankLocker security System Based on RFID and GSM Technology",International Journal of Computer Applications (IJCA) (0975 – 8887)Volume 57– No.18, November 2012.*

[2] *Pravada P. Wankhade and Prof. S. O. Dahad, "Real Time Vehicle locking and Tracking System using GSM and GPS Technology-An Anti-theft System", International Journal of Technology and Engineering System (IJTES): Jan March, 2011.*

[3] *Rajesh C. Pingle and P. B. Borole,"Automatic Rationing for PublicDistribution System (PDS) using RFID and GSM Module toPrevent Irregularities," HCTL Open International Journal ofTechnology Innovations and Research, vol 2,pp.102-111,Mar 2013.*

[4] *Sunrom Technologies, Datasheet - GSM Modem - RS232 – SIM900D(Available online at: http://www.sunrom.com/gsm-and-gps/gsm-modem-rs232-sim900)*

[5] *WWW.elecrtonicproject.com*

[6] *Muzdy book for assembly.*

ISSN: 2394-7659
IMPACT FACTOR- 2.789

International Journal of Engineering Researches and Management Studies

[7] Kumar Chaturvedula U.P, "RFID Based Embedded system for vehicle Tracking and prevention of road accidents", international Journal of Egg. Research and Technology (IJERT), Vol. 1 Issue 6, August-2012, ISSN

[8] S. Srinivas, N. Selvaraj, C.S.P. Rao, "Consumer Information System for Public Distribution System (PDS) In Warangal District, Telangana State", International Journal of Management and Commerce Innovations ISSN 2348-7585 (Online), Vol. 3, Issue 1, pp: (347-365), Month: April 2015 – September 2015