

Digital Rationing – Automatic Material Provision and Deceit Control Using RFID & GSM

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Abstract: Ration card now a days is essential for every home and are used for various field such as getting gas connection, it act as address proof for various purposes etc. All the people having a ration card can buy various materials (rice, kerosene, etc) from the ration shops. But in this system there are two draw backs, first one is weight of the material may be inaccurate due to human mistakes and secondly, if the materials are not bought at the end of the month, they will sell it to others without any intimation to the government for their own benefit. We propose an automatic ration materials distribution based on GSM (global system for mobile) and RFID (radio frequency identification) technology instead of ration cards. To get the materials in ration shops need to swipe the RFID tag against the RFID reader, and then controller check the customer codes and details of amounts for the card and hence purchase can be made. After receiving materials controller send the information to government office and customer through GSM technology

Keywords: RFID tag, RFID reader, GSM technology, keypad, level converter, driver circuit, motor.

I. Introduction

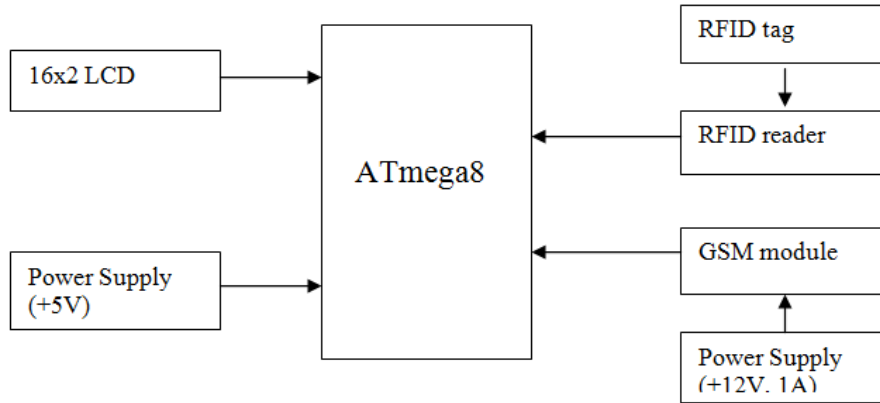
Ration distribution system is one of the largest government's economic policies in India. Its main motto is to provide food grains (sugar, wheat, rice, kerosene etc.) to the people at affordable rates. The network of the ration shops is spread all over in India to provide food security to the people. This distribution of ration is controlled and monitored by central government, along with the state government. But it has so many limitations.

Most of the ration shopkeepers keep fake ration cards with them. Due to fake ration cards, the dealer receives the extra ration from higher authority and he sales it into the open market. The dealer may not provide a sufficient amount of food grains to consumers. Most of the time people are not aware of the availability of ration in ration shop. The dealer may sale ration at higher rates than recommended by the government or he may do wrong entries in register. In this way, in the current situation we are facing problem of corruption in public distribution system. There is no such effective system through which government gets acknowledgement of consumption of food grains by people.

In our project we are using RFID tag PIC microcontroller, GSM (Global System for Mobiles), keypad, LCD display, level converter, power supply unit and relay driver circuits. By using this we can provide a reliable and advanced ration distribution system. By following this system we can save more time compared to the existing system.

II. Existing System

In the existing system the RFID tag is swiped against the RFID reader. Now the reader sends 12 bit hex code to the controller. If the code matches with the data base then the card is considered as valid and the LCD displays the name and quantity of materials allotted to the customer. The material distribution will be done manually and the message will be sent to the customer. If the code mismatches then it displays as card invalid.

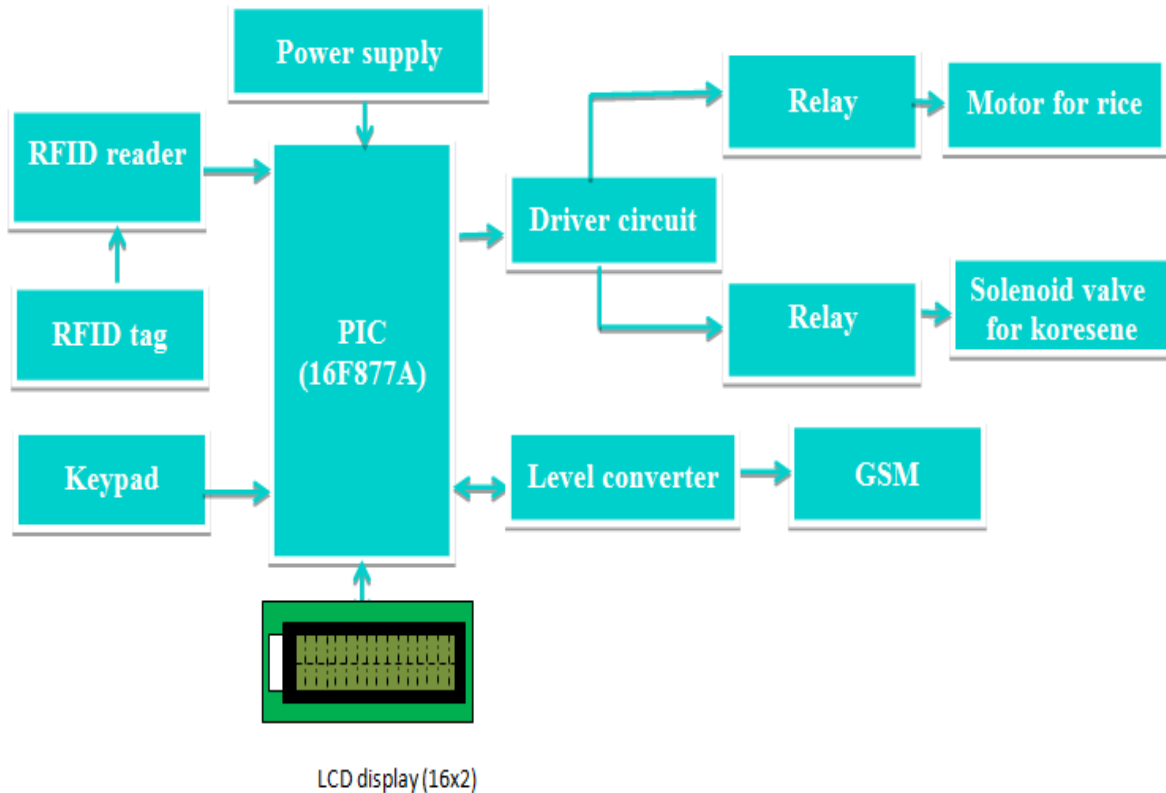


III. Proposed System

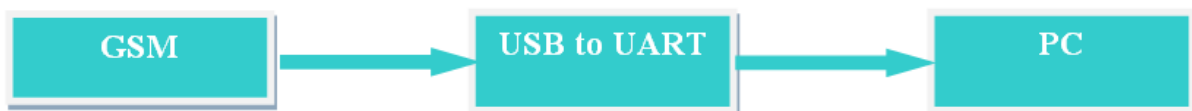
In our project we propose the automation system for distribution instead of manual distribution. First the tag is swiped against the reader then, controller asks for user id. Once the id is matched controller asks for password. If the password matches then the successful purchase can be made as it displays the amount and quantity available for their card. The material distribution is made automatic. Driver circuit is used for controlling the motor and reader. If motor is on materials will be delivered out. After every successful purchase message will be sent to the customer and the purchase made for the whole day will be sent to the head office. This system over comes the disadvantages in the existing system.

IV. a. Block Diagram

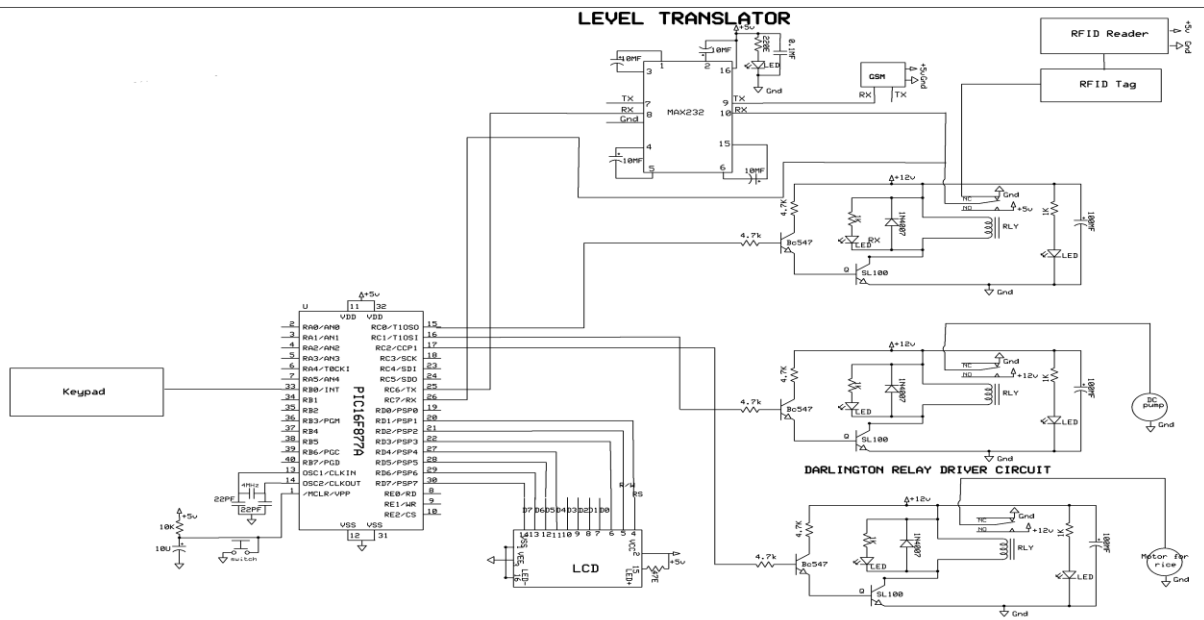
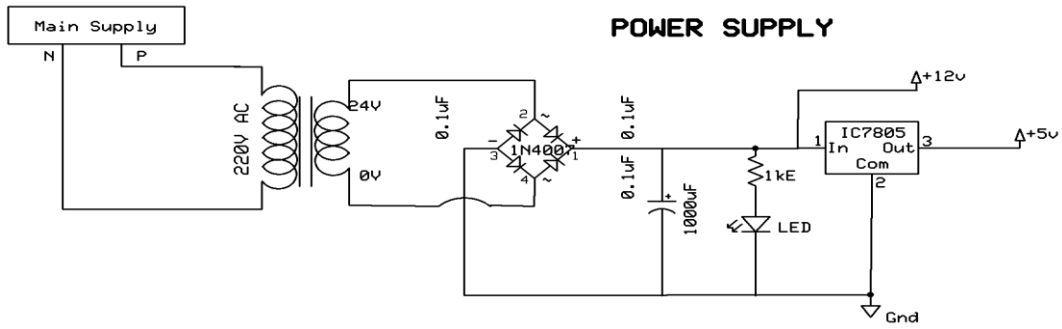
MODULE1:



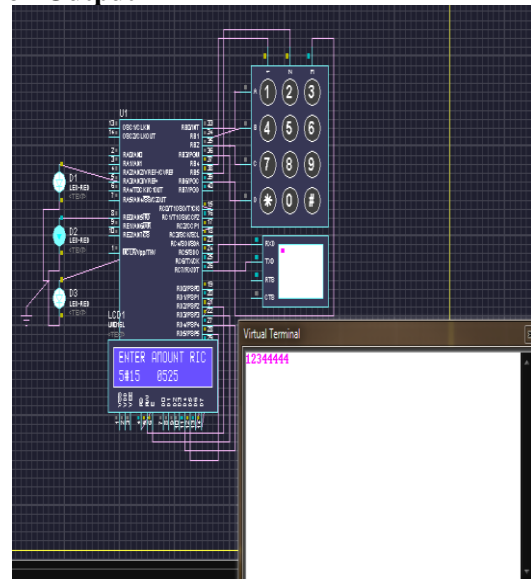
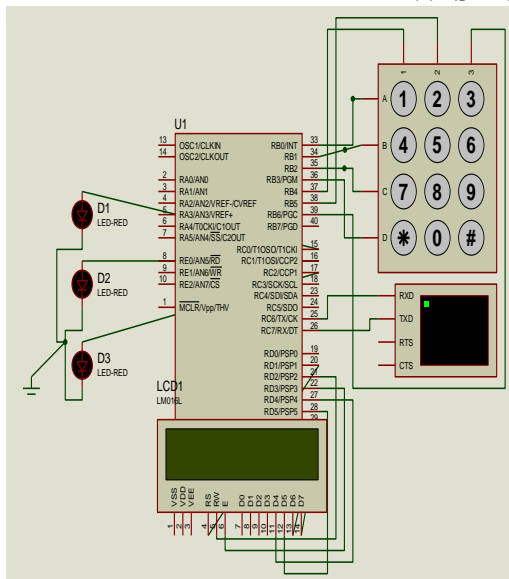
MODULE2:

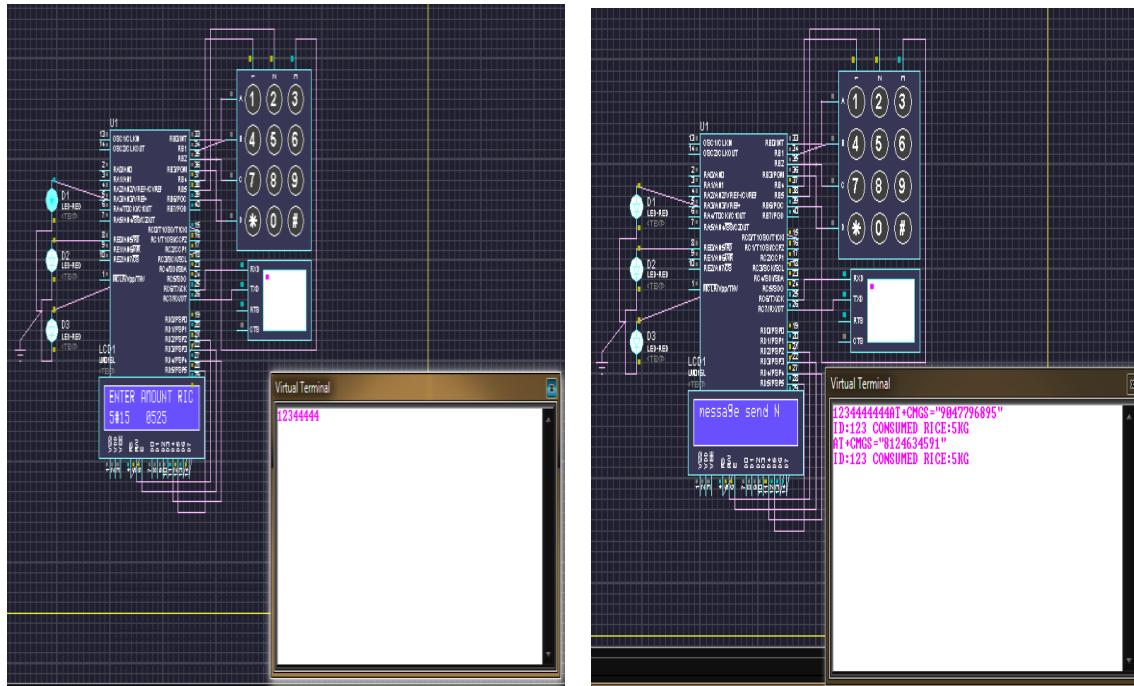


IV. b. Circuit Diagram



V. Simulation Output





- 1) Insert the user id will be displayed in the LCD
- 2) Virtual terminal window will be opened where we can type the id number
- 3) If the id matches it asks for password
- 4) If password matches LCD displays the amount and materials available
- 5) Now we have to select the material and the quantity
- 6) The selected material will be delivered automatically with the help of motor
- 7) Here on state and off state of motor has been indicated by LED

Advantages

- 1) Accurate
- 2) Reduces human effort
- 3) Deceit can be controlled
- 4) Cost effective
- 5) Circuit complexity is reduced

VI. Conclusion

In this paper, we have implemented and tested an Automatic Ration Materials Distribution Based on GSM and RFID technology instead of ration cards. But in the existing system having two draw backs, first one is weight of the material may be inaccurate due to human mistakes and secondly, if the materials are not bought at end of the month, they will sale to others without any intimation to the government and customers.

References

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