

# DESIGN OF ELECTRONIC RATION CARD SYSTEM USING RFID WITH SMS FACILITY

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## ABSTRACT

*This project paper explains that, we have developed a smart ration card the usage of Radio Frequency identity (RFID) method to save you the ration forgery as there are probabilities that the shopkeeper may additionally promote the cloth to a person else and take the profit and put a few false amount of their statistics. In this device, a RFID tag is used that includes the member of the family information and the consumer desires to show this tag to the RFID reader. The microcontroller related to the reader will tests for the user authentication. If the user is found real then the quantity of ration to take delivery of to the purchaser in keeping with the total quantity of own family members might be displayed on show device. This smart ration card is free from theft as the statistics approximately the delivered ration may be ship at once to the authorities without guide feeding the use of international device for cellular communication (GSM) technique.*

**Keywords:** *Arm 7, Smart Card Reader, GSM, LCD*

## I. INTRODUCTION

India's Public Distribution machine (PDS) is the largest retail device in the international Public distribution machine affords a ration card issued beneath an order or authority of the nation government for the purchase of critical consumer materials like rice, wheat, kerosene and oil. Nation authority's troubles exclusive ration cards like yellow ration card, saffron ration card, and white ration card relying on family annual profits. The customer cloth is provided to ration card holders within the first week of every month by way of ration shopkeeper. Public Distribution machine is one of the widely debatable troubles that involve malpractice. The guide intervention in weighing of the substances ends in faulty measurements and/or it is able to happen, the ration save owner illegally uses patron substances without earlier information of ration card holders. The proposed machine aids to control malpractices which are Present in ration shop by means of changing guide work with automatic system primarily based on RFID and GSM. Every purchaser i.e. circles of relatives head furnished RFID card which acts as ration card.

The RFID card has unique identity wide variety. The patron scans the cardboard on RFID reader that's interfaced with microcontroller kept at ration shop. As soon as client is tested via password, the device asks the patron to pick appropriate material and amount of material thru keypad. Based totally on clothchosen by way of customer, suitable circuitry may be activated and customer receives cloth. GSM interfaced with microcontroller sends statistics inside the shape of SMS to related people.

## II. EXISTING SYSTEM

The general public having a ration card to shop for the substances from the ration shops. While get the fabric from the ratio store, first need to publish the ration card and they may put the signal within the ratio card relies upon at the substances. Then they will difficulty the substances thru weighting system with assist of human. There may be chance to promote the fabric to unauthorized character without intimation to owner. On every occasion an unauthorized person attempt to use the ration card then concurrently get alert to unique character thru GSM. Based on RFID generation it's far used to offer safety for authorizes character i.e. family members however in this device massive quantity of statistics storage isn't always applicable.

## III. PROPOSED SYSTEM

Now a day ration card is very important for every home and used for various subject which include family members info, to get gasoline connection, it act as deal with evidence for various functions etc. all of the human beings having a ration card to buy the numerous substances (sugar, rice, oil, kerosene, etc) from the ration shops. The drawback with this RFID generation is the outside memory requirement for garage and also complexity even as referring or exporting the information from outside reminiscence chips. To overcome the drawbacks with the existed RFID era, we're featuring a new machine with clever card technology. The clever card is likewise looks as if RFID tag, except the no physical contact with the reader module. The smart card reader is having the inner reminiscence in it. Subsequently it is simple to keep extra information of corresponding circle of relatives participants and also getting alertness via GSM on every occasion unauthorized man or woman trying to get admission to the card.

### Block Diagram

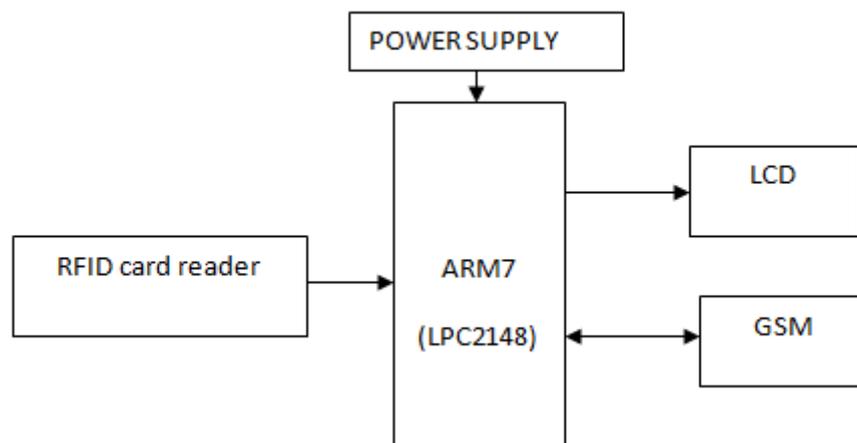


Figure1: block diagram

### 3.1 LPC2148 Microcontroller

The LPC2148 microcontroller board based totally on a 16-bit/32-bit ARM7TDMI-S CPU with actual-time emulation, 16-bit/32-bit ARM7TDMI-S microcontroller in a tiny LQFP64 package deal, 8 kb to 40 kb of on-chip static RAM and 32 kb to 512 kb of on-chip flash memory; 128-bit large interface/accelerator allows

excessive-pace 60 MHz operation, In- tool Programming (ISP), single 10-bit DAC offers variable analogue output, 32-bit timers/outdoor event counters (with four capture and 4 have a have a look at channels every), PWM unit (six outputs) and watchdog, Low energy real-Time Clock (RTC), multiple serial interfaces which includes UARTs , speedy I2C-bus (400kbit/s), SPI and SSP with buffering and variable statistics period capabilities.

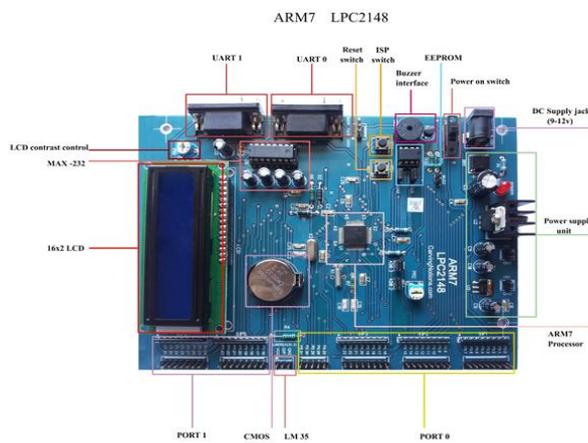


Figure 2: LPC2148 microcontroller

### 3.2 GSM-Module

GSM (international device for cellular communications) is a cell network, which means that that cell telephones connect with it via way of searching for cells in the immediately place. GSM networks feature in four specific frequency levels. Maximum GSM networks feature within the 900 MHz or 1800 MHz bands. A few international locations in the Americas use the 850 MHz and 1900 MHz bands because the 900 and 1800 MHz frequency bands had been already allotted. The rarer 4 hundred and 450 MHz frequency bands are assigned in a few worldwide places, wherein those frequencies were previously used for first-era structures.



Figure 3: GSM module

### **3.3 RFID**

We have the two types of RFID reader active and passive. In the RFID reader we have the one magnet, in the RFID reader also have the one magnet , whenever we place the card on the reader the magnetic flux will be generate and card number will be read by the reader. We are using the 5 v power supply. the RFID have the two types one is active and another one is passive. For the active one we have the sometime limit , so we need to complete the work within the time only , but in case passive reader we can don't have any time limit we can use the long. This is used for the security purpose in the banks , offices and other security places.



**Figure4: RFID reader**

### **3.4 RFID Tags**

The RFID cards are two types active and passive . the rf tags contains the one number which is there inside the card we can't visible that card number, and it will have one magnetic coil in the card when we place the tag on the reader it will generates a magnetic flux and reads the card number. This card will with the owner and the reader with that particular application. This is used for the security purpose.



**Figure 5: RFID cards**



## 3.5 Software

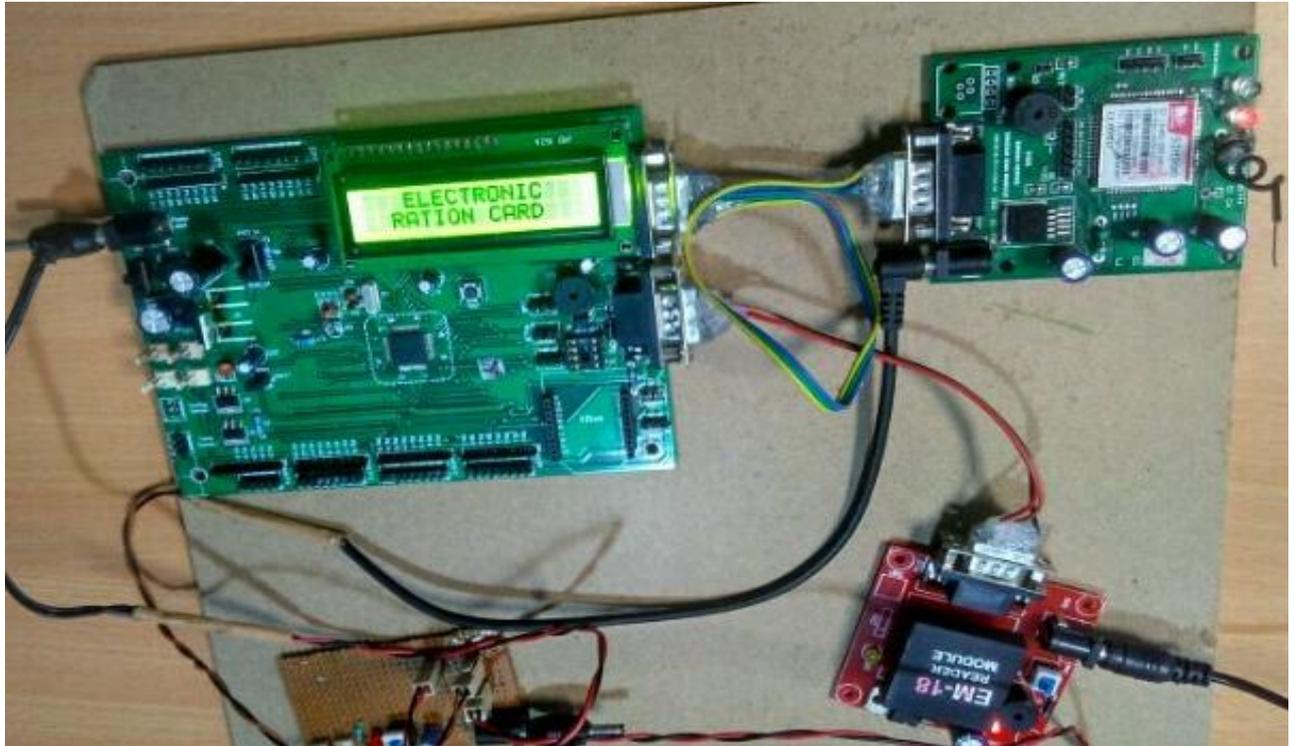
To finish the undertaking on equipment need to installed programming on to the controller utilized as a part of this venture for that reason we need programming's similar to Kiel u vision and glimmer enchantment those are examined in given beneath Code are frequently adjusted and accumulated on a brisk host machine, (for example, a tablet or working framework workstation) and in this way the resulting feasible code will then be downloaded to the objective to be tried. Cross compilers square measure helpful at whatever point the host machine has a ton of assets (memory, circle, I/O and so on) than the objective. Kiel compiler is one such compiler that backings a gigantic assortment of host and target blends. With this project you'll have the capacity to delete individual squares or the entire nonvolatile stockpiling of the microcontroller

## IV. WORKING PROCEDURE

Every customer is supplied with a RFID card which is registered by the authority's authority. On the time of ration distribution at ration keep, first password of patron is proven. User id established with the database supplied through the government authority that is stored inside the microcontroller. As soon as verification is a hit, purchaser is requested for a select sort of cloth and amount required thru push buttons and keypad respectively. Primarily based on sort of fabric chosen, the motor or solenoid valve is activated. The load cellular or degree indicator is checked for correct quantity. After collecting proper quantity cloth motor or solenoid is disabled. GSM module will ship the facts in shape of SMS to the user in addition to PDS authority. Current stock within the ration keep is displayed using lcd.

The automatic Ration materials Distribution primarily based on GSM and RFID generation used to distribute or vend the liquid or stable material that is used for Ration materials distribution in ration stores. Initially everybody may be provided an RFID or smart Card, as opposed to a ration card. If the client needs to get any ration material, the consumer has to show the ration RFID tag card to the RFID reader package, the reader that is integrated with the mission kit will understand the RFID numbers show with the aid of the consumer. Every consumer could have a completely unique range, which is not seen to the user. This identified RFID number could be given to a microcontroller, which compared the input range with the database. earlier than starting the system, the specific RFID range of the ration person might be programmed in the controller, such as consumer call & cope with details, date of expire of ration card, etc., in order that the controller will apprehend the statistics coming from RFID by comparing with the database. Once the person is diagnosed, the microcontroller will test whether or not the consumer has already sold the ration object belongs to that month. If no longer then, ration objects to be disbursed might be displayed on the liquid crystal display screen, the person has to feed the remarks that which ration object he goes to buy. If the user, pick out the ration item for purchasing functions then the controller will calculate the quantity of his or her buy and take a look at with the quantity available inside the RFID card. If she or he has sufficient amount to shop for then the micro controller will start the solenoid and motor mechanism to dispense the chosen ration object. As the dispensing procedure goes on concurrently in the controller will ship a command to GSM Modem, to ship the textual content SMS to the consumer about the ration item, she or he bought. Before beginning the method the quantity of the object to be distributed has to be calibrated one at a time then the most effective controller will dispense the right quantity of ration object decided on.

The project “Design of electronic ration card system using RFID with SMS facility” was successfully completed and output verified on the hard ware. Whenever the person takes the ration the message will sent to the government officers. With this project we can easily find out the how much ration used.



## VI. CONCLUSION

The traditional gadget has drawbacks like malpractices, low processing speed, lengthy ready time at ration keep to get fabric and fabric robbery in ration keep with none acknowledgement to government and patron. To triumph over above troubles, automated ration save played critical function. The automatic ration save concerned RFID in addition to GSM generation to distribute the kerosene or grain material. Ration card is replaced with the aid of RFID and data is dispatched to customer the use of GSM module. The proposed device creates the transparency in public distribution device as the paintings will become computerized. With the assist of this machine, it's far possible to make public distribution system green and free from malpractices. The proposed machine has blessings like it's miles helpful to prevent malpractices at ration shop, maintain information well, reduces paper work, time saving approach and cost powerful.

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