Abstract

This paper presents a RFID based Smart Ration System which would overcome drawbacks of conventional ration system. The conventional ration system has drawbacks such as weight of the material may be inaccurate due to human mistakes and if the material is not purchased by the customer, at the end of the month the distributor will sale the material for his profit without taking permission from government. This system will provide RFID tags to customers instead of conventional ration card. These RFID tags will get scan at distributor and customer will get required material automatically.

1. INTRODUCTION

The most of the people having a ration card to buy the materials from the ration shops. When get the material from the ratio shop, first need to submit the ration card and they will put the sign in the ratio card depends on the materials. Then they will issue the materials through weighting system with help of human. But in this system having two draw backs, first one is weight of the material may be inaccurate due to human mistakes and secondly, if not buy the materials at the end of the month, they will sale to others without any intimation to the government and customers. In this paper, we have proposed an Automatic Ration Materials Distribution Based on GSM and RFID Technology to avoid the drawbacks. Today we are facing a number of transport related
problems. RFID technology effectively used to solve some of them. RFID is act as ratio card and other purpose such as RC book, insurance details, service details etc. GSM used to communicate the information between the two people or more than two persons to update the information depends on the requirements.

2. DESIGN MODULE

a. Block Diagram

![Block Diagram](image)

Figure 1: Block Diagram

b. Block diagram Explanation

The block diagram of an Automatic Ration Materials Distribution Based on GSM and RFID Technology is shown in the fig.1. This system consists of various parts such as RFID, GSM, microcontroller, motor driver, solenoid control circuits and keyboard.

- **Power Supply Circuit Diagram:**
  The power supply most important for electronic circuits, which is provide the required power to microcontroller and other electronics devices.

- **Microcontroller Circuit:**
  Microcontroller is the heart of the ration materials distribution system. There are used various application such as automatically controlled products, automobile engine control systems, to control medical devices, remote controls, printer, scanner, office machines, appliances, power tools, toys and other embedded systems. The size and cost of the
microcontroller are less. The 12 MHz crystal oscillator is used to provide the required clock signals to the microcontroller.

- **GSM and RFID Circuit:**
RFID stands for Radio-Frequency Identifications. The RFID is small electronic device that consist of a small chip and an antenna. The chip typically is capable of carrying 2,000 bytes of data or less. A significant advantage of RFID devices above the others devices, RFID device does not require to positioned precisely relative to the scanner. The RFID devices will work within a few feet (up to 20 feet for high-frequency devices) of the scanner. The RFID tag used to read information about the customer through RFID Reader. The GSM used to send the SMS to the customer as well as government authorized person for the verification.

- **LCD Display:**
A liquid-crystal display (LCD) is a flat panel display, electronic visual display, or video display that uses the light modulating properties of liquid crystals. Liquid crystals do not emit light directly. The LCD is used in a wide range of applications including computer monitors, televisions, instrument, aircraft cockpit displays, and signage. The most common in consumer devices such as video players, gaming devices, clocks, watches, calculators, and telephones, and have replaced cathode ray tube (CRT) displays in most applications. The LCD screen is more energy efficient than a CRT. The power consumption is very low while compare with other devices.

- **Motor with Driver Circuit:**
The motor driver circuit is used to provide proper matching between motor and circuits. We are using L293D motor driver IC.

### 3. CONCLUSION
In this way, we are developing a system for smart and automatic ration distribution. Proposed system can provide safe, secure way for ration material distribution. Using this proposed modern system we can have better management of the ration distribution system. Govt. can have indirect check on the availability of the ration to the beneficiary. It is transparent.

### 4. REFERENCES