AUTOMATION PETROL BUNK MANAGEMENT USING POSTPAID CARD

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Abstract -. *This paper shows the improvisation of manually operated petrol bunks, as of this process the automated petrol bunks using cloud communications and Microcontroller along with RFID reader is proposed. Every step is made user friendly, where computerized RFID reader is installed at the bunk and post-paid cards are issued to every person along with vehicle registration certificate. It is that when the user approaches the petrol bunk and swipes the card at the RFID reader, it shows the respective user details. Then, after verifying the details and password is entered just to verify the user and then the required amount of fuel is entered, then the relay sensor gets activated and fuel gets released. When the quantity assigned is filled the filling gets stopped automatically, after this process the message of transaction details is automatically sent to registered mobile number of the user.*

***Key Words*: AVR Microcontroller ,RFID module , Smart card ,GSM Module ,Motors ,Power Supply ,Relay ,Adapter ,Keypad .**

1.INTRODUCTION

Automation petrol bunk management is a microcontroller based project which controls the whole assembly i.e. smart card, relay, motor. It also provides onsite recharge facility. The main attraction of this project is that it eliminates human interaction and avoids the situation of black selling when there is no serviceman. In this, microcontroller acts as a master device while smart card acts as slave device. On completion of transaction, money is deducted from card and the updated balance is shown again. In case of low balance, transaction cannot complete and

respective message is cannot complete. Every time fuel is dispensed, a bill giving details of the date, time and quantity of the petrol will be generated automatically. In this manner many ideas have been proposed to discover Automation Petrol Bunk.
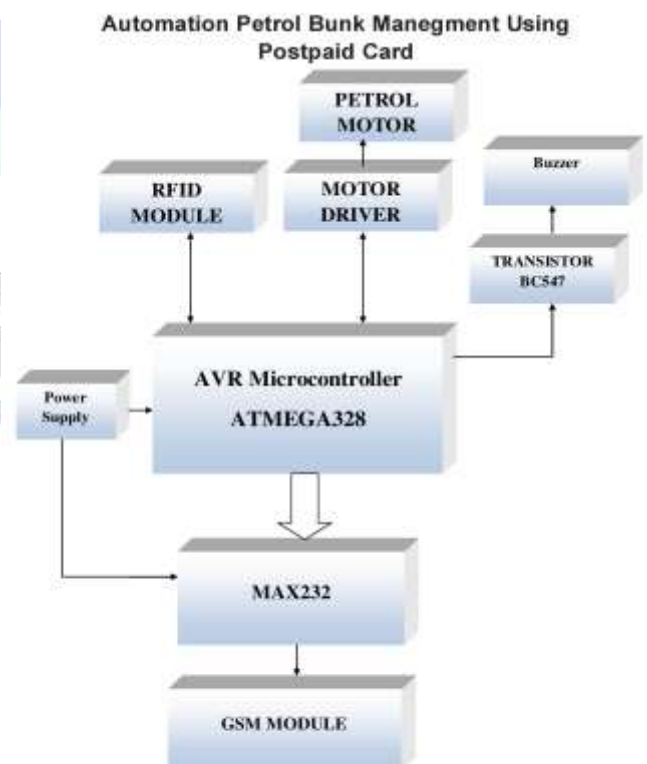
2. BLOCK DIAGRAM

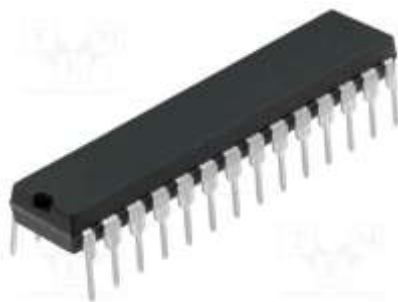Fig 1 Block Diagram

2.1 Microcontroller Introduction -

A microcontroller (sometimes abbreviated µC, uC or MCU) is a small computer on a single integrated circuit containing a processor core, memory, and programmable input/output peripherals.

Microcontrollers are designed for embedded applications, in contrast to the microprocessors used in personal computers or other general purpose applications. Microcontrollers are used in automatically controlled products and devices, such as auto mobile engine control systems, implantable medical devices, remote controls, office machines, appliances, power tools, toys and other embedded systems. By reducing the size and cost compared to a design that uses a separate microprocessor, memory, and input/output devices, microcontrollers make it economical to digitally control even more devices and processes. Mixed signal microcontrollers are common, integrating analogue components needed to control non-digital electronic systems.

2.2 GSM

The GSM module is SIM 900D is a powerful GSM module for SMS and call control .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. The module consists of SIM 900 A for calling and messages.

2.3 SMART CARD

The smart card is memory device which can store the 256 kb data. The smart card has the 256 kb of the data. In that 0-31 data was stored the company profile data from 32-256 memory locations we can stored our required data. In the smart card we can write and read the data. In this we give one smart for every account, whenever the/she take the book from the library he need to place the card on the reader that data will be stored in the card and system data base. While we are returning the book again need to insert the card so that will be deducted in our account. By writing and reading the data we have a some specific format with that format only we can read and write the data.

2.4 MOTORS

Motors are electro mechanical gadgets which can be used for the onvert the electrical alerts into mechanical indicators. The all D.C vehicles are have same internal mechanism, both electromechanically to exchange the route of contemporary waft in a part of

the motor. In challenge we're used for to move the motor in precise path. We need to attach the motor to controller thru driver IC handiest.

2.5 POWER SUPPLY

A **power supply** is an electrical device that supplies electric power to an electrical load. The primary function of a power supply is to convert electric current from a source to the correct voltage, current, and frequency to power the load. As a result, power supplies are sometimes referred to as electric power converters. Some power supplies are separate standalone pieces of equipment, while others are built into the load appliances that they power. Examples of the latter include power supplies found in desktop computers and consumer electronics devices. Other functions that power supplies may perform include limiting the current drawn by the load to safe levels, shutting off the current in the event of an electrical fault, power conditioning to prevent electronics noise or voltage surges on the input fstoring energy so it can continue to power the load in the event of a temporary interruption in the source power (uninterruptible power supply).

3. WORKING

Now a day's petroleum products made an impact by performing very importantrole in the world. The cost of demand is very high. The day to day analysis describes the demand of fuel kept increasing but no other alternatives have been found. This is step taken that has been initiated to control the consumption of fuel as well as to decrease the cost of demand. In exception when it's get implemented, it somehow helps in controlling traffic and pollution as well rarely but surely. Automation of petrol bunk manageable system is a project based on microcontroller which controls the entire assembly system i.e., smart card, relay, and motor. The main attraction of this project is that it eliminates human interaction and avoids matters of black commerce once there's no man.in this, microcontroller act as a master device while smart card acts as slave device. Oncompletion of transaction, when the filling gets completed i.e., the fuel is filled on a particular amount of requirement as per the client and at the very end of the quantity of fuel filled is registered and gets added with the old transaction amount and billing is made for the scheduled time for payment ,transaction cannot complete and respective message is cannot complete .every time fuel gets dispensed, a bill

is scheduled to be generated with the details of the particulars which has been used ,and will be added to the records of billing and the bill will be generated at the end of scheduled time for payment and the bill be sent as a massage to be concerned address .In this case ,cloudcommunication plying a vital role in sending notification to the user or client. Inthis manner several concepts are projected to get automated gasoline bunk.

4. CONCLUSION

The smart petrol bunk is to monitor the limit of the consumption of the petrol. This process required sensors, motors of smaller size and required very less space. The approach sense using high wavelength light and act immediately when the limit crosses the threshold. The proposed system works efficiently and provides an automatic device to save human life

5.REFERENCES

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