

IMPLEMENTATION OF MOBILE RECHARGE MACHINE USING MICROCONTROLLER

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Abstract: Now a day we recharge the mobile by using internet, scratch card or by the E-recharge. The problem with this is most of the people don't know how to use the internet for this purpose. Most of them don't have the net banking facilities. So they are unable to do online recharge of their mobile & that's why they prefer the general way to recharge the mobile. Generally people go for scratching the recharge cards which is time consuming process and also it increases human annoyance. By using current system you cannot recharge your cell phones at late night or early in the morning. So following paper focuses on efficient way to recharge mobile.

Key Words: GSM, EEPROM, communication, E-recharge.

1. INTRODUCTION:

In our day to day life the communication plays very important role. The reason behind this is the human beings are intelligent creatures, without sharing our thoughts, feelings, knowledge. We cannot stay alive. Since, from last three decades the mobile phones are used as an efficient device for carrying proper communication between human beings located at two different places. With this the numbers of improvements are also done to achieve the proper & efficient communication. In today's life, numbers of things are automated to reduce our annoyance. e.g. A.T.M. Because of such types of machines & systems, we are able to do our tasks with great efficiency and in proper way. As a result, we are able to achieve our definitive goals in communication. While using mobile phones for communication, we have to recharge it whenever required. There are number of ways of recharging the cell phones. Some of them are scratching the recharge card, by using sms service etc. But all these methods have certain drawbacks. So we have developed a new mobile recharge machine. Mobile Recharge Machine is nothing but a type of automatic machine which will recharge your cell phones in a proper and efficient manner at any time.

2. BLOCK DIAGRAM & DESCRIPTION:

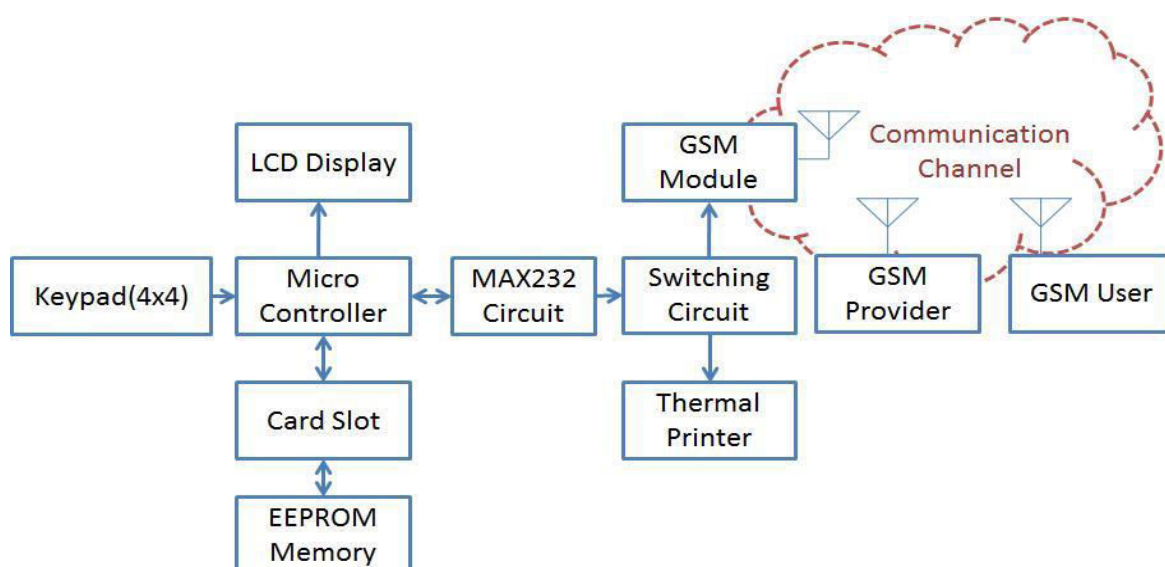


Fig.1.Block Diagram

2.1 Working Principle:

To use this system following procedure needs to be followed. First insert the EEPROM memory card into the card slot. Then microcontroller will read the amount present on the EEPROM. After this you have to enter your mobile number, Carrier code and amount of recharge by which you are going to recharge your cell phone. Now the microcontroller will give the AT command to the GSM module to send the message to service provider and after this service provider will inform the user about his current recharge. At the end of procedure thermal printer will print all the detail about current transactions.

2.2 GSM Module:

Global System for Mobile (GSM) is a second generation cellular system standard that was developed in Europe. From the user point of view one of the most remarkable features of GSM is the subscriber identity module (SIM), it is memory device that stores information such as subscriber identity.

Specifications:

- SIM card holder supporting 1.8 V and 3 V card type.
- MMCX Interface connector for RF output (50 Ohm connector MMCX)
- Edge Mount SMD J01341A0081.
- 60 pin board-to-board connector (CVILUX CBRB060PC2000R0): Audio (2x analog, 1x digital), I2C bus, SPI bus, 2x ADC, 2x analog out (PWM), 12 GPIOs.
- 1 UART serial port.

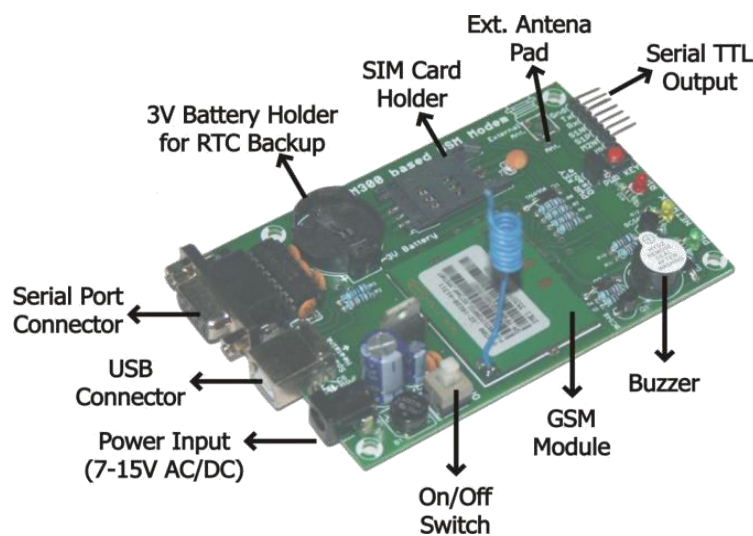


Fig.2.GSM Module

3. SIMULATION RESULTS:

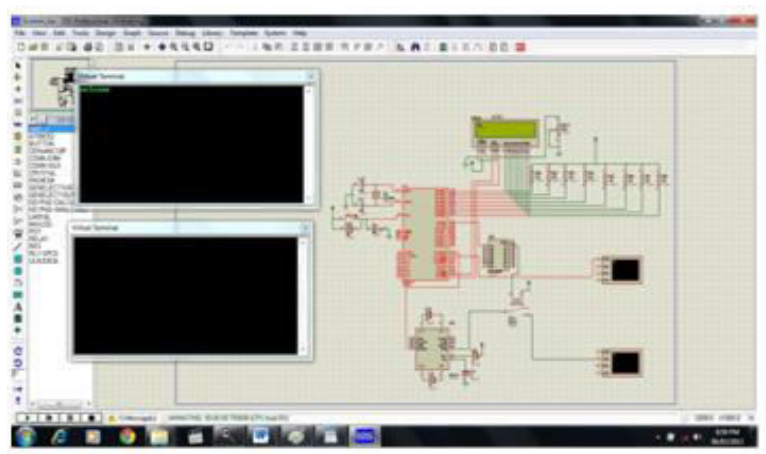


Fig.3. Simulation of LCD display

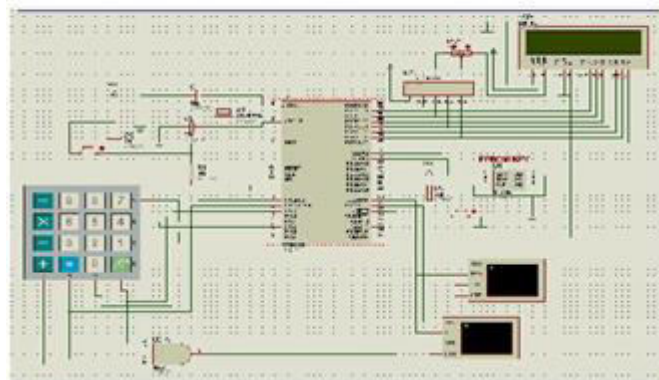


Fig.4.Simulation of keypad & LCD interfacing

Above window shows simulation of LCD Display & keypad interfacing in proteus

4. EXPERIMENTAL SETUP:



Fig.5.Experimental Setup

Steps in operation:

STEP 1: Insert pre-recharged memory card into card slot, the amount on memory card will be read by μc .

STEP2: By using keypad enter company code, mobile no., recharge amount

STEP 3: After this, balance gets reduced & new amount will be stored in the card

STEP 4: With the help of AT commands GSM modem will send a SMS to the user.

STEP 5: Printer will print the status of current Transaction.

5. CONCLUSION:

As we know that, there are number of limitations on present recharge methods like scratching recharge cards, lack of internet connections for E-recharge, lack of 24x7 service i.e. we are unable to recharge at late night and early in the morning. In emergency cases, such automatic machines are helpful to us. This machine provides efficient way of recharging mobile at any time & at any place.

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