

GSM based Electronic Voting Machine

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Abstract---India is world’s largest democracy. Fundamental right to vote or simply voting in election forms the basis of Indian democracy. In India all earlier elections a voter used to cast his vote by using ballot paper. This is a long, time-consuming process and very much prone to errors. This situation continued till elections scenario was completely changed by electronic voting machine. No more ballot paper, ballot boxes, stamping, etc. all this condensed into a simple box called ballot unit of the electronic voting machine. Cellphone based voting machine is capable of saving considerable printing stationery and transport of large volumes of electoral material. It is easy to transport, store, and maintain. It completely rules out the chance of invalid votes. Its use results in reduction of polling time, resulting in fewer problems in electoral preparations, law and order, candidates' expenditure, etc. and easy and accurate counting without any mischief at the counting centre. This project is based on C language programming.

Keywords: GSM300, 89V51RD2BN Controller, LCD, Display, MAX-232

I. INTRODUCTION

This is an Electronic Voting Machine which maintained the voting record for all candidate through messages received as SMS or GPRS Packets and also send Acknowledgement of task. Such Voting machine can be used at different areas of the human being life. Such as reality shows, college’s etc. Sent command from Mobiles or PCs to these devices you can cast your vote to your desired candidate. These devices are designed to remotely casting you’re vote from anywhere and anytime. The GSM modem receives the SMS. The microcontroller validates the SMS and then perform specific task on the device. The microcontroller used in this case is 89V51RD2BN. SIM300 is used as the GSM modem. In this prototype model, LCD display is used for simulation purpose. The results presented in the thesis support the proper functionalities and working of the system. The timing diagram suggests the response of the modem to various AT(attention) commands.

II. BLOCK DIAGRAM

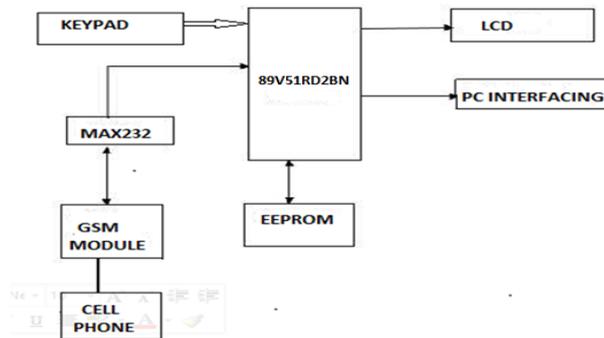


Fig. 1: Block diagram of system

A. Description of Block Diagram:

First of mobile is interfaced to microcontroller .The user has his password stored in front of his id number in n the memory of μc . The User has to send his voting information via sms to the mobile interfaced to the microcontroller. The μc will consider a vote if the password of a person matches to his election id. When a vote gets approved it gets locked and the user account will be expired. The mobile interfaced to the μc will send an acknowledgment message when the vote is granted; if something goes wrong then μc will send a negative acknowledgment message via sms to the user. If the password of the person is entered in the same order, there will be a positive vote given to the candidate to which the voter is voting. If the password is in the reverse manner, there will be a negative voting against the candidate voted. This is done in order to reduce the risk of forcible voting.

III. COMPONENTS OF VOTING MACHINE

A. P89V51RD2 Microcontroller:

The P89V51RD2 is an 80C51 microcontroller with 64 kB Flash and 1024 bytes of data RAM. ISP allows a device to be reprogrammed in the end product under software control. The capability to field/update the application firmware makes a wide range of applications possible. The P89V51RD2 is also In-Application Programmable (IAP), allowing the Flash program memory to be reconfigured even while the application is running.

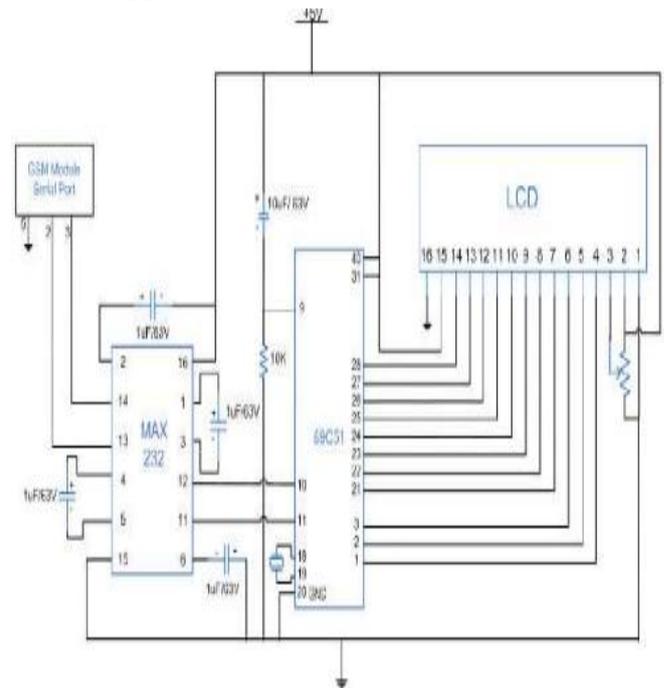


Fig. 2: Circuit Connections

B. LCD16*2:

A16x2LCD means it can display 16 characters per line and there are 2 such lines. In this LCD each characteristics displayed in 5x7 pixel matrix. This LCD has two registers, namely, Command and Data.

C. MAX-232:

The MAX232IC is used to convert the TTL/CMOS logic levels to RS232 logic levels during serial communication of microcontrollers with PC. The controller operates at TTL logic level(0-5V) whereas the serial communication in PC works on RS232 standards(-25 V to+ 25V).This makes it difficult to establish a direct link between them to communicate with each other.

D. GSM 300:

GSM MODEM is a class of wireless MODEM devices that are designed for communication of a computer with the GSM and GPRS network. It requires a SIM (Subscriber Identity Module) card just like mobile phones to activate communication with the network. Also they have IMEI (International Mobile Equipment Identity) number similar to mobile phones for their identification.

AT commands are instructions used to control a modem. AT is the abbreviation of AT tension. Every command line starts with "AT" or "at". That's why modem commands are called AT commands. Many of the commands that are used to control wired dial-up modems, such as ATD (Dial), ATA (Answer), ATH (Hook control) and ATO (Return to online data state), are also supported by GSM/GPRS modems and mobile phones. Besides this common AT command set, GSM/GPRS modems and mobile phones support an AT command set that is specific to the GSM technology, which includes SMS-related commands like AT+CMGS (Send SMS message) , AT+CMSS (Send SMS message from storage), AT+CMGL (List SMS messages) and AT+CMGR (Read SMS messages).

IV. AT COMMANDS USED IN SMS

AT Command	Meaning
+CNMI	New Message indications
+CMGL	List messages
+CMGR	Read Messages
+CNMA	New Message Acknowledgement
+CMGS	Send message
+CMSS	Send message from Storage
+CMGW	Write message to memory
+CMGD	Delete message
+CMGC	Send command
+CMMS	More messages to send

V. FLOW CHART

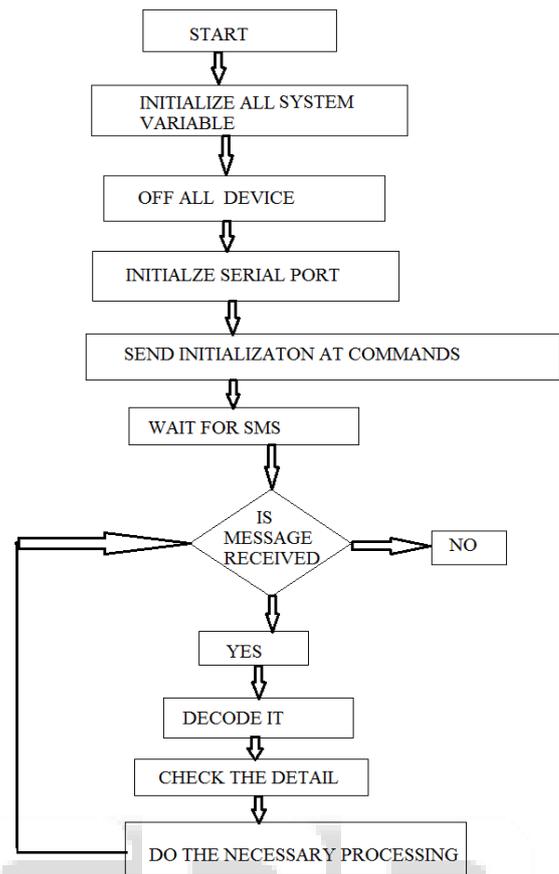


Fig. 3: Block diagram of System

VI. ADVANTAGES

- (1) It is economical
- (2) Less manpower required
- (3) Less time required for voting & counting
- (4) Avoids invalid voting
- (5) Saves transportation cost due to its compact size

VII. APPLICATION

This could be used for voting purpose at any required place.

VIII. LITERATURE REVIEW

This project is an implementation to the idea of the wireless communication between a mobile phone and a microcontroller. Currently the main work that has been done on this proposed system is through serial port to the computer but not wireless. If they want to control the Vending Machine, they have to go to the remote area and change the rotation and one/off the Vending Machine. But in this new design, the systems need not be reprogrammed to control Voting Machine changing the programming of microcontroller. The user will send SMS from his phone and he will be able to cast their vote.

IX. CONCLUSION

GSM based Designs have developed another innovative and Public utility product for mass communication this is an Electronic Voting Machine which maintained the voting record for all candidate through messages received as SMS

acknowledgement of task. Such Voting machine can be used at different areas of the human being life. Such as reality shows, colleges etc. Sent command from Mobiles or PCs to these devices you can cast your vote to your desired candidate. These devices are designed to remotely casting your vote from anywhere and anytime. Wireless communication has announced its arrival on big stage and the world is going mobile.

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