IOSR Journal of Engineering (IOSRJEN) **www.iosrjen.org**
ISSN (e): 2250-3021, ISSN (p): 2278-8719
PP 06-09

Real Time GSM based Electronic Display Screen

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***Abstract*:** *The main aim of this project is to implement wireless electronic communication on semiconductor diode name plate victimization GSM. It presents Associate in Nursing SMS based mostly name plate incorporating the wide used GSM to facilitate the communication of displaying message on name plate via user's mobile. The semiconductor diode show System is aimed toward the colleges and universities for displaying day to-day info unceasingly or at regular intervals throughout theoperating hours. These displays area unit employed in bar chart displays, Industrial controllers, Panel meters, semiconductor diode matrix displays. Being GSM- based mostly system, it offers flexibility to show flash news or announcements quicker than the programmable system. The Arduino UNO could be a wide used ASCII text file microcontroller board supported theseMI conductor device ATmega328P microcontroller. The SIM900A could be a complete Dual-band GSM/GPRS answer in a verySMT module which may be embedded within the client applications. The projected system can facilitate in reducing the human effort, paper, printer Ink and price for manual dynamical of the notices.*

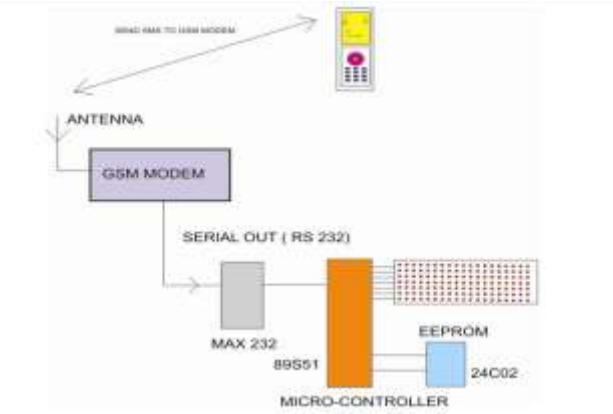
Keywords: *GSM Based, Real time messaging, LED plate.*

I. Introduction

IT present associate degreeSMSprimarily basedboard INCORPORATING the wide USED GSM TO FACILITATE THE COMMUNICATION OF DISPLAYING MESSAGE ON board VIA USER'Smobile. THE light-emitting diode show SYSTEM IS aimed towardthe universities AND UNIVERSITIES FOR DISPLAYING DAY TO-DAY info incessantly OR AT REGULAR INTERVALS throughout THEoperating HOURS. BEING GSM- primarily based SYSTEM, IT OFFERS FLEXIBILITY TO show FLASH NEWS OR ANNOUNCEMENTS quickerTHAN THE PROGRAMMABLE SYSTEM. GSM-BASED show SYSTEM may BE USED AT different PUBLIC PLACES LIKE faculties, HOSPITALS, RAILWAY station, gardens, etc. THIS board shows the data ON alphanumeric display no matter you send from the mobile.

II. Basic Functios Of E-Notice Board

A. GSM modem captures SMS messages with one secret key # sent by user through a mobile phone.
B. The user is required to send SMS messages to the SIM number of card inserted in the GSM modem.
C. The SMS is received by GSM modem and is processed in order to forward the message (information) to the microcontroller.



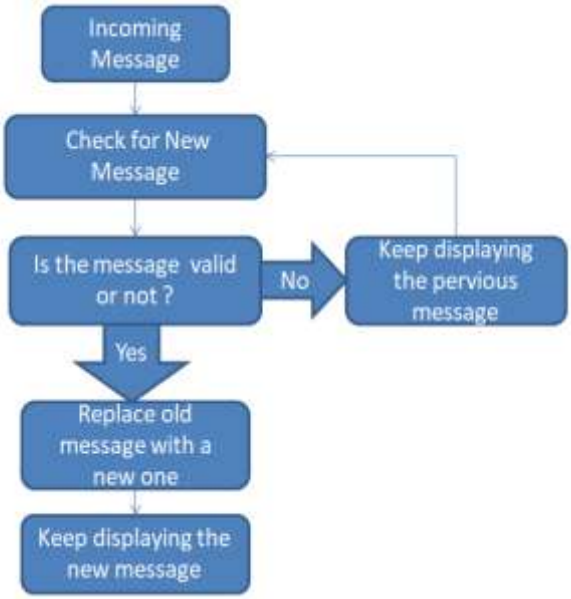
D. Once the message is received from the GSM modem, it is then sent to the microcontroller which process this data.

E. The microcontroller grabs out the SMS message body text and then it is displayed on the LCD screen interfaced to the microcontroller.

III. Working

1. The project uses a GSM modem duly interfaced to a microcontroller through a USB plug.
2. GSM is a cellular network, which implies that cell phones connect with it by checking out cells within the immediate locality.
3. Extra power supply and MAX-232 IC is interfaced to the microcontroller.
4. The MAX232 has two receivers that convert from RS-232 to TTL voltage levels, and two drivers that convert from TTL logic to RS-232 voltage levels.
5. The number gets stored in the microcontroller for further communication to that number only.
6. This gives a security feature to the system with the help of secret key #.
7. GSM modem receives the message from the number which was earlier stored in the microcontroller memory.
8. The microcontroller on the Arduino board has EEPROM. Thislittle house that may store computer memory unit variables.
9. The EEPROM is permanent storage just like a hard drive in computers.
10. After the receiving message is displayed on the LED display.

IV. Flow Chart



V. Conclusion

- This model can be used very efficiently in establishments like chain restaurants where the orders and special discounts can be displayed at all the branches at the same time, in colleges where students and staffs can be informed simultaneously in no time.
- It can also be set up at public transport places like railways, bus stations, airports and also at the roadside for controlling the traffic and in emergency situations. It is an economical system and very easy to handle. Use of papers in displaying of notices is avoided. The information can only be updated by the authorized persons.
- The display boards are one of the major communications media.
- Thus we can conclude that this project is just a start, an idea to make use of GSM in communications to the next level.

VI. Future Scopes

- In this project, we are sending messages over a GSM network and displaying it on pluck cards by the use of AT commands.
- Robots can be controlled in a similar manner by sending commands to the robots. This technique can be used for spy bots at distant locations, utilized by the defense organizations to monitor the movement of enemy troops.
- Local language can be added as a variation in this project. Also, we realize that this project saves time, energy and hence the environment.
- The backend system architecture is needed to be built for the Android and Web sub-system based on Web Socket so as to make the application up and running in real-time.
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VII. Advantages & Limitations

Advantages

1) Message can be sent from anywhere to available mobile signal.
2) It can reduce physical effort of distributing and printing paper based notices.
3) It can spread among people in real time since large screen display is used.
4) The electronic board is not any would like wires for showing the data on the LCD display.

Limitations

1) Network failure will restrict the transmission of message.
2) It is costly as compared to manual notice board.

VIII. Application

A. Educational Institution and Organization

Currently we rely on putting up papers on notice boards to inform people of events. This method can be discarded by using GSM based LED display to display information in real time. E.g.Placement news, Cultural Activities news, etc.

B. Advertisement

In shopping malls we get to hear the offers on various products from time to time.Instead we continuously display the information regarding the product and related offers on electronic display boards.

C. Railway Station

Instead of announcing the delay in arrival of train we can display the information.

D. Hotels

To display the availability of the rooms and the room rents the type of rooms.

E. Nursing Homes

To show the employees attending, the provision of the doctors, list of the specialised doctors, range of in patients etc.

Acknowledgement

We warmly acknowledge the continual encouragement, timely suggestions and galvanized steering offered by our guidefaculty member. Prof. Anup Gade, Department of information Technology, Tulsiramji Gaikwad Patil faculty of Engineering and Technology, Mohgaon, Nagpur in conveyance this report back to a eminent completion. We are thankful to Prof. Anup Gade Head of the Department of Information Technology for permitting us to make use of facilities available in the department to carry out the project successfully.

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