

# Wireless Notice Board Using GSM for Multiusers

Shyamala C<sup>#1</sup>, Asha M<sup>#2</sup>

<sup>#</sup>Asst Professor, Dept. of ECE, GSSSIETW, Mysuru, India

<sup>1</sup>[shyamalac@gsss.edu.in](mailto:shyamalac@gsss.edu.in)

<sup>2</sup>[asha.m@gsss.edu.in](mailto:asha.m@gsss.edu.in)

**Abstract:** Notice boards play a vital role mostly in educational institutions. The events, occasions or any news, which has to be passed to the students, will be written on the notice boards present in every floor in the colleges or schools. The present system is like, a person will be told the news and the user has to update this news on all the notice boards present in the college or school. This will be seen mostly during the examination seasons. At present, when information has to be updated in a notice board, it has to be done manually. In present electronic systems, no matter how many displays are present, only a single notice can be sent to all of the notice boards irrespective of their places. To overcome this disadvantage, multiple displays along with a decoder are used to select a particular display. The information is sent through ATMEGA controllers by using GSM technology.

**Keyword :** GSM, SMS , LCD, RF module, ATMEGA, CDS

## I. INTRODUCTION

The GSM based e-notice board is aimed at the colleges and universities for displaying day-to-day information continuously or at regular intervals during the working hours, it is also called as Campus Display system (CDS). Being GSM-based system, it offers flexibility to display flash news or announcements faster than the programmable system. GSM-based campus display system can also be used at other public places like schools, hospitals, railway stations, gardens etc. without affecting the surrounding environment. The CDS mainly consists of a GSM receiver and a display toolkit which can be programmed from an authorized mobile phone. It receives the SMS, validates the sending Mobile Identification Number (MIN) and displays the desired information after necessary code conversion. It can serve as an electronic notice board and display the important notices instantaneously thus avoiding the latency. Being wireless, the GSM based CDS is easy to expand and allows the user to add more display units at any time and at any location in the campus depending on the requirement of the institute.

Information Transfer a coordinated sequence of user and telecommunication system actions that causes information present at a source user to become present at a destination user. An information-transfer transaction usually consists of three consecutive phases called the access phase, the information-transfer phase, and the disengagement phase. Broadcast term describe communication where a piece of information is sent or transmitted from one point to all other points. There is just one sender, but the information is simultaneously sent to all connected receivers.

In networking, a distinction is made between broadcasting and multicasting. Broadcasting sends a message to everyone on the network whereas multicasting sends a message to a select list of recipients. One of the most common examples is broadcast through a cellular network service. This serves multiple end users at different locations in a simulcast fashion. Practically every cellular system has some kind of broadcast mechanism. This can be used directly for distributing information to multiple mobiles, commonly, for example in a mobile telephony system, the most important use of broadcast information is to set up channels for one to one communication between the mobile Trans-receiver and the base station. This is called paging. The details of the process of paging vary somewhat from network to network, but normally we know a limited number of cells where the phone is located (this group of cells is called a location area in the GSM system). Paging takes place by sending the broadcast message on all of those cells. This project aims at integrating the expansiveness of a wireless cellular network and the ease of information transfer through the SMS with the coverage of campus display boards. It can also be a modest effort to realize the complete potential of public display boards in instantaneous information broadcast in swift response to events of interests.

## II. LITERATURE SURVEY

With the development of cellular networks in the 1970's for increasing the lack of frequencies in the radiotelephone services which in turn lead to introduction of AMPS (Advanced Mobile Phone System) where the transmission was analog based. This was known to be the first generation in cellular networks. The second generation was based on digital transmission and was called with various abbreviations as GSM (Global System for Mobile communications), ERMES (European Radio Messaging System). Various Cordless telephone standards were also introduced during this time only. The third generation has risen with the unification of different technologies; some of them which are popularly known are FPLMTS (Future Public Land Mobile Telecommunications System), UMTS (Universal Mobile Telecommunication System), and IMT-2000(International Mobile Telecommunication).

The Short Message Service (SMS) technology is one the most stable mobile technologies around. Most of our tertiary students carry mobile phones with SMS facilities and can be used for teaching and learning. There are many projects using SMS technologies in education as outlined in the

literature survey, but many publications do not provide the possible underlying technologies to implement such as the teaching and learning systems. The system is capable of supporting administrative teaching and learning activities via the SMS technology. [1]

The technology advancement allows a reliable and authentic wireless communication to be easily developed between a mobile phone and microcontroller using GSM modem. It includes sending message from any of the remote area to the distant located e-notice board using GSM mobile. For sending the text message from remote area, mobile phone is interfaced with GSM modem. [2]

The further developed projects made use of a moving message display board that is used as digital notice board and also a GSM modem. When the user wants to display or update the notice board, he sends a message from his mobile defining the password of the system to the number of the SIM that is inserted in the display system model. The modem connected to display system will receive the SMS, the microcontroller inside the system is programmed in such a way that when the modem receives any message, microcontroller will read the message from serial port, verify the password and if correct displays the message in the displaying system. The SMS is deleted from the SIM each time it is read thus making room for next SMS. [3]

The remote notice board with a GSM modem at the receivers end was developed. So if the user wants to display any message, he can send the information by SMS from anywhere to display boards installed in remote places and thus update the LCD display accordingly. The project made use of ATMEGA32 Microcontroller which has only one serial port. [4]

Various AT commands were used to display the message onto the display board. Microcontroller AT89S52 along with AT commands is used to control the display board and for conveying the information through a message sent from authenticated user. [5]

### III. DESIGN METHODOLOGY

To the above module the power supply from source is given to the RPS(Regulated Power Supply) which supplies a constant voltage of prefixed magnitude .This magnitude remains constant regardless of input voltage ,the prefixed constant voltage level is +5v. IC 7805 is used for this purpose. This block provides power supply to all other blocks. The LCD display, GSM module and RF module are interfaced with microcontroller.

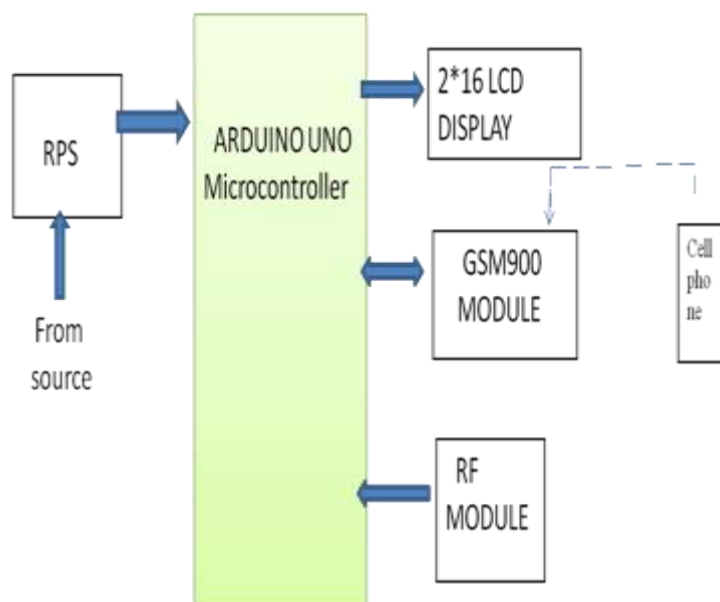


Figure1: Primary Display Block

The SIM of valid number is inserted to the GSM module. The user who wants to display the information sends it as a SMS from his cell phone to the SIM inserted in the GSM module. The message is stored in the SIM memory. The microcontroller is programmed in such a way that it continuously checks for the arrival of new message .On arrival of message microcontroller retrieves the message and sends it to the primary LCD display board. The message is then displayed on the primary LCD board. The same message is sent to the RF module which broadcasts the message through wireless RF transmission. The message is displayed until a new message arrives in the SIM. The message is deleted from the SIM making room for the new message.

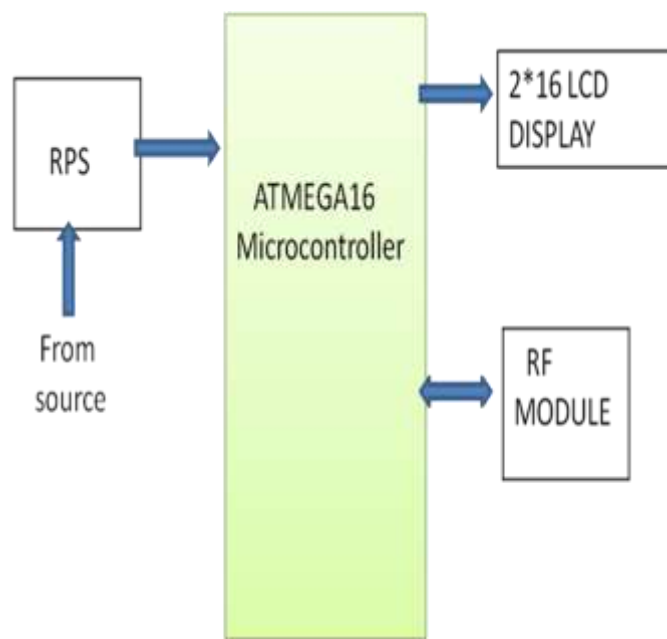
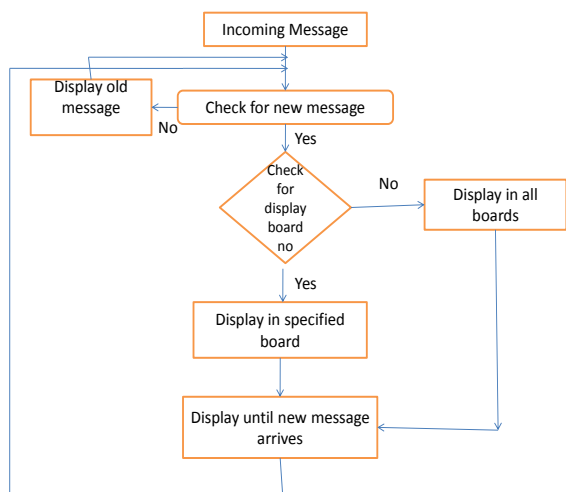


Figure2: Secondary Display Block

The primary unit microcontroller on arrival of a message checks for the number attached to the message. This number specifies the secondary LCD kit number on which the message has to be displayed. Only to that secondary kit the message is further transmitted from the RF module. If there is no number attached to the message, then message is broadcasted to all the secondary display boards. The RF module at secondary display units receives the message. The microcontroller decodes this message and sends to the display boards.

#### IV. ALGORITHM



12

#### V. RESULTS

The data or the notification updates send by the user using mobile will be transmitted to the receiver. The data received by GSM modem will be passed to the microcontroller which sends the received data to the display unit. Thus the transmitted data is expected to be displayed in the primary display board. The message is further transmitted to secondary board through RF module and displayed.

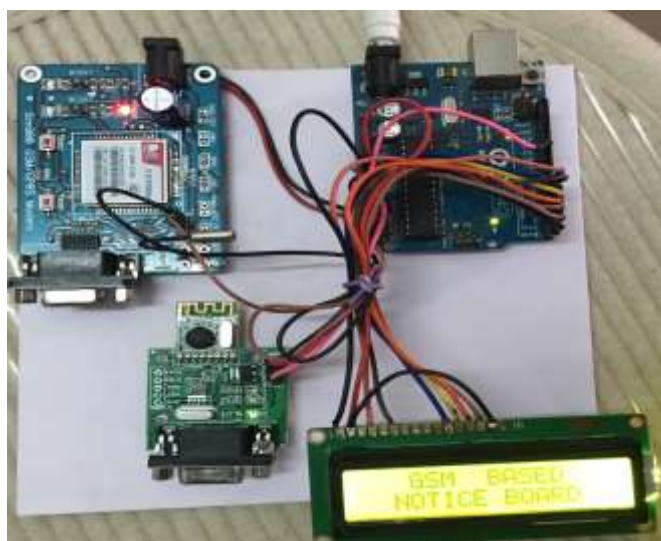


Figure 3: Default display



Figure 4: Display at Primary Board



Figure 5: Display at Secondary Board

#### VI. CONCLUSION & FUTURE SCOPE

As the technology is advancing every day the display board systems are moving from Normal hand writing display to digital display. Further to Wireless display units. The proposed work develops a wireless notice board system with GSM modem connected to it, which displays the desired message of the user through an SMS. This proposed system has many upcoming applications in educational institutions and organizations, traffic management, railways, advertisements etc. Being user friendly, long range and faster means of conveying information are major bolsters for this application.

##### FUTURE SCOPE

Commercial model can be able to display more than one message at a time. In our system the messages are sent via GSM network and displayed on a LED by utilizing AT commands. The same principle can be applied to control

electrical appliances at a distant location. It can also be used to display the alert messages in vehicles moving in remote areas like reserve forests or mountain and hilly areas . It can be further enhanced to display room temperature or flash news or time when no notification is there to display. Extension can be made to transfer and display multimedia messages.

#### REFERENCES

- [1]. GSM BASED DISPLAY TOOLKIT –GSM BASED E-NOTICE BOARD by Venkatesh Agnihotri, Arjun M Nayak, Aditya Bharadwaj, Department of Computer Science Engineering S.D.M. College of Engineering & Technology ,Dharwad.
- [2]. DEVELOPMENT OF SMS BASED TEACHING AND LEARNING SYSTEM –GSM BASED E-NOTICE BOARD by Venkatesh Agnihotri, Arjun M Nayak, Aditya Bharadwaj, Department of Computer Science Engineering.
- [3]. GSM MOBILE PHONE BASED LED SCROLLING MESSAGE DISPLAY SYSTEM Prachee U.Ketkar, Kunal P.Tayade, Akash P. Kulkarni, Rajkishor M.Tugnayat, Department of Information Technology Jawaharlal Darda Institute Of Engineering & Technology, Yavatmal, Maharashtra, India.
- [4]. Display Message on Notice Board using GSM by Foram Kamdar, Anubhav Malhotra and Pritish Mahadik IDepartment of Electronics and Telecommunications, Mumbai University,S.P.I.T, Andheri West, Mumbai, INDIA
- [5]. WIRELESS ELECTRONIC DISPLAY BOARD USING GSM TECHNOLOGY by JAGAN MOHAN REDDY and VENKARESHWARLU, CBIT, Hyderabad.
- [6]. Rahul NS, SAjin samjan, Sarthprasad KV, Sudeesh KS “multiuser GSM based notice board.
- [7]. Nivetha S. R, Pujitha. R, Preethi Selvaraj & Yashvanthini S.M “sms based wireless notice board with monitoring system
- [8]. SMS Based wireless E notice board m.baby, g divya, harini p, y eleena slesser.
- [9]. GSM based e-Notice board: Wireless Communication by Pawan Kumar, Vikas Bharadwaj, Kiran Pal, Narayan Singh Rathor, Amit Mishra.
- [10].SMS based Wireless E-Notice Board by M.Baby, G. Divya, P.Harini andEleena Slesser, Department Of ECE, BEC, Bapatla