

# Wireless Digital Notice Board Using GSM Technology

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**Abstract** - *In this proposed system the idea of wireless Digital Notice Board Using GSM Technology has been presented. So our main aim is to reduce paper work and time. In this paper we are trying to implement our system in such a way that it can display message from authorized user sends to GSM module which is located on the notice board. So in short, the GSM module which is located at Digital notice board receives the message from authorized user and displayed on notice board which is situated at remote location, at same time this message will be sent to different users mobile numbers that are stored in microcontroller memory. So spreading of important message or notice will be takes place within very short span of time to respective mobile no's. Means user or registered person can able to send the message from anywhere and this message is displayed on LCD display.*

**Key Words:** GSM module, Remote Location.

## 1. INTRODUCTION

GSM – a digital mobile telephony system, which is globally accessed by more than 212 countries and territories. Global system for mobile communication is completely optimized for full duplex voice telephony. Initially developed for the replacement of first generation (1G) technology, now GSM is available with lots of salient features with the constant up gradation of third generation (3G) technology.

Now-a-days advertisement is going digital. The big shops and the shopping centers use digital displays now. Also, in trains and buses the information like platform number, ticket information is displayed in digital boards. People are now adapted to the idea of the world at its finger-tips. The use mobile phones have increased drastically over years. Control and communication has become important in all the parts of the world.

This gave us the idea to use mobile phones to receive message and then display it on an electronic board. The GSM technology is used. GSM stands for Global System for Mobile Communication. Due to this international roaming capability of GSM, we can send message to receiver from any part of the world. It is has the system for SMS Short Message Service.

This project is a remote notice board with a GSM modem at the receivers end. So if the user wants to display any message, he can send the information by SMS and thus update the LCD display accordingly [1].

So overcome such issue we are going to make “Wireless Notice Board using GSM System” is useful in college ,industries ,hospital, organization etc. This is wireless module which send message wirelessly with the help of GSM module. Means user or registered person can able to send the message from anywhere and this message is displayed on LCD display. In addition this message also sends to everyone whose user number store in memory. Everyone get the message personally. Whenever new message is received it is give indication by buzzer. As engineer’s main aim is to make life simple with help of technology, this is one step to simplify real time noticing.

## 2. PROPOSED SYSTEM

In this proposed system the message send from authorized user to GSM module which is located on the notice board. So this GSM module receives the message and displayed on notice board, at same time this message will be send different mobile number store in memory of microcontroller. When new message is arrived at notice board than the buzzer will beep.

Max232 shift the level of signal which converts the signal between the microcontroller and GSM module. After the conversion of signal this message will be displayed on notice board.

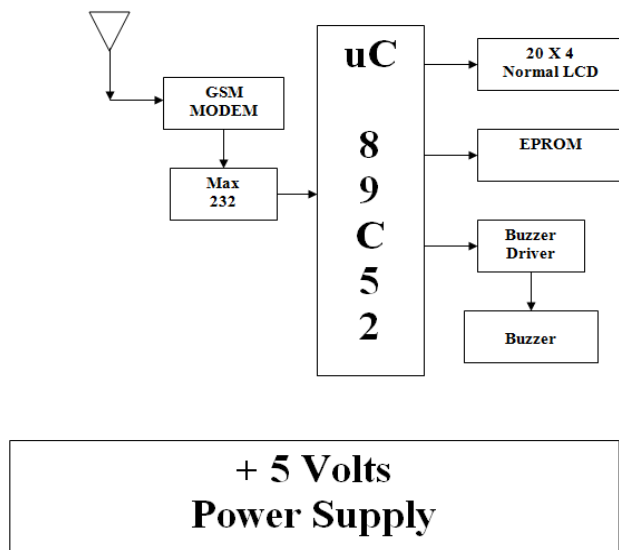


Fig -1: Block Diagram of Proposed System

## 2.1 HARDWARE MODULE

GSM Based Digital Notice Board has following blocks

1. Microcontroller 89C52
2. 20 X 4 LCD Display Normal & Jumbo
3. Buzzer Driver
4. Buzzer
5. Power Supply
6. Level Converter MAX 232
7. GSM MODEM

### 2.1.1. Micro-controller board: -

It is a low-power, high-performance CMOS 8-bit microcomputer with 8K bytes of Flash Programmable and Erasable Read Only Memory (PEROM). The device is manufactured using Atmel's high-density nonvolatile memory technology and is compatible with the MCS-52™ instruction set and pin out. The on-chip Flash allows the program memory to be reprogrammed in-system or by a conventional nonvolatile memory programmer. By combining a versatile 8-bit CPU with Flash on a monolithic chip, the Atmel micro-controller is a powerful microcomputer, which provides a highly flexible and cost effective solution so many embedded control applications.

### 2.1.2 20 X 4 LCD Normal & Jumbo:

We are using 20 X 4 LCD to display the notice. Normal LCD is sufficient to display. But we can connect JUMBO LCD also.

### 2.1.3 Buzzer Driver:

Output signal from micro-controller 89C51 is weak so we have to amplify that signal. Buzzer driver block i.e. amplifier block amplifies the signal for driving the Buzzer. For amplification Transistor BC 547 is used.

### 2.1.4 Buzzer:

In this project we are using Buzzer as output device. When SMS is received then Buzzer turns ON for some time. Again when SMS is read then Buzzer Turns On for some time. Again when SMS is deleted then Buzzer Turns On for some time.

### 2.1.5 POWER SUPPLY:

For our project we require + 5 Volt and +12 Volts supply. +5 Volts is given to Micro-controller board, and LCD display.

+12 Volts are used for GSM MODEM.

### 2.1.6 Level converter MAX 232

RS-232 INTERFACE: For GSM modem which works on the RS-232 voltage levels, logic 1 varies from -3 to -15 volts and logic 0 from +3 to +15 volts. The microcontroller which works on TTL logic levels, logic 1 is +5 volts and logic 0 is 0 volts. Therefore to interface the two we use a MAX 232 driver IC manufactured by Maxim.

### 2.1.7 GSM Modem

GSM MODEM: A GSM modem is a wireless modem that works with a GSM wireless network. A wireless modem behaves like a dial-up modem. The main difference between them is that a dial-up modem sends and receives data through a fixed telephone line while a wireless modem sends and receives data through radio waves. Like a GSM mobile phone, a GSM modem requires a SIM card from a wireless carrier in order to operate.

A GSM modem can be an external unit or a PCMCIA card (also called PC Card). An external GSM modem is connected to a PC through a serial cable, a USB cable, Bluetooth or Infrared. Like a GSM mobile phone, a GSM modem requires a SIM card from a wireless carrier in order to operate.

PC's use AT commands to control a GSM modems. You can use a GSM modem just like a Hayes compatible modem. GSM modems support an extended set of AT commands. These extended AT commands are defined in the GSM standards.

## 2.2 SOFTWARE MODULE

### 2.2.1 Keil uVision4

Kiel. The Keil C51 C Compiler for the 8051 microcontroller is the most popular 8051 C compiler in the world. It provides more features than any other 8051 C compiler available today. The C51 Compiler allows you to write 8051 microcontroller applications in C that, once compiled, have the efficiency and speed of assembly language. Language extensions in the C51 Compiler give you full access to all resources of the 8051.

The C51 Compiler translates C source files into reloadable object modules which contain full symbolic information for debugging with the µVision Debugger or an in-circuit emulator. In addition to the object file, the

compiler generates a listing file which may optionally include symbol table and cross reference information.

### 2.2.2 AT command

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).

### 3. CONCLUSIONS

The display boards are one of the major communications medium for mass media. Local language can be added as a variation in this project. This can be achieved by using graphics and other decoding techniques. Also we realize that this project saves time, energy and hence environment. Cost of printing and photocopying is also reduced as information can be given to a large number of people from our fingertips. Thus we can conclude that this project is just a start, an idea to make use of GSM in communications to a next level.

### 4. FUTURE SCOPE

Temperature display during periods wherein no message buffers are empty is one such theoretical improvement that is well possible. Another very interesting and significant improvement would be to accommodate multiple receiver MODEMS at different positions in the geographical area carrying duplicate SIM cards. Multilingual display can be another added variation in the project We can able to store messages for long time by using sd memory card.

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### BIOGRAPHIES



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