



# Wireless Advertisement Display for Data Transmission

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## Abstract:

This project deals with an innovative rather an interesting manner of intimating the message to the people using a wireless electronic advertising display board which is synchronized using the GSM technology. This will help us in passing any message almost immediately without any delay just by sending a SMS which is better and more reliable than the old traditional way of making the flexes of advertisements and also giving the priority to the important person. This proposed technology can be used in many public places, malls or big buildings to enhance the security system and also make awareness of the new products in the markets.. Using various AT commands is used to display the advertisement onto the display board. GSM technology is used to control the display board and for conveying the information through a message sent from authenticated user.

**Keywords:** GSM module, LED Display, microcontroller.

## 1. INTRODUCTION

Now-a-days advertisement displaying is going digital with a high speed. The big malls and industries use digital displays now for advertisements. Also, on Railway Station and Bus Station the new products information is displayed on digital boards. People are now adapted to the idea of the world at its finger-tips. The use of mobile phones has 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 advertisement display board by using GSM technology. 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 the system for SMS-Short Message Service also for MMS. This project is a remote advertisement display 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. As engineer's main aim is to make life simple with help of technology, this is one step to simplify advertisement boards by using electronic display digital boards instead of flex boards.

## 2. HARDWARE USED:

### GSM Modem:

[2]A GSM modem is a remote modem which works with a GSM remote system. It acts like a dial-up modem. The real contrast between them is that a dial-up modem sends and gets information through an altered phone line while a remote modem sends and gets information through medium of radio waves. Much the same as a GSM cell-cellular telephone, a GSM modem needs a SIM card from a remote transporter so as to work. This is a minimized and convenient terminal that can ful fill different information correspondence needs over GSM. It can be associated with a PC with the assistance of a standard RS232C serial port. It offers highlights like SMS, Data Services, Fax Services and Web Browsing. Information File exchange and remote login is likewise upheld by GSM

Modems. This is immaculate gear for development locales, dams, production line plants and resorts where wired network is neither practicable nor accessible.

AT Commands	Message
+ CMGS	Send message
+CMSS	Send message from memory
+CMGW	Write message to memory
+CMGD	Delete message
+CMGC	Send command
+CMMS	More message to send

### Microcontroller ATMEGA16:

The ATmega16 is a low-power CMOS 8-bit microcontroller based on the AVR enhanced RISC architecture. By executing powerful instructions in a single clock cycle, the ATmega16 achieves throughputs approaching 1 MIPS per MHz allowing the system designed to optimize power consumption versus processing speed.

### MAX232:

[2]IC MAX232 converts signals from an RS-232 serial port to signals suitable for use in TTL compatible digital logic circuits [5]. The MAX232 is a dual driver-receiver and typically converts the RX, TX, CTS and RTS signals. The drivers provide RS-232 voltage level outputs (approx.  $\pm 7.5$  V) from a single + 5 V supply through on-chip charge pumps and external capacitors. This makes it useful for implementing RS-232 in devices that otherwise do not need any voltages outside the 0 V to + 5 V range, as power supply design does not need to be made more complicated just for driving the RS-232 in this case.

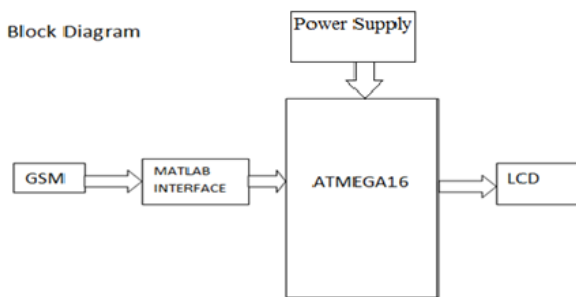
### LCD Display:

[4]In our project we are using GLCD (128x64) as well as basic LCD (2x16) displays. The basic LCD requires 3 control lines as well as 4 or 8 I/O lines for the data bus. The user may select

whether the LCD is to operate with a 4-bit data bus or an 8-bit data bus. If a 4-bit data bus is used the LCD will require a total of 7 data lines (3 control lines plus the 4 lines for the data bus). If an 8-bit data bus is used the LCD will require a total of 11 data lines (3 control lines plus the 8 lines for the data bus). Whereas for the GLCD we require 5 control lines and 8 data lines.

**GSM Modem and PC Interfacing:**

[2]GSM Modem is utilized to get message from the approved client. This GSM modem requires a SIM card from a remote bearer so as to work. This SIM number is contact number of the accepting area. PCs use AT orders to control modems. Despite the fact that GSM modem is interfaced with PC through Bluetooth utilizing a MATLAB program, a GSM modem can be tried before really actualizing into the framework. The MS HyperTerminal is a utilized for to testing the GSM gadget. In the first place sort "AT" A reaction "alright" ought to be come back from the cellular telephone or GSM modem. Presently we will sort "AT+CPIN?" this is utilized to inquiry whether the cellular telephone or GSM modem is sitting tight for a PIN (individual ID number, i.e. secret word). In the event that the reaction is "+CPIN: READY", it implies the SIM card is prepared for use.



**Figure.1. Block diagram Advertisement display for data transmission**

**3. [4] Algorithm:**

1. START
2. Type notice on mobile and send it over a GSM Network via SMS.
3. Message is received at receiver side at GSM modem
4. Check for the new message
5. Check the sender’s number. Is it valid or not (for Authentication).
6. If not then keep displaying old message (notice).
7. Else check for the priority of message.
8. If higher in priority, replace old/previous message with new one.
9. Else keep displaying old/previous message.

**4. CONCLUSION**

The advertisement displays are one of the major communications medium for mass medium. Other languages can be added as a variation in this project also with a local language. This can be achieved by using graphics and other codec techniques. Also we realize that this project saves time, energy and hence environment by making less use of flexes which Costs of printing and is also reduced as information can be given to a large number of people from our fingertips. Due to which marketing of products will be done without efforts. Thus we can conclude that this project is just a start, an idea to

make use of GSM in communications and marketing to a modern level.

**5. UTURE 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. Multilanguage display can be another added variation in the project We can able to store messages for long time by using sd memory card. By making use of this display boards the marketing will be more of a new products and when there is a environmental disaster then it willonly shows emergency messages.

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