

GSM Based Wireless Electronic Notice Board

Mr. Swapnil. S. Kambale¹, Mr. Nilesh. B. Swami², Miss. Punam. H. Kadam³, Prof. Vijay. J. Madane⁴

^{1,2,3}Student, Dept. of Electronics and Telecommunication Engineering, KEC, Maharashtra, India

⁴Professor, Dept. of Electronics and Telecommunication Engineering, KEC, Maharashtra, India

ABSTRACT – This paper gives the idea of wireless electronic notice board using GSM technology. Electronic notice board are the primary thing in any institution or any public places like bus stand. Railway station or in the commercial places such as college. Bank etc. Now a days the notice board is managed or controlled manually. It reduces a no. of resources like paper printer ink, manpower and most important the time, as this system directly displays any information on the notice board no any misuse can be done.

1. INTRODUCTION

Now a days the advertisement process is done digitally Hence the well developed colleges and the school use scrolling LED display to represent in the form of notice board. Control and communication has become very important in all the parts of the world, hence to reduce the time and to show any immediate changes in decision the scrolling LED display are important.

GSM stands for global system for mobile communication. Due to this international roaming capability of GSM are sent message, to receiver from any part of the world. It has the system of sending SMS [short messages services]

This is a electronic notice board with GSM modem at receivers end. So if the user wants to display any message, he/ she can send the information by SMS and thus update the scrolling LED display accordingly.

2. PROBLEM FORMULATION

Before the invention of scrolling LED display, it was very difficult or time consuming process to display any notice on the notice board.

As it requires a notice to prepare and then to display on notice board which consumes time.

Hence to reduce the efforts and to make the system digital we invent the scrolling LED display. So that it reduces the time and efforts to be taken to display on the wireless electronic notice scrolling LED display.

3. BLOCK DIAGRAM

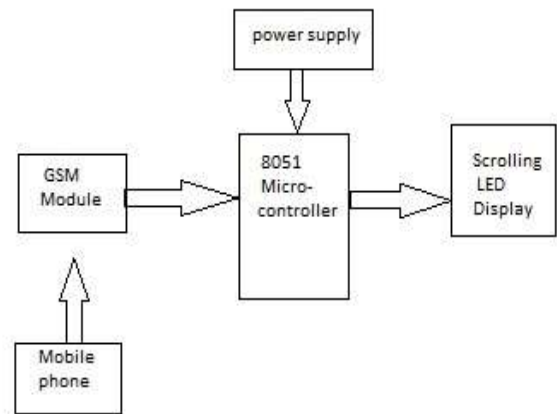


Fig -1: Block diagram

3.1 Block Diagram Description

As shown in the block diagram the various parameters like mobile phone, GSM module, 8051 microcontroller and scrolling LED display are represented in blocks.

The process of the above block diagram is as:

First the mobile phone user send the message to the GSM module that he wants to display on the scrolling LED display. Then the GSM module receive or accept the message that the user has send to GSM module. Now the GSM sends the text message to the microcontroller. As the microcontroller requires the power supply hence the power supply of 5V is provided .

Now the microcontroller displays the message sent by the user on then scrolling LED display.

3. COMPONENTS USED

- 8051 Microcontroller (AT89C51)
- GSM module
- Mobile phone
- Scrolling LED display
- Resistor

- Capacitor
- Crystal oscillator
- Shifter register (74HC595)

4. PRINCIPAL COMPONENTS

4.1 Microcontroller

The AT89C51 is a low power, high performance CMOS 8bit microcomputer with 4k 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 industry standard MCS-51 instruction set and pinout. To perform the fully static operation it requires 0 HZ to 24 MHZ of frequency. The microcontroller has 128x8 bit internal RAM. It has two 16bit timer/counters. And also it has six interrupt sources and it has a programmable serial channel.



Fig -2: AT89C51 (Microcontroller)

4.2 GSM Module

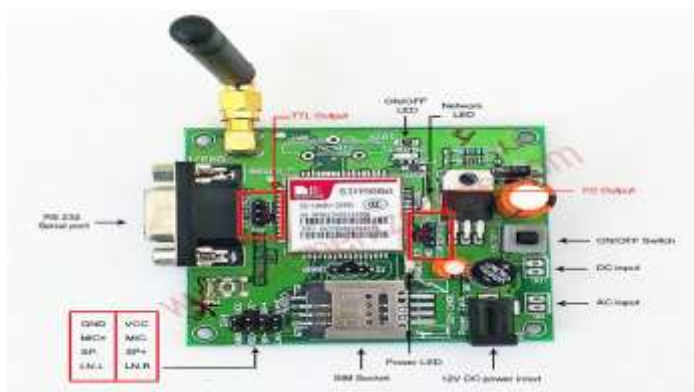


Fig -3: GSM module

GSM means global system for mobile communication. This technology is used to transmit the data services. The mobile voice and operate at different frequency band like 850MHZ ,900MHZ, 1800MHZ. The data rate carrying ability of digital system range is 64Kbps to 120Mbps.

A GSM modem is a specialized type of modem which accepts the SIM card. The operating voltage required is about 7V to 15V. The GSM can be controlled through standard AT command.

4.3 Shifter register



Fig -3: Shifter register

Shifter register is an 8bit serial-in, parallel-out shift register. It has wide operating voltage range of 2 v to 6v. It requires low power consumption about 80 microa.

It takes low input current of 1 microa maximum .it requires typical shift frequency of 35mhz.

4.4 Scrolling LED display



Fig -4: Scrolling LED display

It has long viewing distance and wide range viewing angle. It has the light brightness greater than 4500 cd/sqm. It has the life span greater than 50000 hours. It requires low power consumption and low maintenance cost. It supports the full language. It can be represented or adjusted according to real time clock and calendar. It has auto power on /off function . It has multiple fonts and moving effects.

5. CIRCUIT DIAGRAM

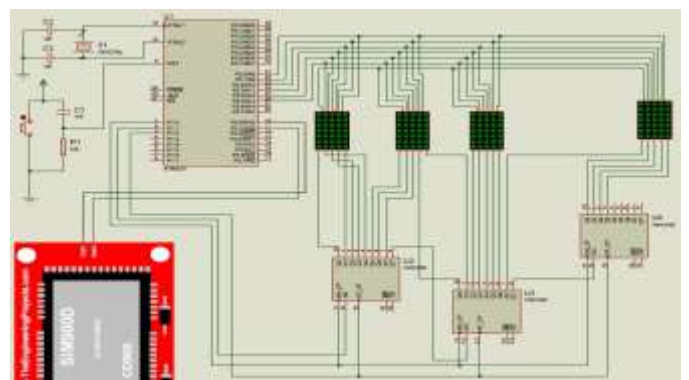


Fig -6: Circuit diagram

This circuit is designed to display the messages digitally and to reduce the efforts that are taken manually to display the notice on notice board .in this circuit micro controller receives the message from the GSM that to be displayed with

the help of receiver and transmitter from GSM to micro controller.

The micro controller is provided with a power supply of 5V. then it display the message to the scrolling LED display.

6. CONCLUSION

Great efficiency is achieved by using the concept of wireless Communication. The module can be efficiently used in educational institutes for faster communication of notices or messages.

The major advantage of this model is that the person can change the message at any point with no constraints of distance.

REFERENCES

- [1] Hardik Gupta, Pooja Shukla, Ankita Nagwekar "GSM based LED scrolling display ". International Journal Of Students Research in Technology and Management , vol (3) , may 2013 , ISBN [978-93-83006-01-4], pg 278-291.
- [2] Jagan Mohan Reddy, Venkareshwarlu "wireless electronic display board using GSM technology", International Journal of Electrical, Electronics and Data communication. ISSN :2320-2084, volume-1, Issue-10, Dec 2013.
- [3] Foram Kamdar. Anubhav Malhotra , Pritish Mahadik " Display Message on Notice Board using GSM", Advanced in Electronics and Electric Engineering. ISSN 2231-1297 , Volume 3, Number 7 (2013),pp.827-832 Research India Publications.