

LED DISPLAY SCROLLING BOARD BASED ON GLOBAL SYSTEM FOR MOBILE COMMUNICATION

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ABSTRACT

These days Global System for mobile communication is widely used in various applications. One from them applications is LED Display Scrolling board. These Boards are generally used in various public places like School, Airports, metro Stations and railway Stations too. The basic use for these boards are to show the desired messages to the public. These boards help out large people to get the specific amount information at the same time. This increases the efficiency of delivering the message to the public. Since these display uses led lights to display the messages which makes it very gorgeous. These Scrolling boards uses Key Elements like: LED, GSM, Micro Controller, rectifiers etc. It also uses 230V Alternating Current supply as input power source.

Keywords: Global System For Mobile Communication, Display Board, Rectifier, LED.

I. INTRODUCTION

Well in very past times it was very hard for people to display these messages. They used different techniques like wooden boards even black boards to show the messages. By the time passes people invented the Semiconductor Technology and this made the thing very easy. With the use semiconductors like rectifiers, Microcontrollers, LED lights etc. we are now able to display the messages on the display boards at various stations and hospitals. The message display portion consist of various LED lights which are combined in the form of Matrix such as (8x8), (10x10) etc. These display boards are given their input (which is to be displayed on the board) through key boards which can not be access through remote. So, we come up with an idea for fixing its remote accessing problem. We added the GSM i.e. Global System for mobile Communication. As we know that GSM is generally used for sending the messages through mobile phones to other mobile phones. Though here this GSM is used to send the message to be displayed on the Message board through mobile phones and hence this makes this system to work remotely.

II. COMPONENTS USED

• GSM MODULE

Global system for mobile communications chip {GSM}. It's a medium between transmitter and receiver for example cell phones and electronic bulletin board.it was shot up by {ETSI} which is European telecommunication standards institute. It's a core of the entire setup. GSM modem is connected to the power supply microchip and communicating link (RS-232) with programmable device. We can also join this by committed modem devices such as input output consecutive ports, {universal serial bus}, Bluetooth or else smartphones which make it extra appropriate for use. Every module is linked with an interchangeable phones.it is moreover furnished for voices and data services to perform at the 850mhz, 900mhz,1800mhz and 1900mhz frequency band. Sometimes in case of interference among two information the GSM modem uses {TDMA}strategy which is time division multiple access with the purpose of different time slot for every user with the similar frequency to their information respectively. The GSM modem has vast application in different fields namely transact business security applicants, supply chain management and weather bureau.

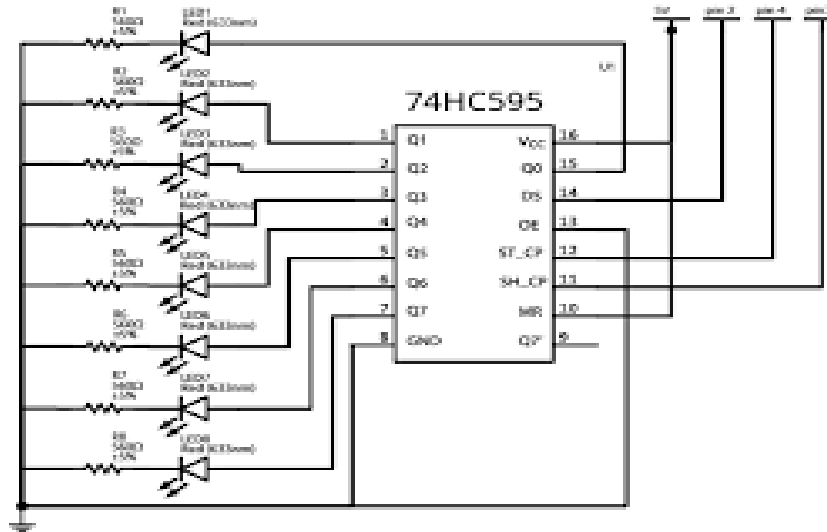


Figure 3: Shift register

• **SUBSCRIBER IDENTITY MODULE**

SIM is nothing but subscribe identity module. At first, it was only planned for cell phone networking only such as for calling and SMS. But now it's uses for multitasking. There is fixed slot inserted in a GSM module for sim. Nowadays, the dimension of sim cards decrease radically, and its functional design is boosted. We also have dual sim option for handsets which are available in market in which two different sim cards are used. This sim card can be used for storage like contact, message, information across networks call records and variety of data services. Presently payments can also be done by mobile phone, but it can't be possible without sim because of this it's becoming more famous .it can also easily replace from one cell to another cell phone with same function and task it was doing earlier, so it's become very convenient to us for using different gadgets with same SIM cards.

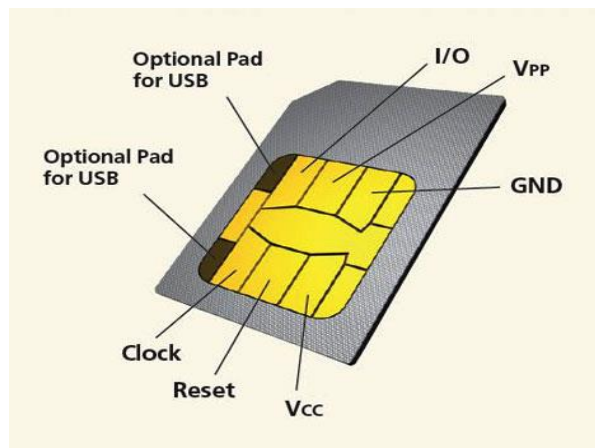


Figure 4: Sim

III. WORKING

If we talk about the working of this system Here, we have used a GSM Module which has a frequency range of 800Mghz to 900Mghz. This GSM Module will send a input message signal to the modem. The modem will demodulate the input signal and a RS -232 USB has been used to make a interface between Micro controller and Modem. As the microcontroller will receive the input value/Signal this will generate Attention Commands also known as AT Commands. The programming for this system is done through Hyper terminal System. As we also know that the Microprocessor has only maximum inbuilt memory of 64 Kilo Bytes flash storage which is very small for storing the input signal coming from GSM Module so, we have used E²PROM which supports more memory storage and helps out our micro controller to store more amount of input data.

This message from E²PROM is transferred to Micro Controller and then to shift registers for displaying the respective output on led display board.

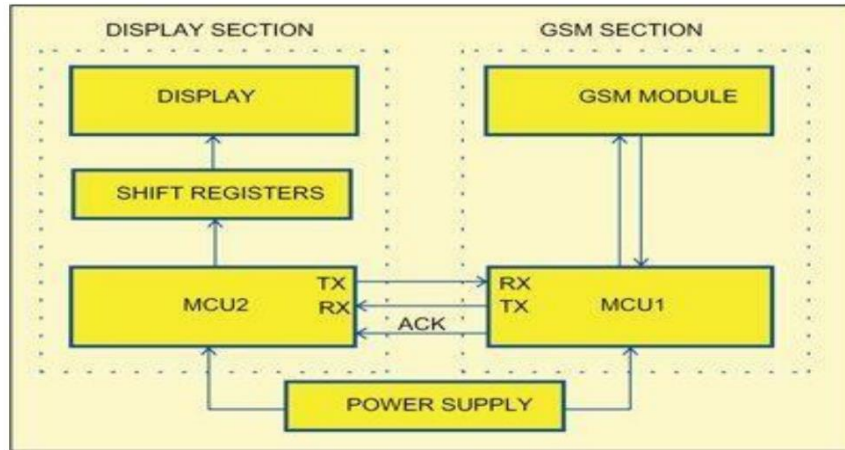


Figure 5: Working of this system

IV. FEATURES OF THIS SYSTEM

Following are the key features of this Scrolling display board:

1. It is very efficient and very fast.
2. We can easily control the scrolling speed of the messages to be displayed.
3. Very fast Processing Speed
4. Cost of this system is very low

V. FUTUTE SCOPE OF THIS PROJECT

1. Since now this project works on single language i.e. English only but in future we can enhance it by providing various types of others language.
2. In future we can add more memory. This will enhance the storage space present in our microcontroller.
3. In future we can introduce it with IOT i.e. internet of things. Which will make it more efficient to work.

VI. CONCLUSION

The idea at which we have come up with is much more efficient then previous one technologies in terms of various prospective like efficiency, performance, compatibility and wireless (because here we are sending he messages through our Global system for mobile communication). It uses coding decoding system so its can be said that it is much reliable in terms of security too. This project will save our precious time, energy.

VII. REFERENCES

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