



ELECTRONIC BULLETIN BOARD BY USING GSM TECHNOLOGY

Mohammad Rizwana¹, Boorna Tharun², Munukuntla Sumalatha³, B. Pavithra⁴

^{1,2,3} B.Tech Student, Dept of ECE, SVS Institute of Technology, Warangal, T.S, India

⁴Guide, Dept of ECE, SVS Institute of Technology, Warangal, T.S, India

ABSTRACT

Notice board is primary factor in any establishment or organization or public-service corporation places like bus stops, railway stations or parks. however causation numerous notices day to day may be a tedious method. This paper deals with advanced board. It presents Associate in Nursing SMS based mostly board incorporating the wide used GSM to facilitate the communication of displaying message on board via user's mobile. Its operation is predicated on microcontroller ATMEGA32 programmed in programing language. ASIM300 GSM electronic equipment with a SIM card is interfaced to the ports of the microcontroller with the assistance of AT commands. Once the user sends a SMS via a registered range from his mobile, it's received by SIM300 GSM electronic equipment at the receiver's finish. SIM300 is punctually interfaced through tier shifter IC MAX32 to the microcontroller. The messaged is so fetched into the microcontroller. it's more showed on Associate in Nursing electronic board that equipped with digital display display interfaced to micro chip high-powered by a regulated power offer from mains offer of 230 volts ac. T his project is our experiment on real time noticing.

Keywords: power supply, microcontroller, gsm.

1. INTRODUCTION:

Now-a-days promotional material goes digital. the large retailers and therefore the searching centers use digital displays currently. Also, in trains and buses the data like platform variety, price ticket info is displayed in digital boards. folks square measure currently custom-made to the thought of the globe at its finger-tips. the employment mobile phones have increased drastically over

years. management and communication has become necessary all told the elements of the globe. This gave United States of America the thought to use mobile phones to receive message then show it on AN electronic board. The GSM technology is employed. GSM stands for world System for Mobile Communication. thanks to this international roaming capability of GSM, we will send message to receiver from any a part of the globe. it's has the system for SMS Short Message Service. This project could be

a remote bulletin board with a GSM electronic equipment at thereceivers finish. thus if the user desires to show any message, hewill send the data by SMS and therefore update the {lcd|liquid crystal show|LCD|digital display|alphanumeric display} display consequently [1]. As engineer's main aim is to form life straightforward with facilitate of technology, this can be one step to modify real time noticing.

2. Working

To understand the working of our project, understanding of the components is required. They are mentioned below.

Components

Components essential for the working of project are:

- 1.) GSM Modem
- 2.) SIM
- 3.) Power Supply
- 4.) LCD
- 5.) Microcontroller
- 6.) Level Shifter
- 7.) Voltage Regulators

We shall discuss these components in detail.

GSM Modem:



Figure 1: LCD 162.

This GSM electronic equipment will settle for any GSM network operator SIM card and act rather like a mobile with its own distinctive telephone number. Advantage of exploitation this electronic equipment are going to be that you just will use its RS232 port to speak and develop embedded applications. Applications like SMS management, knowledge transfer, remote and work are often developed simply. The electronic equipment will either be connected to laptop port directly or to any microcontroller. It are often wont to send and receive SMS or make/receiver voice calls. It may be utilized in GPRS mode to attach to net and do several applications for knowledge work and management. This GSM electronic equipment could be a extremely versatile plug and play quad band GSM electronic equipment for direct and simple integration to RS232 applications.

SIM:

SIM abbreviates as Subscriber Identity Module. it's a chip-on little card consisting of user's data similarly as phone book. User will alter the operator on identical French telephone as per convenience .At present twin SIM French telephones are accessible within the market wherever we are able to use 2 operators on identical handset. The SIM is inserted in as lot accessible on the GSM electronic equipment.

LCD:



Figure 2: LCD 162.

LCD-Liquid Crystal Display is an electronic device for displaying text or characters. We are using 14 pin LCD. 16*2 represents 16 characters and 2 line display. LCD's are economical and easily programmable and can easily display special and custom characters [2][3].

Pin description is as follows

1. Pin 7 to pin 14-All 8 pins are responsible for the transfer of data.
2. Pin 4-This is RS i.e., register select pin.
3. Pin 5-This is R/W i.e., Read/Write pin.
4. Pin 6-This is E i.e., enable pin.
5. Pin 2-This is VDD i.e., power supply pin.
6. Pin 1-This is VSS i.e., ground pin.
7. Pin 3-This is short pin

Microcontroller:

Microcontroller may be a tiny pc on one microcircuit containing a processor core, memory and programmable I/O peripherals. we've got used microcontroller ATMEGA32. it's a high performance, low power Atmel pico power 8-bit AVR RISC-based microcontroller which mixes 32KB ISP nonvolatile storage with read-while-write capabilities, 1024B EEPROM, 2KB SRAM, twenty three general purpose I/O lines, thirty two general purpose operating registers, 3 versatile timer/counters with compare modes, internal and external interrupts, serial programmable USART, a byte-oriented 2-wire serial interface, SPI port, a 6-channel 10-bit A/D device (8-channels in TQFP and QFN/MLF packages), programmable watchdog timer with internal generator, and 5 computer code selectable power saving modes. The device operates between one.8-5.5 volts.

Level Shifter:

The MAX232 is associate degree IC that converts signals from associate degree RS-232 interface to signals appropriate to be used in TTL compatible digital logic circuits. The MAX232 may be a twin driver/receiver and generally converts the RX, TX, CTS and RTS signals. The drivers give RS-232 voltage level outputs (approx. ± 7.5 V) from one + five V provide via on-chip charge pumps. This makes it helpful for implementing RS-232 in devices that otherwise don't want any voltages outside the zero V to + five V vary, as power provide style doesn't have to be compelled to be created a lot of difficult.

Voltage Regulators:

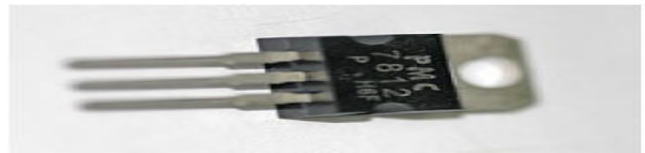


Figure 3: voltage regulator

A transformer could be a device that mechanically maintains a continuing voltage level. A transformer generates a set output voltage of a planned magnitude that is still constant notwithstanding changes to its input voltage or load conditions. Electronic voltage regulators are found in devices like pc power provides wherever they stabilize the DC voltages employed by the processor and different components.

Software used:

Many softwares have been used for programming and interfacing of the microcontroller to GSM modem SIM300 as well as LCD display. They are as follows:

- 1.) AT Commands

2.) HyperTerminal

3.) BascomAVR

AT commands area unit directions went to management a electronic equipment. AT is that the abbreviation of ATention. each instruction starts with "AT" or "at". that is why electronic equipment commands area unit referred to as AT commands. several of the commands that area unit went to management wired dial-up modems, like ATD (Dial), ATA (Answer), ATH (Hook control) and ATO (Return to on-line information state), also are supported by GSM/GPRS modems and mobile phones. Besides this common AT command set, GSM/GPRS modems associated mobile phones support an AT command set that's specific to the GSM technology, which incorporates 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) [4].

HyperTerminal:

HyperTerminal is helpful in diagnosis whether or not a association drawback is thanks to modem/line problems or dial-up networking issue, partially as a result of it bypasses dial-up networking once dialing a POP. it's additionally capable of leading commands to the electronic equipment (ATi), thereby providing a way of assembling valuable in foregarding the electronic equipment properties like the chipset, BIOS and a lot of. HyperTerminal will so be used rather than "More Info" or "Query electronic

equipment" on the medical specialty tab of the Modem Properties in Windows.

bascom AVR:

For a lot of hasty and economical programming, we have a tendency to went bascom AVR that is specially for AVRs like ATMEGA32. it's as a result of it's incorporate functions for UARTs, LCD etc. therefore and additionally by simulation we will check the output on virtual digital display. additionally by direct affiliation of AVR, we will burn the program from bascom AVR solely. Here we offer a basic beginning a code to put together digital display and UART.

```
$regfile = "m48def.dat" ' we use the M48
```

```
$crystal = 8000000 ` crystal frequency
```

```
$baud = 19200 ` baud rate
```

```
$hwstack = 32 ` hardware stack
```

```
$framesize = 24
```

```
Dim A As Byte, C As Integer, S As String * 4
```

```
A = 1
```

So as given, the code is very easy to write and it has many other advantages than conventional Keil software.

3. CONCLUSION

The show boards square measure one amongst the foremost communications medium for mass media. Native language may be supplementary as a variation during this project. this will be achieved by using graphics and different cryptography techniques. Additionally we have a tendency to notice that this project saves time, energy and thus atmosphere. price of printing and photocopying is additionally reduced as info may be given to an outsized variety of individuals from our fingertips. therefore we will conclude that this

project is simply a begin, an inspiration to form use of GSM in communications to a next level.

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