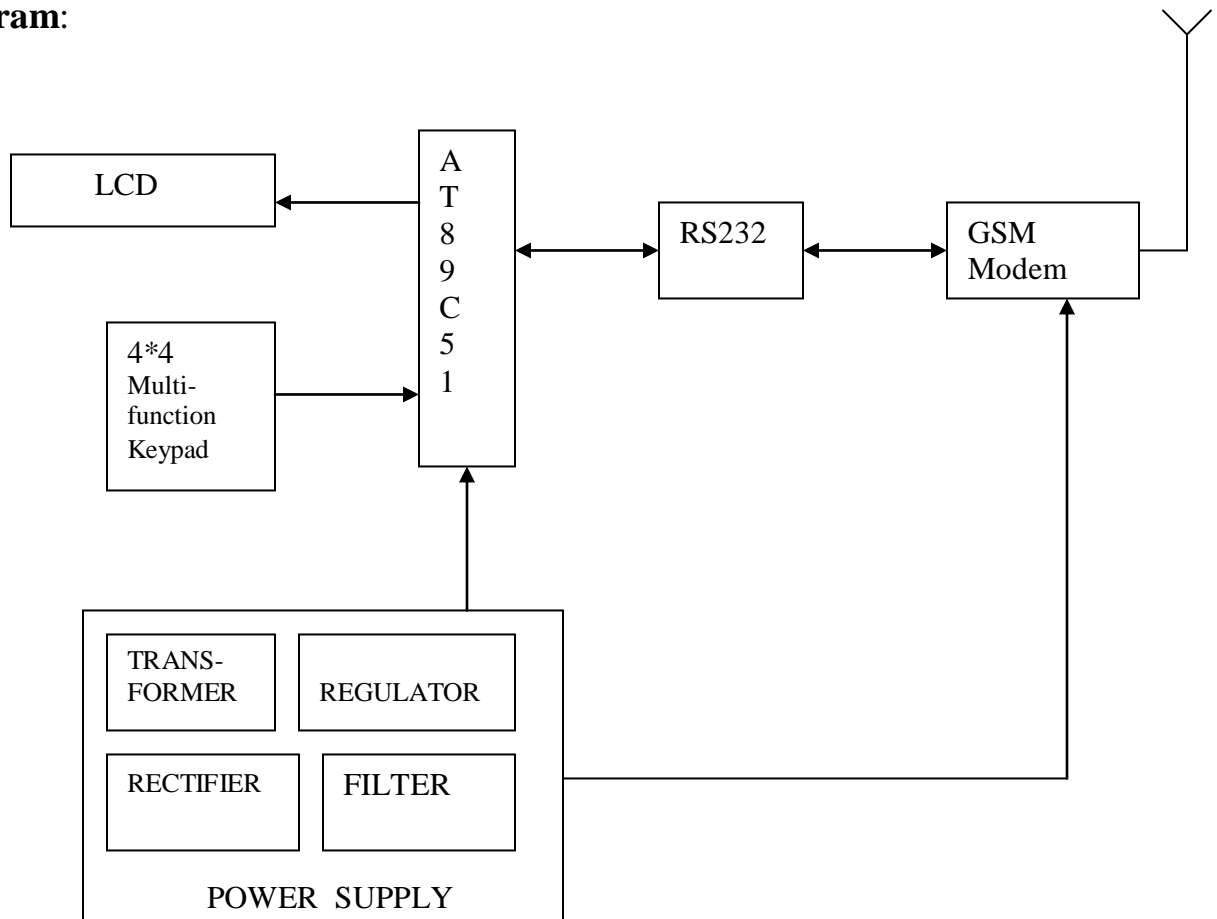


## SMS & CALL SERVICE IMPLEMENTATION FOR MOBILE PHONES USING 8051

### Abstract:

In this project we are going to implement sms and call service for mobile phones using 8051 micro-controller. We are also going to implement the multi-functional keypad by which we can type the messages and send the messages and we can call to a mobile. These functions satisfy the basic things in a mobile phone using 8051 controller.

### Block Diagram:



## **Working Principle:**

We are going to implement 4\*4 keypad to micro-controller and write the code for multi-functional keypad .GSM modem is interfaced to the micro –controller using RS232 .we interface LCD to the controller. When we want to send a message just type message using keypad and the message is send to mobile using Gsm modem.For call service we are going to type the number using keypad and press call button, we can interface a mic controller and a speaker for voice conversation.

## **HARDWARE REQUIREMENTS:**

- GSM MODEM
- AT89c51 micro-controller
- 4\*4 keypad
- Power Supply
- RS232 cable

## **SOFTWARE REQUIREMENTS:**

- KIEL  $\mu$  VISION 2
- EMBEDDED C
- FLASH MAGIC

## **Micro controller-AT89S52**

The AT89S52 is a low-power, high-performance CMOS 8-bit microcontroller with 8K bytes of in-system programmable Flash memory. The device is manufactured using Atmel's high-density nonvolatile memory technology and is compatible with the industry- standard 80C51 instruction set and pinout.

### **Features:**

8K Bytes of In-System Programmable (ISP) Flash Memory

Endurance: 1000 Write/Erase Cycles

4.0V to 5.5V Operating Range

256 x 8-bit Internal RAM

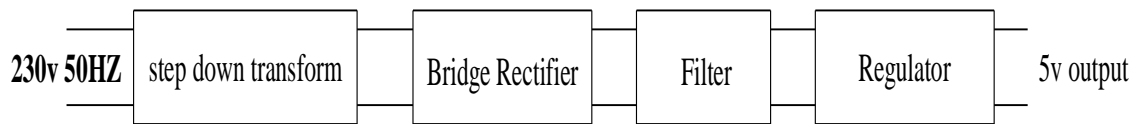
32 Programmable I/O Lines

Full Duplex UART Serial Channel

Fully Static Operation: 0 Hz to 33 MHz

### Power supply:

The microcontroller and other devices get power supply from AC to Dc adapter through voltage regulator. The adapter output voltage will be 12V DC non regulated. The 7805 voltage regulators are used to convert 12 V to 5VDC.



The adapter output voltage will be 12V DC non regulated. The 7805/7812 voltage regulators are used to convert 12 V to 5V/12V DC.

### RS 232 CONVERTER (MAX 232N)

This is the device, which is used to convert TTL/RS232 vice versa.

#### RS-232Protocol

RS-232 was created for one purpose, *to interface between Data Terminal Equipment (DTE) and Data Communications Equipment (DCE) employing serial binary data interchange*. So as stated the DTE is the terminal or computer and the DCE is the modem or other communications device.

RS-232 pin-outs for IBM compatible computers are shown below. There are two configurations that are typically used: one for a 9-pin connector and the other for a 25-pin connector.

**9-pin RS-232 Pin-out**

PIN	DESIGNATION
1	Data Carrier Detect
2	Receiv e Data
3	Transmit Data
4	Data Terminal Ready
5	Signal Ground
6	Data Set Ready
7	Request to Send
8	Clear to Send
9	Ring Indicator

**Voltage range**

The standard voltage range on RS-232 pins is  $-15V$  to  $+15V$ . This voltage range applies to all RS-232 signal pins. The total voltage swing during signal transmission can be as large as  $30V$ . In many cases, RS-232 ports will operate with voltages as low as  $-5V$  to  $+5V$ . This wide range of voltages allows for better compatibility between different types of equipment and allows greater noise margin to avoid interference. Because the voltage swing on RS-232 lines is so large, the RS-232 signal lines generate a significant amount of electrical noise. It is important that this signal does not run close to high impedance microphone lines or audio lines in a system. In cases where you must run these types of signals nearby one another, it is important to make sure that all audio wires are properly shielded.

The main role of the RS232 chip is to convert the data coming for the 12-volt logic to 5 volt logic and from 5 volt logic to 12 volt logic.