# 8051 MICROCONTROLLER

*T*he **Intel MCS-51** *(commonly referred to as **8051**) is a Harvard architecture, CISC instruction set, single chip microcontroller(μC) series which was developed by Intel in 1980 for use in embedded systems. Intel's original versions were popular in the 1980s and early 1990s and enhanced <u>binary compatible</u> derivatives remain popular today.*

Intel's original MCS-51 family was developed using NMOS technology, but later versions, identified by a letter C in their name (e.g., 80C51) used CMOS technology and consume less power than their NMOS predecessors. This made them more suitable for battery-powered devices.

8051 MICROCONTROLLER KIT
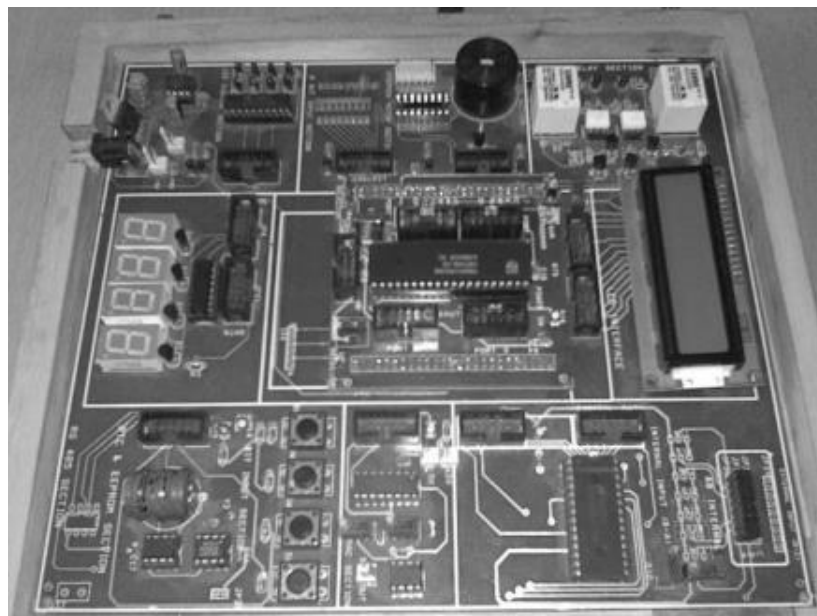
Core hardware → Phillips 89V51RD2.

Firmware tool → KEIL microVISION3

Programming tools → ECE Flash

Hardware → 8051 Application Board

Components used in spy system

1.8051

P1.0	1	40	VCC
P1.1	2	39	P0.0 (AD0)
P1.2	3	38	P0.1 (AD1)
P1.3	4	37	P0.2 (AD2)
P1.4	5	36	P0.3 (AD3)
P1.5	6	35	P0.4 (AD4)
P1.6	7	34	P0.5 (AD5)
P1.7	8	33	P0.6 (AD6)
RST	9	32	P0.7 (AD7)
(RXD) P3.0	10	31	EA/VPP
(TXD) P3.1	11	30	ALE/PROG
(INT0) P3.2	12	29	PSEN
(INT1) P3.3	13	28	P2.7 (A15)
(T0) P3.4	14	27	P2.6 (A14)
(T1) P3.5	15	26	P2.5 (A13)
(WR) P3.6	16	25	P2.4 (A12)
(RD) P3.7	17	24	P2.3 (A11)
XTAL2	18	23	P2.2 (A10)
XTAL1	19	22	P2.1 (A9)
GND	20	21	P2.0 (A8)

2. LCD

Pin No	Symbol	Details
1	GND	Ground
2	Vcc	Supply Voltage +5V
3	Vo	Contrast adjustment
4	RS	0->Control input, 1-> Data input
5	R/W	Read/ Write
6	E	Enable
7 to 14	D0 to D7	Data
15	VB1	Backlight +5V
16	VB0	Backlight ground

3.HEX-KEYPAD
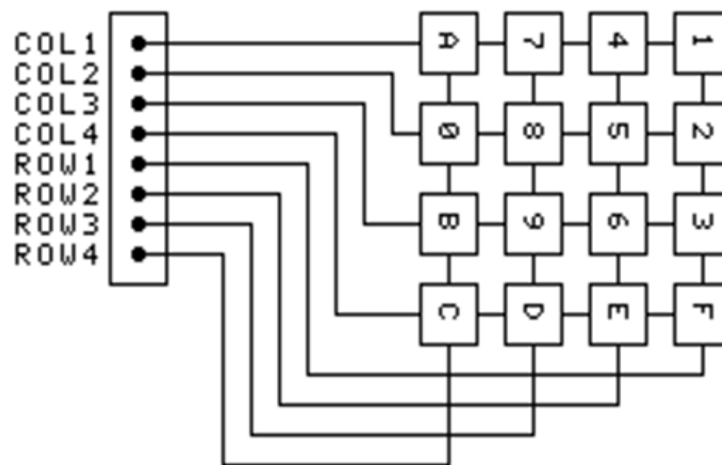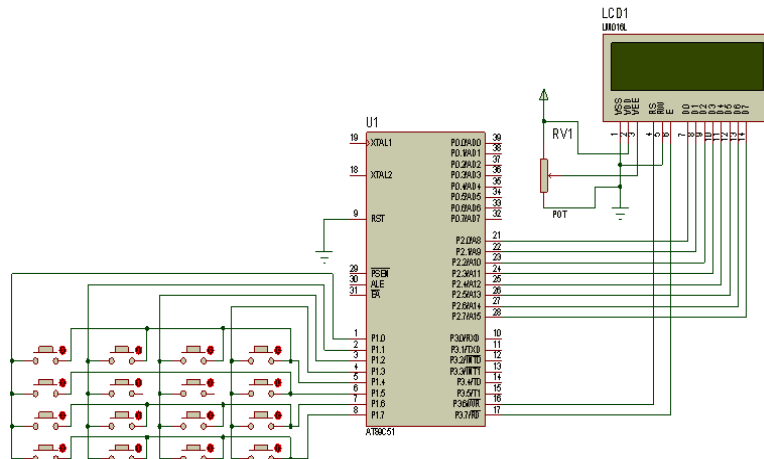
- *Keep all the row pins at LOGIC HIGH and column pins at LOGIC LOW.*

- *Inspect the status of row pin. (row correspond to key pressed provides a grounded path to VCC and hence get a LOW signal.)*

- *Repeat same steps for column high.*

- *Keep all the column pins at LOGIC HIGH and row pins at LOGIC LOW.*

- *Inspect the status of column pin. (column correspond to key pressed provides a grounded path to VCC and hence get a LOW signal.*

4.GSM

Global System for Mobile (GSM) is a second-generation cellular standard developed to cater voice services and data delivery using digital modulation

➢ *One of the key features of GSM is the **Subscriber Identity Module**, commonly known as a **SIM card**.*

➢ *It contains the user's subscription information and phone book.*

➢ *This allows the user to retain his or her information after switching handsets.*

➢ *Alternatively, the user can also change operators while retaining the handset simply by changing the SIM.*

- ➢ **FOR CALL**

- AT +

     INITIATE THE GSM MODEM

- ATD98XXXXXXX; +

TO DIAL A NUMBER.

- ATA

     TO ANSWER A CALL

- ATH

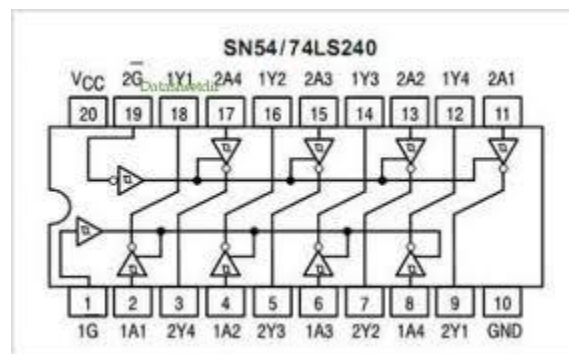   *TO HALT A CONNECTION*

- ATDL

     FOR REDIAL
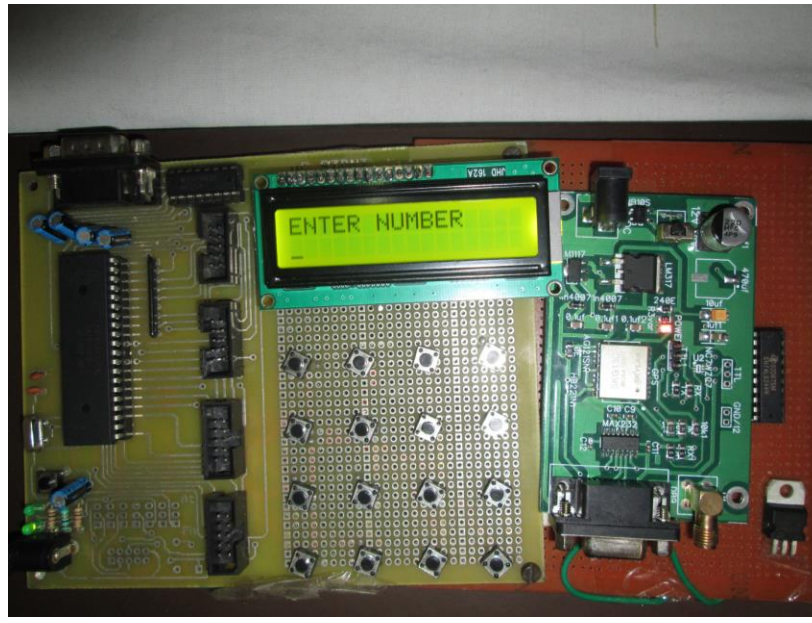
7. GPS

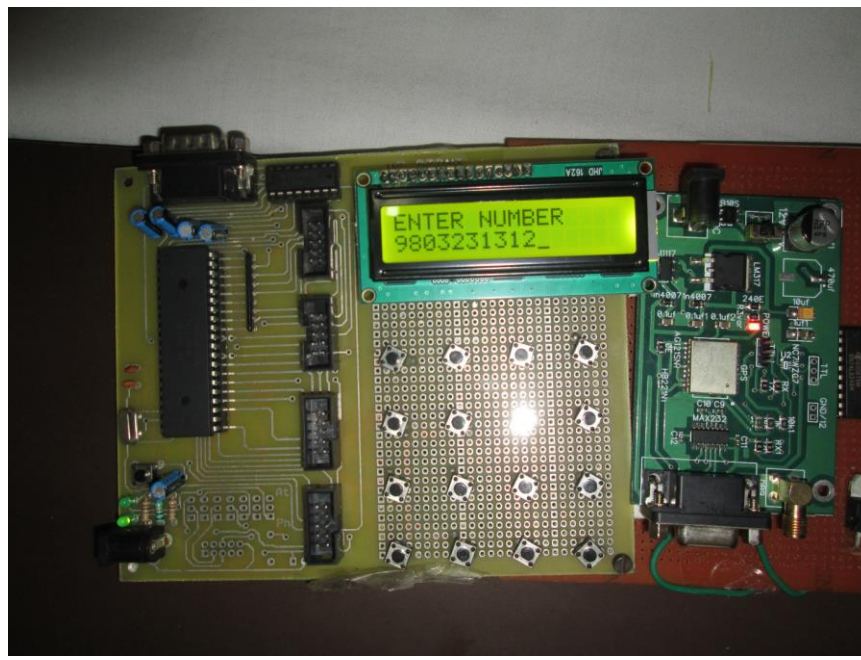## 6. LATCH (SN74LS244N)

WORKING

1. CALL MAKING
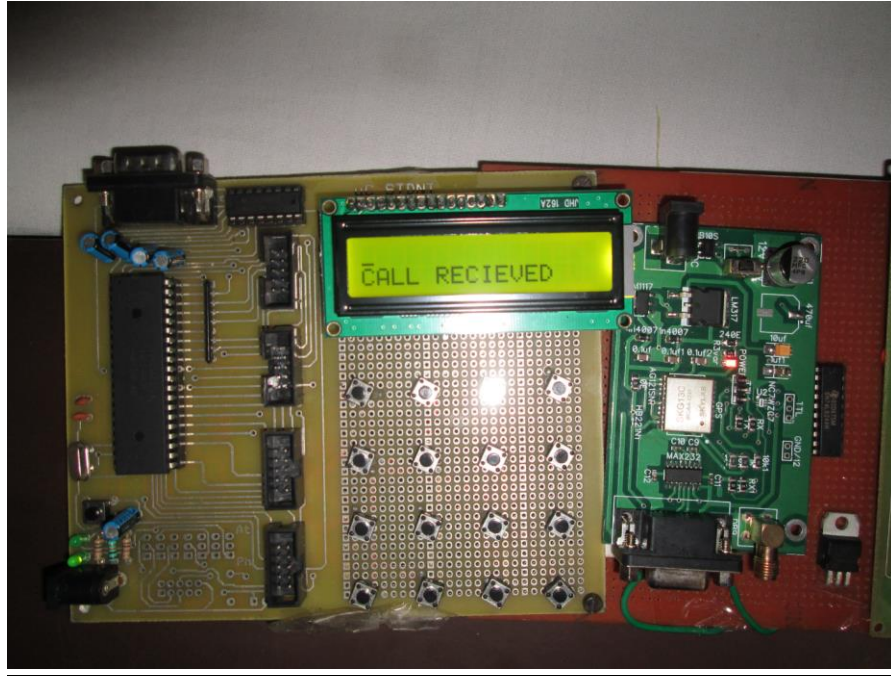## *[A] ENTERING NUMBER*

[B]DIALLING A NUMBER

[C] CALLING

[D]CALL ENDED

2.CALL RECEIVING

[A]CALL RECEIVED

[B] CALL END