# 6-DIGITS 7-SEGMENT LEDS DISPLAY DRIVER

### A. 6-digits 7-segment LEDs Display Driver

This device also used a very common components. For the driver I used TTL seven segment decoder/driver 74LS247 (Family of 7447 is ok!). It needs one IC for every digit LED, The LED used is a common anode type. The color is up to you. Every segment needs a pull up resistor. Used a 220 Ohm for a bright light and a bigger one (about 470 Ohm) for a dimmer light. I used a 220 Ohm resistor and a green color LED. Up to six digits can hold by DB-25 connector, because the input of 74LS247 is a BCD (4-bits). For the dots we used a DB-9 connector, through the buffer 7407 IC for pull up the power, so the input of DB-9 connector could be tired to any TTL level logic. One pin of DB-9 also used for lamp test (LT) function. Use a female type connector, because you can use the standard parallel connector selling in the market without making it anymore. Ok, nothing more to say, lets go to the project.
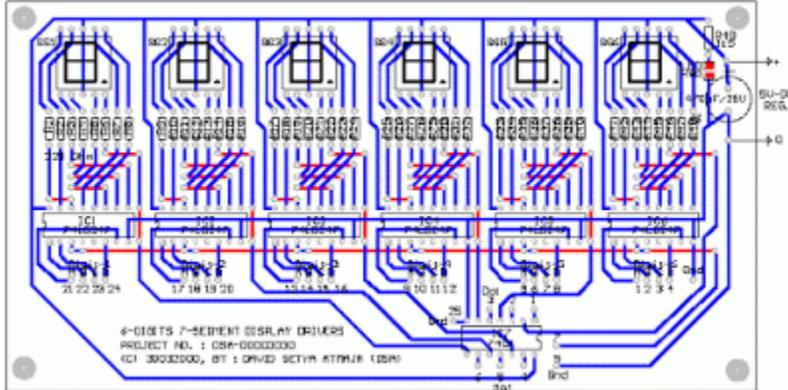
### B. Schematic Diagram

Here is the complete schematic diagram (I drawn it with Protel V1.0).

click the image for zooming
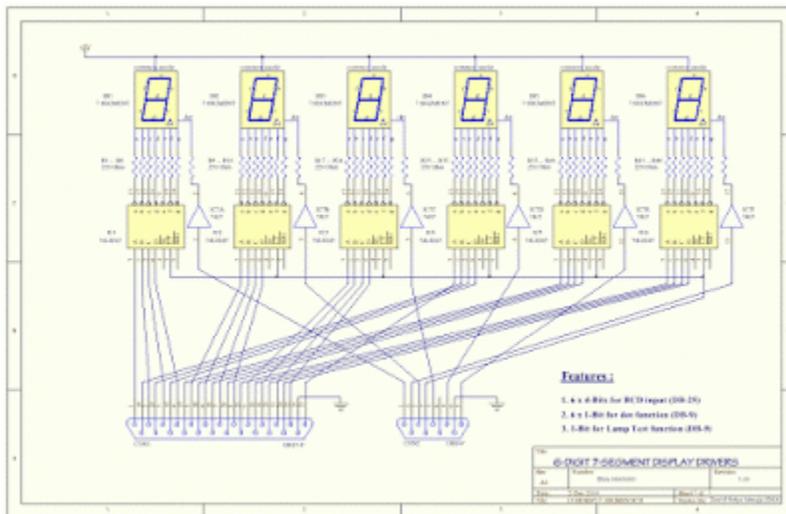


### C. PCB Layout

For the PCB layout, I drawn it using a single layer side. Here is the complete PCB layout (I drawn it with Protel V1.5).

### D. Mounting

All the circuit are very best if it can fit in a box. I put it all in a box size of 20 cm (long) X 10 cm (wide) x 3 cm (tall). The layout panel consist of 6-digits 7-segment LEDs, miniature jack socket, miniature on/off switch, power indicator lamp, DB-9 female connector for dot bits LEDs, and DB-25 female connector for 6-digits BCD input LEDs. Its quiet a compact device

### E. Components

 Notes: Resistor R1...R36 refer to the ICs used. see text for any detail info.

Resistors:

1. R1...R48=220 Ohm.............48 pcs

Diodes:

1. SS1...SS6=7-Segment LED, common anode, green color..6 pcs

ICs:

1. Decoder/Driver IC1...IC6=74LS247...........6 pcs

2. Buffer IC7=7407........................... 1 pcs

Others:

1. Con1=DB-25 female socket........................ 1 pcs

2. Con2=DB-9 female socket......................... 1 pcs

3. Con3=Miniature jack socket (mono) - Optional.... 1 pcs

4. S1=Miniature on/off switch (spdt) - Optional.... 1 pcs

5. Indicator lamp 5V - Optional.....................1 pcs

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## F. Testing

The software test needs LPT expander card for interfacing the circuit. It can both except LPT expander card when run on LPT port or using decoder for PPI-8255. There are 3 kind of test; first is displaying any numerical inputed by user, second is counting up from 0 to 999999, third is displaying the clock. Please try by your self.
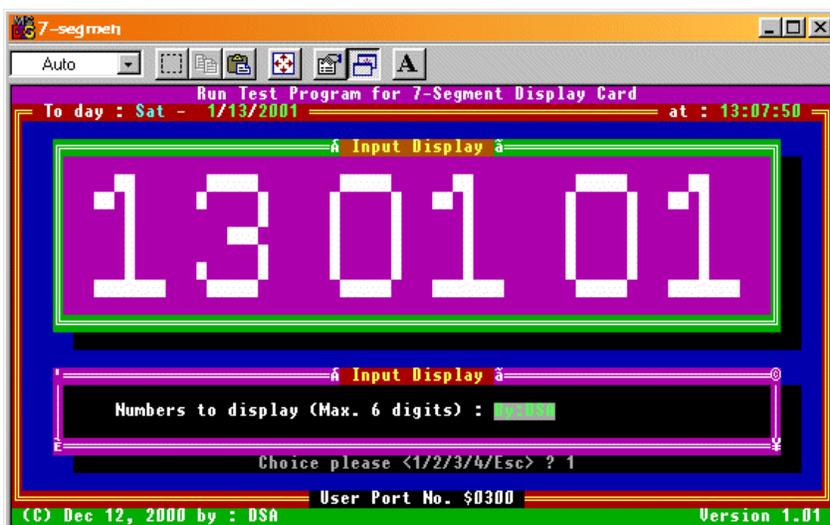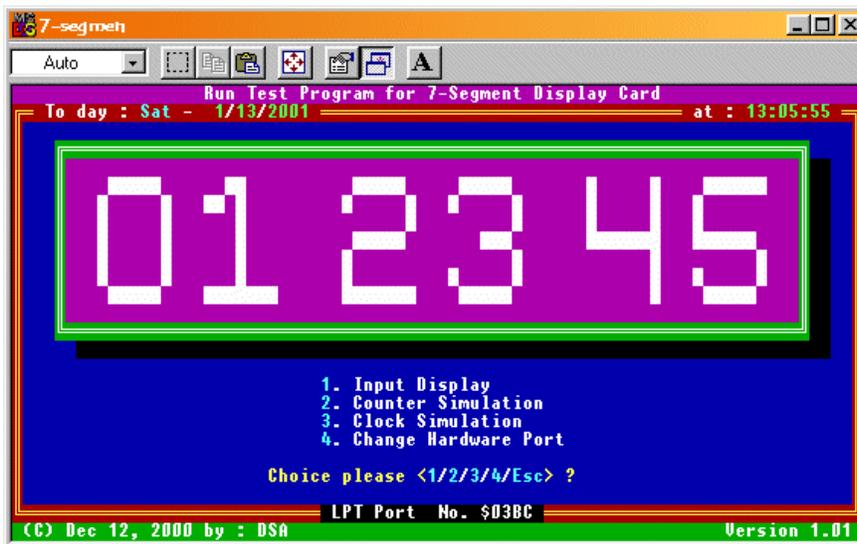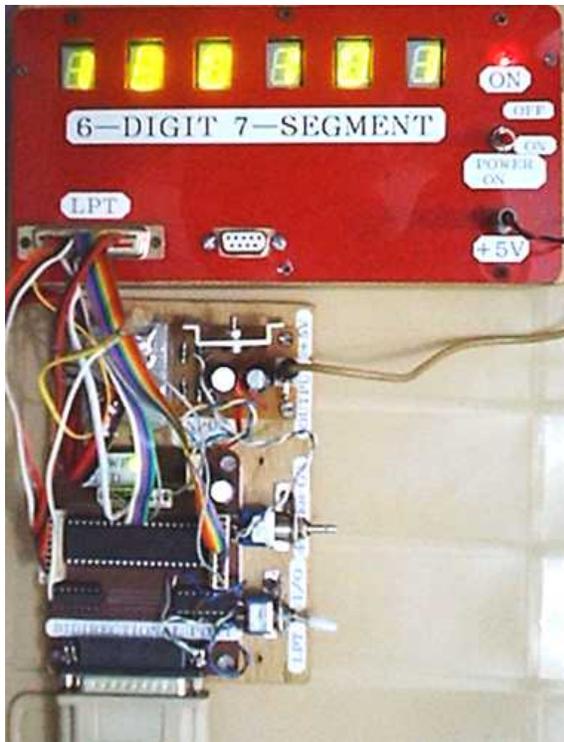
## G. Prototype

My prototype shown below. The panel made by plastic sheet same as the 36-LEDs display driver. Here is the picture.



## H. Application

Here is the application program and hardware. The program test on 80486-DX2-66 PC/AT computer

Source : http://mediatoget.blogspot.in/2011/01/6-digits-7-segment-leds-display-driver.html