

ECL-132 Large-Screen Remote Control Digital Clock (Plug-In remote control version)

ECL-132 has the following functions: memorize before power-down, accurate time adjustment, on time alarm, 5 independent alarms, automatic error correction, closeable LED display.

1. Kit Manual

Model: ECL-132

Model Name: Large-Screen Remote Control Clock

Dimensions: Length 233 * Width 93 * Height 30mm

Operating voltage: 5V (USB power)

Operating current: 30 ~ 50mA (depending on the displaying color)

2. Principle Of Operation

The system consists of Minimum system, infrared receiver circuit, display circuit, buzzer circuit, clock chip and power packs.

(1) Minimum system,:

including power-on reset circuit U1 (STC11F04E), C1, R5 composition, C4, C5, Y1 constitute a clock circuit.

(2)The infrared receiver circuit:

U4 is responsible for receiving the signal transmitted from the remote control, after shaping amplified by an output pin, and transmitted to the microcontroller processing.

(3)Display circuit:

U3 (74HC138N) 3-8 line decoder, Q1-Q4, R1-R4 and 132 LED components.

(4)buzzer circuit:

Including R6, Q5 and LS1, button sounds, hourly chime, the alarm and other sound output from the MCU P3.1 port, via Q5 driver sound by LS1.

(5)Clock Chip:

U2 (DS1302), Y2, C6, C7 and BT1 composition.

(7)Power section:

J1 extension cords, C2, C3 filtering.

3. Operating Instructions

A. key general features:

Press the middle button to enter the main menu;

1) Adjust Time : LED is blinking is currently selected position, after adjusting the hour and minute, then press "main button" to save and exit, enter alarm settings submenu.

2) Alarm setup : At first is 5-way total alarm selection, the first position shows C, the other two position will display

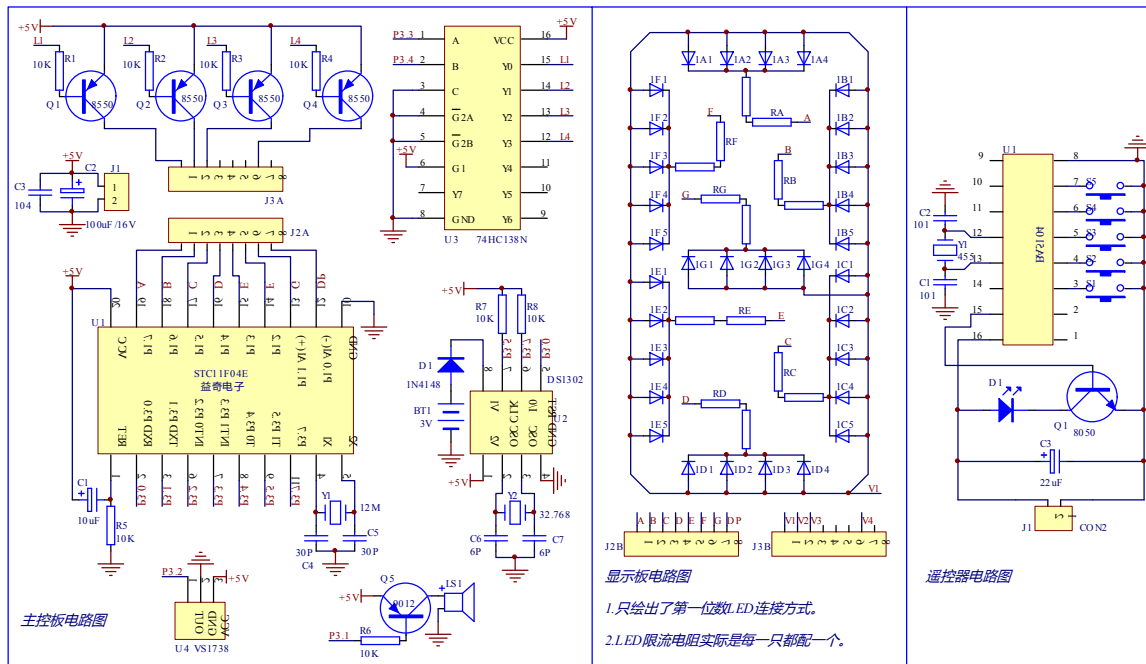
flashing ON (on) or OF (off), will switch by the plus or minus key. If you choose OF (off), then press the "main button" directly into the Error Correction submenu. If you choose ON (on), then press the "main button" to enter the 5-way alarm setting, to channel 1 alarm for example. Display C1, the other two position flashing ON (on) or OF (off), on and off the setting as above, if the press OF (off), then press the "main button" directly into the second channel alarm ON (open) or OF (off) choice; if yes ON (on), then press the "main button" to enter the hours and minutes, the settings are consistent with the method and adjust the time setting is completed and then press the "main button" entry 2-way alarm setting, the first 5-way alarm settings and then press "main button" entry error correction submenu.

3) Error Correction submenu: the first position shows N, after the other two position flashing ON (open amended) or OF (closed amendments), switch by the plus or minus key, if you choose OF (closed Amendment), then press the "main button" then go back to normal working interface; If you select ON (open correction), then press the "main button" entry correction parameter setting interface, the behind two position displays 01 flashes, means one day (the range of days can switch between 1-999 days by plus or minus keys), (it can be between -50 seconds to 50 seconds after the number of days selected number of seconds and then press the "main button" Save settings screen to enter the number of seconds after the two displays 00 flicker, representing 0 seconds by plus or minus keys to choose, there is a negative sign indicates X minus Y second day, no negative sign indicates X days plus Y seconds), press the "main button" returned to normal travel time interface.

B. Key shortcut functions:

- 1) Under normal working time interface press the "off" to turn off or turn on the digital display.
- 2) Under normal working time interface press "switch" to switch between hour-minute interface and minute-second interface.
- 3) Under normal working time interface press "Speed" to select the entire 5-way alarm on or off (display C, ON or OF), then press "main button" entry chime on or off selection (display H, ON or OF), after selection press "main button" returned to normal working time interface.
- 4) In the minutes and seconds interface to go when the screen displayed by the "time" to show SEC, then the second digits flash, a few seconds after minute and second flash together, then press "time" again to zero seconds, finally , returns to the minutes and seconds interface, you can check whether the second is correction precision or not.

Circuit schematics



Parts list

Note: Since the batch is not the same, could lead to some elements out of stock, it will be replaced with similar functions components

There are some differences between the products and the list! Use the material object as the standard!

01. Remote control lists (plug-in version of the remote control)

Name	Model	Num.	Quantity	Name	Model	Num.	Quantity
IC socket	BA5104 16PIN	U1	2	Battery	CR2025	1	1
Transistor	S8050 455E	Q1 Y1	2	Switch	6*6*12	S1~S5	5
Ceramic capacitors	100PF	C1 C2	2	Screw nut	M3*6 M3	8 4	12
Electrolytic capacitors	22uF/25V	C3	1	Double-pass	M3*10	4	4
Battery Holders	CR2025	J1	1	PCB	40*79mm	1	1
Infrared emission tube	Φ 3	D1	1				

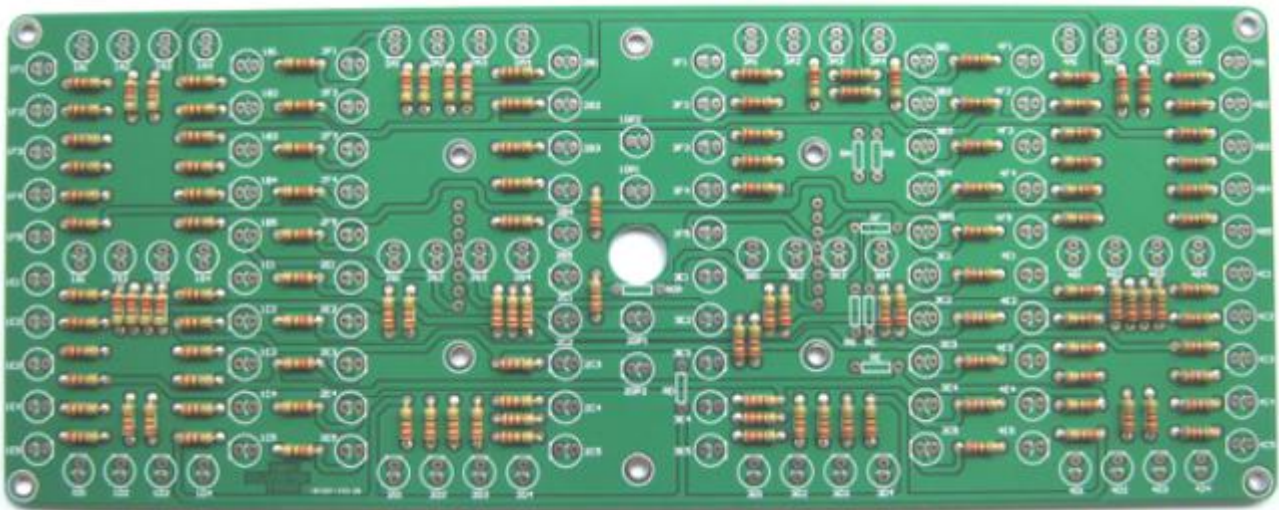
02. Clock list

Resistance	10K	R1~R8	8	Infrared receiver	VS1738	U4	1
Ceramic	5P	C6 C7	2	Battery	CR2025	BT1	1

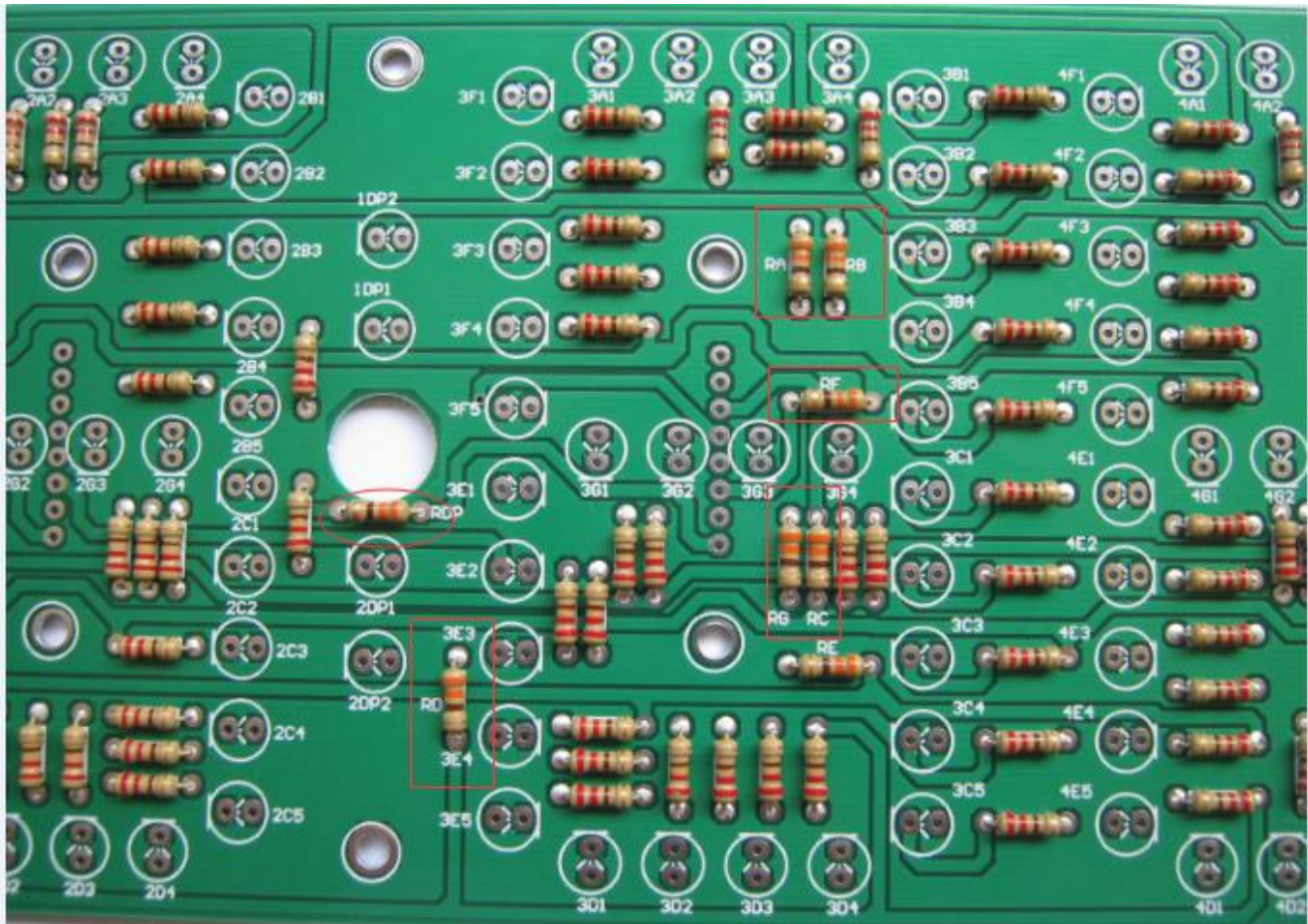
capacitors				Holders			
	30P	C4 C5	2	Battery	CR2025	BT1	1
	104P	C3	1	Female Header	1*8P	J2A J3A	2
Electrolytic capacitors	10uF/25V	C1	1	USB	L=80cm	1	1
	100uF/16V	C2	1	PCB	FR4 70*43mm	1	1
Diode	1N4148	D1	1	Dashboard list			
Transistor	S8550	Q1~Q5	5	Resistance	220R	R1A1~R4G4	130
Crystal	32.768K	Y2	1	330R blue yellow	220R red	RA~RDP	8
	12M	Y1	1	Pin	1*8P	J2B J3B	2
SCM	STC11F04E	U1	1	LED	5mm	1A1~4G4 DP	132
IC	DS1302	U2	1	Pillars	M3*9+6	6	6
	74HC138N	U3	1		M3*15	6	6
IC socket	20PIN	U1	1	Screw	M3*5	12	12
	8PIN	U2	1	Filter plate	Black Transparent	228.88*89.2mm	1
	16PIN	U3	1	Cover	Aluminum	229.4*89.7mm	1
Buzzer	5V Active	LS1	1	PCB	FR4	229*89mm	1

How to install this kit?

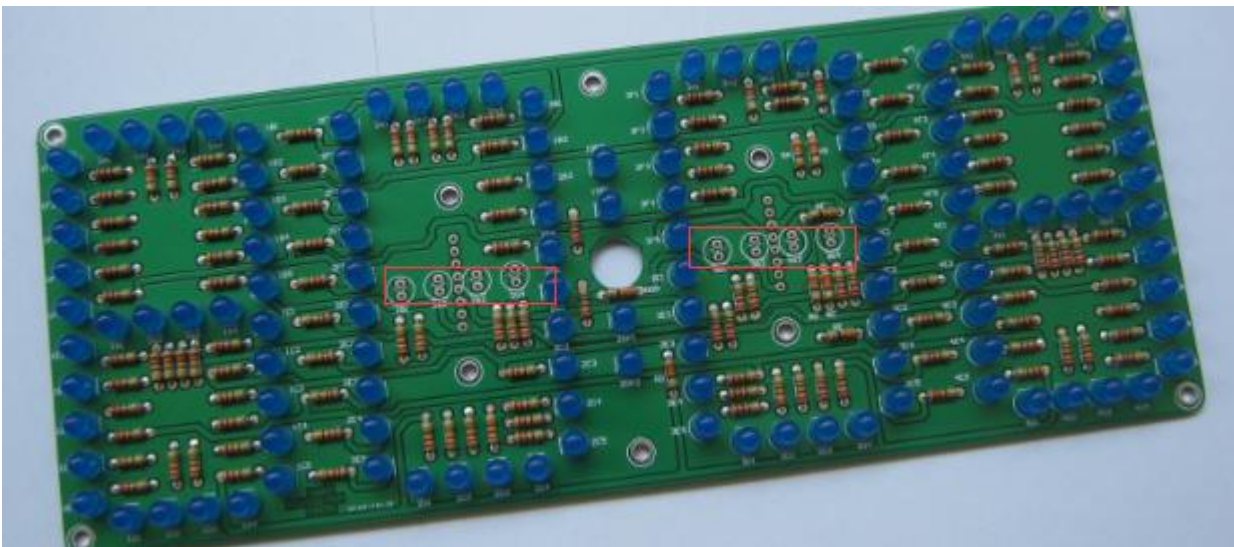
1. 130 resistance welded (130 is the same resistance, remove RA ~ RG and RDP , welded the rest all resistance)



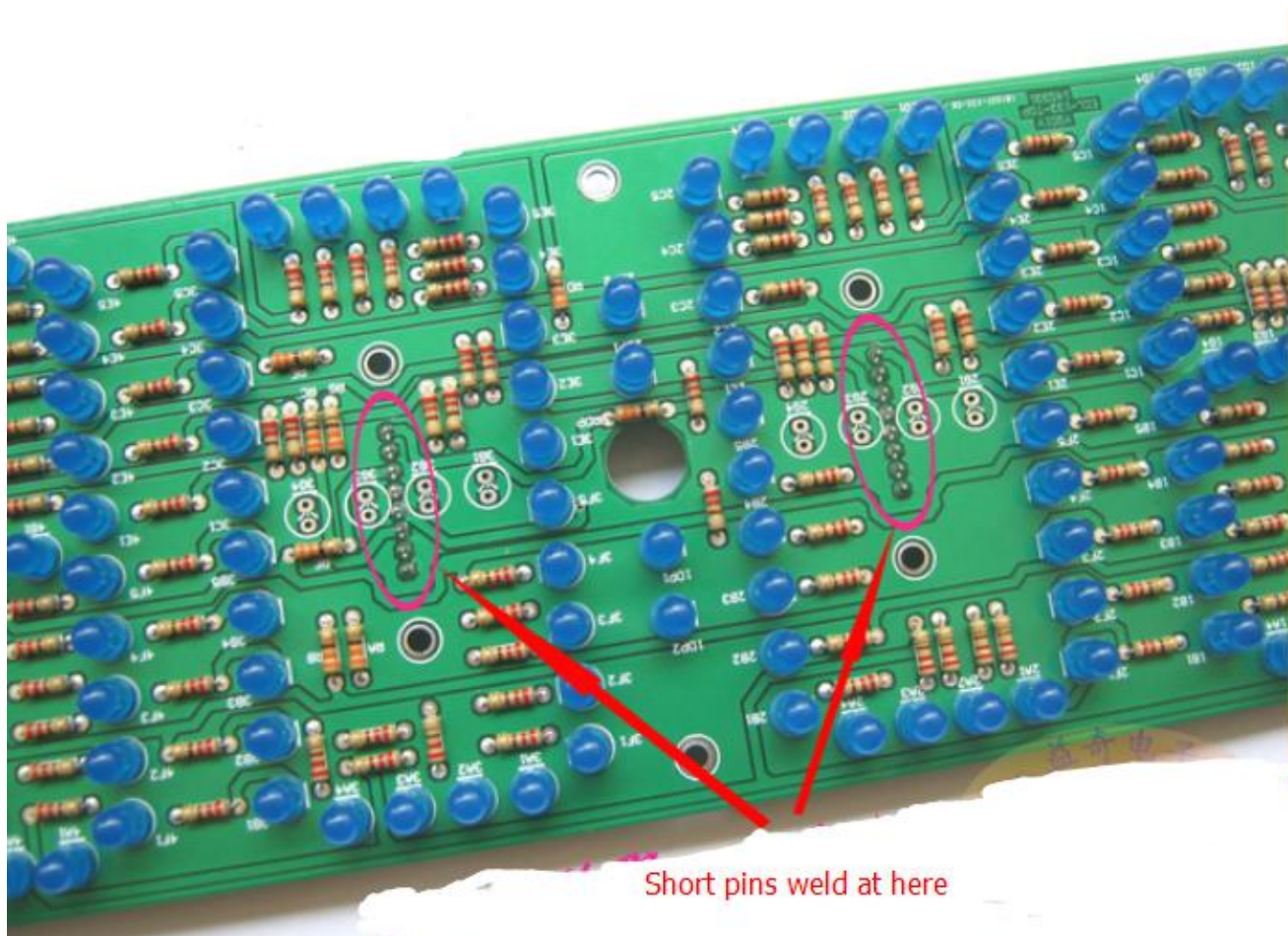
2. Soldering 8 resistance (RA ~ RG and RDP, the same value resistor).



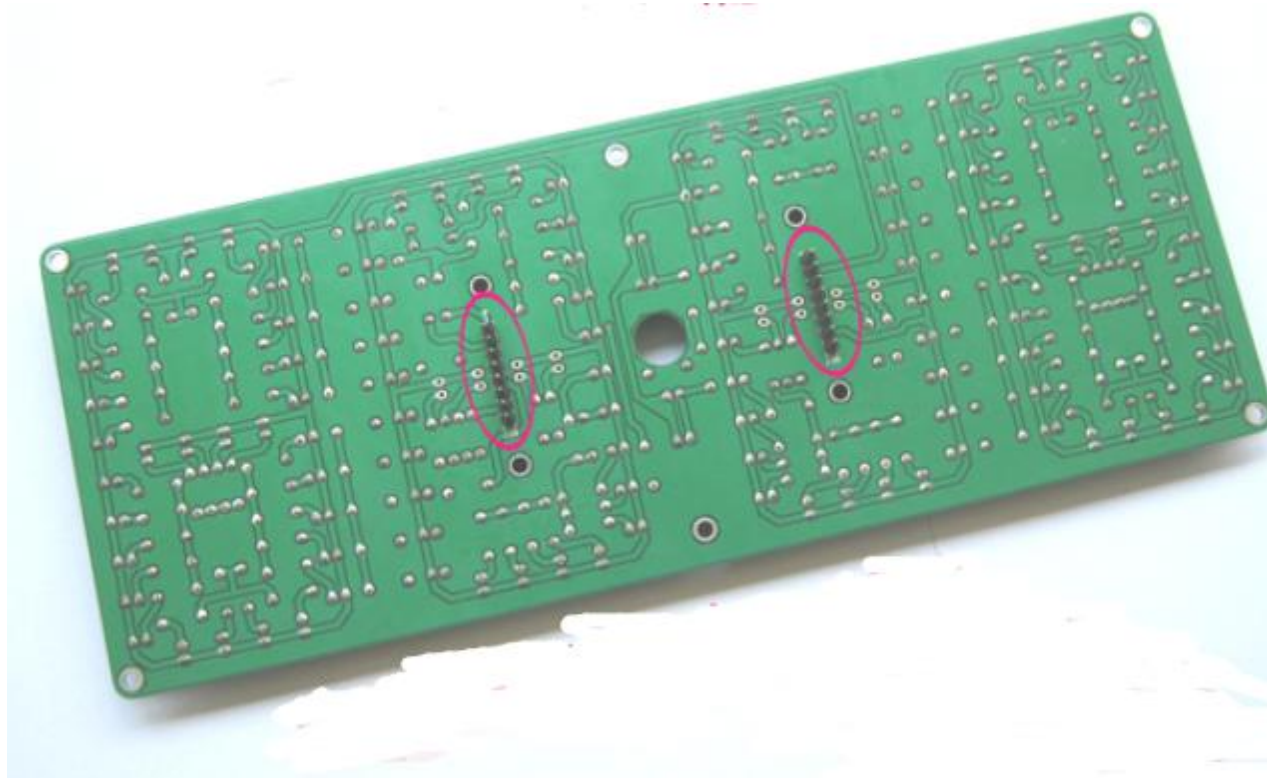
3. 124 LEDs Soldering (the highlight 8 LED NOT Soldering temporarily) long led is positive, short led is negative



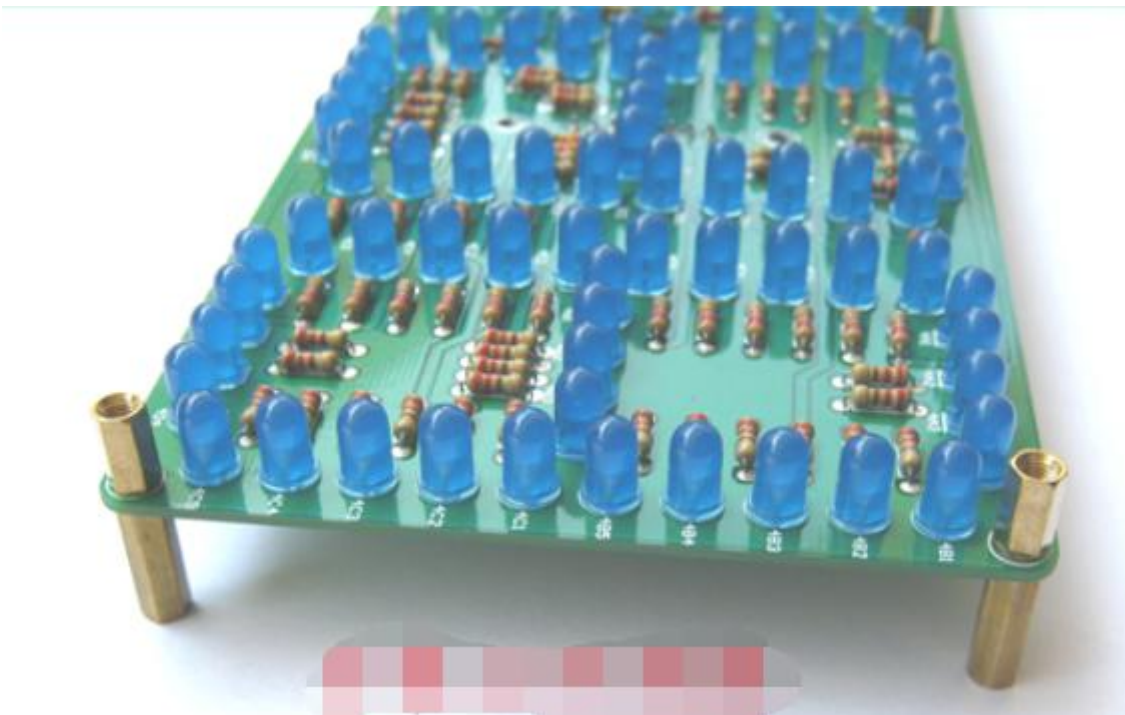
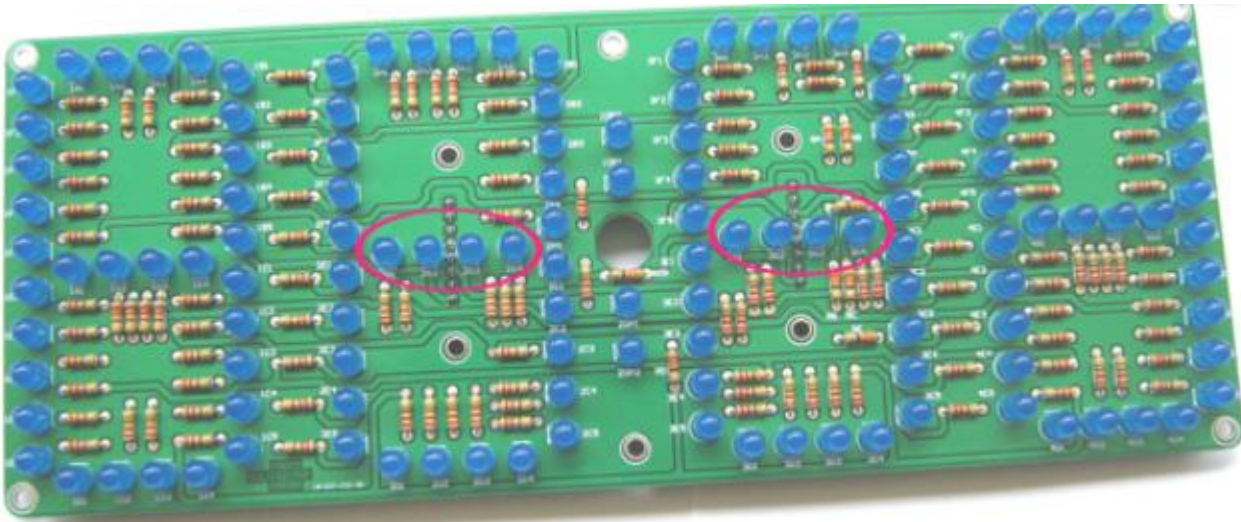
4. Weld the 2 pcs 8P header



Short pins weld at here



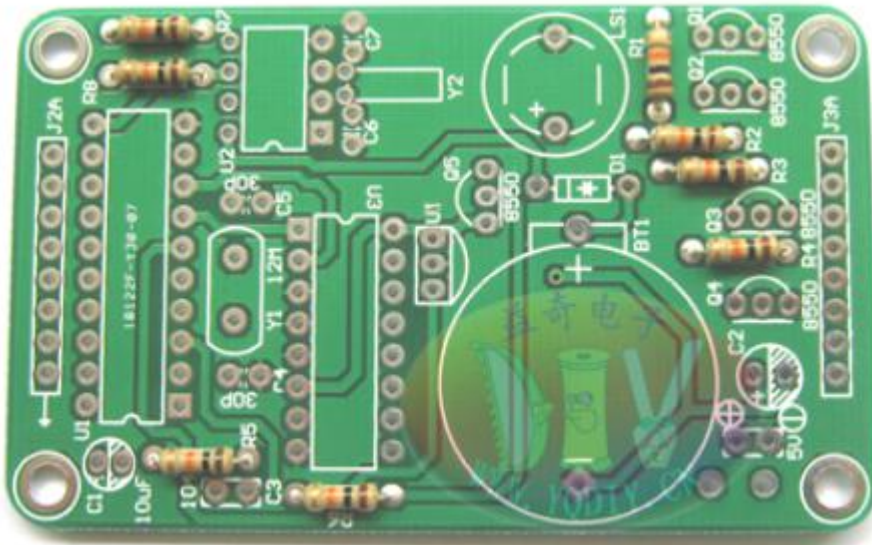
5. Weld the 8 LEDs



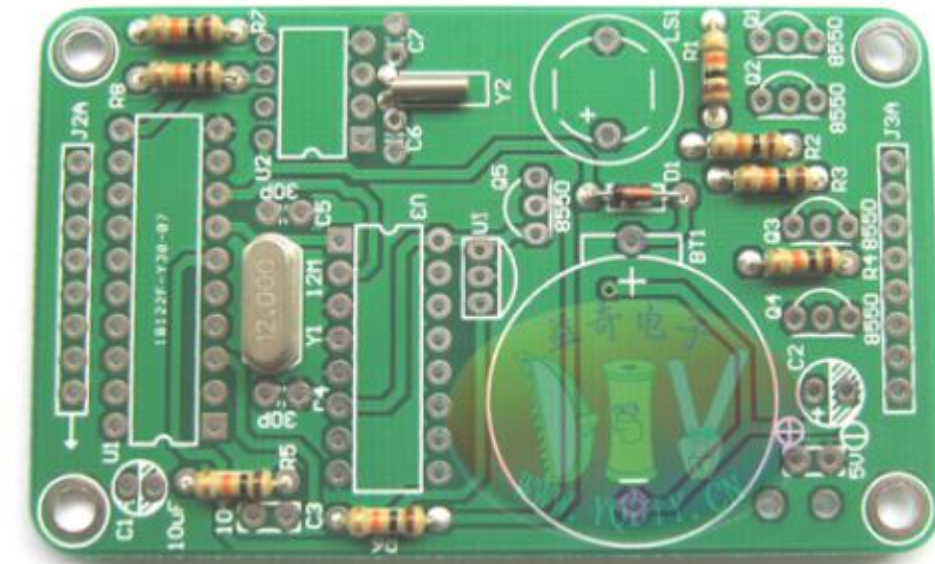
6.

Main board install:

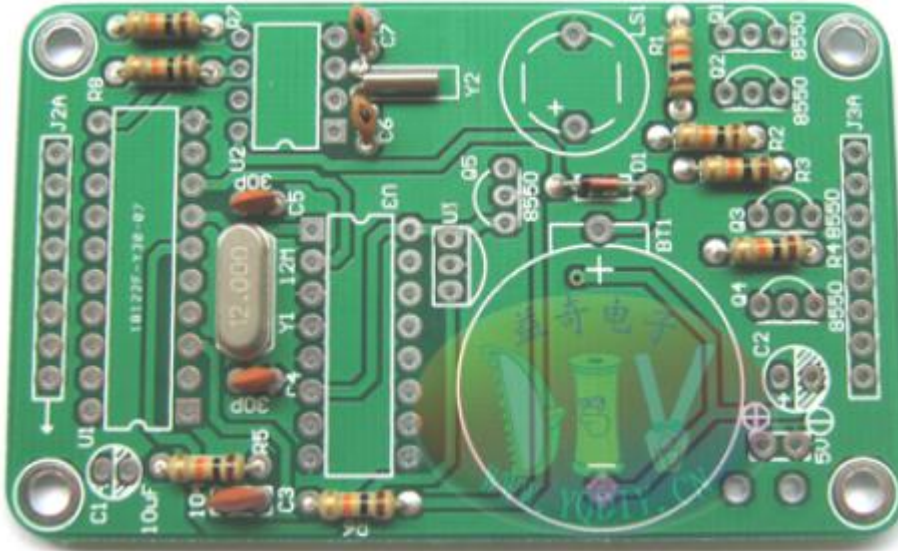
1. 8 Resistance (with same values)



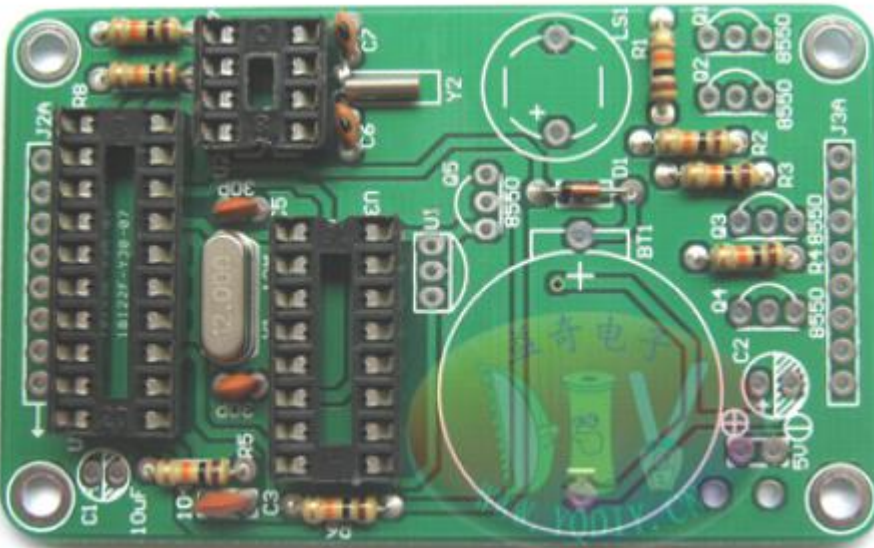
2. Soldering a diode and two crystal



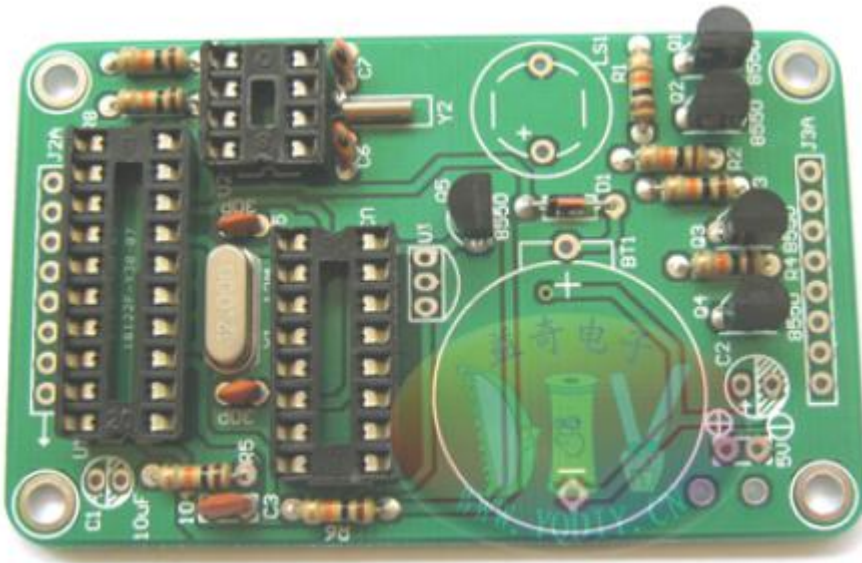
3. Soldering five ceramic capacitors



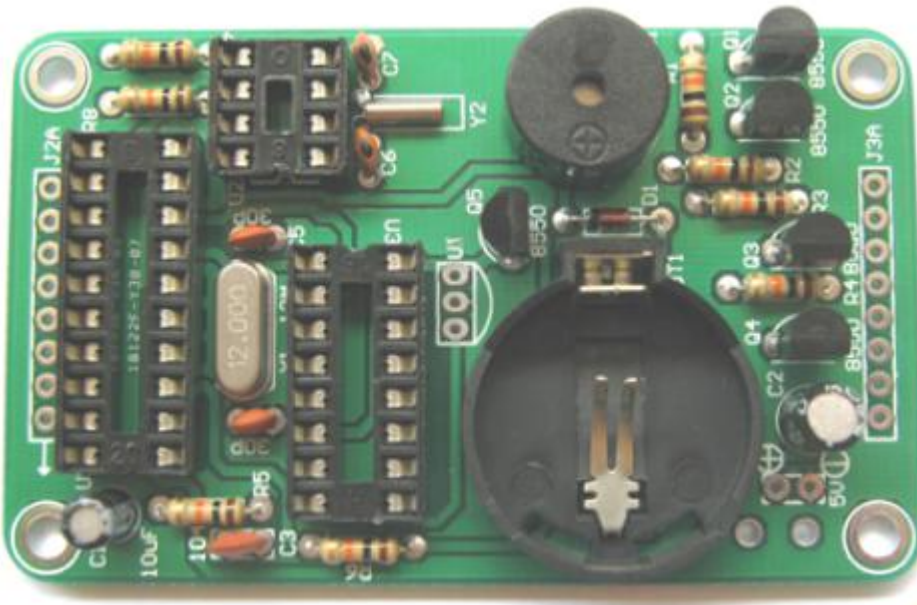
4. Soldering 3 IC sockets.



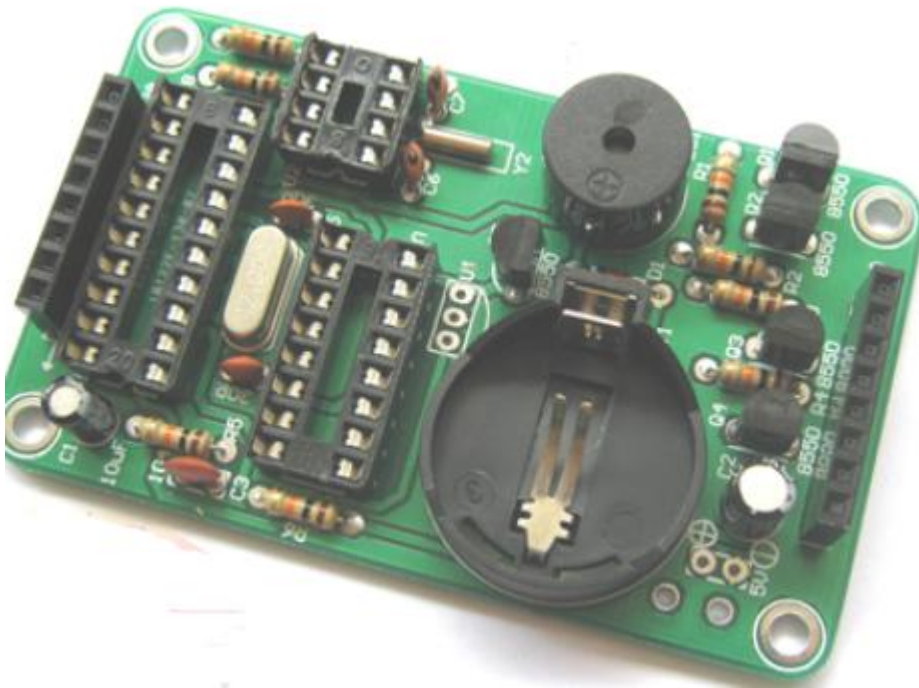
5. Soldering five transistors



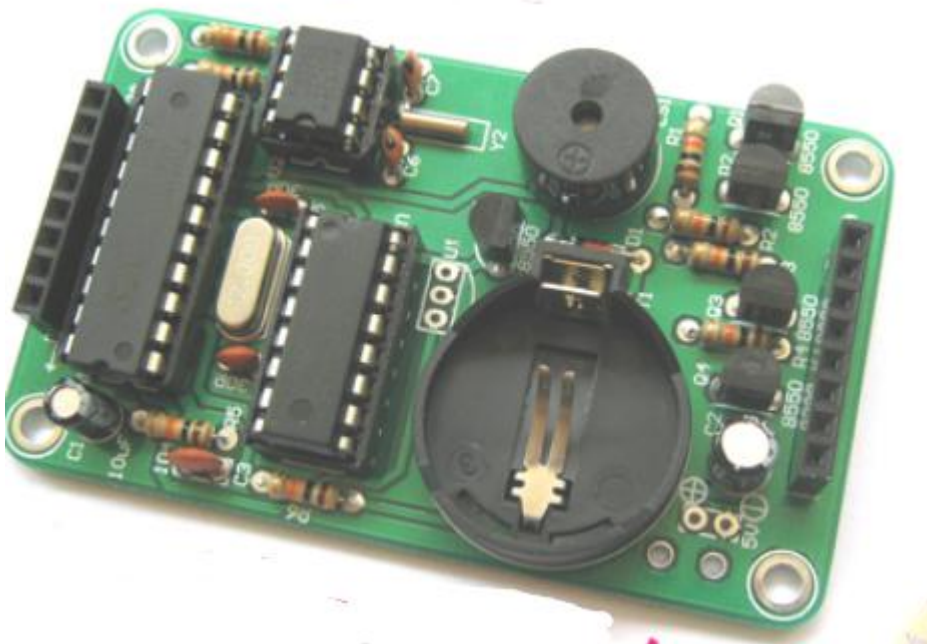
6. Soldering two electrolytic capacitors, a buzzer and a battery holder



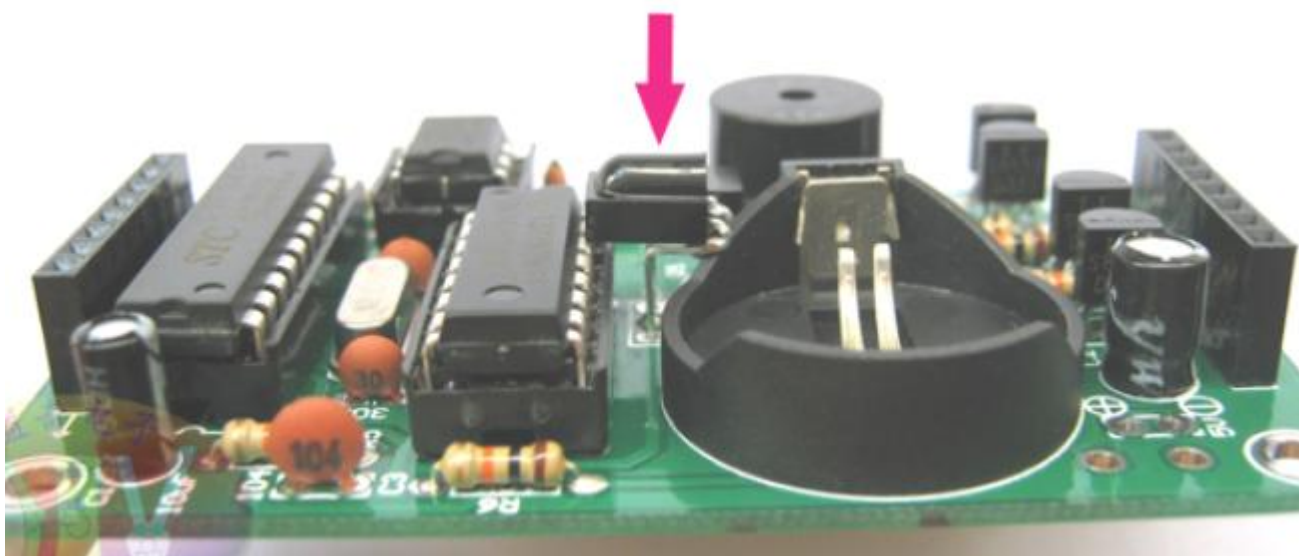
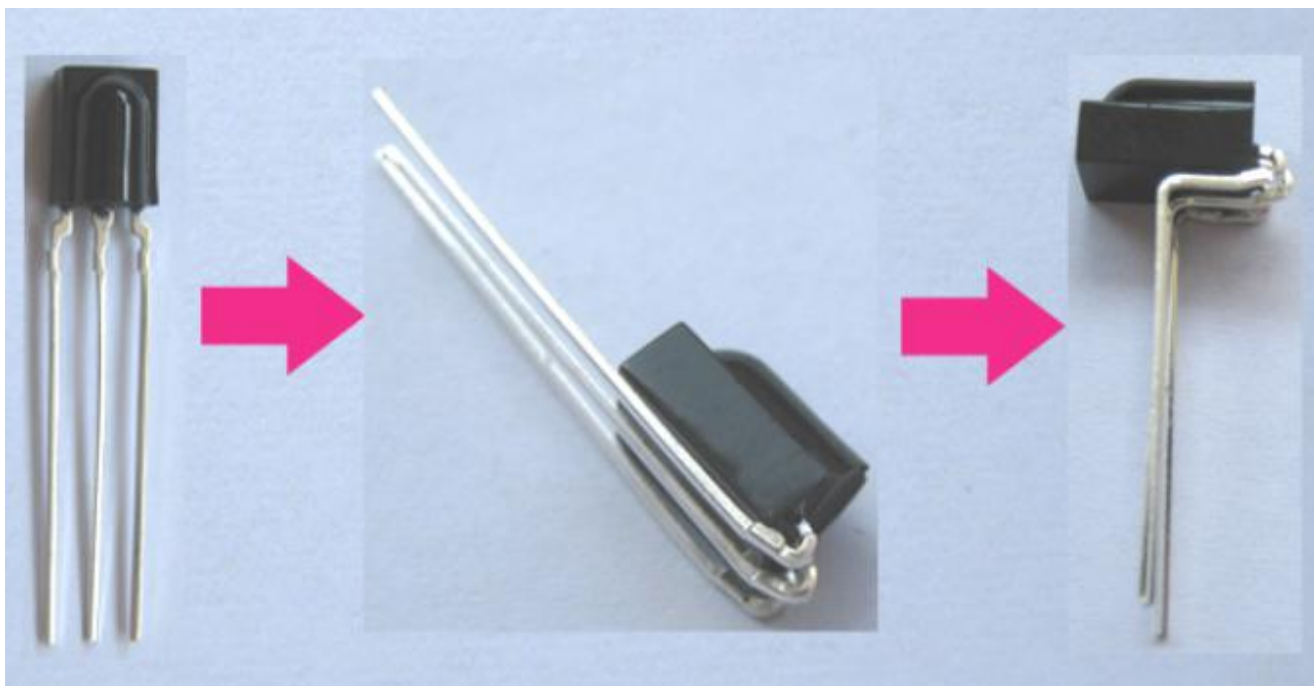
7. Soldering two 8P FEMALE



8. Install three manifold



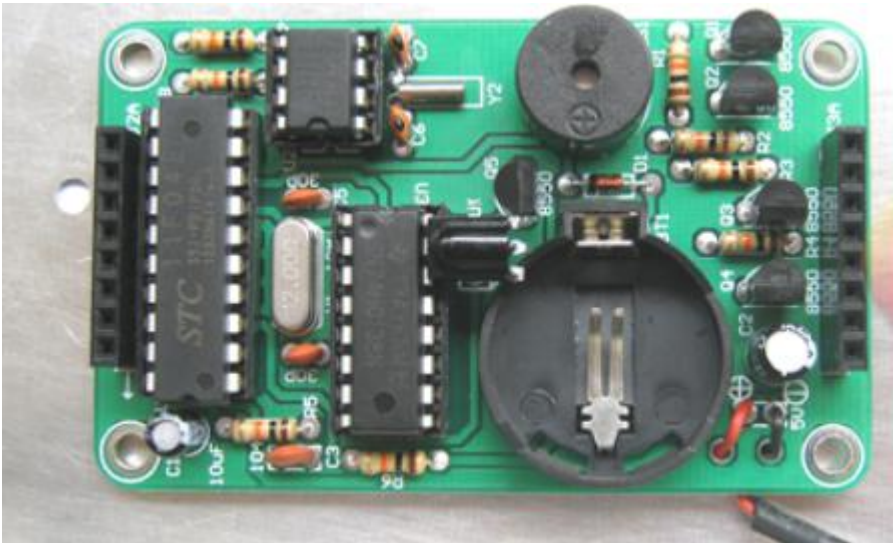
9. Infrared receiver pin:



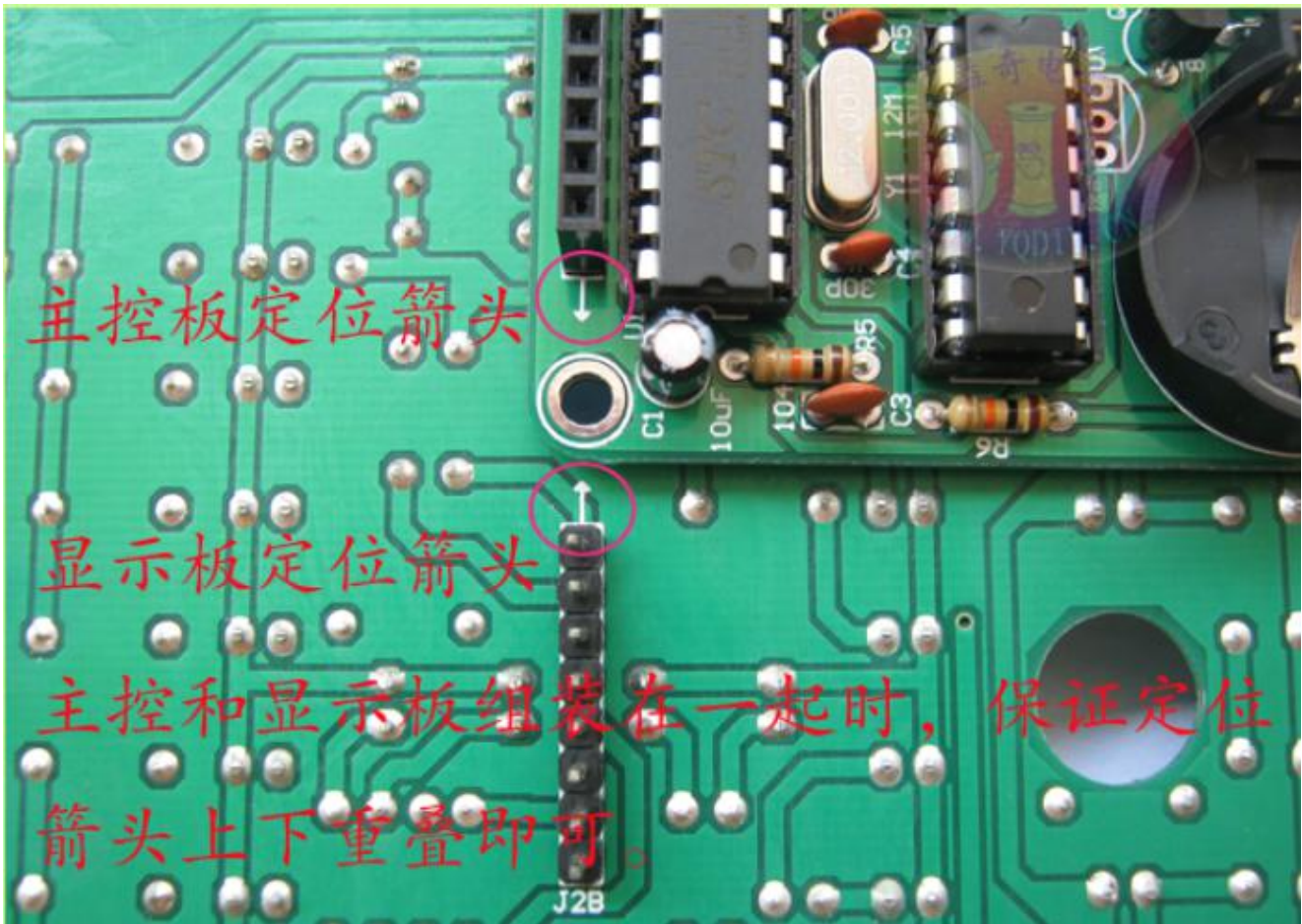
The whole assembly:



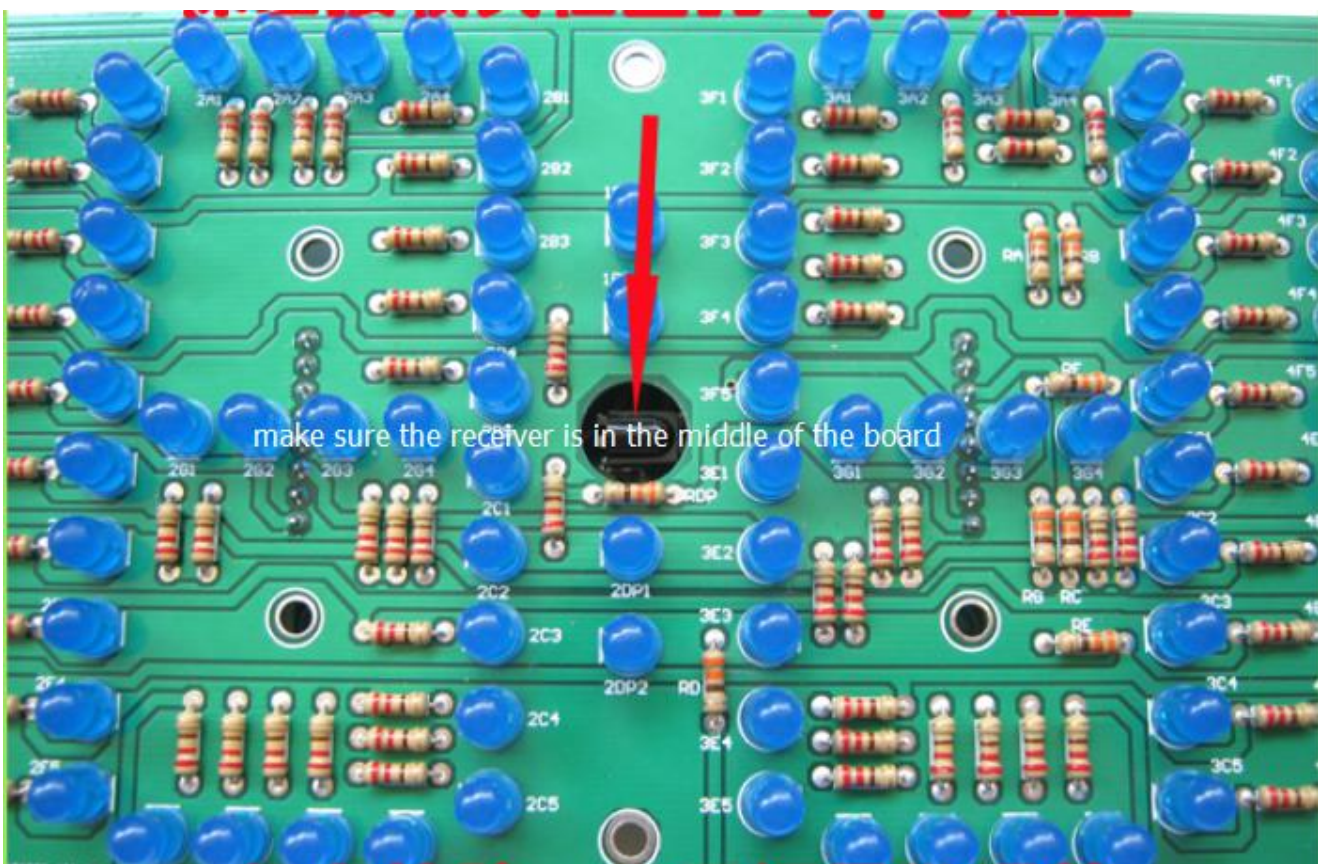
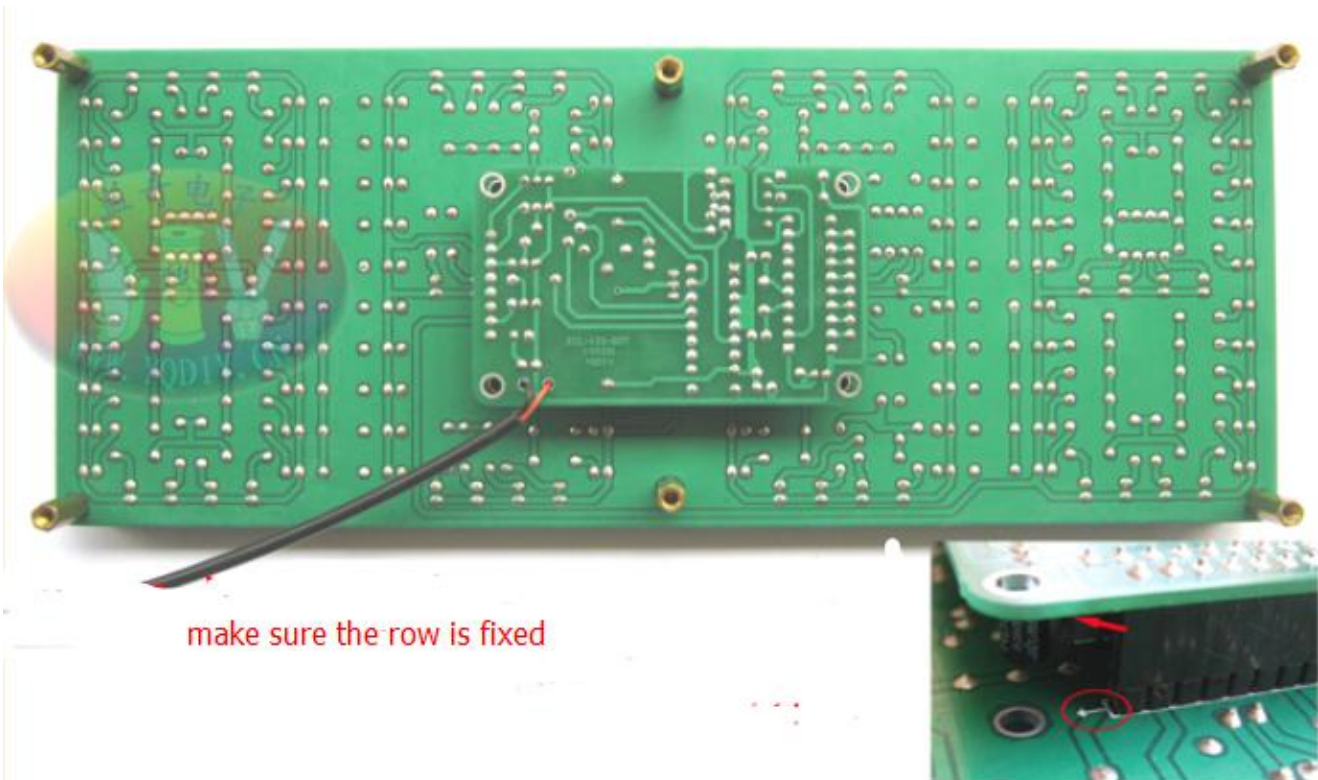
In the main control board Soldering USB power cable



2. First find the positioning arrows control board and the display panel, the two plates are assembled together when stacked vertically to ensure the positioning arrow

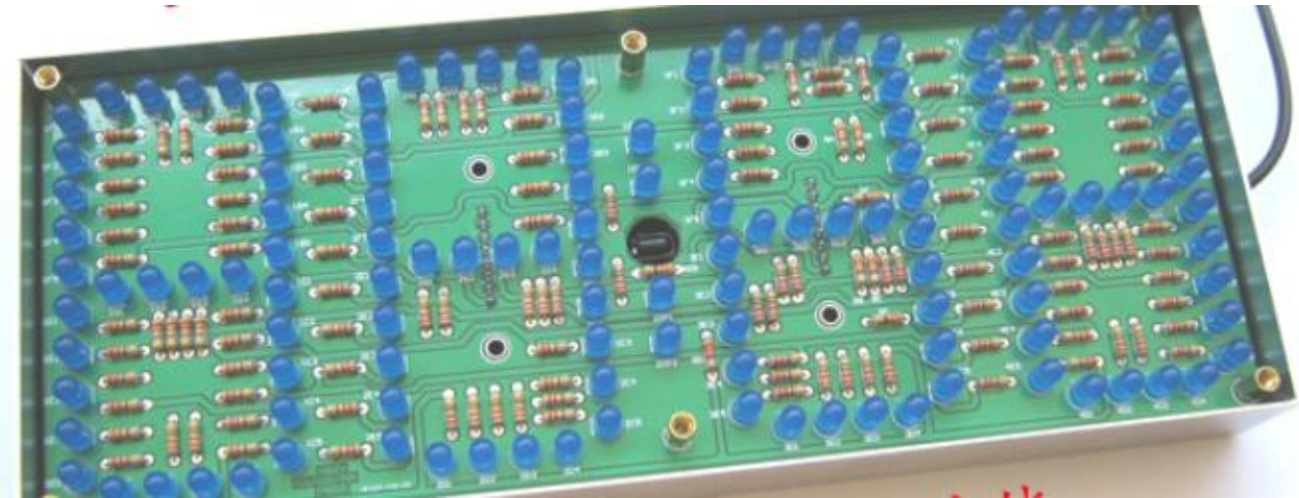


3. Control board and the display panel assembled



4 .. Then you can power it and observe if it can display 00:00 , and then remove the main board and install the button batteries.

5. Put them all into the case, at this time you can debugging the clock.



6. After debugging, install the backside case.

