IV-18(ИВ-18) VFD Tube Clock

Energy Pillar

Assembly Instructions

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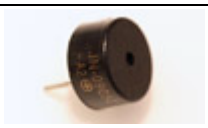
Get a clear understanding of some components

Name	Description	Announcements	Picture
Connector Female	P1	Nonpolarity	
Connector male	P2	Nonpolarity	
Temperature sensor	TEMP	TO-92 footprint, face the flat, left leg is Pin 1	
IR receiver	U3	Face the raised round, left leg is Pin 1	
Buzzer	Buzzer	Leg of longer is anode	
GPS socket	GPS	Nonpolarity	
Mercoid	LP	Nonpolarity	
Photoresistance	R8	Nonpolarity	

Attentions

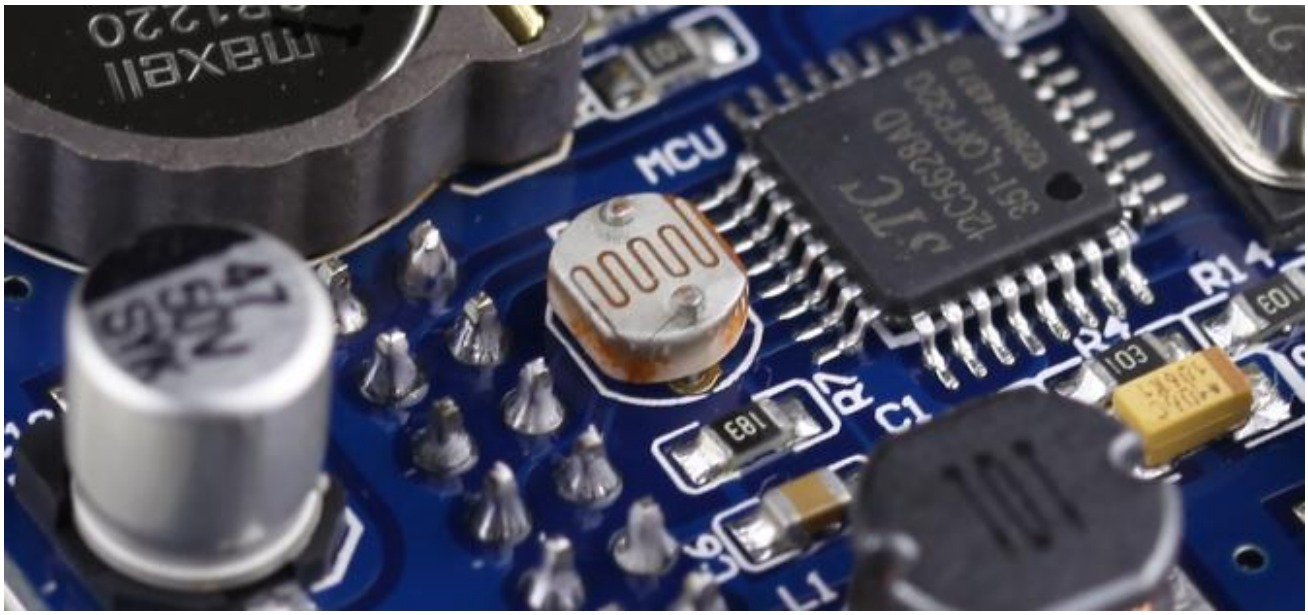
1. All SMD parts were assembled, please don’ t disassembly them;
2. Before soldering, make sure the polarity of components;
3. Please cut the power if abnormally, and check if something wrong during soldering;

Step 1. Solder the photoresistance

Solder the photoresistance on the main board, nonpolarity;

Note: solder only very short to avoid overheating, heating the photoresistance too long would damage it.

The result should now look like this:

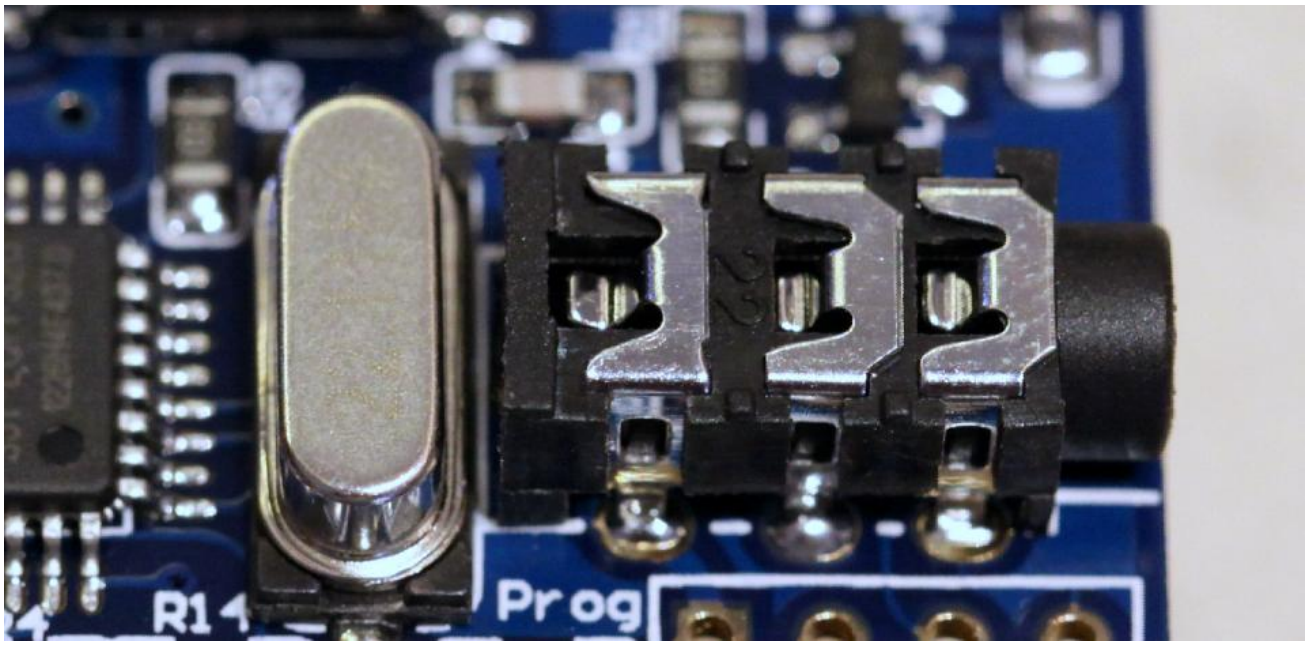


Step 2. Solder the GPS socket

Solder the GPS socket on the main board;

Note: please press the socket and solder the socket close the PCB board.

The result should now look like this:

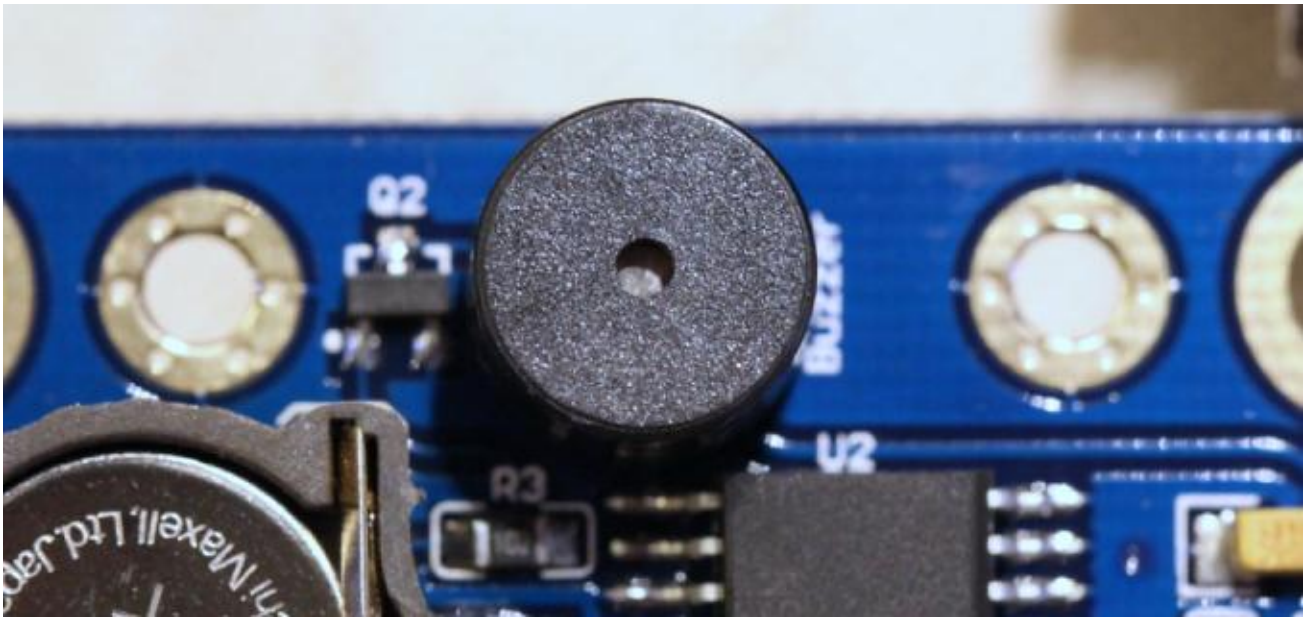


Step 3. Solder the buzzer

Solder the buzzer on the main board;

Note: the leg of longer is anode, and the pad of no shadow is anode.

The result should now look like this:



Step 4. Solder the connector (male)

Solder the connector on the main board from the back of the board;

Note: please press the socket and solder the socket close the PCB board.

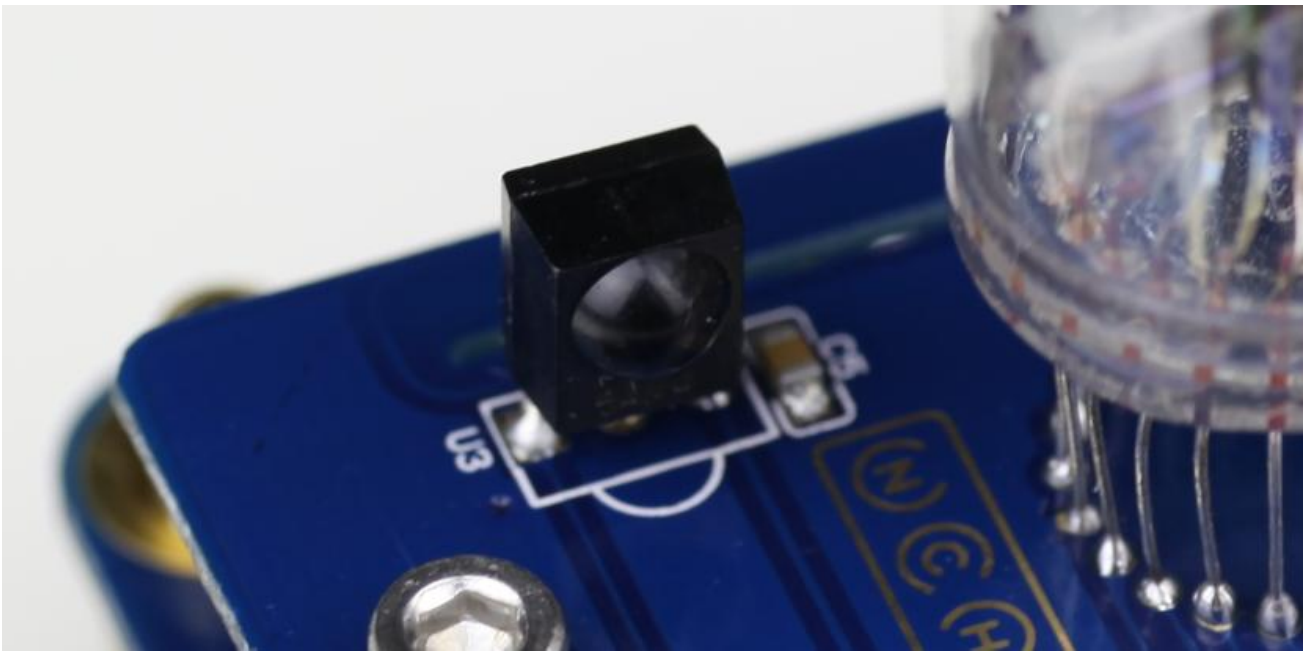
The result should now look like this:

Step 5. Solder the IR receiver

Solder the IR receiver on the main board, Pin1 is on the side of mark U3.

Note: solder only very short to avoid overheating, heating the IR receiver too long would damage it.

The result should now look like this:

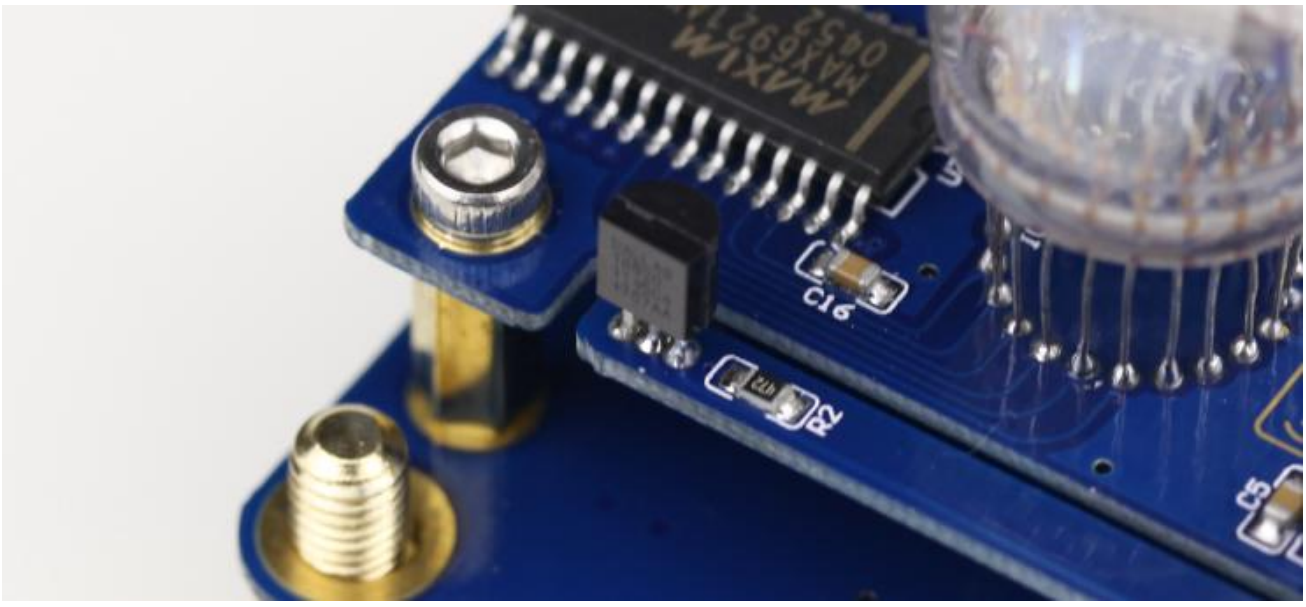


Step 6. Solder the temperature sensor

Solder the temperature sensor on the sub board.

Note: please keep 2-3mm between sensor and PCB board, check whether pad is short by solder after soldered.

The result should now look like this:

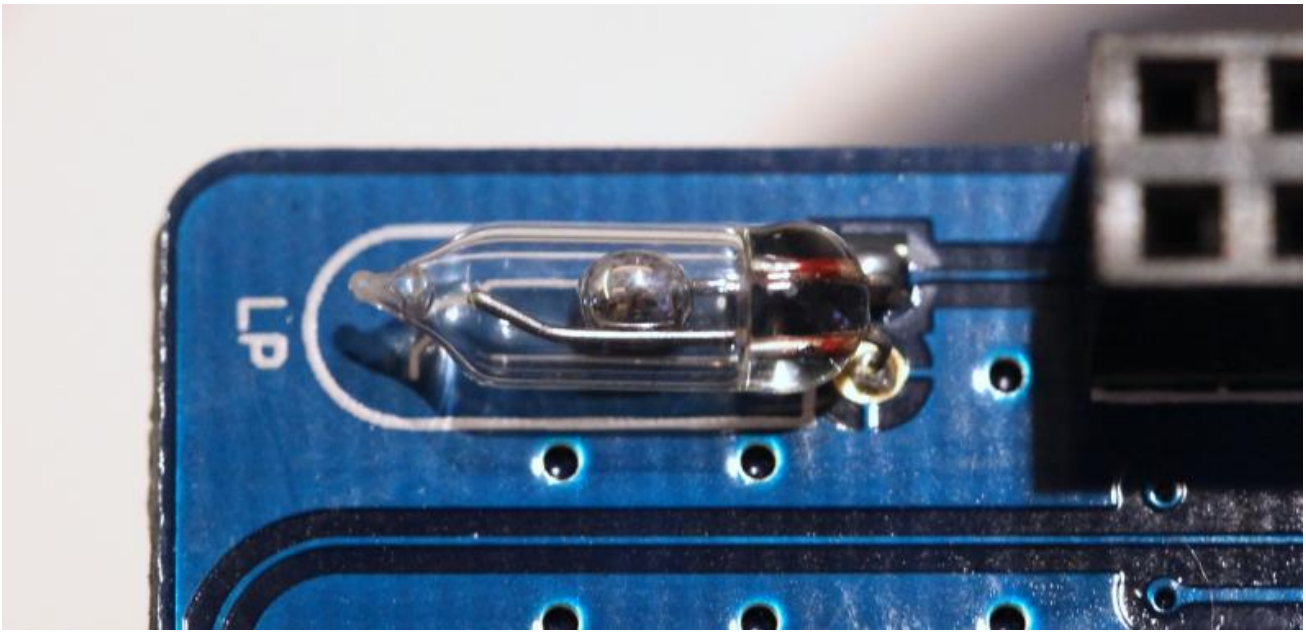


Step 7. Solder the mercoid

Bend up the wires of the mercoid 90° as following picture, and solder it on the sub board, nonpolarity;

Note: solder only very short to avoid overheating, heating the mercoid too long would damage it.

The result should now look like this:

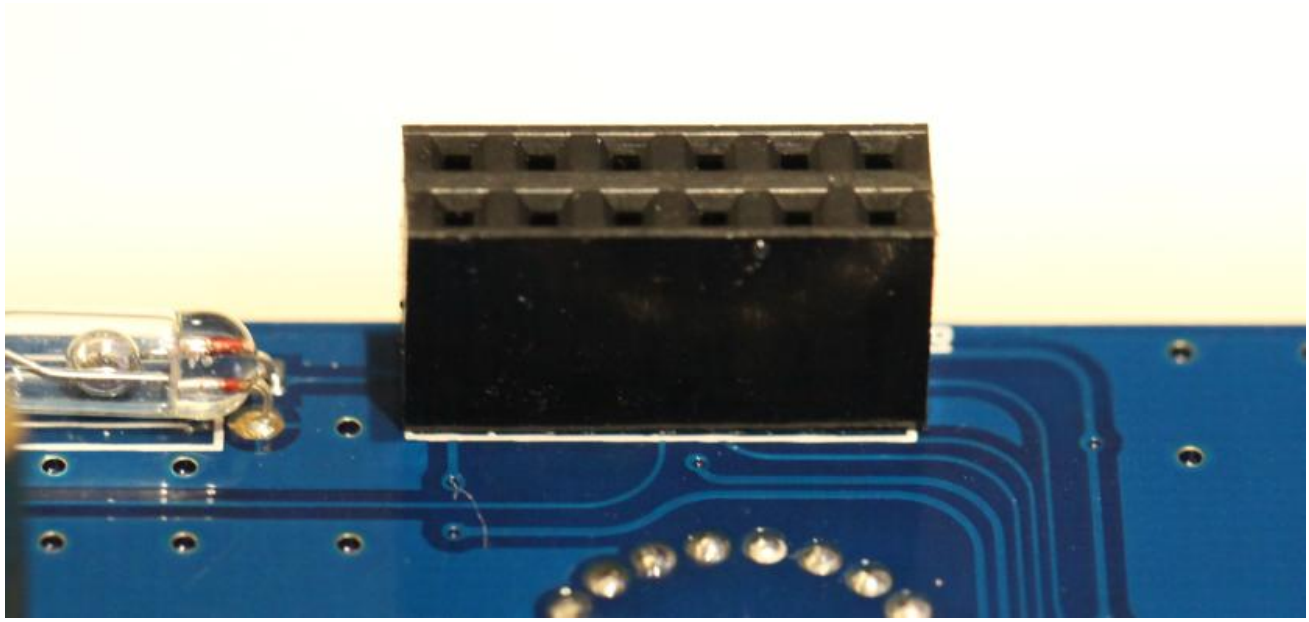


Step 8. Solder the connector (female)

Solder the connector on the sub board;

Note: please press the socket and solder the socket close the PCB board.

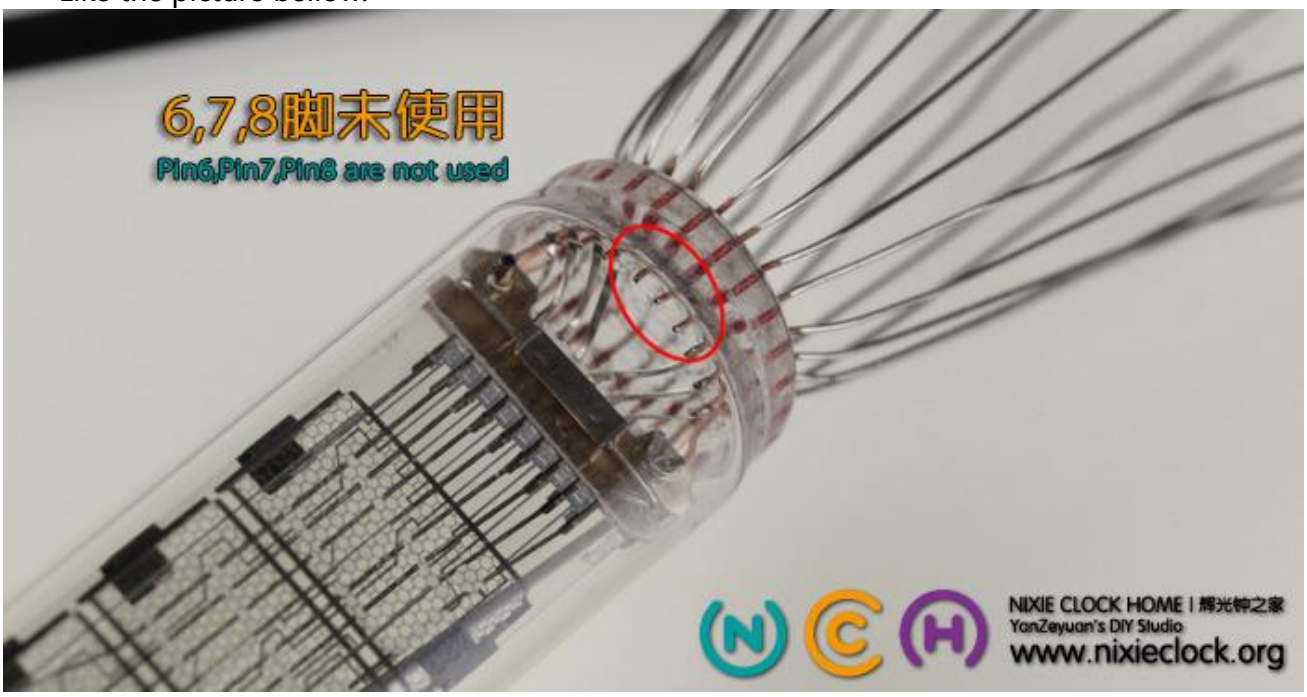
The result should now look like this:



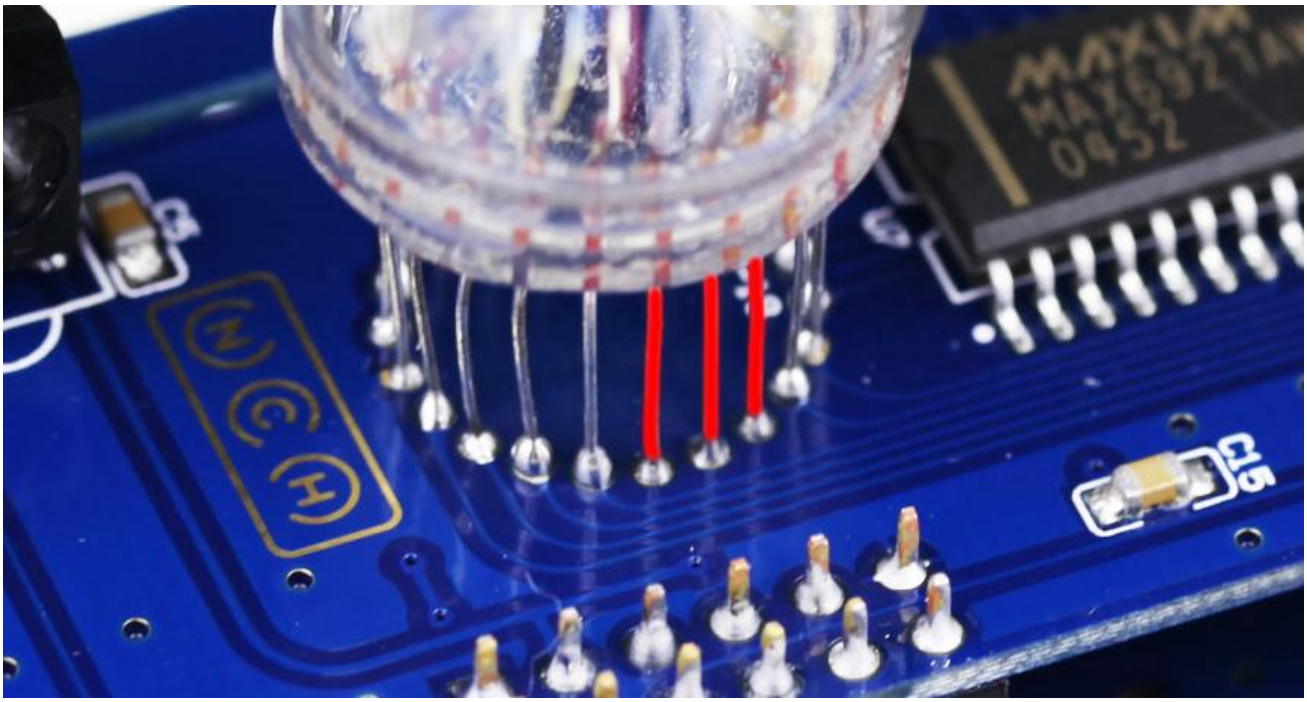
Step 9. Solder IV-18 VFD tube

First, find three pins of tube which no use, you can see the terminal of the pin in the tube is not connect to anything;

Like the picture bellow:



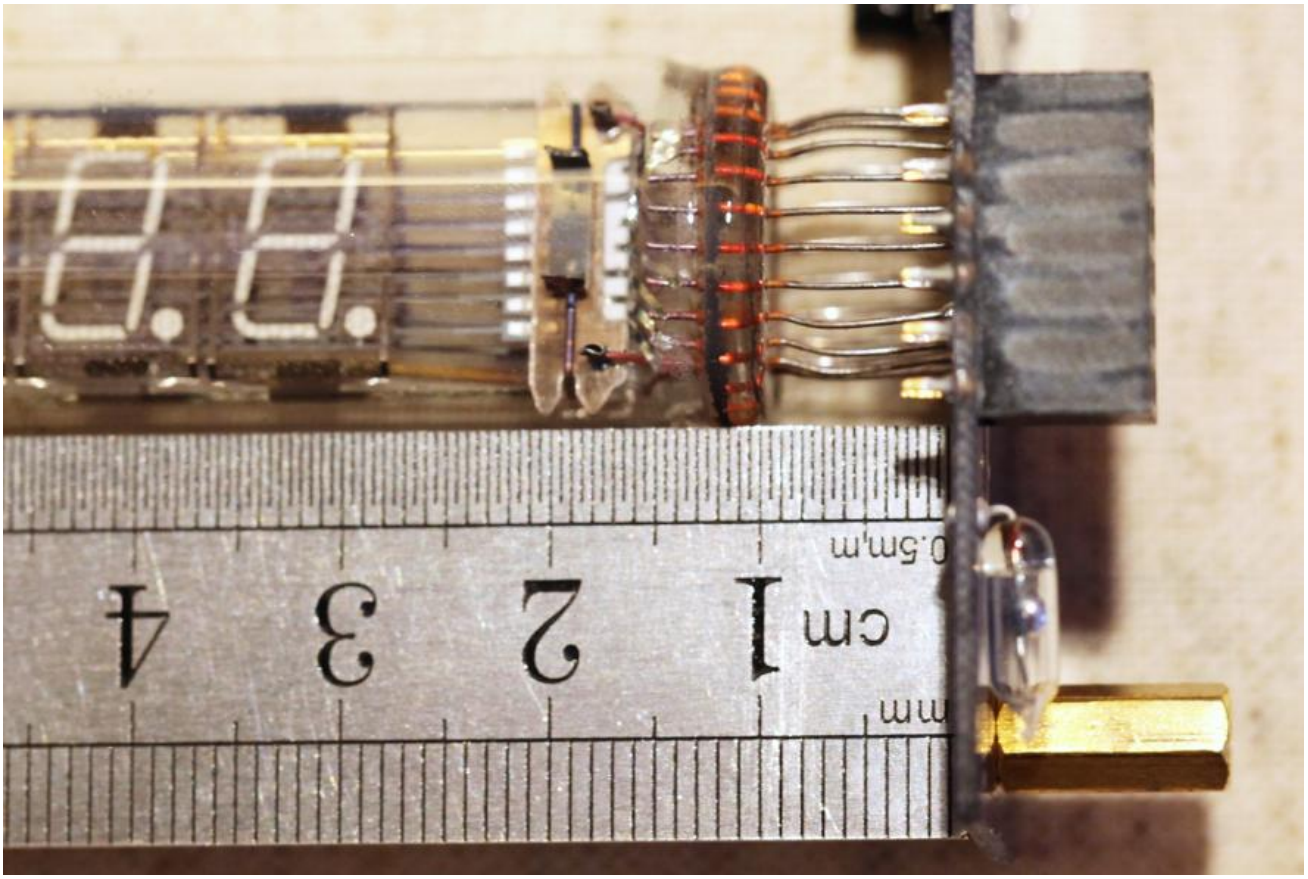
Put these three pins of tube into holes of PCB follow the picture bellow (these three hole do not connect any wire, easy to find), like the picture bellow:



Then put other pins into holes one by one.

Note: the digits should face toward the black connector. Before solder the tube, make sure keep 10mm between the tube and PCB board.

The result should now look like this:



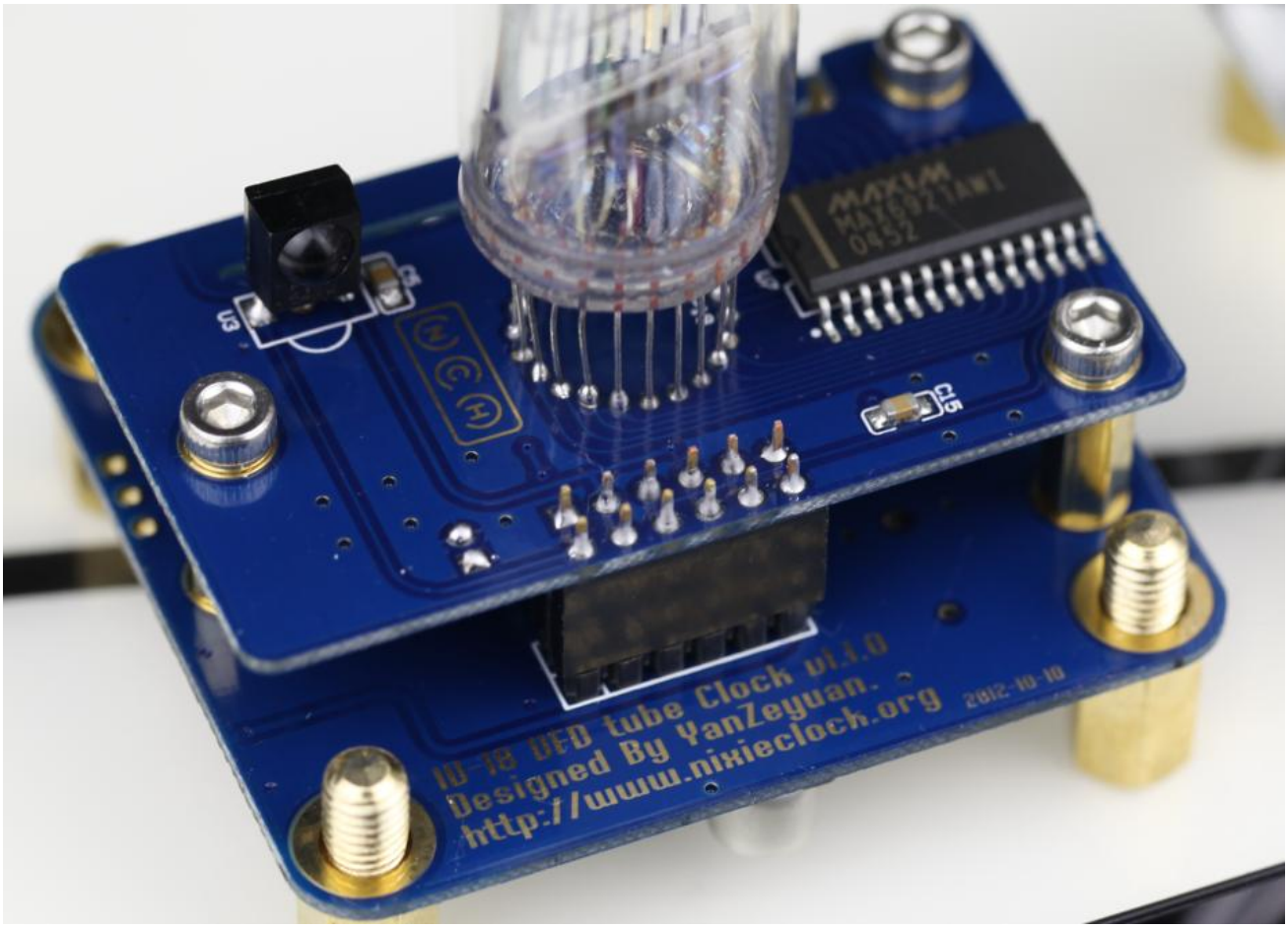
Solder three pins of tube at 120-degree angle, then adjust the tube to straight, perpendicular to the PCB board, solder all pins of tube at last.

Note: solder only very short to avoid overheating, heating the tube too long would damage the tube, check whether pad is short by solder after soldered.

If the tube is not perpendicular to the PCB board after soldered, please hold the root of tube and adjust tube gently, don’ t squeeze it too hard.

Step 10. Power-on test

After assembled all parts, connect mainboard and sub board, the result should now look like this:



Then connect Mini USB cable and power it.

After power on, clock should make a short beep and display "HELLO.", then display the time.

If no beep sound, please disconnect the power immediately, and check if the power is ok.

If beep sound, but tube display nothing, please disconnect the power immediately and check if the tube soldered correctly.

Step 11. Assembly the aluminium alloy shell.

Please visit our website and check some pictures or video for shell assembly.

Any questions please contact me, it's my pleasure to answer your question

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