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ASSEMBLY MANUAL FOR

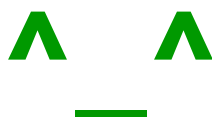
YULIA v6

IV-11/IV-12 VFD CLOCK

If you will have any questions, contact
with me here:

info@kama-labs.com

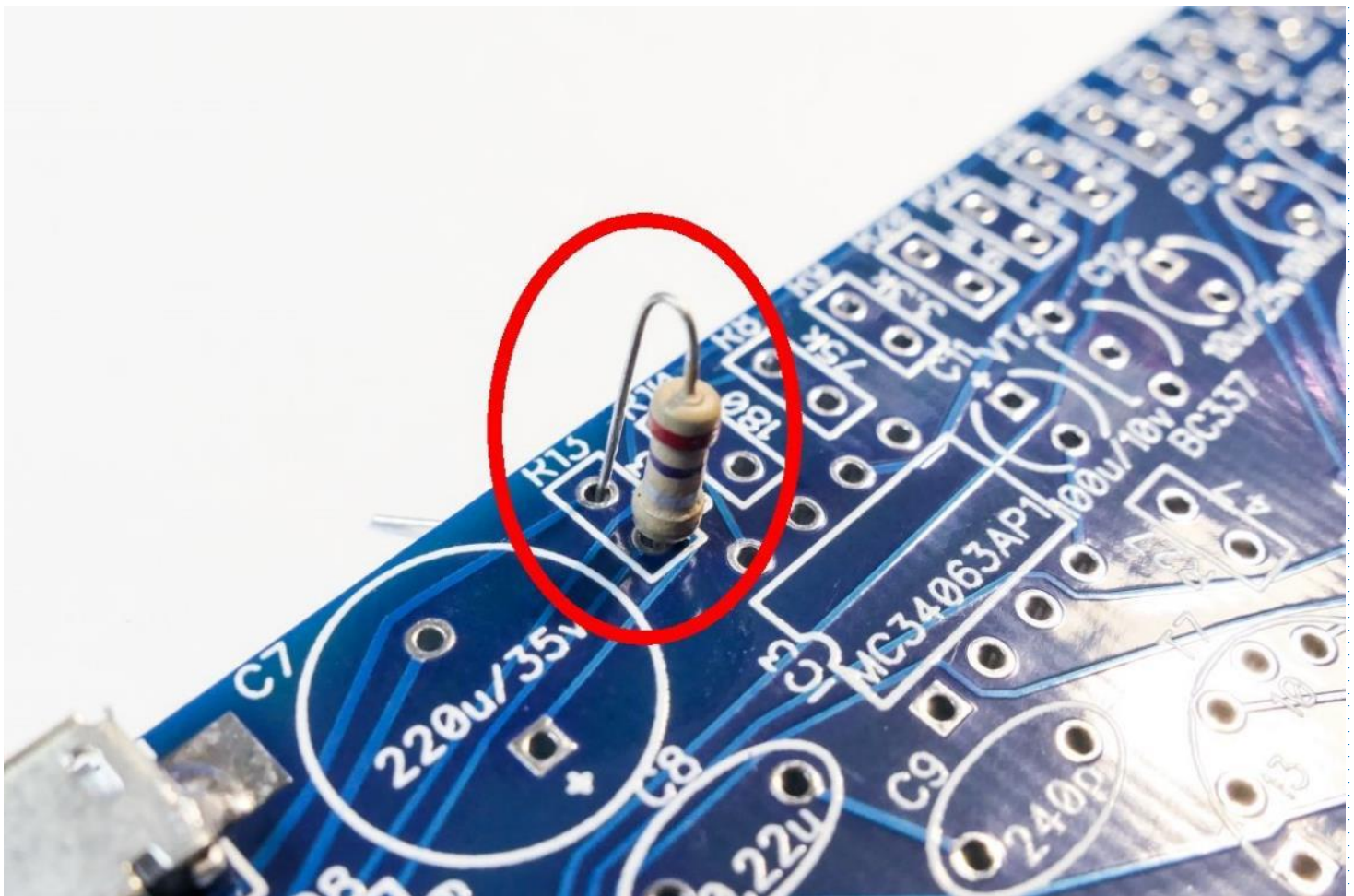
GOOD LUCK!



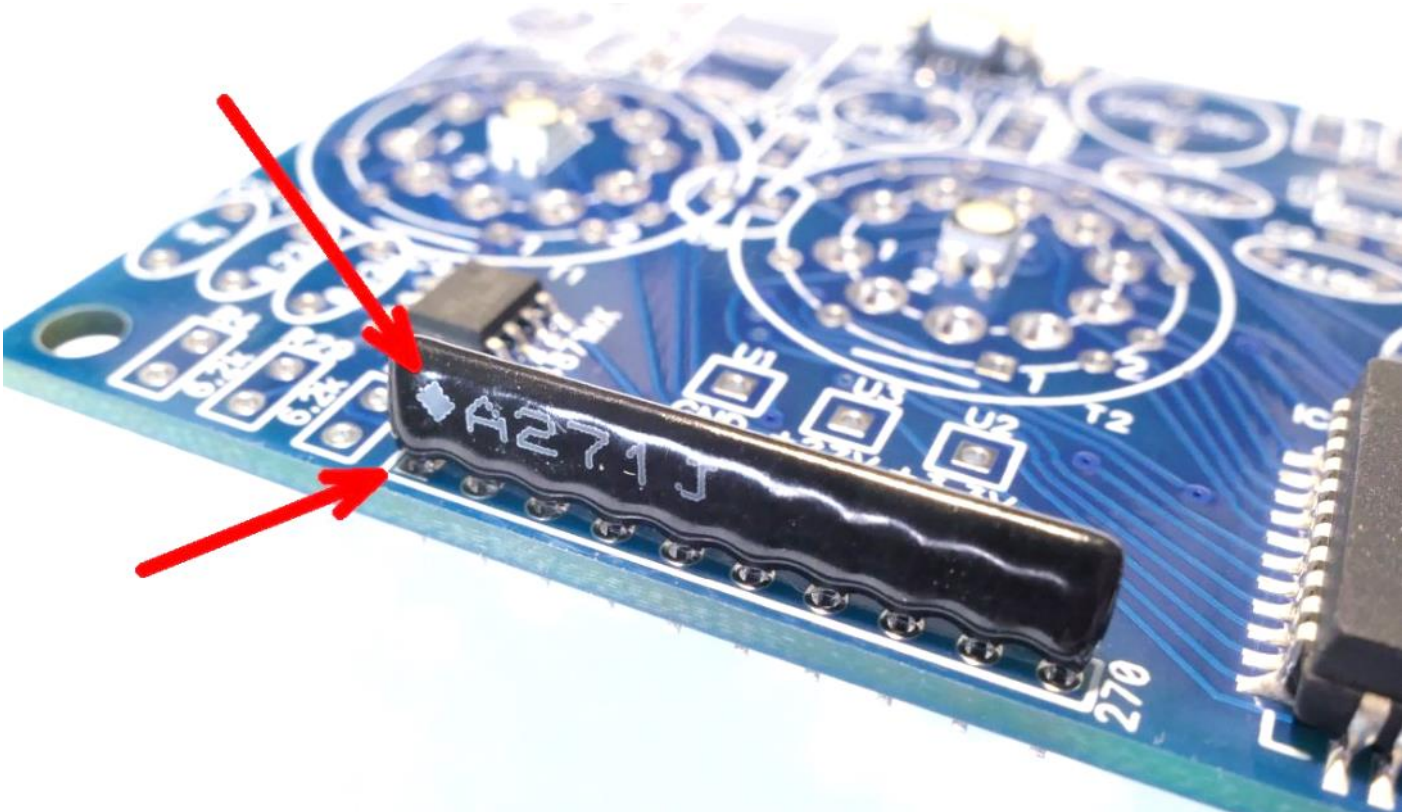
1) You have a PCB with ICs. MCU preprogrammed already:



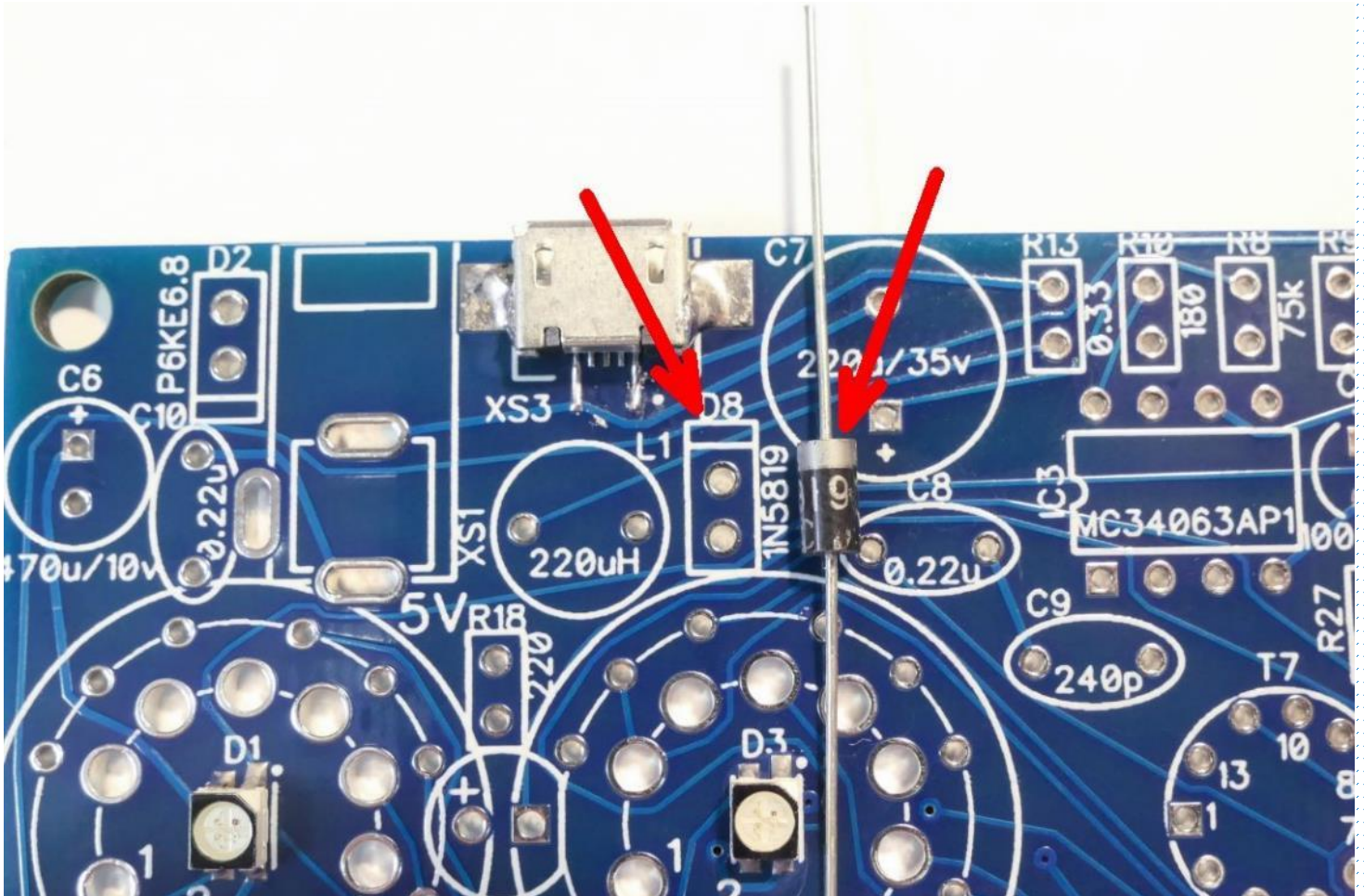
2) Place all resistors vertical:

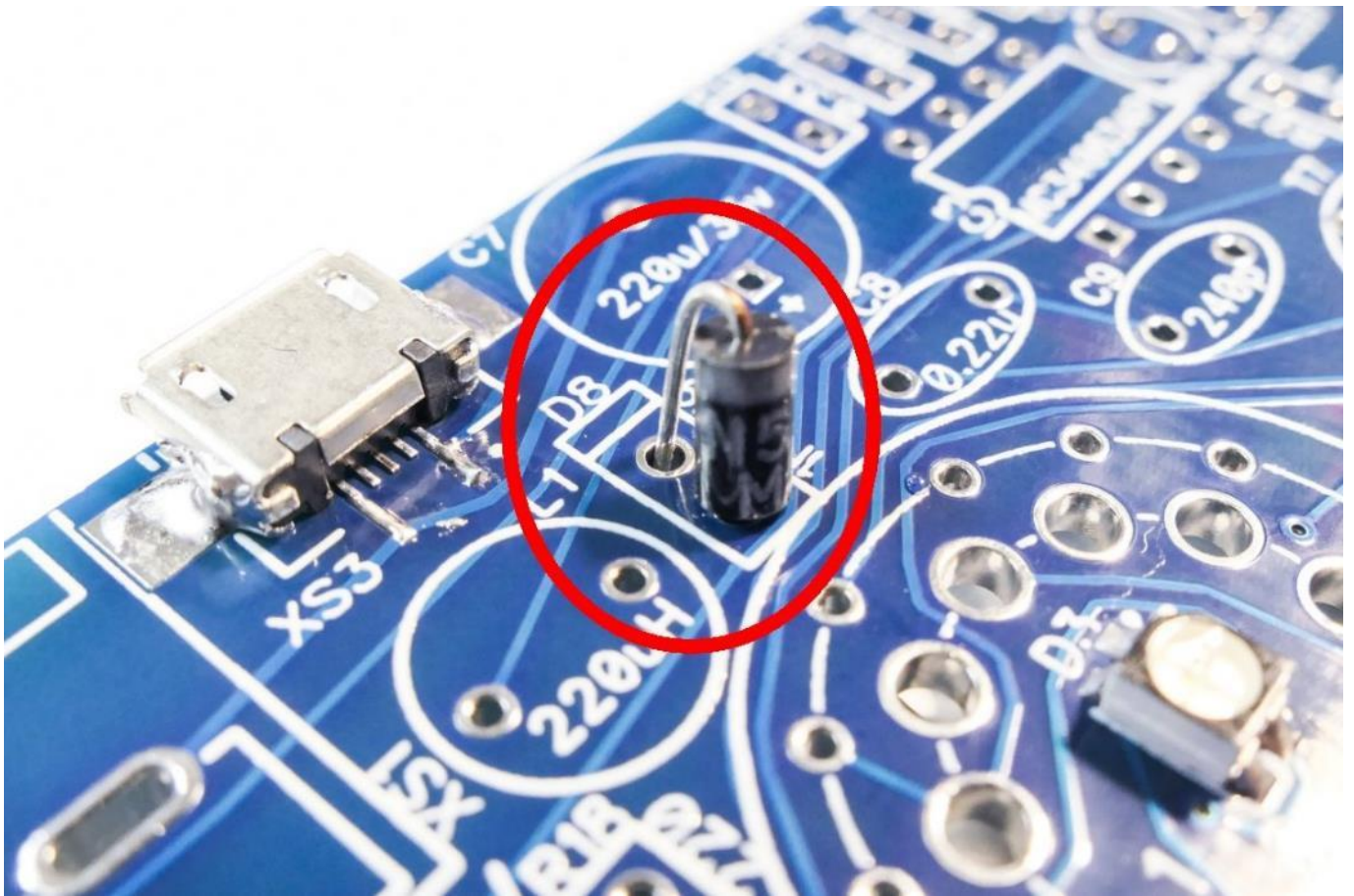


3) Place res.arrays. Common pin to square pad



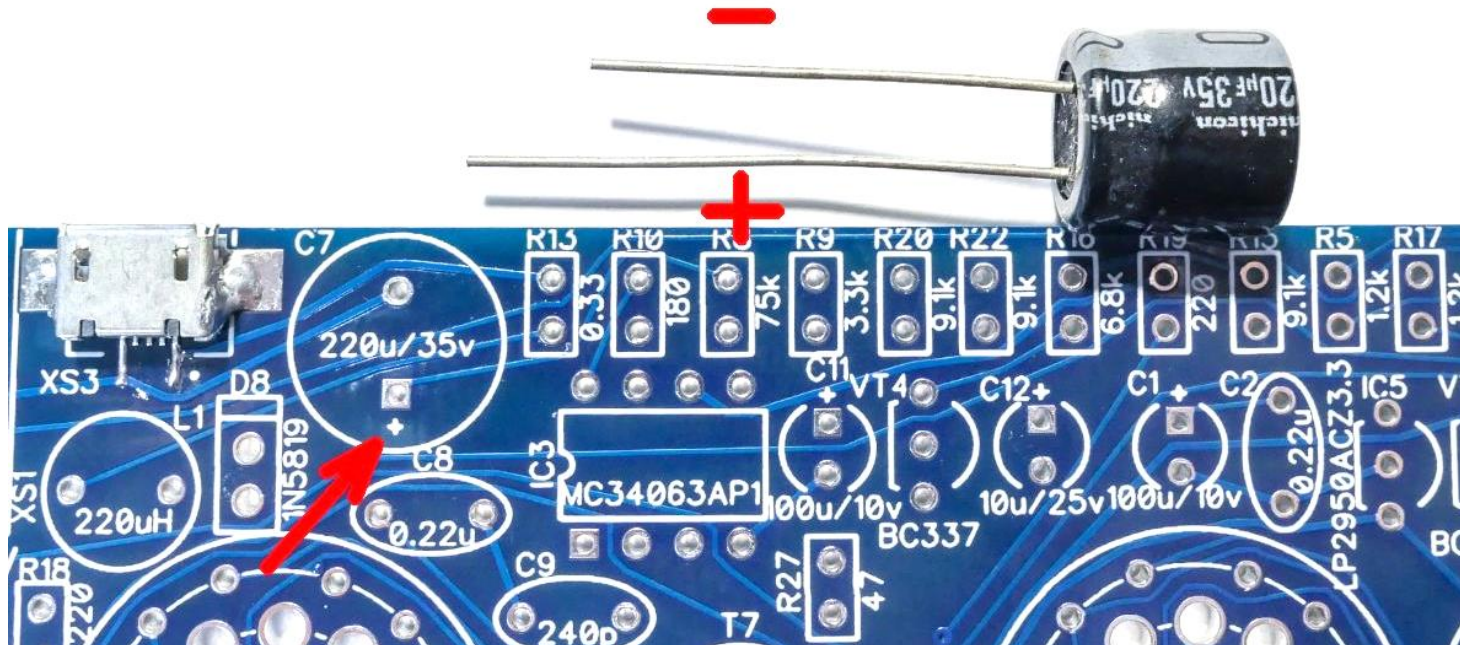
4) Place diodes according marking on PCB:



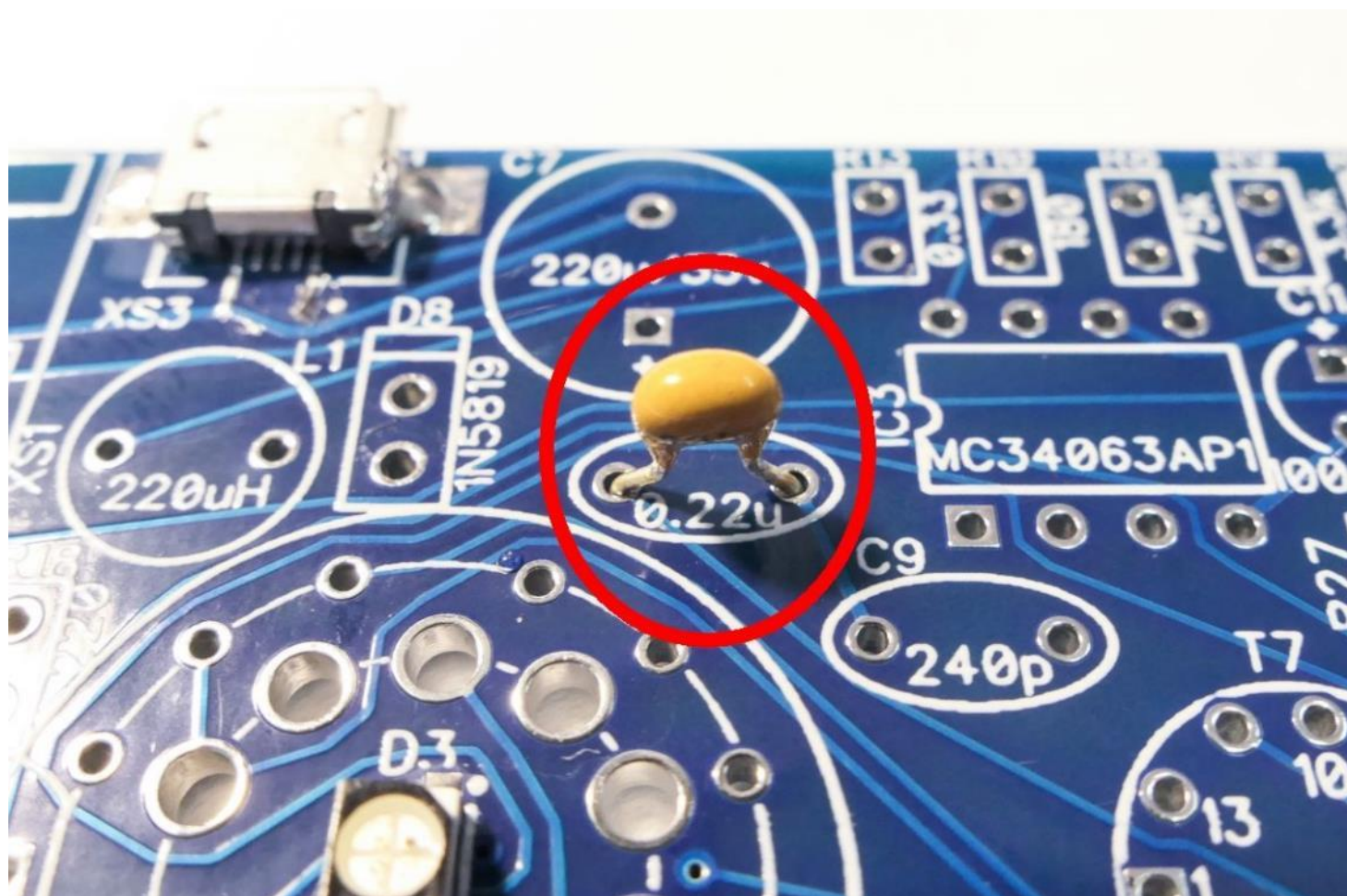


5) Place all electrolytic capacitors. Be careful with polarity!

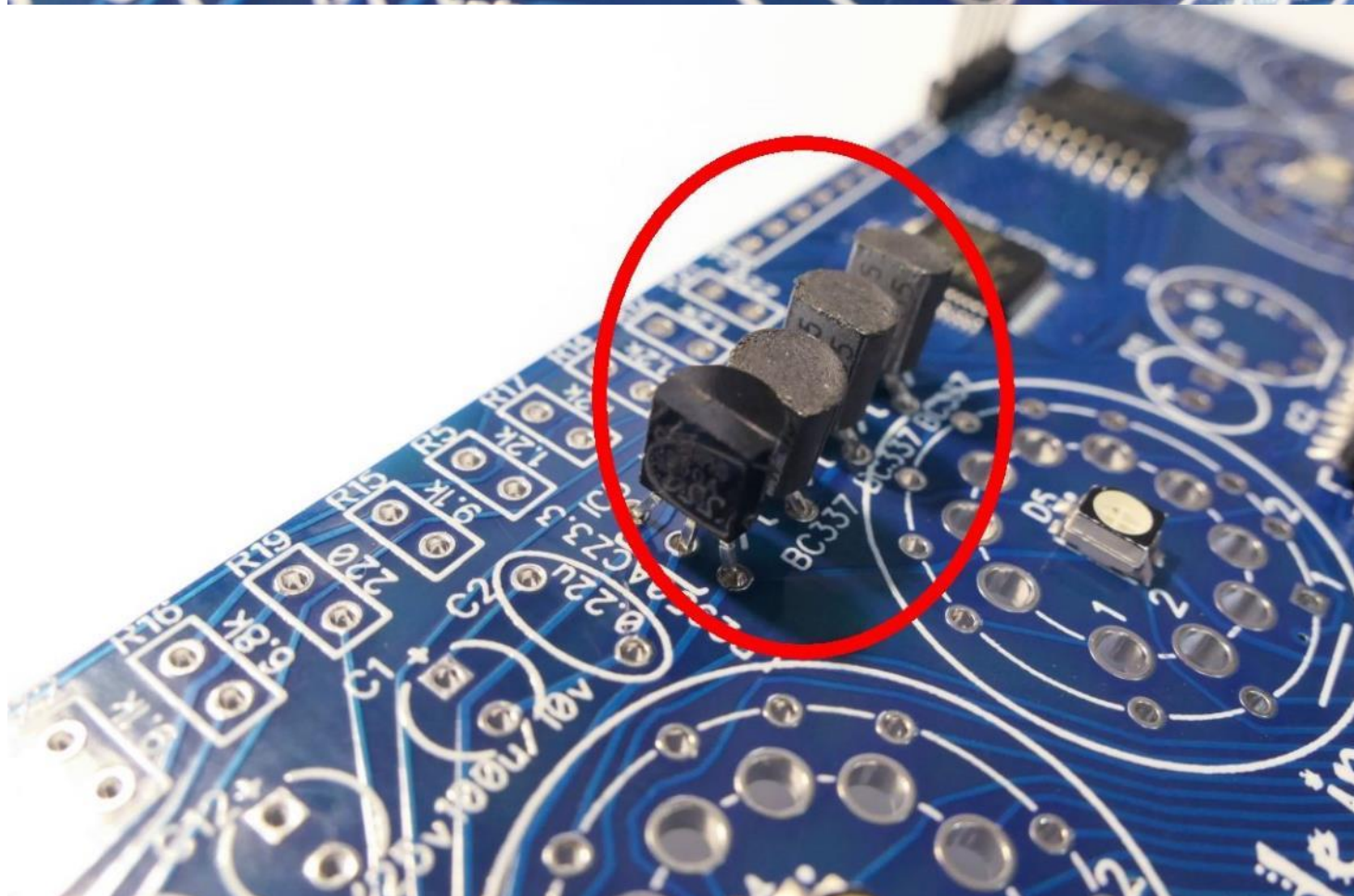
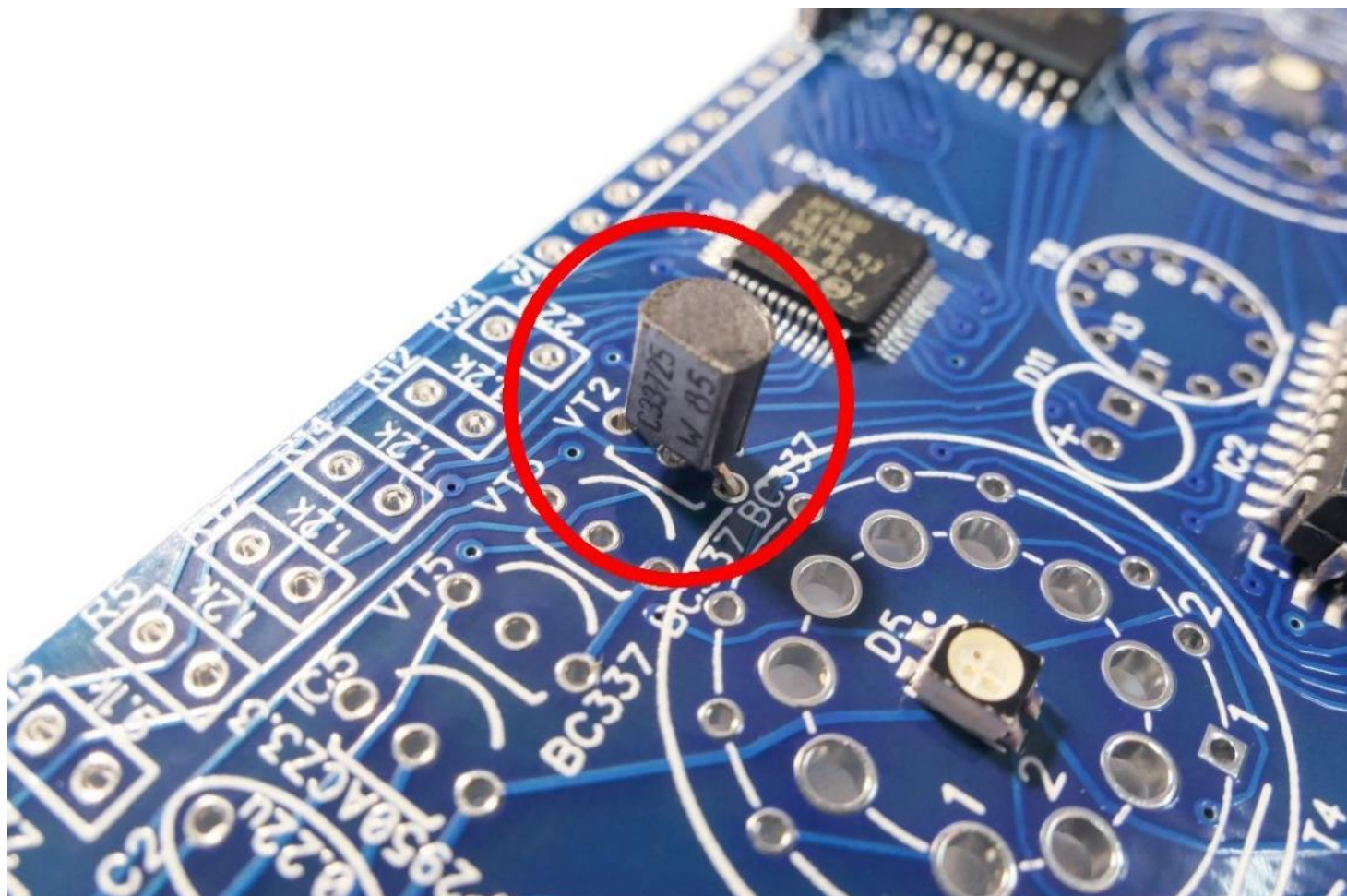




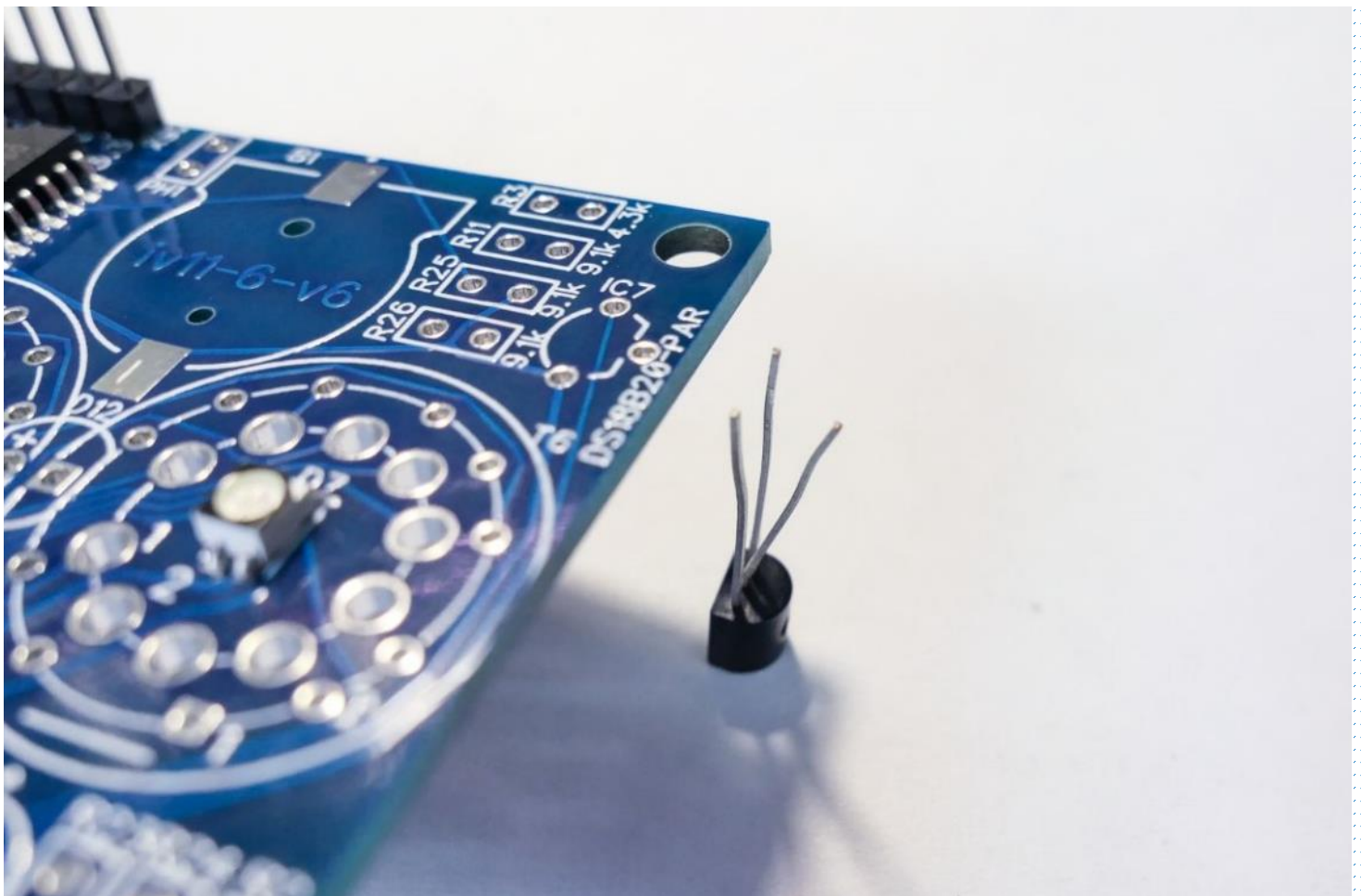
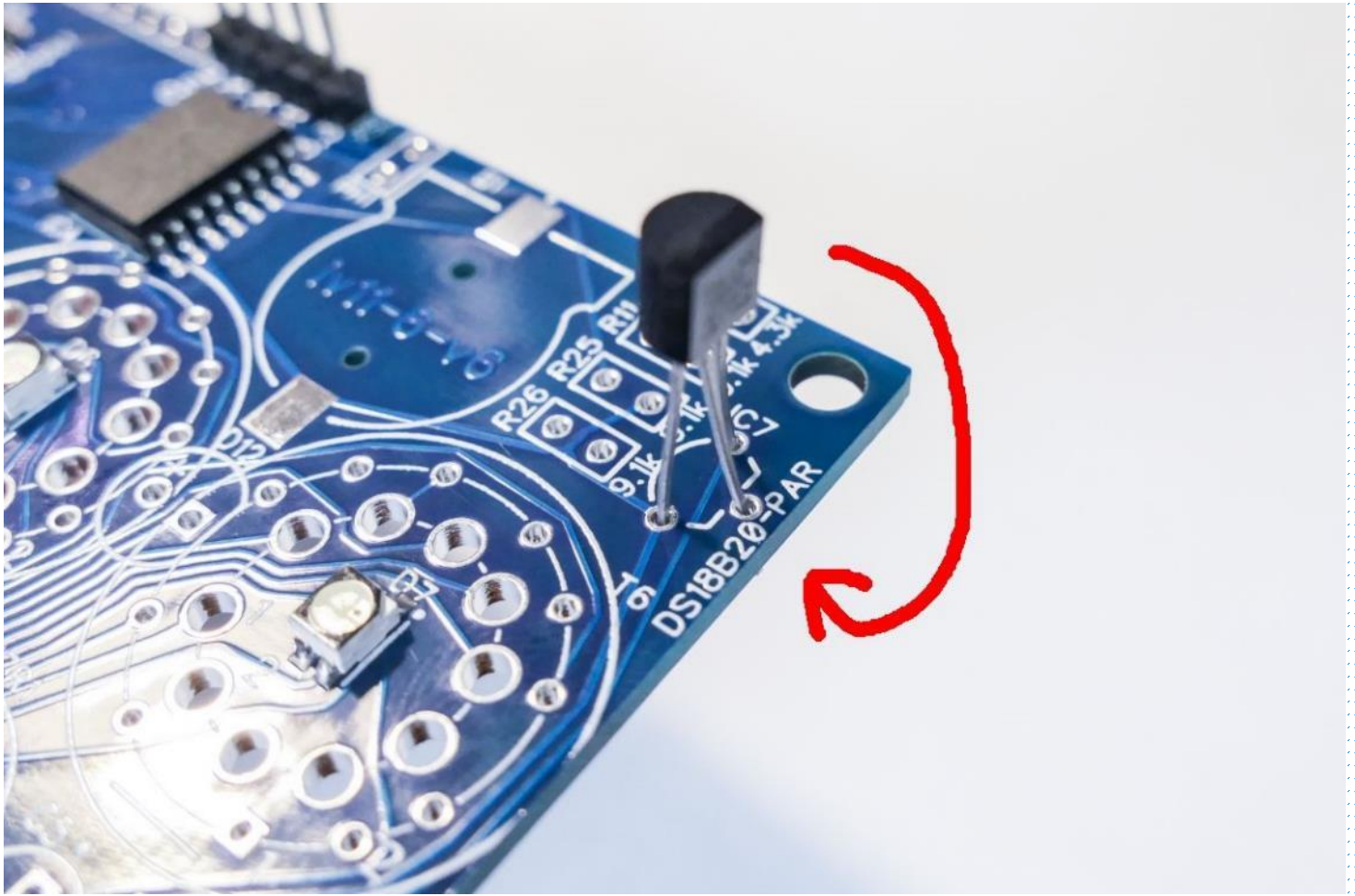
6) Place ceramic capacitor. Polarity is not matter.

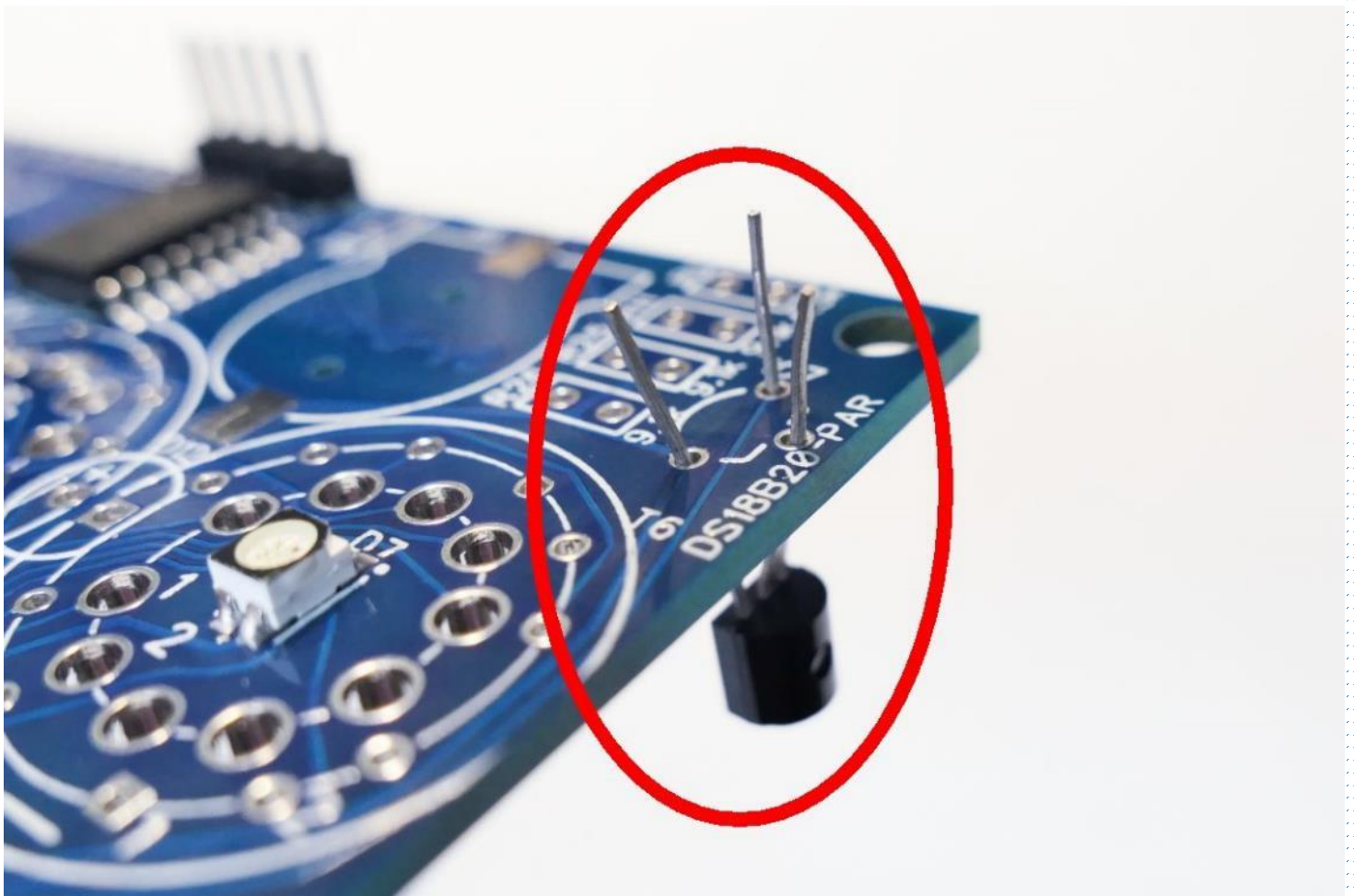


7) Place all transistors and IC5 according marking on PCB:



8) Place temperature sensor IC7 on **bottom** side of PCB:

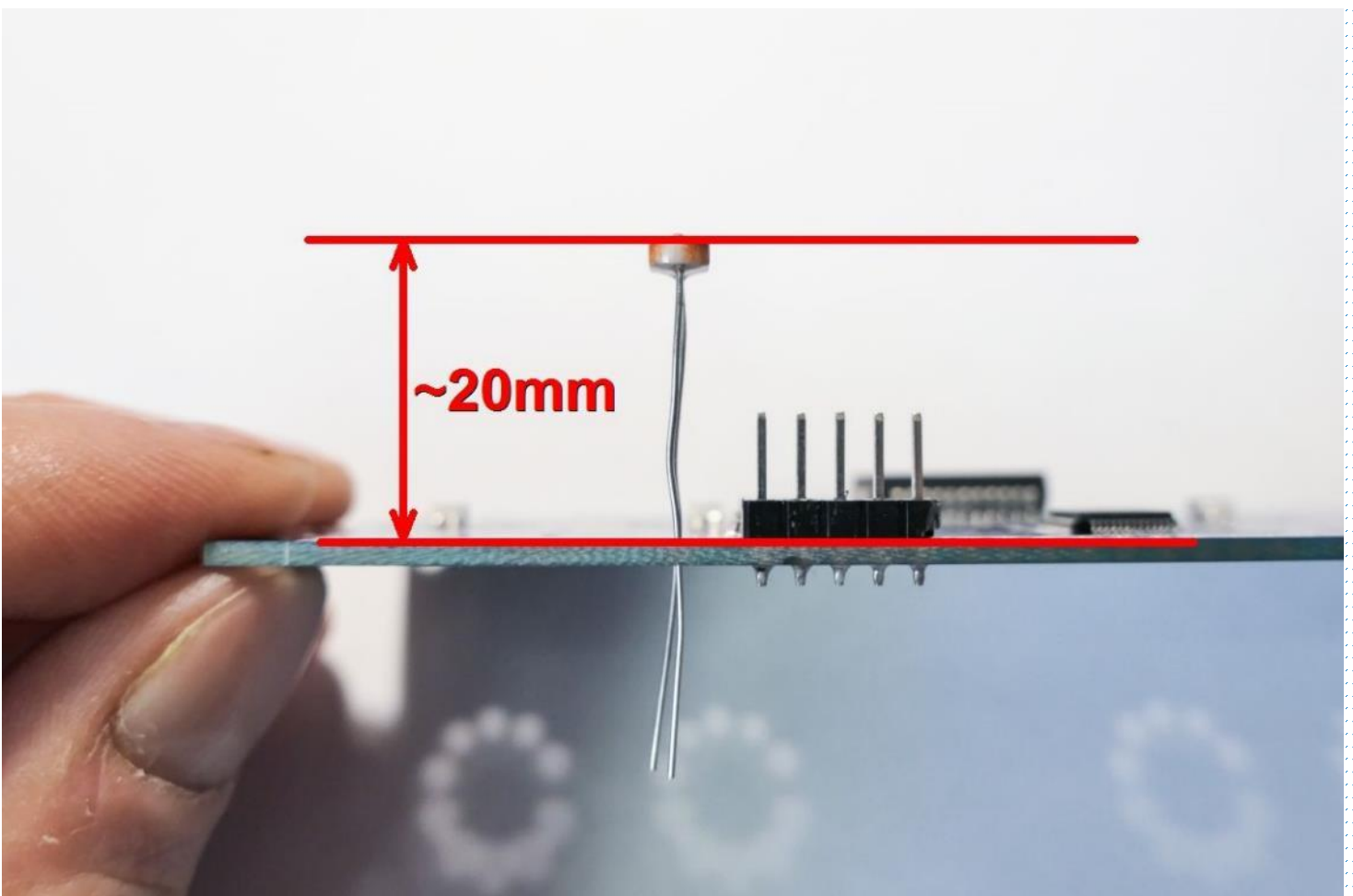
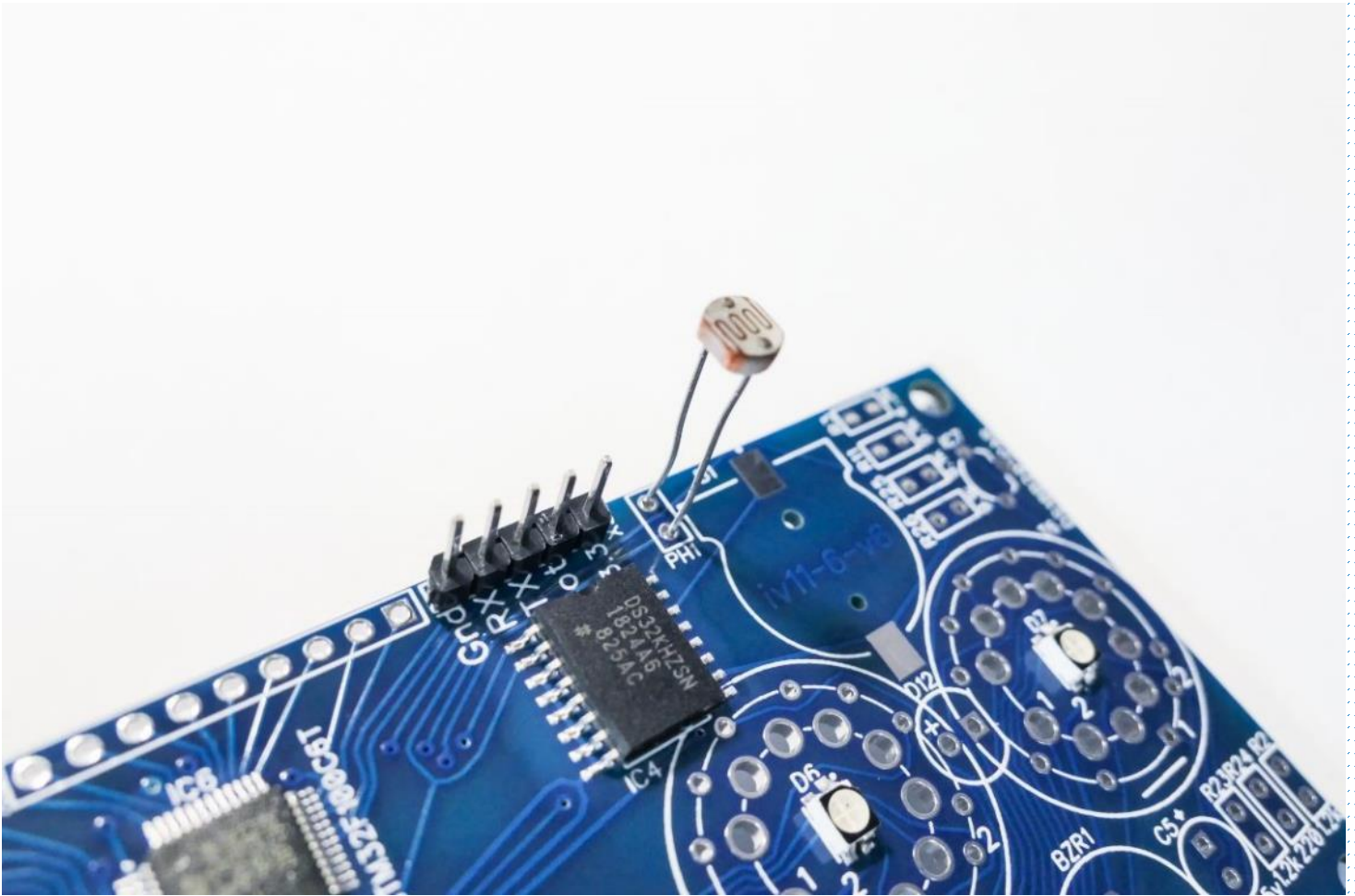




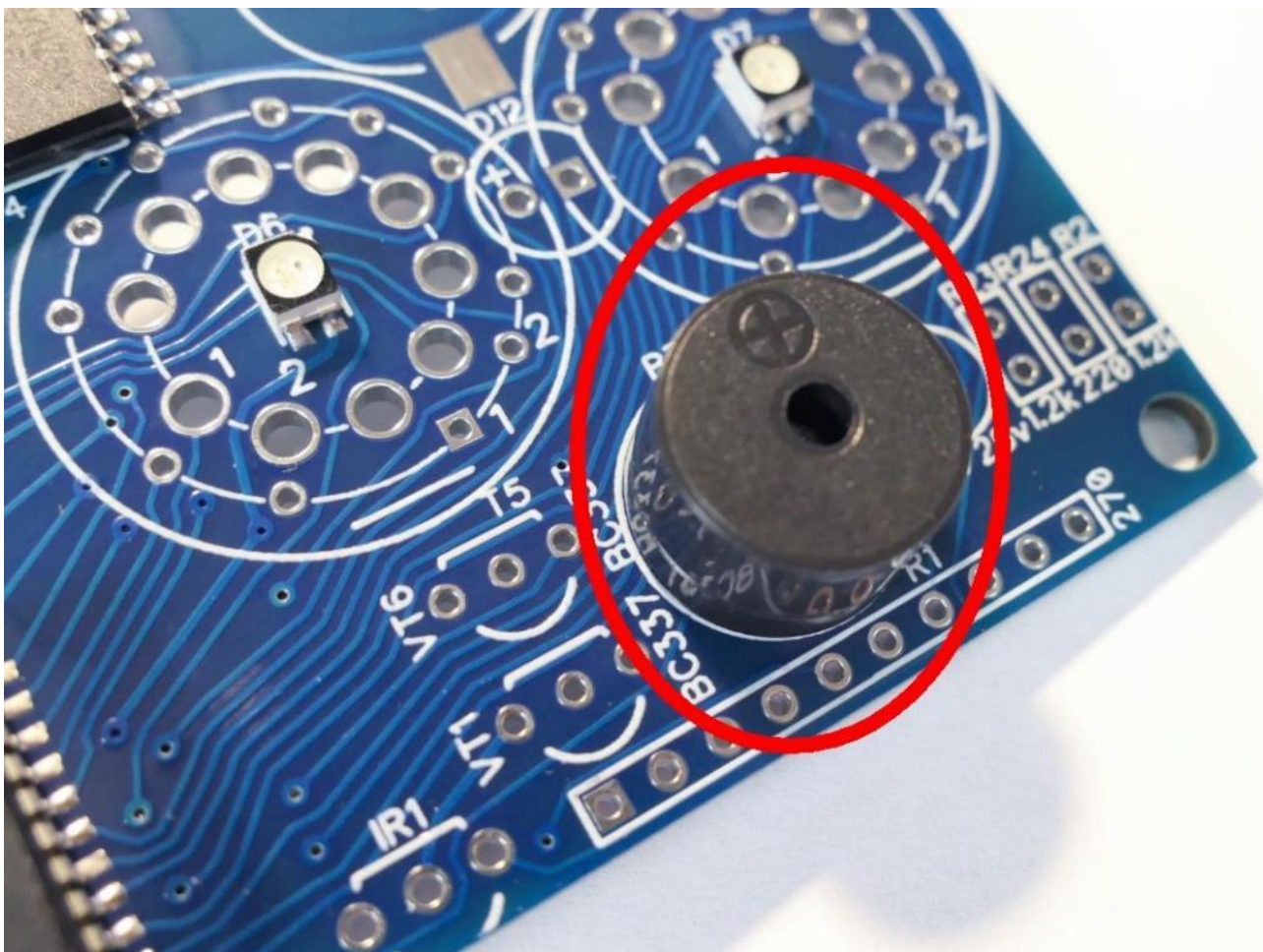
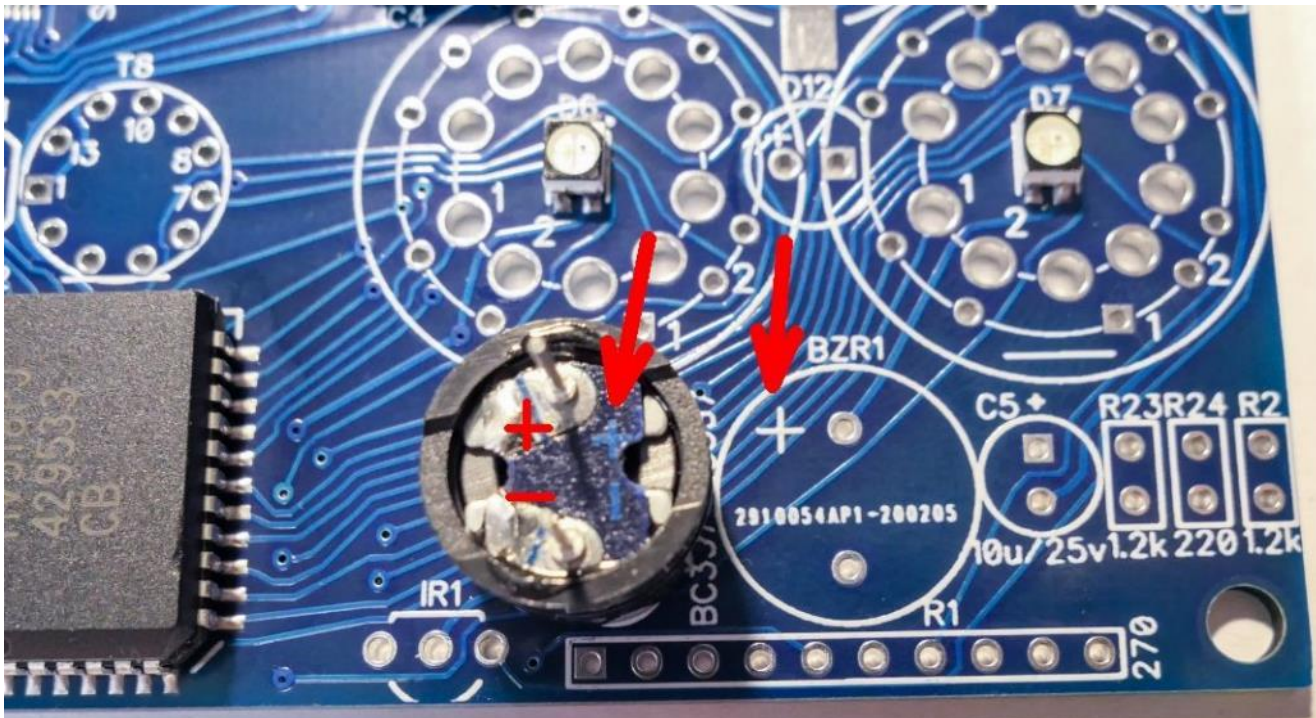
9) Place inductor:



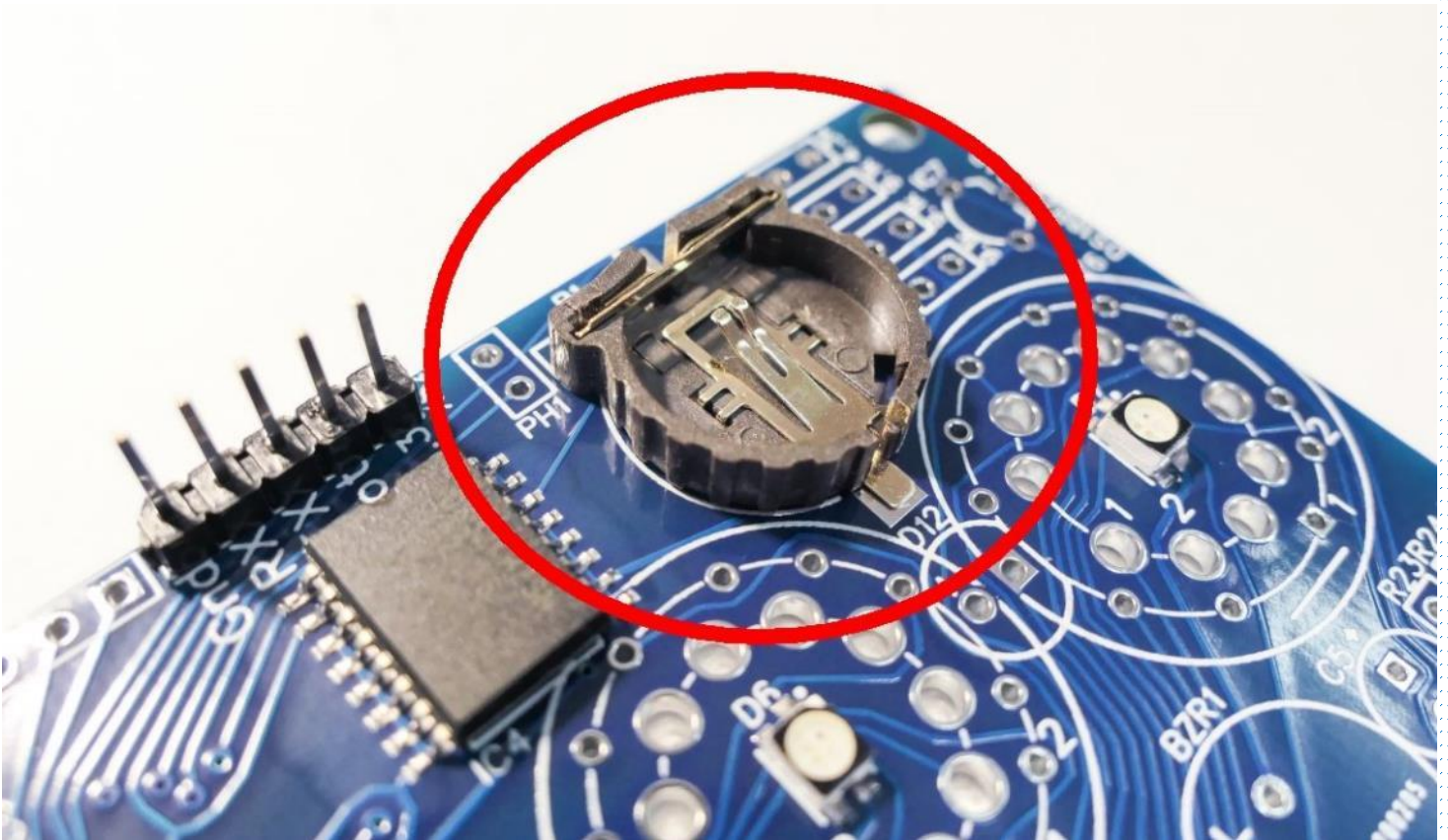
10) Place photoresistor.



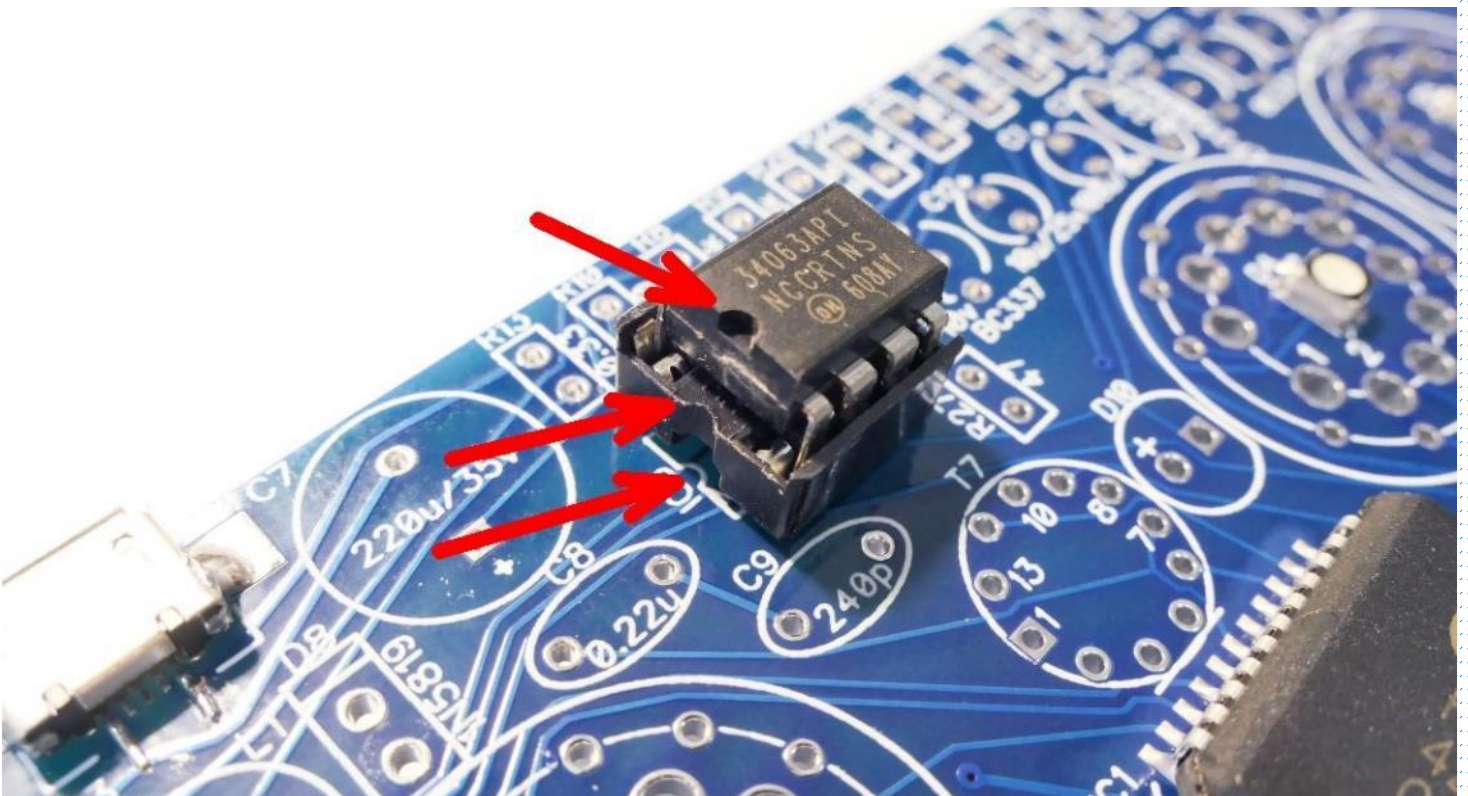
11) Install buzzer:



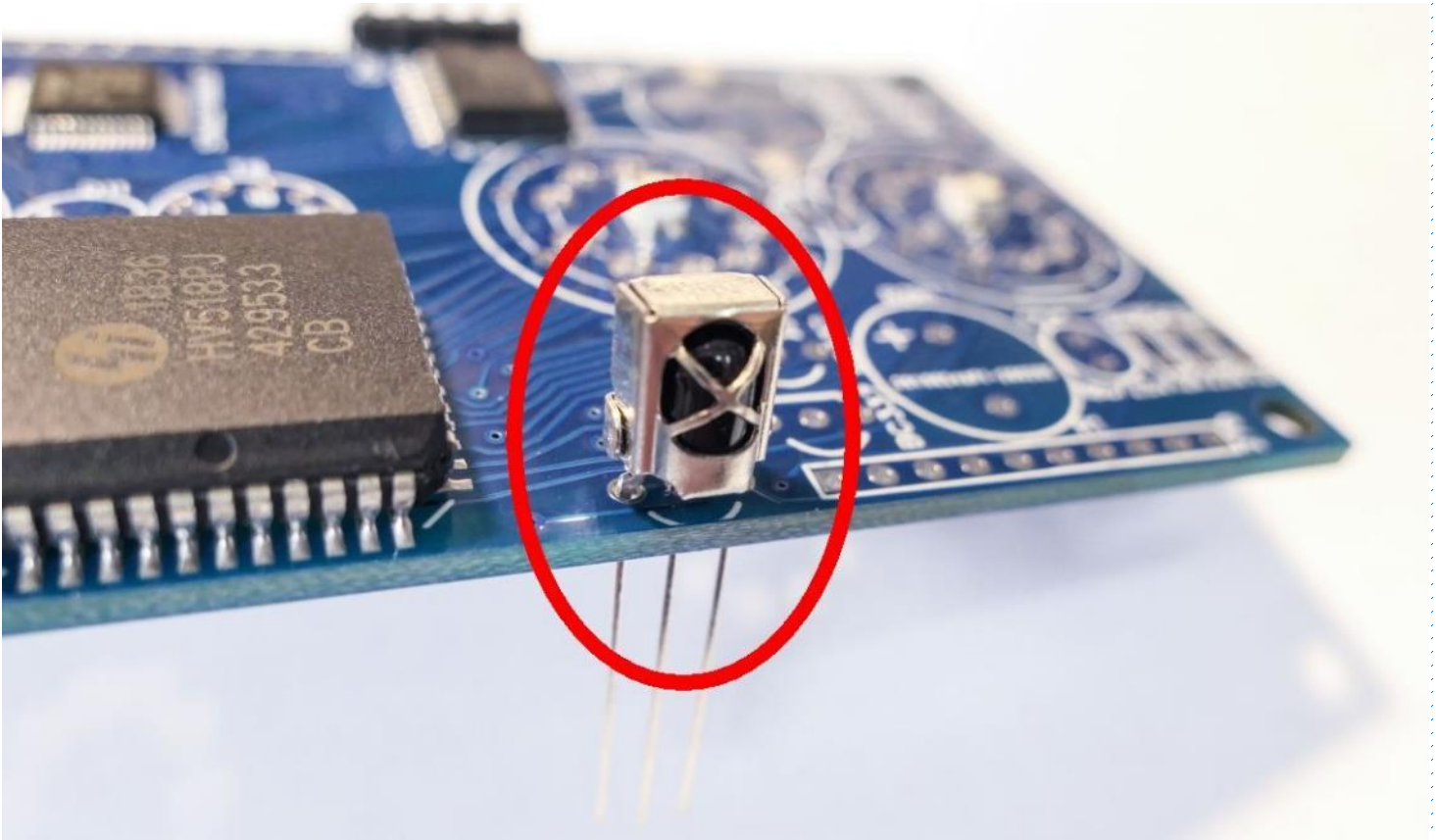
12) Place battery holder and insert battery when clock will be fully assembled:



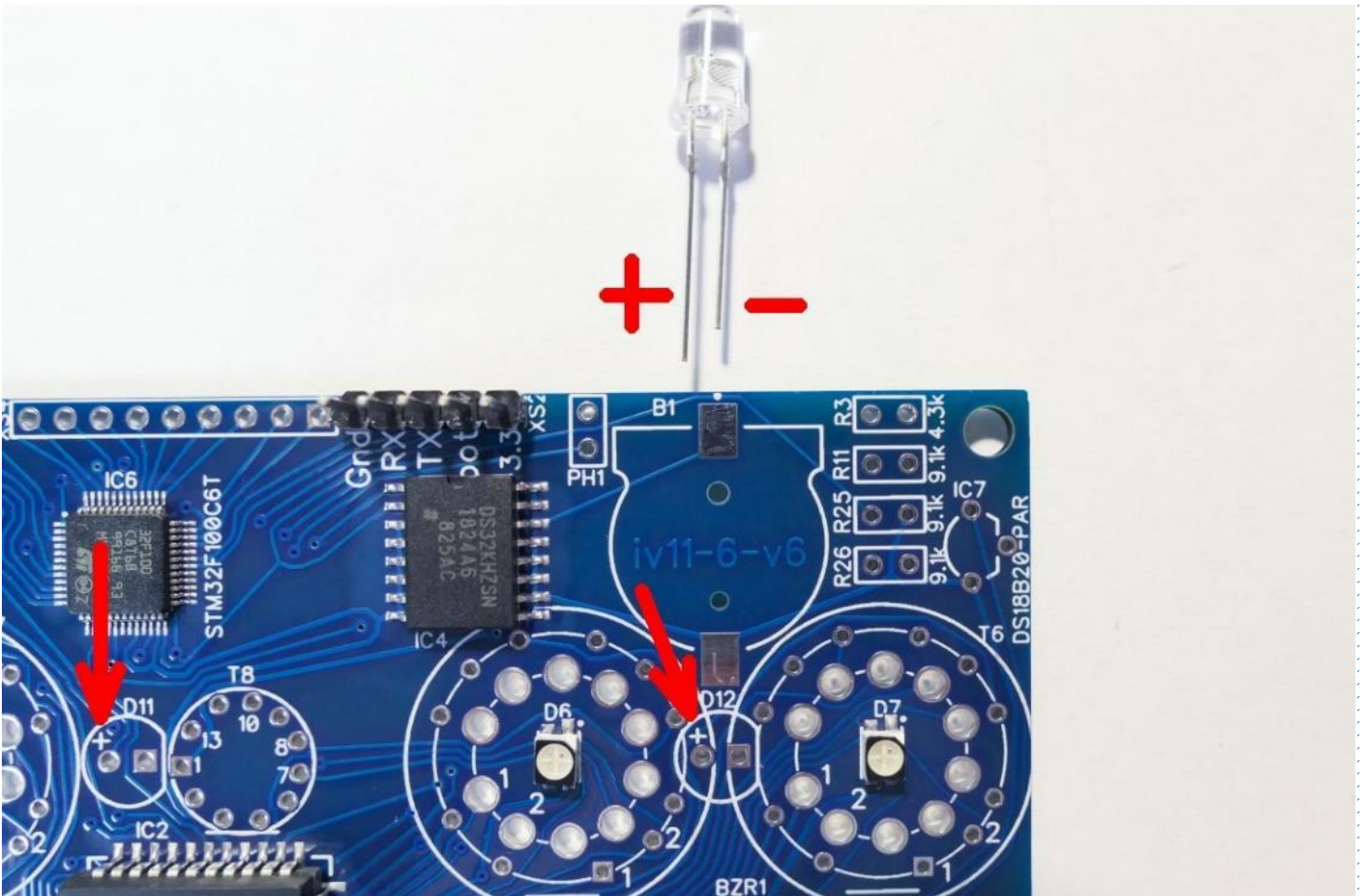
13) Place sockets for IC. Insert MC34063 chip at the end of assembling process:

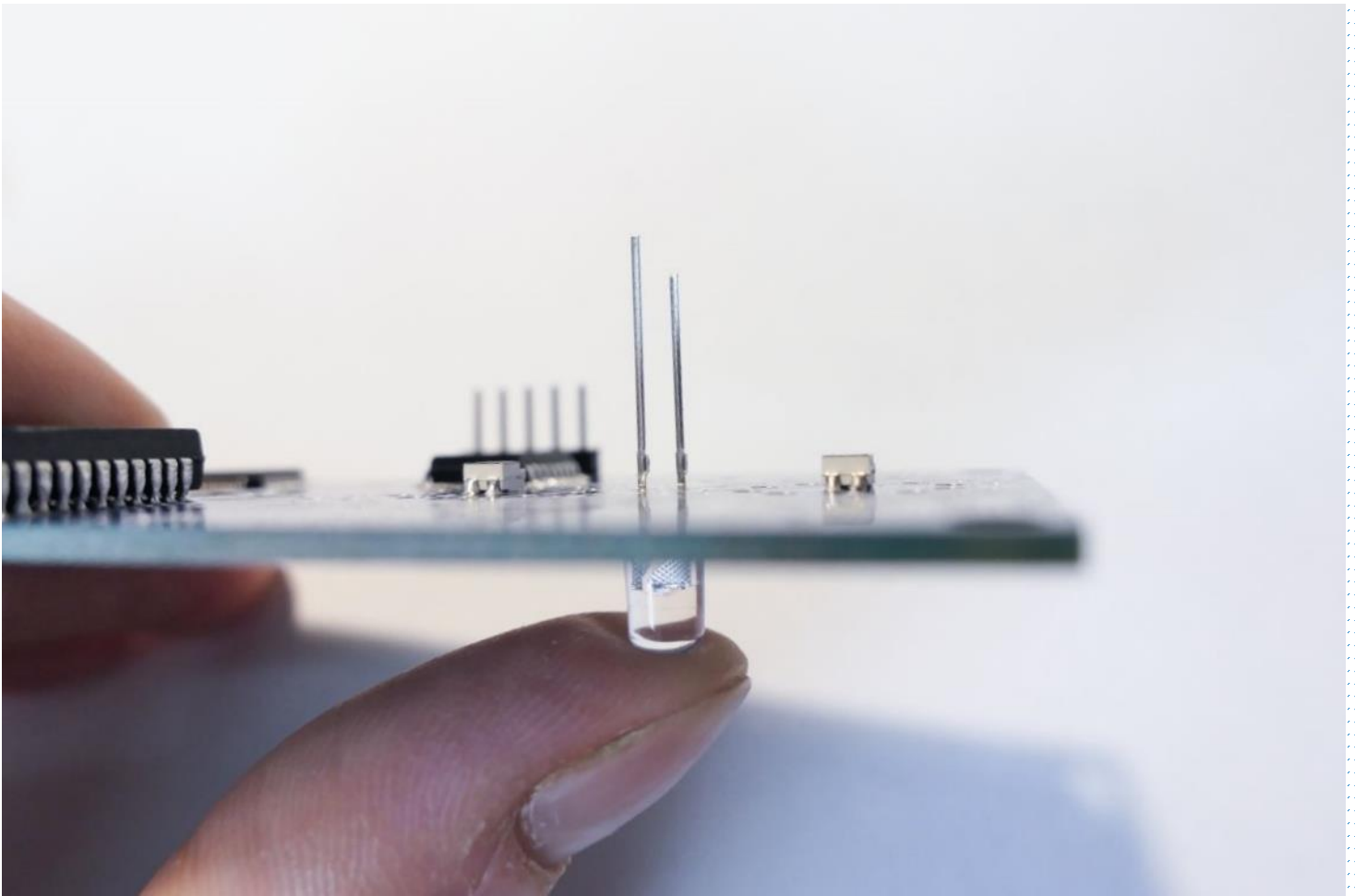


14) Install Infrared receiver:

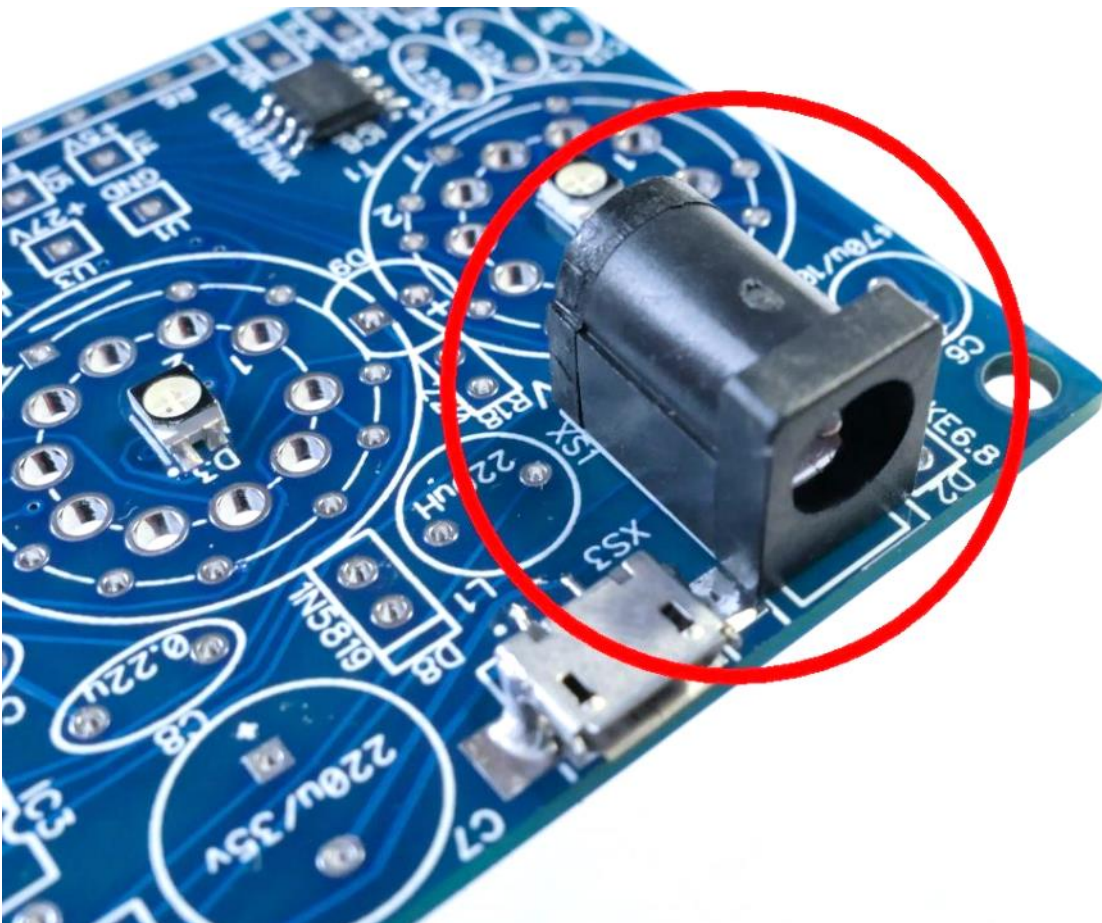


15) Install leds to the bottom side of PCB:

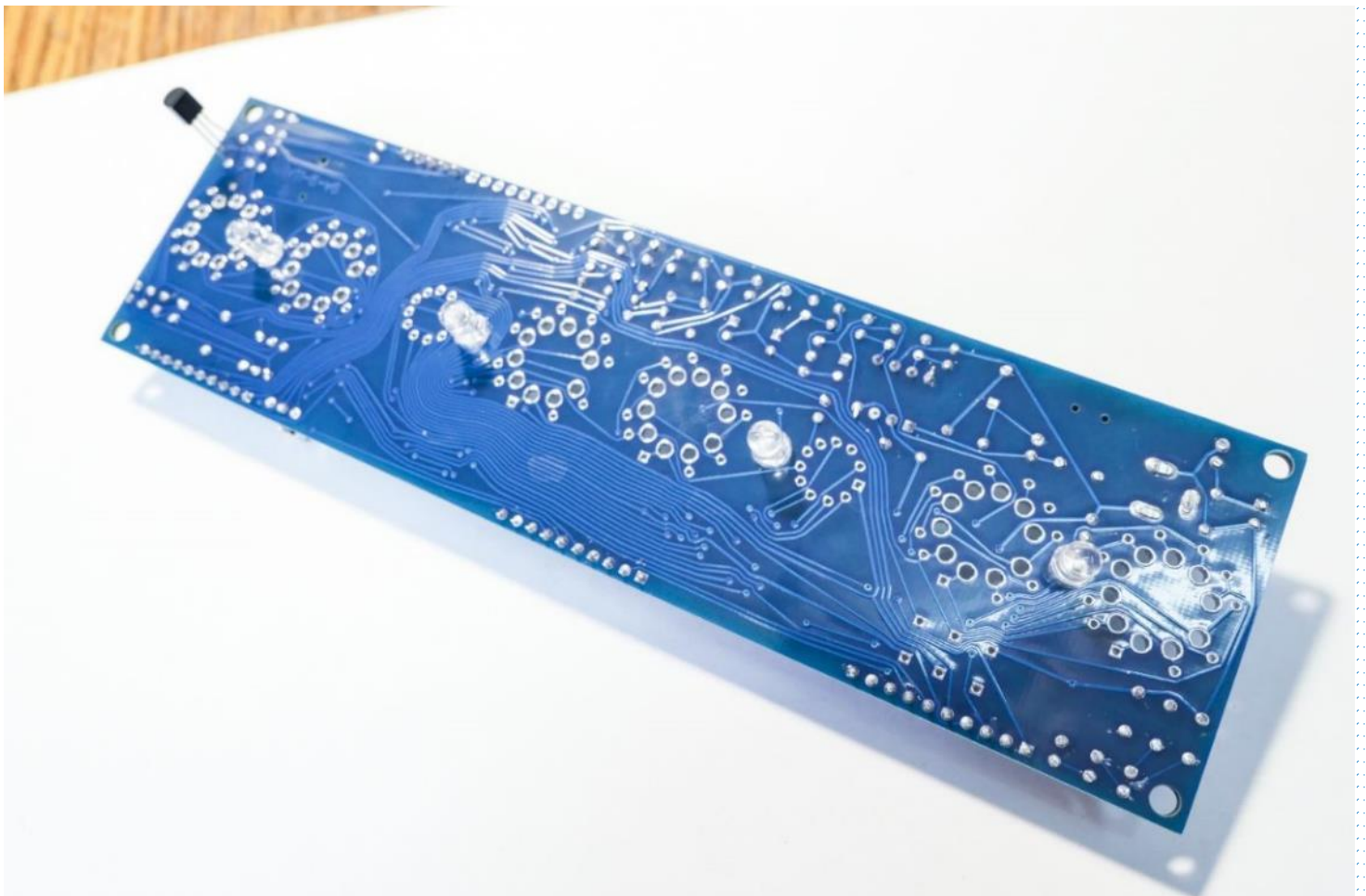


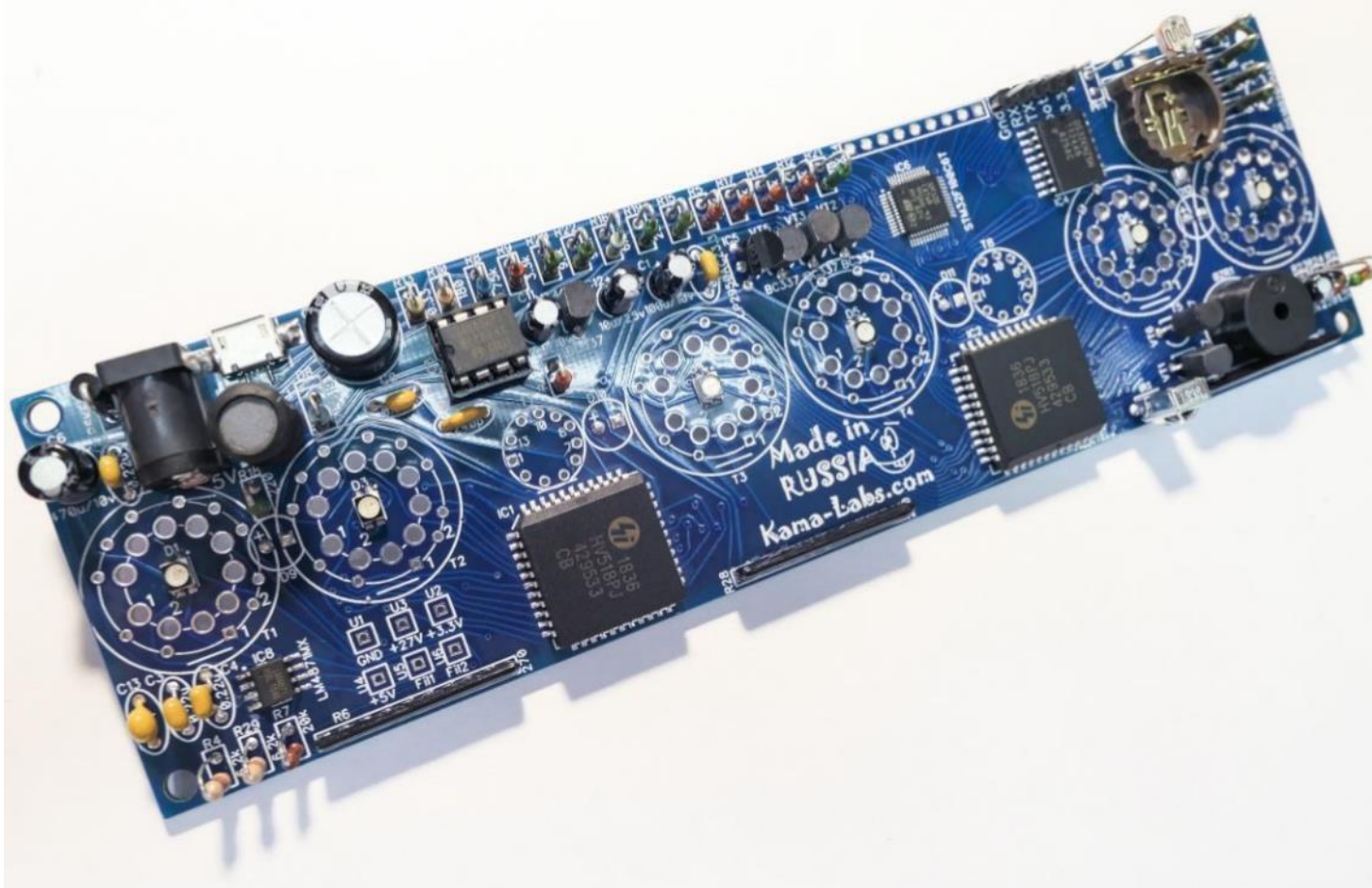
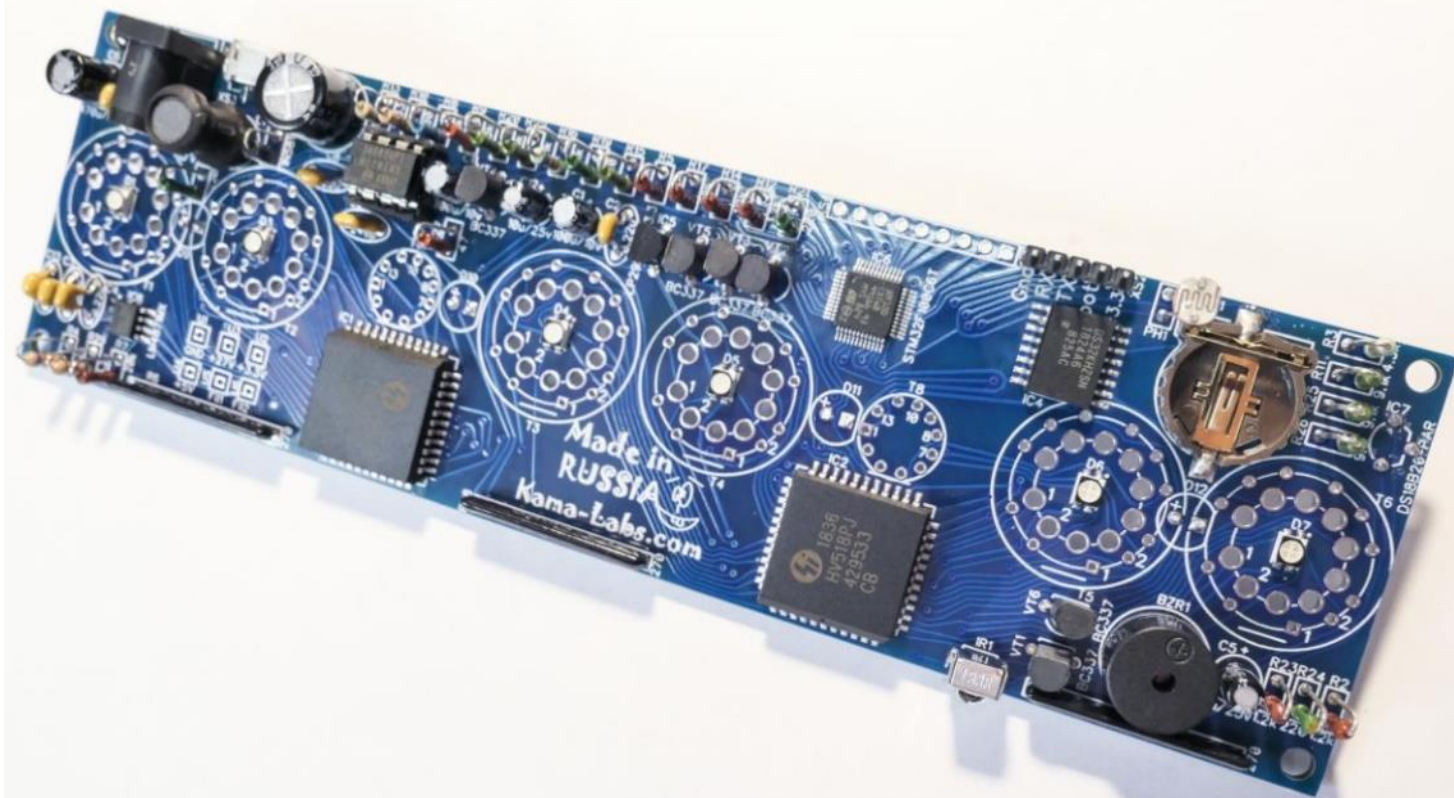


16) Install socket for power supply:

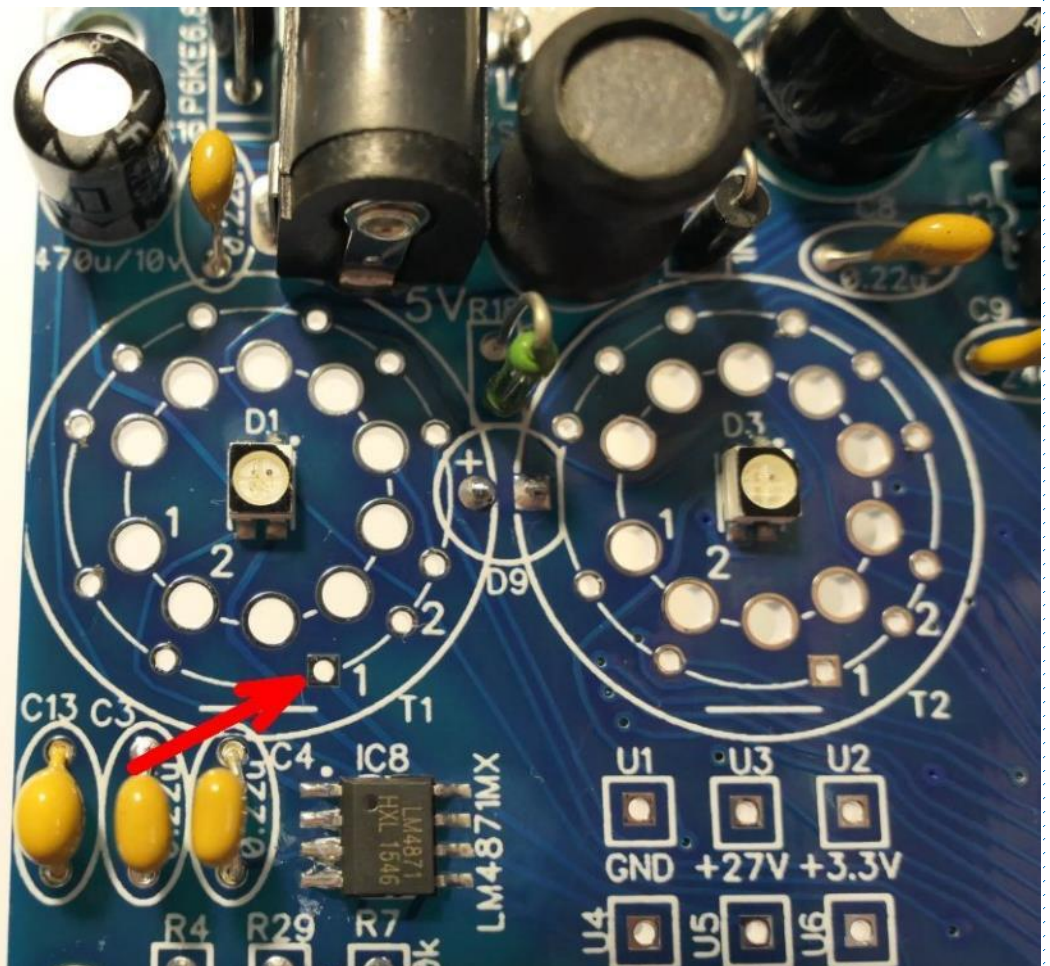
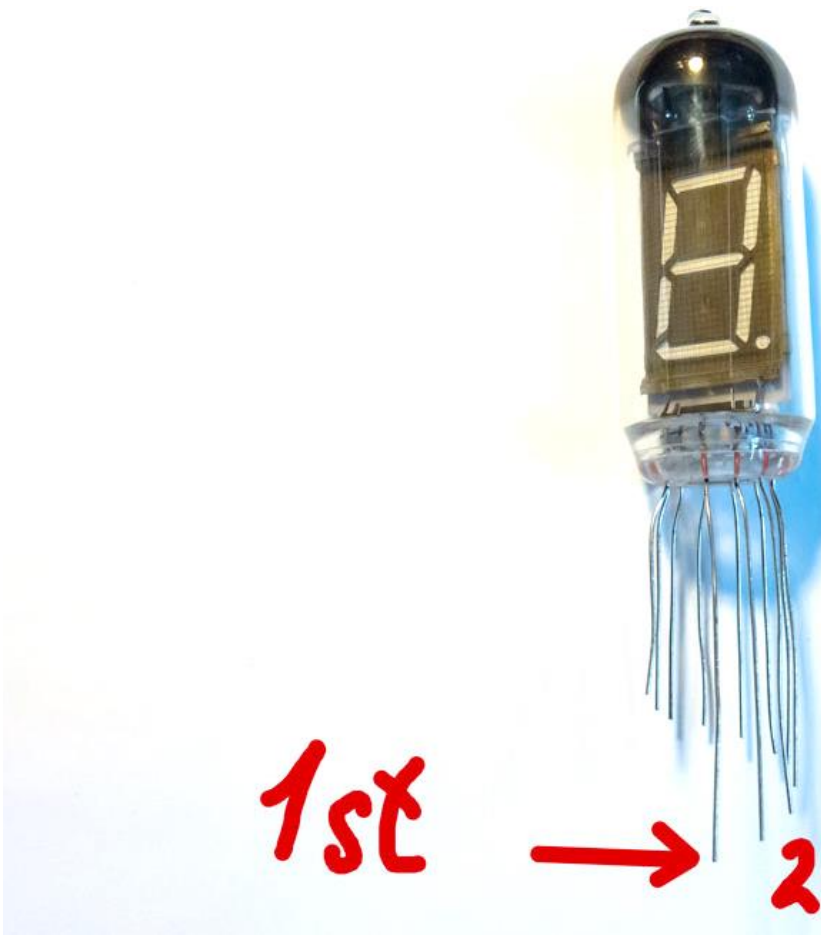


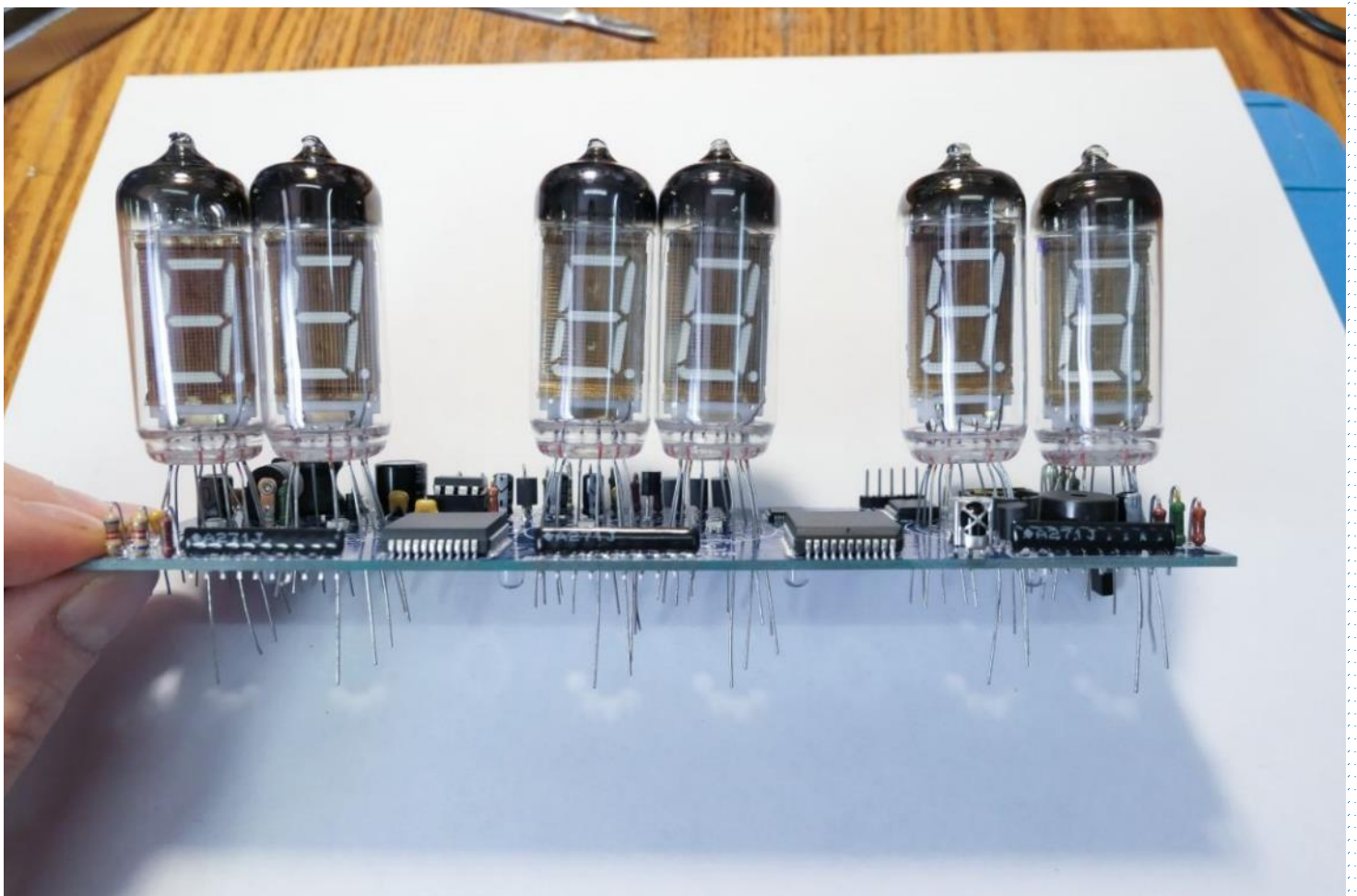
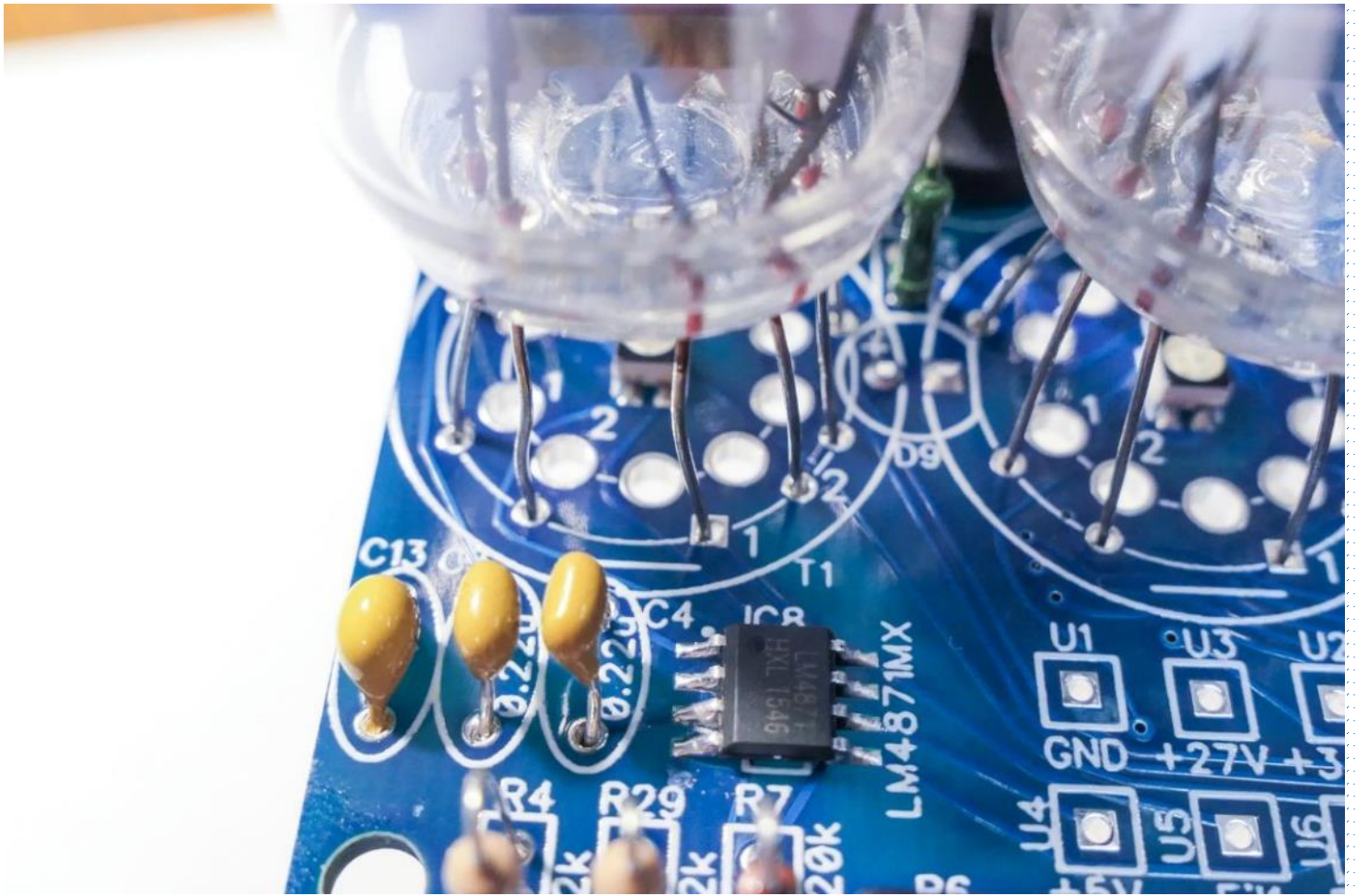
17) After all, your board should look like on photo:

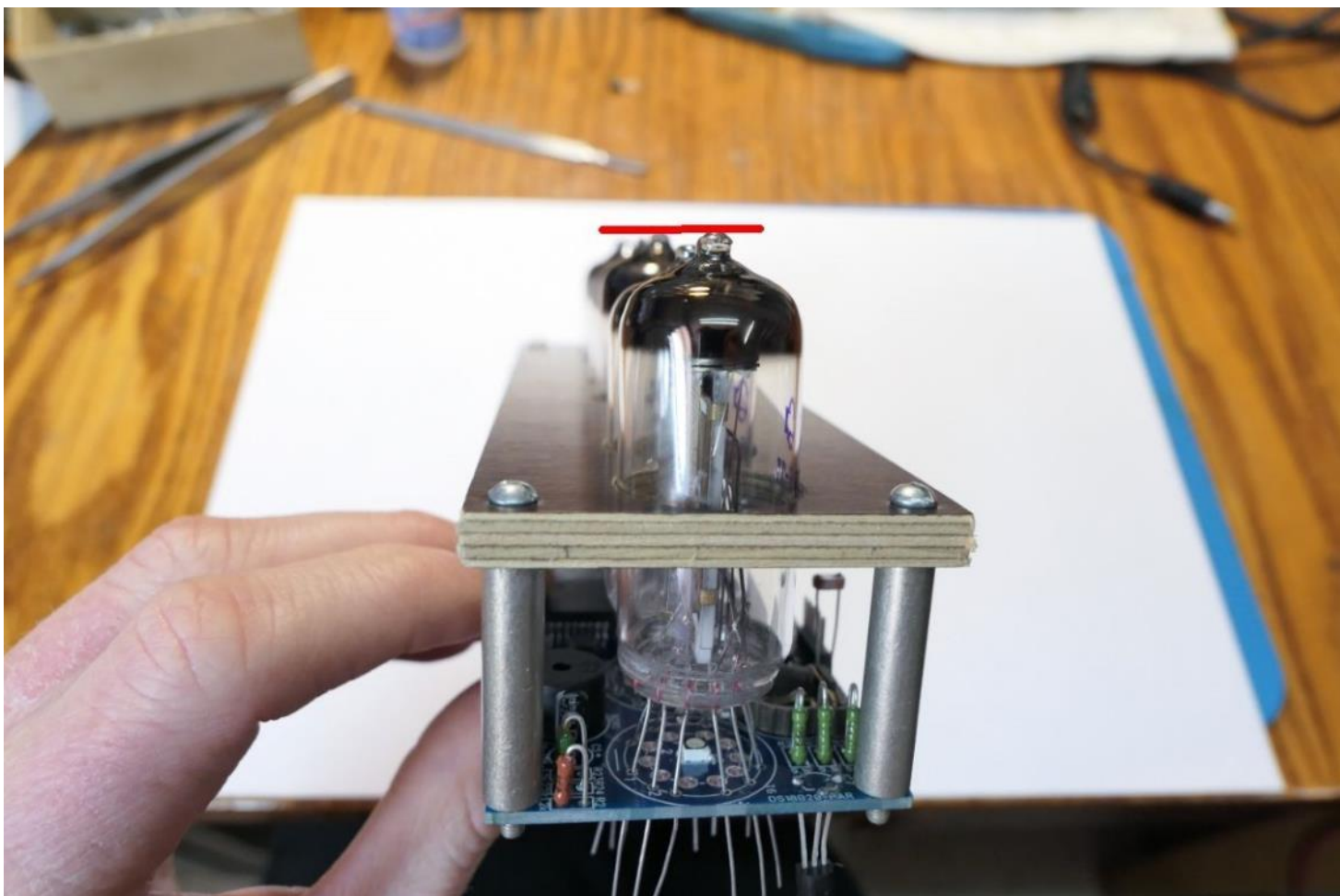
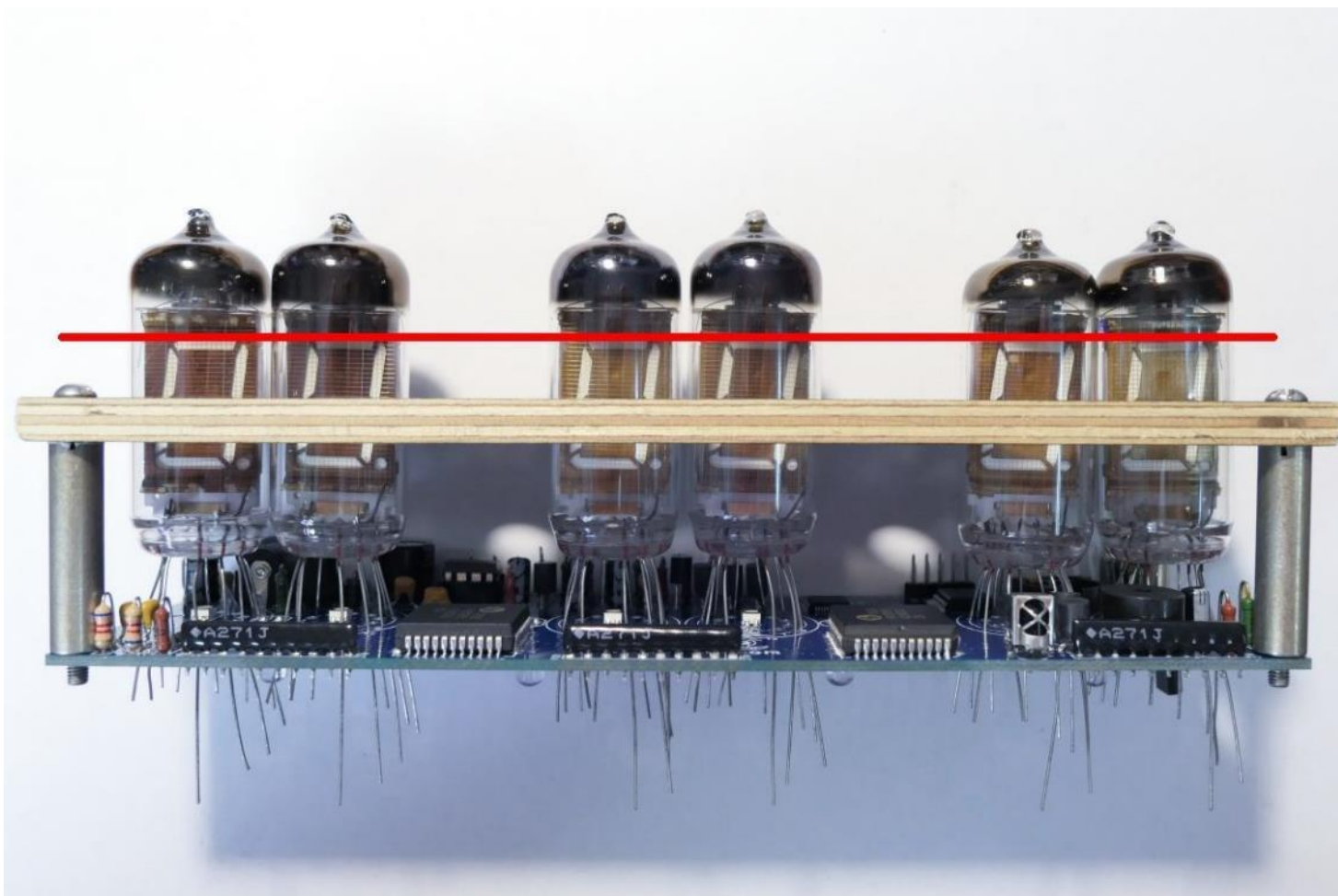




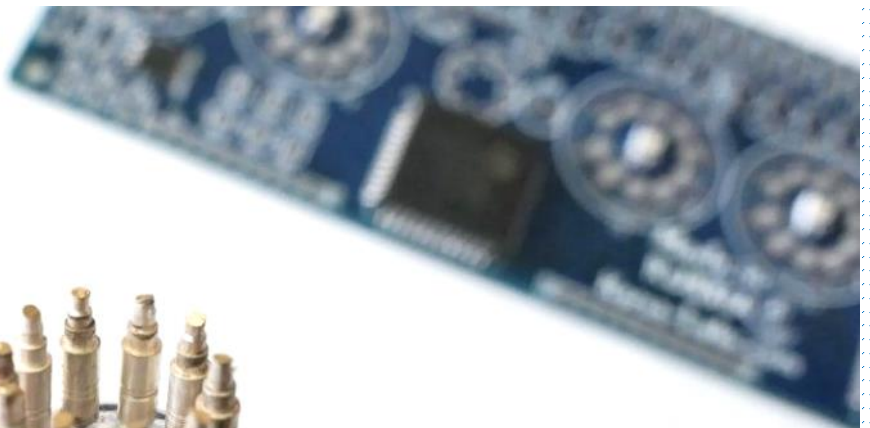
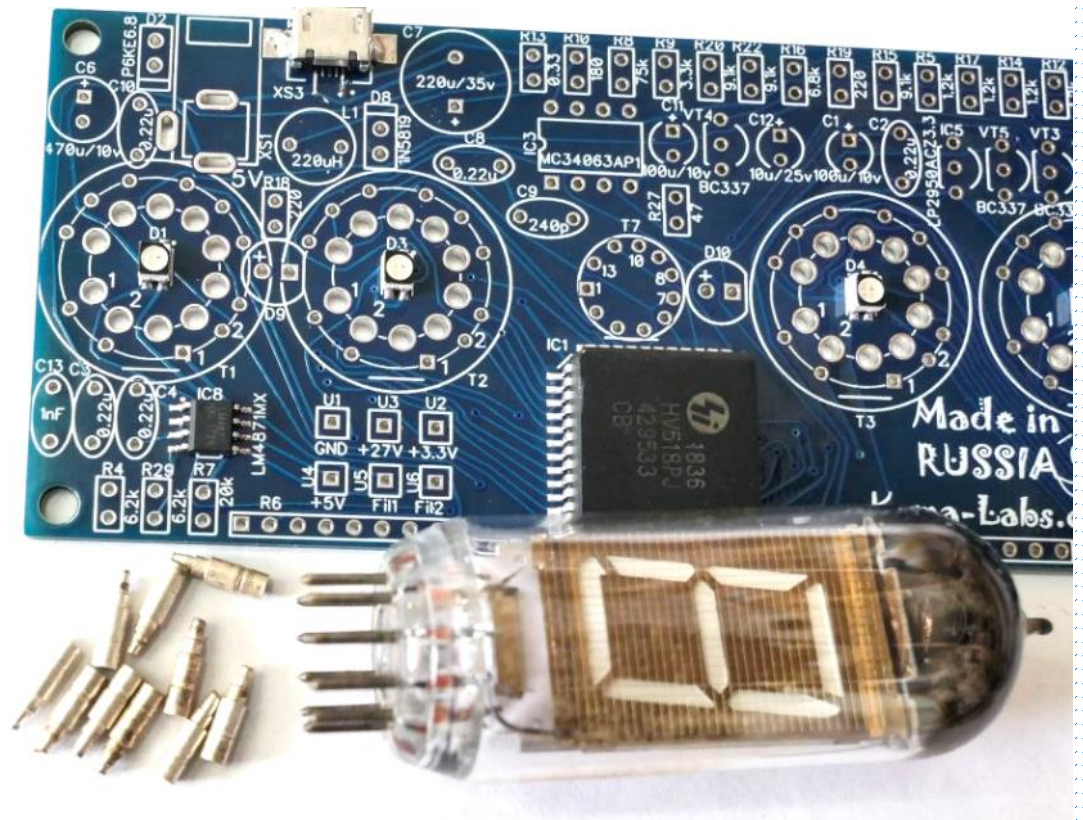
18) Prepare and install all IV-11 tubes. You can see that pins of tubes cuts spiral already. The longest pin – the first pin:

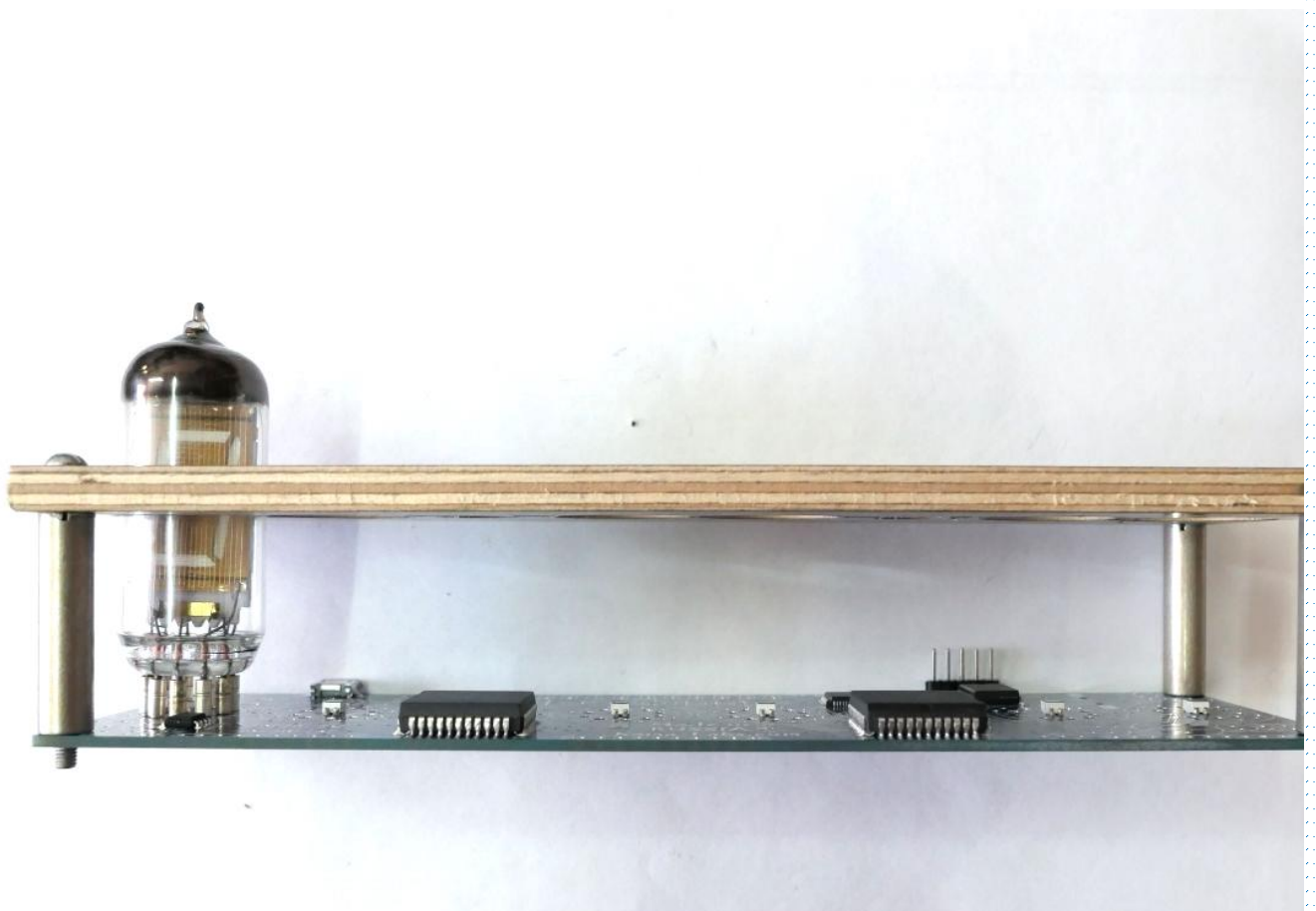
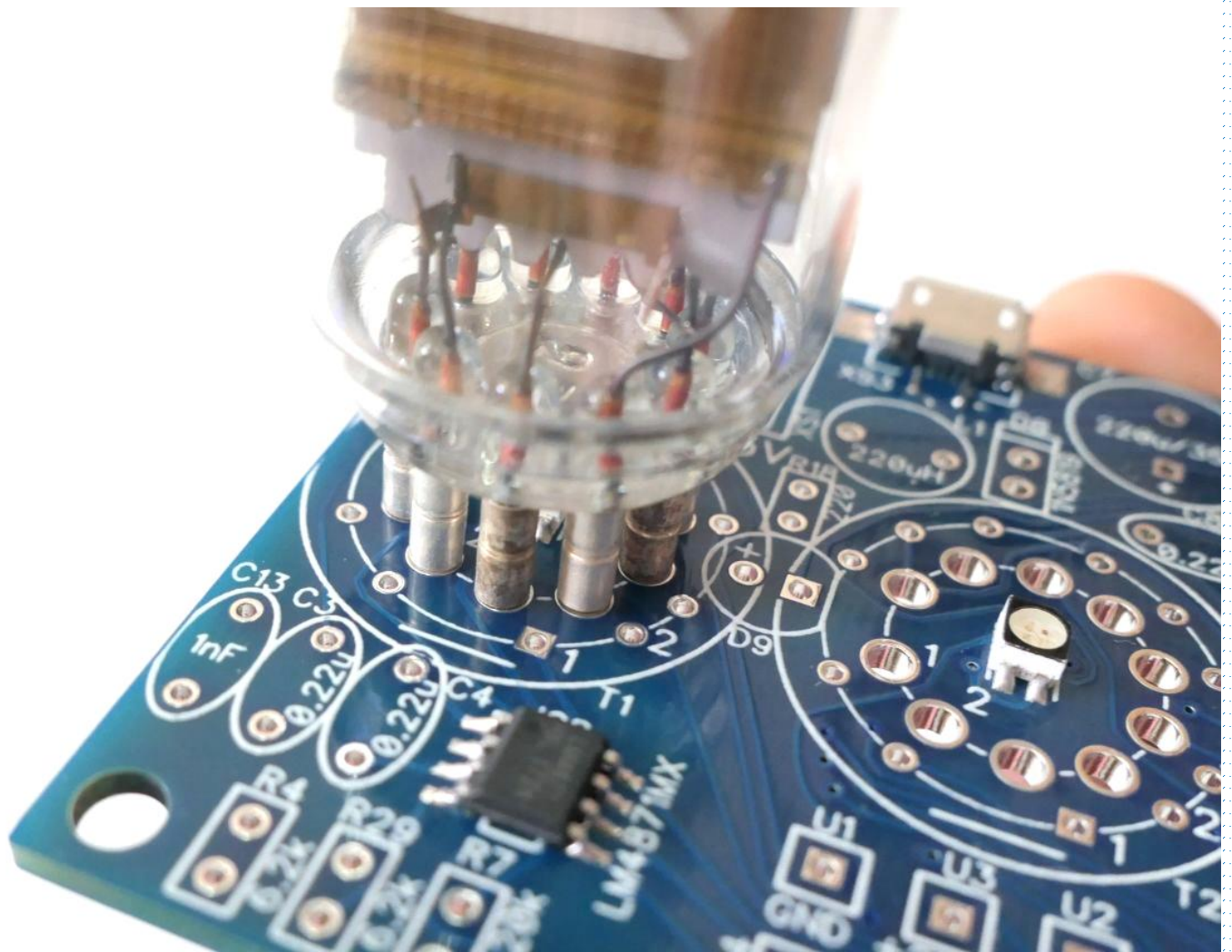


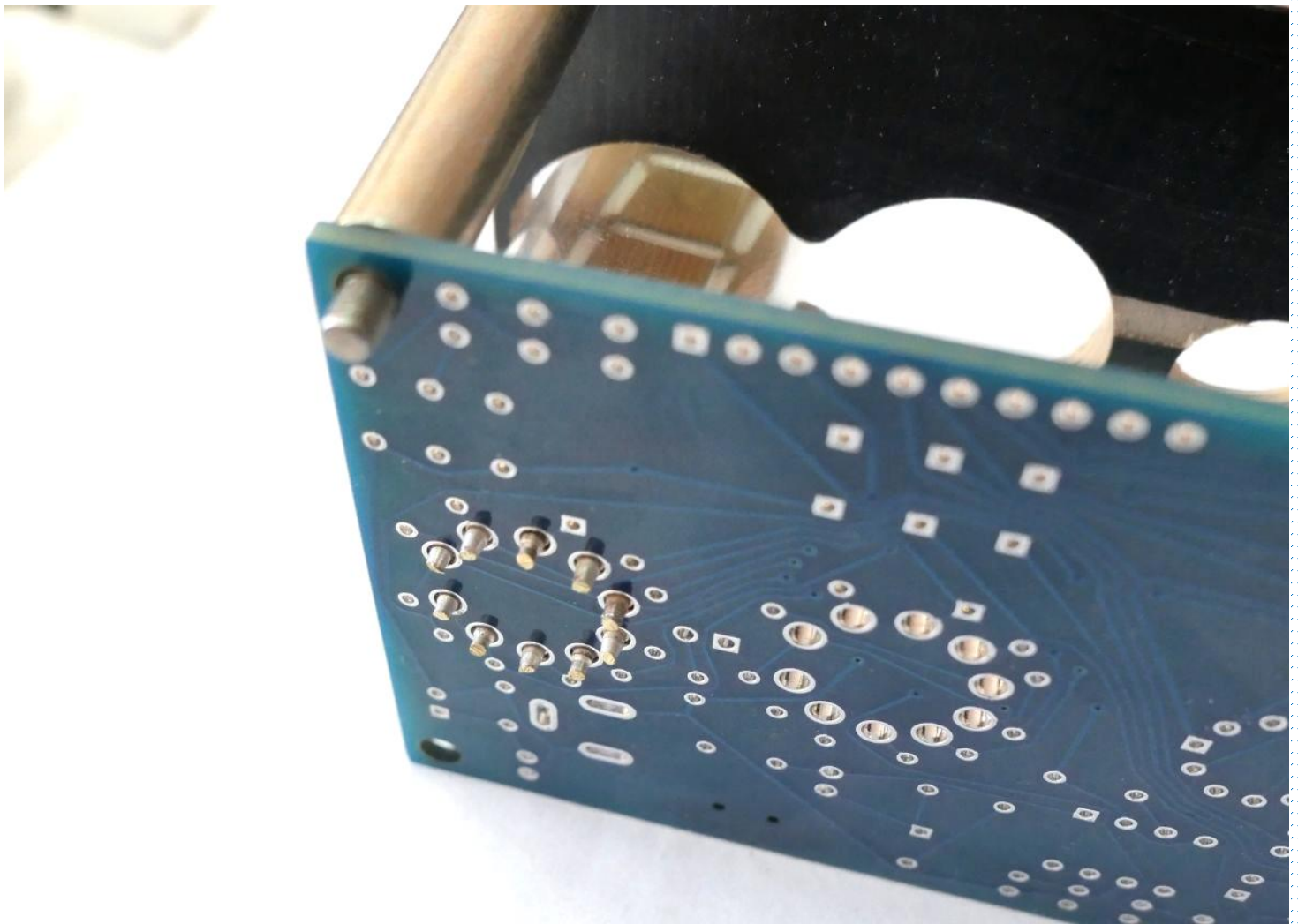




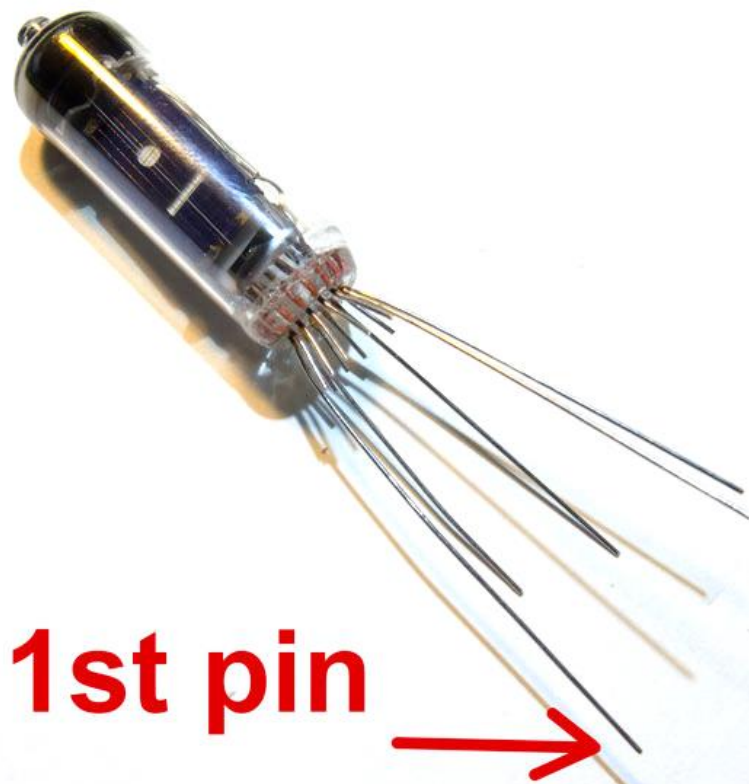
19) How to install IV-12 tubes:

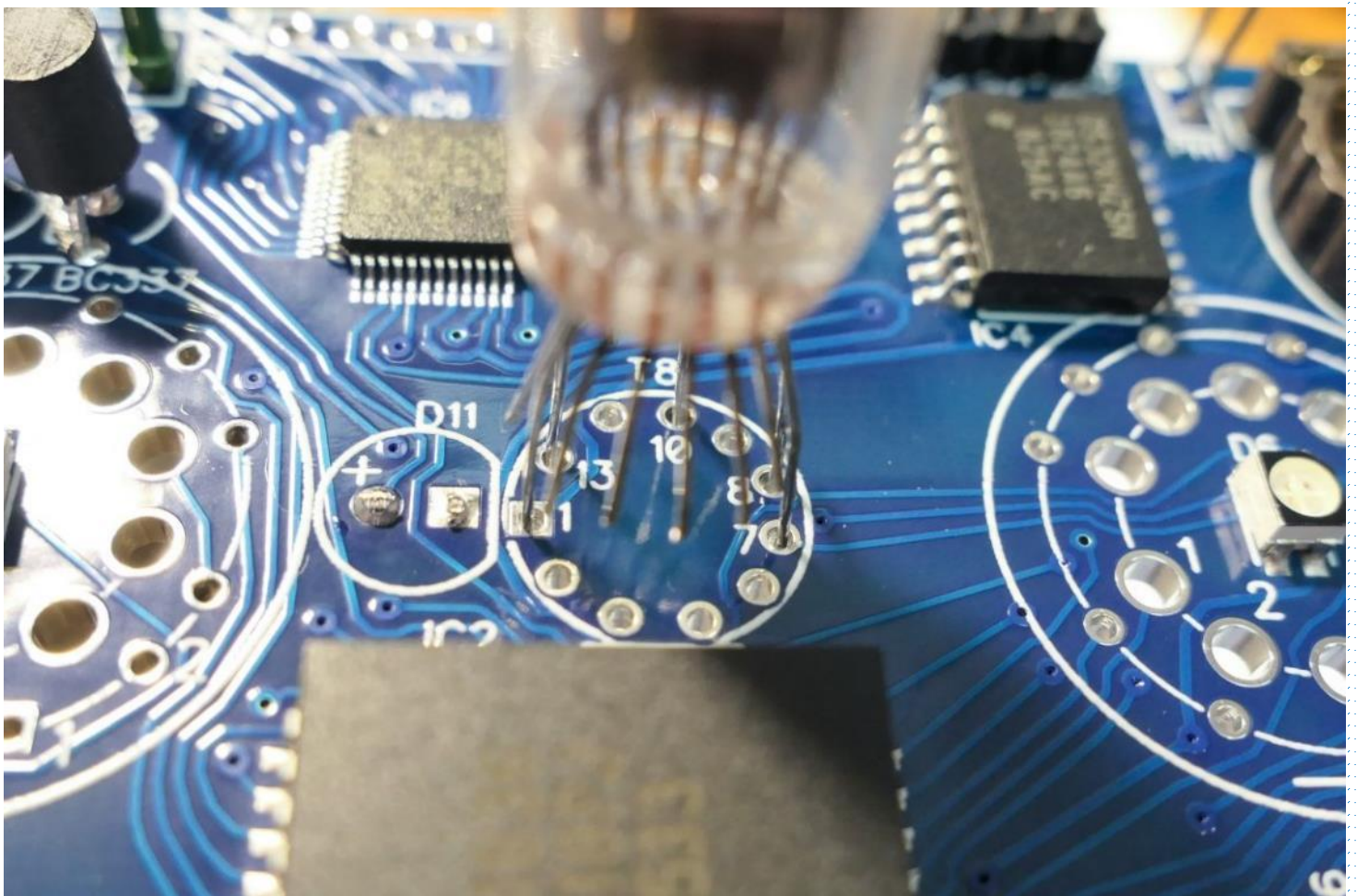
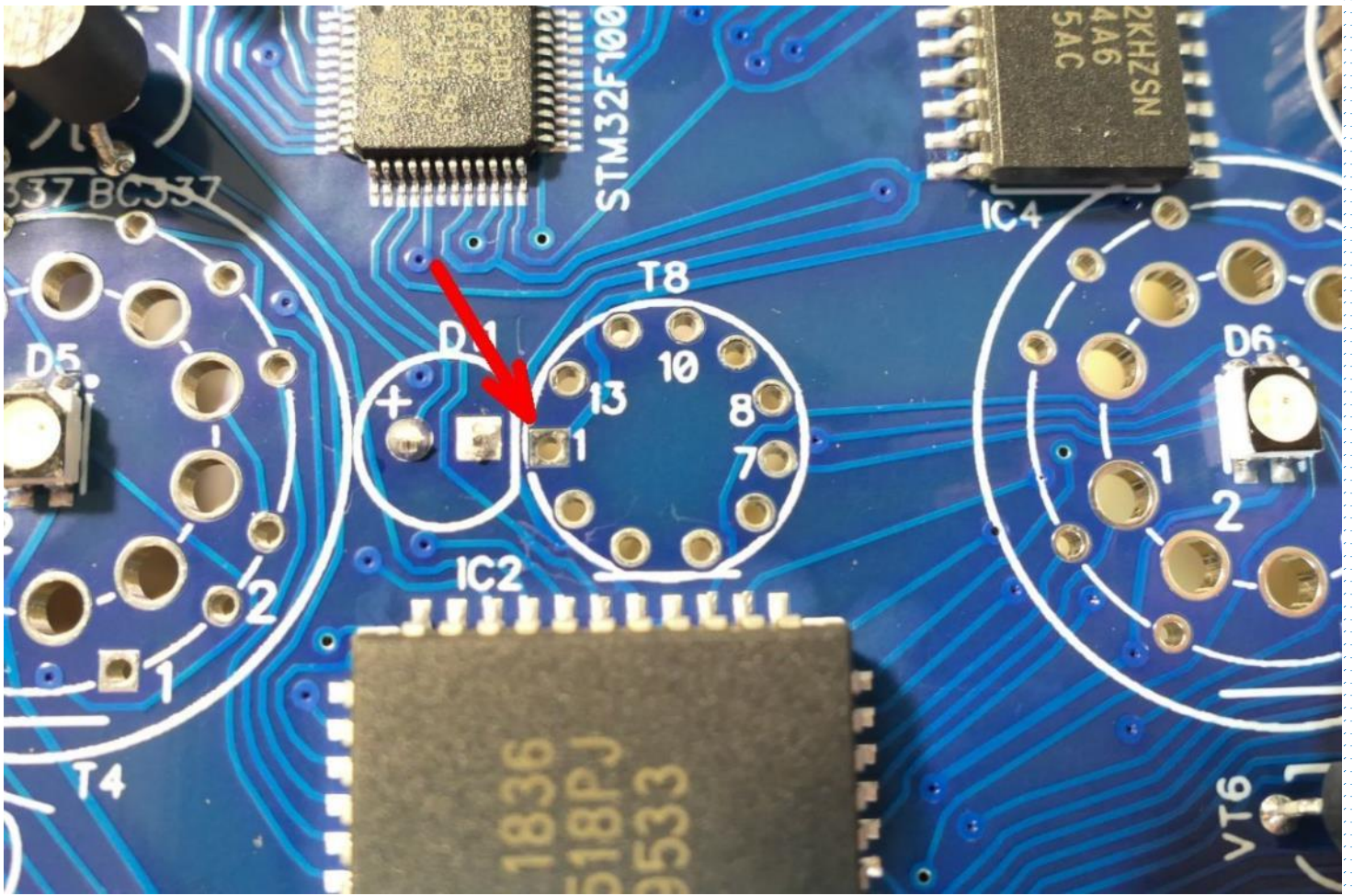






20) Place 2x IV-1 tubes. Pins of tubes cut spiral already too:





21) After all clock should work.







CONGRATULATIONS!


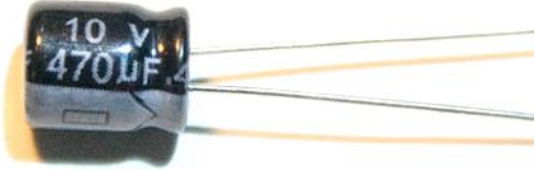




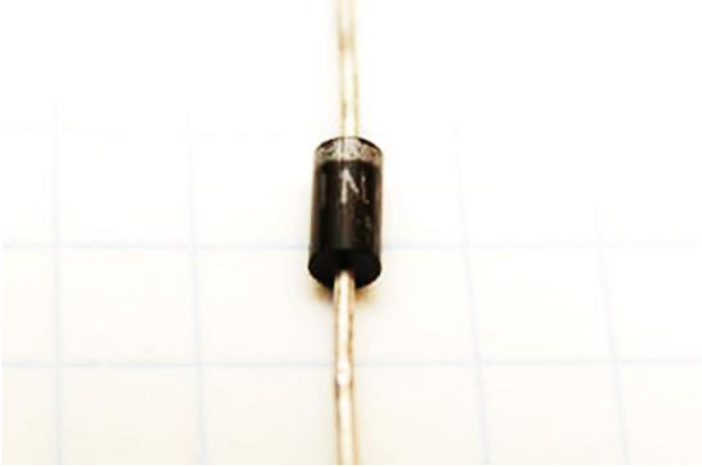





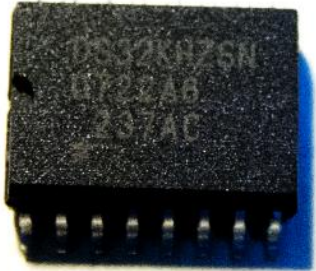
PARTS LIST





Please note, that elements in kit can be a little different. If you doubt value of element, check it with multimeter.

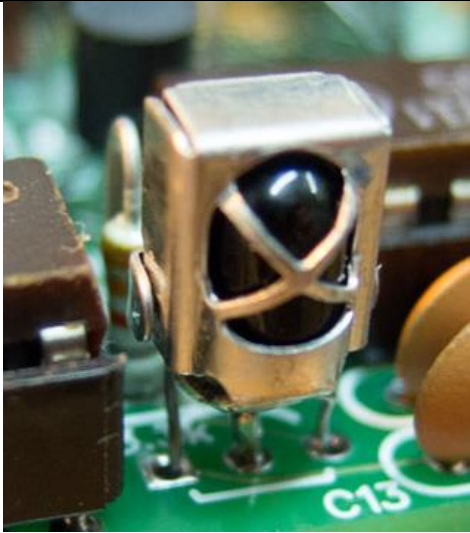

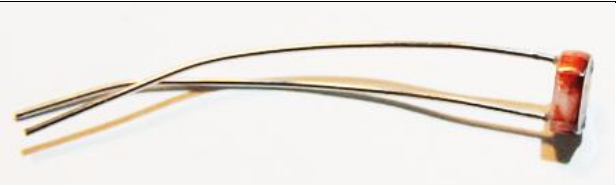
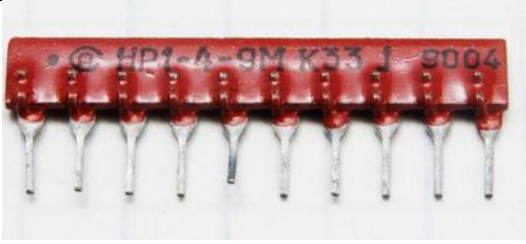




IF VALUE OF ELEMENT IN SPECIFICATION AND ON PCB IS DEFFERENT, PLEASE USE VALUES FROM SPECIFICATION OR SCHEME.






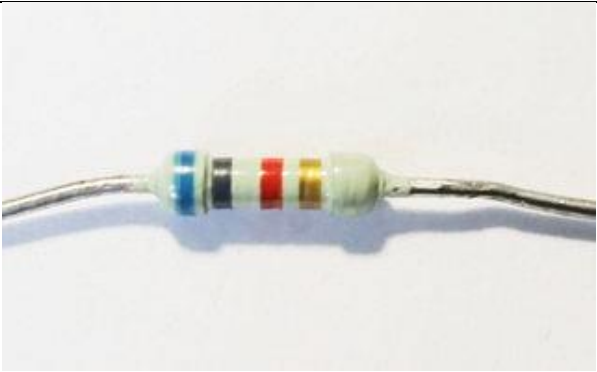


Label	Qty	Value	Photo
B1	1	CR1220	
BZR1	1	BUZZER	
C1, C11	2	100u/10v	
C2, C3, C4, C8, C10	5	0.22u	

C5, C12	2	10u/25v	
C6	1	470u/10v	
C7	1	220u/35v	
C9	1	240p	
C13	1	1nF	
D1, D3, D4, D5, D6, D7	6	RGB LED 3528 Common Anode	
D2	1	P6KE6.8	

D8	1	1N5819	
D9, D10, D11, D12	4	LED Auto	
IC1, IC2	2	HV518	
IC3	1	MC34063AP1	
IC4	1	DS32KHZS	

IC5	1	LP2950ACZ3.3	
IC6	1	STM32F100C6T	
IC7	1	DS18B20-PAR	
IC8	1	LM4871MX	

IR1	1	IR-sensor/пульт	
L1	1	220uH	
PH1	1	SF2-1	
R1, R6, R28	3	270 resistor array	
R2, R5, R12, R14, R17, R23	6	1.2k	
R3	1	4.3k	
R4, R29	2	6.2k	
R7	1	20k	

R8	1	75k	
R9	1	3.3k	
R10	1	180	
R11, R15, R20, R22, R25, R26	6	9.1k	
R13	1	0.33	
R16	1	6.8k	
R18, R19, R21, R24	4	220	
R27	1	47	

T1, T2, T3,
T4, T5, T6

6

IV-11/IV-12



T7, T8

2

IV-8/IV-1



VT1, VT2,
VT3, VT4,
VT5, VT6

6

BC337







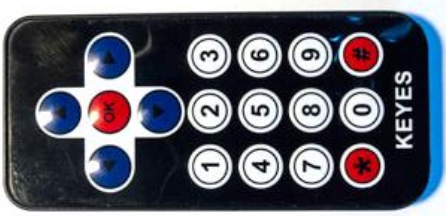
XS1

1

Power socket



XS3	1	Micro USB	
Battery holder	1	CR1220	
Board	1		
Plastic case / wooden case			
5V Power adapter			

Remote control			
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