www.Kama-Labs.com

ASSEMBLY MANUAL FOR

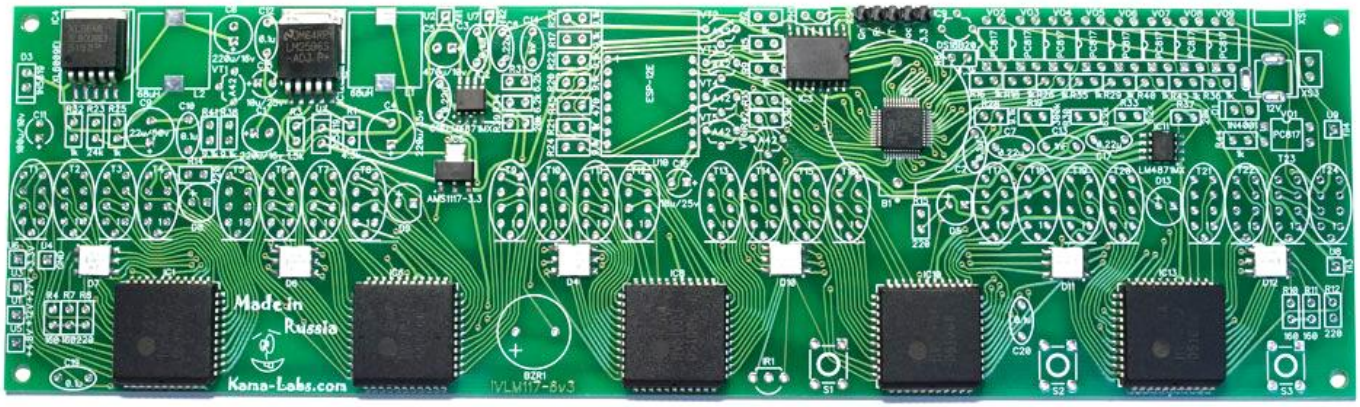
** ANUTA ** v3 Wi-Fi

CLOCK

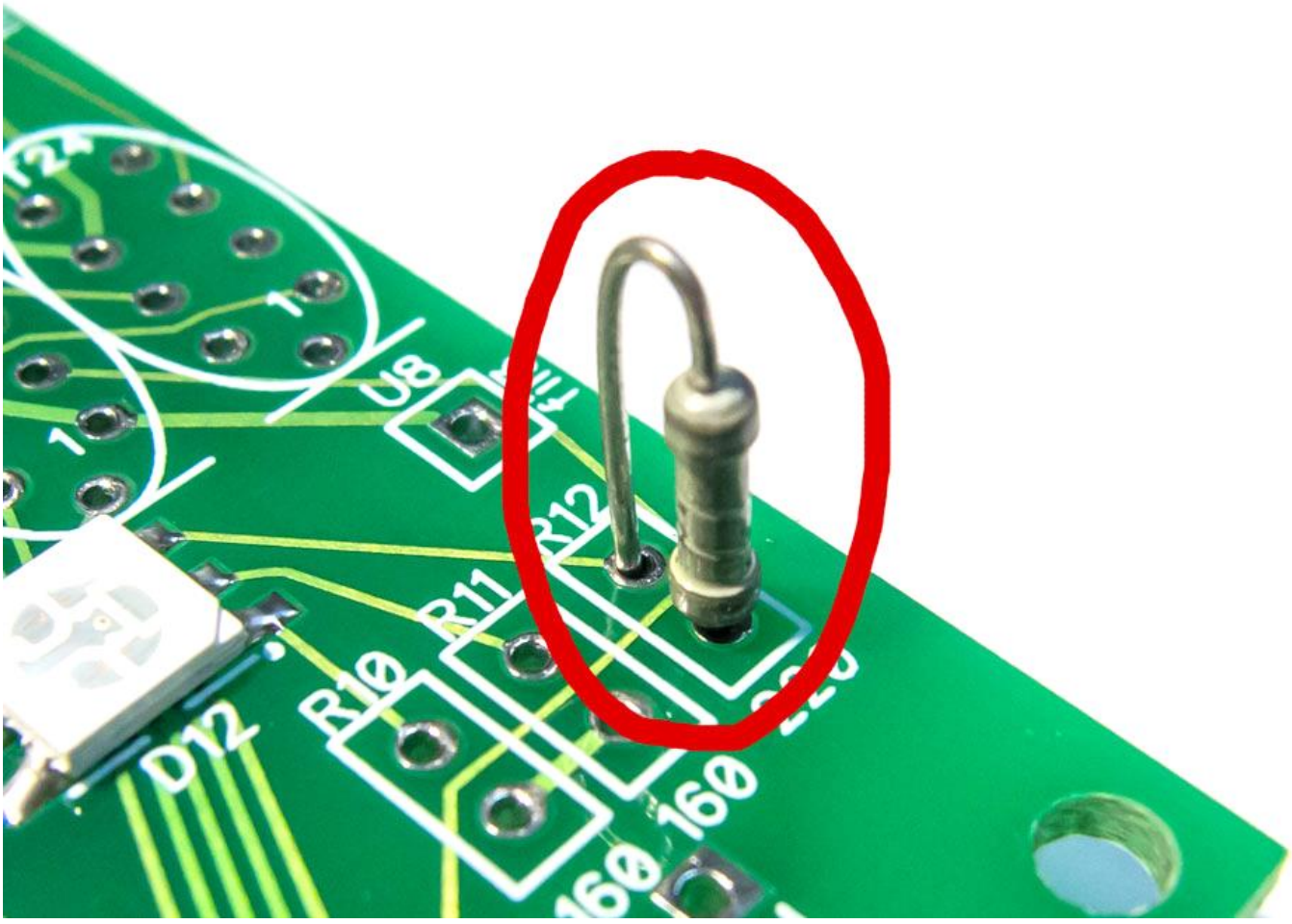
Be very careful with static electricity. If clock not work after build its mean that it can been damaged by static electricity in process of assemble.

Check resistance between +3.3 and GND pins of XS4. The resistance should be more than 1kOhm.

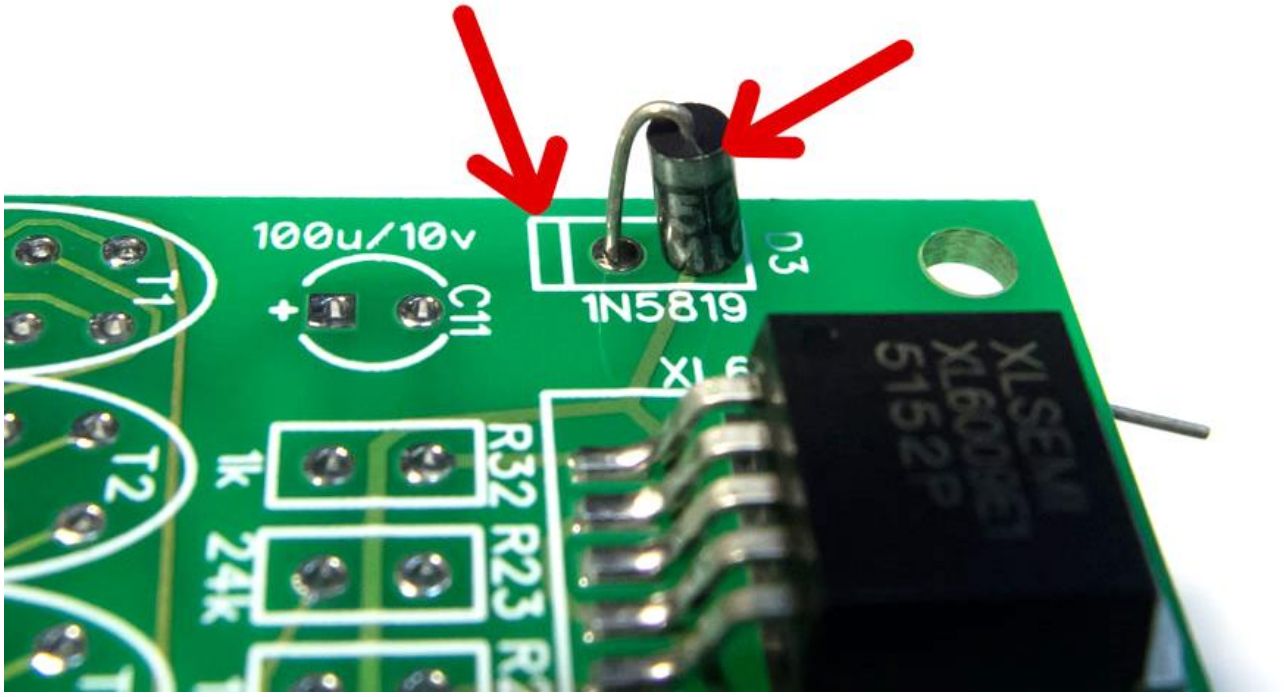
1) You have a PCB with all SMD elements soldered:



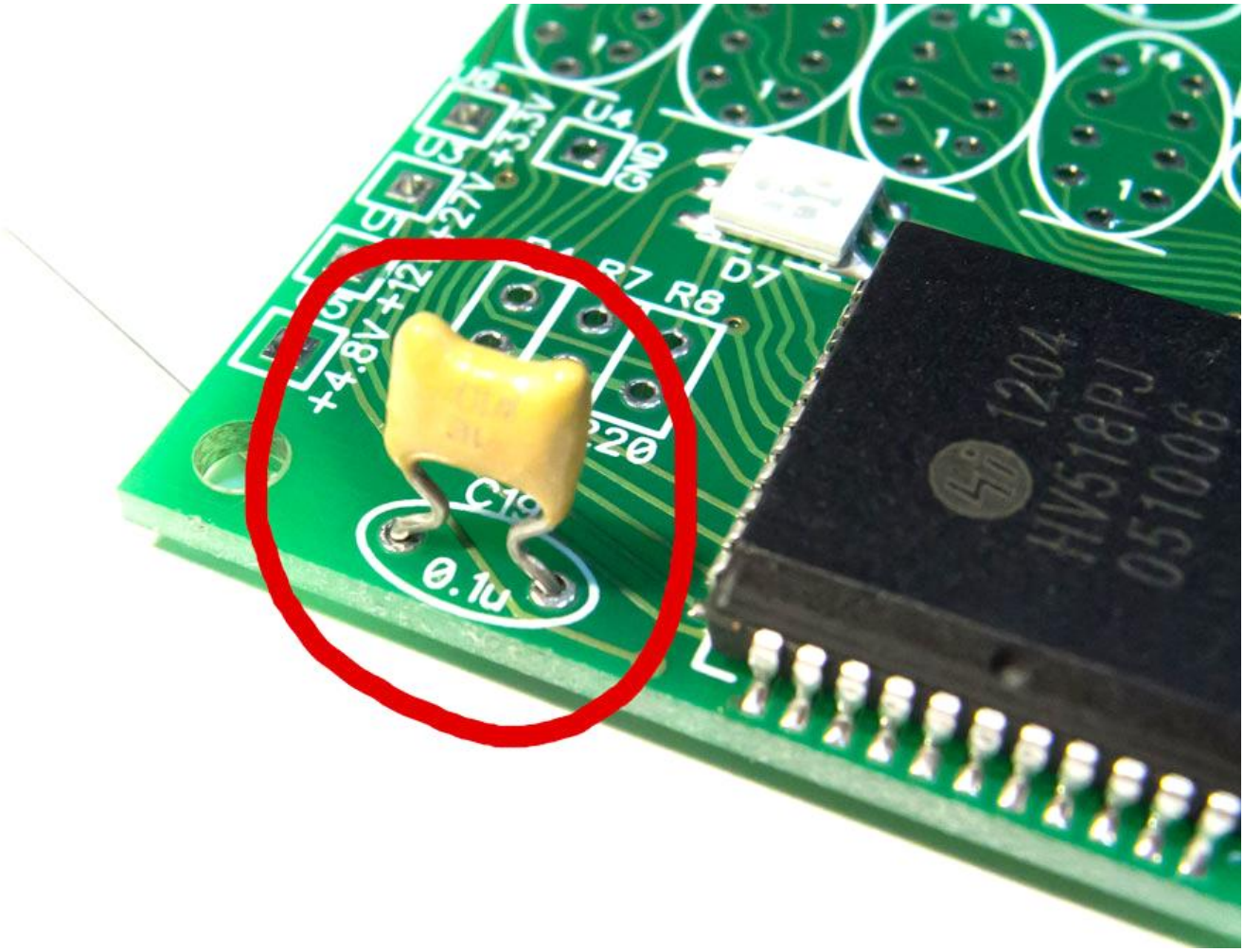
2) Place all resistors vertical.



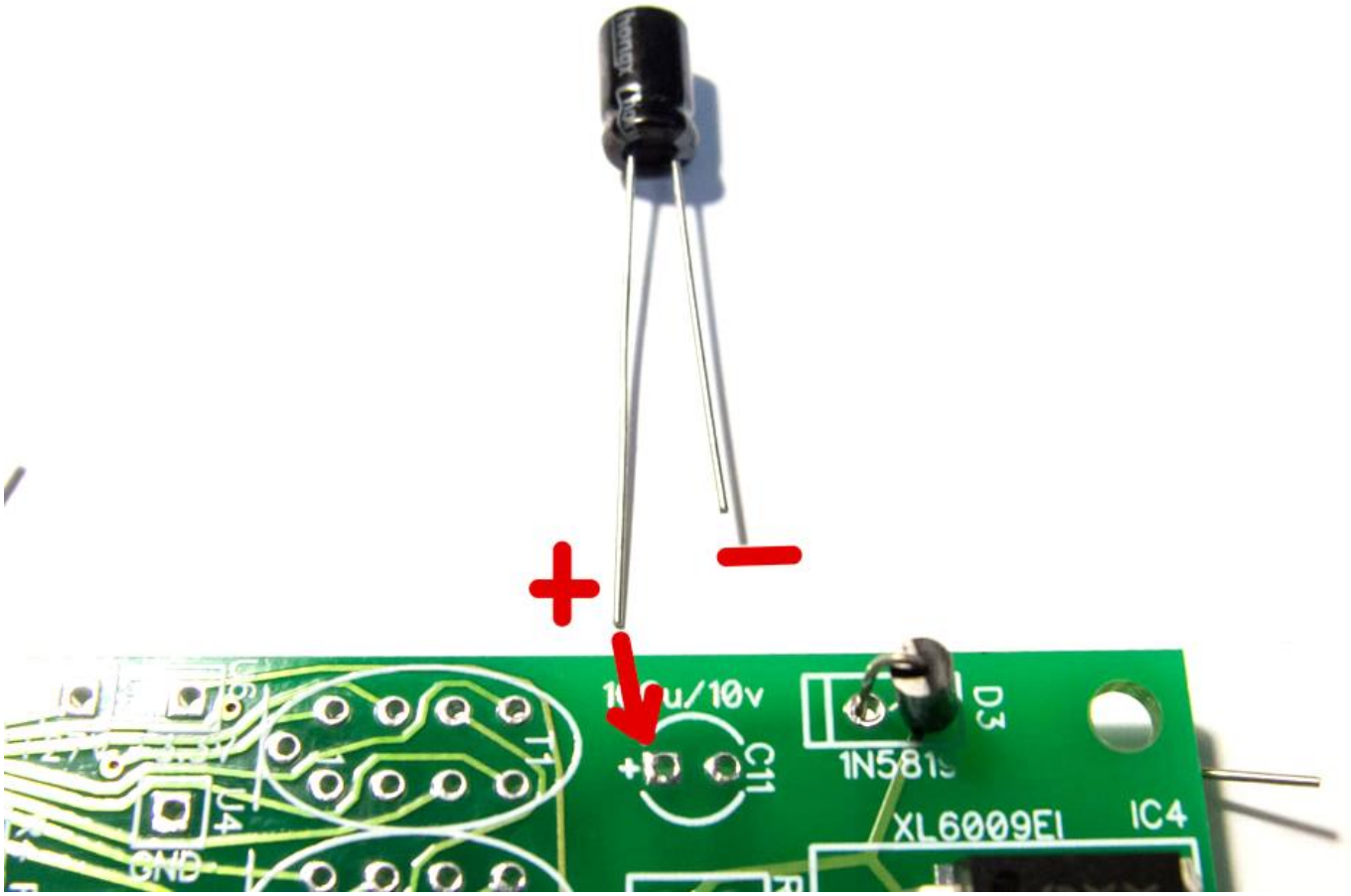
3) Place diodes:

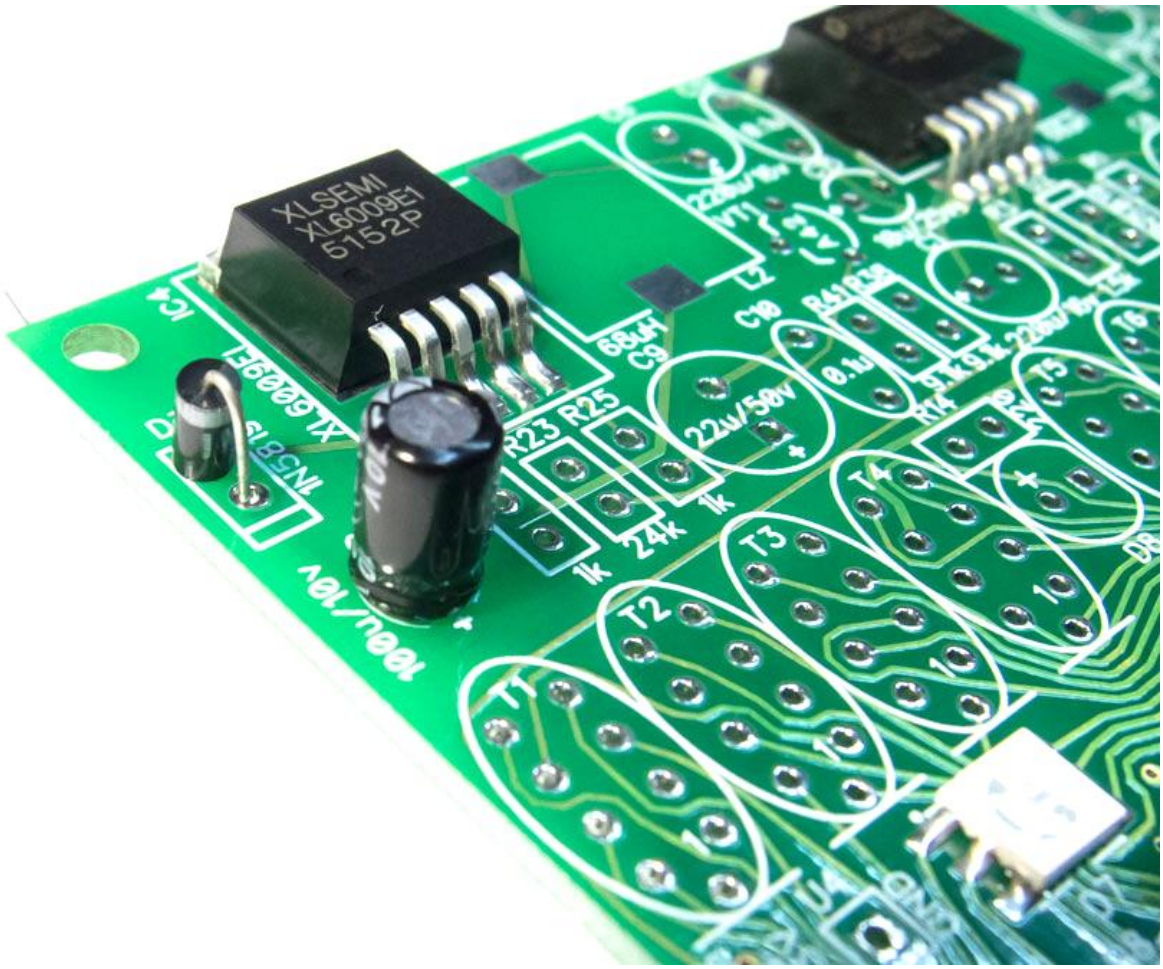


4) Place all ceramic capacitors:

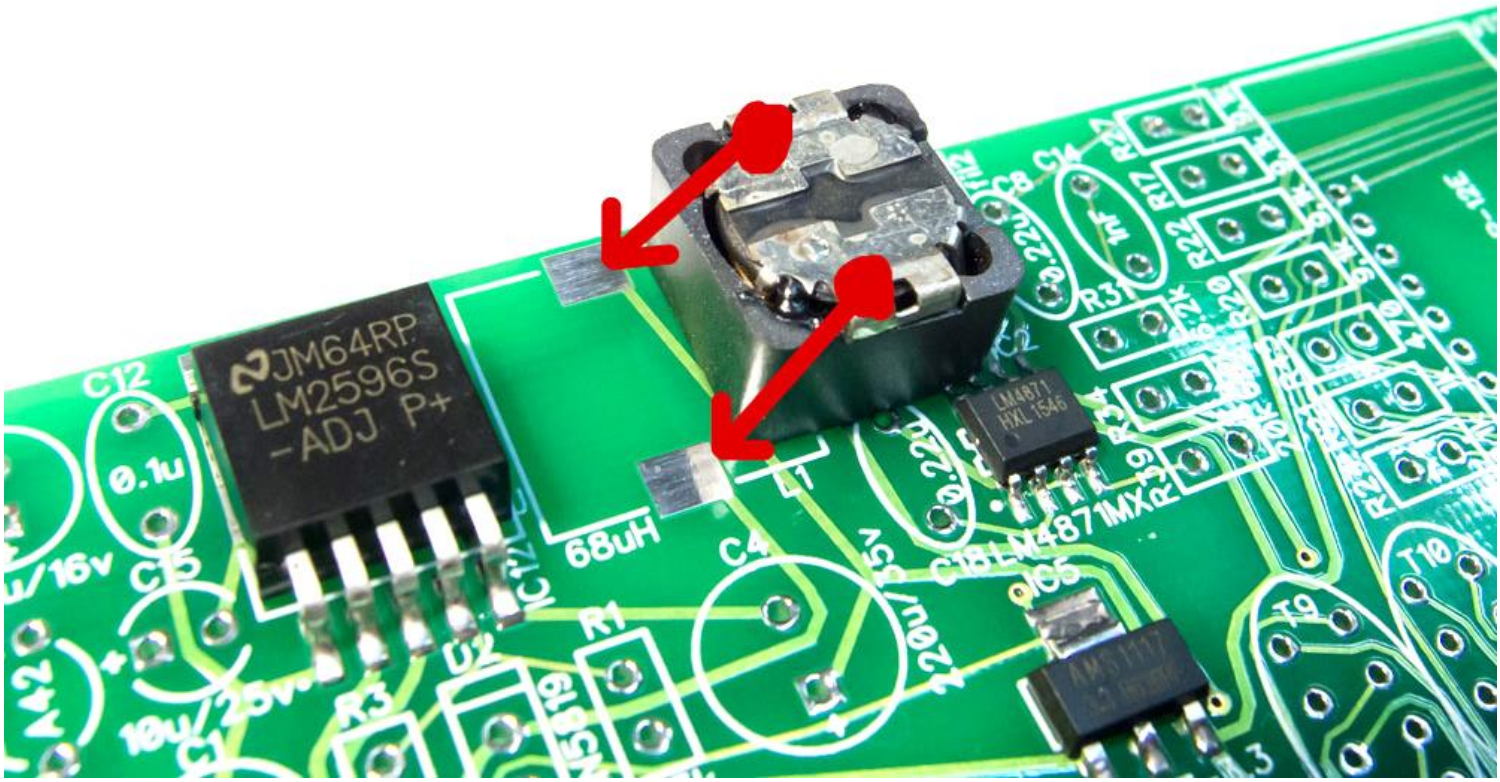


5) Place all electrolytic capacitors. Be careful with polarity!

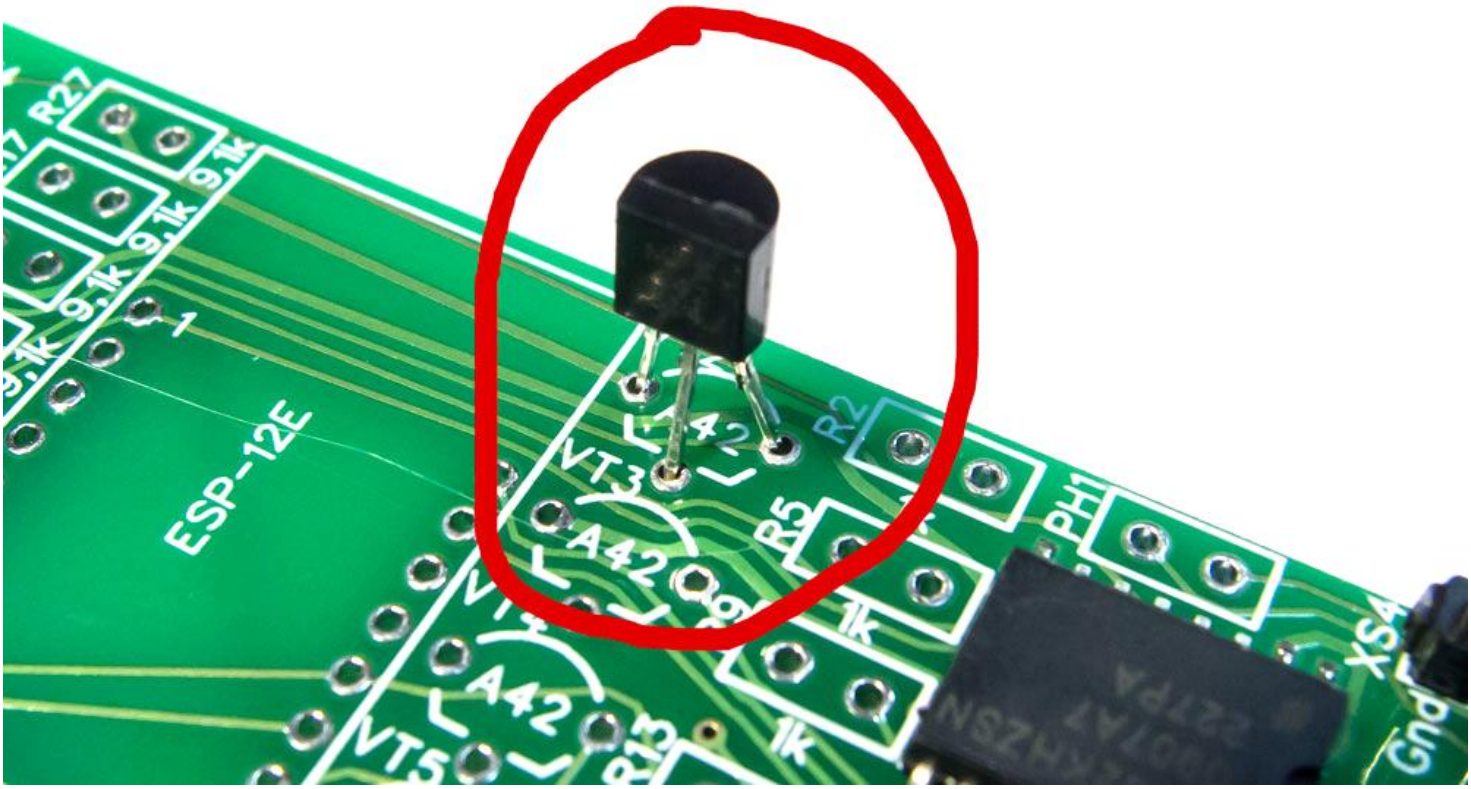




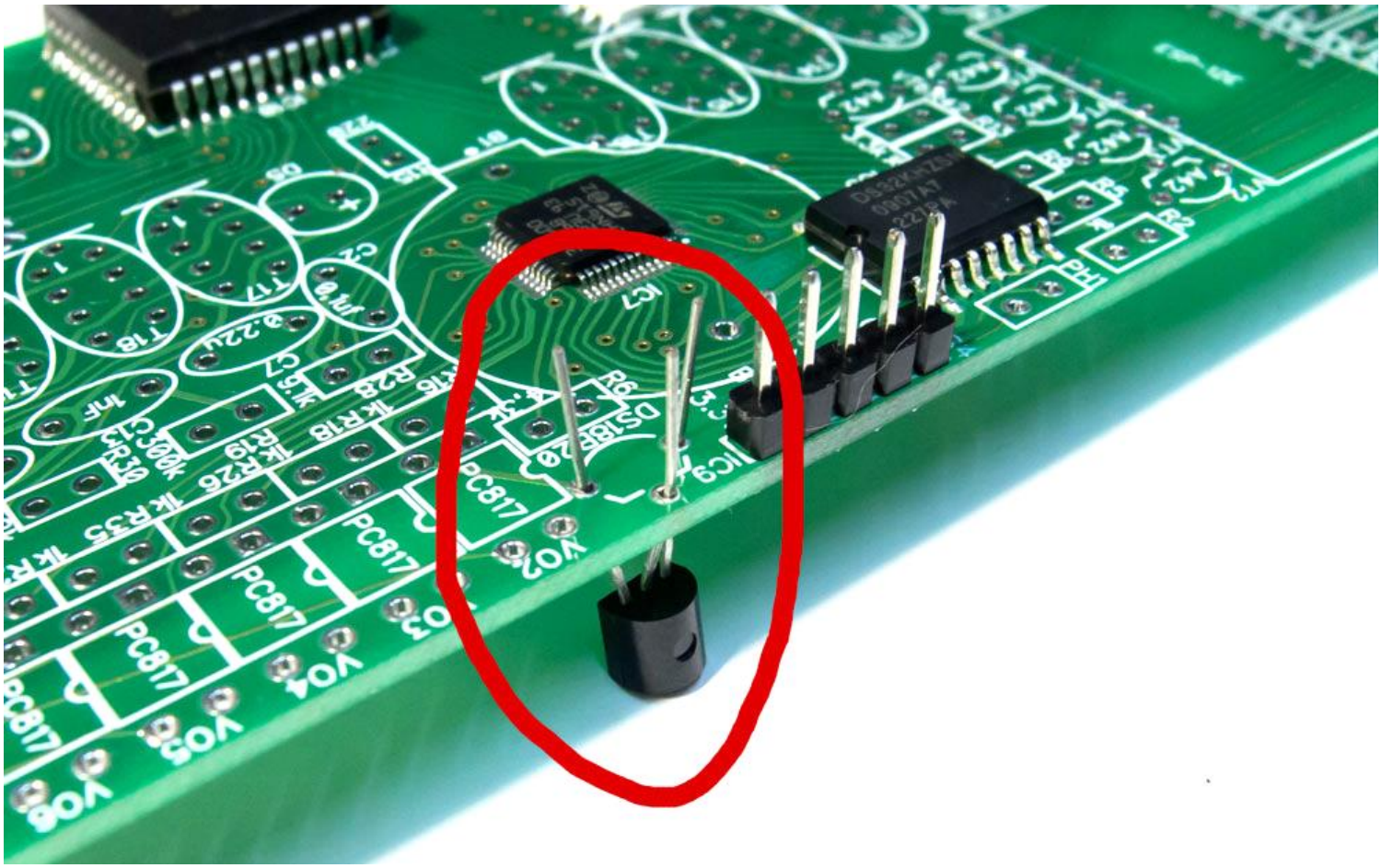
6) Install SMD inductors:

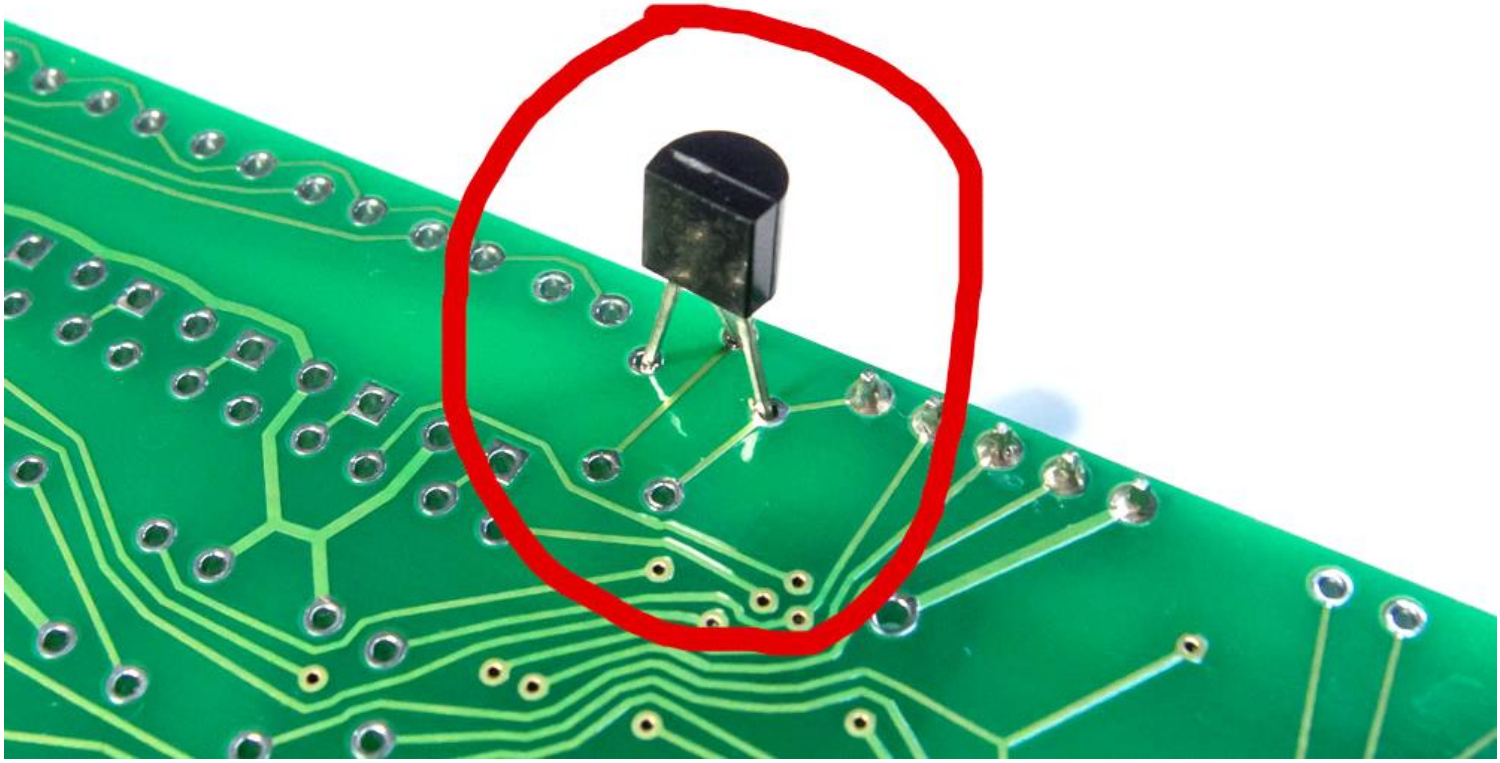


7) Place all transistors:

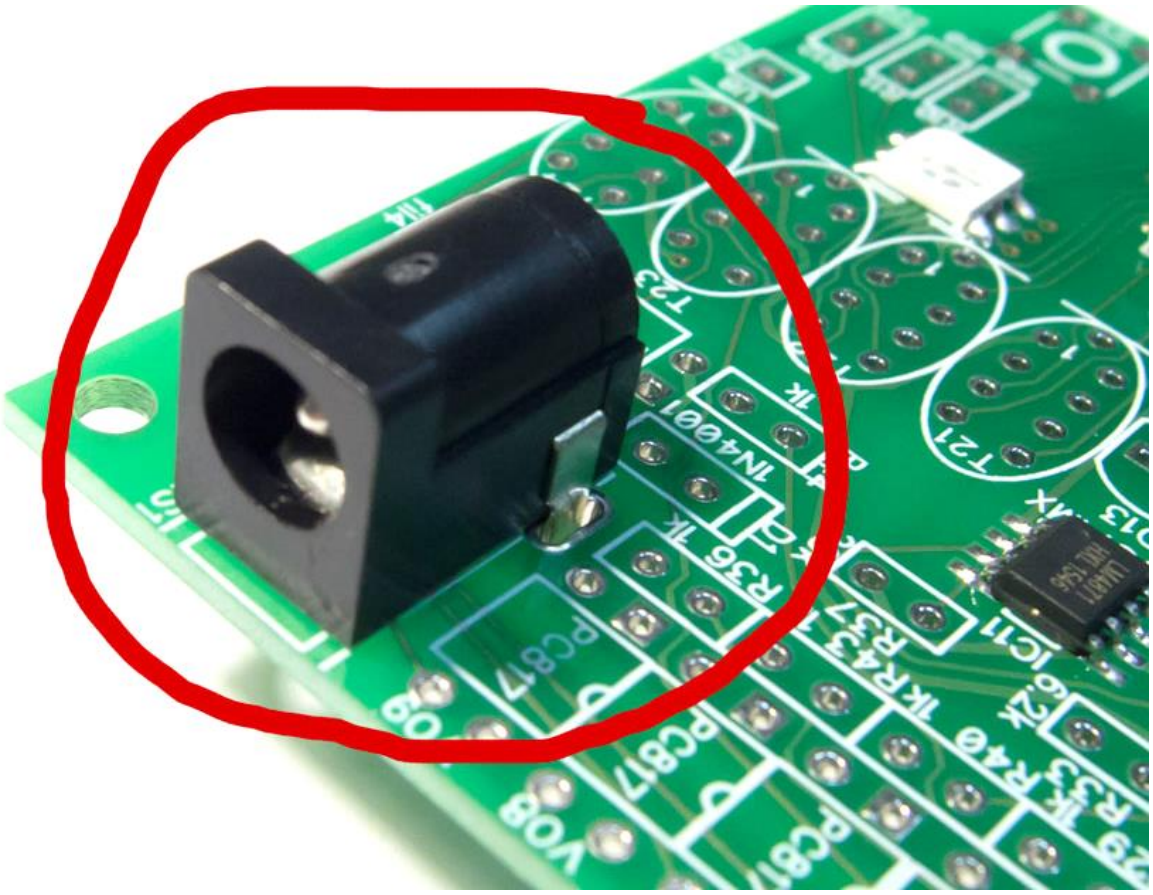


8) Install temperature sensor on bottom side of PCB:

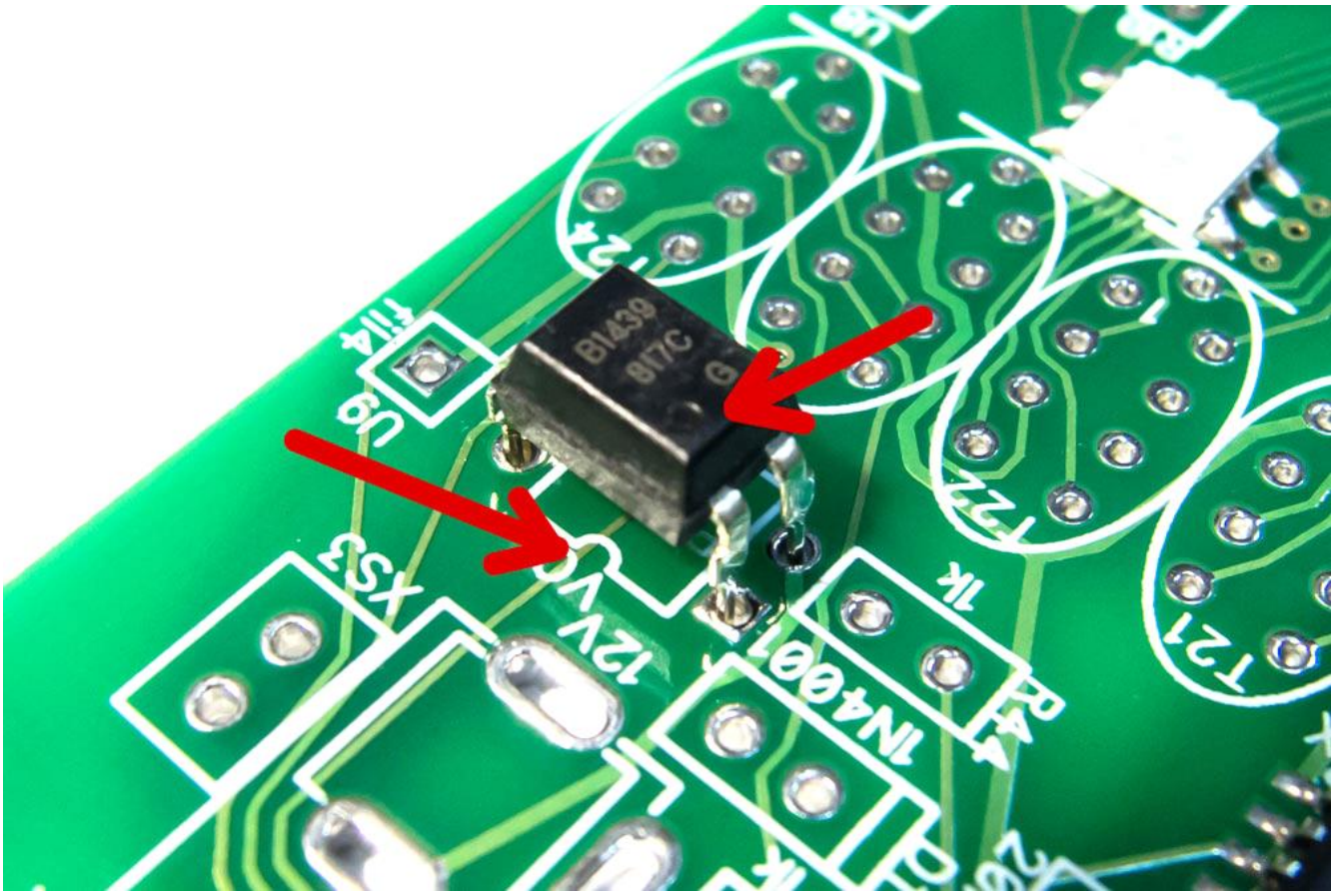


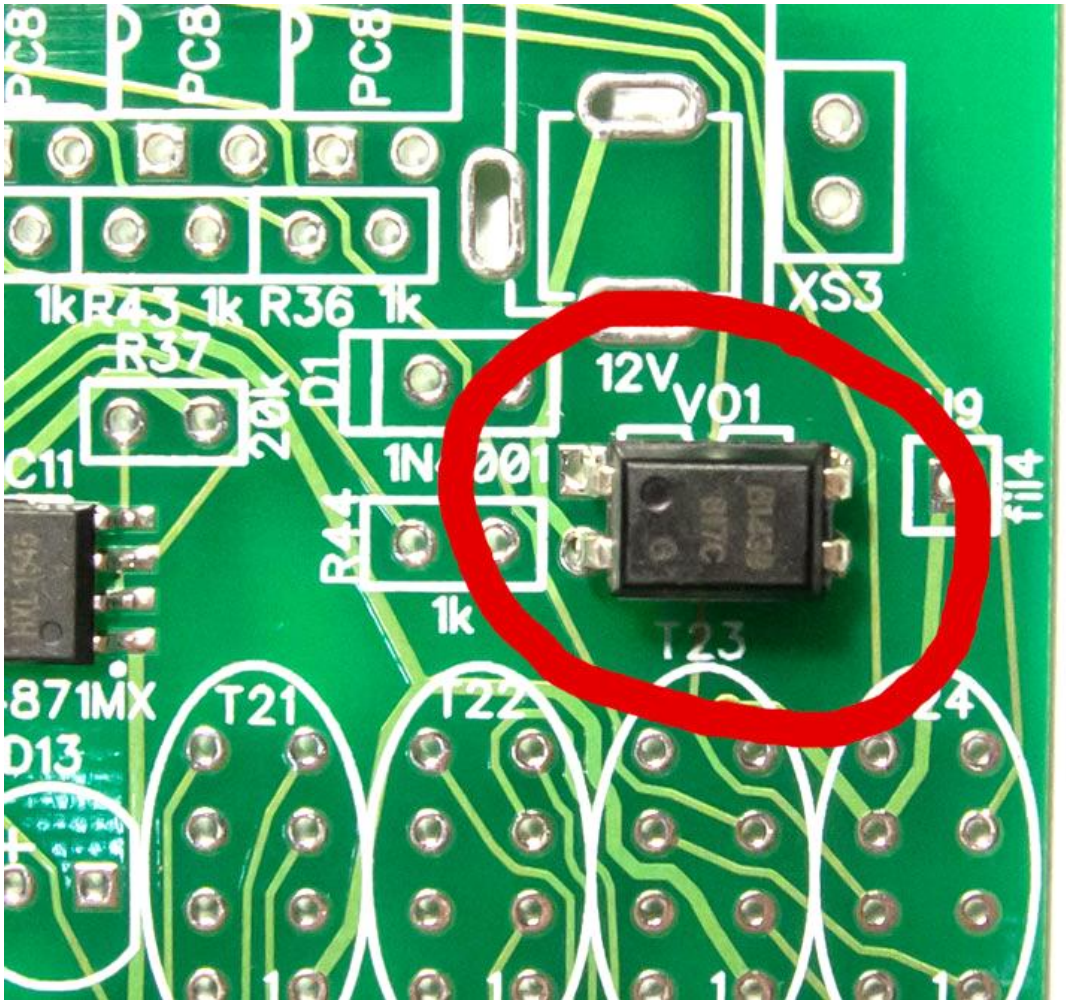


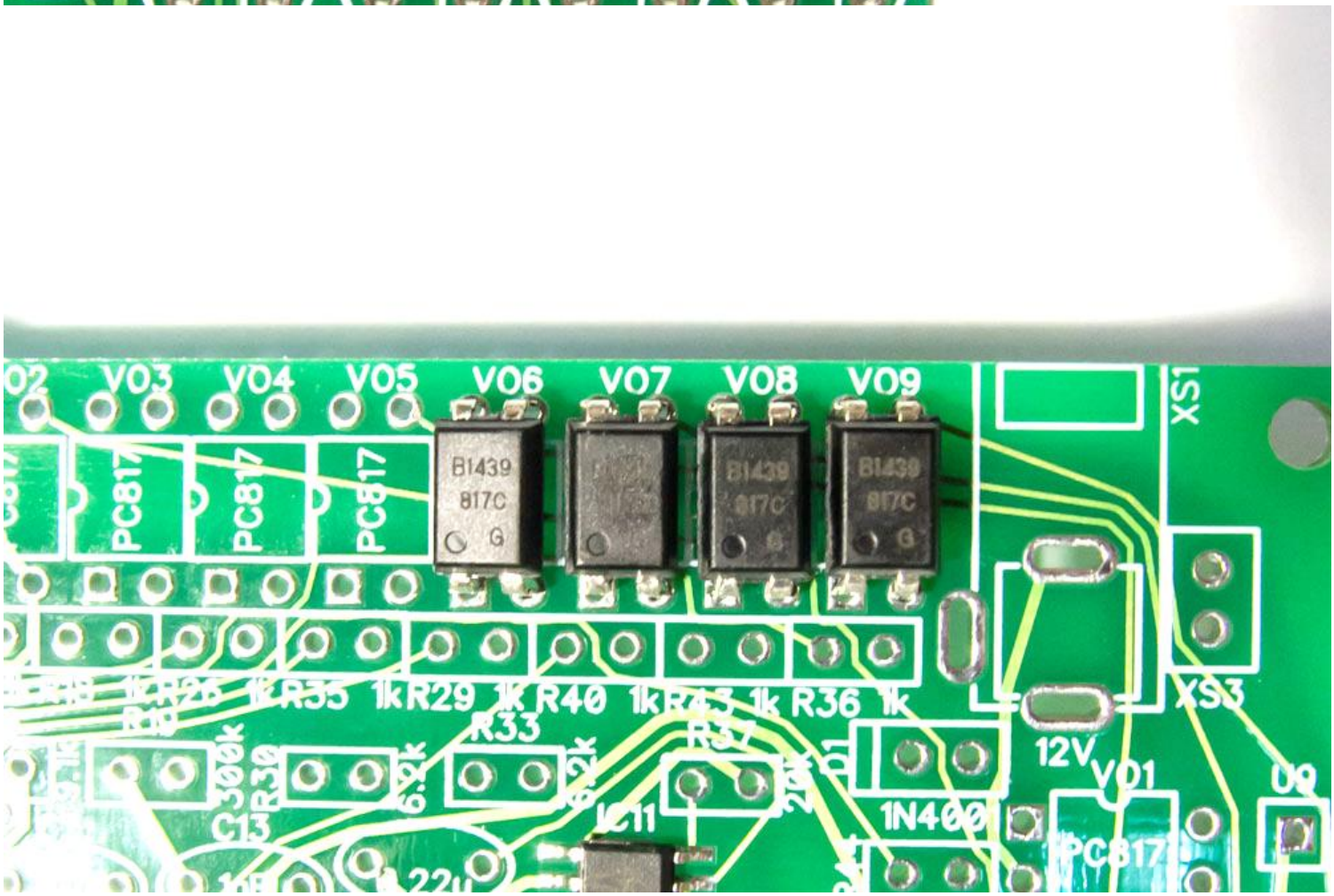
9) Install power plug:



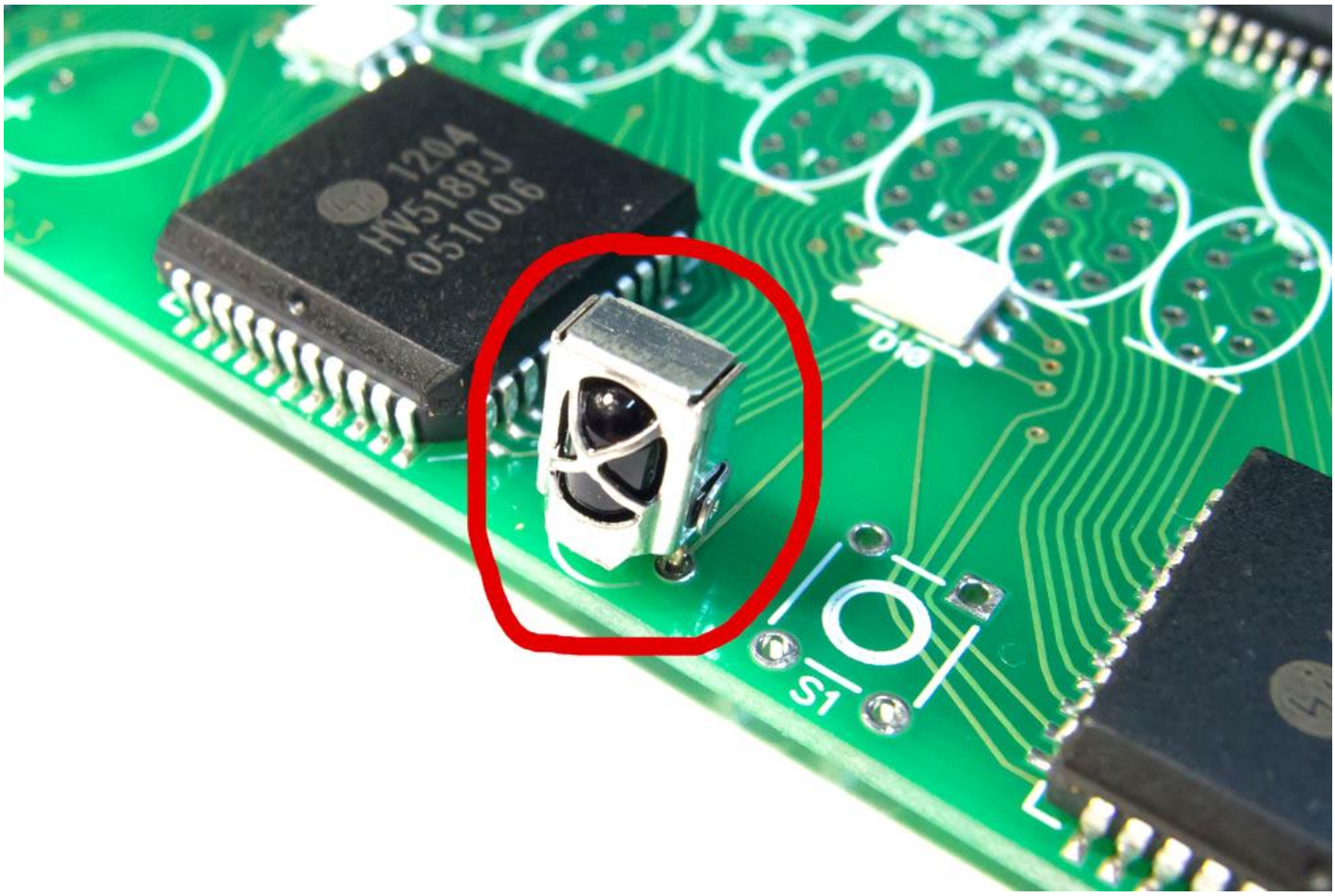
10) Install optocouplers:



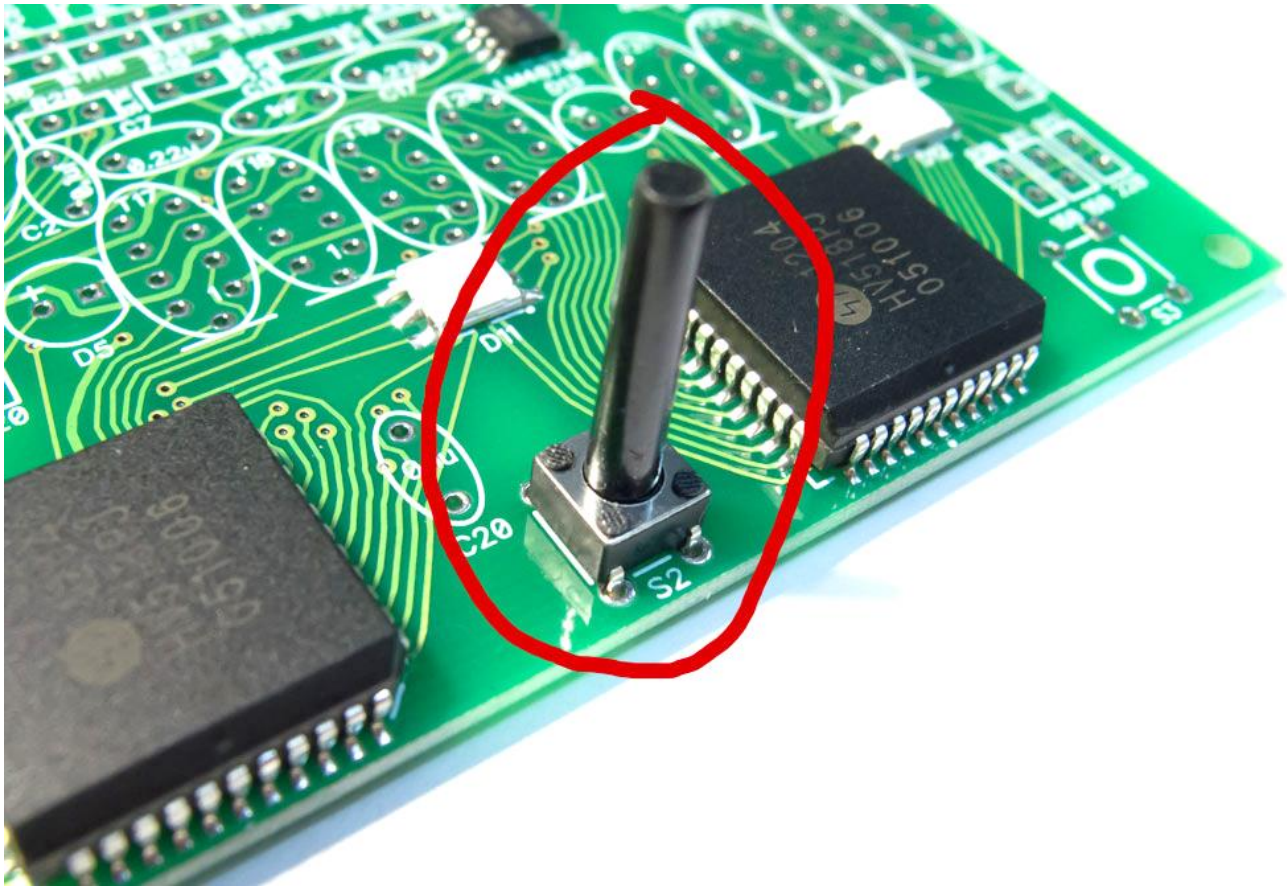

PC8
PC8
PC8
1k R43 1k R36 1k
R37
20k
D1
12V
V01
XS3
C11
R44
1k
T23
T21
T22
T24
D13


V03
V04
V05
V06
V07
V08
V09
XS1
PC817
PC817
PC817
B1439
817C
R35 1k R29 1k R40 1k R43 1k R36 1k
R33
R37
XS3
12V
V01
IC11
1N400
PC817

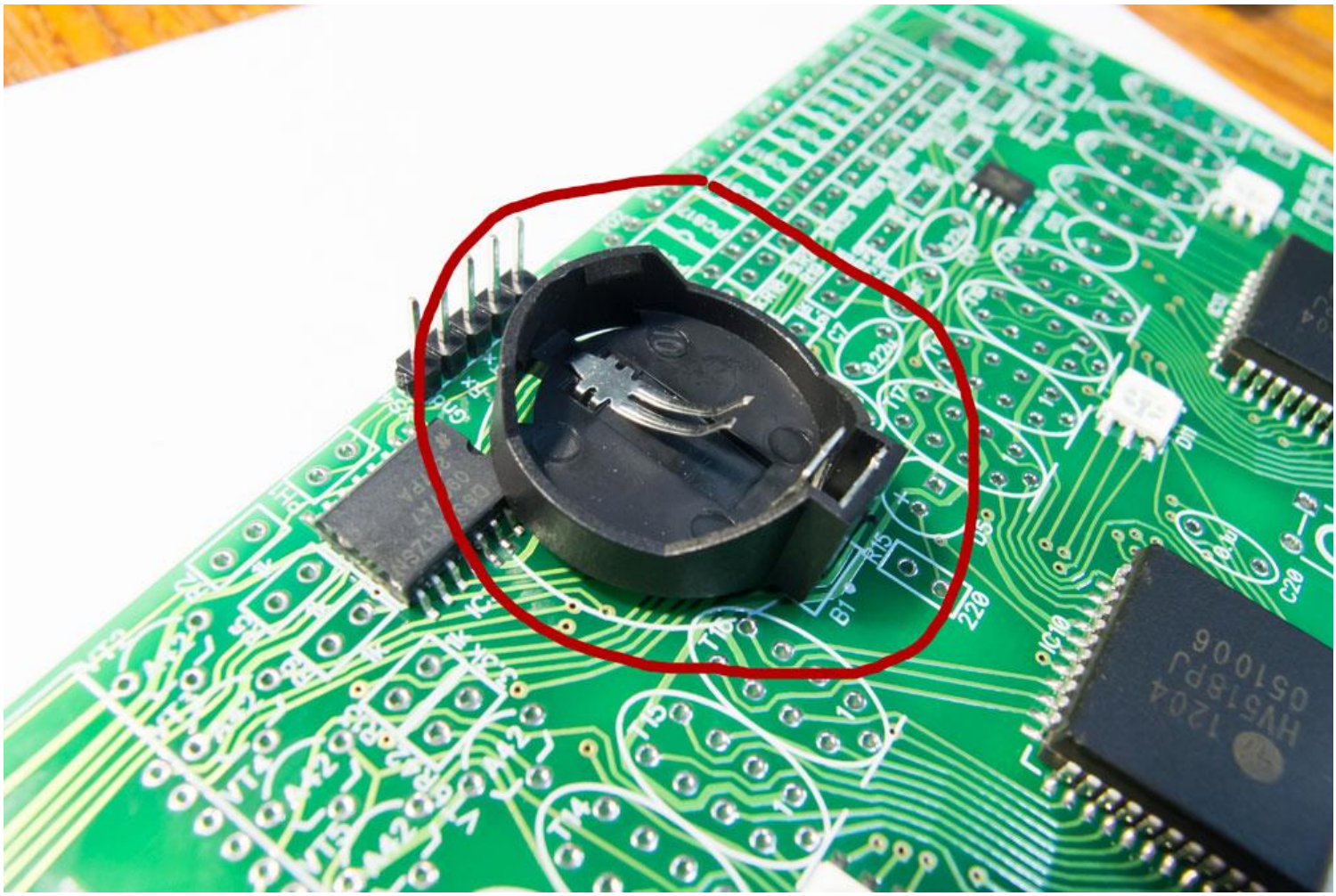
11) Install IR-sensor:



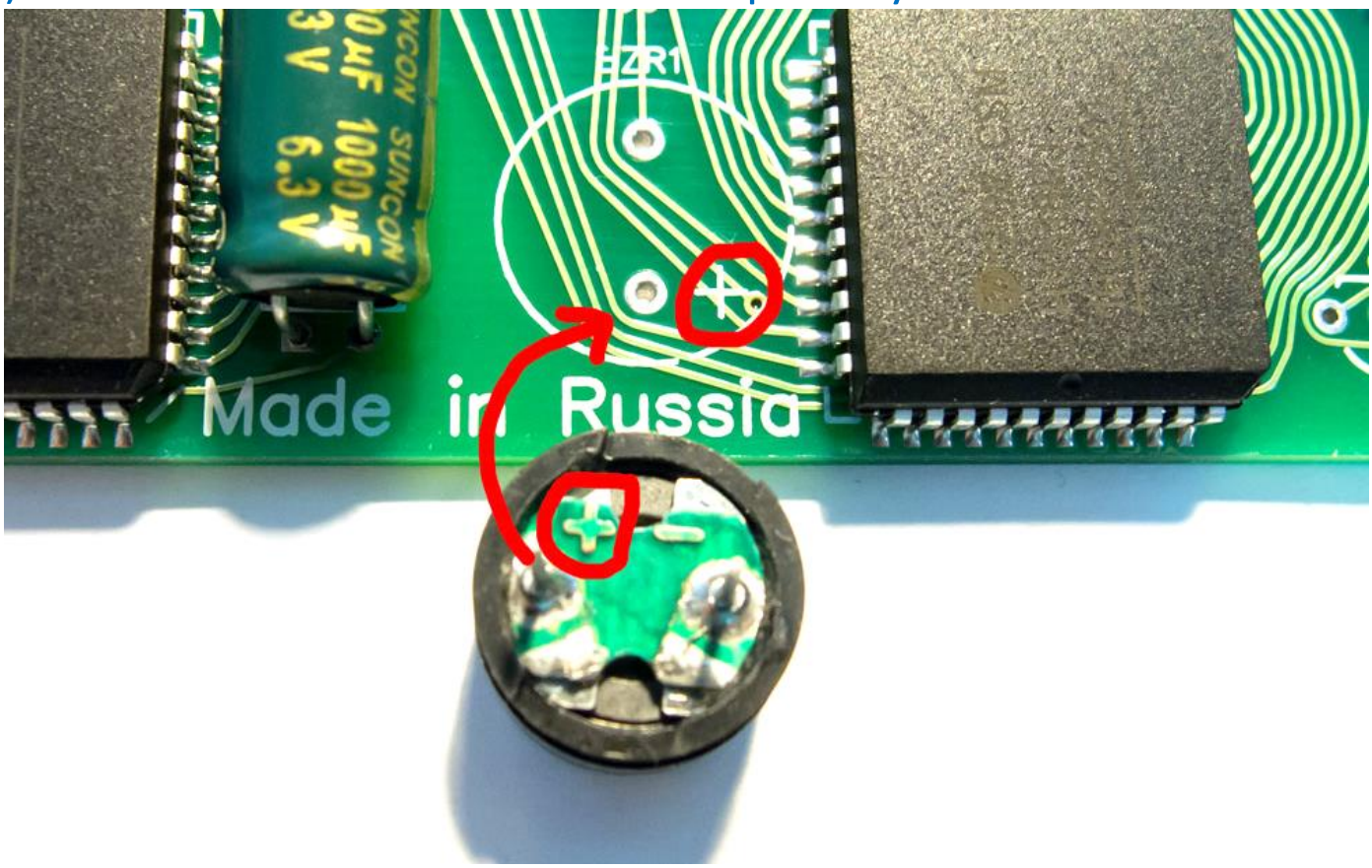
12) Install buttons:

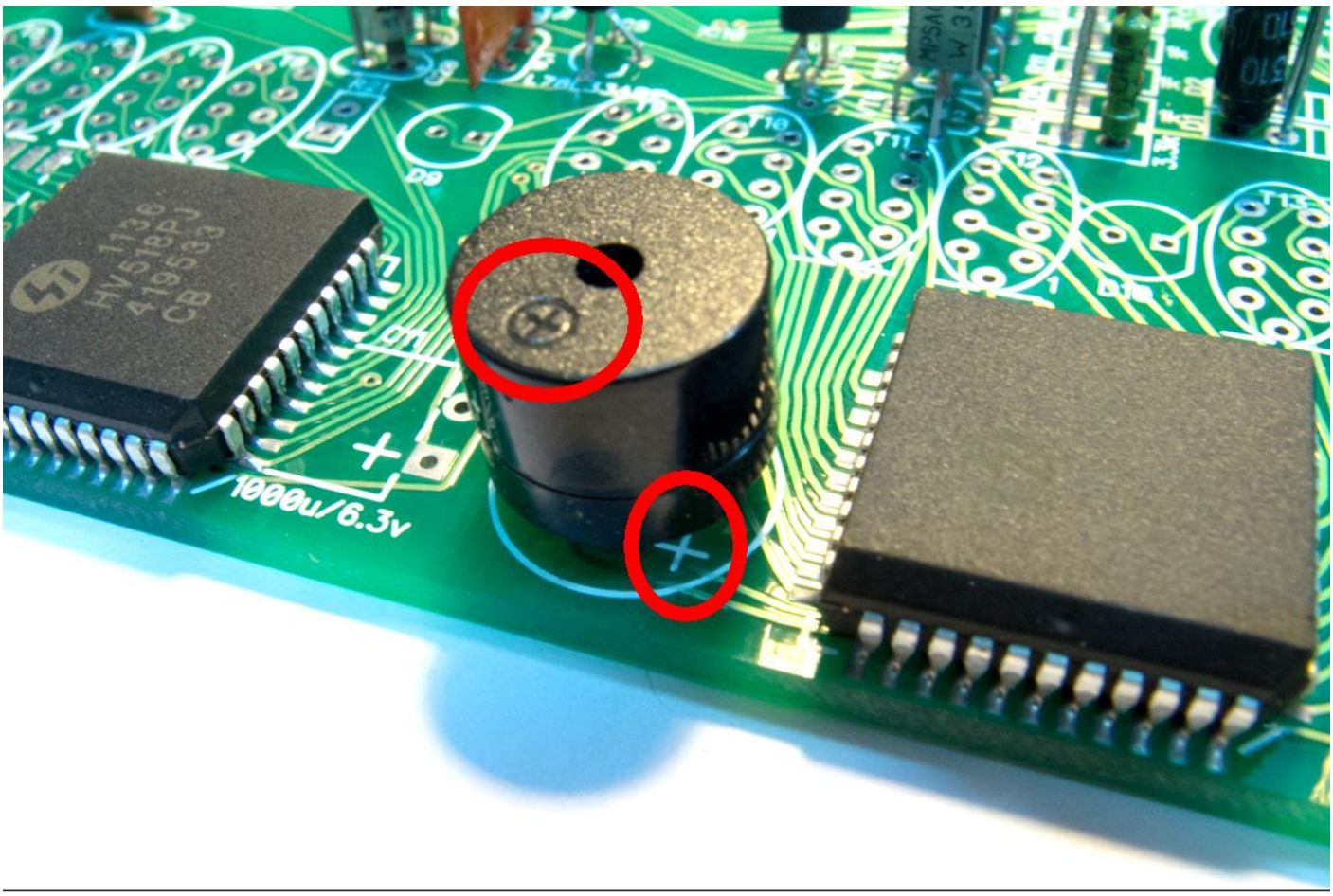


13) Place battery holder and insert battery when clock will be fully assembled:

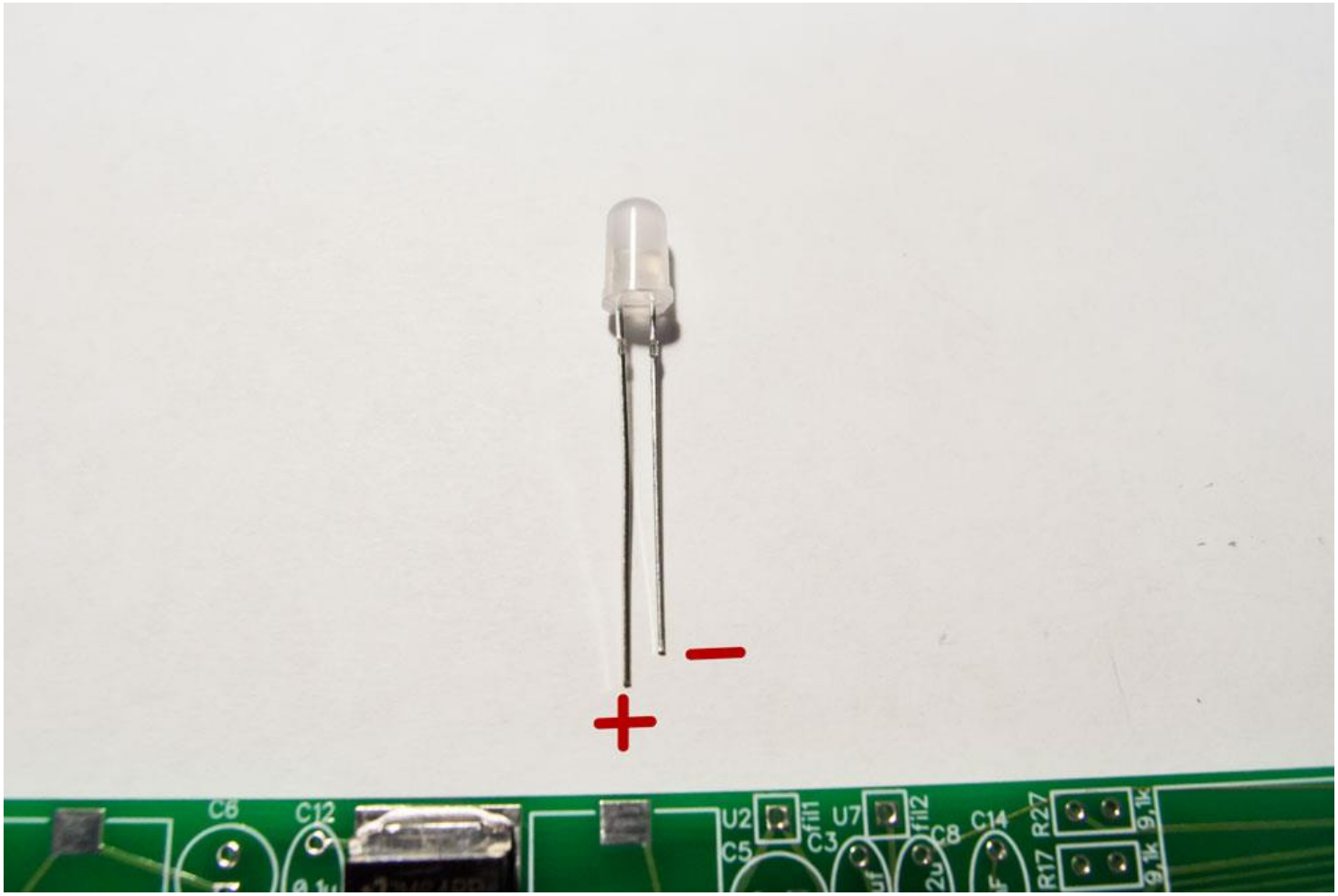


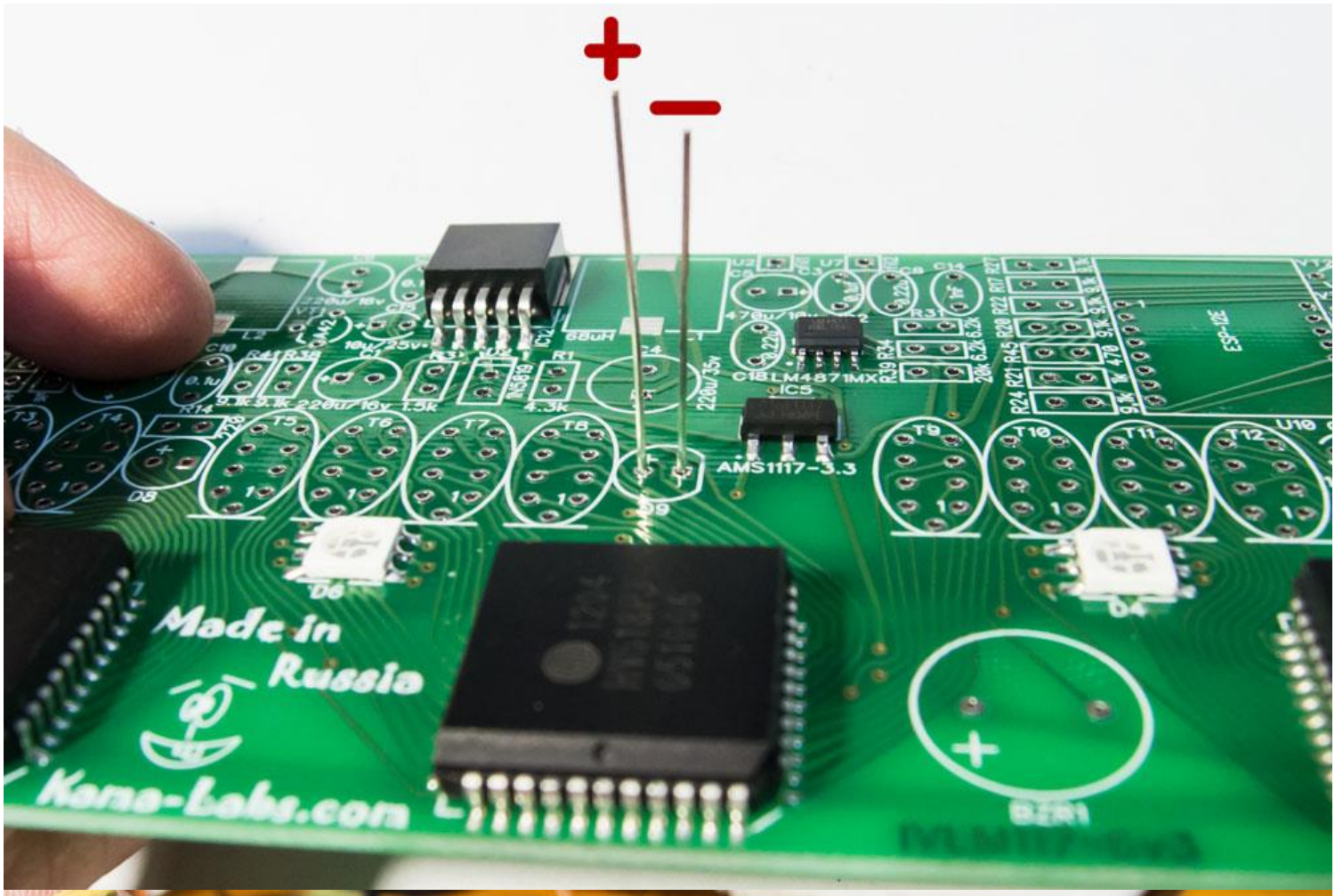
14) Place buzzer and be careful with polarity:

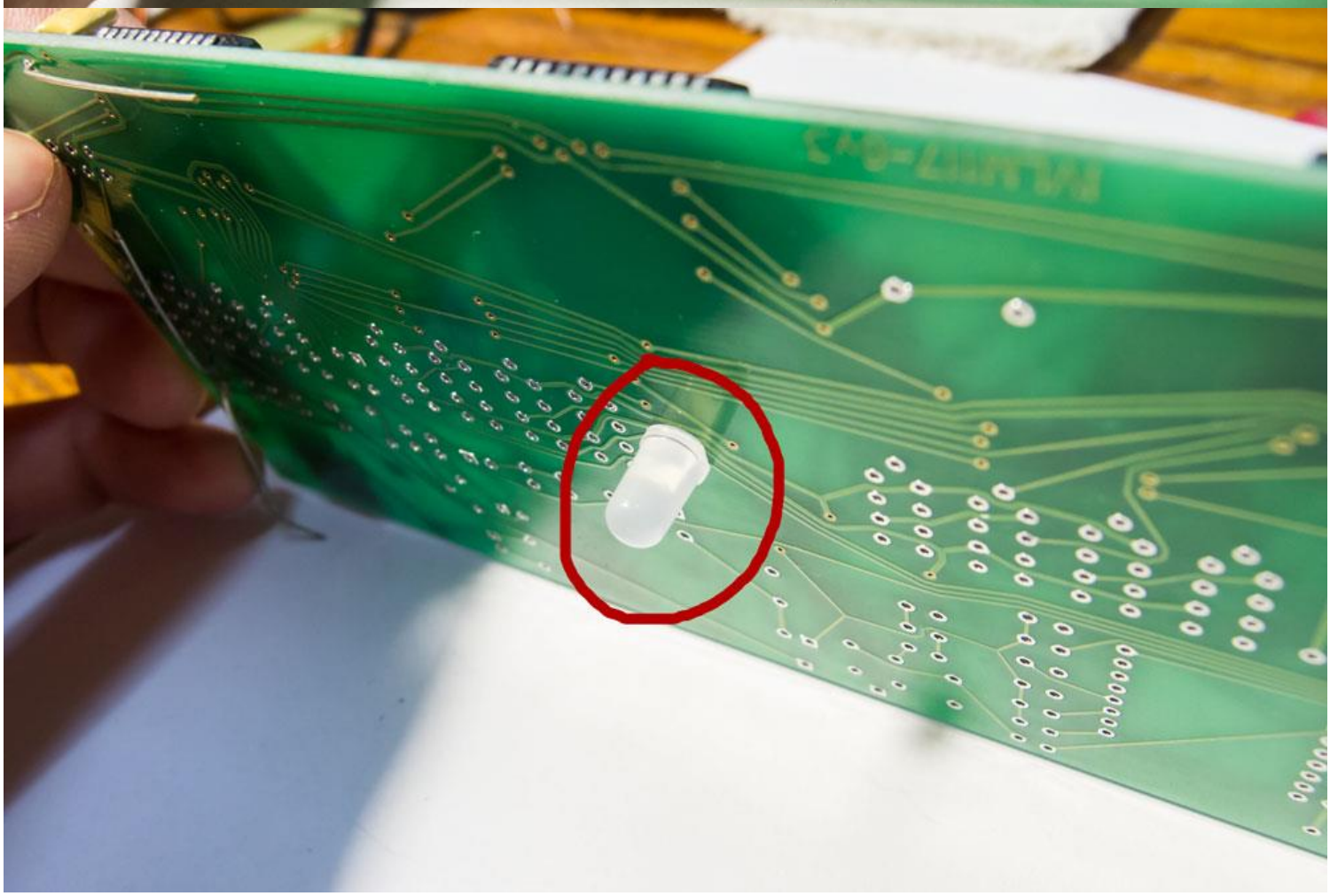




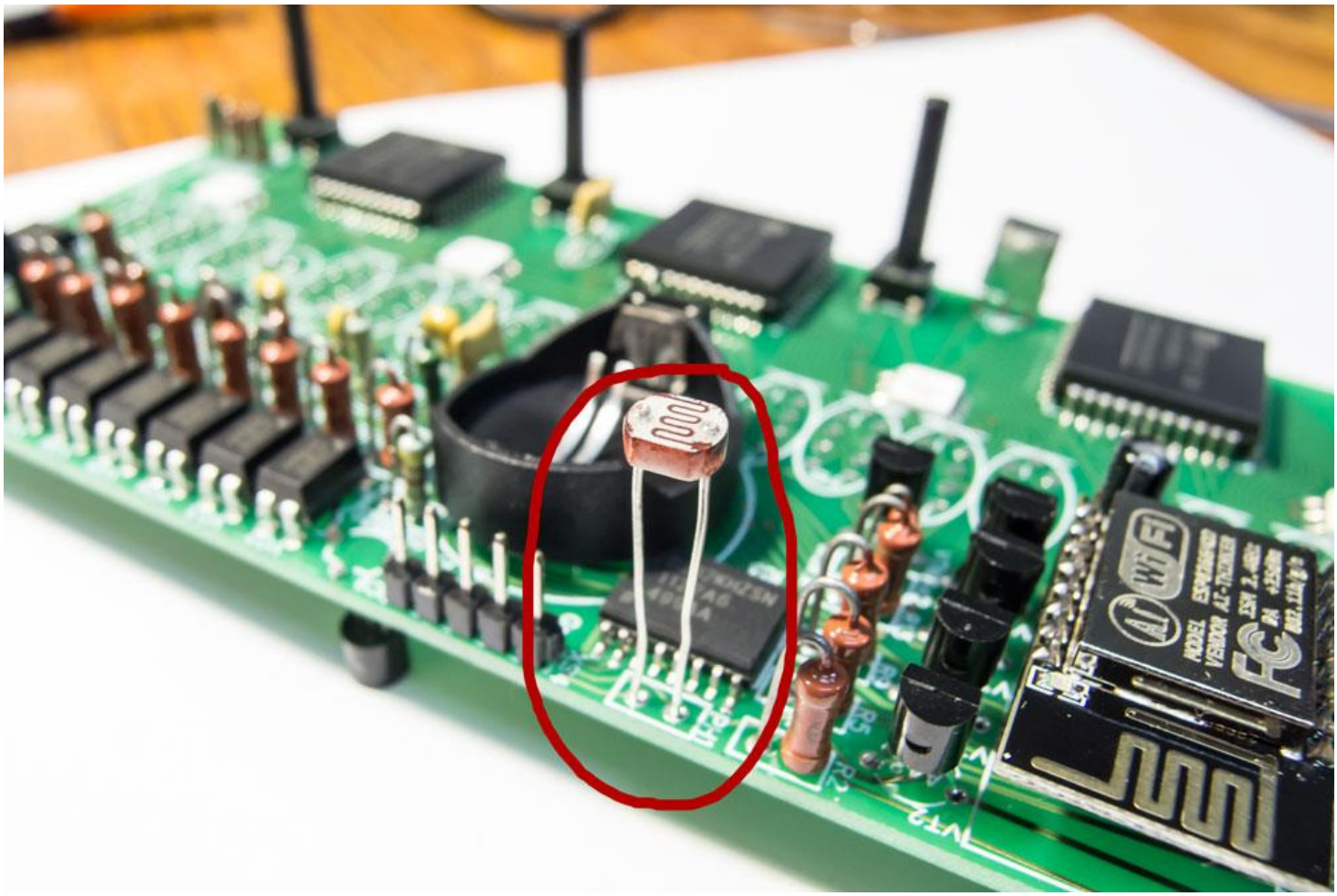
15) Install LEDs:

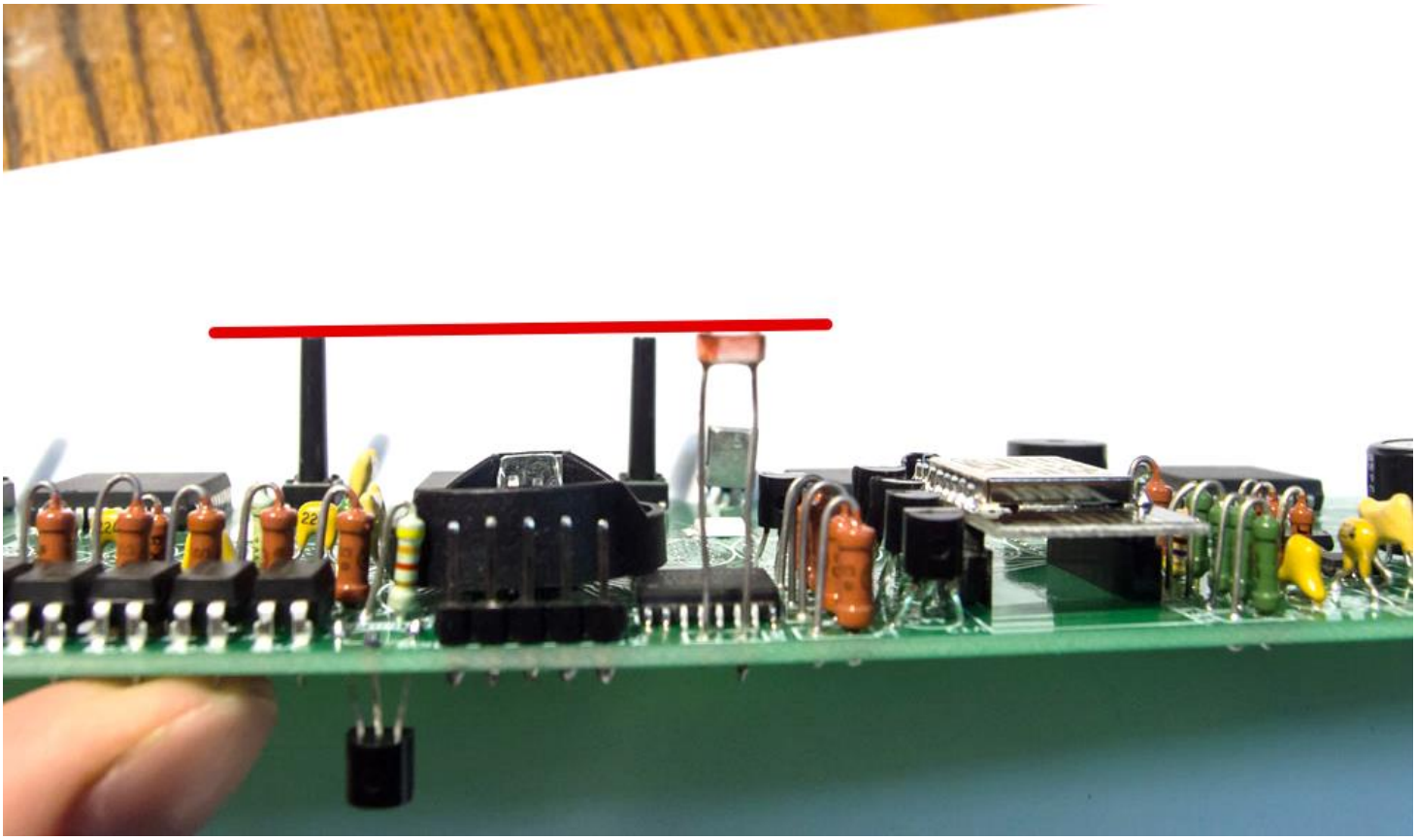



Made in
Russia
Kama-Labs.com
AMS1117-3.3

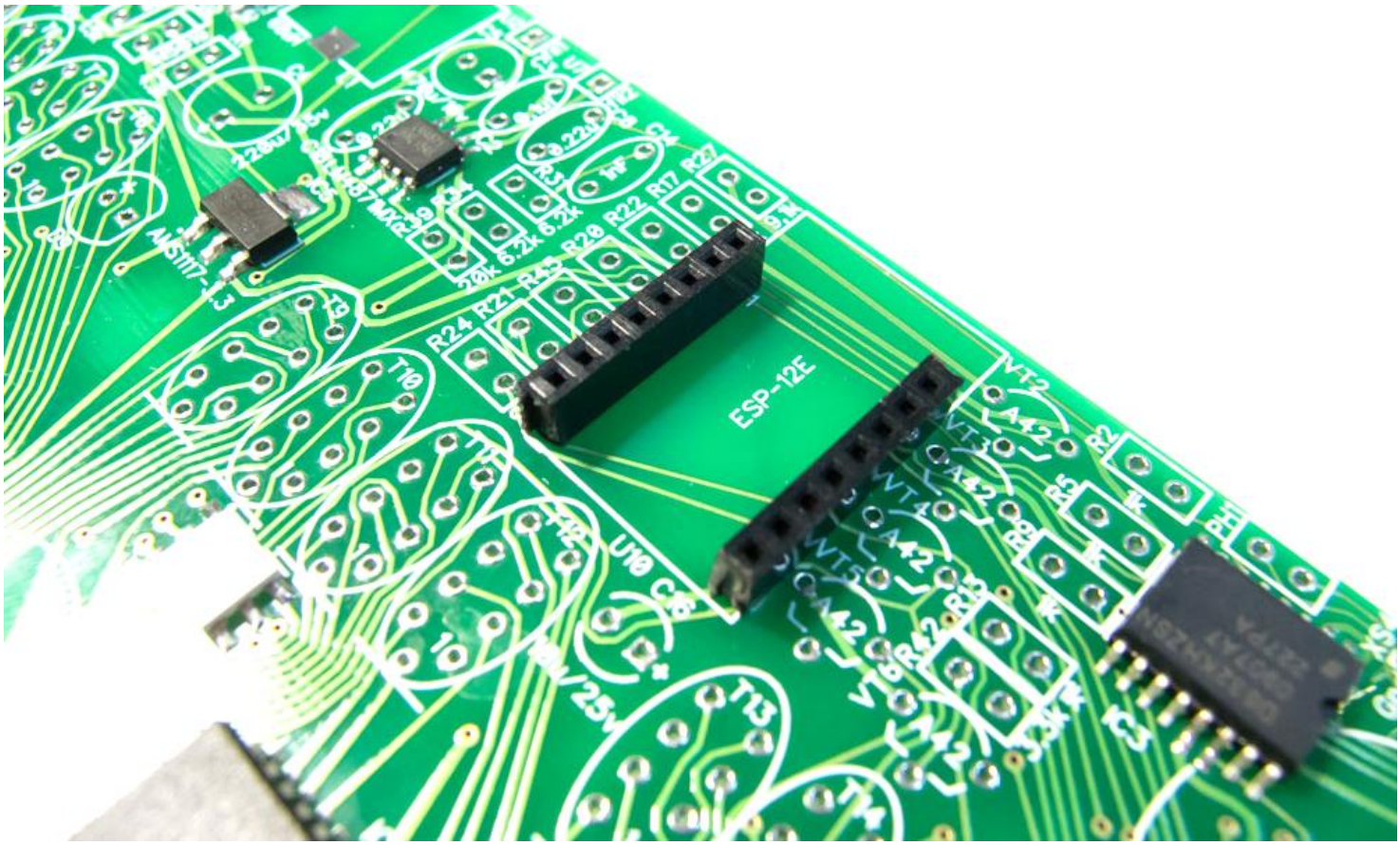


16) Install photoresistor. The high should be equal high of buttons:

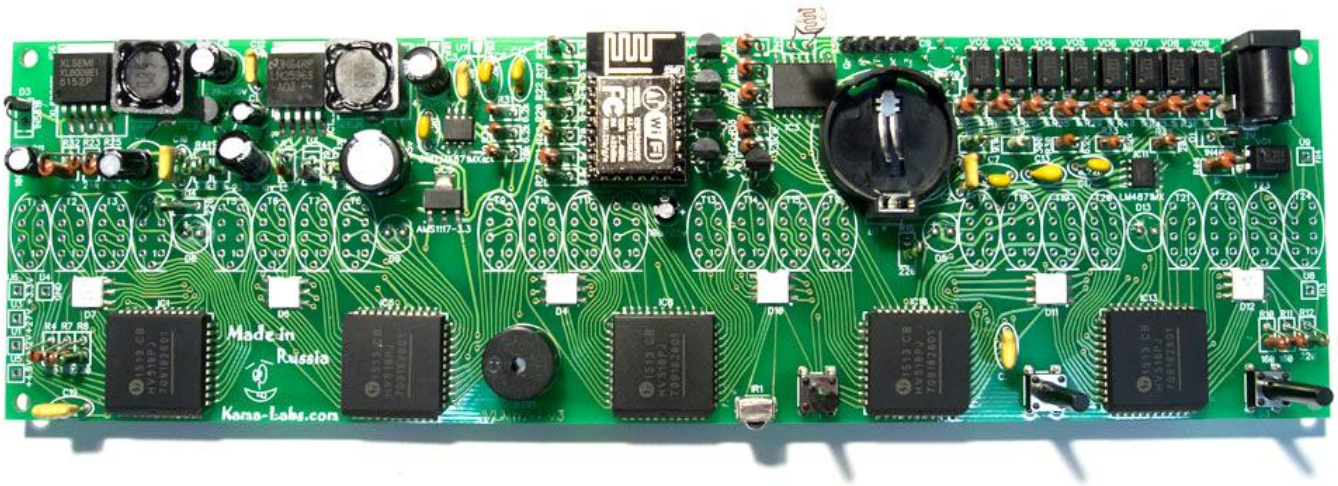


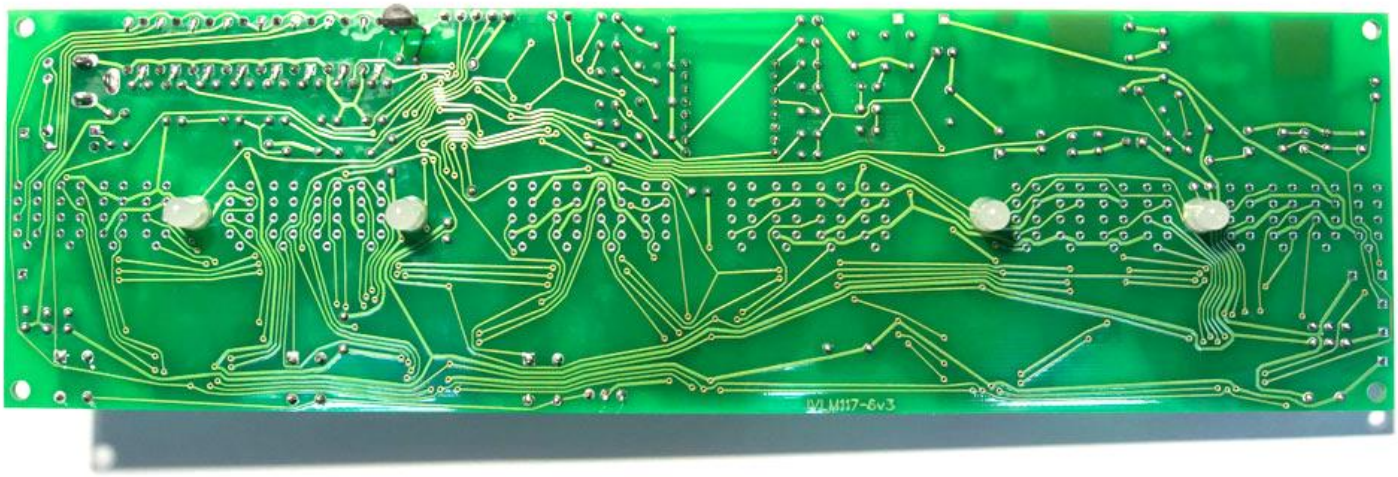


17) Install female sockets of Wi-Fi- module:

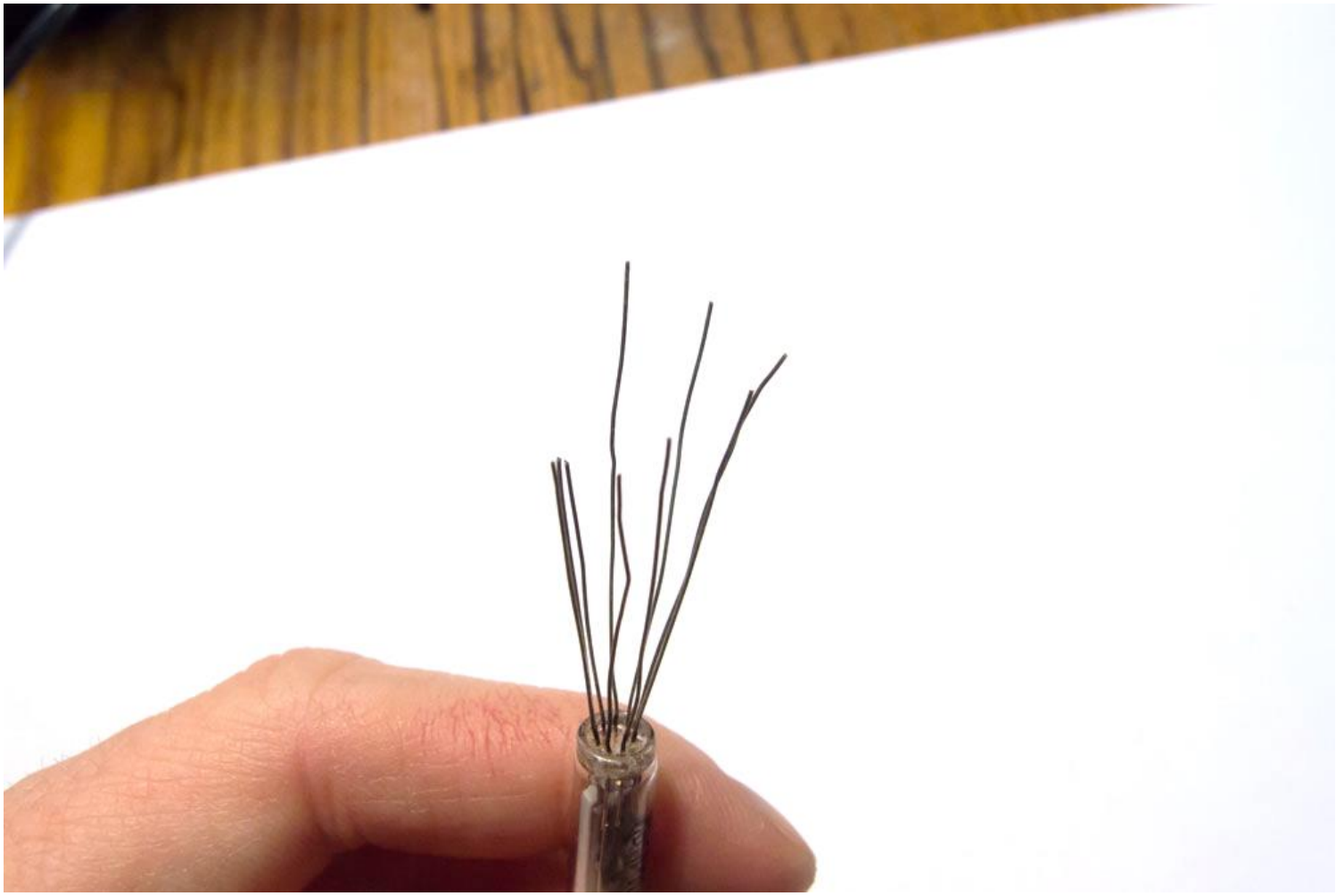


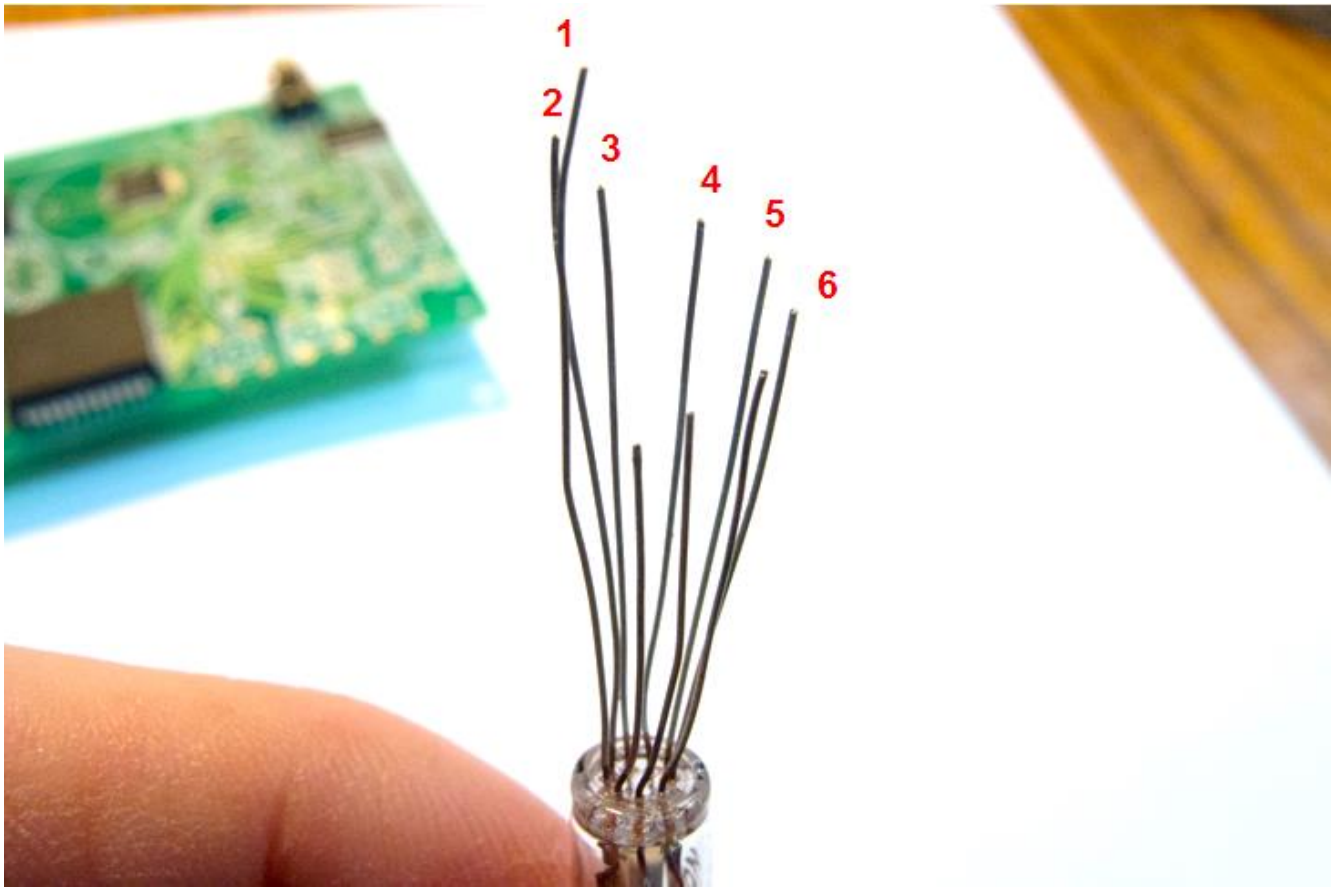
Now you have fully assembled PCB but without tubes:



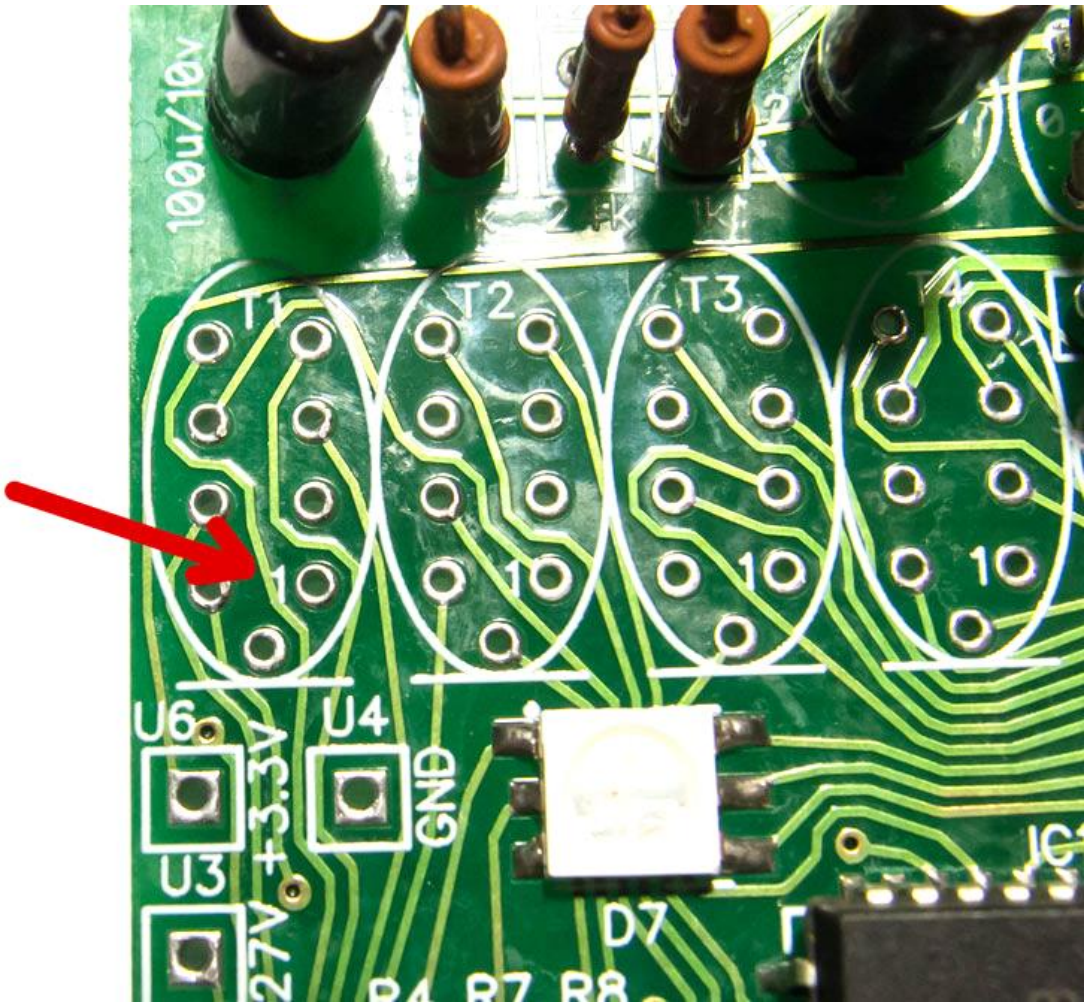


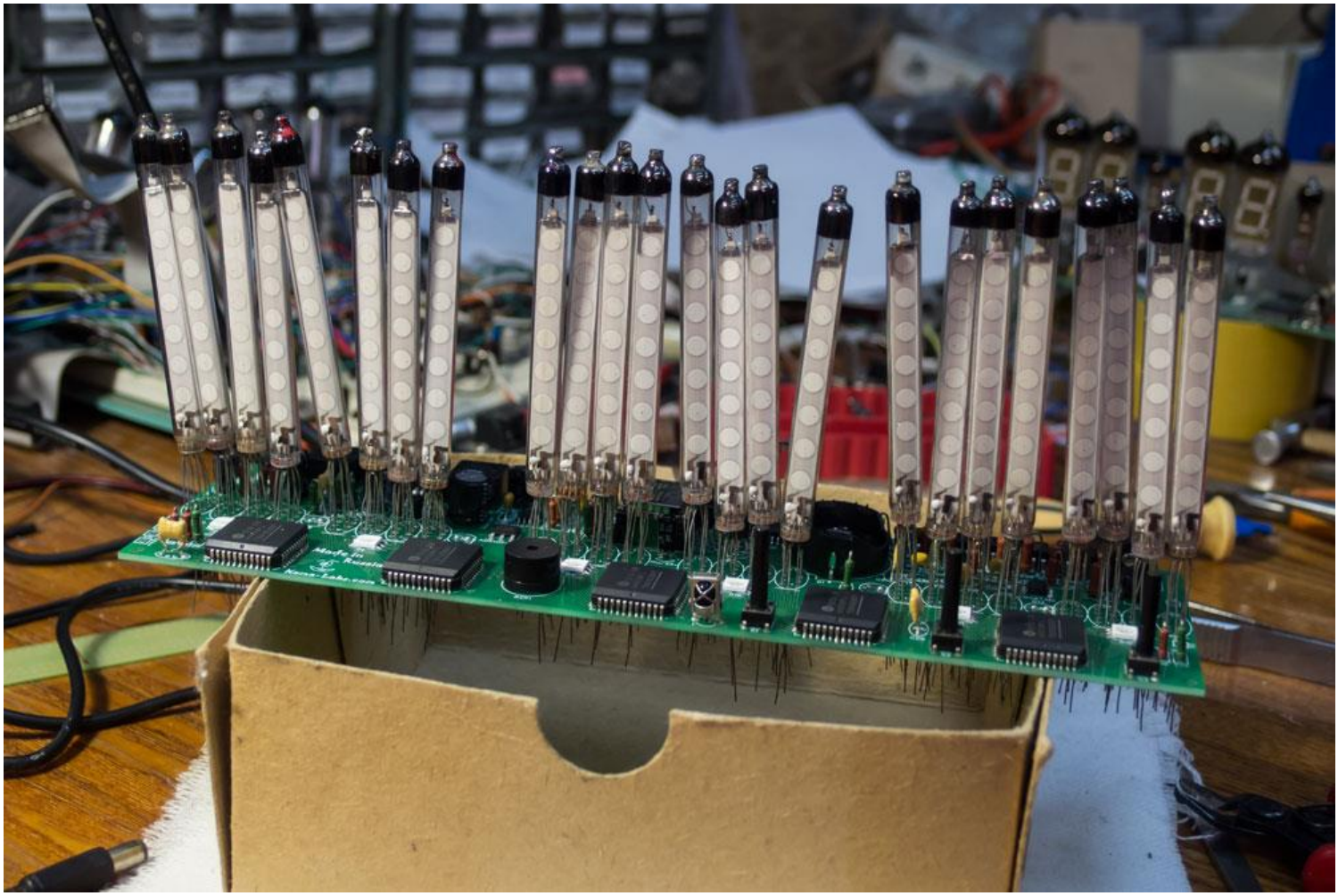
18) Prepare the IVLM tubes. The numeration start from most long wire and go in clockwise. Longest pin – the first pin.



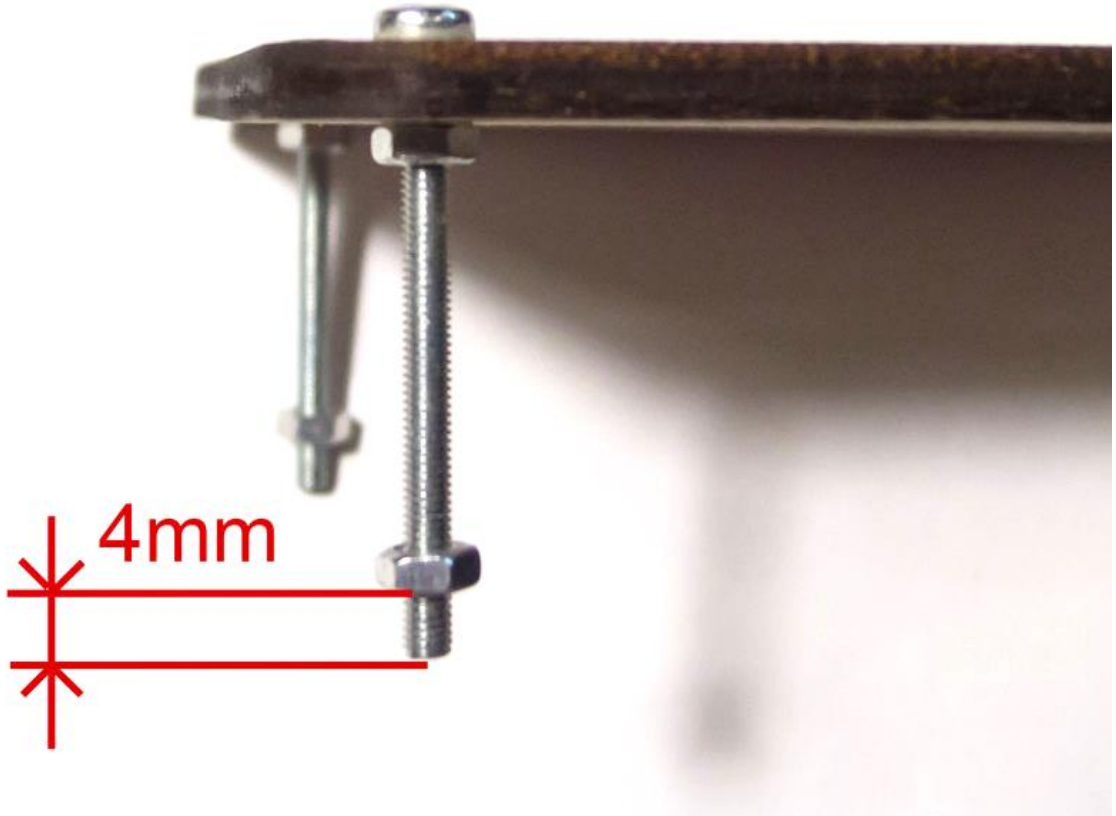

1
2
3
4
5
6

19) Insert tube into holes in PCB. Hole for first tube pin marked as “1”:



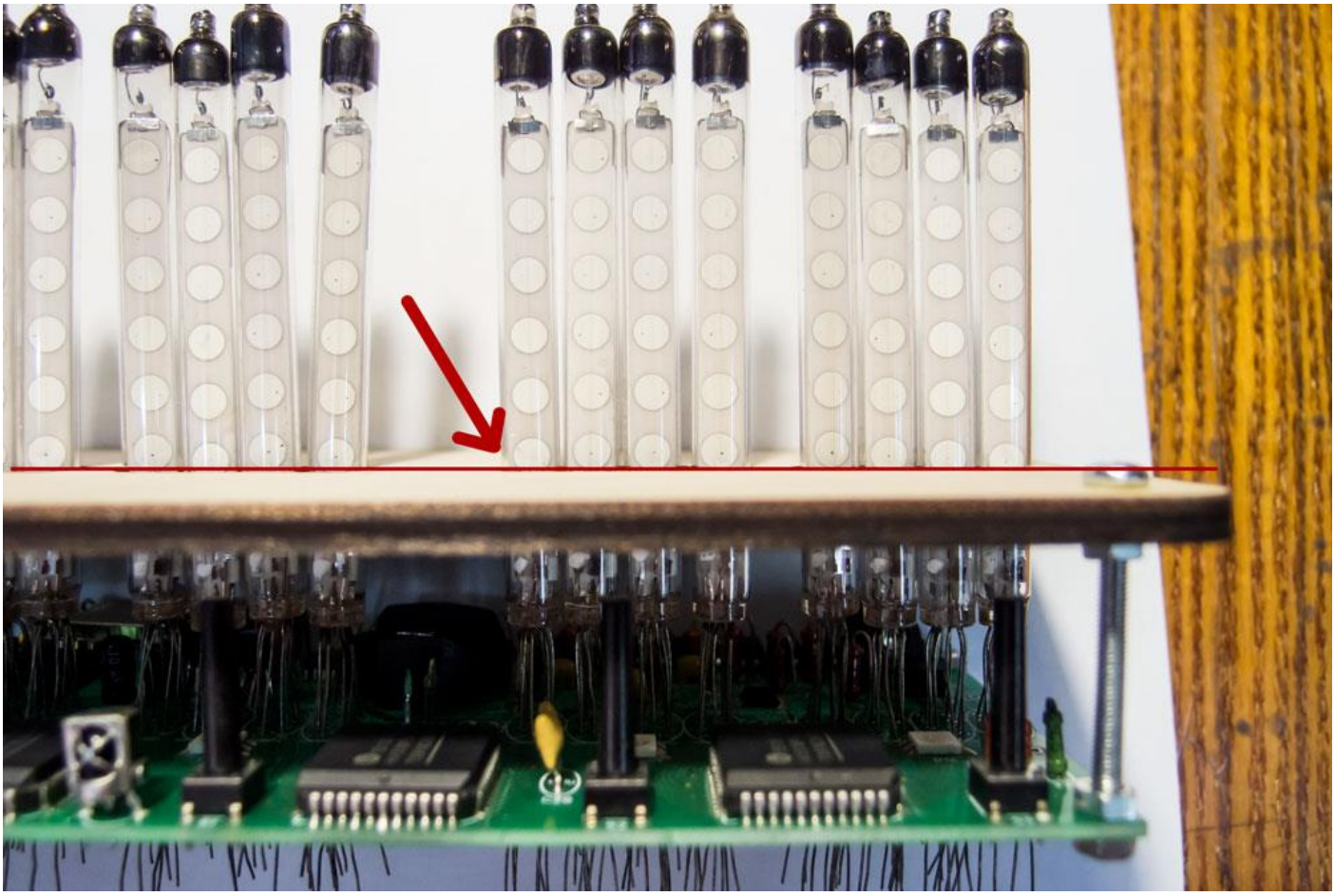


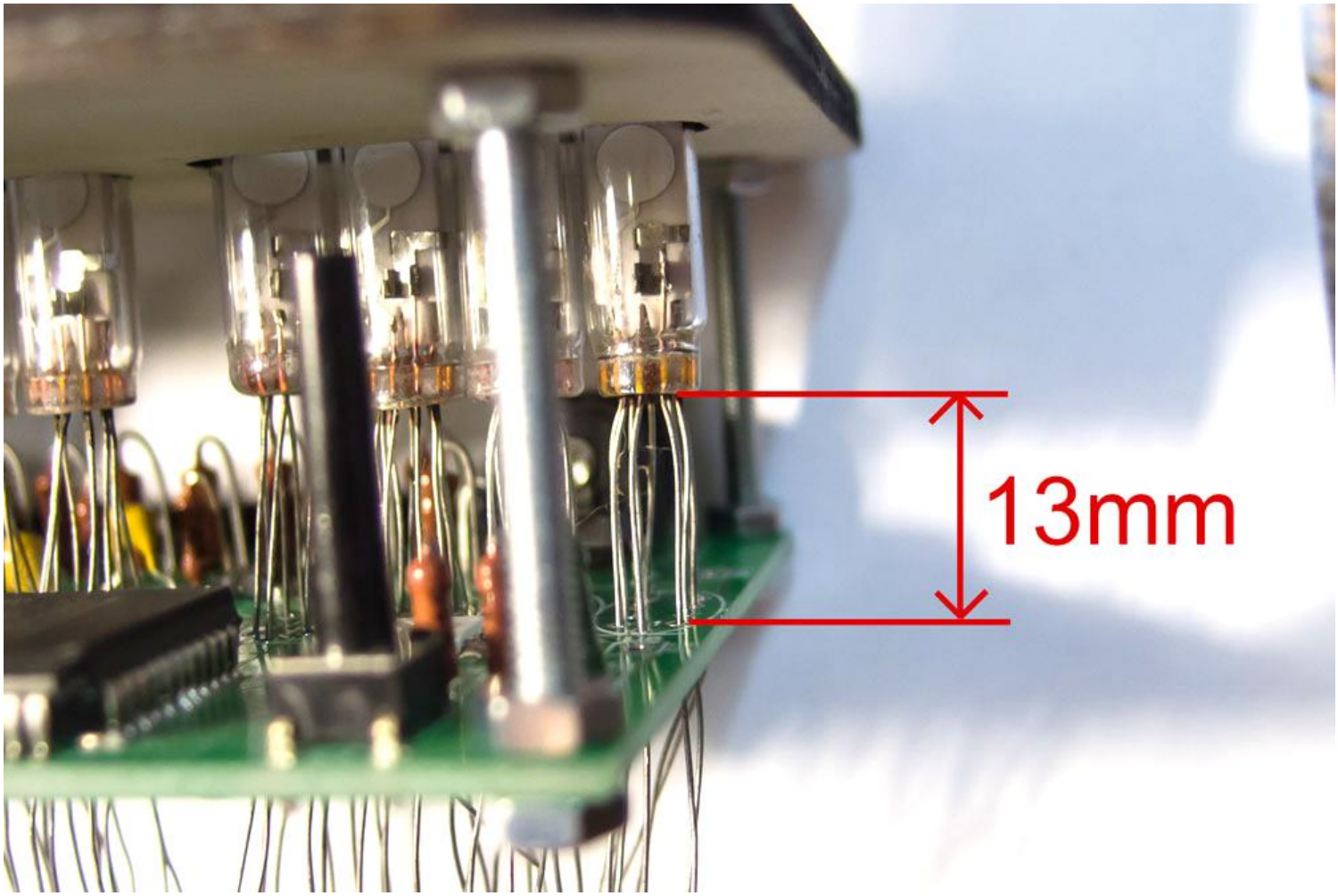
20) Use wooden piece for align and solder tubes. Fit the screws like on photo:



Then, fit wooden piece to clock:

21) Now, align tubes like on photo:



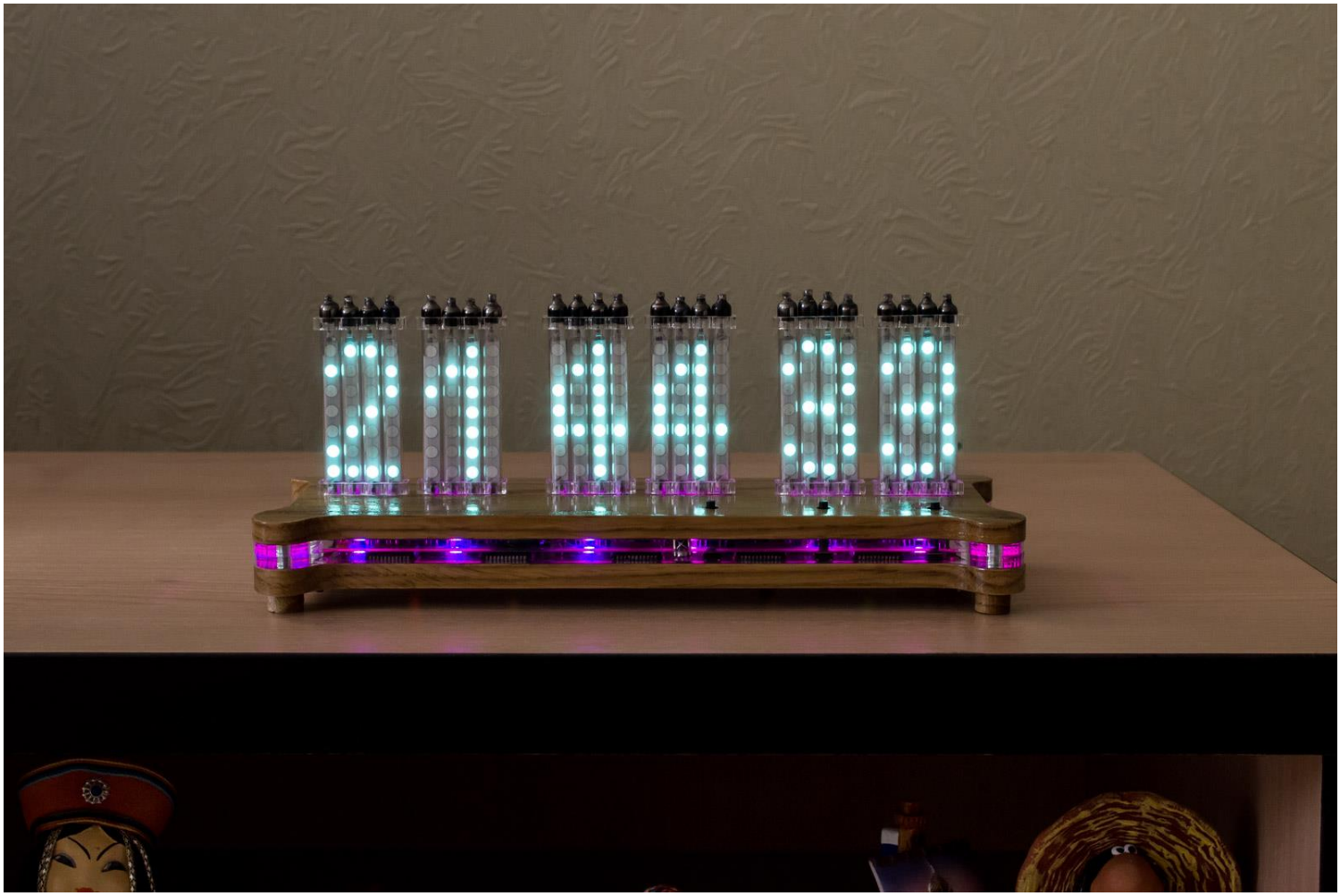


22) Insert Wi-Fi model into socket:

23) Then check the resistance between GND and +3.3V pins of XS4 again. It is should be more than ~1k.

24) Plug 12V DC adapter. The microcontroller starts work and you will hear short melody. Tubes will lit. If it not happens, check voltage +3.3V on XS4 between GND and +3.3 pins.

25) After all clock should work.



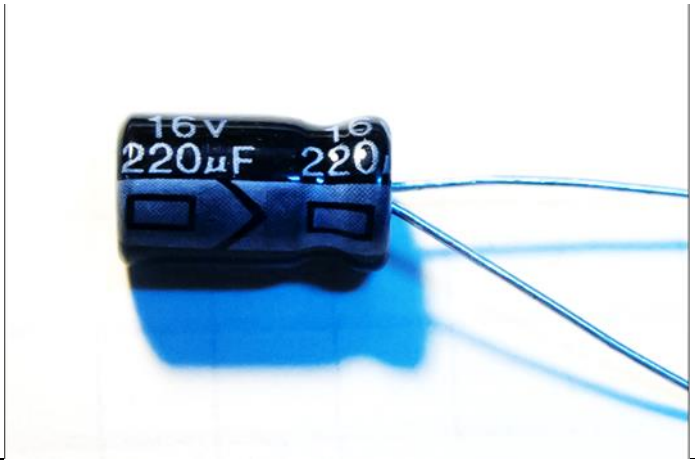
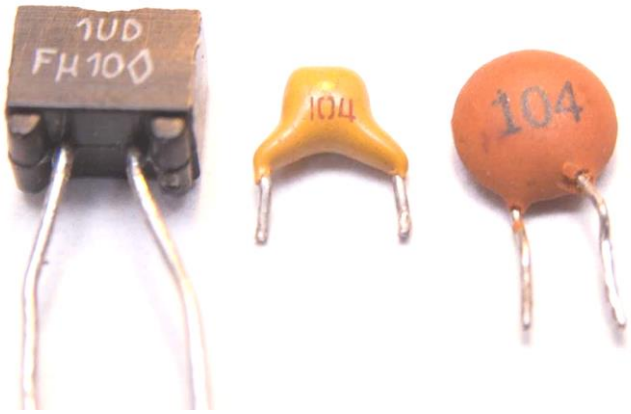
CONGRATULASIONS!

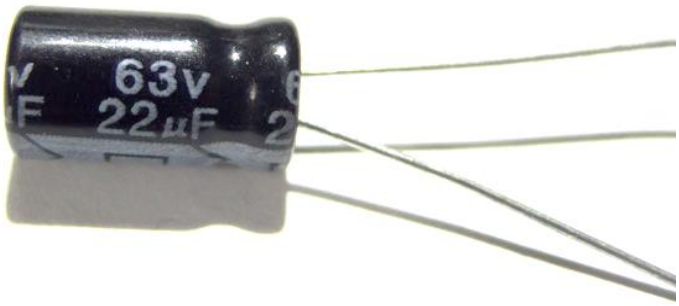
PARTS LIST

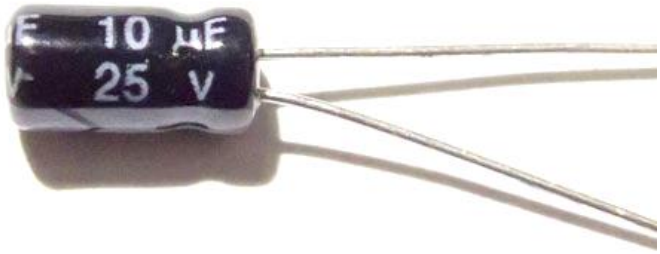
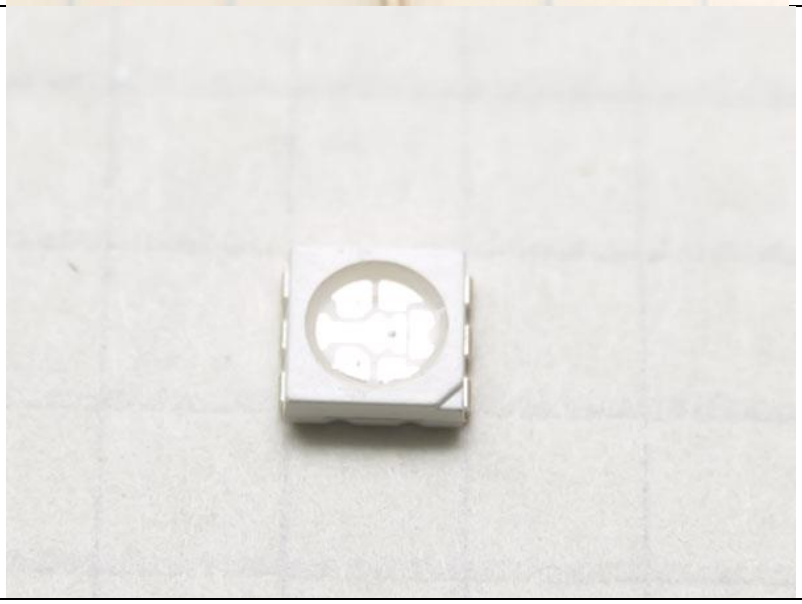
Please note, that elements in kit can be a little different. If you doubt value of element, check it with multimeter.

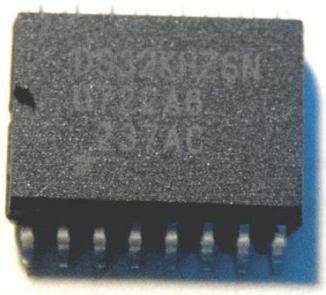
IF VALUE OF ELEMENT IN SPECIFICATION AND ON PCB IS DEFFERENT, PLEASE USE VALUES FROM SPECIFICATION AND SCHEMATIC.

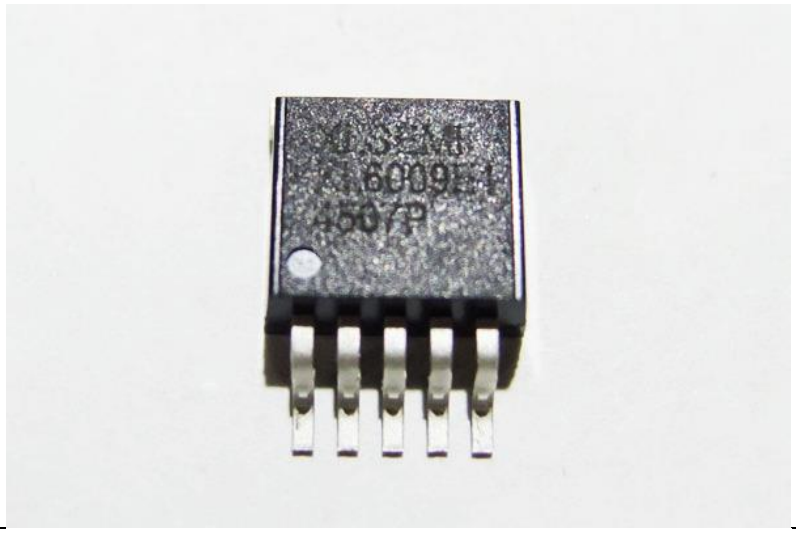
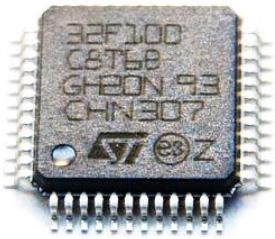
Caption	Value	Qty.	Photo
B1	CR2032	1	
Battery holder		1	
BZR1		1	

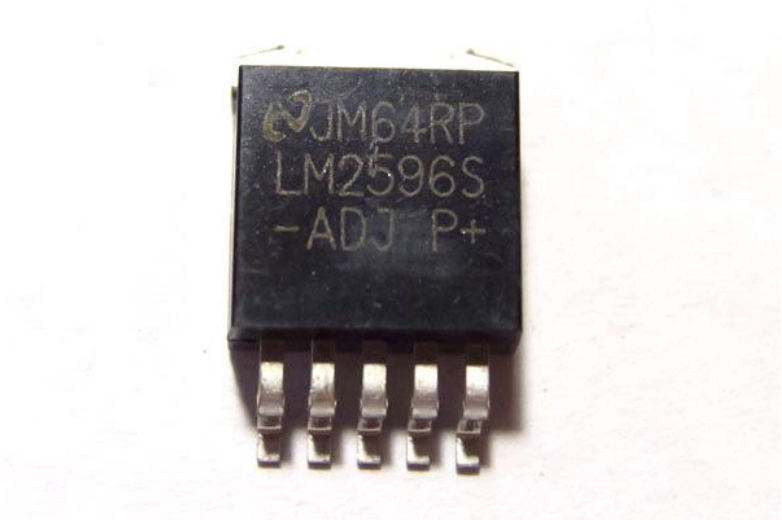
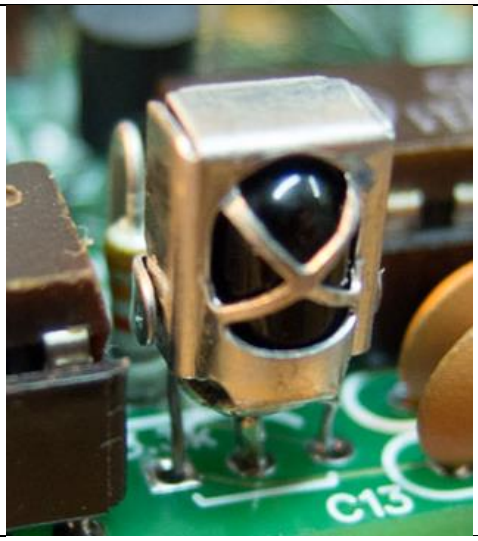
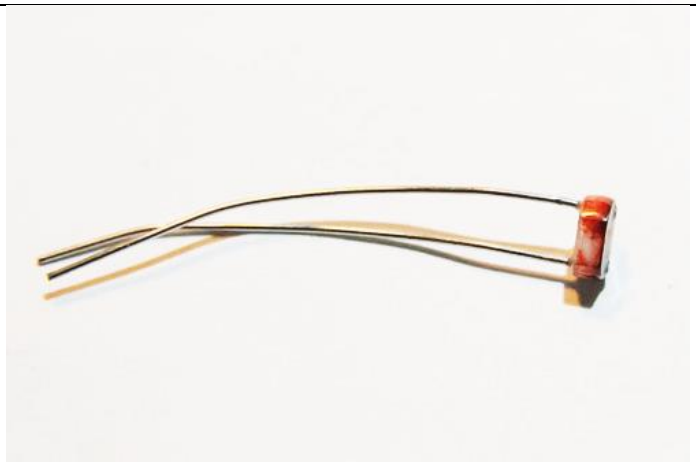
C1, C6	220u/16v	2	
C2, C3, C10, C12, C19, C20	0.1u	6	
C4	220u/35v	1	
C5	470u/10v		

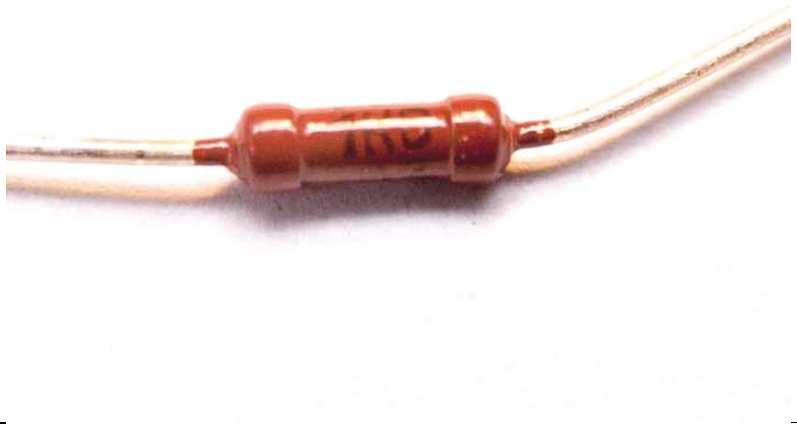
C7, C8, C17, C18	0.22u	4	
C9	22u/50-60v	1	
C11	100u/10v	1	
C13, C14	1nF	2	

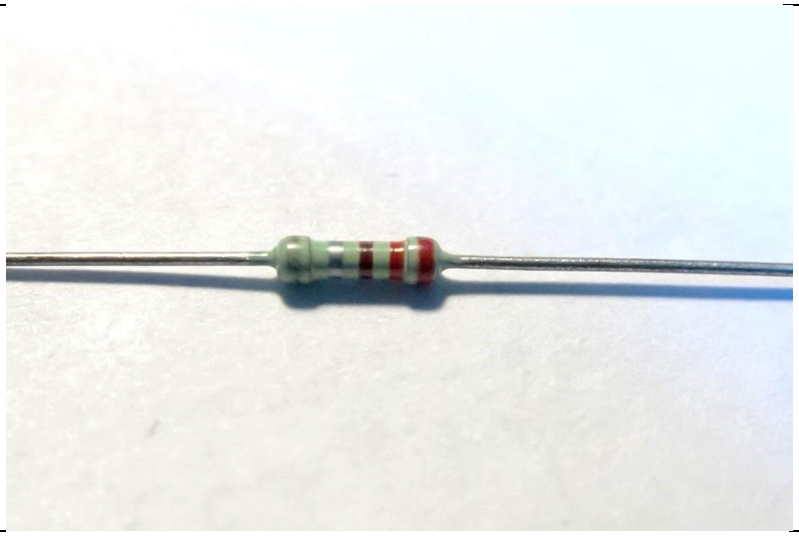
C15, C16	10u/25v	2	
D1	1N4001	1	
D2,D3	1N5819	2	
D4, D6, D7, D10, D11, D12	Led RGB 5050	6	

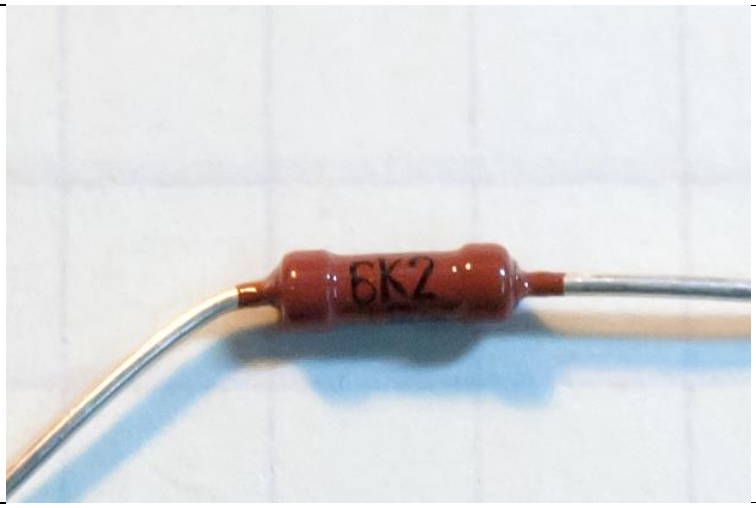
D5, D8, D9, D13	LED Auto	4	
IC1, IC6, IC8, IC10, IC13	HV518	5	
IC2, IC11	LM4871MX	2	
IC3	DS32kHz	1	

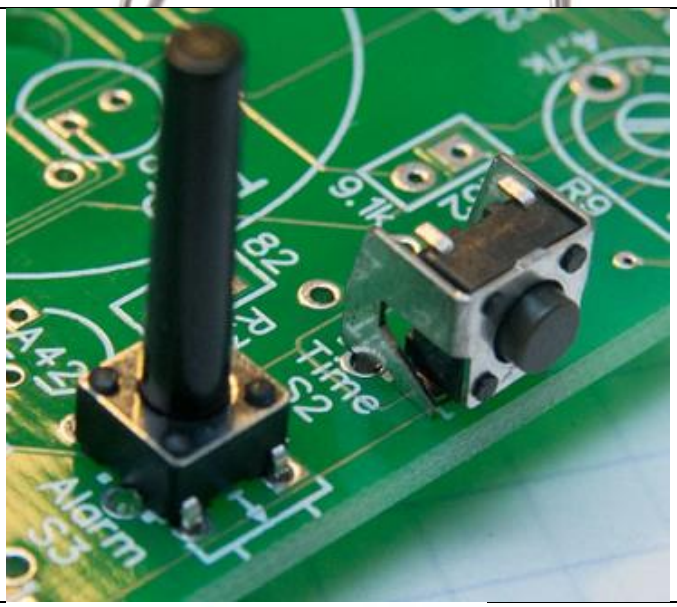
IC4	XL6009EI	1	
IC5	AMS1117-3.3	1	
IC7	STM32F100C6T	1	
IC9	DS18B20-PAR	1	

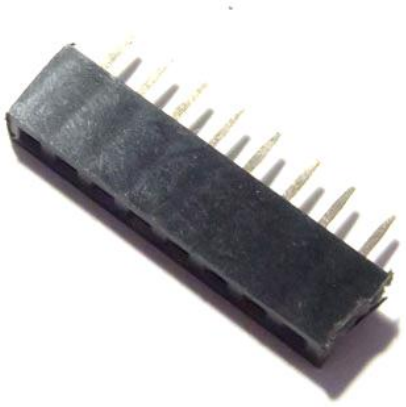
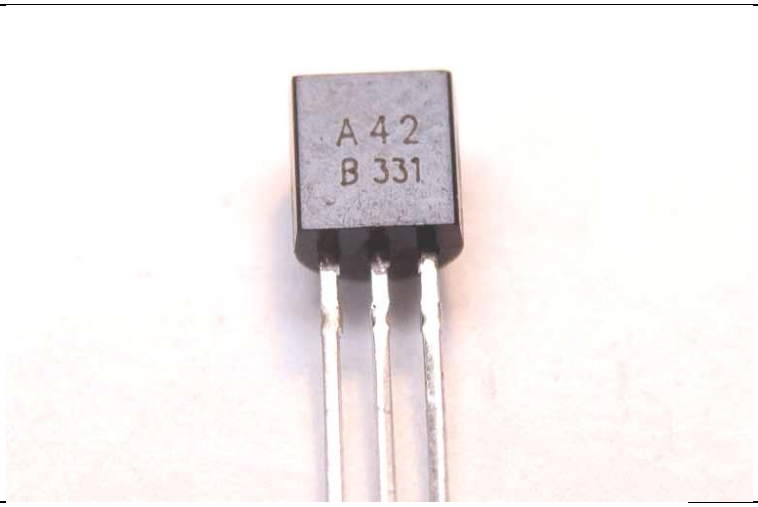
IC12	LM2596S-ADJ	1	
IR1	IR-sensor	1	
L1, L2	68uH	2	
PH1	Photoresistor	1	

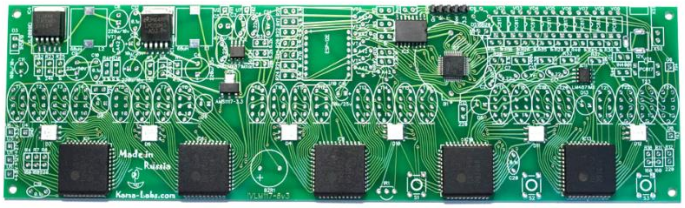
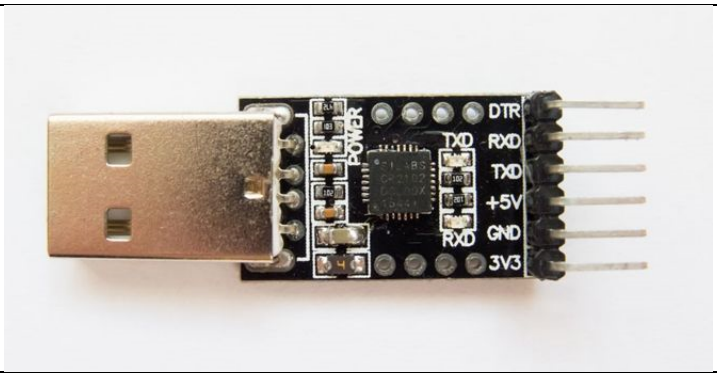
R1, R6	4.3k	2	
R2, R5, R9, R13, R16, R18, R21, R25, R26, R29, R32, R35, R36, R40, R43, R44	1k	16	
R3	1.5k	1	

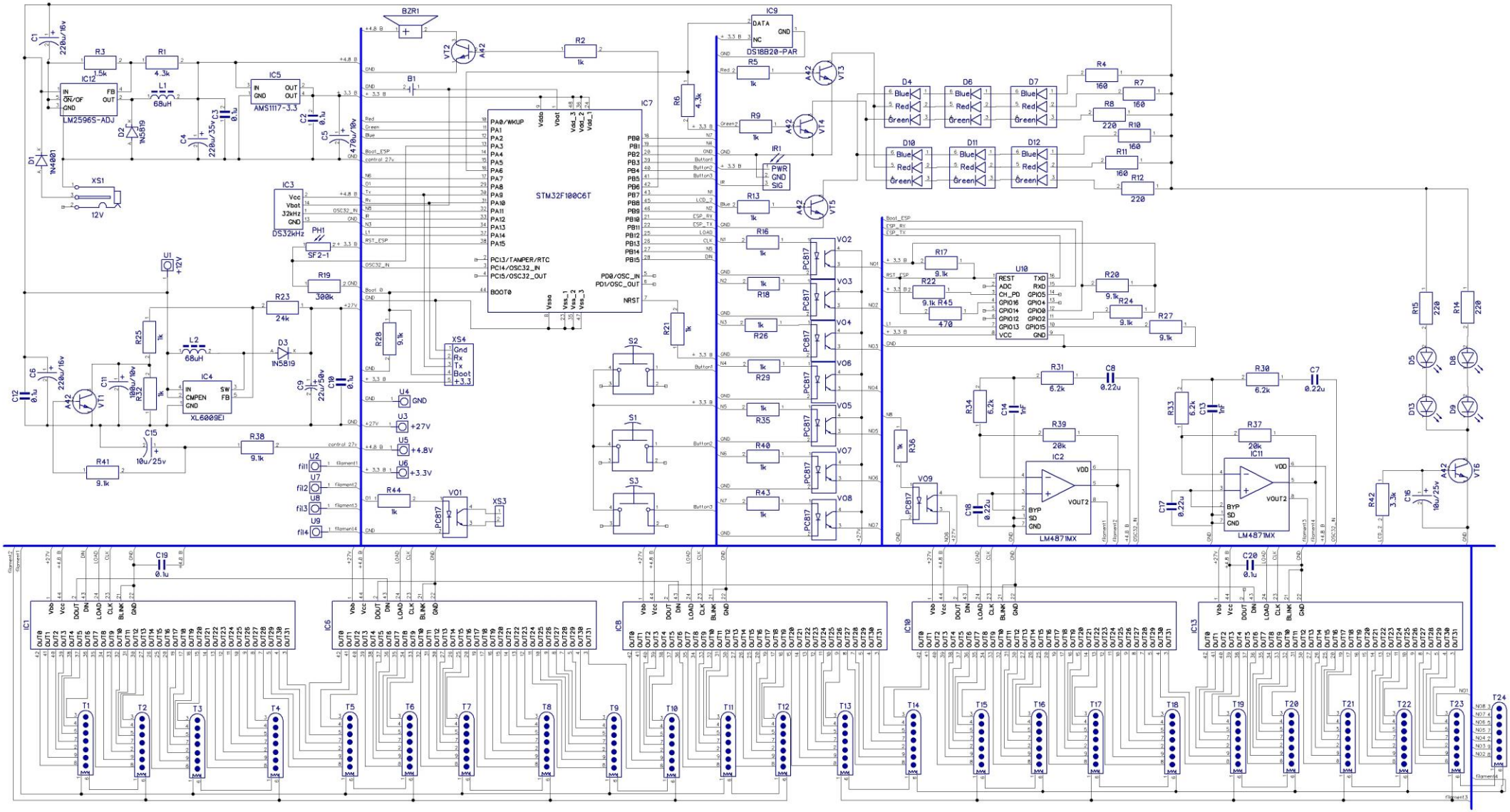
R4, R7, R10, R11	160	4	
R8, R12, R14, R15	220	4	
R17, R20, R22, R24, R27, R28, R38, R41	9.1k	8	
R19	300k	1	

R23	24k	1	
R30, R31, R33, R34	6.2k	4	
R37, R39	20k	2	
R42	3.3k	1	

R45	470	1	
S1, S2, S3	Buttons	3	
T1, T2, T3, T4, T5, T6, T7, T8, T9, T10, T11, T12, T13, T14, T15, T16, T17, T18, T19, T20, T21, T22, T23, T24	IVLM1-1/7	24	

U10	Female socket	2	
VO1, VO2, VO3, VO4, VO5, VO6, VO7, VO8, VO9	PC817	9	
VT1, VT2, VT3, VT4, VT5, VT6	A42	6	
XS1	Power plug	1	

PCB		1	
12V Power supply		1	
USB-UART converter		1	
Plastic/wooden case		1	


STM32F100C6T
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AMS1117-3.3
DS18B20-PAR
DS32kHz
XL6009EI
LM4871MX
BZR1
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IC2
IC4
IC5
IC6
IC7
IC8
IC9
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IC11
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