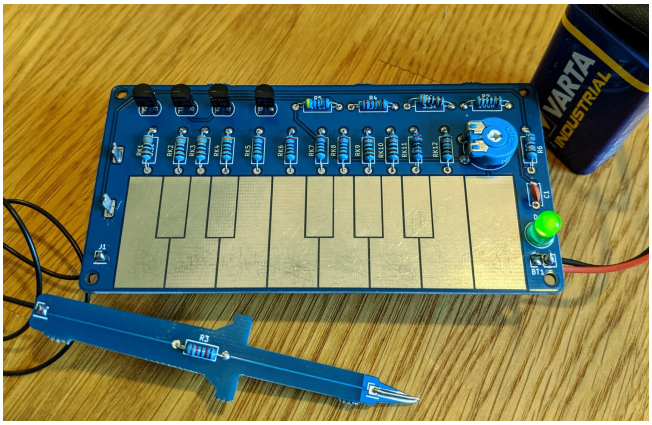
Saw Tooth Organ



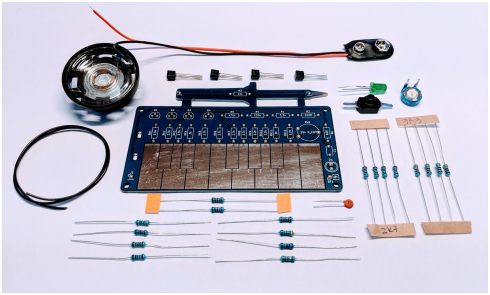
Quantity	Name	Description	Signing/Colorcode
1	BT1	9 V battery holder	
1	C1	22 nF capacitor	223
1	D1	5 mm green LED	
1	LS1	8 Ω–100 Ω speaker	
3	Q1–Q3	BC547C NPN transistor	
1	Q4	BC557C PNP transistor	
4	R1, RK1-RK3	3.3 kΩ resistor	OR OR BK BR BR
1	R2	100 Ω resistor	BR BK BK BK BR
1	R3	22 kΩ resistor	RE RE BK RE BR
1	R4	220 kΩ resistor	RE RE BK OR BR
1	R5	470 kΩ resistor	YE VI BK OR BR
1	R6	82 Ω resistor	GR RE BK GO BR
1	RK4	3 kΩ resistor	OR BK BK BR BR
4	RK5–RK8	2.7 kΩ resistor	RE VI BK BR BR
2	RK9,RK10	2.2 kΩ resistor	RE RE BK BR BR
1	RK11	2 kΩ resistor	RE BK BK BR BR
1	RK12	1.2 kΩ resistor	BR RE BK BR BR
1	RV6	25 kΩ potentiometer	
1	SW1	push button	
1	wire flexible 30 cm		
1	wire stiff 3 cm		
1	PCB		

Difficulty: ●●○○○ Build-Time: 1–2 Hours

Farblegende: SI = silber; GO = gold; BK = schwarz; BR = braun; RE = rot; OR = orange; YE = gelb; GR = grün; BL = blau; VI = violett; GR = grau; WH = weiß

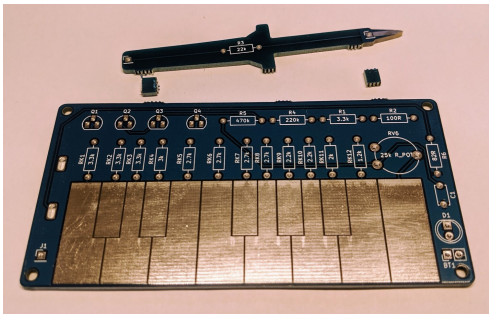
Step 1

a) Hints: Resistance value can be determined via color coding
b) Orientation for resistors is not important.
c) LEDs have a flat side and one shorter leg. Both show the negative side. LED orientation is printed on the board.



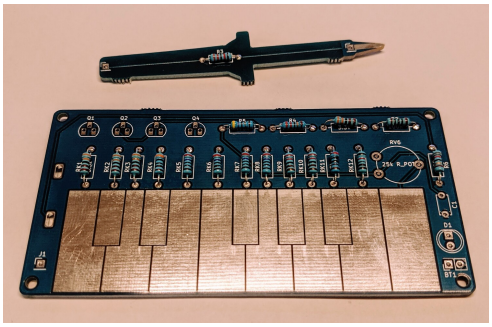
Step 2

a) Break off the stylus at the predetermined breaking points. Use a pliers.



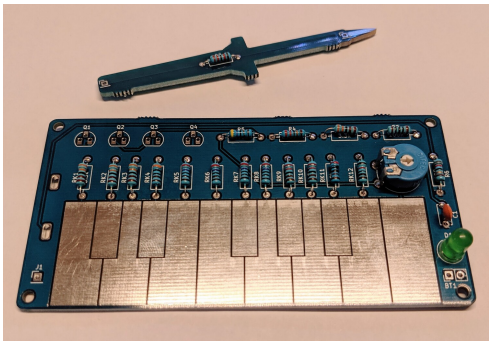
Step 3

a) Solder all resistors.
b) Pay attention to the correct value which is printed on the board.



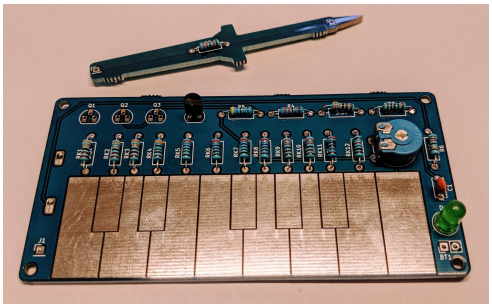
Step 4

a) Solder the potentiometer.
b) Solder the capacitor.
c) Solder the LED. Pay attention to the correct orientation (See Step 1)!



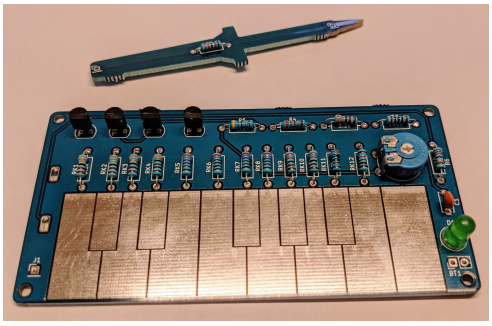
Step 5

a) Solder the PNP transistor BC557C (Q4). Attention: Risk of mix-up with the NPN transistors.



Step 6

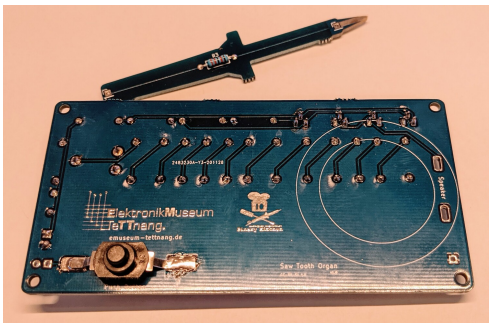
a) Solder the three NPN transistors BC547C (Q1–Q3).



Step 7

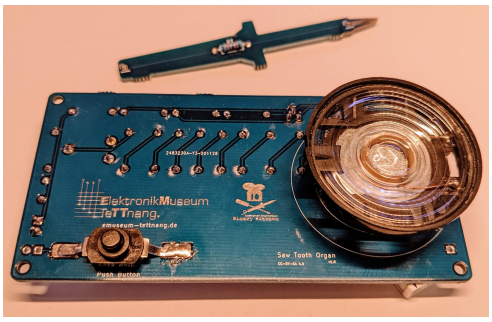
a) Turn around the board.

b) Bend the soldering tabs and solder the button to the board. The direction does not matter.



Step 8

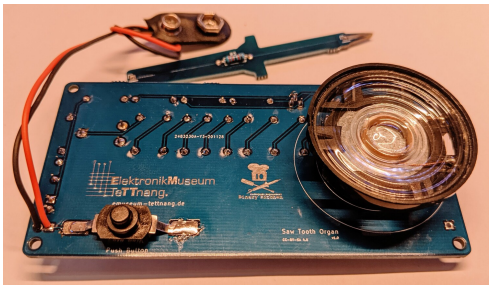
a) Solder on the speaker.



Step 9

a) Thread the red and black wire of the battery holder through the holes (not in the picture) above the solder pads and insert the wires into the solder pads. Attention: red is positive,black is negative

b) Solder the wires.

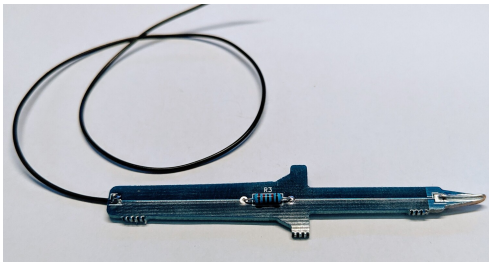


Step 10

a) Solder the stiff wire at the tip of the stylus in the soldering point

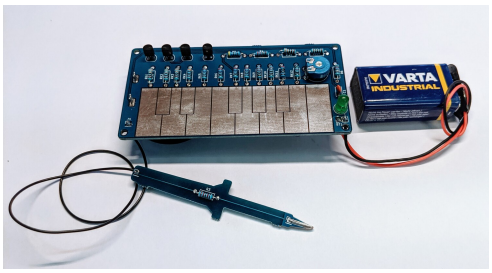
b) Then bend the wire over the tip and solder it on the long soldering points (back and front) at the tip.

Step 11



a) Thread the flexible wire through the hole at the back-poart of the stylus (not in picture)
b) Solder the wire then to the soldering pint
c) Thread the other end trough the hole near the connector point on the board.
d) Solder the wire to the soldering point.

Step 12



a) Insert a battery and turn on your organ.
b) The green LED should turn on now.
c) You are done. Have fun playing your organ!