

# Nibble++ SMD Soldering Challenge



Quantity	Name	Description	Signing/Value
1	BT1	SMD Battery Holder	CR2032
2	C1,C3	0805 capacitor	100 nF
1	C2	0805 capacitor	1 $\mu$ F
1	D1	0805 SMD LED	red
1	D2	0603 SMD LED	orange
1	D3	0402 SMD LED	yellow
1	D4	0201 SMD LED	green
1	D5	0201 SMD LED	blue
1	R1	0805 SMD resistor	82 $\Omega$
1	R2	0603 SMD resistor	82 $\Omega$
1	R3	0402 SMD resistor	62 $\Omega$
1	R4	0201 SMD resistor	330 $\Omega$
1	R5	01005 SMD resistor	33 $\Omega$
2	R6, R7	0805 SMD resistor	100 k $\Omega$
1	SW1	SMD Switch	
1	U1	SOIC-8 Timer	NE555
1	U2	SOP-16 Counter	CD4017
1	Board		

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

Manual v1.0  CC BY-SA 4.0 Binary Kitchen e.V.

Board v1.1  CC BY-SA 4.0 Binary Kitchen e.V.

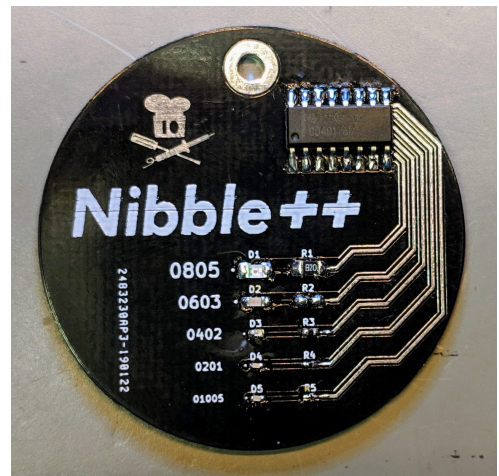
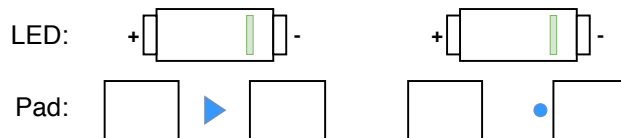
### Step 1

- a) Hint: Resistors do not have a direction
- b) Capacitors are marked with colours (direction does not matter)
- c) LEDs DO HAVE a direction!
- d) Solder resistors R1 - R5 on the front-side



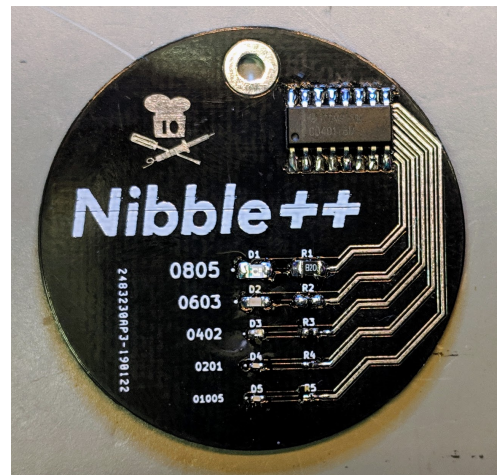
### Step 2

- a) Carefull: LEDs do have a direction! First read this part completely
- b) Solder D1 - D5 to the board
- c) The LED has a green marking on the back side
- d) A dot is printed onto the board
- e) The dot shows the direction where the green marking has to be directed while soldering



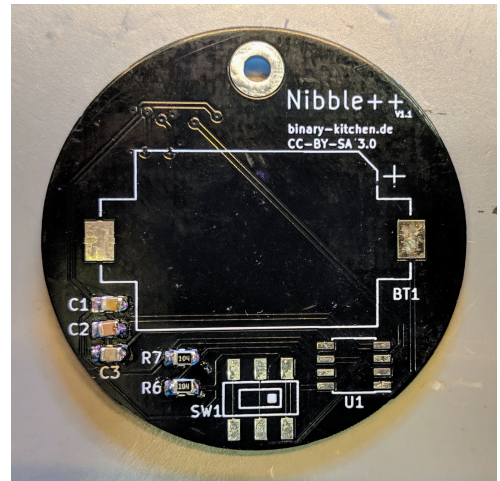
### Step 3

- a) Solder CD4017 to the front-side
- b) Direction is marked with a white dot



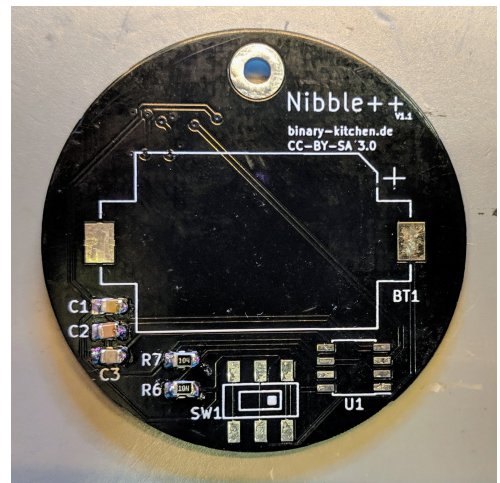
#### Step 4

- a) Solder C1 - C3 to the back-side of the board
- b) Direction is not important



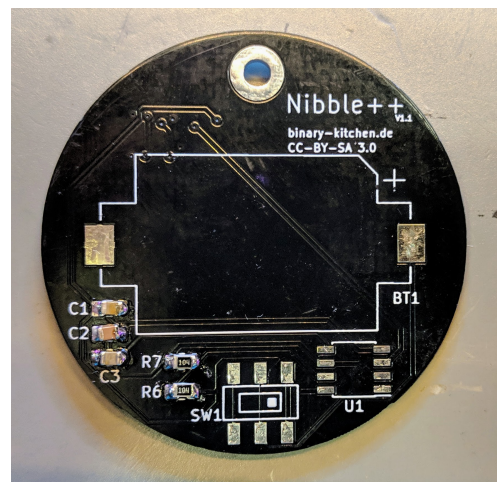
#### Step 5

- a) Solder R6 and R7 to the back-side of the board
- b) Direction is not important



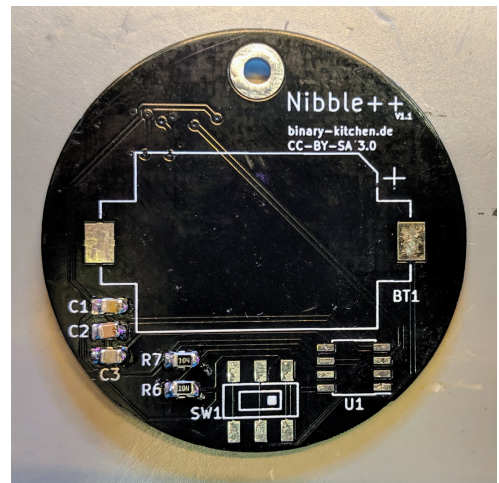
#### Step 6

- a) Solder U1 (NE555) to the back-side of the board
- b) The longer white line (bottom right) on the board marks the direction



## Step 7

- Solder the switch SW1 to the board back-side



## Step 8

- Solder battery-holder BT1 to the back-side of the board
- Insert a battery
- All LEDs should glow
- You are finished!

