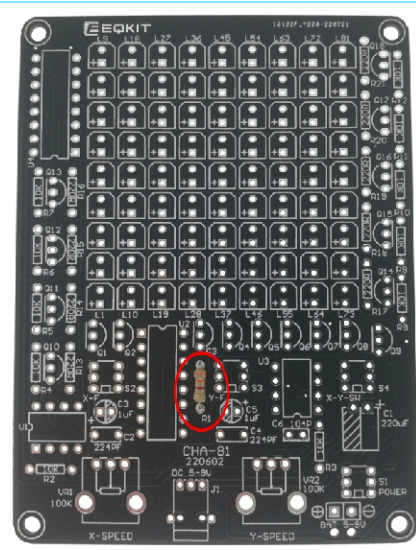


CHA-81 LED Chaser Instructions

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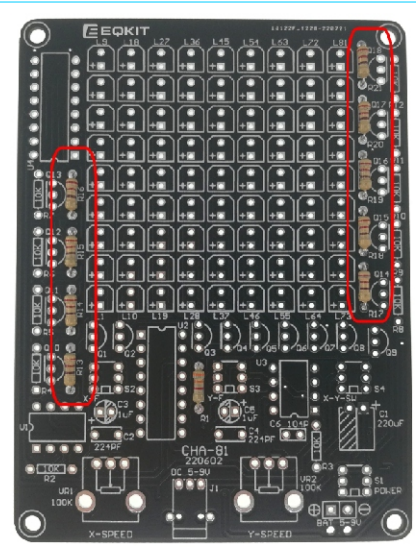
- Tools you need:**
- ① Iron (30W)
 - ② Solder wire
 - ③ Multimeter
 - ④ Tweezers
 - ⑤ Wire cutters

- Precautions:**
- ① Check part values & quantities against part list
 - ② Always meter resistor values before soldering
 - ③ Understand all part polarities and orientations



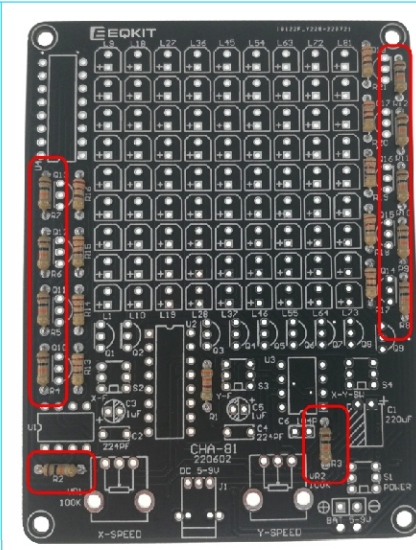
R1 3.3K

① Resistor



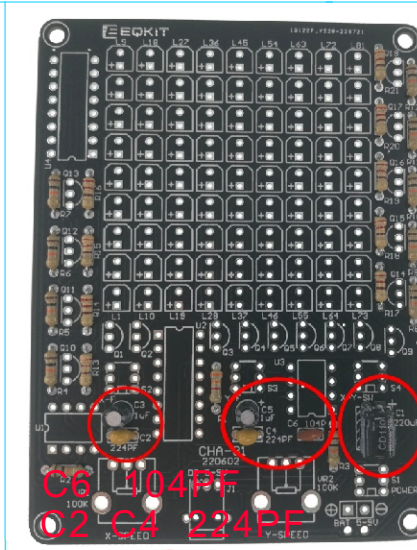
R13-R21 220R

② Resistor



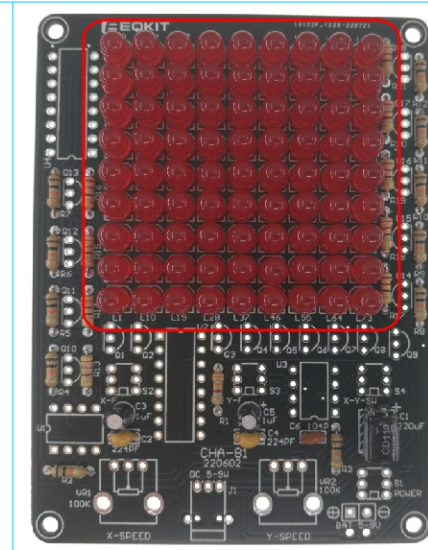
R2-R12 10K

③ Resistor



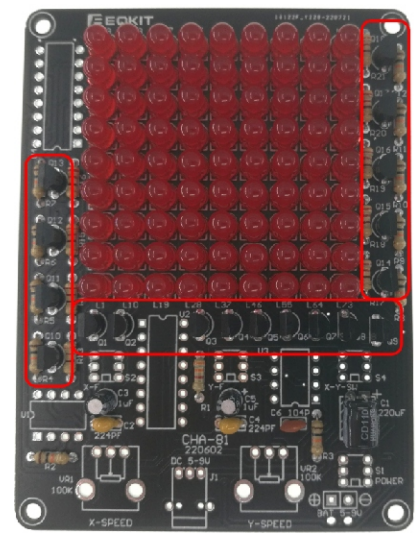
C1 220uF
C3 C5 1uF

④ Capacitor



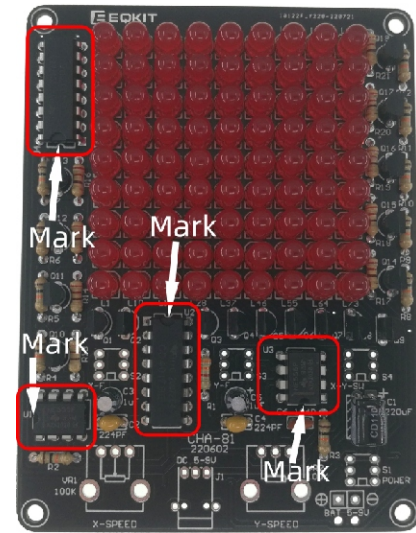
L1-L81 5mm Red

⑤ LED



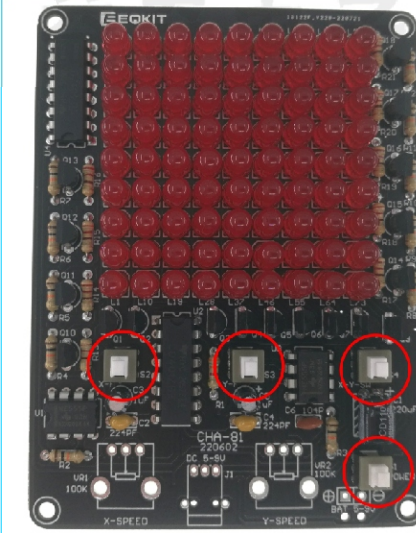
Q1-Q18 S9014

⑥ Triode



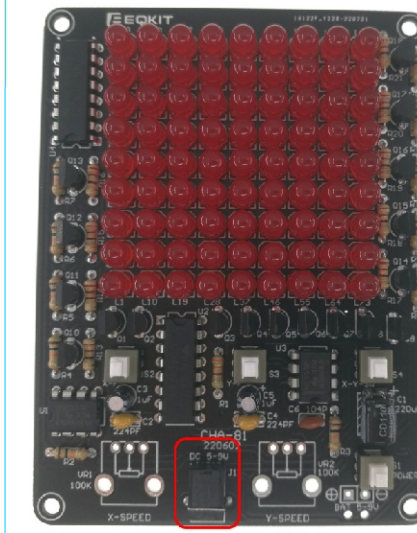
U1 U3 NE555
U2 U4 CD4017

⑦ Chip



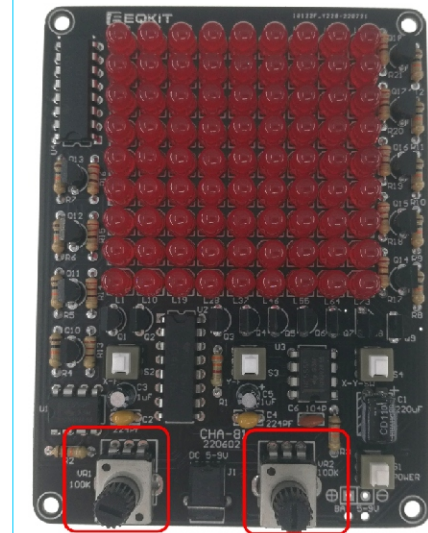
S1-S4 5.8X5.8

⑧ Switch



J1 3.5mm

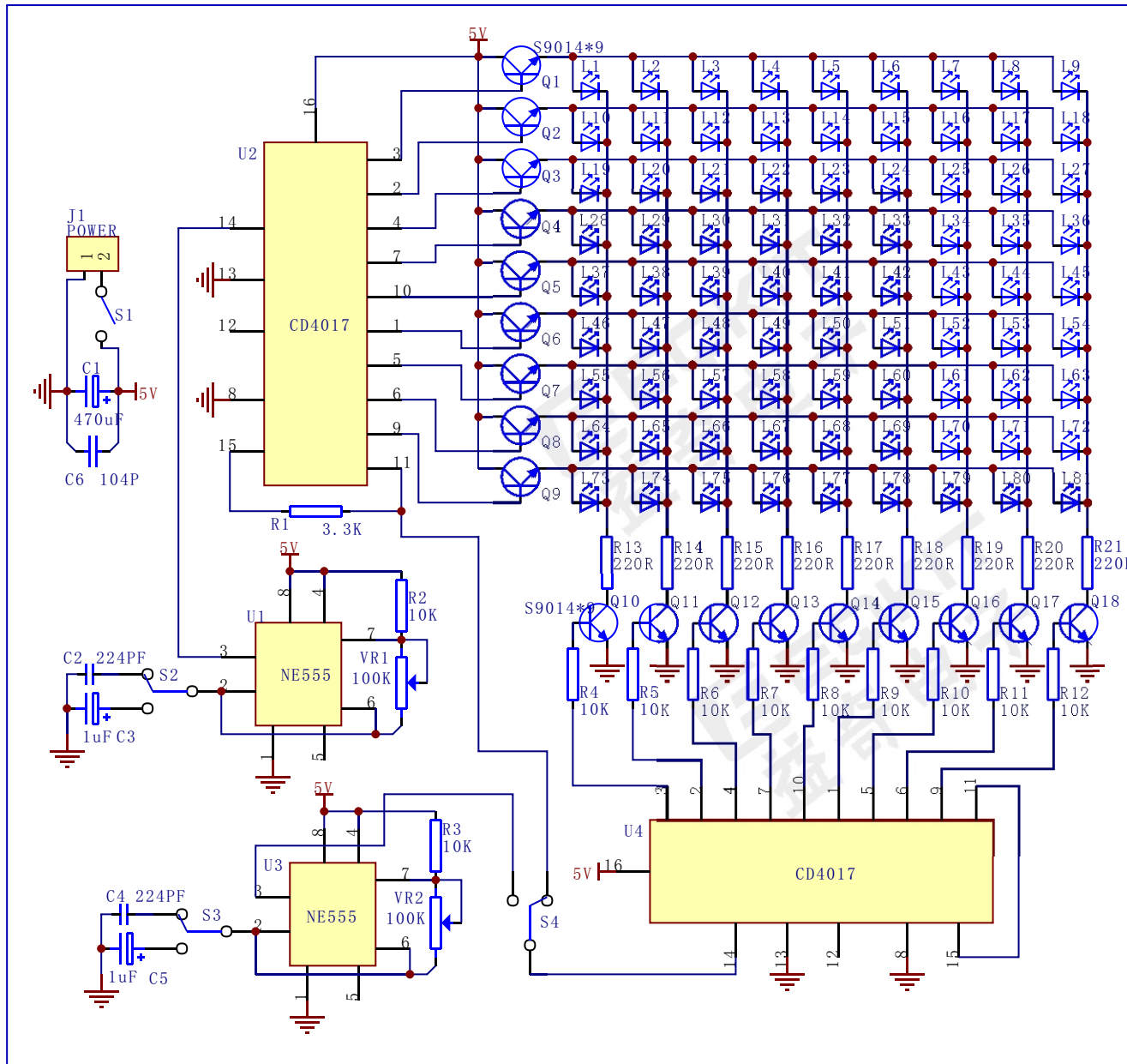
⑨ DC Socket



VR1 VR2 100K

⑩ Potentiometer

Design schematic



CHA-81 LED Chaser Components List			
Name	Model	Code	QTY
Resistor	220R	R13--R21	9
	3.3K	R1	1
	10K	R2--R12	12
Potentiometer	100K	VR1 VR2	2
Ceramic-CAP	104PF	C6	1
Monolithic-CAP	224PF	C2 C4	2
Electrolytic-CAP	1uF/50V	C3 C5	2
	220uF/16V	C1	1
LED	5mm Red	L1--L81	85
Triode	S9014	Q1--Q18	19
Switch	5.8X5.8	S1--S4	4
DC Socket	3.5MM	J1	1
Chip	NE555	U1 U3	2
	CD4017	U2 U4	2
Power Cord	USB to 3.5mm		1
PCB	CHA-81		1