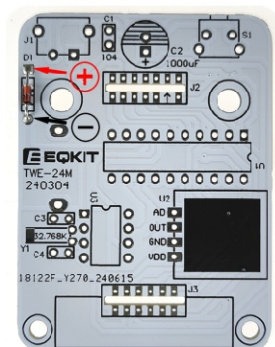


Tools you need:

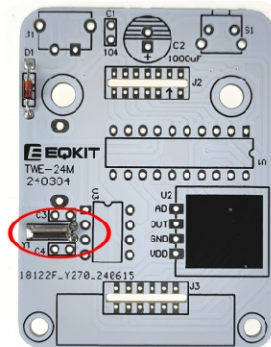
- ① Iron (30W)
- ② Solder wire
- ③ Multimeter
- ④ Tweezers
- ⑤ Wire cutters

Precautions:

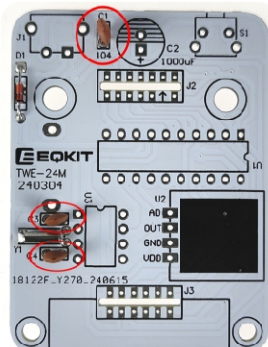
- ① Check part values & quantities against part list
- ② Always meter resistor values before soldering
- ③ Understand all part polarities and orientations



① Diode
D1-1N4148



② Crystal oscillator
Y1-32.768KHz



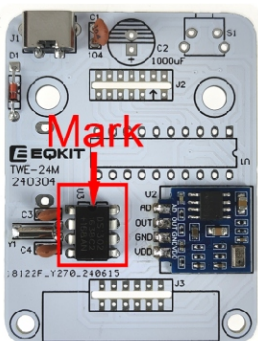
③ Ceramic capacitors
C1-104PF, C3 C4-15PF



④ USB Socket
J1-Type-c



⑤ Chipset
U2-WD4010



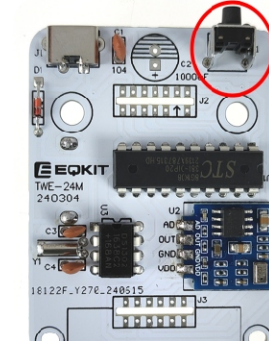
⑥ Chip
U3-DS1302



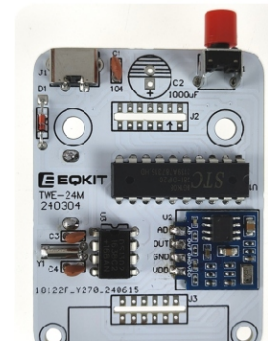
⑦ Chip
U1-STC8G1K08



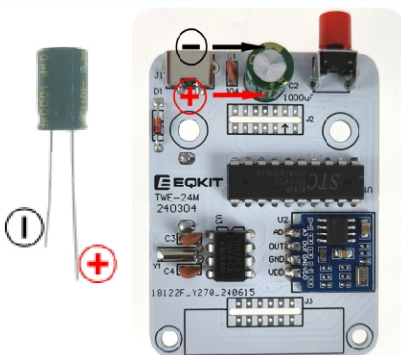
⑧ Battery shrapnel
BT1-CR1220



⑨ Switch
S1-6x6x7



⑩ Switch cap
A56 Red



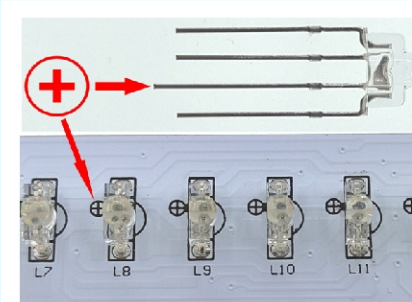
⑪ Electrolytic capacitor
C1-1000uF/10V



⑫ Digital tube
DS1-0.36 inch 4-digit



⑬ Display Board and
Main Board combination



⑭ LED
3MM Tower shaped Colorful
L1--L24-Colorful LED

⑮ Lamp Board and
Main Board combination

Keep the lamp board and
motherboard perpendicular



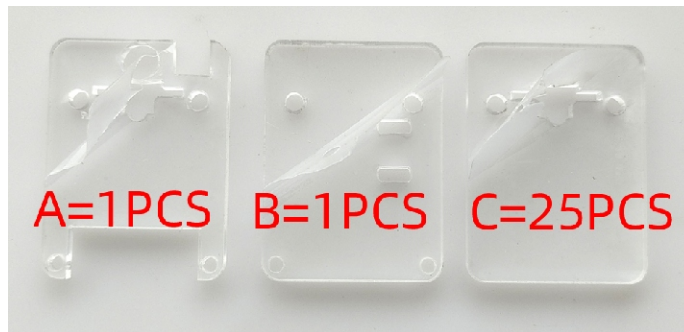
(16) Power on test

1. Press S1 first, then turn on the power.
2. Short press S1 to change the color of the LED light.
3. If the two dots in the middle of the clock flash, it indicates that the clock is normal.



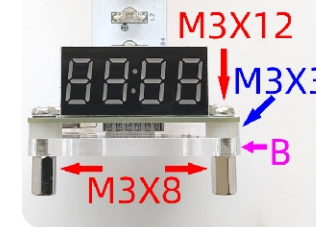
(17) Acrylic plate

4mm thick transparent acrylic plate x 27PCS
Remove the protective film on both sides of the acrylic plate



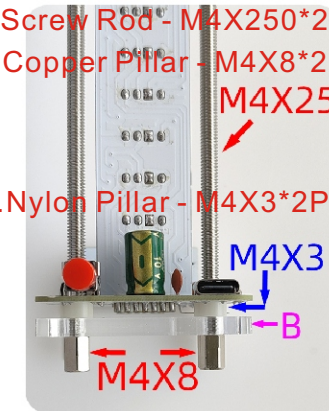
(18) Install acrylic plate

1. Copper Pillar - M3X8*2PCS
2. Acrylic Plate - B *1PCS
3. Nylon Pillar - M3X3*2PCS
4. Screw - M3X12*2PCS



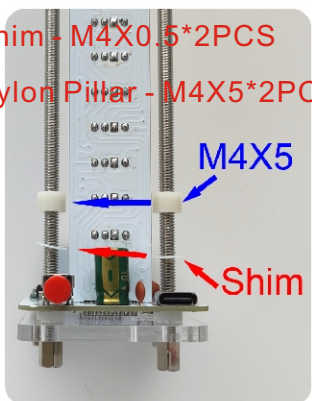
(19) Screw rod

1. Screw Rod - M4X250*2PCS
2. Copper Pillar - M4X8*2PCS
3. Nylon Pillar - M4X3*2PCS



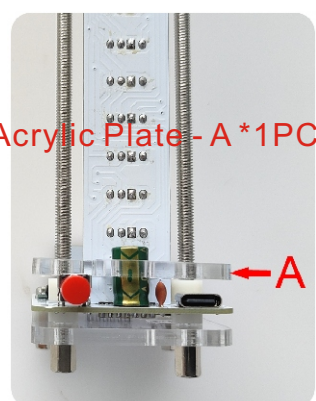
(20) Shim

1. Shim - M4X0.5*2PCS
2. Nylon Pillar - M4X5*2PCS



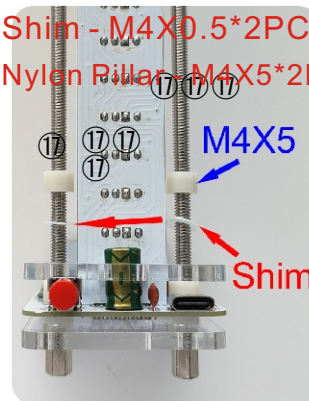
(21) Install acrylic plate

Acrylic Plate - A *1PCS



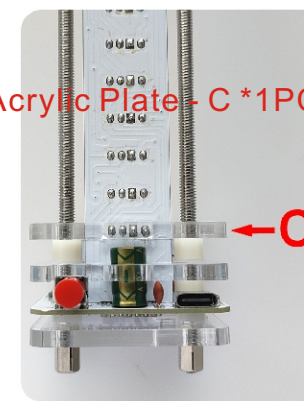
(22) Shim

1. Shim - M4X0.5*2PCS
2. Nylon Pillar - M4X5*2PCS



(23) Install acrylic plate

Acrylic Plate - C *1PCS



(24) Cap Nut

M4 Cap nut

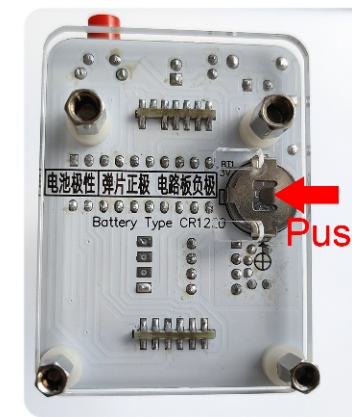
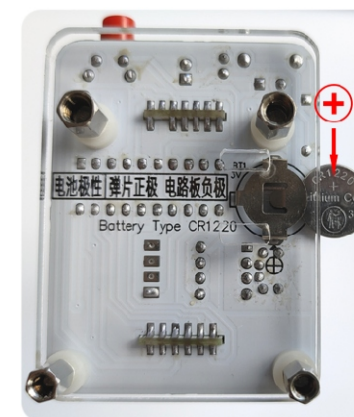
Cap Nut - M4 *2PCS



(25) Attention: Ensure that each LED is located in the middle of each acrylic plate by adding or not adding shims



(26) Battery need to be self provided, Type CR1220



Key Function:
 Short press S1 to set the display color;
 Long press S1 to enter the function settings

Component List			
Name	Model	Code	QTY
Ceramic Cap	104PF	C1	1
	15PF	C3 C4	2
Electrolytic Cap	1000uF/10V	C2	1
Diode	1N4148	D1	1
Crystal Osc	32.768KHz	Y1	1
Chip	DS1302	U3	1
	STC8G1K08	U1	1
Chipset	WD4010	U2	1
LED	Colorful	L1-L24	24
Digital Tube	0.36 inch	DS1	1
Switch	6x6x7	S1	1
Switch Cap	A56 Red	Red	1
USB socket	Type-c	J1	1
Battery Shrapnel	CR1220	BT1	1
Battery	CR1220	BT1	1
Power Cord	Type-c	L=1M	1
PCB	TWE-24M	44x59	1
	TWE-24D	20.4x220.8	1
	TWE-24L	30.5x17.5	1
Acrylic Plate	A	4mm	1
	B	4mm	1
	C	4mm	25
Nylon Pillar	M3X3	Nylon	2
	M4X3	Nylon	2
	M4X5	Nylon	52
Screw	M3X12	Stainless Steel	2
Shim	M4X0.5	Nylon	55
Screw Rod	M4X250	Stainless Steel	2
Cap Nut	M4	Stainless Steel	2
Copper Pillar	M3X8	Nickel Plating	2
	M4X8	Nickel Plating	2

1.Quick Operation

Key Operation	Function Settings	Function Options	Display	Function Description	Default
Short press S1	Set display color	Color Mode 1	CL:01	Two colors and real-time changes	1
		Color Mode 2	CL:02	Seven colors and real-time changes	
		Color Mode 3	CL:03	Display a single color	
		Color Mode 4	CL:04	Display a single color	
		Color Mode 5	CL:05	Display a single color	
		Color Mode 6	CL:06	Display a single color	
		Color Mode 7	CL:07	Display a single color	
		Color Mode 8	CL:08	Display a single color	
		Color Mode 9	CL:09	Display a single color	

2. Function Menu Interface Operation: Flashing data can be changed

Key Operation	Function Settings	Display	Function Description	Default
1. Long press S1 to enter the function settings interface.	Display Mode 1	Arr 1	Same direction display and peak hold	1
	Display Mode 2	Arr 2	Same direction display	
	Display Mode 3	Arr 3	Reverse display and peak hold	
	Display Mode 4	Arr 4	Reverse display	
	Display Mode 5	Arr 5	Display and peak hold from the middle to both ends	
	Display Mode 6	Arr 6	Display from the middle to both ends	
2. Short press S1 to change parameters.	Time	HH:MM	Set the HH (0~23) and MM (0~59) Every time the minute is changed, the second resets to zero	00:00
	Time Format	12H/24H	Short press the S1 to change the 12 hour or 24-hour format	24H
	Sensitivity	SE:Ab	Ab=1~12: The larger the value, the higher the sensitivity	06
	Data Display	dd:M	M=0: No data displayed	L
			M=L: Display peak level	
			M=C: Display time	
	Display Speed	SPEn	n=1~4 The larger the value, the higher the refresh rate	3
	Brightness	Ledm	m=1~8 The larger the value, the higher the brightness	8
	Dark Mode	dArx	x=1 Enable ,x=0 Disable	Disable
	Dark mode period	HHhh	HH=0~23: Start time of dark mode hh=0~23: End time of dark mode	

1.Press S1 first, then turn on the power. Enter display testing mode

2.When powered on, the digital display will show the software version number.

3. After powering on, check if the two points in the middle of the clock are flashing.
 If it flashes, the clock function is normal.

Hardware Testing

Design Schematic

