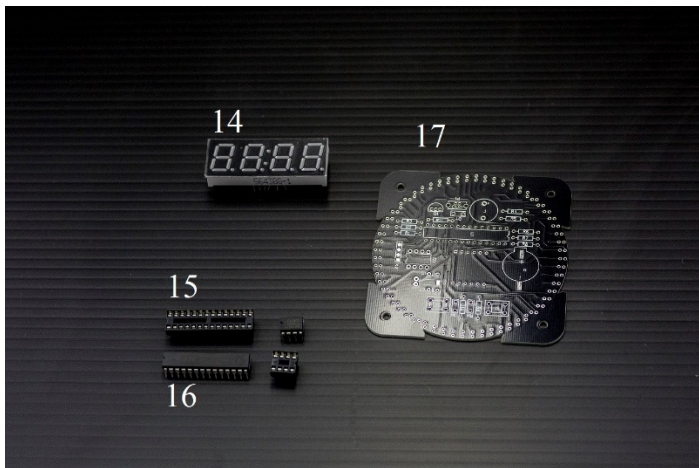


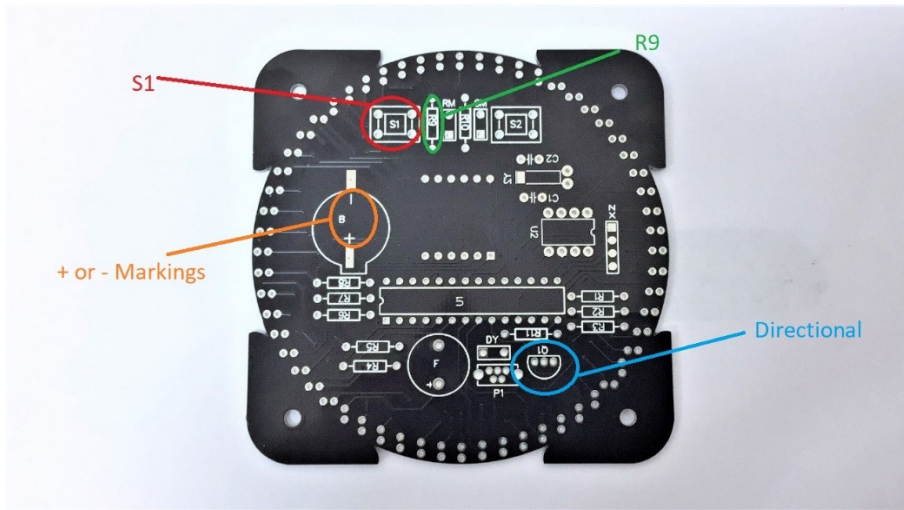
User Guide for DS1302 Rotating Red LED Digital Clock Timer Module Kit - TA0289

Kit Contents:



The package comes with:




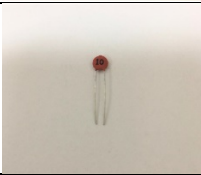
1. 9 x 330-ohm resistors
2. 3 x 10K-ohm resistors
3. Blue LEDs
4. Red LEDs
5. CR1220 Battery and its holder
6. Buzzer
7. USB socket
8. 10p Ceramic Cap
9. 2 x Tactile switches
10. PNP Transistor
11. LDR photoresistor
12. Thermistor
13. 32.768KHz crystal oscillator
14. LED Clock Tube
15. STC MCU and its DIP socket
16. DS1302 Real Time Clock and its DIP socket
17. PCB Board


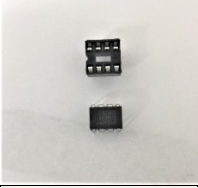

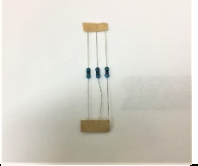
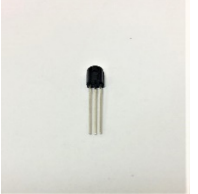







The PCB has component “Identifiers” to help guide with component installation positions. A chart provided below helps identify which component belongs to which position.

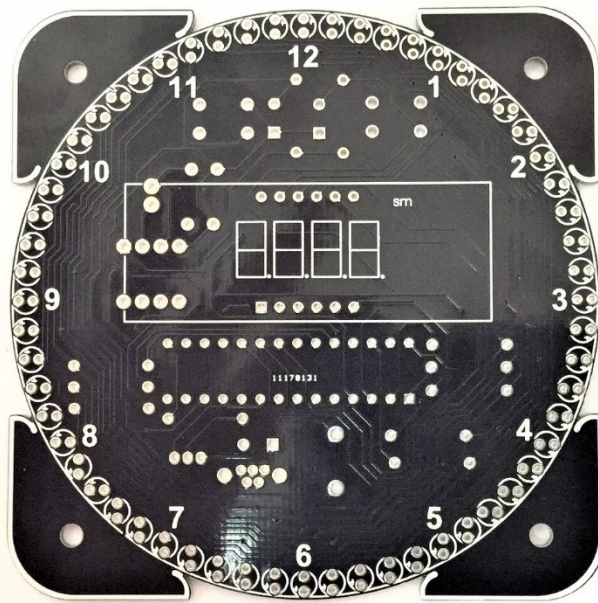
For example, “S1” is for a “Tactile Switch”, “R9”is for a 10K Ohm resistor, and so on.



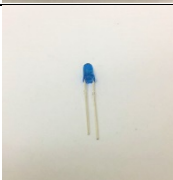
Some components are “Directional”, which mean they require to be placed on to the PCB facing a direction (shown on the example above). The PCB assists by providing an outline of the component, as well as providing markings to let you know which way to insert the component (shown on the example above).

Component Identifiers (Clockwise from the top left)	Component Image	Component Name
S1/S2		2 x Tactile Switch
RM		Thermistor
GM		Light Dependant Resistor/Photoresistor
C1/C2		10p Ceramic Capacitor

Y2		32.768KHz crystal oscillator
U2		DS1302 Real Time Clock and its DIP socket
R1 ~ R8, R11		9 x 330 Ohm Resistor
R9, R10		3 x 10K Ohm Resistor
Q1		PNP transistor Tip: Be careful with position of PNP transistor
DY		Battery Box Tip: RED Positive cable goes to the circular hole on the PCB and Black Negative cable goes to the square hole on the PCB
P1		USB female interface
F		Buzzer Tip: Plus “+” sign shows the positive side of the Buzzer.
U1		STC MCU and its DIP socket Tip: Align the notch sign on the chip and DIP socket
B		CR1220 Battery and its Battery Holder Tip: Exposed bottom pin is the positive pin.

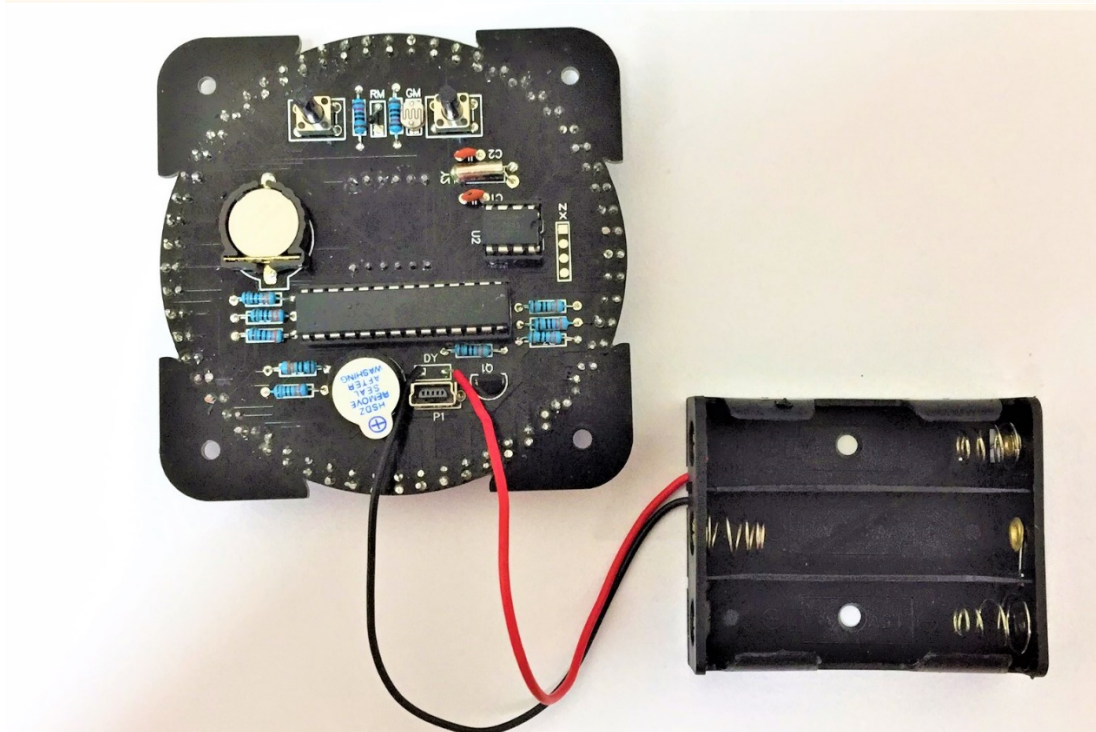
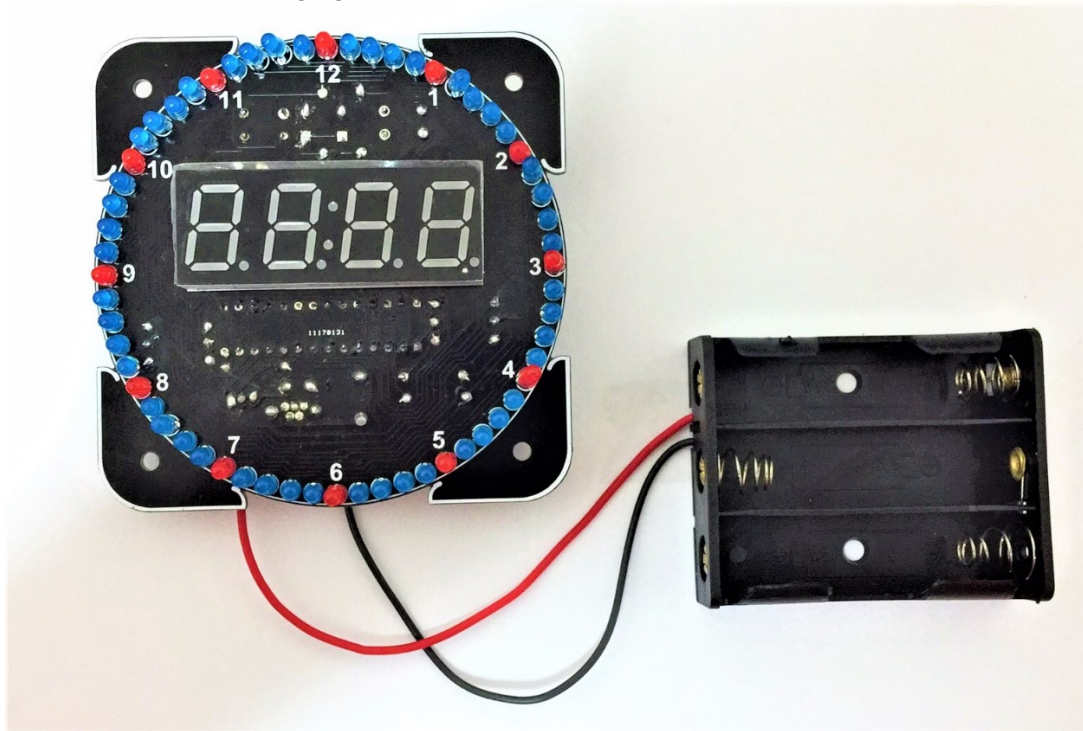
Now you have finished one side of the PCB. Turn the PCB and solder the other side.



Sm (On the Other side of the PCB)		Digital Tube
Hour Clock Points		Red LEDs Tip: Long leg pin is the positive pin
Minute Clock Points		Blue LEDs. Tip: Long leg pin is the positive pin

Have Fun

Now it's time to have fun! Turn the power on, and see how your DIY digital Clock goes! After final assembly, the Digital Clock may require adjustments. The left tactile switch is "PLUS" Button which is used to adjust the Alarm and time values. On the other hand, the right tactile switch is "MODE" Button which is for changing the mode between Alarm and current time.



Operation Mode

There are two tactile switches used to alter LED flashing modes and Alarm & Current time values. The following chart shows detailed operation mode.

Default mode: Current Time in the format of “Hour: Minute” and Second shows by flashing the LEDs on the Clock panel, Temperature

LED flash mode: The flashing pattern of LEDs can be modified by pressing the left button, “PLUS” button. Below show different LED patterns when changing the “PLUS” button.

- **Press the left button, “PLUS” button:** All hourly LEDs are light on. Second LEDs are light on clockwise.
- **Press the left button, “PLUS” button:** All LEDs are light on except one LED which represents the second.
- **Press the left button, “PLUS” button:** LEDs are light on with second time sequence.
- **Press the left button, “PLUS” button:** All LEDs are light on except those LEDs which lies 5 minutes ahead of current time.
- **Press the left button, “PLUS” button:** LEDs are turned off with second time sequence.
- **Press the left button, “PLUS” button:** LEDs are light on clockwise
- **Press the left button, “PLUS” button:** Two LED are light symmetrically. One LED is moving from 12 O’clock and ends in 6 O’clock position.
- **Press the left button, “PLUS” button:** All LEDs are flashing.
- **Press the left button, “PLUS” button:** LEDs which lies in each 15-minute clock partitions are light on backwards and forwards.

Time adjustment mode:

- **Press the right button, “MODE” button:** One beep and current *minute* time flashes. Then you can change the digits by pressing the “PLUS” button.
- **Press the right button, “MODE” button:** One beep and current *hour* time flashes. Then you can change the digits by pressing the “PLUS” button.
- **Press the right button, “MODE” button:** One beep and current Alarm *minute* time flashes. Then you can change the digits by pressing the “PLUS” button.
- **Press the right button, “MODE” button:** One beep and current Alarm *hour* time flashes. Then you can change the digits by pressing the “PLUS” button.
- **Press the right button, “MODE” button:** One beep and Alarm status appears (0000 shows that Alarm is off and 1111 shows the Alarm is on). Then you can change the on/off state by pressing the “PLUS” button
- **Press the right button, “MODE” button:** One beep and LDR (light dependent photoresistor) status appears (0000 shows that LDR is off and 1111 shows the LDR is on). When surrounded by different light environment, the LED clock would automatically adapt to surrounding light environment to suit your vision. You can change this function by pressing the “PLUS” button.

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