



CAI-201 RGB 4Bit Digital Electronic Clock DIY Kit

1.Parameter:

- 1.Item name: CAI-201 RGB 4Bit Digital Electronic Clock DIY Kit
- 2.Model:CAI-201
- 3.Work voltage:DC 5V
- 4.Work Temperature:-40℃~85℃
- 5.Work Humidity:0%~95%RH
- 6.Size(Installed):115*40*32mm

2.Installation Tips:

- 1>.User needs to prepare the soldering tool at first.
- 2>.Please be patient until the installation is complete.
- 3>.The package is DIY kit.It need finish install by user.
- 4>.The soldering iron can't touch the components for a long time(1.0 second), otherwise it will damage the components.
- 5>.Pay attention to the positive and negative of the components.
- 6>.Strictly prohibit short circuit.
- 7>.Install complex components preferentially.
- 8>.Make sure all components are in right direction and right place.
- 9>.Please wear anti-static gloves or anti-static wristbands when installing electronic components.
- 10>.It is strongly recommended to read the installation manual before starting installation!!!

3.Installation Steps(Please be patient):

Step 1: Install 4pcs 10Kohm Metal Film Resistor at R1,R2,R_P,R_T.

Step 2: Install 1pcs CR1220 Battery Socket at BT1.

Step 3: Install 1pcs 32.768K Crystal Oscillator at Y1.

Step 4: Install 1pcs DIP-16 IC Socket at U1.There is a mark(notch) on one end of the IC Socket and there is a mark(curved silk screen printing) on PCB where the IC Socket can place on.These two marks are corresponding to each other and are used to specify the installation direction of the IC Socket.

Step 5: Install 1pcs DIP-8 IC Socket at U2.There is a mark(notch) on one end of the IC Socket and there is a mark(curved silk screen printing) on PCB where the IC Socket can place on.These two marks are corresponding to each other and are used to specify the installation direction of the IC Socket.

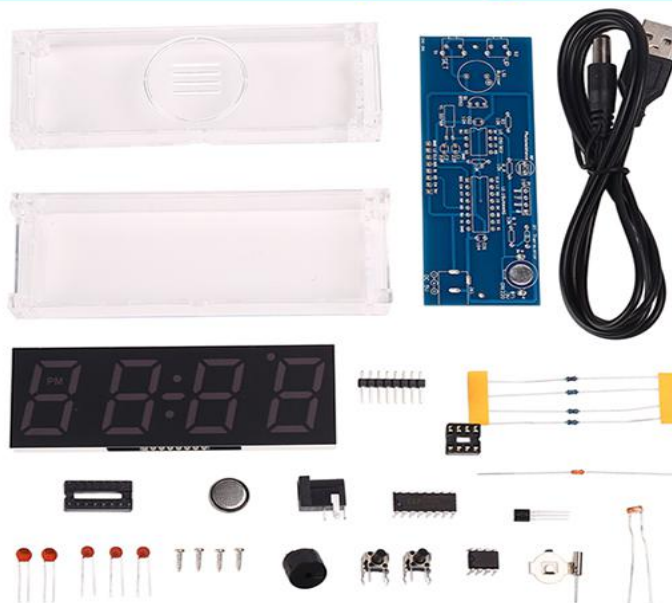
Step 6: Install 2pcs 22pF Ceramic Capacitor at C1,C2.

Step 7: Install 2pcs 0.1uF 104 Ceramic Capacitor at C01,C02.

Step 8: Install 1pcs TO-92 S8550 Transistor at Q1.Pay attention to the installation direction of arc.

- Step 9: Install 1pcs 5.5*2.1mm DC-005 Power Socket at JK1.
Step 10: Install 1pcs 5V Passive buzzer at LS1. Pay attention to the installation direction.
- Step 11: Install 2pcs Black Button at S1,S2.
Step 12: Install 1pcs GL5516 GL5516 Photoresistor at RP. Pay attention to reserve about 8mm height.
Step 13: Install 1pcs 10K B:3950 5% NTC Temperature Sensor at RT. Pay attention to reserve about 5mm height.
Step 14: Install 1pcs DIP-16 IC IAP15W413AS at U1. There is a mark(notch) on one end of the IC Socket and there is a mark(curved silk screen printing) on PCB where the IC can place on. These two marks are corresponding to each other and are used to specify the installation direction of the IC.
Step 15: Install 1pcs DIP-8 IC DS1302 Clock Chip at U2 by the same method.
- Step 16: Install 1pcs 3V CR1220 Battery on battery socket. Pay attention to the direction of the battery.
Step 17: Install XH2.54-8P Male Pin on 4Bit RGB Digital Tube.
Step 18: Install 4Bit RGB Digital Tube on PCB.
Step 19: Install Transparent Case and fixed by M1.7*7mm Screw and Nuts.
Step 20: Connect to power supply and set parameters according to set method.

Items in the package





Component Listing				
No.	Component Name	PCB Marker	Parameter	Quantity
1	Metal Film Resistor	R1,R2,R_P,R_T	10Kohm	4
2	NTC Temperature Sensor	RT	10K B:3950 5%	1
3	GL5516 Photoresistor	RP	GL5516	1
4	Crystal Oscillator	Y1	32.768k	1
5	S8550 Transistor	Q1	TO-92	1
6	Black Button	S1,S2	6*6*10mm	1
7	DC-005 Power Socket	JK1	5.5*2.1mm	1
8	5V Passive buzzer	LS1	8.5*12mm	1
9	CR1220 Battery Socket	BT1	3V	1
10	Ceramic Capacitor	C1,C2	22pF	2
11	Ceramic Capacitor	C01,C02	0.1uF 104	2
12	Screw		M1.7*7mm	4
13	Nut		M1.7mm	4
14	CR1220 Battery	BT1	3V	1
15	XH2.54-8P Male Pin			1
16	IC Socket	U1	DIP-16	1
17	IC Socket	U2	DIP-8	1
18	IAP15W413AS	U1	DIP-16	1
19	DS1302 Clock IC	U2	DIP-8	1
20	4Bit RGB Digital Tube			1
21	USB Power Cable		100cm	1
22	Transparent Case		115*40*32mm	1
23	PCB		97*34*1.6mm	1

NOTE:Users can complete the installation according to the PCB silk screen and component list.



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2.Set Method:

- 2.1>.Keep press 'SET' button about 3 second enter into set mode.
- 2.2>.Short press 'SET' button to switch set parameter at set mode.The selected parameters will flash automatically.
- 2.3>.Short press'UP' button to increase parameter value.
- 2.4>.It automatically saves the parameters and exits without any operate in 15 second.

3..Time mode:

- 3.1>.12H hourly optional system
- 3.2>.24H hourly optional system(default)

4.Hourly Report:

- 4.1>.It can set Hourly Report range such 7-21 which means Hourly Report from 7:00 to 21:00(default 7-21)

5.3 Alarm:

- 5.1>.A1 alarm: default turn ON.
- 5.2>.A2 alarm: default turn OFF.
- 5.3>.A3 alarm: default turn OFF.

6.Alarm control:

- 6.1>.oN:E: Daily alarm mode(Alarm from Monday to Sunday and default)
- 6.2>.--:E: Weekend Holiday mode(Alarm from Monday to Friday)

7.Automatic adjust brightness:

- 7.1>.oN-L: Turn ON Automatic brightness control by sensor(default)
- 7.1>.--L: Turn OFF Automatic brightness control by sensor

8.Set brightness:

- 8.1>.This function just can be set when turn OFF automatic adjust brightness.
- 8.2>.L-3:Set at the brightest
- 8.3>.L-2:Set at middle brightness
- 8.4>.L-1:Set at minimum brightness

9. Calibration temperature: Calibrate the temperature value.

10.Temperature display unit:

- 10.1>.C : Display temperature in Celsius degree
- 10.2>.F : Display temperature in Fahrenheit degree

11.Display color:

- 11.1>.dC-1: Sets the specified display color. 4Bit display in the same color but different parameters can choose different colors for Time, Temperature, Date, Week. Display color can not automatic change at



normal display.

11.2>.dC-2: Sets the specified display color.Each Bit digital tube can choose different display colors. Display color can not automatic change at normal display.

11.3>.dC-3: Automatic color change. 4Bit display in the same color but display color can automatic change at normal display. Default display mode.

11.4>.dC-4: Automatic color change.Each Bit digital tube can display different display colors and display color can automatic change at normal display.

12.Alarm music:

12.1>.dU-1 : For Elise

12.2>.dU-2 : An die Freude

12.3>.dU-3 : Spanish bullfighter

13.Calibrate time:

Calibrate time range is -9 second to 9 second by display dE-9 to dE 9. Default dE 0.

14.Display mode:

14.1>.dP-1:Only display time.

14.2>.dP-2:Display time, temperature in turns.

14.3>.dP-3:Display time, date, week in turns.

14.4>.dP-4:Display time, temperature ,date, week in turns.

5.Setting Method:

1>.Reset settings:

1.1>.Keep press 'SET' and 'UP' buttons at the same time about 3 second. Then release buttons after screen turn ON and alarm. Factory default settings is 2019.01.01 7:59:50. And after 10second,the alarm will turn ON at 8:00.

2>.Set Method:

2.1>.Keep press 'SET' button about 3 second enter into set mode.

2.2>.Short press 'SET' button to switch set parameter at set mode.The selected parameters will flash automatically.

2.3>.Short press 'UP' button to increase parameter value.

2.4>.It automatically saves the parameters and exits without any operate in 15 second.

3>.Set Year: Enter set mode will start set year then press 'UP' button to set value for current year.

4>.Set Month: Short press 'SET' button for the 1st time and then press 'UP' button to set value for current month.



5>.Set Day: Short press 'SET' button for the 2nd time and then press 'UP' button to set value for current day.

6>.Set Hour: Short press 'SET' button for the 3rd time and then press 'UP' button to set value for current hour.

7>.Set Minute: Short press 'SET' button for the 4th time and then press 'UP' button to set value for current minute.

8>.Set 12/24H mode: Short press 'SET' button for the 5th time and then press 'UP' button to select 12H or 24H.

9>.Set Hourly Report Start Hour: Short press 'SET' button for the 6th time and then press 'UP' button to set value for Hourly Report Start hour.

10>.Set Hourly Report Stop Hour: Short press 'SET' button for the 7th time and then press 'UP' button to set value for Hourly Report Stop Hour. Such as 7-21 means Hourly Report from 7:00 to 21:00

11>.ON/OFF Alarm A1: Short press 'SET' button for the 8th time and then press 'UP' button to turn ON or OFF alarm A1. It will display 'oN:A1' or '--:A1'.

12>.Set Alarm A1 Hour: Short press 'SET' button for the 9th time and then press 'UP' button to set value for alarm A1 hour.

13>.Set Alarm A1 Minute: Short press 'SET' button for the 10th time and then press 'UP' button to set value for alarm A1 minute.

14>.Set Alarm A2 and A3 by the same method.

15>. Set Alarm control: Short press 'SET' button for the 17th time and then press 'UP' button to set value for Set Alarm control 'oN:E' or '--:E'.

16>. Set Automatic adjust brightness: Short press 'SET' button for the 18th time and then press 'UP' button to set value for Set Alarm control 'oN:L' or '--:L'.

17>. Set brightness: Short press 'SET' button for the 19th time and then press 'UP' button to set value for Set brightness 'L-1' or 'L-2' or 'L-3'.

18>.Calibration temperature: Short press 'SET' button for the 20th time and then press 'UP' button to calibrate the temperature value.Calibrate range is -9~9°C

19>.Set Temperature Unit: Short press 'SET' button for the 21th time and then press 'UP' button to switch °C or °F

20>.Set display color: Short press 'SET' button for the 22th time and then press 'UP' button to switch 'dC-1' or 'dC-2' or 'dC-3' or 'dC-4'

21>.Set Alarm Rings: Short press 'SET' button for the 23th time and then press 'UP' button to switch rings for alarm.It will display 'dU-1' or 'dU-2' or 'dU-3'

22>.Calibration time: Short press 'SET' button for the 24th time and then press 'UP' button to calibrate the time value.Calibrate range is -9~9second.

23>.Display mode: Short press 'SET' button for the 25th time and then press 'UP' button to switch display mode.It will display 'dP-1' or 'dP-2' or 'dP-3' or 'dP-4'

24>.Save and Exit: Short press 'SET' button for the 26th time to save parameters and return to normal display status.