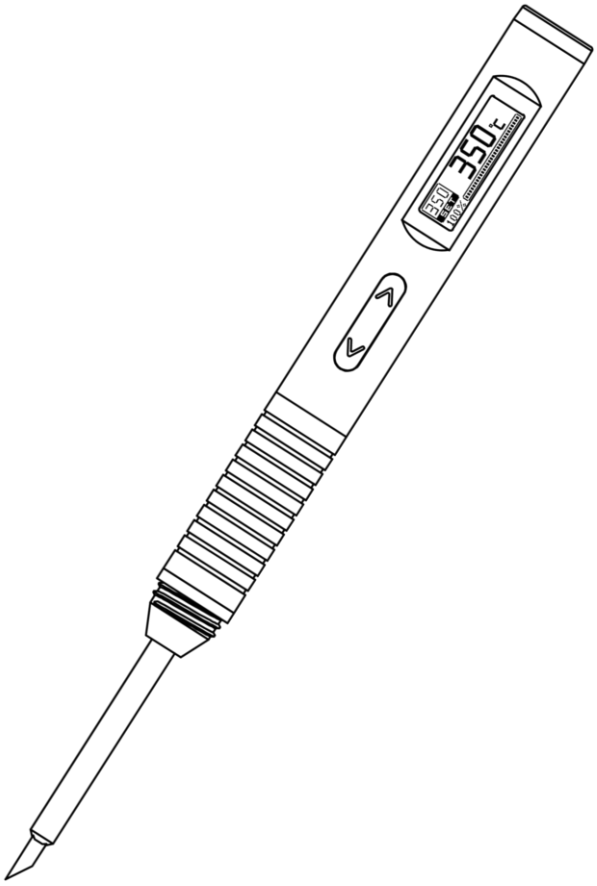
User Manual

T80&T80P Smart Soldering Iron

Pocket Size Soldering Iron

User Manual

ALIENTEK



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T80&T80P Smart Soldering Iron

User Manual

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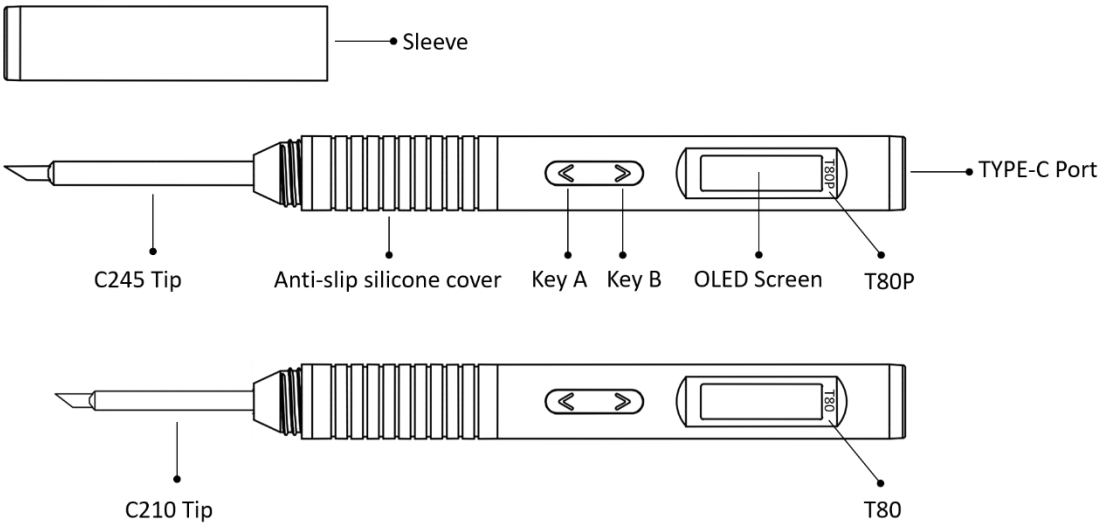
Thank you for purchasing this product. We recommend that you spend some time reading this user manual in order that you fully understand all the operational features it offers.

1. Description

T80&T80P smart soldering iron is a multi-functional soldering iron, it has the following characteristics:

- Use Type-C interface for power supply, support PD\QC fast charge protocol.
- Use OLED display, the effect is good.
- Support 9~20V working voltage range.
- Heating power 18 ~ 100W adjustable.
- Fast heating, can melt tin in 2 seconds (T80 @100W).
- Fast temperature recovery, no fear of large solder joints.
- Temperature control stability is 2%.
- Hand-held induction, smart sleep.
- Small size, easy to carry.
- Ergonomically designed handle, good grip.

2. Parts



Note: The T80 is the same as the T80P shell. The soldering tip used is different. Can't be used interchangeably!

3. Specifications

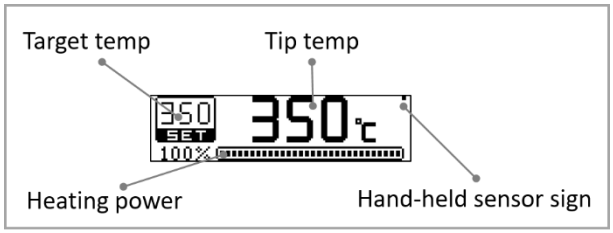
Model	T80	T80P
Power port	Type-C	
Operating voltage	DC 9~20V	
Fast charging protocol	PD2.0/3.0 QC2.0/3.0	
Temperature Range	80~450°C	

Heating power	18~100W①(adjustable)	
Screen	0.87' OLED (128*32 Pixel)	
Handle size	L175mm Ø14mm	
Tip model	C210	C245
Tip size	KU(L80mm Ø3.5mm)	KU(L98mm Ø4.5mm)
Resistance	2.1Ω	2.5Ω
Overall weight	38.5g	42.8g

Note : The recommended working power for T80 is 65W(Not include T80P). When set to 100W, it may affect the lifespan of the iron tip， Please use it carefully！

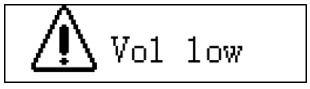
4. Installation

5. Interface

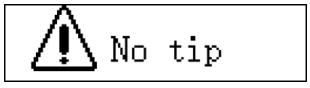


Main interface:

Hand-held sensor sign : when the handheld is detected, the point shows, otherwise it will disappear.

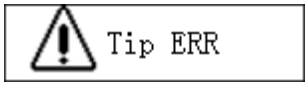


Low voltage prompts: the input voltage is lower than 9V screen will indicate "low voltage" and cannot be heated.

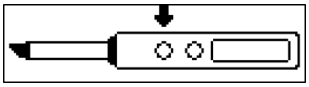


No soldering tip prompts: please insert the soldering tip.

Mos Err: MOS tube is broken down, please contact the manufacturer.

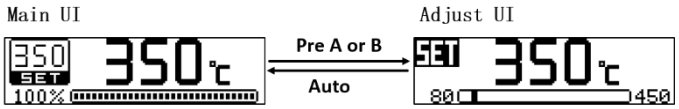


Abnormal soldering tip: The soldering iron tip is damaged, please replace the heating core.

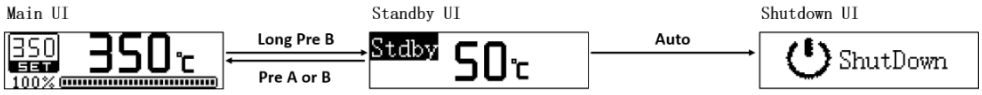


Start heating prompts: Press button A to start heating.

6. Operation

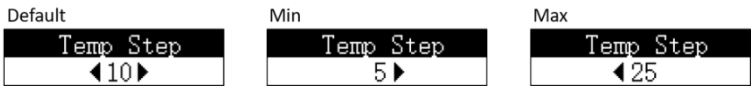


Temperature adjustment: click A or B to enter the temperature adjustment UI. And release the button first, then click or long press to adjust the temperature. After the adjustment, automatically return after 3 seconds.

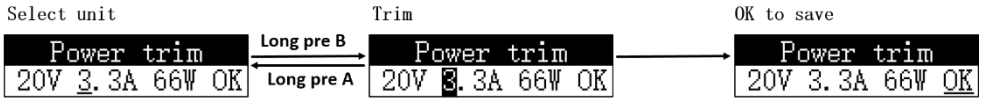


Manual shutdown: Long press B to enter the standby UI, and the temperature will drop to 50 degrees, and then the machine will shut down.

Menu operation: click A and B at the same time to enter the menu. Click A and B to slide the menu, long press A to exit, long press B to enter the next menu.



Parameter setting: Click A and B to increase or decrease the parameter value, Long press B to save the parameters and exit, long press A will not save the parameters.



Power trim: On the power tuning interface, Step 1: Click A or B to select unit (include the unit\decade\OK). Step 2: Long press B to confirm selection and trim, long press A to deselect. Step 3: Select OK and long press B to save and exit.

7. System flow

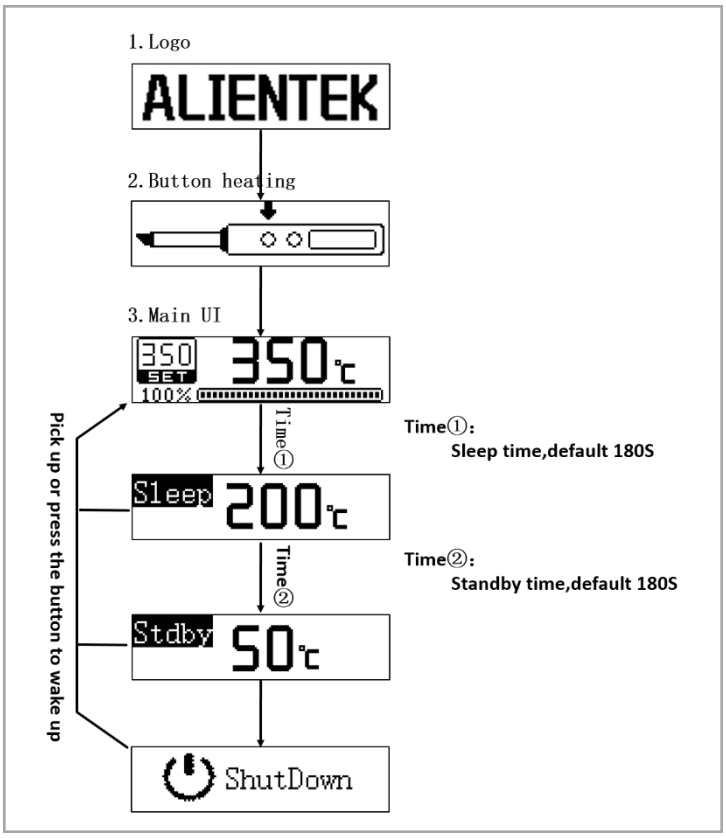


Figure 7-1 Work flow

After the T80&T80P smart soldering iron is powered on, it displays the logo first, Then it is prompted to press the A button to enter the main UI (the button heating UI can be set to turn on or off in the menu. After turning on, the machine will directly enter the main UI). In the button heating UI, if the A button is not pressed within 10 seconds, it will automatically shut down. In main UI, which is in a normal working state. The running status can be divided into the following four types:

- **Working state (main UI):** The soldering iron is heated, and the temperature is constant at the user's set temperature. If the handle is not used for a period of time (timing 1: sleep time), it will enter the sleep state.
- **Sleep state:** The soldering iron is heated, and the temperature is constant at the sleep temperature (the default is 200°). It will exit the dormant state and return to the main UI when it senses the hand held or presses the button. Otherwise, after a period of time (timing 2: standby time), it will enter the standby state.
- **Standby state:** The soldering iron is not heated. In the same way, it will exit the dormant state and return to the main UI when it senses a hand held or presses a button. Otherwise, the temperature of the soldering iron tip will slowly drop, and when it drops to 50°C, it will enter the shutdown countdown state, and when the countdown ends, it will enter the screen off state.
- **Screen off state:** The soldering iron is not heating. In this state, the system is running with low energy consumption, and restarts when it senses a hand held or presses a button.

8. Working voltage

The machine can set the heating power of different voltages from the fast charger to obtain different voltage and the corresponding voltage. However, the following two situations may occur:

1. Set the working voltage to 20V, and the actual output is only 12V. In this case, you need to set the working voltage in the menu to 12V.
2. The machine will restart in heating, which indicating that the output power of the fast charger is insufficient. In this case, you can enter the menu to fine -tune the power to achieve the maximum output power of the fast charging head.
3. Set the working voltage to Auto. Under the PD protocol, heating is performed according to the maximum power of the PD protocol. Under QC protocol, default output current 3A.

9. Menu

There are 14 items in the menu. The definition, factory value and adjustable range of each item are shown in the table below:

Menu item	Definition	Factory default	Adjustable range
1.Vol Info	Display input voltage and current tip temperature		
2.Temp Step	Temperature adjustment step value	10	5-25
3.Sleep Temp①	Target temperature after entering sleep state	200℃	80℃-300℃
4.Sleep Time	The time for the handle to stand still and enter the sleep state from the working state	180 秒	0 -1200S --:(No sleep) 0S:(Sleep immediately)
5.Stdby Time	The time for the handle to stand still and enter the standby state from the sleep state	180 秒	0-1200S --:(No standby) 0S:(Standby immediately)
6.Work Vol	Working voltage obtained from the fast charger and heating power of the corresponding voltage	20V/3.3A 65W	● Auto ● 20V/5A 100W① ● 20V/3.3A 65W ● 12V/3.0A 36W ● 12V/2.0A 24W ● 9V/3.0A 27W ● 9V/2.0A 18W
7.Power trim	Fine heating power, by adjusting the current	20V/3.3A 65W	0.1A-6.0A
8.Temp Unit	Display temperature unit	℃	● Celsius(℃) ● Fahrenheit(℉)
9.Language	Language selection	Simplified Chinese	● Simplified Chinese ● English

			● Traditional Chinese ● Japanese language
10.Rota 180	Rotate the display by 180 degrees, and the functions of buttons A and B are reversed. Suitable for left-hand work mode	Rota 0	● Rota 0 ● Rota 180 ● Auto
11. Po_heat	Turn on and off heat immediately after power-on	Turn off	● Turn on ● Turn off
12.Temp Trim②	Fine tune the error between the actual temperature and the displayed temperature	0	-50~50 ℃
13.Restore	Restore the parameters to the factory state		
14.Ver Info	Show version		

Note:

① Note : The recommended working power for T80 is 65W(Not include T80P). When set to 100W, it may affect the lifespan of the iron tip， Please use it carefully！

② **Temperature trim method: in working condition, set the target temperature to 350℃, use the soldering iron thermometer to measure the actual temperature after the temperature is stable, record the error between the target temperature and the actual temperature (the value can be positive or negative), and then enter the menu Fill in the error in temp trim value.**

③ **The step of sleep temperature adjustment is fixed at 10℃**

10. Firmware upgrade

Step 1: Scan the QR code below to download the latest firmware (e.g T80_APP. atk).

Download

Step 2: Power off the device, press and hold the B button, then use the USB Type-c cable to connect to the computer, power on the device, about 4 seconds, the screen displays "Upgrade...", then release the button. The operation is shown in Figure 10-1 below:

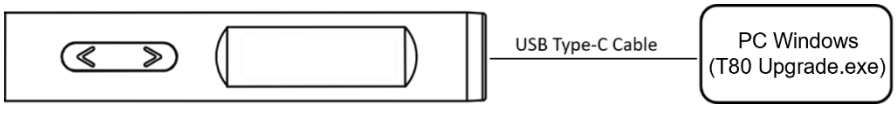


Figure 10-1 Connection

Step 3: Open the upgrade software, wait for the device to automatically connect, or click to re-connect. The connection is successful as shown in Figure 10-2 below:

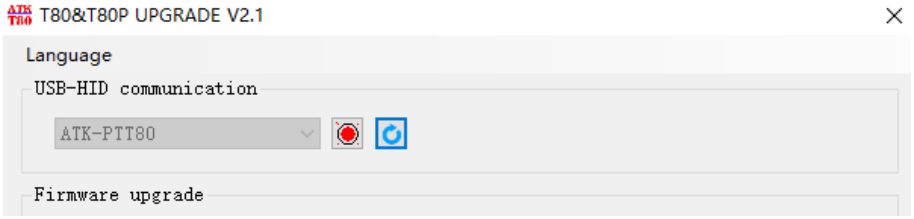


Figure 10-2 connection succeeded

Step 4: Select the local firmware, and load the T80_APP.atk file, click to start the upgrade and wait for the upgrade to complete. The operation is shown in Figure 10-3 below.

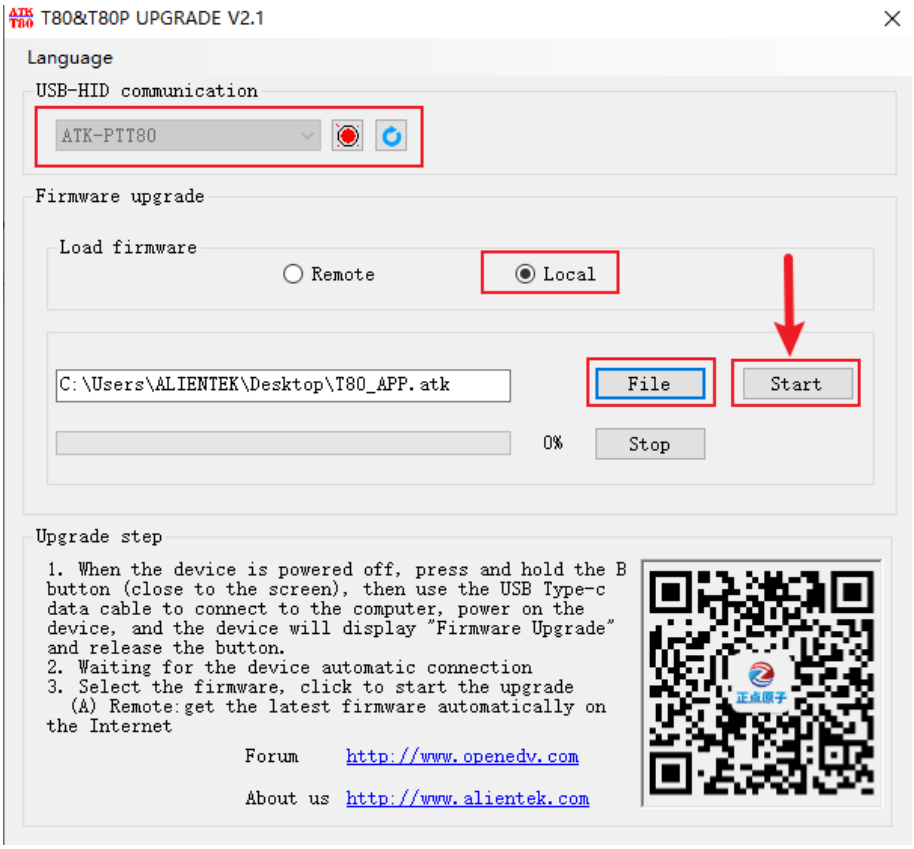


Figure 10-3 Firmware upgrade

11. ESD SAFE

When using a fast charging adapter to power the soldering iron tip, there may be induced electricity. There will be no problem with soldering ordinary components, but some sensitive components may be damaged. When soldering sensitive components, there are two solutions to ensure ESD SAFE:

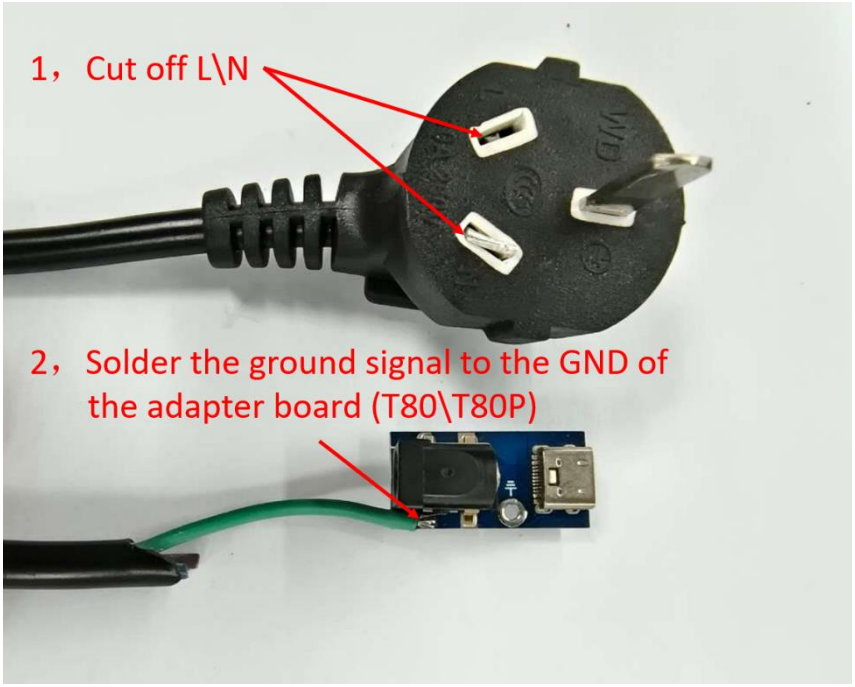
1. Use a fast charging power bank to power the device **(recommended)**.
2. Connect the device to the ground through an adapter board.

STEP:

a) Required materials: 1 power cord, 1 adapter board, 2 C2C cables

b) Cut off the L\N of the power cord and solder the ground wire to the GND of the adapter board. (T80\T80P)

As shown below:



c) Connect to the power strip, as shown below:

12. Maintenance

- **When the new tip is used for the first time, it is necessary to heat the tin to 250 ° C first to prevent dry burning oxidation!**
- **When the new tip is used for the first time, there will be a temperature jump problem, which will stabilize after a few hours of use!**
- After the soldering iron is used, apply proper tin to the tip of the soldering iron to prevent oxidation before disconnecting the power supply.
- The tip of the soldering iron works normally at a temperature of about 300 to 380 ° C. Do not use it for a long time (more than 420 ° C) to avoid the effect of dry burning on the life of the tip.
- Do not force the tip when welding.
- If the surface of the tip is not oxidized, use a cloth or other tool to carefully wipe the surface layer, then heat it to 200 ° C and immediately apply tin to the surface to prevent re-oxidation.
- Do not use wet sponge with bright water, semi-dry state is best, otherwise the soldering iron tip is easy to oxidize.
- Do not use flux containing chlorine or excessive acid to avoid corrosion of the surface

13. FAQ

The summary of common problems is shown in Table 12.1:

Problems and phenomena	Solution
Restarts when heating occurs	Check if the output power of the adapter is sufficient
Working voltage setting 20V, screen only displays 12V	Check the maximum output voltage of the adapter
Handheld sensing failure	Contact after-sales service

Table 12.1 Summary of issues

14. Serivices

1. After – sales Service:

T80&T80P host has a one-year free warranty service in the case of non-artificial damage. Please contact the dealer for warranty service. Soldering tips are consumables, if there is no quality problem, once used they will not be returned.

2. Website

Download : www.alientek.com/download
Company : www.alientek.com
Aliexpress : www.aliexpress.com/store/1102909571

3. Contact US

E-mail : fae-smt@alientek.com