正点原子

T100 Smart Soldering station

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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. Foreword

T100 is a smart multi-function soldering station. It has the following characteristics:

- Small size and light weight, portable.
- Fast heating, melting tin only takes 8 seconds.
- Use one-piece T12 tip for easy replacement without soldering.
- Idle Temp. Stability(still air):±2℃.
- 1.3 inch OLED screen, good display.
- Support external battery or power adapter for power supply, convenient for outdoor use.
- Support for charging external battery, adjustable charging current.
- Supports functions such as sleep, standby, and automatic shutdown.
- Support storage 6 sets of tips parameters, you can switch different tips to adapt to no application。

2. Specifications

T100 Smart Soldering Station	
Input AC voltage	AC 100~240V
Input DC voltage	DC 12~26V
Max power	108W
Heating power	72W
Temperature Range	100~500℃
Tip to ground resistance	<2Ω
Tip to ground voltage	<2mV
Host dimensions	120mm×88mm×38mm
Host weight	370g
Wire length of handle	1.1m

3. Packing list

- T100 Smart Soldering Station Host 1pcs
- Soldering Iron Handle 1pcs
- T12 TIP 1pcs
- Power Cable 1pcs
- Stand + Sponge(for wipe TIP) (optional)
- Tin wire + Rosin (optional)
- 24V 18650 Lithium Battery Pack (optional)

4. Parts description

4.1 Front panel

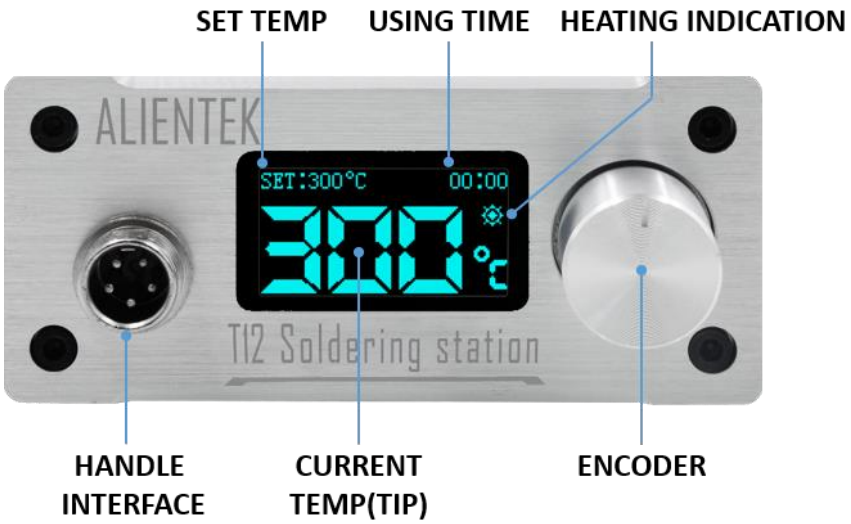

Fig 4.1 front panel

Set temp: range is 100~500℃.

Using time: In units of minutes, cleared after sleep.

Heating indication: display when heating, flashing at constant temperature, not displayed when cooling.

Encoder: rotate or click to adjust the set temp, double click to enter the setting menu.

4.2 Back panel

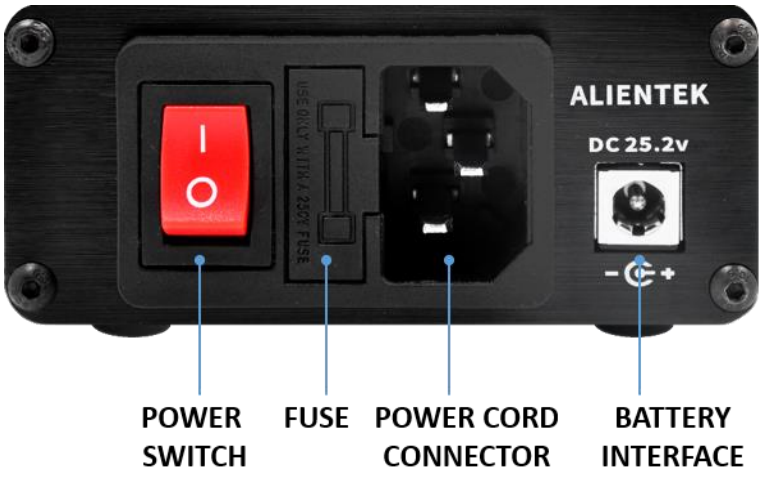

Fig 4.2 back panel

Power cord connector: input AC 100~240V.

Battery interface: input DC 10~26V.

4.3 Install iron tip and connect handle

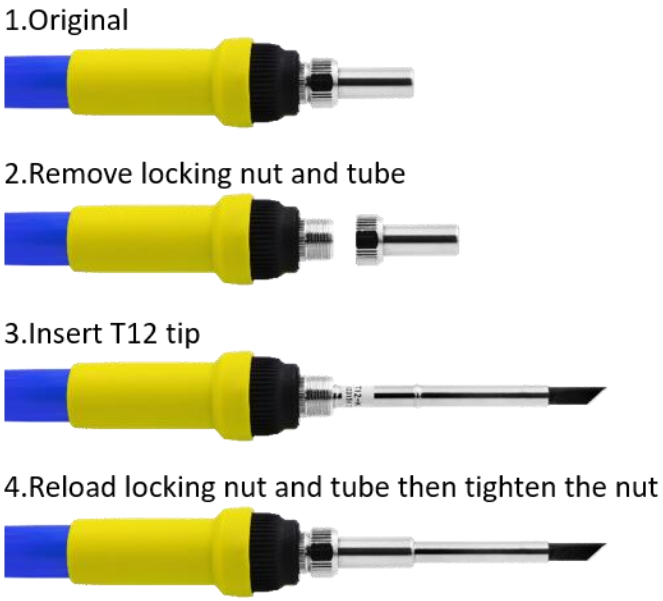

Fig 4.3 install iron tip

Fig 4.4 connect handle

5. Display description

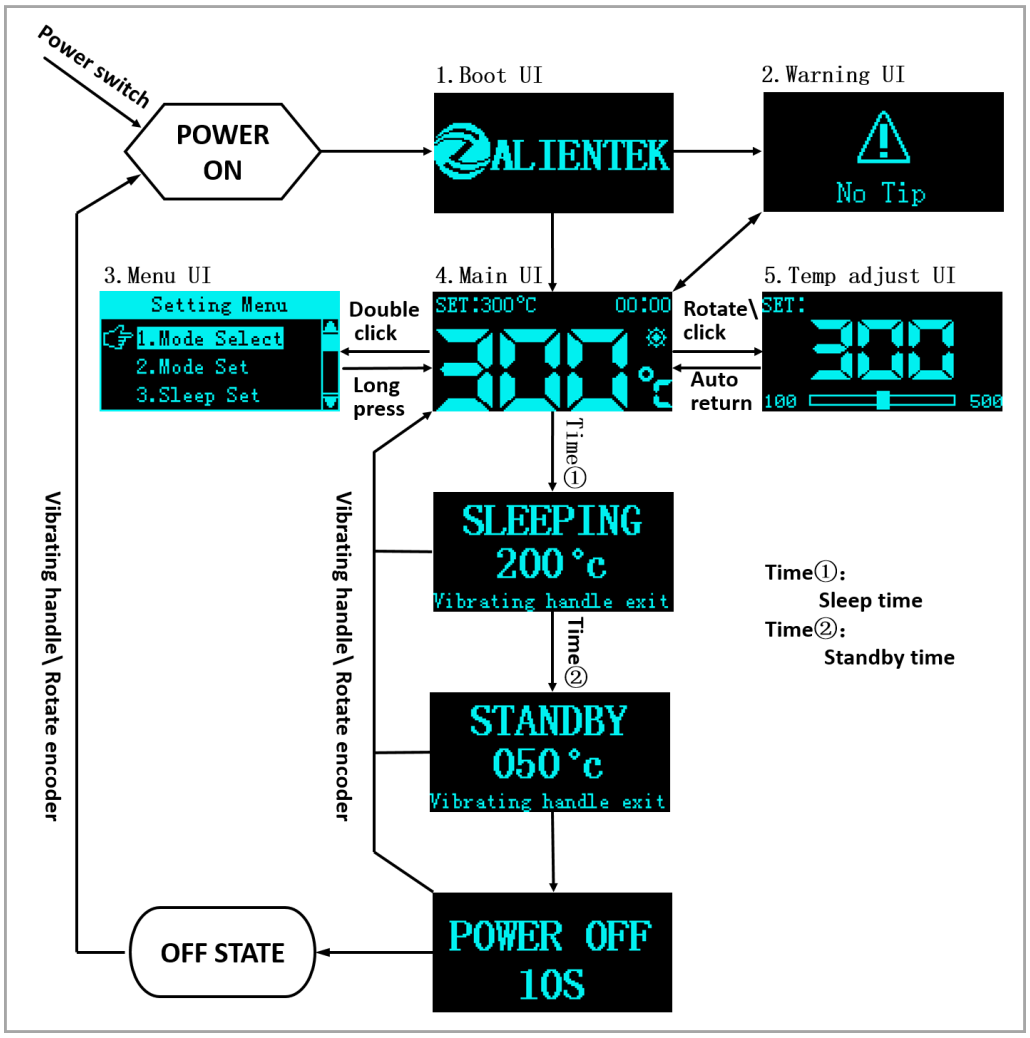

Fig 5.1 system flow

After the power switch is turned on, the soldering station starts to display the boot UI. If there is no access handle, prompt “No Tip”, otherwise enter main UI and the soldering station works normally. The working status of the soldering station can be divided into the following four types:

Normally: Heating and constant temperature at set temp.In the main UI, rotate or click the encoder to enter temperature adjust UI. You can adjust the set temperature by rotating and clicking the encoder. After the adjustment is completed, it will automatically return to the main UI. Double-click the encoder to enter the setting menu UI, long press the encoder will return to the main UI. When a period of time (Time①: Sleep Time) does not use the handle, does not rotate and clicks the encoder, it goes to sleep.

Sleeping： Heating and constant temperature at sleep temp. Vibrate the handle, rotate or click the encoder to exit the sleep state and return to the main UI. When a period of time (Time②: Standby time) does not use the handle, does not rotate, and clicks the encoder, it enters the standby state.

Standby： Not heated. Vibrate the handle, rotate or click the encoder to exit the standby state and return to the main UI. The temperature of tip drops from the sleep temperature,when it drops

to 50 ℃, it enters the ready-to-shutdown state, and then counts down for 10 seconds. After the timer is over, the screen goes out and the system enters the off state.

Off state： Not heated. The screen is off (Note: The power here is not disconnected!). In this state, the screen goes out and the system is running at very low power consumption. When the handle is detected to vibrate, rotate or click the encoder, it will restart.

6. Setting menu description

Note: Double-click the encoder on the main UI or warning UI to enter the menu UI, rotating the encoder to select the menu option, click to enter next menu, long press to exit.

6.1 Mode select

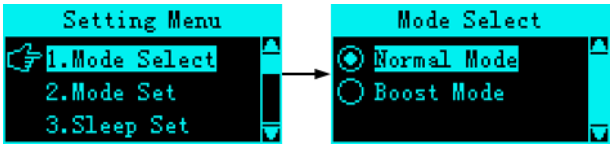

Fig 6.1 mode select

The soldering iron working mode (also called the temperature regulating mode) is divided into the normal mode and the boost mode. The temperature adjustment method: rotating or clicking the encoder in the main UI to enter the temp adjust UI, after the adjustment is completed, it will automatically return to the main UI.

Normal mode： In the temp adjust UI, click the encoder the set temp cycle in the four levels temperature (200, 300, 350, 450); rotating the encoder to adjust the set temp by step.

Boost mode： In the temp adjust UI, click the encoder the set temp switch between the boost temp (default 420) and the previous temperature; rotating the encoder to adjust the set temp by step. When returning to the main UI with boost temp, the boost countdown(boost time) will be displayed in the upper right corner of the main UI. After the temperature reaches the boost temp, the countdown will start.At the end of the timer, the set temp will return to the previos temp. The boost main UI is shown in Figure 6.2 below.

Fig 6.2 boost main UI

6.2 Mode set

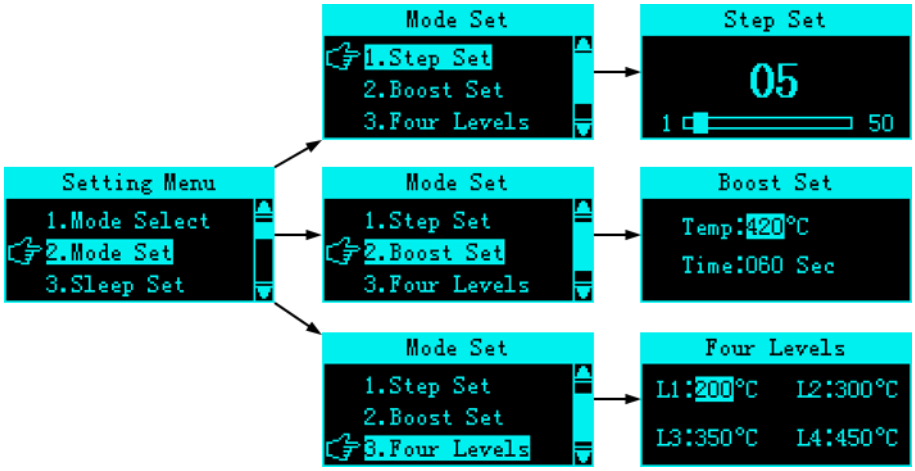

Fig 6.3 mode set

Step set: In the temp adjust UI, rotating the encoder to adjust the set temp to step by this value.

Boost set: Used in boost mode, including boost temp and boost time (boost countdown).

Four levels: Used in noamal moed,in temp adjust UI,clicking the encoder,set temp cycle in four levels (default 200 300 350 450℃).

6.3 Sleep set

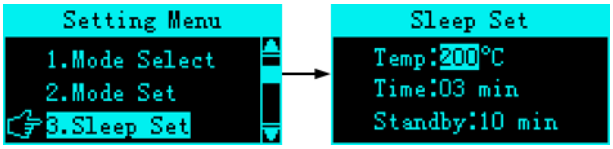

Fig 6.4 sleep set

Sleep temp: default 200℃.

Sleep time: In units of minutes, the setting range is 1~20 and 99. That is the time① in the control system flow chart of Fig. 1. In the normal working state, and the system enters the sleep state without using the handle, rotating or clicking the encoder within the specified sleep time. **Note: When set to 99, it means not sleeping! Do not sleep and will not enter standby!**

Standby: Standby time. In units of minutes. The setting range is 0~20. That is the time② in the control system flow chart of Fig. 1. In the sleep state, the system enters the standby state without using the handle, rotating or clicking the encoder within the specified standby time. **Note: When set to 0, it means that the soldering iron skips sleep and direct standby!**

6.4 Tip select

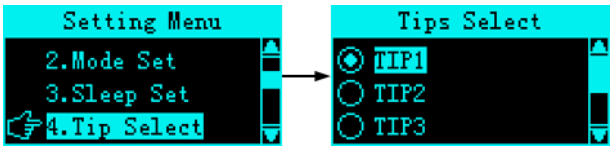

Fig 6.5 tip select

The system can save 6 tip calibration parameters, the user can select, calibrate and save any one. (Note: the factory default selection of the tip 1 is suitable for the tip of this soldering station)

6.5 Tip calibration

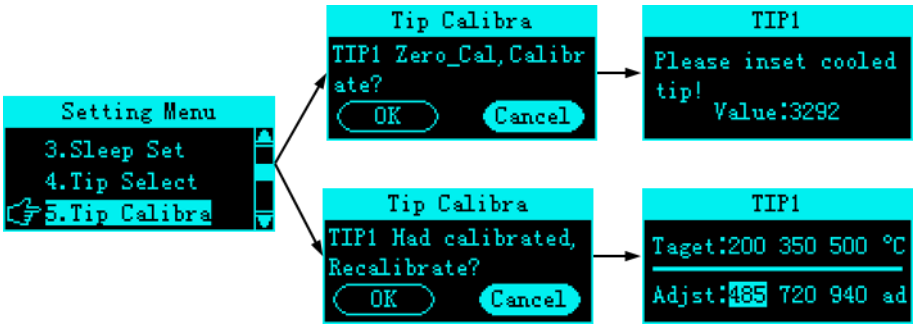

Fig 6.6 tip calibration

The tip calibration is divided into the following three steps:

Step 1: Select the tip to be calibrated.

Step2: zero calibration. Disconnect the handle from the soldering station host. Double-click the encoder in the warning UI to enter the menu interface, select “5. Tip calibration”, the interface prompts “Tip 1 zero calibration, calibrate?”, select OK and click the encoder, interface Prompt "Please insert a cooled soldering iron!", make sure the tip has cooled to room temperature, then connect the handle to the host. Finally, the interface prompts "Calibration succeeded!" and displays the calibration value.

Step3: 3-point temperature calibration. The handle and the soldering station host are normally connected. Double-click the encoder in the main UI to enter the menu UI, select “5. Tip calibration”, the interface prompts “The tip 1 is calibrated, determine recalibration?”, select OK and click the encoder, the interface “Target: 200 350 500 °c” is displayed, 3 target temperature points, “Adjustment: 493 650 916 ad” is the calibration parameter value corresponding to the temperature point. Calibrate 200 °C, place the tip on a professional soldering iron temperature measuring instrument, turn the encoder to adjust the parameter value, the temperature of the soldering iron will change in real time, so that the temperature of the thermometer is stable at 200 °C (Note: Thermometer The display has a hysteresis, it takes a while to wait), and the 200 temperature point is calibrated. Then click the encoder to calibrate the 350 temperature point, click the encoder to calibrate 500 temperature point, and finally click to exit the calibration interface, and the calibration is complete.

Note: The soldering station has calibrated. The default is the soldering iron tip 1. If there is no professional soldering iron temperature measuring instrument, it is not recommended to recalibrate!

6.6 Beep set

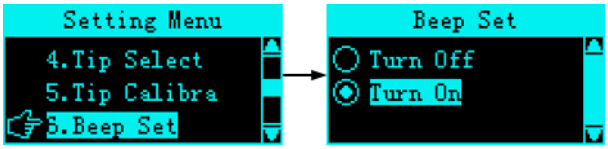

Fig 6.7 beep set

The beeper is used to indicate that the iron temperature reaches the target temperature ("beep beep"), power on ("beep"), enters boost mode, and exits boost mode ("beep"). The default is open and the user can turn it on or off as needed.

6.7 Auto shutdown

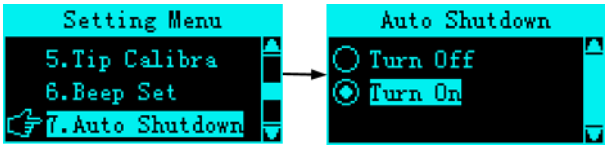

Fig 6.8 auto shutdown

In the standby state, after the soldering iron temperature drops from the sleep temperature to 50 ℃, if the automatic shutdown is turned on, the device enter the countdown state, and the system is turned off after the countdown ends. If Auto Power Off is off, it remains in standby.

6.8 DC Power

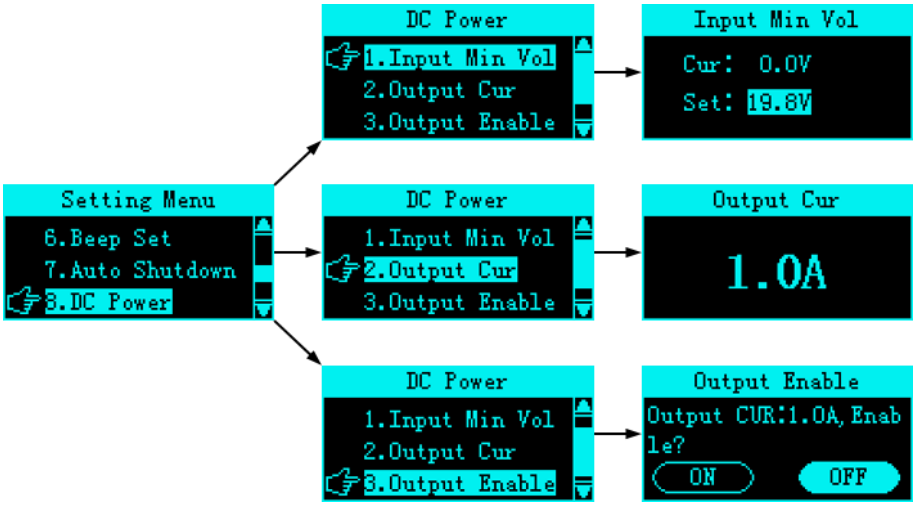

Fig 6.9 DC Power

Input min voltage: When the AC power supply is disconnected from the external battery, the voltage is lower than this value, the soldering iron stops heating, and the system will warn that the

voltage is low as shown in Figure 5.1. The default is 19.8V, which is 6S lithium battery pack × 3.3V. Usually, the lithium battery is basically less than 3.3V. This parameter can be adjusted (10~26V), and user can adjust the value according to battery.

Fig 6.10 battery low

Output current: range: 0.1~1.5A (default 1A). When AC power is used and the battery is connected, this value is the current that charges the battery.

Output Enable: Turns charging on or off.

Note: The output voltage is 25.2V, only supports 6-cell lithium battery pack charging!

6.9 Language

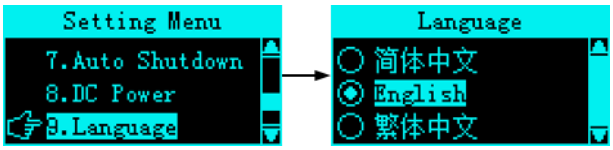

Fig 6.11 language

The system supports three languages: Simplified Chinese, English, and Traditional Chinese.

6.10 Version information

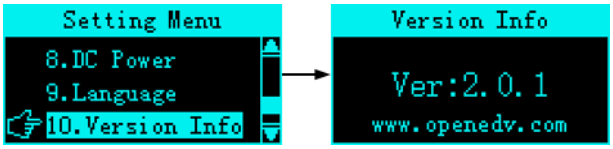

Fig 6.12 version information

Version information: The firmware version of the current soldering station.

6.11 Factory reset

Fig 6.13 factory reset

Factory reset: Restores most of the setup parameters to factory values, but does not include language selection.

7. Firmware upgrade

1. Disconnect the power supply, disconnect the handle and the host, use cable to connect the USB to TTL serial port module and the host according to the following Figure 7.1 connection.

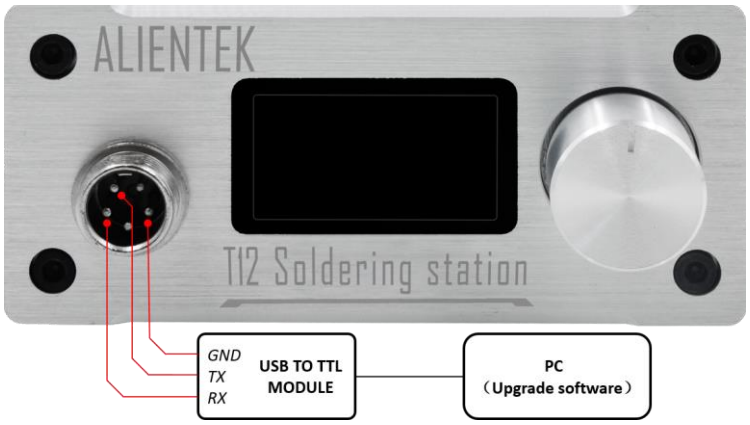

Fig 7.1 upgrade connection

2. Press and hold the encoder then power on, wait until the screen displays “Firmware Upgrade” and release the encoder, as shown in Figure 7.2 below.

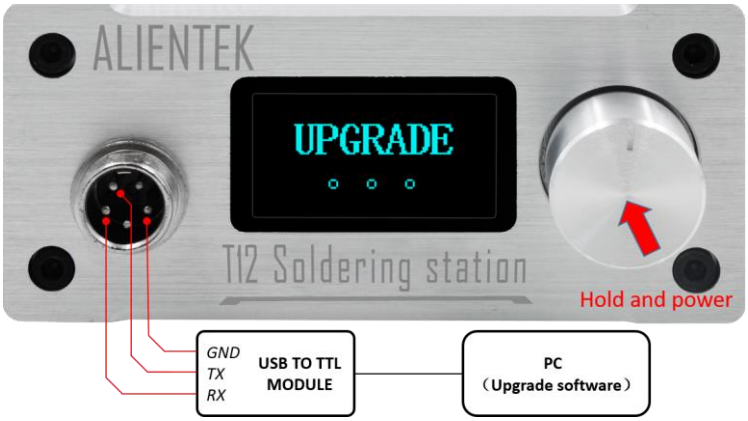

Fig 7.2 enter upgrade

3. Open the firmware upgrade software, select the serial port number, open the serial port, select the serial port upgrade, open the upgrade file (.atk file), and finally click start upgrade and wait for the upgrade to complete. The operation is shown in Figure 7.3 below.

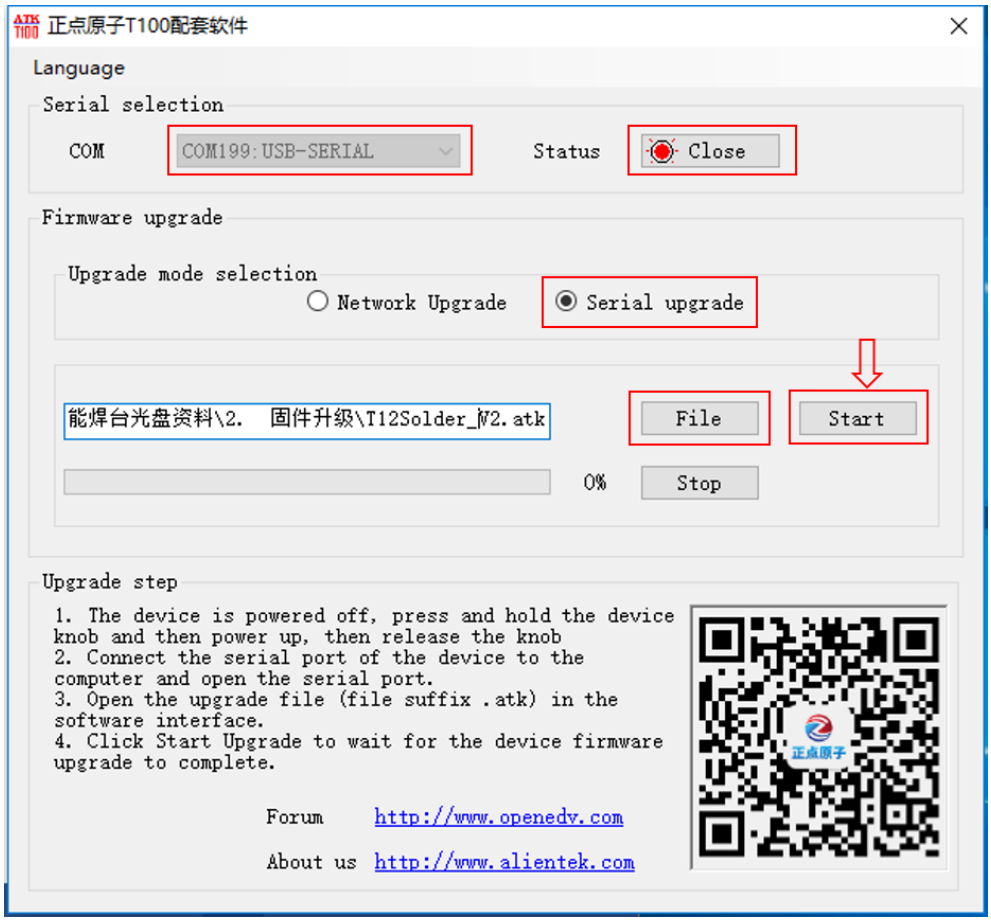

Fig 7.3 upgrade software operation

4. The upgrade is successful and the screen is shown in Figure 7.4 below. The system will automatically restart after the upgrade is complete.

Fig 7.4 upgrade success

8. Maintenance

note:

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.

9. Precautions

- Do not drop or hit the machine!
- Do not get the machine wet or use it in a humid environment to avoid the risk of electric shock due to short circuit in the internal circuit!
- The temperature of the soldering station can reach 100~500 ℃ during normal operation. Do not touch the soldering iron!
- When replacing the tip, turn off the power and replace it when the tip is cooled to room temperature!
- Never connect the handles of other manufacturers to this soldering station! Different manufacturers handle interface definitions are different!
- There is a high voltage circuit in the soldering station, so don't disassemble it!

10. Warranty items

1. The term of service
   Guangzhou Xingyi Electronic and Technology Co., Ltd promise good quality products. If the product is defective unit by normal use within 7 days after purchasing, the customer can choose to return or repair warranty (doesn't affect the secondary sales after they can return) Faulty of normal use for free repairing within one year warranty.
2. Date of purchase is in accordance with invoice date or receipt date issued by seller. Online shopping can cut trade shots.
3. For the following cases, we do not provide free warranty service
   (1) All man-made damage, including abnormal use or do not follow the guide;
   (2) The iron tip is a consumable item, no warranty.

11. Others

1、 Shopping:
Official shop1: https://openedv.taobao.com
Official shop2: https://eboard.taobao.com

2、 Data Download
Download Address: http://openedv.com/thread-296324-1-1.html

3、 FAE
Website: www.alientek.com
Technology Forum: www.openedv.com
Fax: 020-36773971
Phone: 020-38271790