T100 Smart Soldering Station

Smart Soldering Station

ALIENTEK

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Revision history

Version	Date	Modify
V1.0	2019/11/18	First release
V1.1~V1.4	2021/12/21	Modify some details
V1.5	2023/07/26	Change the handle and related images

Contents

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

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.
- 1.3 inch OLED screen, good display.
- Idle Temp. Stability(still air):±2℃
- Support fast charging power bank, type-c port (PD/QC).
- Supports functions such as sleep, standby, and automatic shutdown.

2. Specifications

T100 Smart Soldering Station	
Input AC voltage	AC 100~240V
Type-C fast charge protocol	PD2.0\QC3.0
Type-C obtain voltage[①]	20V
Max power(internal power)	108W
Heating power(internal power)	72W
Heating power(Type-c power)	50W @20V
Temperature Range	80~500°C
Tip to ground resistance	<2Ω
Tip to ground voltage	<2mV
Host dimensions	120mm×88mm×38mm
Host weight	370g
Handle length	1.3m

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)

4. Install before use

4.1 Install the iron tip

1.Original

2.Insert Soldering tip

4.2 Inset the handle

Handle arrow pointing up then insert

5. Panel description

5.1 Front panel

Fig 5.1 front panel

Set temp: range is 80~500℃.

Using time: In units of minutes.

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.
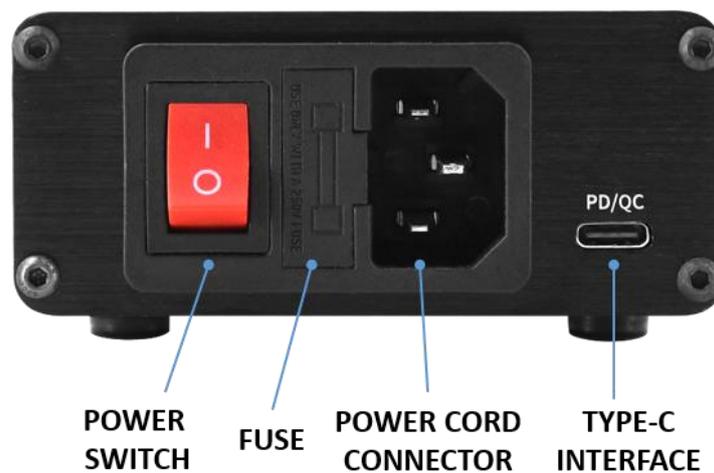
5.2 Rear panel

Fig 5.2 back panel

Power cord connector: input AC 100~240V.

Type-C interface: Connect a power bank that supports fast charging, support PD2.0 \ QC3.0 fast charge protocol (note: 20V by default, 50W heating power).

Note:

    1. Some quick chargers can only output 12V, heating power is only 18W.

    2. The maximum power output of some quick chargers is not enough to work normally, the machine will restart when it starts to heat up, please replace with another one with sufficient power.
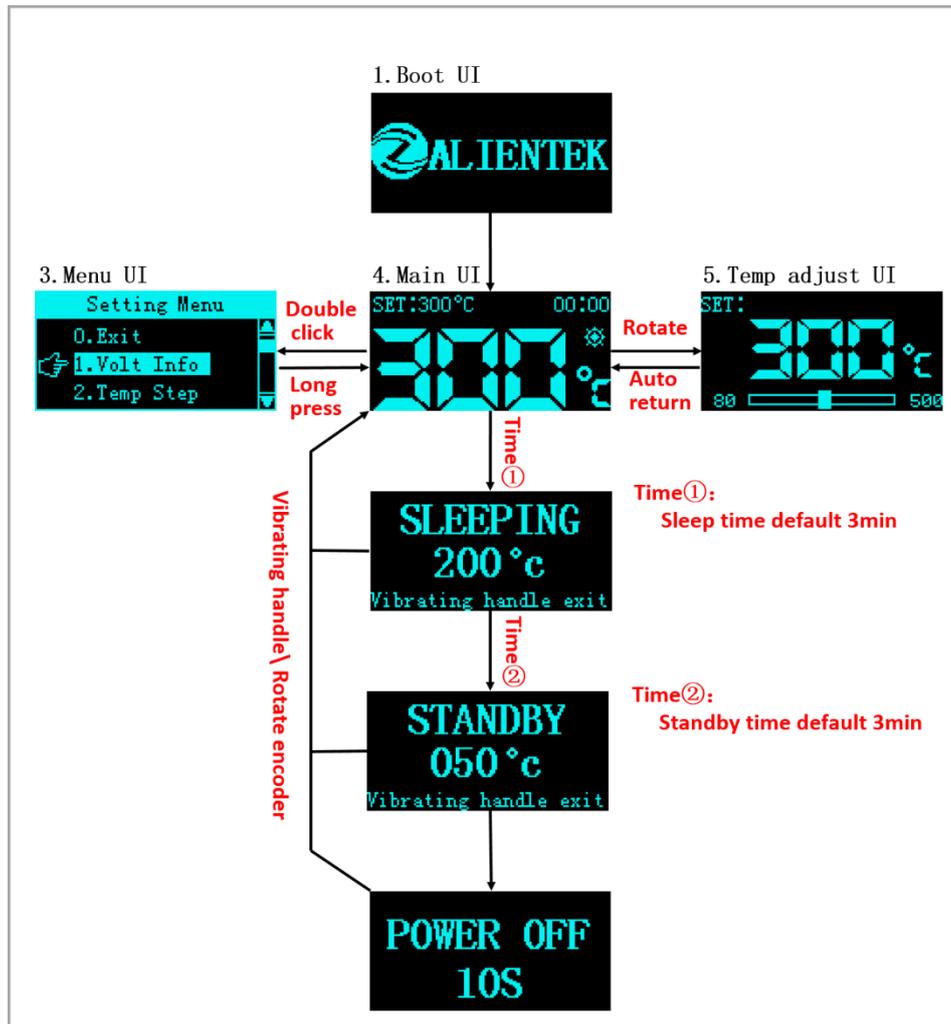
6. Display description

Fig 6.1 system flow

As shown in Figure 6.1 System work flow chart, the working status of the soldering station can be divided into the following four types:

Normally(Main UI): Heating and constant temperature at set temp. Click the encoder to cyclically adjust the set temperature [200, 350, 450], and rotate the encoder to adjust the set temperature step by step. During a period of time (time①: sleep time), the controller will enter the sleep state without using the handle.

Sleeping： Heating and constant temperature at sleep temp. Vibrate the handle, rotate or click the encoder to exit the sleep state. For a period of time (Time②: Standby time), it will enter the standby state without using the handle.

Standby： Not heated. Vibrate the handle, rotate or click the encoder to exit the standby state. The temperature of tip drops from the sleep temperature,when it drops to 50 ℃, it enters the ready-to-power off 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.
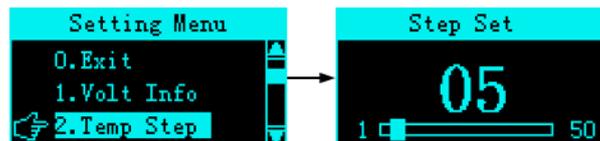
7. Setting menu description

Note: Double-click the encoder to enter the menu UI, click to enter next menu, long press to exit.
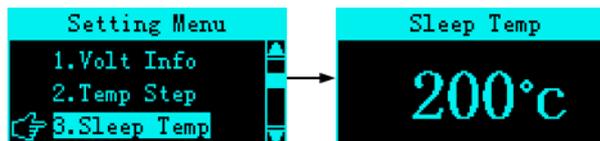
6.1 Voltage info
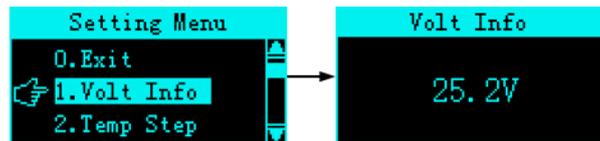
Display the current working voltage. If 220V is connected, the internal power supply voltage is 25.2V. If type-c is connected, shows 20V (the maximum output voltage of different quick chargers may be different).
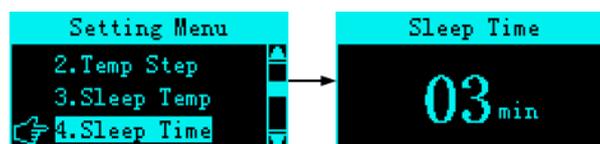
6.2 Step set

Rotate the encoder to adjust the set temperature in steps of this value.
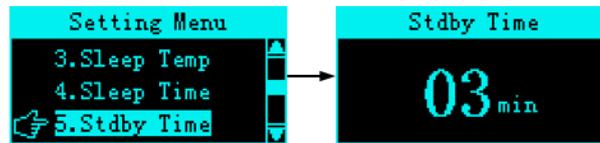
6.3 Sleep temp

If the handle is not used during the sleep time, it will enter the sleep state and constant this temperature.

6.4 Sleep time

In the normally state. If the handle is not used during the sleep time, it enters the sleep state, and the vibrating handle or rotary encoder exit. This time range:10sec~20min,or turn off.

6.5 Standby time

In the sleeping state. If the handle is not used within the standby time, it enters the standby state, the tip no heating, and the vibrating handle or rotary encoder exits. This time range: 10sec~20min,or turn off.

6.6 Temp trim
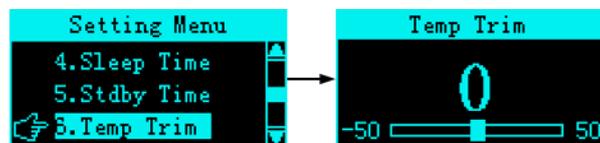
Temperature fine -tuning: If the temperature is set at 350 degrees, the user feels that the actual temperature is less than 350 degrees, and this value can be increased.

6.7 Auto power off
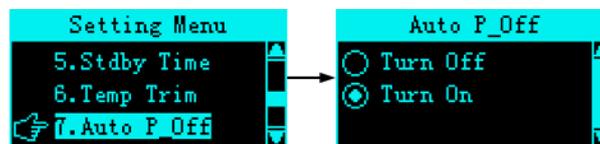
In the standby state, after the soldering iron temperature drops from the sleep temperature to 50 ℃, if this value is turned on, the device enter the countdown state, and the system is turned off after the countdown ends. If this value is turned off, it remains in standby.
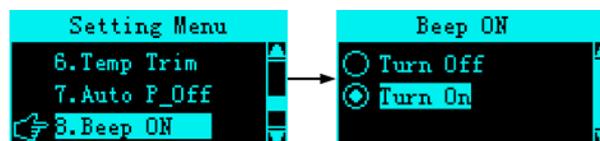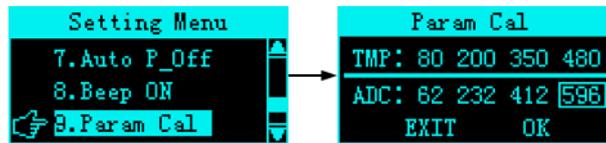
6.8 Beep ON

Fig 7.1 beep set

Turn beep sound on or off.

6.9 Parameter calibration

Note: Temperature calibration requires a soldering iron thermometer!

TMP: Show the calibration temperature point;

CAL: After using the soldering iron thermometer to measure the actual temperature, adjust this value.

After all the temperature points are measured, choose OK to save. (Note: After saving, the temp trim value will be automatically set to 0).

The soldering iron thermometer is shown below:
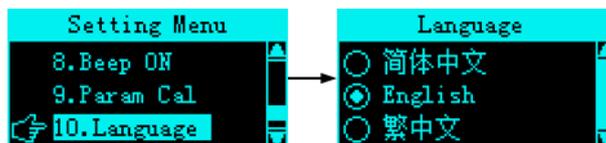

6.10 Language

Fig 7.2 language

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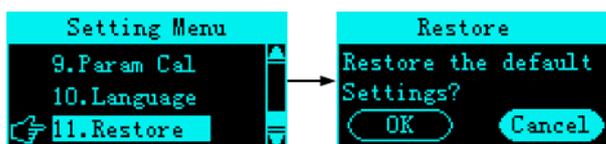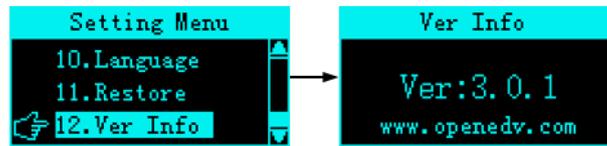
6.11 Restore

Fig 7.3 factory reset

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

6.12 Version information

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

8. Firmware upgrade

Step 1: Scan the QR code below to download the latest firmware (T100_APP. atk).

Download

Step 2: Press the knob, then insert the Type-C data cable, and connect to the computer. After the screen displays the firmware upgrade, release the knob. The operation is shown in the figure below 8.1:
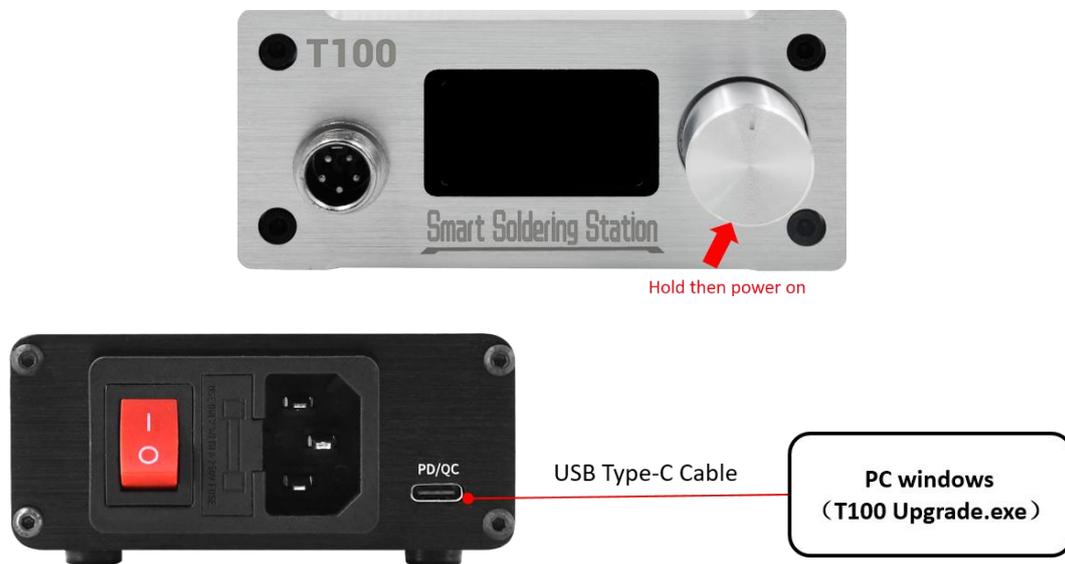

Fig 8.1 upgrade connection

Step 3: After the Type-C data cable is connected to the computer, the device manager of the computer will display the serial port number, as shown in Figure 8.2 below.
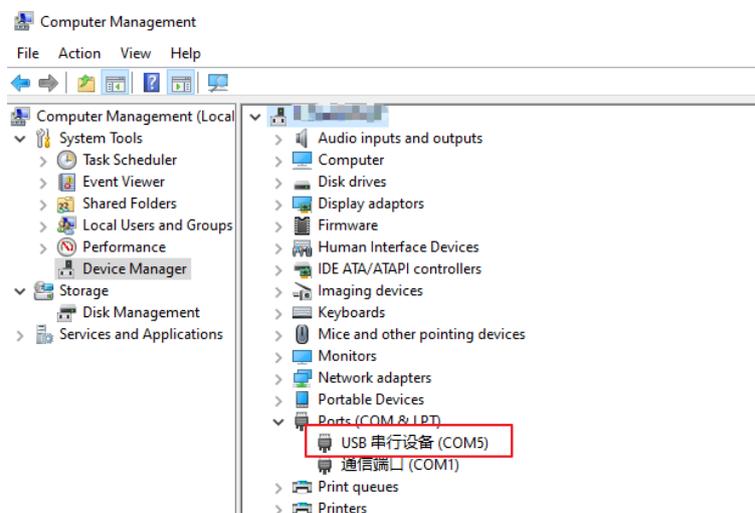
Fig 8.2 serial port number

Step 4: Open the firmware upgrade software, select the serial port number, open the serial port, select the network upgrade, and finally click start upgrade and wait for the upgrade to complete. The operation is shown in Figure 8.3 below.

Fig 8.2 upgrade software operation

Step 5: The upgrade is successful and the screen is shown in Figure 8.4 below. The system will automatically restart after the upgrade is complete.

Fig 8.3 upgrade success

9. Maintenance
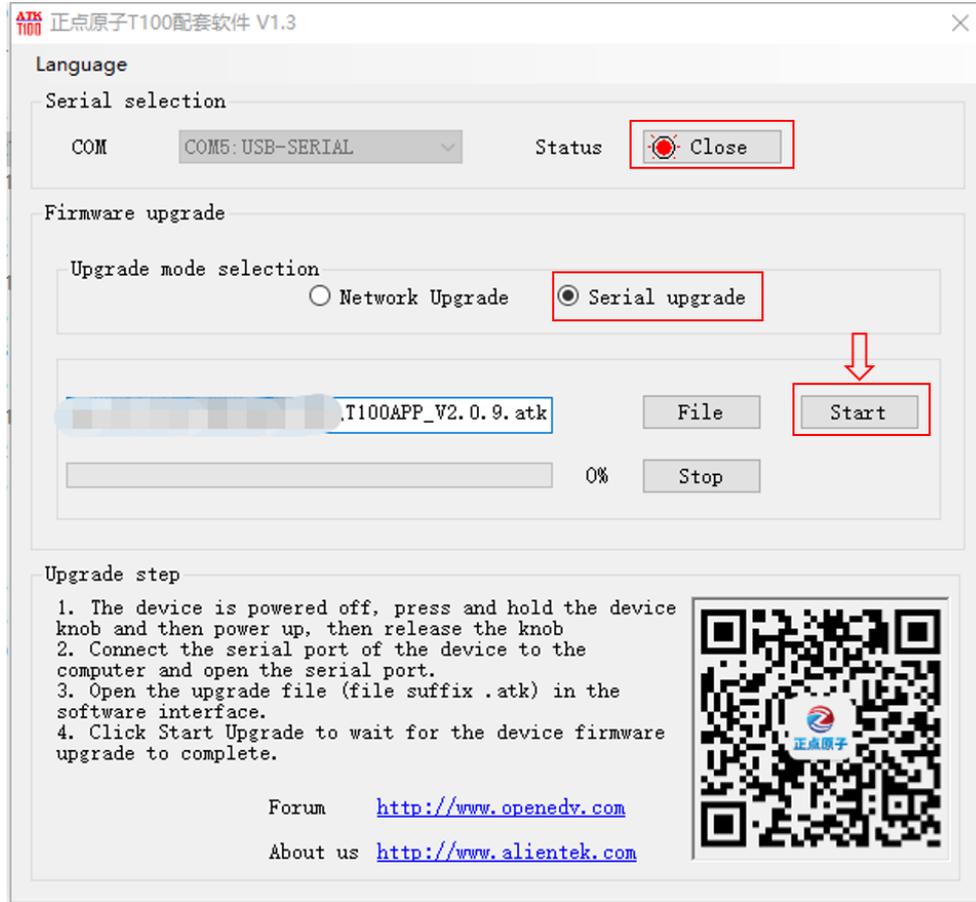
When the new tip is used for the first time, it is necessary to heat the tin to 250 ° C first to prevent dry burning oxidation!

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.

10. 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 °C 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!

11. FAQ

The summary of common problems is shown in Table 6.1:

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

Table 6.1 Summary of issues

12. Serivices

1. After – sales Service：

　　T100 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