User Manual

HP15 Heating Plate User Manual

High performance mini constant temperature heating plate

User Manual

ALIENTEK

Revision history

Version	Date	Modify
V1.0	2024/10/23	First release
V1.1	2024/11/28	Add temperature adjustment during the heating process, shortening the setting wait time.
V1.2	2025/09/25	Newly added logo icon, newly added introduction of Bluetooth function, expanded adjustable range of reflow soldering.

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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.

Safety Instructions

1, The HP15 supports power supply via either a DC port or a Type-C port, but not both simultaneously. Using both at the same time may damage the device.
2, The HP15 requires a suitable power supply (default 100W). If the power supply is insufficient, it may cause the device to restart. In this case, please adjust the power supply setting to an appropriate level in the menu.
3, After powering on and heating, please do not touch the heating surface to avoid burns. You can roughly determine the temperature by observing the indicator lights (green indicates low temperature, red indicates high temperature).
4, During the first use or after prolonged storage, slight smoke or odor may occur while heating, which is normal. After heating for a period, it will return to normal.
5, After the use of the heating table, there may be a slight yellow/dirty, which is a normal phenomenon, pay attention to the maintenance of the heating table.
6, If a lower power supply (such as less than 40W) is used for the HP15, it may not reach the preset temperature. Please switch to a higher wattage power supply.
7, The HP15 has a maximum temperature tolerance of 350℃. Avoid keeping the device at the highest temperature for extended periods. Please turn off the power when finished or leaving to prevent fire hazards.
8, Please do not disassemble or modify the product. Before use, review this manual and store the product properly to prevent children from accidentally activating the heating function and causing injury.

1, Product Introduction

HP15 is a high performance mini constant temperature heating table. The product has the following characteristics:

- Support DC power supply or Type-C power supply.
- Type-C power supply supports PD2.0 and PD3.0 fast charging protocols.
- PID temperature control for precise and rapid temperature regulation.
- Supports a heating temperature range from 80°C to 350°C.
- Supports 150W high-power heating for rapid temperature rise.
- Supports constant temperature heating and reflow soldering dual working modes.
- Support lamp temperature prompts, color changes with temperature
- Supports tilt detection for safer usage.

- Supports power output adjustment, ensuring good power supply compatibility.
- Supports reverse polarity protection and over-temperature protection, enhancing safety.
- Support firmware upgrade function.
- Split design for easy maintenance.
- Compact size for easy portability.

2，Technical Parameter

Items	Description
Input voltage	Input voltage is DC 12V to 24V (note that Type-C and DC inputs cannot be used simultaneously!)
Fast charging protocol	PD2.0 / PD3.0
Power limitation	30W ~ 150W
Temperature range	80℃ ~ 350℃
Area of heating	50mm×50mm
Angle of toppling	20° ~ 50°
Standby power	≤ 0.5W
Temperature stability	±3%
Screen parameters	0.96 inch IPS LCD 160×80
Dimensions	72.5mm(L)×55.6mm(W)×41.5mm(H)
Weight	≈100g

Table 2.1 Characteristic

3，Packing list

- HP15 host 1pcs
- C2C cable 100W 1pcs
- Simple paper manual 1pcs
- Box of packaging 1pcs
- GaN Charger 65W (Optional)
- GaN Charger 100W (Optional)

4， Quick Start

4.1 Appearance description

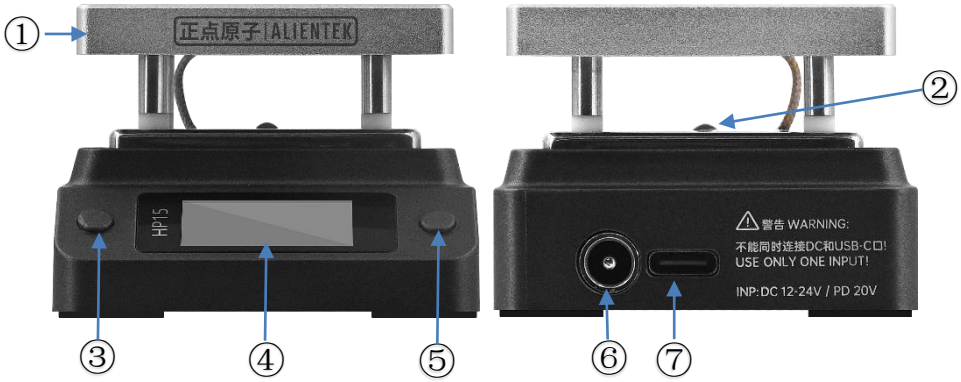

Figure 4.1.1 HP15 Appearance

Description

① Heating table（50mm*50mm）
② RGBLED color lights
③ Left button
④ 0.96-inch IPS LCD
⑤ Right button
⑥ DC power supply interface（12V-24V）
⑦ Type-C power supply interface（Max 20V）

4.2 Functional details and operating instructions

4.2.1 RGBLED description

The HP15 is equipped with an RGBLED to indicate the current temperature of the heating element. The RGBLED will change color gradually as the temperature rises, with colors corresponding to temperature values as shown in Table 4.2.1.1.

Color	Temperature
Pure green	≤50℃
Green gradually transitions to yellow	50℃ ~ 90℃
Yellow gradually transitions to white	90℃ ~ 125℃
White gradually transitions to purple	125℃ ~ 165℃
Purple gradually transitions to red	165℃ ~ 200℃
Pure red	≥200℃

Table 4.2.1.1 Color to temperature

4.2.2 Main interface

The main interface of the HP15 features four functional options: Refl(Reflow), Heat, Menu, and Info(Information), as shown in Figure 4.2.2.1.

Figure 4.2.2.1 Main interface

The descriptions of the main interface functions are shown in Table 4.2.2.1.

Options	Function
Refl(Reflow)	Simulated reflow soldering function, which automatically heats in stages according to preset temperatures and times.
Heat	Constant temperature heating function, according to the preset temperature constant temperature heating.
Menu	Parameter configuration.
Info(Information)	View current device status information.

Table 4.2.2.1 Main interface function description

The operation instructions for the main interface are shown in Table 4.2.2.2.

Buttons	Click	Long-Press
Left	Skip an option to the left	Invalid
Right	Skip an option to the right	Enter the selected option's function

Table 4.2.2.2 Main interface operation instruction

4.2.3 Reflow interface

This interface simulates the reflow soldering function, where the HP15 performs staged temperature control based on the user-set target temperature and time. The reflow soldering process is divided into four stages: heating stage, holding stage, soldering stage, and cooling stage.

The reflow soldering interface description is shown in Figure 4.2.3.1.

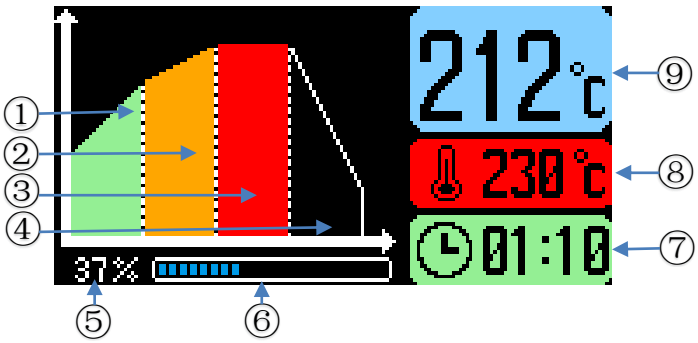

Figure 4.2.3.1 Reflow interface

The descriptions of the reflow interface functions are shown in Table 4.2.3.1.

Number	Function
①	Heating stage, the device rapidly heats according to the preset temperature and time. Once the countdown ends and the preset temperature is reached, the heating stage concludes, remains illuminated, and automatically transitions to the next stage.
②	Holding stage, the device gradually heats according to the preset temperature and time. Once the countdown ends and the preset temperature is reached, the holding stage concludes, remains illuminated, and automatically transitions to the next stage.
③	Soldering stage, the device first rapidly heats to the preset temperature. After reaching the preset temperature, it begins a countdown according to the preset time, maintaining a constant temperature until the countdown ends, at which point it automatically transitions to the next stage.
④	Cooling stage, the device stops heating and activates the fan for cooling. Once the temperature cools down to the preset value and the countdown ends, the reflow soldering process concludes, and the interface automatically returns to the main screen.
⑤	Power ratio, real-time display of the current heating power and power supply percentage value.
⑥	Power progress bar, according to the power percentage value dynamic display power progress bar.
⑦	Preset time, preset time countdown display for each stage, can be set through the menu.
⑧	Preset temperature, four stage target temperature, can be set through the menu.
⑨	Current temperature, real-time display of the current heating table temperature.

Table 4.2.3.1 Reflow interface function description

The operation instructions for the reflow interface are shown in Table 4.2.3.2.

Buttons	Click	Long-Press
Left	Invalid	Return to the main interface
Right	Invalid	Invalid

Table 4.2.3.2 Reflow interface operation instruction

4.2.4 Heat interface

This interface maintains constant temperature heating. The HP15 will quickly heat from the current temperature to the preset constant temperature based on user-defined values and maintain that temperature until the heating time expires or the user manually exits.

Constant temperature heating allows for three preset temperature values (T1, T2, T3). During the heating process, users can freely switch between the three preset temperatures using the buttons, as shown in Figure 4.2.4.1.

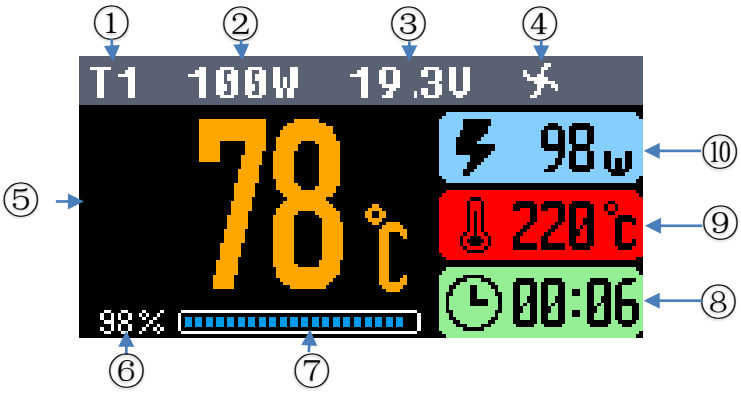

Figure 4.2.4.1 Heat interface

The descriptions of the heat interface functions are shown in Table 4.2.4.1.

Number	Function
①	Preset temperature label, three temperature values can be preset: T1 / T2 / T3
②	Power supply value [1], manually set the output power of different power supply, can be configured in the menu.
③	Current voltage value, real-time display current input voltage value.
④	Fan icon. If the icon lights up, the fan is turning. If the icon disappears, the fan is off.
⑤	Current temperature, real-time display of the current heating table temperature value.
⑥	Power ratio, real-time display of the current heating power and power supply percentage value.
⑦	Power progress bar, according to the power percentage value dynamic display power progress bar.
⑧	Heating time, record the time used for heating, heating timeout automatically returned to the main interface.
⑨	Preset temperature, target temperature for heating, and maintain constant temperature after reaching the preset temperature.（Press and hold the right button to enter temperature adjustment mode and adjust the current preset temperature [2].）
⑩	Current power, real-time display of the current power used for heating.

Table 4.2.4.1 Heat interface function description

Note 1: The factory default power supply value is set to 100W. You should adjust this parameter based on your power adapter or fast charger's actual output capability, otherwise, issues may arise such as constant restarts during heating (insufficient power, please lower this value) or slow heating (power mismatch, increase this value or switch to a higher wattage power supply).

Note 2: The preset temperatures for T1/T2/T3 can all be adjusted by pressing and holding the right button, with an adjustable range of 80°C to 350°C. After adjustment, the parameters will be automatically saved after 2 seconds.

The operation instructions for the reflow interface are shown in Table 4.2.4.2.

Buttons	Click	Long-Press
Left	Invalid / Reduce	Return to the main interface/ Fast reduction
Right	Switch preset temperature values/ Increase	Enter temperature adjustment mode / Fast increase

Table 4.2.4.2 Heat interface operation instruction

4.2.5 Menu interface

After entering the menu settings interface, various parameters can be configured, as shown in Figure 4.2.5.1.

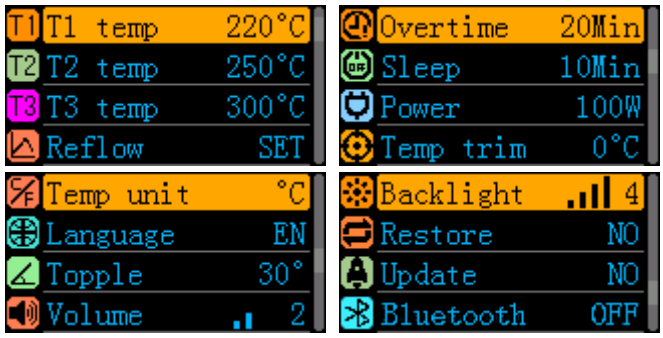

Figure 4.2.5.1 Menu interface

The explanation of menu items, the adjustable range and factory settings are shown in Table 4.2.5.1:

Items	Paraphrase		Factory settings	Range
Exit	Exit menu setting			
T1 temperature	Constant temperature heating preset target temperature 1		220°C	80°C~350°C
T2 temperature	Constant temperature heating preset target temperature 2		250°C	80°C~350°C
T3 temperature	Constant temperature heating preset target temperature 3		300°C	80°C~350°C
Reflow soldering	Up temperature	Quickly raise the target temperature	150°C	120°C~180°C
	Up time	Time required for the heating phase	80S	60S~120S
	Keep temperature	Slowly increase the target temperature	180°C	150°C~220°C
	Keep time	Time required for the insulation phase	80S	60S~150S
	Weld temperature	Target temperature during welding phase	230°C	220°C~300°C
	Weld time	Time required for welding phase	120S	30S~250S
	Down temperature	The target temperature for the cooling down phase	50°C	50°C~80°C
	Down time	Time required for the cooling phase	300S	180S~480S

Heating time out	Set the heating timeout time, when timeout it will automatically return to the main interface	20Min	● 1Min~30Min ● OFF
Sleep time	Set the required time for sleep, when timeout it will enter the sleep state	10Min	● 1Min~30Min ● OFF
Power supply	Set the power supply value (adjust it according to the actual situation of the power supply)	100W	30W~150W
Temperature calibration	Set the temperature calibration value	0℃	-50℃~50℃
Unit of temperature	Set the temperature unit, Celsius or Fahrenheit display	℃	● ℃ ● ℉
Language setting	Set the interface display language	简体中文	● 简体中文 ● English ● 繁体中文
Topple setting	Set the dumping detection Angle	30°	● 20° ~ 50° ● OFF
Volume setting	Set the volume	2	0 ~ 4
Backlight setting	Set backlight brightness	4	0 ~ 4
Restore the factory	Set to restore factory default parameters	NO	● NO ● YES
Firmware update	Firmware upgrade interface, cooperate with the host computer, update firmware	NO	● NO ● UP
Bluetooth	Turn on or off the Bluetooth function	OFF	● OFF ● ON
Bluetooth name	Display the name of the Bluetooth connection	HP15	

Table 4.2.5.1 Menu interface function description

The operation instructions for the menu interface are shown in Table 4.2.5.2.

Buttons	Click	Long-Press
Left	Last term / Reduce	Return to the main interface / Fast reduction / Do not save and exit
Right	Next item / Increase	Select option / Fast increase / Save and exit（Wait 2S and autosave）

Table 4.2.5.2 Menu interface operation instruction

4.2.6 Info interface

After entering the information viewing interface, users can check the current status of key parameters of the heating platform, as shown in Figure 4.2.6.1.

Figure 4.2.6.1 Info interface

The descriptions of the info interface functions are shown in Table 4.2.6.1.

Number	Function
①	Power supply, displays the set power supply value
②	Input voltage, displays the input voltage value
③	Fan state, display fan state, on or off
④	Heating table status, shows whether the heating table exists
⑤	Hardware version, which displays the current hardware version number
⑥	Software version, displays the current software version number
⑦	Heat table temperature, display the current heat table temperature value
⑧	Internal resistance of heating element, display internal resistance value of heating element

Table 4.2.6.1 Info interface function description

The operation instructions for the info interface are shown in Table 4.2.6.2.

Buttons	Click	Long-Press
Left	Return to the main interface	Return to the main interface
Right	Return to the main interface	Return to the main interface

Table 4.2.6.2 Info interface operation instruction

4.2.7 Alarm interface

During system operation, if an anomaly occurs or a sensor error is detected, the device will display an alarm notification and stop heating, returning to the main screen or entering sleep mode. Alarm notifications include: heating timeout, entering sleep mode, no platform detected, and device tilt, as shown in Figure 4.2.7.1.

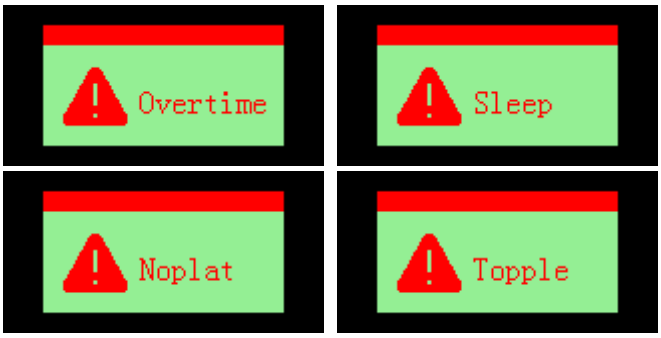

Figure 4.2.7.1 Alarm interface

The descriptions of the alarm interface functions are shown in Table 4.2.7.1.

Alarm	Operation
Overtime	If the heating time exceeds the set timeout, heating will stop, an alarm will sound, and the system will automatically return to the main interface.
Sleep	If the main interface is left on for longer than the set sleep time, an alarm will sound, and the screen, fan, and indicator lights will turn off, entering sleep mode. Pressing any key will exit sleep mode.
No platform	If the device cannot detect the heating platform, heating will stop, an alarm will sound, and it will automatically return to the main interface.
Topple	If the device is tilted beyond the set angle, heating will stop, an alarm will sound, and it will automatically return to the main interface.

Table 4.2.7.1 Alarm interface function description

4.3 Firmware upgrade

The HP15 provides a firmware upgrade feature for users. When a firmware upgrade is needed, users can access the firmware upgrade option in the menu settings to enter the upgrade mode, and the device will switch to the firmware upgrade interface. The HP15 supports local mode upgrades using the software: ATK-HP15 UPGRADE. Users should also prepare the latest HP15 firmware (. atk file) and follow the steps shown in Figure 4.3.1 to proceed with the upgrade.

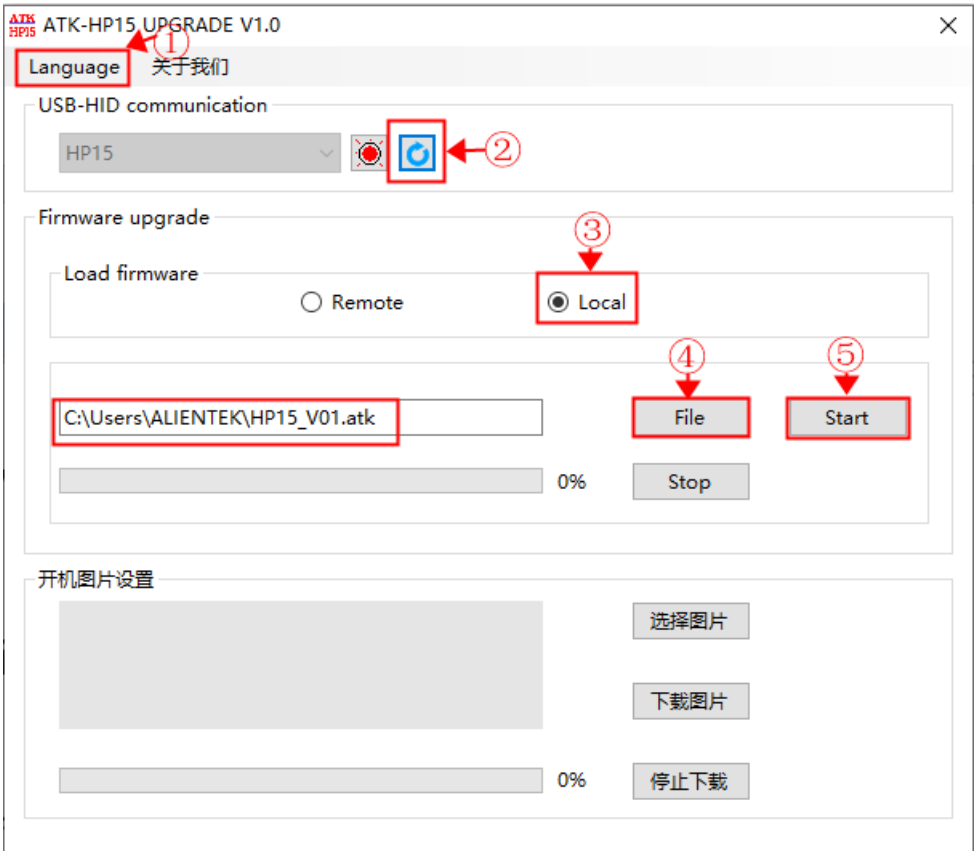

Figure 4.3.1 Firmware upgrade instructions

The operation instructions for the firmware upgrade are shown in Table 4.3.1.

Step	Operation
①	Set language to English
②	Click the refresh icon. When "HP15" appears, it indicates that the device is successfully connected to the compute
③	Select "Local" to use the local upgrade mode.
④	Click "File" to open the latest firmware (.atk file).
⑤	Click "Start" and wait for the progress bar to complete. Once the device screen shows "Upgrade Successful," it indicates that the firmware upgrade is complete. The device will automatically switch to the upgraded firmware for operation.

Table 4.3.1 Firmware upgrade operation instruction

Notes:

① Using local upgrade mode requires you to prepare the latest firmware.（.atk file）

② After entering firmware upgrade mode, you must start the upgrade within 10 seconds. If you exceed this time,

it will automatically revert to the original firmware. To continue upgrading, you need to re-enter the menu settings and select the firmware upgrade option again.

③ During the firmware upgrade process, you should avoid power interruptions or disconnecting the Type-C cable. If a power interruption is unavoidable, please completely power off the HP15 and then power it back on to restart the firmware upgrade process.

4.4 Bluetooth function

Search for "atk-xtool" in the application store, find the "atk-xtool" software, download and install it. At the same time, turn on the Bluetooth function in the settings menu of the HP15 device.

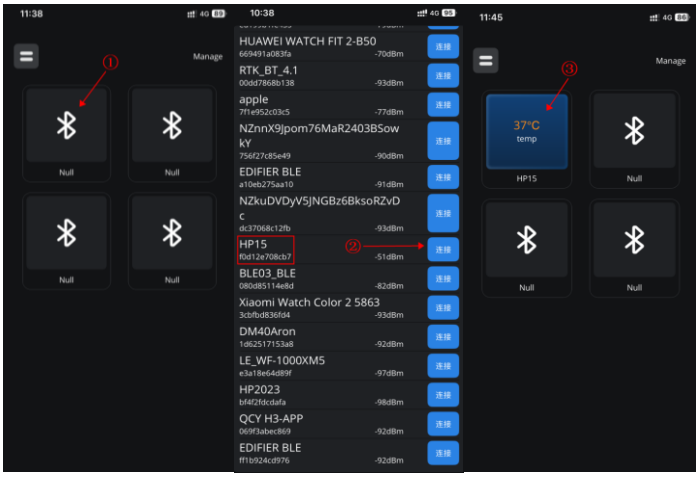

Figure 4.4.1 Bluetooth function instructions

After successfully connecting to Bluetooth, you can use the APP to set some parameters for the device and check its status.

5, FAQ

The summary of common problems is shown in Table 5.1:

Problems and phenomena	Solution
Entering the reflow soldering interface or constant temperature heating interface will cause a restart.	Check if the maximum output power of the power supply matches the power rating configured for the HP15. For example, if the charger has a maximum output of 65W but the HP15's factory default maximum is 100W, heating the device may cause a restart. You should enter the menu, find the power options, and adjust the power to match the charger (or slightly lower).
The power supply voltage can only be applied to 5V, not higher voltages	Check if the fast charger or power bank supports the PD protocol. The HP15 only supports PD 2.0/3.0 fast charging protocols; other protocols are not supported.
The temperature never goes up	Check the heating power. For example, a heating power of 30W

	can only reach around 200 degrees Celsius, making it difficult to achieve 300 degrees. Please set a higher heating power or replace it with a power supply that has a larger output.
Failed to connect to the computer	1. Check if the Type-C cable supports data communication. 2. Try restarting the device 3. Contact after-sales service
After being idle for a while, the screen goes black and the RGBLED is off.	1. Check if the device has entered sleep mode, as it may automatically enter sleep after being idle for a while. 2. Contact after-sales service
The device cannot be turned on	1. Check if the Type-C power supply is OK? 2. Check if the power supply reversed? 3. Contact after-sales service
Tip no platform	Check if the heating plate is properly installed or if there are any contact issues.
Slight smoke or odor during the first heating process	This is a normal phenomenon, and it should disappear after heating for a while.

Table 5.1 Summary of frequently asked questions

6， Serivices

1. After – sales Service:

HP15 host has a one-year free warranty service in the case of non-artificial damage. Please contact the dealer for warranty service.

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

FCC Caution:

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to

provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

-Reorient or relocate the receiving antenna.

-Increase the separation between the equipment and receiver.

-Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

-Consult the dealer or an experienced radio/TV technician for help.

The device has been evaluated to meet general RF exposure requirement. The device can be used in portable exposure condition without restriction.