



HP20 Heating Plate User



user's manual



official website

Table of contents

Safety Instructions (Must Read)	1
1. Product Introduction	2
2. Product Overview	2
3. Specifications	3
4. Screens & Operating Instructions	3
5. Firmware Upgrade	10
6. Services	12

Safety Instructions (Must Read)

- HP20 supports either DC input or USB-C (Type-C) PD input. Never connect both at the same time; doing so may damage the device.
- With DC input, the default power limit is 140 W. With USB-C PD, the device will negotiate up to the charger's maximum rated power. You can adjust this in the menu under "Power Limit".
- When finished, exit Heating mode and allow the fan to run for automatic cool-down. Disconnect power only after the fan stops to avoid burns.
- This product is a heating device. To ensure normal heating performance and stable temperature control, it is recommended to use a power adapter rated at no less than 100W (Output: DC 20V, Rated current: $\geq 5A$).
- Do not touch the heated surface while powered or hot to avoid burns.
- Do not allow liquids to enter the unit or operate it in humid environments.
- If not used for an extended period, disconnect the power and store the product properly.
- Do not disassemble or modify the product. Read this manual before use and keep the product and manual stored safely out of reach of children.

Disclaimer (Must Read)

In certain use cases (e.g., low-temperature operation $\leq 200^{\circ}\text{C}$ or when fast heating is not required), a power supply rated below 100W but above 65W may still be able to power the device. However, the following behaviors are normal:

- The heating-up speed may be significantly reduced, and it may take longer to reach the target temperature.
- High-temperature operation (e.g., $\geq 200^{\circ}\text{C}$), use in a cold environment, or contact with large/highly conductive objects may prevent the unit from reaching or maintaining the target temperature steadily.

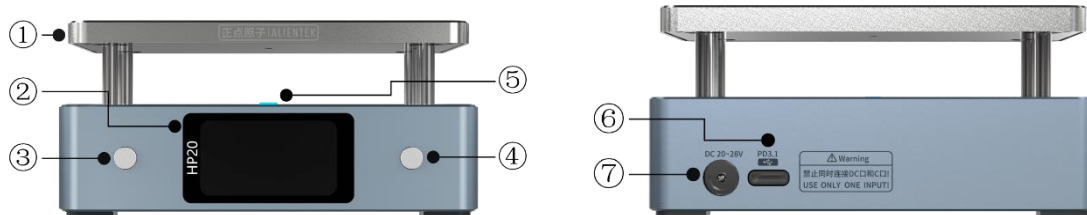
Note: When using a low-power supply, the device will continue to operate to the best of its ability, but full rated performance across all temperature ranges and loads is not guaranteed. Performance issues caused by an under-rated power adapter, poor-quality adapter, or falsely rated specifications (e.g., slow heating, unstable temperature, failure to reach the set temperature) are not considered product defects.

1. Product Introduction

The HP20 is the latest high-performance constant temperature heating station from Guangzhou Xingyi Electronic Technology Co., Ltd. (Zhengdian Atom). It offers the following key features:

- Supports DC or Type-C power delivery for flexible use
- Type-C power delivery supports PD 3.1/3.0/2.0 fast charging protocols
- Supports colored temperature indicator lights with color gradients
- Supports real-time temperature curves and displays
- Supports a heating temperature range of 40°C to 350°C
- Supports 200W high-power heating for rapid heating
- Supports three working modes: constant temperature heating, reflow soldering, and phone repair
- Supports power adjustment and PD adaptive charging head maximum power, eliminating the need for manual adjustment
- Supports over-temperature protection, short-circuit protection, and heating timeout protection
- Supports firmware upgrades
- All-aluminum body, precision craftsmanship

2. Product Overview



- ① Heated plate (100×60 mm)
- ② 1.4" IPS display (320×172)
- ③ L button
- ④ R button

- ⑤ RGB LED indicator
- ⑥ USB Type-C power input (Max 28 V)
- ⑦ DC power input (20–32 V)

3. Specifications

Parameter	Specification
Power Ports	DC5521 / USB Type-C (use one only; do not connect both)
Input Voltage	DC 20–32 V
Fast-Charge Protocols	PD 3.1 / 3.0 / 2.0
Power Limit	65–200 W (configurable in menu)
Temperature Range	40–350 °C
Heating Area	100 × 60 mm
Standby Power	≤ 1 W
Temperature Stability	±3 %
Display	1.47" IPS LCD, 320 × 172 px
Dimensions	104 × 64 × 50.6 mm (L × W × H)
Weight	≈ 260 g

The power corresponding to the temperature rise is as follows:

Power\Temp	100°	200°	260°	300°	350°
200W	00:35	01:20	02:00	02:30	03:30
140W	00:45	02:05	03:20	04:30	N/A
100W	01:10	03:20	06:35	N/A	N/A
65W	01:58	06:50	N/A	N/A	N/A

Note:

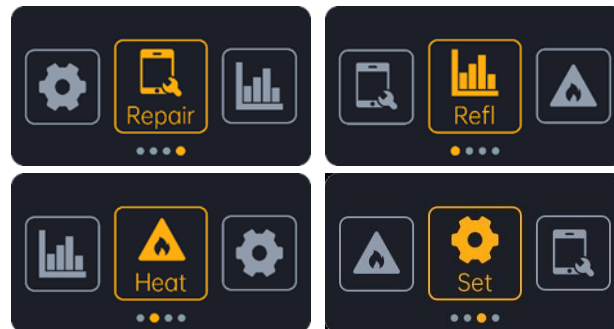
- ① It is recommended to use a power supply of more than 140W. Different room temperatures and temperature measurement instruments may cause variations.
- ② The recommended operating temperature for 140W is ≤ 300°C.
- ③ The recommended operating temperature for 100W is ≤ 260°C.

4. Screens & Operating Instructions

The HP20 is equipped with an RGB LED to indicate the heater surface temperature. As temperature rises, the LED color transitions smoothly across ranges. The color–temperature mapping is as follows:

Color	Temperature
Cyan-green	≤50°C
Green to yellow	50°C ~ 90°C
Yellow to white	90°C ~ 125°C
White to purple	125°C ~ 165°C

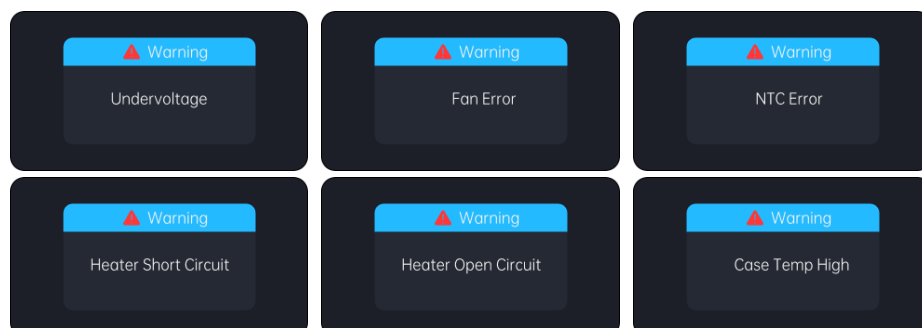
Purple to red	165°C ~ 200°C
Pure red	≥200°C

Main Screen:**Main Screen Functions**

Options	功能
Repair	Built-in temperature and timer presets for common assembly and disassembly scenarios
Reflow	Simulated reflow function automatically heats in stages according to preset temperatures and times
Heating	Constant temperature heating function maintains constant heating at preset temperatures
Settings	Configure parameters

Main Screen Operation:

Key	Single Press	Long Press
L Key	Move one option to the left	N/A
R Key	Move one option to the right	Enter the options interface

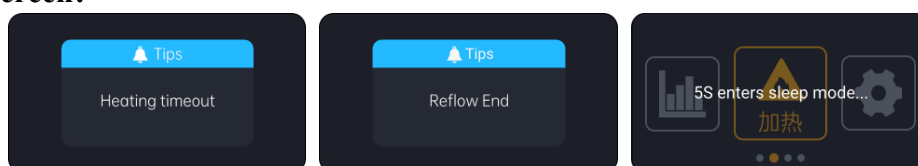
Warning Screen:

The warning Screen function description is as follows:

Warning	Interpretation
---------	----------------

Undervoltage	The input voltage is lower than the operating voltage, preventing heating. Press any key to return to the main interface.
Fan Error	The fan self-test is not running or is blocked. Please check the fan and re-power on.
NTC Error	If the NTC sensor inside the housing is short-circuited or open-circuited, please contact the manufacturer.
Heater Short Circuit	If the heating wire is short-circuited, please contact the manufacturer.
Heater Open Circuit	If the heating wire is disconnected, please contact the manufacturer.
Case Temp High	If the temperature inside the housing exceeds 50°C, heating will stop.
Power low	The reflow soldering function is disabled because the current power supply is below 100W. Press any key to return to the main interface.

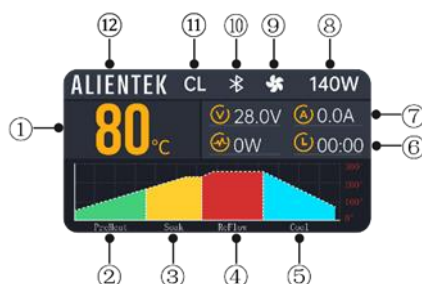
Tips Screen:



The tips interface function description is as follows:

Tips	Interpretation
Heating timeout	If the heating time exceeds the set time, the heating will stop. Press any key to return to the main interface
Reflow End	When the cooling temperature is reached, the countdown ends and heating stops. Press any key to return to the main interface
enters sleep mode	When the sleep time is exceeded in the main interface or setting interface, a 5S countdown will sound and the screen will be turned off. The fan and colored lights will be turned off when the temperature drops to 50°, and the system will enter sleep mode. Press any button to exit sleep mode.

Reflow Screen:



The reflow function description is as follows:

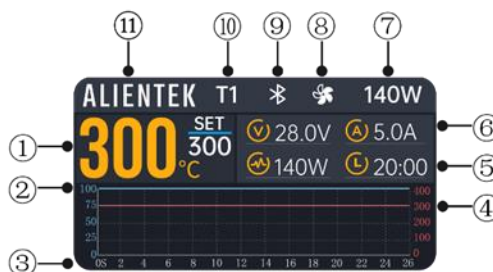
No.	Function
①	Current temperature: Displays the heating plate temperature in real time.
②	Preheating phase: Raises the temperature to the preset value within the

	preset time.
③	Constant temperature phase: Rapidly raises the temperature to the preset value and begins the constant temperature countdown.
④	Reflow phase: Rapidly raises the temperature to the preset value and begins the constant temperature countdown.
⑤	Cooling phase: Rapidly cools the temperature to the preset value and stops heating at the end of the countdown.
⑥	Real-time power and timer.
⑦	Real-time voltage and current.
⑧	Current power setting.
⑨	Fan icon: Speed settings 1-5.
⑩	Bluetooth icon. On: Bluetooth is on. Off: Bluetooth is off.
⑪	Current reflow stage: Preheat (PH), Constant temperature (SK), Reflow (RF), Cooling (CL)
⑫	Brand LOGO

Reflow Screen Operation:

Key	Single Press	Long Press
L Key	N/A	Return to Home screen
R Key	N/A	N/A

Heat Screen:



The constant temperature heating screen function description is as follows:

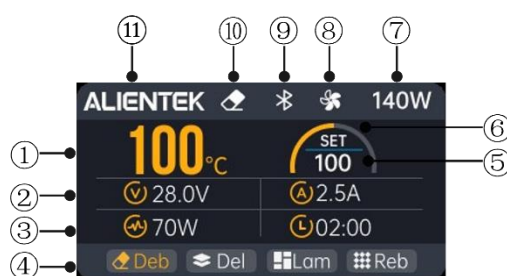
No.	Function
①	Current temperature: Displays the heating plate temperature in real time.
②	Heating output percentage curve (0-100%)
③	Time scale
④	Real-time temperature curve
⑤	Real-time power and timer.
⑥	Real-time voltage and current.
⑦	Current power setting.
⑧	Fan icon: Speed settings 1-5.
⑨	Bluetooth icon. On: Bluetooth is on. Off: Bluetooth is off.
⑩	Quick temperature

⑪	Brand LOGO
---	------------

Heat Screen Operation:

Key	Single Press	Long Press
L Key	Temperature decrease	Return to the main interface
R Key	Temperature increase	Switch to the quick temperature

Repair interface:



The repair nce interface function description is as follows:

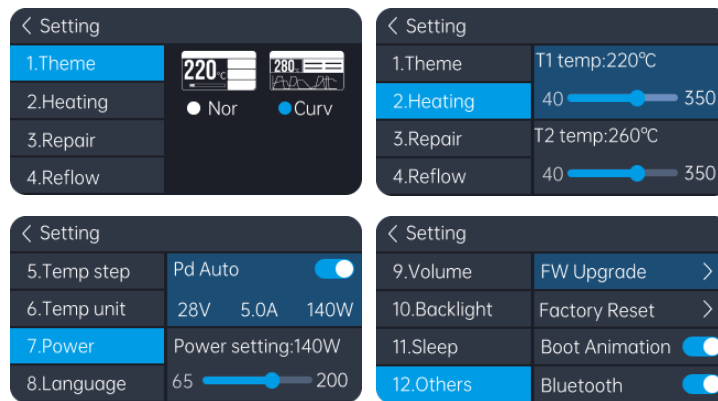
No.	Function
①	Current temperature: Displays the heating plate temperature in real time.
②	Real-time voltage and current.
③	Real-time power and timer.
④	Long press the R key to switch to the repair mode.
⑤	Set the target temperature
⑥	Power progress bar
⑦	Current power setting.
⑧	Fan icon: Speed settings 1-5.
⑨	Bluetooth icon. On: Bluetooth is on. Off: Bluetooth is off.
⑩	Current repair mode
⑪	Brand LOGO

Repair Screen Operation:

Key	Single Press	Long Press
L Key	Temperature decrease	Return to the main interface
R Key	Temperature increase	Switching mode

Note: This port supports adding accessories such as extended heating modules, soldering nets, and soldering stations required for mobile phone repairs. Please purchase these accessories at your own convenience. To adjust the temperature, use "Repair Settings" and "Temperature Adjustment" under the "Settings" menu.

Settings Screen:



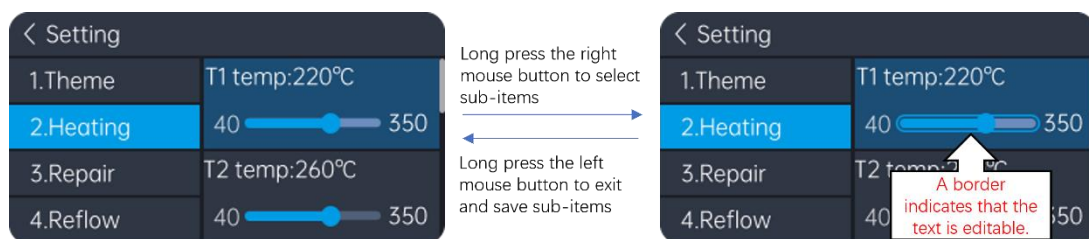
The function description of the setting interface is as follows:

Set Item	Interpretation		Factory settings	Adjustable range
1. Theme	Heating interface display mode		curve	Standard curve
2. Heating	T1 temp	Quick Temperature 1	200	40 - 350°
	T2 temp	Quick Temperature 2	260	40 - 350°
	T3 temp	Quick Temperature 3	300	40 - 350°
	Trim	Set the temperature difference between the heating and reflow interface and the thermometer	0	-50 - 50°
	Heating timeout	Set the time and stop heating when the time is up	20Min	● 1-30Min ● 关闭
3. Repair	Debonding	Target temperature for Debonding mode	100°	60 - 150°
	Debonding Time	Set the debonding time and stop heating when the time is up	2Min	10 - 300S
	Delamination	Target temperature for delamination mode	80°	60 - 260°
	Delamination Time	Set the delamination time and stop heating when the time is up	2Min	10 - 300S
	Lamination	Target temperature for lamination mode	80°	60 - 260°
	Lamination Time	Set the lamination time and stop heating when the time is up	2Min	10 - 300S
	Reballing	Target temperature for reballing mode	260°	40 - 300

	Reballing Time	Set the reballing time and stop heating when the time is up	2Min	10 – 300S
	Trim	Set the temperature difference between the maintenance interface and the thermometer	0	-50- 50°
4. Reflow	Up temp	Target temperature during the warm-up phase	150°	120 – 180°
	Keep temp	Target temperature during constant temperature phase	180°	150 - 220°
	Weld temp	Target temperature during reflow phase	260°	230 - 300°
	Cool temp	Target temperature during cooling phase	80°	50 - 80°
	Up time	Time required for the warm-up phase	2Min	60 – 300S
	Keep time	Continuous heating time after reaching constant temperature	1:30S	30 – 300S
	Weld time	Continuous heating time after reaching reflow temperature	1Min	30 – 300S
	Cooltime	Reach cooling temperature, timeout stops heating	5Min	300 – 480S
5. Temp step	Adjust the step value of the set temperature		10℃	1 – 20℃
6. Temp unit	Celsius or Fahrenheit display		℃	● ℃ ● °F
7. Power	Pd Auto	Maximum power of adaptive PD charging head	ON	● ON ● OFF
	Power settings	Setting the DC power supply	140W	65 – 200W
8. Language	Set the interface display language		Simplified Chinese	● Simplified Chinese ● English ● Traditional Chinese

9. Volume	Set the volume	High	● Off ● Low ● Medium ● High
10. Backlight	Setting the backlight brightness	80%	10 - 100%
11. Sleep	Set the sleep time and enter the sleep state when the timeout	20Min	● 1 - 30Min ● OFF
12. Others	Firmware Upgrade	Enter firmware upgrade mode	
	Factory Reset	Restore factory settings, excluding language settings	
	Startup animation	Turn startup animation on and off	ON ● ON ● OFF
	Bluetooth switch	Turn startup Bluetooth on and off	ON ● ON ● OFF
13. Version	View current version information		
14. Manual	Scan the QR code to view the user manual		

Parameter settings:



The following table describes the settings interface operation instructions::

KEY	Click	Long press
L KEY	Previous item / Subtract	Return to the main interface / Save and rollback
R KEY	Next item / Add	invalid

5. Firmware Upgrade

Step 1: Power off the device. Press and hold the R button, connect the device to the computer using a USB Type-C data cable, and power on the device for about 4 seconds until the screen displays "USB Connection". Then release the button. See Figure 5-1 below:

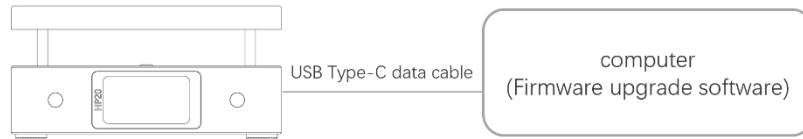


Figure 5-1 Connection Diagram

Alternatively, you can go to "Other Settings" —> "Firmware Upgrade" in the settings interface to put the HP20 into firmware upgrade mode. See Figure 5-2 below:

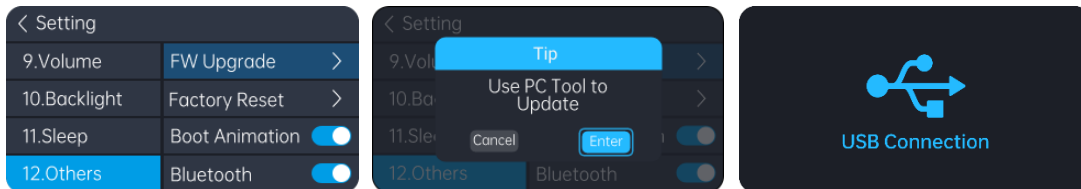


Figure 5-2 Firmware upgrade interface

Step 2: Open the upgrade software and wait for the device to connect automatically, or click "Reconnect". A successful connection will be shown in Figure 5-3 below:

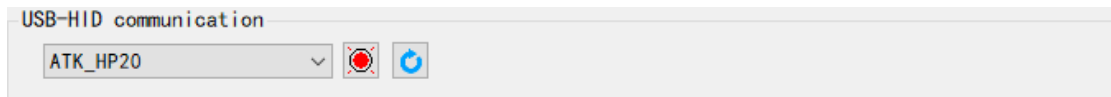


Figure 5-3 shows a successful connection.

Step 3: Select the remote firmware provider (computer needs internet connection), click "Start Upgrade," and wait for the upgrade to complete and automatically redirect to the app. See Figure 5-4 below for instructions:

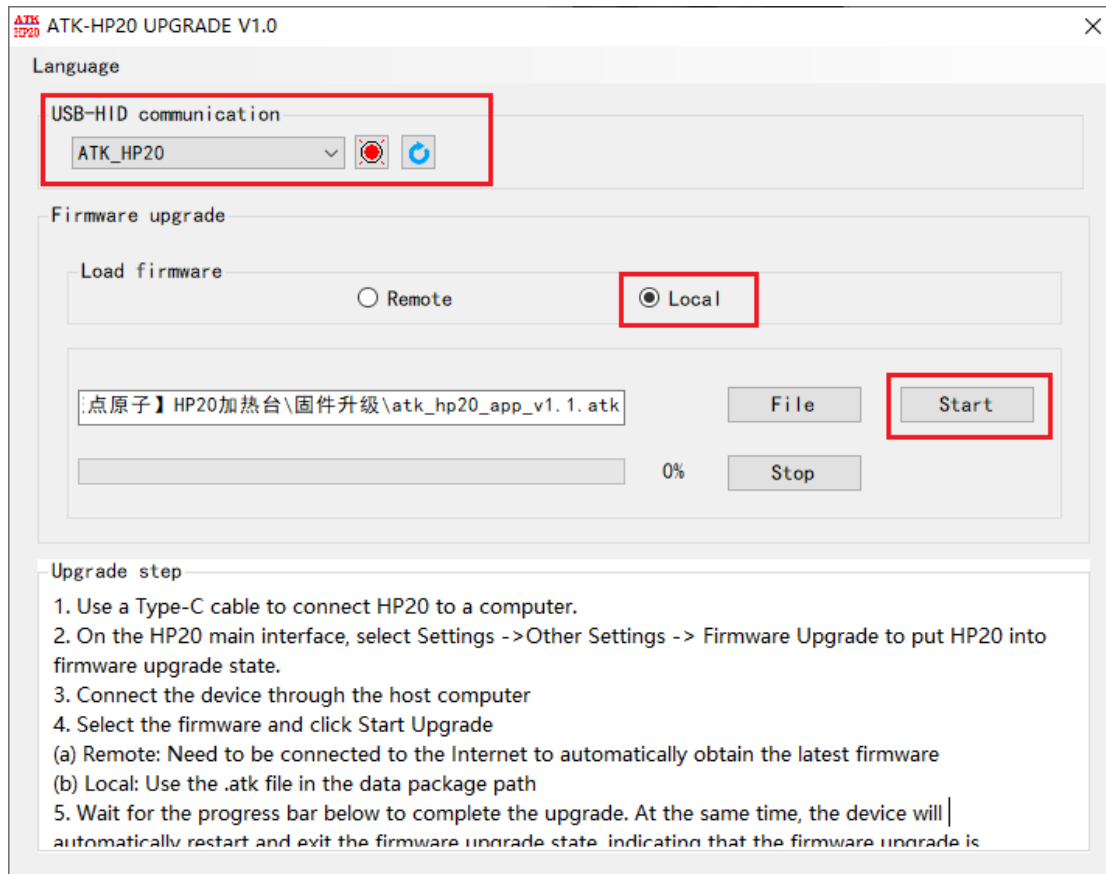


Figure 5-4 Schematic diagram of firmware upgrade operation

6. Services

1. After – sales Service:

HP20 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 : <http://www.openedv.com/docs/index.html>

Company : www.alientek.com

Aliexpress : www.aliexpress.com/store/1102909571

3. Contact US

E-mail : fae-smt@alientek.com